

Atlas Copco Customized Solutions

Global Projects 2017

Atlas Copco

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Mechanics

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Vertical fixtures

A fixtured assembly designed for Nutrunner integration. Nutrunners (spindles) are oriented vertically. The base and top plates are custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility.

SCOPE OF SUPPLY

- ▶ Base plate with spindle layout according to the application
- ▶ Pipe support(s)
- ▶ Handle mounting components
- ▶ Operator interface mounting components
- ▶ Suspension mounting components with center of gravity adjustment
- ▶ Safety belt(s) (1 per 150 kg (330 lbs) load)
- ▶ Cable management

REQUIRED EQUIPMENT

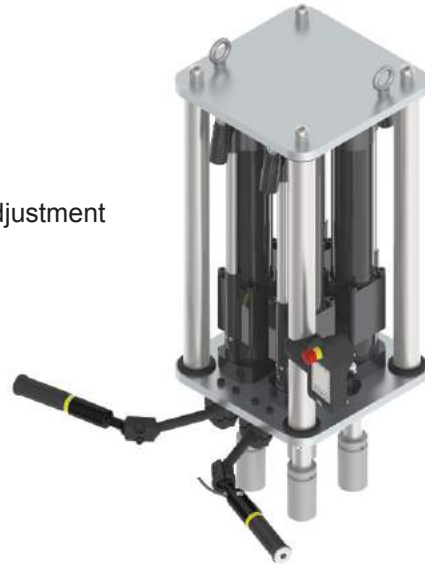
- ▶ Nutrunner(s)
- ▶ Operator interface (Indicator Box, etc.)
- ▶ Operator handle(s)

OPTIONS

- ▶ Sockets

NOTES

- ▶ **Important:** For one and two spindle applications, a torque reaction device (e.g., torque reaction bar, torque reaction suspension) is to be used to protect operator safety. The torque reaction device is not included in the scope of supply and needs to be specified separately (price on request).



VERTICAL FIXTURES 350 NM 1-PIPE 1 - 4 SPINDLES

Description	Ordering No.
Vertical Fixture 350 Nm 1-Pipe - 1 Sp	8439 3000 01
Vertical Fixture 350 Nm 1-Pipe - 2 Sp	8439 3000 02
Vertical Fixture 350 Nm 1-Pipe - 3 Sp	8439 3000 03
Vertical Fixture 350 Nm 1-Pipe - 4 Sp	8439 3000 04



VERTICAL FIXTURES 350 NM 2-PIPES WITH SUSPENSION PIPE 2 - 10 SPINDLES

Description	Ordering No.
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 2 Sp	8439 3001 02
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 3 Sp	8439 3001 03
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 4 Sp	8439 3001 04
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 5 Sp	8439 3001 05
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 6 Sp	8439 3001 06
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 7 Sp	8439 3001 07
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 8 Sp	8439 3001 08
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 9 Sp	8439 3001 09
Vertical Fixture 350 Nm 2-Pipe with Suspension Pipe - 10 Sp	8439 3001 10



Vertical fixtures

VERTICAL FIXTURES 350 NM 2-PIPES 1 - 10 SPINDLES

Description	Ordering No.
Vertical Fixture 350 Nm 2-Pipes - 1 Sp	8439 3002 01
Vertical Fixture 350 Nm 2-Pipes - 2 Sp	8439 3002 02
Vertical Fixture 350 Nm 2-Pipes - 3 Sp	8439 3002 03
Vertical Fixture 350 Nm 2-Pipes - 4 Sp	8439 3002 04
Vertical Fixture 350 Nm 2-Pipes - 5 Sp	8439 3002 05
Vertical Fixture 350 Nm 2-Pipes - 6 Sp	8439 3002 06
Vertical Fixture 350 Nm 2-Pipes - 7 Sp	8439 3002 07
Vertical Fixture 350 Nm 2-Pipes - 8 Sp	8439 3002 08
Vertical Fixture 350 Nm 2-Pipes - 9 Sp	8439 3002 09
Vertical Fixture 350 Nm 2-Pipes - 10 Sp	8439 3002 10



VERTICAL FIXTURES 350 NM 4-PIPES 11 - 20 SPINDLES

Description	Ordering No.
Vertical Fixture 350 Nm 4-Pipes - 11 Sp	8439 3003 11
Vertical Fixture 350 Nm 4-Pipes - 12 Sp	8439 3003 12
Vertical Fixture 350 Nm 4-Pipes - 13 Sp	8439 3003 13
Vertical Fixture 350 Nm 4-Pipes - 14 Sp	8439 3003 14
Vertical Fixture 350 Nm 4-Pipes - 15 Sp	8439 3003 15
Vertical Fixture 350 Nm 4-Pipes - 16 Sp	8439 3003 16
Vertical Fixture 350 Nm 4-Pipes - 17 Sp	8439 3003 17
Vertical Fixture 350 Nm 4-Pipes - 18 Sp	8439 3003 18
Vertical Fixture 350 Nm 4-Pipes - 19 Sp	8439 3003 19
Vertical Fixture 350 Nm 4-Pipes - 20 Sp	8439 3003 20



VERTICAL FIXTURES 1000 NM 4-PIPES 1 - 10 SPINDLES

Description	Ordering No.
Vertical Fixture 1000 Nm 4-Pipes - 1 Sp	8439 3004 01
Vertical Fixture 1000 Nm 4-Pipes - 2 Sp	8439 3004 02
Vertical Fixture 1000 Nm 4-Pipes - 3 Sp	8439 3004 03
Vertical Fixture 1000 Nm 4-Pipes - 4 Sp	8439 3004 04
Vertical Fixture 1000 Nm 4-Pipes - 5 Sp	8439 3004 05
Vertical Fixture 1000 Nm 4-Pipes - 6 Sp	8439 3004 06
Vertical Fixture 1000 Nm 4-Pipes - 7 Sp	8439 3004 07
Vertical Fixture 1000 Nm 4-Pipes - 8 Sp	8439 3004 08
Vertical Fixture 1000 Nm 4-Pipes - 9 Sp	8439 3004 09
Vertical Fixture 1000 Nm 4-Pipes - 10 Sp	8439 3004 10



Vertical fixtures

VERTICAL FIXTURES 350 NM 6-PIPES 20 - 28 SPINDLES

Description	Ordering No.
Vertical Fixture 350 Nm 6-Pipes - 20 Sp	8439 3005 20
Vertical Fixture 350 Nm 6-Pipes - 21 Sp	8439 3005 21
Vertical Fixture 350 Nm 6-Pipes - 22 Sp	8439 3005 22
Vertical Fixture 350 Nm 6-Pipes - 23 Sp	8439 3005 23
Vertical Fixture 350 Nm 6-Pipes - 24 Sp	8439 3005 24
Vertical Fixture 350 Nm 6-Pipes - 25 Sp	8439 3005 25
Vertical Fixture 350 Nm 6-Pipes - 26 Sp	8439 3005 26
Vertical Fixture 350 Nm 6-Pipes - 27 Sp	8439 3005 27
Vertical Fixture 350 Nm 6-Pipes - 28 Sp	8439 3005 28



VERTICAL FIXTURES 1000 NM 6-PIPES 11 - 20 SPINDLES

Description	Ordering No.
Vertical Fixture 1000 Nm 6-Pipes - 11 Sp	8439 3006 11
Vertical Fixture 1000 Nm 6-Pipes - 12 Sp	8439 3006 12
Vertical Fixture 1000 Nm 6-Pipes - 13 Sp	8439 3006 13
Vertical Fixture 1000 Nm 6-Pipes - 14 Sp	8439 3006 14
Vertical Fixture 1000 Nm 6-Pipes - 15 Sp	8439 3006 15
Vertical Fixture 1000 Nm 6-Pipes - 16 Sp	8439 3006 16
Vertical Fixture 1000 Nm 6-Pipes - 17 Sp	8439 3006 17
Vertical Fixture 1000 Nm 6-Pipes - 18 Sp	8439 3006 18
Vertical Fixture 1000 Nm 6-Pipes - 19 Sp	8439 3006 19
Vertical Fixture 1000 Nm 6-Pipes - 20 Sp	8439 3006 20



Vertical fixtures

DIMENSIONS

▶ 350 Nm 1-Pipe 1 - 4 Spindles - 8439 3000 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

$$\text{Fixture Weight} = N \times (S + A) + U$$

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3000 xx

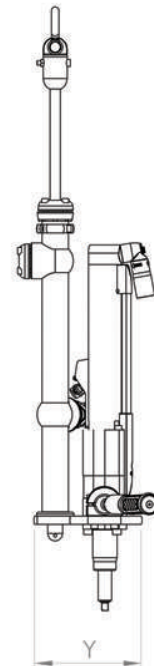
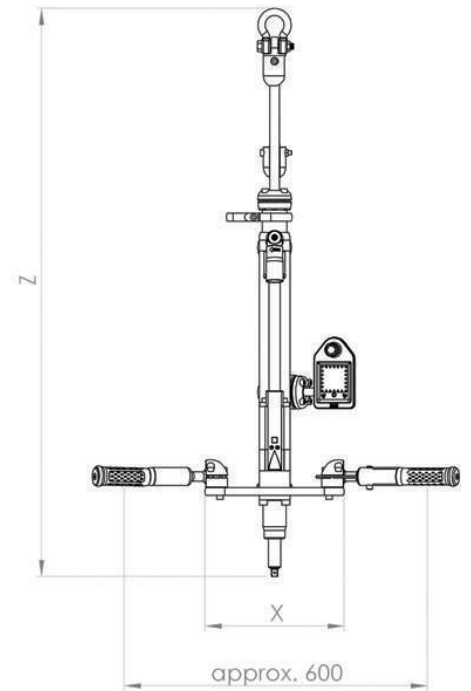
- ▶ U = 25 kg or 55 lbs

NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Height Z mm (in)	Spindle Weight S kg (lb)
QST34-CT	850 (33.5)	2 (4.4)
QST42-CT	850 (33.5)	3.6 (7.9)
QST50-CT	900 (35.4)	5.8 (12.8)
QST62-CT	1000 (39.4)	10.5 (23.1)
QST42-COT	950 (37.4)	4.4 (9.7)
QST50-COT	950 (37.4)	7.8 (17.2)
QST62-COT	1050 (41.3)	13.5 (29.8)
ETX42-CT	850 (33.5)	3.5 (7.7)
ETX50-CT	900 (35.4)	5.9 (13)
ETX62-CT	950 (37.4)	10.2 (22.5)
ETX42-COT	900 (35.4)	4.6 (10.1)
ETX50-COT	950 (37.4)	8 (17.6)
ETX62-COT	1000 (39.4)	12.9 (28.4)

(X, Y depending on bolt pattern)
All dimensions are approximate.



Vertical fixtures

DIMENSIONS

▶ 350 Nm 2-Pipes with Suspension Pipe 2 - 10 Spindles - 8439 3001 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3001 xx

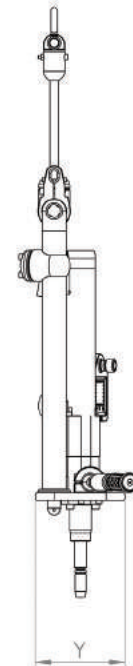
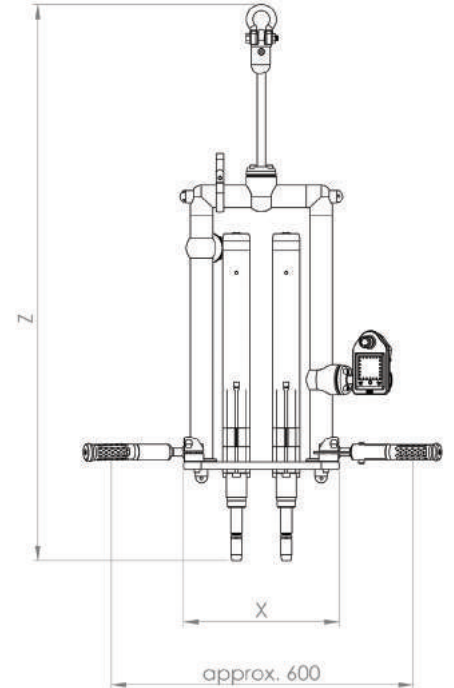
- ▶ U = 35 kg or 77 lbs

NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Height Z mm (in)	Spindle Weight S kg
QST34-CT	850 (33.5)	2 (4.4)
QST42-CT	850 (33.5)	3.6 (7.9)
QST50-CT	900 (35.4)	5.8 (12.8)
QST62-CT	1000 (39.4)	10.5 (23.1)
QST42-COT	950 (37.4)	4.4 (9.7)
QST50-COT	950 (37.4)	7.8 (17.2)
QST62-COT	1050 (41.3)	13.5 (29.8)
ETX42-CT	850 (33.5)	3.5 (7.7)
ETX50-CT	900 (35.4)	5.9 (13)
ETX62-CT	950 (37.4)	10.2 (22.5)
ETX42-COT	900 (35.4)	4.6 (10.1)
ETX50-COT	950 (37.4)	8 (17.6)
ETX62-COT	1000 (39.4)	12.9 (28.4)

(X, Y depending on bolt pattern)
All dimensions are approximate.



- ▶ 350 Nm 2-Pipes 1 - 10 Spindles - 8439 3002 xx
- ▶ 350 Nm 4-Pipes 11 - 20 Spindles - 8439 3003 xx
- ▶ 350 Nm 6-Pipes 20 - 28 Spindles - 8439 3005 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

$$\text{Fixture Weight} = N \times (S + A) + U$$

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight
(Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3002 xx

- ▶ U = 35 kg or 77 lbs

Unit Weight for 8439 3003 xx

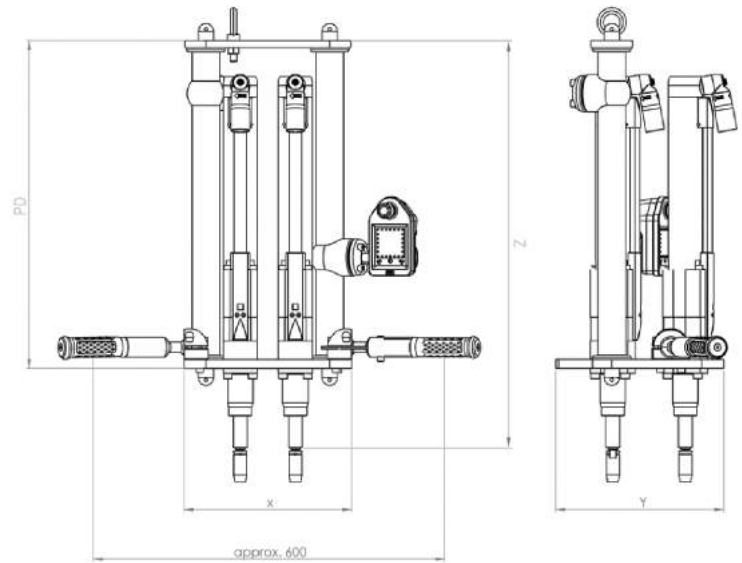
- ▶ U = 90 kg or 198 lbs

Unit Weight for 8439 3005 xx

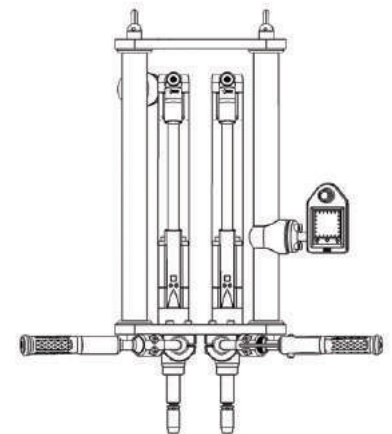
- ▶ U = 160 kg or 353 lbs

NOTES

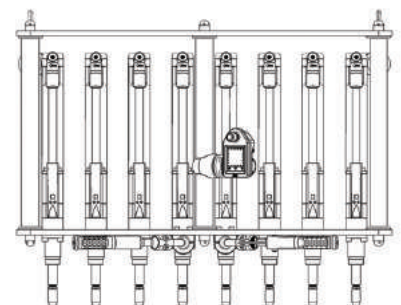
- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



8439 3002 xx



8439 3003 xx



8439 3005 xx

Description	Height Z mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST34-CT	593 (23.3)	436 (17.2)	2 (4.4)
QST42-CT	638 (25.1)	496 (19.5)	3.6 (7.9)
QST50-CT	691 (27.2)	546 (21.5)	5.8 (12.8)
QST62-CT	808 (31.8)	646 (25.4)	10.5 (23.1)
QST42-COT	716 (28.2)	596 (23.5)	4.4 (9.7)
QST50-COT	768 (30.2)	646 (25.4)	7.8 (17.2)
QST62-COT	834 (32.8)	696 (27.4)	13.5 (29.8)
ETX42-CT	688 (27.1)	546 (21.5)	3.5 (7.7)
ETX50-CT	741 (29.2)	596 (23.5)	5.9 (13)
ETX62-CT	808 (31.8)	646 (25.4)	10.2 (22.5)
ETX42-COT	716 (28.2)	596 (23.5)	4.6 (10.1)
ETX50-COT	768 (30.2)	646 (25.4)	8.0 (17.6)
ETX62-COT	834 (32.8)	696 (27.4)	12.9 (28.4)

(X, Y depending on bolt pattern)
All dimensions are approximate.

Vertical fixtures

DIMENSIONS

- ▶ 1000 Nm 4-Pipes 1 - 10 Spindles - 8439 3004 xx
- ▶ 1000 Nm 6-Pipes 11 - 20 Spindles - 8439 3006 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = $N \times (S + A) + U$

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3004 xx

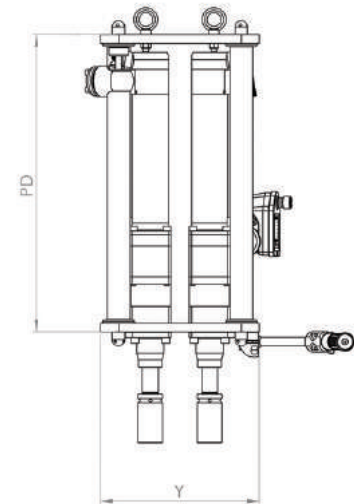
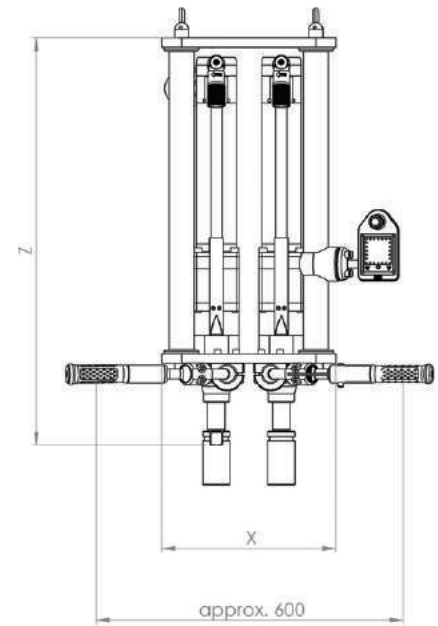
- ▶ U = 160 kg or 353 lbs

Unit Weight for 8439 3006 xx

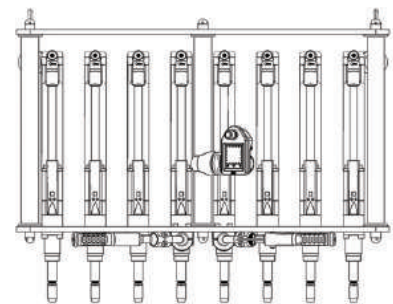
- ▶ U = 300 kg or 661 lbs

NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



8439 3004 xx



8439 3006 xx

Description	Height Z mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST80-CT	857 (33.7)	701 (27.6)	16.4 (36.2)
QST90-CT	865 (34.1)	701 (27.6)	25.8 (56.9)
QST80-COT	927 (36.5)	801 (31.5)	21 (46.3)
QST90-COT	984 (38.7)	851 (33.5)	30 (66.1)
ETX72-CT	889 (35)	751 (29.6)	19 (41.9)
ETX90-CT	850 (33.5)	701 (27.6)	22 (48.5)
ETX72-COT	827 (32.6)	701 (27.6)	20 (44.1)
ETX90-COT	934 (36.8)	801 (31.5)	30 (66.1)

(X, Y depending on bolt pattern)
All dimensions are approximate.

Horizontal fixtures

A fixtured assembly designed for Nutrunner integration. Nutrunners (spindles) are oriented horizontally. The base and back plates are custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility.

SCOPE OF SUPPLY

- ▶ Base plate with spindle layout according to the application
- ▶ Pipe support(s)
- ▶ Handle mounting components
- ▶ Operator interface mounting components
- ▶ Suspension mounting components with center of gravity adjustment
- ▶ Safety belt(s) (1 per 150 kg (330 lbs) load)
- ▶ Cable management

REQUIRED EQUIPMENT

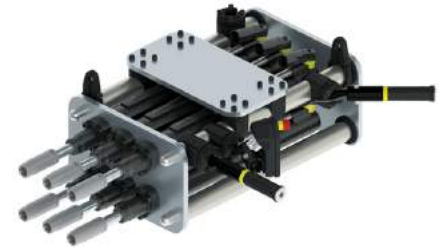
- ▶ Nutrunner(s)
- ▶ Operator interface (Indicator Box, etc.)
- ▶ Operator handle(s)

OPTIONS

- ▶ Sockets

NOTES

- ▶ **Important:** For one and two spindle applications, a torque reaction device (e.g., torque reaction bar, torque reaction suspension) is to be used to protect operator safety. The torque reaction device is not included in the scope of supply and needs to be specified separately (price on request).



Non-Torque Reaction Interface



Torque Reaction Interface

HORIZONTAL FIXTURES 150 NM 1-PIPE 1 - 4 SPINDLES

Description	Ordering No.
Horizontal Fixture 150 Nm 1-Pipe - 1 Sp	8439 3101 01
Horizontal Fixture 150 Nm 1-Pipe - 2 Sp	8439 3101 02
Horizontal Fixture 150 Nm 1-Pipe - 3 Sp	8439 3101 03
Horizontal Fixture 150 Nm 1-Pipe - 4 Sp	8439 3101 04



HORIZONTAL FIXTURES 350 NM 1-PIPE 1 - 4 SPINDLES

Description	Ordering No.
Horizontal Fixture 350 Nm 1-Pipe - 1 Sp	8439 3100 01
Horizontal Fixture 350 Nm 1-Pipe - 2 Sp	8439 3100 02
Horizontal Fixture 350 Nm 1-Pipe - 3 Sp	8439 3100 03
Horizontal Fixture 350 Nm 1-Pipe - 4 Sp	8439 3100 04



Horizontal fixtures

HORIZONTAL FIXTURES 350 NM 2-PIPES 1 - 4 SPINDLES

Description	Ordering No.
Horizontal Fixture 350 Nm 2-Pipes - 1 Sp	8439 3102 01
Horizontal Fixture 350 Nm 2-Pipes - 2 Sp	8439 3102 02
Horizontal Fixture 350 Nm 2-Pipes - 3 Sp	8439 3102 03
Horizontal Fixture 350 Nm 2-Pipes - 4 Sp	8439 3102 04



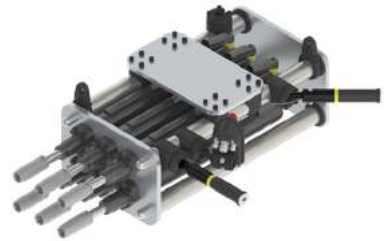
HORIZONTAL FIXTURES 350 NM 4-PIPES 2 - 10 SPINDLES

Description	Ordering No.
Horizontal Fixture 350 Nm 4-Pipes - 2 Sp	8439 3106 02
Horizontal Fixture 350 Nm 4-Pipes - 3 Sp	8439 3106 03
Horizontal Fixture 350 Nm 4-Pipes - 4 Sp	8439 3106 04
Horizontal Fixture 350 Nm 4-Pipes - 5 Sp	8439 3106 05
Horizontal Fixture 350 Nm 4-Pipes - 6 Sp	8439 3106 06
Horizontal Fixture 350 Nm 4-Pipes - 7 Sp	8439 3106 07
Horizontal Fixture 350 Nm 4-Pipes - 8 Sp	8439 3106 08
Horizontal Fixture 350 Nm 4-Pipes - 9 Sp	8439 3106 09
Horizontal Fixture 350 Nm 4-Pipes - 10 Sp	8439 3106 10



HORIZONTAL FIXTURES 1000 NM 4-PIPES 1 - 6 SPINDLES

Description	Ordering No.
Horizontal Fixture 1000 Nm 4-Pipes - 1 Sp	8439 3107 01
Horizontal Fixture 1000 Nm 4-Pipes - 2 Sp	8439 3107 02
Horizontal Fixture 1000 Nm 4-Pipes - 3 Sp	8439 3107 03
Horizontal Fixture 1000 Nm 4-Pipes - 4 Sp	8439 3107 04
Horizontal Fixture 1000 Nm 4-Pipes - 5 Sp	8439 3107 05
Horizontal Fixture 1000 Nm 4-Pipes - 6 Sp	8439 3107 06



Horizontal fixtures

DIMENSIONS

▶ 150 Nm 1-Pipe 1 - 4 Spindles - 8439 3101 xx

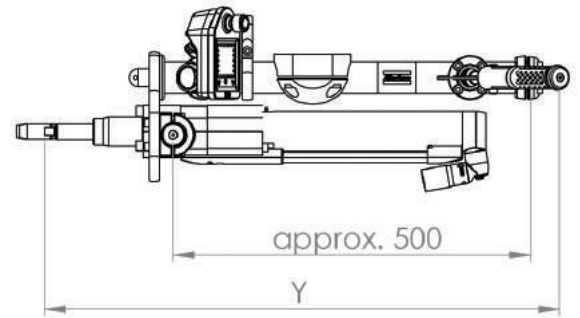
COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3101 xx

- ▶ U = 25 kg or 55 lbs

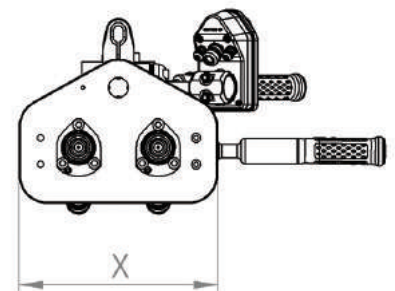


NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Length Y mm (in)	Spindle Weight S kg
QST34-CT	850 (33.5)	2 (4.4)
QST42-CT	850 (33.5)	3.6 (7.9)
QST50-CT	900 (35.4)	5.8 (12.8)
QST62-CT	1000 (39.4)	10.5 (23.1)
QST42-COT	950 (37.4)	4.4 (9.7)
QST50-COT	950 (37.4)	7.8 (17.2)
QST62-COT	1050 (41.3)	13.5 (29.8)
ETX42-CT	850 (33.5)	3.5 (7.7)
ETX50-CT	900 (35.4)	5.9 (13)
ETX62-CT	950 (37.4)	10.2 (22.5)
ETX42-COT	900 (35.4)	4.6 (10.1)
ETX50-COT	950 (37.4)	8 (17.6)
ETX62-COT	1000 (39.4)	12.9 (28.4)

(X depending on bolt pattern)
All dimensions are approximate.



Horizontal fixtures

DIMENSIONS

▶ 350 Nm 1-Pipe 1 - 4 Spindles - 8439 3100 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

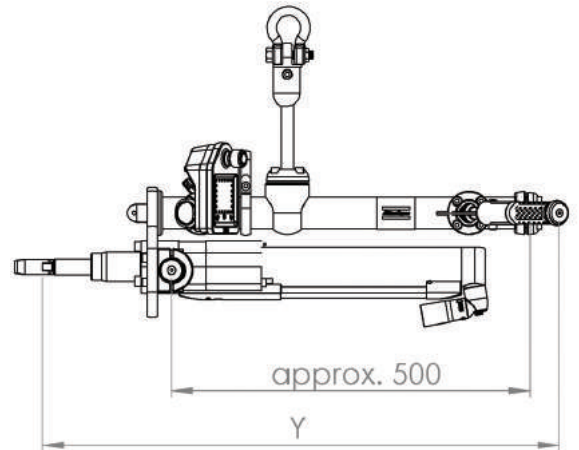
- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3100 xx

- ▶ U = 25 kg or 55 lbs

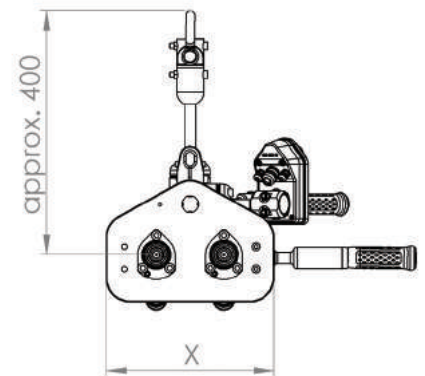
NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



Description	Length Y mm (in)	Spindle Weight S kg (lb)
QST34-CT	850 (33.5)	2 (4.4)
QST42-CT	850 (33.5)	3.6 (7.9)
QST50-CT	900 (35.4)	5.8 (12.8)
QST62-CT	1000 (39.4)	10.5 (23.1)
QST42-COT	950 (37.4)	4.4 (9.7)
QST50-COT	950 (37.4)	7.8 (17.2)
QST62-COT	1050 (41.3)	13.5 (29.8)
ETX42-CT	850 (33.5)	3.5 (7.7)
ETX50-CT	900 (35.4)	5.9 (13)
ETX62-CT	950 (37.4)	10.2 (22.5)
ETX42-COT	900 (35.4)	4.6 (10.1)
ETX50-COT	950 (37.4)	8 (17.6)
ETX62-COT	1000 (39.4)	12.9 (28.4)

(X depending on bolt pattern)
All dimensions are approximate.



Horizontal fixtures

DIMENSIONS

- ▶ 350 Nm 2-Pipe 1 - 4 Spindles - 8439 3102 xx
- ▶ 350 Nm 4-Pipe 2 - 10 Spindles - 8439 3106 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

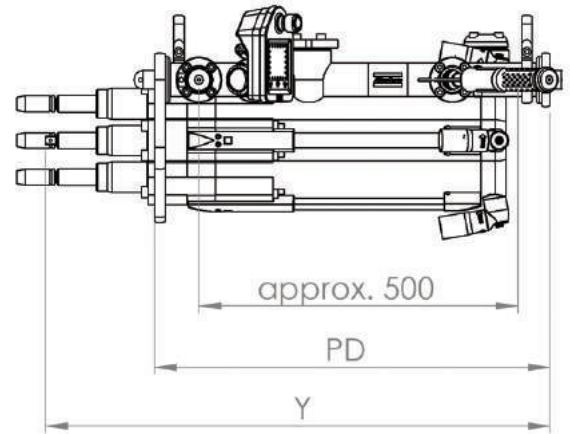
- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3102 xx

- ▶ U = 40 kg or 88 lbs

Unit Weight for 8439 3106 xx

- ▶ U = 105 kg or 231 lbs



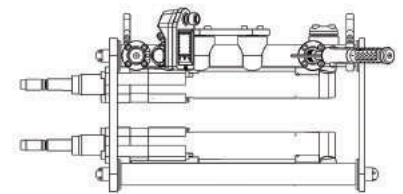
8439 3102 xx

NOTES

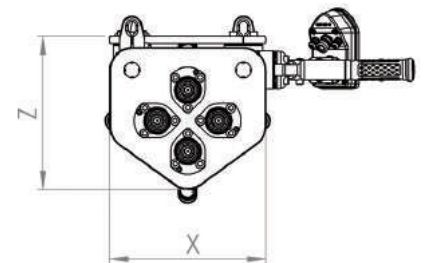
- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Length Y mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST34-CT	593 (23.3)	436 (17.2)	2 (4.4)
QST42-CT	638 (25.1)	496 (19.5)	3.6 (7.9)
QST50-CT	691 (27.2)	546 (21.5)	5.8 (12.8)
QST62-CT	808 (31.8)	646 (25.4)	10.5 (23.1)
QST42-COT	716 (28.2)	596 (23.5)	4.4 (9.7)
QST50-COT	768 (30.2)	646 (25.4)	7.8 (17.2)
QST62-COT	834 (32.8)	696 (27.4)	13.5 (29.8)
ETX42-CT	688 (27.1)	546 (21.5)	3.5 (7.7)
ETX50-CT	741 (29.2)	596 (23.5)	5.9 (13)
ETX62-CT	808 (31.8)	646 (25.4)	10.2 (22.5)
ETX42-COT	716 (28.2)	596 (23.5)	4.6 (10.1)
ETX50-COT	768 (30.2)	646 (25.4)	8 (17.6)
ETX62-COT	834 (32.8)	696 (27.4)	12.9 (28.4)

(X, Z depending on bolt pattern)
All dimensions are approximate.



8439 3103 xx



▶ **1000 Nm 4-Pipe 1 - 6 Spindles - 8439 3107 xx**

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

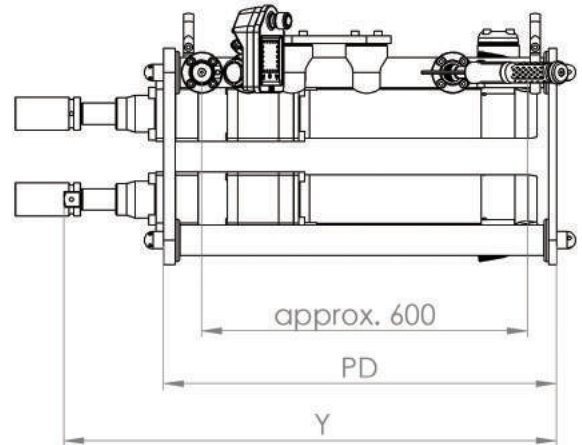
- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3101 07

- ▶ U = 180 kg or 397 lbs

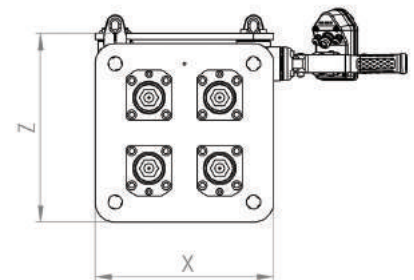
NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



Description	Length Y mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg
QST80-CT	857 (33.7)	701 (27.6)	16.4 (36.2)
QST90-CT	865 (34.1)	701 (27.6)	25.8 (56.9)
QST80-COT	927 (36.5)	801 (31.5)	21 (46.3)
QST90-COT	984 (38.7)	851 (33.5)	30 (66.1)
ETX72-CT	889 (35)	751 (29.6)	19 (41.9)
ETX90-CT	850 (33.5)	701 (27.6)	22 (48.5)
ETX72-COT	827 (32.6)	701 (27.6)	20 (44.1)
ETX90-COT	934 (36.8)	801 (31.5)	30 (66.1)

(X, Z depending on bolt pattern)
All dimensions are approximate.



HR1 horizontal rotate fixtures

A fixtured assembly designed for Nutrunner integration. Nutrunners (spindles) are oriented horizontally. The base plate is custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility.

SCOPE OF SUPPLY

- ▶ Base plate with spindle layout according to the application
- ▶ Rotate handle
- ▶ Front rotate bearing, support plate and rotational stops
- ▶ Pipe support
- ▶ Handle mounting components
- ▶ Operator interface mounting components
- ▶ Suspension mounting components with center of gravity adjustment
- ▶ Cable management

REQUIRED EQUIPMENT

- ▶ Nutrunner(s)
- ▶ Operator interface (Indicator Box, etc.)
- ▶ Operator handle(s)

OPTIONS

- ▶ Sockets

NOTES

- ▶ **Important:** For one and two spindle applications, a torque reaction device (e.g., torque reaction bar, torque reaction suspension) is to be used to protect operator safety. The torque reaction device is not included in the scope of supply and needs to be specified separately (price on request).



Non-Torque Reaction Interface



Torque Reaction Interface



HR1 Side View



HR1 Front View



HR1 Rear View

HR1 horizontal rotate fixtures

HR1 HORIZONTAL ROTATE FIXTURES 350 NM 130 MM 2 - 6 SPINDLES

Description	Ordering No.
HR1 Horizontal Rotate Fixture 350 Nm 130 mm - 2 Sp	8439 3204 02
HR1 Horizontal Rotate Fixture 350 Nm 130 mm - 3 Sp	8439 3204 03
HR1 Horizontal Rotate Fixture 350 Nm 130 mm - 4 Sp	8439 3204 04
HR1 Horizontal Rotate Fixture 350 Nm 130 mm - 5 Sp	8439 3204 05
HR1 Horizontal Rotate Fixture 350 Nm 130 mm - 6 Sp	8439 3204 06



HR1 HORIZONTAL ROTATE FIXTURES 350 NM 300 MM 2 - 6 SPINDLES

Description	Ordering No.
HR1 Horizontal Rotate Fixture 350 Nm 300 mm - 2 Sp	8439 3205 02
HR1 Horizontal Rotate Fixture 350 Nm 300 mm - 3 Sp	8439 3205 03
HR1 Horizontal Rotate Fixture 350 Nm 300 mm - 4 Sp	8439 3205 04
HR1 Horizontal Rotate Fixture 350 Nm 300 mm - 5 Sp	8439 3205 05
HR1 Horizontal Rotate Fixture 350 Nm 300 mm - 6 Sp	8439 3205 06



HR1 horizontal rotate fixtures

DIMENSIONS

- ▶ 350 Nm 130 mm 2 - 6 Spindles - 8439 3204 xx
- ▶ 350 Nm 300 mm 2 - 6 Spindles - 8439 3205 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

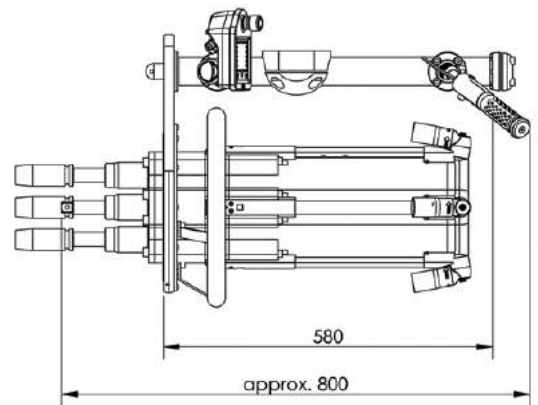
- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3204 xx

- ▶ U = 30 kg or 66 lbs

Unit Weight for 8439 3205 xx

- ▶ U = 35 kg or 77 lbs

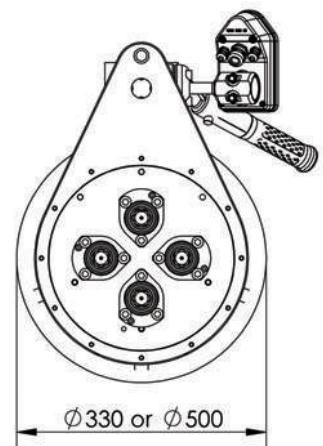


NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Spindle Weight S kg (lb)
QST34-CT	2 (4.4)
QST42-CT	3.6 (7.9)
QST50-CT	5.8 (12.8)
QST62-CT	10.5 (23.1)
QST42-COT	4.4 (9.7)
QST50-COT	7.8 (17.2)
QST62-COT	13.5 (29.8)
ETX42-CT	3.5 (7.7)
ETX50-CT	5.9 (13)
ETX62-CT	10.2 (22.5)
ETX42-COT	4.6 (10.1)
ETX50-COT	8 (17.6)
ETX62-COT	12.9 (28.4)

All dimensions are approximate.



HR1 horizontal rotate fixtures - c-c distance

2-SPINDLE - HR1 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/COT mm (in)
QST34	35 (1.38)	-	130 (5.12)
ETX/QST42	43 (1.69)	31 (1.22)	130 (5.12)
ETX/QST50	51 (2.01)	37 (1.46)	130 (5.12)
ETX/QST62	63 (2.48)	45 (1.77)	130 (5.12)

3-SPINDLE - HR1 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/COT mm (in)
QST34	48 (1.89)	-	130 (5.12)
ETX/QST42	54 (2.13)	36 (1.42)	130 (5.12)
ETX/QST50	70 (2.76)	43 (1.69)	130 (5.12)
ETX/QST62	86 (3.39)	52 (2.05)	130 (5.12)

4-SPINDLE - HR1 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/COT mm (in)
QST34	50 (1.97)	-	130 (5.12)
ETX/QST42	61 (2.40)	44 (1.73)	130 (5.12)
ETX/QST50	72 (2.83)	52 (2.05)	130 (5.12)
ETX/QST62	89 (3.50)	63 (2.48)	130 (5.12)

5-SPINDLE - HR1 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/COT mm (in)
QST34	60 (2.36)	-	130 (5.12)
ETX/QST42	73 (2.87)	52 (2.05)	130 (5.12)
ETX/QST50	86 (3.39)	63 (2.48)	130 (5.12)
ETX/QST62	107 (4.21)	76 (2.99)	130 (5.12)

6-SPINDLE - HR1 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/COT mm (in)
QST34	81 (3.19)	-	130 (5.12)
ETX/QST42	86 (3.39)	62 (2.44)	130 (5.12)
ETX/QST50	101 (3.98)	74 (2.91)	130 (5.12)
ETX/QST62	126 (4.96)	90 (3.54)	130 (5.12)

HR2 horizontal rotate fixtures

A fixtured assembly designed for Nutrunner integration. Nutrunners (spindles) are oriented horizontally. The base and back plates are custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility.

SCOPE OF SUPPLY

- ▶ Base plate with spindle layout according to the application
- ▶ Rotate handle
- ▶ Rear rotate bearing assembly with rotational stops
- ▶ Rear plate
- ▶ Aluminum tapered supports or pipe supports
- ▶ Handle mounting components
- ▶ Operator interface mounting components
- ▶ Suspension mounting components with center of gravity adjustment
- ▶ Cable management



REQUIRED EQUIPMENT

- ▶ Nutrunner(s)
- ▶ Operator interface (Indicator Box, etc.)
- ▶ Operator handle(s)

OPTIONS

- ▶ Sockets

NOTES

- ▶ **Important:** For one and two spindle applications, a torque reaction device (e.g., torque reaction bar, torque reaction suspension) is to be used to protect operator safety. The torque reaction device is not included in the scope of supply and needs to be specified separately (price on request).

HR2 HORIZONTAL ROTATE FIXTURES 350 NM 3-S-550 200 MM 2 - 8 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 2 Sp	8439 3206 02
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 3 Sp	8439 3206 03
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 4 Sp	8439 3206 04
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 5 Sp	8439 3206 05
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 6 Sp	8439 3206 06
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 7 Sp	8439 3206 07
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 200 mm - 8 Sp	8439 3206 08



HR2 horizontal rotate fixtures

MODEL KEY

Description		350 NM	3-S	650	250 MM	2 - 8 SPINDLES
Maximum Torque	350 Nm					
Number of Supports	3					
Type of Support	S					
Length of Supports	650					
Maximum C-C Distance	250 mm					
Number of Spindles	2 - 8					

HR2 HORIZONTAL ROTATE FIXTURES 350 NM 3-S-650 52 MM 2 - 3 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 52 mm - 2 Sp	8439 3207 02
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 52 mm - 3 Sp	8439 3207 03



HR2 HORIZONTAL ROTATE FIXTURES 350 NM 3-S-550 400 MM 2 - 8 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 2 Sp	8439 3208 02
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 3 Sp	8439 3208 03
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 4 Sp	8439 3208 04
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 5 Sp	8439 3208 05
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 6 Sp	8439 3208 06
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 7 Sp	8439 3208 07
HR2 Horizontal Rotate Fixture 350 Nm 3-S-550 400 mm - 8 Sp	8439 3208 08



HR2 HORIZONTAL ROTATE FIXTURES 350 NM 3-S-650 250 MM 2 - 8 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 2 Sp	8439 3209 02
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 3 Sp	8439 3209 03
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 4 Sp	8439 3209 04
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 5 Sp	8439 3209 05
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 6 Sp	8439 3209 06
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 7 Sp	8439 3209 07
HR2 Horizontal Rotate Fixture 350 Nm 3-S-650 250 mm - 8 Sp	8439 3209 08



HR2 HORIZONTAL ROTATE FIXTURES 350 NM 3-P-550 750 MM 2 - 8 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 2 Sp	8439 3210 02
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 3 Sp	8439 3210 03
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 4 Sp	8439 3210 04
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 5 Sp	8439 3210 05
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 6 Sp	8439 3210 06
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 7 Sp	8439 3210 07
HR2 Horizontal Rotate Fixture 350 Nm 3-P-550 750 mm - 8 Sp	8439 3210 08



HR2 horizontal rotate fixtures

HR2 HORIZONTAL ROTATE FIXTURES 350 NM 3-P-650 600 MM 2 - 8 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 2 Sp	8439 3211 02
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 3-Pp	8439 3211 03
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 4 Sp	8439 3211 04
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 5 Sp	8439 3211 05
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 6 Sp	8439 3211 06
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 7 Sp	8439 3211 07
HR2 Horizontal Rotate Fixture 350 Nm 3-P-650 600 mm - 8 Sp	8439 3211 08



HR2 HORIZONTAL ROTATE FIXTURES 1000 NM 3/4-P-650 300 MM 2 - 4 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 300 mm - 2 Sp	8439 3212 02
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 300 mm - 3 Sp	8439 3212 03
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 300 mm - 4 Sp	8439 3212 04



HR2 HORIZONTAL ROTATE FIXTURES 1000 NM 3/4-P-650 500 MM 2 - 6 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 500 mm - 2 Sp	8439 3213 02
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 500 mm - 3 Sp	8439 3213 03
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 500 mm - 4 Sp	8439 3213 04
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 500 mm - 5 Sp	8439 3213 05
HR2 Horizontal Rotate Fixture 1000 Nm 3/4-P-650 500 mm - 6 Sp	8439 3213 06



HR2 HORIZONTAL ROTATE FIXTURES 1000 NM 4/5-P-800 350 MM 2 - 6 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 350 mm - 2 Sp	8439 3214 02
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 350 mm - 3 Sp	8439 3214 03
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 350 mm - 4 Sp	8439 3214 04
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 350 mm - 5 Sp	8439 3214 05
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 350 mm - 6 Sp	8439 3214 06



HR2 HORIZONTAL ROTATE FIXTURES 1000 NM 4/5-P-650 700 MM 2 - 6 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-650 700 mm - 2 Sp	8439 3215 02
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-650 700 mm - 3 Sp	8439 3215 03
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-650 700 mm - 4 Sp	8439 3215 04
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-650 700 mm - 5 Sp	8439 3215 05
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-650 700 mm - 6 Sp	8439 3215 06



HR2 HORIZONTAL ROTATE FIXTURES 1000 NM 4/5-P-800 450 MM 2 - 6 SPINDLES

Description	Ordering No.
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 450 mm - 2 Sp	8439 3216 02
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 450 mm - 3 Sp	8439 3216 03
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 450 mm - 4 Sp	8439 3216 04
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 450 mm - 5 Sp	8439 3216 05
HR2 Horizontal Rotate Fixture 1000 Nm 4/5-P-800 450 mm - 6 Sp	8439 3216 06



HR2 horizontal rotate fixtures

DIMENSIONS

- ▶ 350 Nm 3-S-550 200 mm 2 - 8 Spindles - 8439 3206 xx
- ▶ 350 Nm 3-S-650 50 mm 2 - 8 Spindles - 8439 3207 xx
- ▶ 350 Nm 3-S-550 400 mm 2 - 8 Spindles - 8439 3208 xx
- ▶ 350 Nm 3-S-650 250 mm 2 - 8 Spindles - 8439 3209 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3206 xx

- ▶ U = 168 kg or 370 lbs

Unit Weight for 8439 3207 xx

- ▶ U = 174 kg or 384 lbs

Unit Weight for 8439 3208 xx

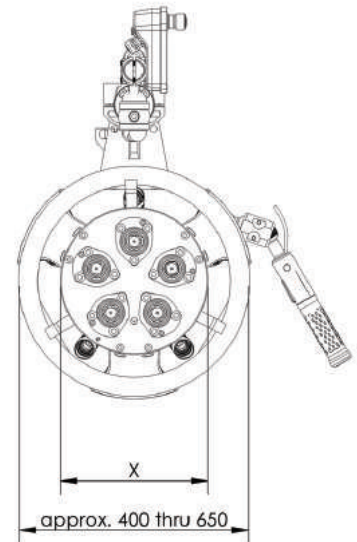
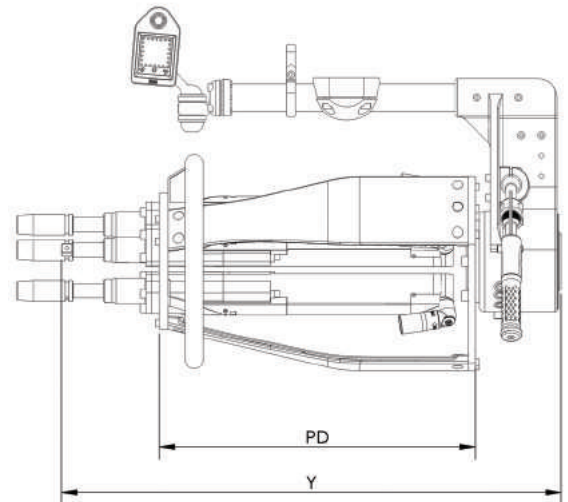
- ▶ U = 230 kg or 507 lbs

Unit Weight for 8439 3209 xx

- ▶ U = 232 kg or 511 lbs

NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



Description	Length Y mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST34-CT	901 (35.5)	586 (23.1)	2 (4.4)
QST42-CT	896 (35.3)	596 (23.5)	3.6 (7.9)
QST50-CT	899 (35.4)	596 (23.5)	5.8 (12.8)
QST62-CT	916 (36.1)	596 (23.5)	10.5 (23.1)
QST42-COT	874 (34.4)	596 (23.5)	4.4 (9.7)
QST50-COT	976 (38.4)	696 (27.4)	7.8 (17.2)
QST62-COT	992 (39)	696 (27.4)	13.5 (29.8)
ETX42-CT	896 (35.3)	596 (23.5)	3.5 (7.7)
ETX50-CT	899 (35.4)	596 (23.5)	5.9 (13)
ETX62-CT	916 (36.1)	596 (23.5)	10.2 (22.5)
ETX42-COT	874 (34.4)	596 (23.5)	4.6 (10.1)
ETX50-COT	976 (38.4)	696 (27.4)	8 (17.6)
ETX62-COT	992 (39)	696 (27.4)	12.9 (28.4)

All dimensions are approximate.

HR2 horizontal rotate fixtures

DIMENSIONS

- ▶ 350 Nm 3-P-550 750 mm 2 - 8 Spindles - 8439 3210 xx
- ▶ 350 Nm 3-P-650 600 mm 2 - 8 Spindles - 8439 3211 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

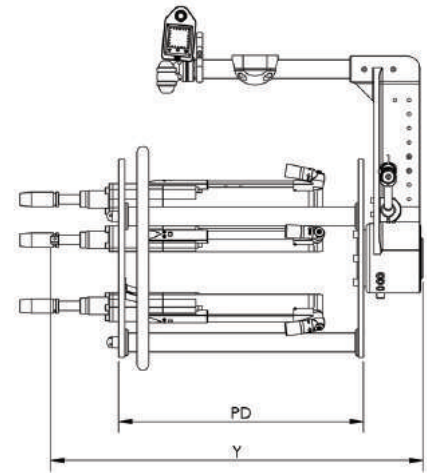
- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3210 xx

- ▶ U = 264 kg or 582 lbs

Unit Weight for 8439 3211 xx

- ▶ U = 270 kg or 595 lbs

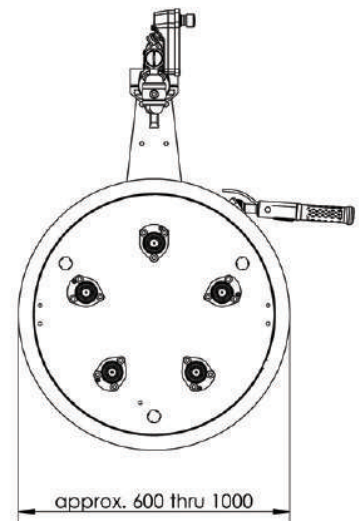


NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Length Y mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST34-CT	901 (35.5)	586 (23.1)	2 (4.4)
QST42-CT	896 (35.3)	596 (23.5)	3.6 (7.9)
QST50-CT	899 (35.4)	596 (23.5)	5.8 (12.8)
QST62-CT	916 (36.1)	596 (23.5)	10.5 (23.1)
QST42-COT	874 (34.4)	596 (23.5)	4.4 (9.7)
QST50-COT	976 (38.4)	696 (27.4)	7.8 (17.2)
QST62-COT	992 (39)	696 (27.4)	13.5 (29.8)
ETX42-CT	896 (35.3)	596 (23.5)	3.5 (7.7)
ETX50-CT	899 (35.4)	596 (23.5)	5.9 (13)
ETX62-CT	916 (36.1)	596 (23.5)	10.2 (22.5)
ETX42-COT	874 (34.4)	596 (23.5)	4.6 (10.1)
ETX50-COT	976 (38.4)	696 (27.4)	8 (17.6)
ETX62-COT	992 (39)	696 (27.4)	12.9 (28.4)

All dimensions are approximate.



HR2 horizontal rotate fixtures

DIMENSIONS

- ▶ 1000 Nm 3/4-P-650 300 mm 2 - 4 Spindles - 8439 3212 xx
- ▶ 1000 Nm 3/4-P-650 500 mm 2 - 6 Spindles - 8439 3213 xx
- ▶ 1000 Nm 4/5-P-800 350 mm 2 - 6 Spindles - 8439 3214 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3212 xx

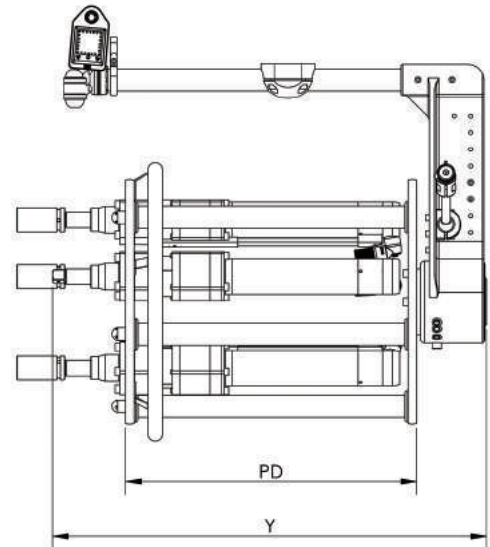
- ▶ U = 214 kg or 472 lbs

Unit Weight for 8439 3213 xx

- ▶ U = 287 kg or 633 lbs

Unit Weight for 8439 3214 xx

- ▶ U = 225 kg or 496 lbs

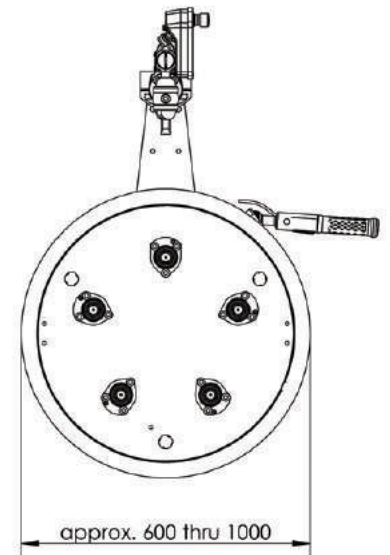


NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.

Description	Length Y mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST80-CT	1015 (40)	701 (27.6)	16.4 (36.2)
QST90-CT	1023 (40.3)	701 (27.6)	25.8 (56.9)
QST80-COT	1135 (44.7)	851 (33.5)	21 (46.3)
QST90-COT	1142 (45)	851 (33.5)	30 (66.1)
ETX72-CT	997 (39.2)	701 (27.6)	19 (41.9)
ETX90-CT	1008 (39.7)	701 (27.6)	22 (48.5)
ETX72-COT	1135 (44.7)	851 (33.5)	20 (44.1)
ETX90-COT	1142 (45)	851 (33.5)	30 (66.1)

All dimensions are approximate.



HR2 horizontal rotate fixtures

DIMENSIONS

- ▶ 1000 Nm 4/5-P-650 700 mm 2 - 6 Spindles - 8439 3215 xx
- ▶ 1000 Nm 4/5-P-800 450 mm 2 - 6 Spindles - 8439 3216 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 8439 3215 xx

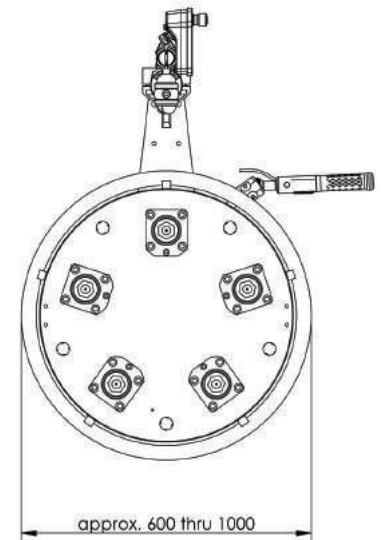
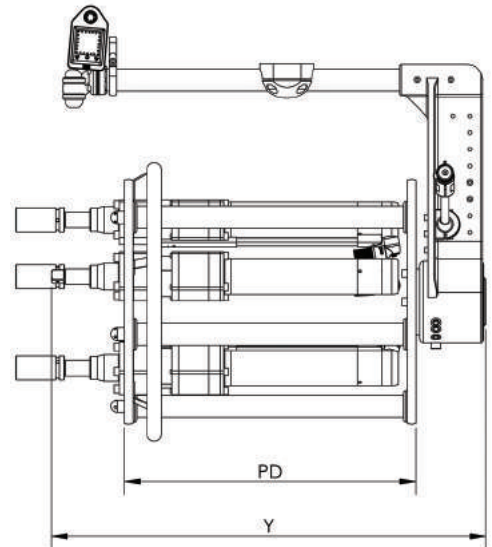
- ▶ U = 398 kg or 877 lbs

Unit Weight for 8439 3216 xx

- ▶ U = 315 kg or 694 lbs

NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



Description	Length Y mm (in)	Plate Distance PD mm (in)	Spindle Weight S kg (lb)
QST80-CT	1015 (40)	701 (27.6)	16.4 (36.2)
QST90-CT	1023 (40.3)	701 (27.6)	25.8 (56.9)
QST80-COT	1135 (44.7)	851 (33.5)	21 (46.3)
QST90-COT	1142 (45)	851 (33.5)	30 (66.1)
ETX72-CT	997 (39.2)	701 (27.6)	19 (41.9)
ETX90-CT	1008 (39.7)	701 (27.6)	22 (48.5)
ETX72-COT	1135 (44.7)	851 (33.5)	20 (44.1)
ETX90-COT	1142 (45)	851 (33.5)	30 (66.1)

All dimensions are approximate.

HR2 horizontal rotate fixtures - c-c distance

2-SPINDLE - HR2 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/ COT mm (in)
QST34	35 (1.38)	-	130 (5.12)
ETX/QST42	43 (1.69)	31 (1.22)	130 (5.12)
ETX/QST50	51 (2.01)	37 (1.46)	130 (5.12)
ETX/QST62	63 (2.48)	45 (1.77)	130 (5.12)

3-SPINDLE - HR2 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/ COT mm (in)
QST34	48 (1.89)	-	130 (5.12)
ETX/QST42	54 (2.13)	36 (1.42)	130 (5.12)
ETX/QST50	70 (2.76)	43 (1.69)	130 (5.12)
ETX/QST62	86 (3.39)	52 (2.05)	130 (5.12)

4-SPINDLE - HR2 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/ COT mm (in)
QST34	50 (1.97)	-	130 (5.12)
ETX/QST42	61 (2.40)	44 (1.73)	130 (5.12)
ETX/QST50	72 (2.83)	52 (2.05)	130 (5.12)
ETX/QST62	89 (3.50)	63 (2.48)	130 (5.12)

5-SPINDLE - HR2 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/ COT mm (in)
QST34	60 (2.36)	-	130 (5.12)
ETX/QST42	73 (2.87)	52 (2.05)	130 (5.12)
ETX/QST50	86 (3.39)	63 (2.48)	130 (5.12)
ETX/QST62	107 (4.21)	76 (2.99)	130 (5.12)

6-SPINDLE - HR2 - C-C DISTANCE

Description	Min. C-C Distance CT mm (in)	Min. C-C Distance COT mm (in)	Max. C-C Distance CT/ COT mm (in)
QST34	81 (3.19)	-	130 (5.12)
ETX/QST42	86 (3.39)	62 (2.44)	130 (5.12)
ETX/QST50	101 (3.98)	74 (2.91)	130 (5.12)
ETX/QST62	126 (4.96)	90 (3.54)	130 (5.12)

HR3 horizontal rotate fixtures

A fixtured assembly designed for Nutrunner integration. Nutrunners (spindles) are oriented horizontally. The base and back plates are custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility.

SCOPE OF SUPPLY

- ▶ Base plate with spindle layout according to the application
- ▶ Rotate handle
- ▶ Center rotate bearing assembly with rotational stops
- ▶ Handle mounting components
- ▶ Operator interface mounting components
- ▶ Suspension mounting components with center of gravity adjustment
- ▶ Cable management



REQUIRED EQUIPMENT

- ▶ Nutrunner(s)
- ▶ Operator interface (Indicator Box, etc.)
- ▶ Operator handle(s)

OPTIONS

- ▶ Sockets

NOTES

- ▶ **Important:** For one and two spindle applications, a torque reaction device (e.g., torque reaction bar, torque reaction suspension) is to be used to protect operator safety. The torque reaction device is not included in the scope of supply and needs to be specified separately (price on request).

HR3 HORIZONTAL ROTATE FIXTURES 1000 NM 800 MM 2 - 6 SPINDLES

Description	Ordering No.
HR3 Horizontal Rotate Fixtures 1000 Nm 800 mm - 2 Sp	9040 5502 02
HR3 Horizontal Rotate Fixtures 1000 Nm 800 mm - 3 Sp	9040 5502 03
HR3 Horizontal Rotate Fixtures 1000 Nm 800 mm - 4 Sp	9040 5502 04
HR3 Horizontal Rotate Fixtures 1000 Nm 800 mm - 5 Sp	9040 5502 05
HR3 Horizontal Rotate Fixtures 1000 Nm 800 mm - 6 Sp	9040 5502 06



Torque Reaction Interface



Non-Torque Reaction Interface

HR3 horizontal rotate fixtures

DIMENSIONS

- ▶ 1000 Nm 800 mm 2 - 6 Spindles - 9040 5502 xx

COMPLETE FIXTURE WEIGHT ESTIMATE

Fixture Weight = N x (S + A) + U

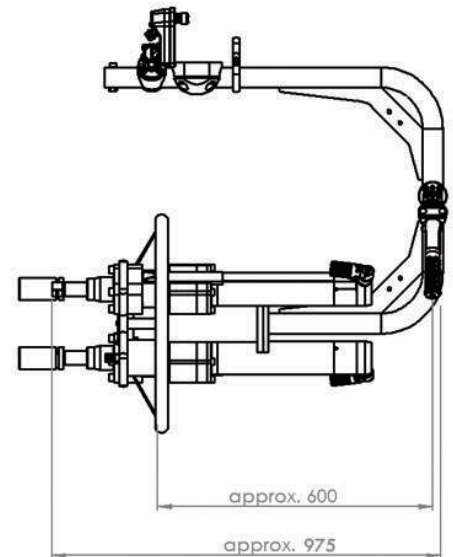
- ▶ N = Number of Spindles
- ▶ S = Spindle Weight
- ▶ A = Additional Weight (Cable, Sockets, etc.) = 1 kg or 2 lbs
- ▶ U = Unit Weight

Unit Weight for 9040 5502 xx

- ▶ U = 110 kg or 243 lbs

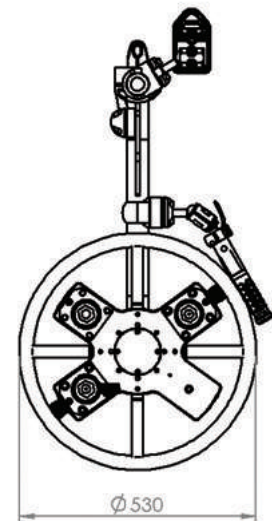
NOTES

- ▶ The fixture weight is an approximation and will vary depending on size and included options. Operator interface, handles and mounting components are included in the Unit Weight.



Description	Spindle Weight S kg (lb)
QST80-CT	16.4 (36.2)
QST90-CT	25.8 (56.9)
QST80-COT	21 (46.3)
QST90-COT	30 (66.1)
ETX72-CT	19 (41.9)
ETX90-CT	22 (48.5)
ETX72-COT	20 (44.1)
ETX90-COT	30 (66.1)

All dimensions are approximate.



Horizontal rotate fixtures

A fixtured swivel housing, designed for QST or ETX nutrunner integration. The nutrunner plate is custom built according to the application.

SCOPE OF SUPPLY

- ▶ Steering wheel (front)
- ▶ Cable management strain relief on rear of machine
- ▶ Safety belt (1 for 150 kg weight)
- ▶ Custom built base plate according to the application
- ▶ Mechanics for the centre of gravity adjustment
- ▶ Include operator interface mounting (for Indicator Box) and handle mounting
- ▶ Suitable for all types of suspensions
- ▶ 8995 7009 xy with pneumatic pitch change (two c-c distance), for QST and QMX nutrunners



REQUIRED EQUIPMENT

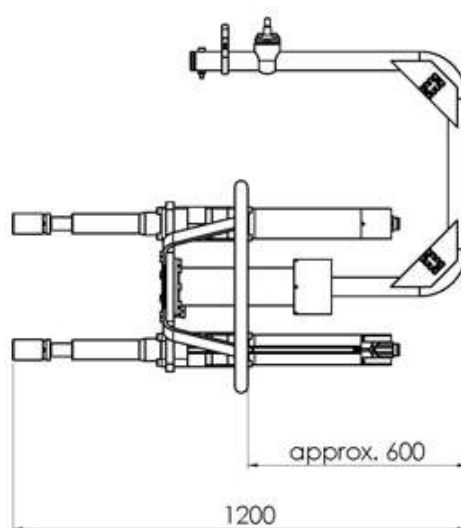
- ▶ The handle configuration, operator interface, torque reaction bar and sockets are not included in the scope of supply and need to be ordered separately.

NOTES

- ▶ **Important:** For two nutrunner applications a torque reaction bar must be fitted to protect operator safety.

HR3 HORIZONTAL ROTATE FIXTURE

Description	Ordering No.
HR3 Horizontal Rotate Fixture 1000 Nm - 2 Sp	8995 7007 02

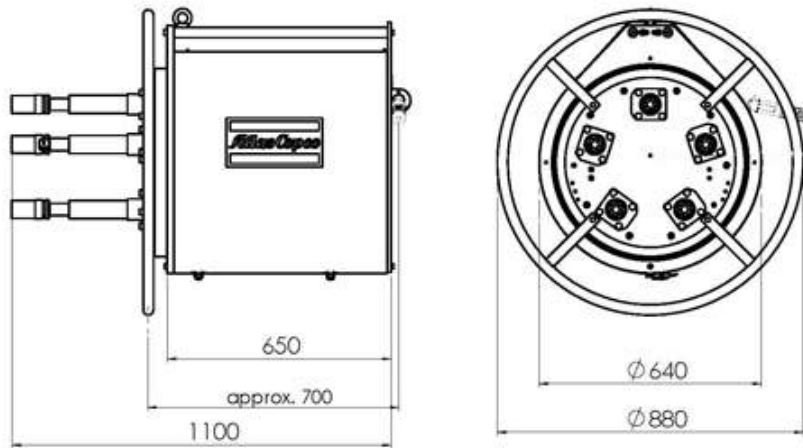


Weight: 110 kg
C-C Distance: 250 mm - 400 mm

Horizontal rotate fixtures

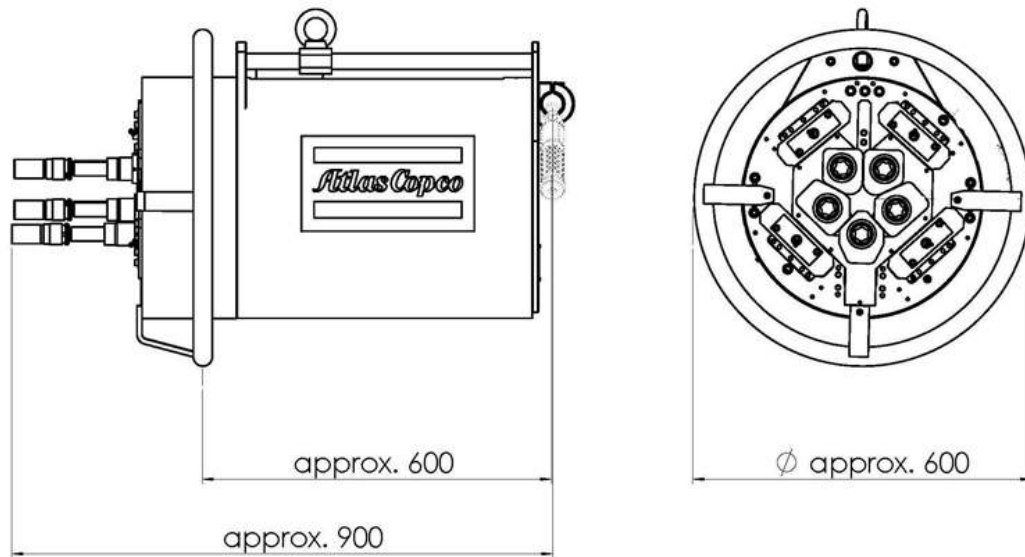
HD2 HORIZONTAL ROTATE FIXTURE

Description	Ordering No.
HD2 Horizontal Rotate Fixture 1000 Nm - 2 Sp	8995 7008 02
HD2 Horizontal Rotate Fixture 1000 Nm - 3 Sp	8995 7008 03
HD2 Horizontal Rotate Fixture 1000 Nm - 4 Sp	8995 7008 04
HD2 Horizontal Rotate Fixture 1000 Nm - 5 Sp	8995 7008 05



Weight = $N \times W + 170$ kg
N = Number of Nutrunners
W = Nutrunner Weight
C-C Distance: 160 mm - 400 mm

Horizontal rotate fixtures

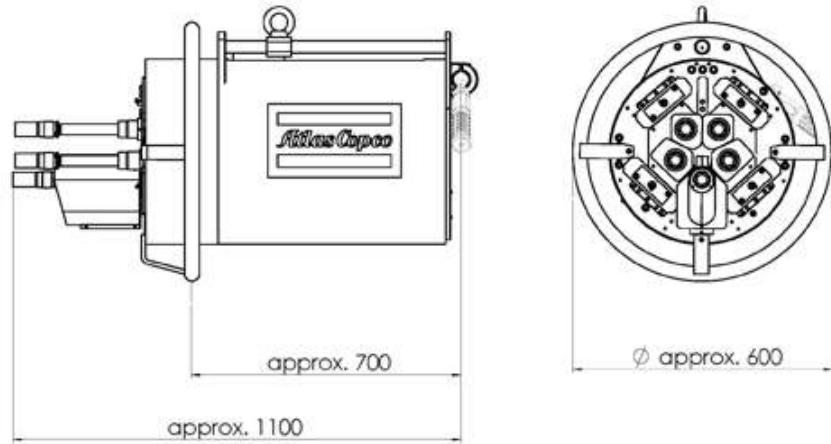


HD2 HORIZONTAL ROTATE FIXTURE VARIABLE PITCH

Description	Ordering No.
HD2 Horizontal Rotate Fixture Variable Pitch 20 Nm - 4 Sp	8995 7009 13
HD2 Horizontal Rotate Fixture Variable Pitch 20 Nm - 5 Sp	8995 7009 14
HD2 Horizontal Rotate Fixture Variable Pitch 20 Nm - 6 Sp	8995 7009 15
HD2 Horizontal Rotate Fixture Variable Pitch 50 Nm - 4 Sp	8995 7009 01
HD2 Horizontal Rotate Fixture Variable Pitch 50 Nm - 5 Sp	8995 7009 02
HD2 Horizontal Rotate Fixture Variable Pitch 50 Nm - 6 Sp	8995 7009 03
HD2 Horizontal Rotate Fixture Variable Pitch 150 Nm - 4 Sp	8995 7009 04
HD2 Horizontal Rotate Fixture Variable Pitch 150 Nm - 5 Sp	8995 7009 05
HD2 Horizontal Rotate Fixture Variable Pitch 150 Nm - 6 Sp	8995 7009 06
HD2 Horizontal Rotate Fixture Variable Pitch 350 Nm - 4 Sp	8995 7009 07
HD2 Horizontal Rotate Fixture Variable Pitch 350 Nm - 5 Sp	8995 7009 08
HD2 Horizontal Rotate Fixture Variable Pitch 350 Nm - 6 Sp	8995 7009 09

No. of Nutrunners	Nutrunner	C-C Distance Min. mm	C-C Distance Max. mm	Weight kg
4	QST34	85	140	114
4	QST42	85	140	120
4	QST50	85	140	140
4	QST62	85	180	150
5	QST34	85	140	122
5	QST42	85	140	130
5	QST50	85	140	150
5	QST62	85	180	170
6	QST34	85	140	130
6	QST42	85	140	140
6	QST50	85	140	160
6	QST62	100	180	190

Horizontal rotate fixtures



HD2 HORIZONTAL ROTATE FIXTURE VARIABLE BOLT

Description	Ordering No.
HD2 Horizontal Rotate Fixture Variable Bolt 50 Nm - 4/5 Sp	8995 7009 10
HD2 Horizontal Rotate Fixture Variable Bolt 350 Nm - 5/6 Sp	8995 7009 11
HD2 Horizontal Rotate Fixture Variable Bolt 50 Nm - 4/4/5 Sp	8995 7009 12

No. of Nutrunners	Nutrunner	C-C Distance Min. mm	C-C Distance Max. mm	Weight kg
4 / 5 change	QST34	85	140	142
4 / 5 change	QST42	85	140	150
4 / 5 change	QST50	85	140	160
5 / 6 change	QST34	85	140	150
5 / 6 change	QST42	85	140	160
5 / 6 change	QST50	85	180	170
5 / 6 change	QST62	85	180	190
4 / 4 / 5 change	QST34	85	180	172
4 / 4 / 5 change	QST42	85	180	180
4 / 4 / 5 change	QST50	85	180	200

Mobile horizontal rotate fixtures

A fixtured assembly designed for Nutrunner integration. Nutrunners (spindles) are oriented horizontally. The base plate is custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility. Further, this mobile fixture is designed to roll smoothly over an industrial floor, providing flexibility to access multiple applications.

FEATURES

- ▶ The base plate is custom designed according to the application. The fixture offers improved operator view and excellent maintenance accessibility. Further, controllers are mounted in the base frame of the unit. The maximum capacity of this unit is 1000 Nm.

SCOPE OF SUPPLY

- ▶ Base frame with wheels for operation on workshop floors
- ▶ Spindle base plate with spindle layout according to the application - Standard C-C Distance 335 mm
- ▶ Rear rotate handles
- ▶ Rear rotate bearing assembly
- ▶ Crank handle for manual height adjustment: 450 - 550 mm
- ▶ Control box with start / stop / parameter select functions
- ▶ Torque Reaction Spindle(s)

REQUIRED EQUIPMENT

- ▶ Nutrunner(s)
- ▶ Operator interface (Indicator Box, etc.)
- ▶ Operator handle(s)

OPTIONS

- ▶ Sockets

MOBILE NUTRUNNER

Description	Ordering No.
Mobile Horizontal Rotate Fixture - 2 Spindle	9040 0804 59



Vertical fixture with variable pitch - wheel

This housing can be used for 2 nutrunner applications with variable pitch (e.g. aircraft wheels).

SCOPE OF SUPPLY

- ▶ Housing
- ▶ Cover
- ▶ Manual stepless pitch change (300 - 600 mm)
- ▶ Interface for nutrunner type QST80/90 or ETX72/90
- ▶ Include operator interface mounting (for Indicator Box) and handle mounting
- ▶ Inline transducer device
- ▶ Cable management

REQUIRED EQUIPMENT

- ▶ The handle configuration, operator interface, torque reaction bar and sockets are not included in the scope of supply and need to be ordered separately.

NOTES

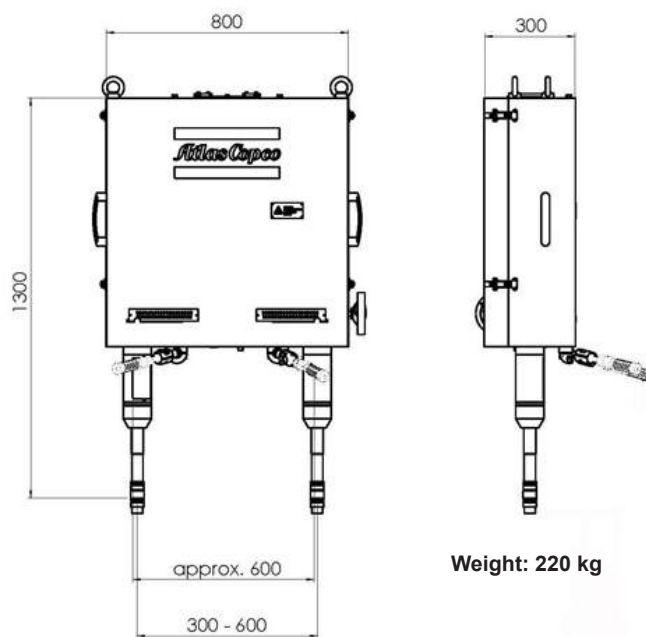
- ▶ **Important:** The two nutrunner application has to be used with a base plate fitted torque reaction bar or a torque reaction suspension.

The workpiece should be fixed for this applications without torque reaction bar connected to the workpiece, otherwise a movement of the workpiece and maybe also a movement of the tightening system could be effected through the torque of the nutrunner.



WHEEL NUTRUNNER VERTICAL VARIABLE PITCH

Description	Ordering No.
Wheel Nutrunner Vertical Manual Pitch Change 1000 Nm	8995 7010 02



Horizontal fixture with variable pitch - wheel

This swiveling housing can be used for 2 nutrunner applications with variable pitch (e.g. truck or tractor wheels).

SCOPE OF SUPPLY

- ▶ Housing with swivel device
- ▶ Frame with mechanics for the centre of gravity adjustment
- ▶ Cover
- ▶ Steering wheel
- ▶ Operator Handle
- ▶ Include operator interface mounting (for Indicator Box)
- ▶ Manual or electrical stepless pitch change (200 - 450 mm)
- ▶ Interface for nutrunner type QST80/90 or ETX72/90
- ▶ Integrated safety device for torque reactions
- ▶ Cable Management
- ▶ Safety belt (1 for 150 kg weight)



REQUIRED EQUIPMENT

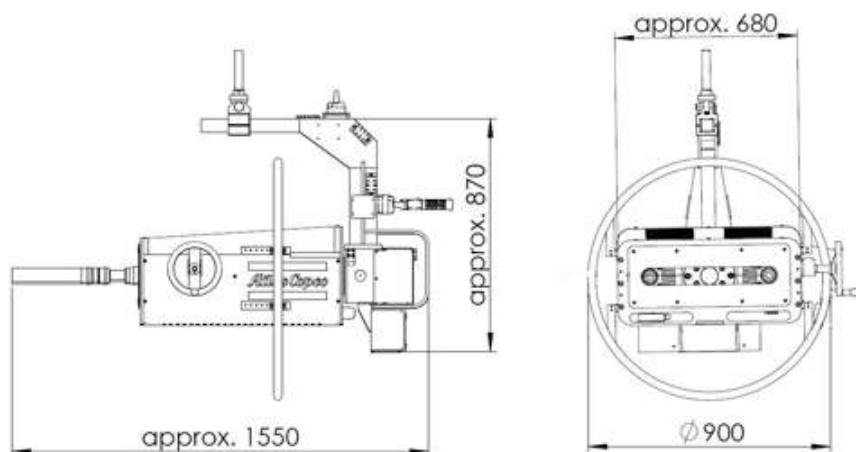
- ▶ The handle configuration, operator interface and sockets are not included in the scope of supply and need to be ordered separately.

NOTES

- ▶ **Important:** The workpiece should be fixed for this applications without torque reaction bar connected to the workpiece, otherwise a movement of the workpiece could be effected through the torque of the nutrunner.

WHEEL NUTRUNNER HORIZONTAL MANUAL PITCH CHANGE

Description	Ordering No.
Wheel Nutrunner Horizontal Manual Pitch Change 1000 Nm	8995 7010 05

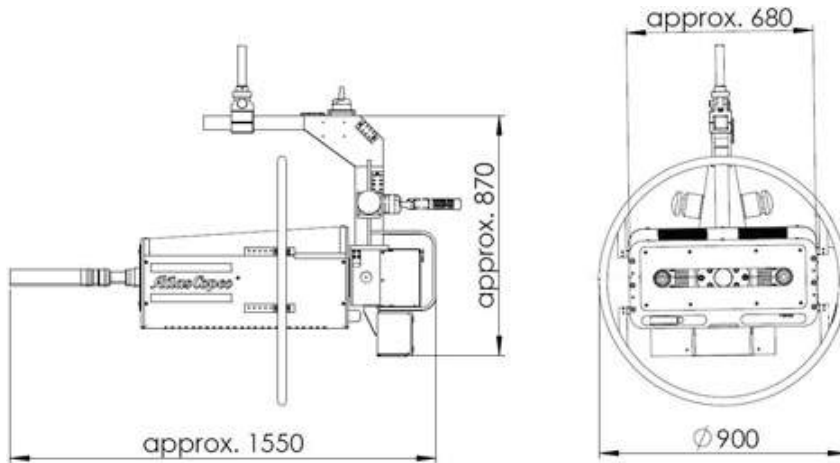


Weight: 300 kg

Horizontal fixture with variable pitch - wheel

WHEEL NUTRUNNER HORIZONTAL ELECTRICAL PITCH CHANGE

Description	Ordering No.
Wheel Nutrunner Horizontal Electrical Pitch Change 1000 Nm	8995 7010 06



Weight: 330 kg

Vertical fixture with variable pitch - u-bolt

This housing can be used for 4 nutrunner high torque applications with variable pitch in x-direction and y-direction (e.g. U-bolt, main bearing cap).

SCOPE OF SUPPLY

- ▶ Housing with high torque frame
- ▶ Mechanics for the centre of gravity adjustment
- ▶ Cover, multipiece
- ▶ Manual or electrical stepless pitch change for 2 x 2 nutrunners
- ▶ Interface for nutrunner type QST80/90 or ETX72/90
- ▶ Cable management
- ▶ Safety belt (1 for 150 kg weight)

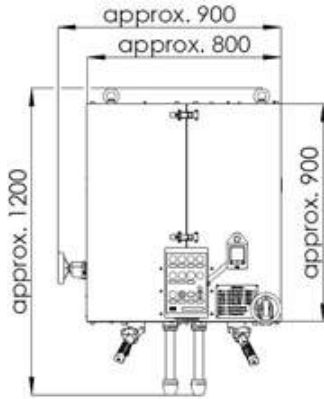
REQUIRED EQUIPMENT

- ▶ The handle configuration and the sockets are not included in the scope of supply and needs to be ordered separately.

Vertical fixture with variable pitch - u-bolt

U-BOLT NUTRUNNER MANUAL PITCH CHANGE

Description	Ordering No.
U-Bolt Nutrunner Manual Pitch Change 1000 Nm	8995 7010 07

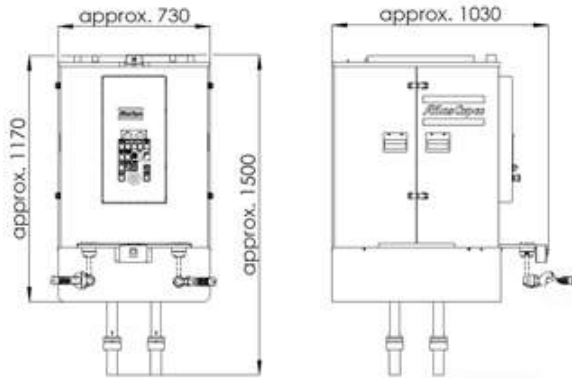


Configuration example only:
Weight = 620 kg
Pitch = 128 / 128 mm - 160 / 173 mm

Vertical fixture with variable pitch - u-bolt

U-BOLT NUTRUNNER ELECTRICAL PITCH CHANGE

Description	Ordering No.
U-Bolt Nutrunner Electrical Pitch Change 1000 Nm	8995 7010 08



Configuration example only:
Weight = 320 kg
Pitch = 95 / 95 mm - 210 / 210 mm

Powerhead tooling plates

Powerhead Tooling Plates are designed to accommodate ETX and QST Nutrunners. Powerheads are normally integrated into an automated assembly station and are custom built according to the application.

SCOPE OF SUPPLY

- ▶ Tooling plate
- ▶ Cable support assembly
- ▶ Mounting holes

REQUIRED EQUIPMENT

- ▶ Nutrunners
- ▶ Nutrunner Cables

NOTES

- ▶ Control of the Powerhead start to be carried out by external interface. There is no operator interface included.
- ▶ Stacked Nutrunners are not included and must be quoted separately.



POWERHEAD TOOLING PLATES 350 NM 1 - 30 SPINDLES

Description	Ordering No.
Powerhead Tooling Plates 350 Nm - 1 Sp	9040 4000 01
Powerhead Tooling Plates 350 Nm - 2 Sp	9040 4000 02
Powerhead Tooling Plates 350 Nm - 3 Sp	9040 4000 03
Powerhead Tooling Plates 350 Nm - 4 Sp	9040 4000 04
Powerhead Tooling Plates 350 Nm - 5 Sp	9040 4000 05
Powerhead Tooling Plates 350 Nm - 6 Sp	9040 4000 06
Powerhead Tooling Plates 350 Nm - 7 Sp	9040 4000 07
Powerhead Tooling Plates 350 Nm - 8 Sp	9040 4000 08
Powerhead Tooling Plates 350 Nm - 9 Sp	9040 4000 09
Powerhead Tooling Plates 350 Nm - 10 Sp	9040 4000 10
Powerhead Tooling Plates 350 Nm - 11 Sp	9040 4000 11
Powerhead Tooling Plates 350 Nm - 12 Sp	9040 4000 12
Powerhead Tooling Plates 350 Nm - 13 Sp	9040 4000 13
Powerhead Tooling Plates 350 Nm - 14 Sp	9040 4000 14
Powerhead Tooling Plates 350 Nm - 15 Sp	9040 4000 15
Powerhead Tooling Plates 350 Nm - 16 Sp	9040 4000 16
Powerhead Tooling Plates 350 Nm - 17 Sp	9040 4000 17
Powerhead Tooling Plates 350 Nm - 18 Sp	9040 4000 18
Powerhead Tooling Plates 350 Nm - 19 Sp	9040 4000 19
Powerhead Tooling Plates 350 Nm - 20 Sp	9040 4000 20
Powerhead Tooling Plates 350 Nm - 21 Sp	9040 4000 21
Powerhead Tooling Plates 350 Nm - 22 Sp	9040 4000 22
Powerhead Tooling Plates 350 Nm - 23 Sp	9040 4000 23
Powerhead Tooling Plates 350 Nm - 24 Sp	9040 4000 24

Powerhead tooling plates

Description	Ordering No.
Powerhead Tooling Plates 350 Nm - 25 Sp	9040 4000 25
Powerhead Tooling Plates 350 Nm - 26 Sp	9040 4000 26
Powerhead Tooling Plates 350 Nm - 27 Sp	9040 4000 27
Powerhead Tooling Plates 350 Nm - 28 Sp	9040 4000 28
Powerhead Tooling Plates 350 Nm - 29 Sp	9040 4000 29
Powerhead Tooling Plates 350 Nm - 30 Sp	9040 4000 30

POWERHEAD TOOLING PLATES 1000 NM 1 - 30 SPINDLES

Description	Ordering No.
Powerhead Tooling Plates 1000 Nm - 1 Sp	9040 4001 01
Powerhead Tooling Plates 1000 Nm - 2 Sp	9040 4001 02
Powerhead Tooling Plates 1000 Nm - 3 Sp	9040 4001 03
Powerhead Tooling Plates 1000 Nm - 4 Sp	9040 4001 04
Powerhead Tooling Plates 1000 Nm - 5 Sp	9040 4001 05
Powerhead Tooling Plates 1000 Nm - 6 Sp	9040 4001 06
Powerhead Tooling Plates 1000 Nm - 7 Sp	9040 4001 07
Powerhead Tooling Plates 1000 Nm - 8 Sp	9040 4001 08
Powerhead Tooling Plates 1000 Nm - 9 Sp	9040 4001 09
Powerhead Tooling Plates 1000 Nm - 10 Sp	9040 4001 10
Powerhead Tooling Plates 1000 Nm - 11 Sp	9040 4001 11
Powerhead Tooling Plates 1000 Nm - 12 Sp	9040 4001 12
Powerhead Tooling Plates 1000 Nm - 13 Sp	9040 4001 13
Powerhead Tooling Plates 1000 Nm - 14 Sp	9040 4001 14
Powerhead Tooling Plates 1000 Nm - 15 Sp	9040 4001 15
Powerhead Tooling Plates 1000 Nm - 16 Sp	9040 4001 16
Powerhead Tooling Plates 1000 Nm - 17 Sp	9040 4001 17
Powerhead Tooling Plates 1000 Nm - 18 Sp	9040 4001 18
Powerhead Tooling Plates 1000 Nm - 19 Sp	9040 4001 19
Powerhead Tooling Plates 1000 Nm - 20 Sp	9040 4001 20
Powerhead Tooling Plates 1000 Nm - 21 Sp	9040 4001 21
Powerhead Tooling Plates 1000 Nm - 22 Sp	9040 4001 22
Powerhead Tooling Plates 1000 Nm - 23 Sp	9040 4001 23
Powerhead Tooling Plates 1000 Nm - 24 Sp	9040 4001 24
Powerhead Tooling Plates 1000 Nm - 25 Sp	9040 4001 25
Powerhead Tooling Plates 1000 Nm - 26 Sp	9040 4001 26
Powerhead Tooling Plates 1000 Nm - 27 Sp	9040 4001 27
Powerhead Tooling Plates 1000 Nm - 28 Sp	9040 4001 28
Powerhead Tooling Plates 1000 Nm - 29 Sp	9040 4001 29
Powerhead Tooling Plates 1000 Nm - 30 Sp	9040 4001 30

PLATE DIMENSTIONS - POWERHEAD TOOLING PLATES

Description	Plate Thickness mm
QST34	10
QST42/50/62	15
QST80/90	20
ETX42/50/62	15
ETX72/90	20



26-Spindle QST62 Tooling Plate



8-Spindle QST80 Tooling Plate

Powerhead

Standard Powerhead designed for QST or ETX spindle integration. This style of Powerhead is normally integrated in an assembly station and is custom built according to the application. Control of Powerhead start etc. to be carried out by external interface.

SCOPE OF SUPPLY

- ▶ Custom built base plate manufactured according to the application on one level, i.e. no stacking of spindles in different levels.

REQUIRED EQUIPMENT

- ▶ The sockets are not included in the scope of supply and need to be ordered separately.

NOTES

- ▶ There is no operator interface delivered.



Plate Thickness
QST34: 10 mm
QST42/50/62: 15 mm
ETX42/50/62: 15 mm

POWERHEAD 350 NM

Description	Ordering No.
Powerhead 350 Nm - 1 Sp	8995 7011 01
Powerhead 350 Nm - 2 Sp	8995 7011 02
Powerhead 350 Nm - 3 Sp	8995 7011 03
Powerhead 350 Nm - 4 Sp	8995 7011 04
Powerhead 350 Nm - 5 Sp	8995 7011 05
Powerhead 350 Nm - 6 Sp	8995 7011 06
Powerhead 350 Nm - 7 Sp	8995 7011 07
Powerhead 350 Nm - 8 Sp	8995 7011 08
Powerhead 350 Nm - 9 Sp	8995 7011 09
Powerhead 350 Nm - 10 Sp	8995 7011 10
Powerhead 350 Nm - 11 Sp	8995 7011 11
Powerhead 350 Nm - 12 Sp	8995 7011 12
Powerhead 350 Nm - 13 Sp	8995 7011 13
Powerhead 350 Nm - 14 Sp	8995 7011 14
Powerhead 350 Nm - 15 Sp	8995 7011 15
Powerhead 350 Nm - 16 Sp	8995 7011 16
Powerhead 350 Nm - 17 Sp	8995 7011 17
Powerhead 350 Nm - 18 Sp	8995 7011 18
Powerhead 350 Nm - 19 Sp	8995 7011 19
Powerhead 350 Nm - 20 Sp	8995 7011 20
Powerhead 350 Nm - 21 Sp	8995 7011 21
Powerhead 350 Nm - 22 Sp	8995 7011 22
Powerhead 350 Nm - 23 Sp	8995 7011 23
Powerhead 350 Nm - 24 Sp	8995 7011 24
Powerhead 350 Nm - 25 Sp	8995 7011 25
Powerhead 350 Nm - 26 Sp	8995 7011 26
Powerhead 350 Nm - 27 Sp	8995 7011 27
Powerhead 350 Nm - 28 Sp	8995 7011 28
Powerhead 350 Nm - 29 Sp	8995 7011 29
Powerhead 350 Nm - 30 Sp	8995 7011 30

POWERHEAD 1000 NM

Description	Ordering No.
Powerhead 1000 Nm - 1 Sp	8995 7012 01
Powerhead 1000 Nm - 2 Sp	8995 7012 02
Powerhead 1000 Nm - 3 Sp	8995 7012 03
Powerhead 1000 Nm - 4 Sp	8995 7012 04
Powerhead 1000 Nm - 5 Sp	8995 7012 05
Powerhead 1000 Nm - 6 Sp	8995 7012 06
Powerhead 1000 Nm - 7 Sp	8995 7012 07
Powerhead 1000 Nm - 8 Sp	8995 7012 08
Powerhead 1000 Nm - 9 Sp	8995 7012 09
Powerhead 1000 Nm - 10 Sp	8995 7012 10
Powerhead 1000 Nm - 11 Sp	8995 7012 11
Powerhead 1000 Nm - 12 Sp	8995 7012 12
Powerhead 1000 Nm - 13 Sp	8995 7012 13
Powerhead 1000 Nm - 14 Sp	8995 7012 14
Powerhead 1000 Nm - 15 Sp	8995 7012 15
Powerhead 1000 Nm - 16 Sp	8995 7012 16
Powerhead 1000 Nm - 17 Sp	8995 7012 17
Powerhead 1000 Nm - 18 Sp	8995 7012 18
Powerhead 1000 Nm - 19 Sp	8995 7012 19
Powerhead 1000 Nm - 20 Sp	8995 7012 20
Powerhead 1000 Nm - 21 Sp	8995 7012 21
Powerhead 1000 Nm - 22 Sp	8995 7012 22
Powerhead 1000 Nm - 23 Sp	8995 7012 23
Powerhead 1000 Nm - 24 Sp	8995 7012 24
Powerhead 1000 Nm - 25 Sp	8995 7012 25
Powerhead 1000 Nm - 26 Sp	8995 7012 26
Powerhead 1000 Nm - 27 Sp	8995 7012 27
Powerhead 1000 Nm - 28 Sp	8995 7012 28
Powerhead 1000 Nm - 29 Sp	8995 7012 29
Powerhead 1000 Nm - 30 Sp	8995 7012 30



Plate Thickness:
QST80/90: 20 mm
ETX72/90: 20 mm

Tooling plate mounting assembly

Tooling Plate Mounting Assemblies are designed to mount to Powerheads.

FEATURES

- ▶ Provides minor location adjustment for the Powerhead. Can be mounted in a vertical or horizontal orientation.

SCOPE OF SUPPLY

- ▶ Tooling plate mounting assembly
- ▶ (4) Push-Pull block assemblies

REQUIRED EQUIPMENT

- ▶ Powerhead Tooling Plate



TOOLING PLATE MOUNTING ASSEMBLY

Description	Ordering No.
Tooling Plate Mounting Assembly-Machine Mount (100 mm x 100 mm)	9040 4002 01
Tooling Plate Mounting Assembly-Machine Mount (200 mm x 200 mm)	9040 4002 02
Tooling Plate Mounting Assembly-Machine Mount (300 mm x 300 mm)	9040 4002 03
Tooling Plate Mounting Assembly-Machine Mount (400 mm x 400 mm)	9040 4002 04
Tooling Plate Mounting Assembly-Machine Mount (500 mm x 500 mm)	9040 4002 05
Tooling Plate Mounting Assembly-Machine Mount (600 mm x 600 mm)	9040 4002 06
Tooling Plate Mounting Assembly-Machine Mount (700 mm x 700 mm)	9040 4002 07
Tooling Plate Mounting Assembly-Machine Mount (800 mm x 800 mm)	9040 4002 08
Tooling Plate Mounting Assembly-Machine Mount (900 mm x 900 mm)	9040 4002 09
Tooling Plate Mounting Assembly-Machine Mount (1000 mm x 1000 mm)	9040 4002 10

Push-pull block assembly

Push-Pull Block Assemblies are used for adjusting tooling plate location. Allows for 6 mm adjustment.

SCOPE OF SUPPLY

- ▶ Metric fasteners
- ▶ (1) Assembly included



PUSH-PULL BLOCK ASSEMBLY

Description	Ordering No.
Push-Pull Block Assembly - ETX42/50/62 / QST34/42/50/62 Tooling Plate	9040 2129 26
Push-Pull Block Assembly - ETX72/90 / QST80/90 Tooling Plate	9040 2129 27

Slide assembly

The Slide Assembly is typically used in automated stations to provide linear motion to fixtured nutrunners allowing part engagement (by extending the assembly) and clearance (by retracting the assembly).

FEATURES

- ▶ Tooling Plate Mounting Assembly mounts directly to the Slide Assembly. Can be mounted in a vertical or horizontal orientation.

Load Capacity

- ▶ 50 mm Bore Assembly: 153 lbs @ 60 PSI
- ▶ 100 mm Bore Assembly: 685 lbs @ 60 PSI

SCOPE OF SUPPLY

- ▶ Frame assembly
- ▶ Linear bearing with rails (THK)
- ▶ (1) Cylinder and rod end coupler
- ▶ (2) 12 mm proximity switches and brackets - Position 1 and 2
- ▶ (1) Solenoid - Position 1 and 2
- ▶ (2) Stops
- ▶ Rod Lock optional

REQUIRED EQUIPMENT

- ▶ Tooling Plate Mounting Assembly
- ▶ Powerhead Tooling Plates
- ▶ M12 4-Pin Extension Cables for (4) Devices

SLIDE ASSEMBLY

Description	Ordering No.
Slide Assembly (50 mm Bore x 300 mm Stroke)	9040 4002 11
Slide Assembly (50 mm Bore x 300 mm Stroke) with Rod Lock	9040 4002 12
Slide Assembly (100 mm Bore x 300 mm Stroke)	9040 4002 13
Slide Assembly (100 mm Bore x 300 mm Stroke) with Rod Lock	9040 4002 14

REQUIRED INPUTS AND OUTPUTS - SLIDE ASSEMBLY

Description	Required Inputs	Required Outputs	Required Cable Qty .
Position 1 Solenoid Valve	-	1	1
Position 2 Solenoid Valve	-	1	1
Position 1 Proximity Switch	1	-	1
Position 2 Proximity Switch	1	-	1



Slide Assembly for Powerheads



Tooling Plate Mounting Assembly with Slide Assembly

Spindle shift - manual

The Spindle Shift assembly is used to achieve multiple bolt center positions by changing or shifting the position of the spindle. The assembly is housed within the fixtured assembly and is designed specifically for the application. A linear guide assembly is used to provide linear guidance for the spindle shifting. Assemblies are configured based on the spindle torque capacity. The operator manually positions the spindle.

FEATURES

Spindle Shift - Manual - Hand Wheel

- ▶ For use in applications with (2) spindles only
- ▶ Multiple spindle positions with hand wheel (self-locking)
- ▶ Visual indication for desired spindle location
- ▶ 100 mm of linear travel (maximum) between spindles

Spindle Shift - Manual - Pin Lock

- ▶ Multiple spindle positions based on pin-hole locations within the base plate
- ▶ 100 mm of linear travel (maximum)

SCOPE OF SUPPLY

Spindle Shift - Manual - Hand Wheel

- ▶ Nutrunner base / linear guide plates
- ▶ Linear guide assembly
- ▶ Hand wheel/positioning assembly
- ▶ Covers for fixtured assembly

Spindle Shift - Manual - Pin Lock

- ▶ Nutrunner base / linear guide plate
- ▶ Linear guide assembly
- ▶ Positioning handle
- ▶ Locking pin assembly

SPINDLE SHIFT - MANUAL - HAND WHEEL

Description	Ordering No.
Spindle Shift - Manual - Hand Wheel - 20 Nm - 2 Sp	9040 0805 11
Spindle Shift - Manual - Hand Wheel - 50 Nm - 2 Sp	9040 0805 12
Spindle Shift - Manual - Hand Wheel - 150 Nm - 2 Sp	9040 0805 13
Spindle Shift - Manual - Hand Wheel - 350 Nm - 2 Sp	9040 0805 14
Spindle Shift - Manual - Hand Wheel - 1000 Nm - 2 Sp	9040 0805 15

SPINDLE SHIFT - MANUAL - PIN LOCKING

Description	Ordering No.
Spindle Shift - Manual - Pin Lock - 20 Nm - 1 Sp	9040 0805 16
Spindle Shift - Manual - Pin Lock - 50 Nm - 1 Sp	9040 0805 17
Spindle Shift - Manual - Pin Lock - 150 Nm - 1 Sp	9040 0805 18
Spindle Shift - Manual - Pin Lock - 350 Nm - 1 Sp	9040 0805 19
Spindle Shift - Manual - Pin Lock - 1000 Nm - 1 Sp	9040 0805 20



Manual Hand Wheel



Manual Pin Lock

Spindle shift - manual

The principle of the Spindle Shift Manual mechanism enables two or more different application configurations to be catered for by moving the nutrunners to the desired positions. Using standard design principles, a spindle shift device is engineered specifically for the application using high precision linear bearing devices. It is actuated manually either with a hand wheel (adjusting two nutrunners) or a pin locking (adjusting one nutrunner).

SCOPE OF SUPPLY

- ▶ Multiple positions for spindle shift with hand wheel, self locking
- ▶ Two positions for spindle shift with pin locking
- ▶ Stroke max. 100 mm
- ▶ Cover for fixtured housing

SPINDLE SHIFT MANUALLY ACTUATED - HAND WHEEL

Description	Ordering No.
Spindle Shift Manual Hand Wheel 20 Nm - 2 Sp	8995 7110 52
Spindle Shift Manual Hand Wheel 50 Nm - 2 Sp	8995 7110 02
Spindle Shift Manual Hand Wheel 150 Nm - 2 Sp	8995 7111 02
Spindle Shift Manual Hand Wheel 350 Nm - 2 Sp	8995 7112 02
Spindle Shift Manual Hand Wheel 1000 Nm - 2 Sp	8995 7113 02

SPINDLE SHIFT MANUALLY ACTUATED - PIN LOCKING

Description	Ordering No.
Spindle Shift Manual Pin Locking 350 Nm - 1 Sp	8995 7114 01
Spindle Shift Manual Pin Locking 350 Nm - 2 Sp	8995 7114 02
Spindle Shift Manual Pin Locking 350 Nm - 3 Sp	8995 7114 03
Spindle Shift Manual Pin Locking 350 Nm - 4 Sp	8995 7114 04
Spindle Shift Manual Pin Locking 1000 Nm - 1 Sp	8995 7114 05
Spindle Shift Manual Pin Locking 1000 Nm - 2 Sp	8995 7114 06
Spindle Shift Manual Pin Locking 1000 Nm - 3 Sp	8995 7114 07
Spindle Shift Manual Pin Locking 1000 Nm - 4 Sp	8995 7114 08



Spindle shift - pneumatic

The Spindle Shift assembly is used to achieve multiple bolt center positions by changing or shifting the position of the spindle. The assembly is housed within the fixtured assembly and is designed specifically for the application. A linear guide assembly is used to provide linear guidance for the spindle shifting. Assemblies are configured based on the spindle torque capacity. A pneumatic cylinder provides the linear motion.

FEATURES

Spindle Shift

- ▶ Provides 2-spindle positions
- ▶ 100 mm of linear travel (maximum)

Spindle Shift - Proximity Switch/Mounting Bracket Kit

- ▶ Provides position indication for 2-positions: advanced and return

SCOPE OF SUPPLY

Spindle Shift - Pneumatic - Primary

- ▶ Nutrunner base / linear guide plate
- ▶ Linear guide assembly with position stops
- ▶ Pneumatic cylinder, mounting brackets and flow control valves
- ▶ Pneumatic control valve - 24 VDC
- ▶ Pressure regulator

Spindle Shift - Pneumatic - Secondary

- ▶ Nutrunner base / linear guide plate
- ▶ Linear guide assembly with position stops
- ▶ Pneumatic cylinder, mounting brackets and flow control valves

Spindle Shift - Proximity Switch/Mounting Bracket Kit

- ▶ (2) Proximity switches with mounting brackets and sensing brackets

REQUIRED EQUIPMENT

Spindle Shift

- ▶ Digital I/O: direct to controller, I/O Expander or other means - per Primary assembly
- ▶ (2) M12 4-Pin Extension Cables for control valve - per Primary assembly

Spindle Shift - Proximity Switch/Mounting Bracket Kit

- ▶ (1) Digital I/O interface: direct to controller, I/O Expander or other means - per kit
- ▶ (2) M12 4-Pin Extension Cables for control valve - per kit



Spindle shift - pneumatic

OPTIONS

For Position Selection

- ▶ Selector switch
- ▶ Barcode scanner
- ▶ MiniDisplay

NOTES

- ▶ Select (1) Primary for separately controlled assemblies. Add secondary assemblies for the additional spindle assemblies. Example: 4-Spindle Application where (4) spindles are shifted simultaneously: Select (1) Primary assembly and (3) Secondary assemblies.

SPINDLE SHIFT - PNEUMATIC

Description	Ordering No.
Spindle Shift - Pneumatic - 20 Nm - 1 Sp - Primary	9040 0805 21
Spindle Shift - Pneumatic - 20 Nm - 1 Sp - Secondary	9040 0805 22
Spindle Shift - Pneumatic - 50 Nm - 1 Sp - Primary	9040 0805 23
Spindle Shift - Pneumatic - 50 Nm - 1 Sp - Secondary	9040 0805 24
Spindle Shift - Pneumatic - 150 Nm - 1 Sp - Primary	9040 0805 25
Spindle Shift - Pneumatic - 150 Nm - 1 Sp - Secondary	9040 0805 26
Spindle Shift - Pneumatic - 350 Nm - 1 Sp - Primary	9040 0805 27
Spindle Shift - Pneumatic - 350 Nm - 1 Sp - Secondary	9040 0805 28
Spindle Shift - Pneumatic - 1000 Nm - 1 Sp - Primary	9040 0805 29
Spindle Shift - Pneumatic - 1000 Nm - 1 Sp - Secondary	9040 0805 30
Spindle Shift - Proximity Switch/Mounting Bracket Kit (for 1-Assembly)	9040 0805 31

REQUIRED INPUT AND OUTPUTS - SPINDLE SHIFT - PNEUMATIC

Description	Required Inputs	Required Outputs	Required Cable Qty .
Position 1 - Control Valve - Solenoid	-	1	1
Position 2 - Control Valve - Solenoid	-	1	1
Position 1 - Proximity Switch	1	-	1
Position 2 - Proximity Switch	1	-	1

Spindle shift - pneumatic

The principle of the Spindle Shift Pneumatic mechanism enables a pneumatical spindle shift in two fixed positions for one nutrunner moving to the desired positions. Using standard design principles, this spindle shift device is engineered specifically for the application using high precision linear bearing devices and actuated pneumatically.

SCOPE OF SUPPLY

- ▶ Two fixed positions (pneumatically)
- ▶ Positions are mechanically locked from nutrunner size QST50
- ▶ Required minimum air pressure 5,5 bar
- ▶ Stroke max. 100 mm
- ▶ Cover for fixtured housing



SPINDLE SHIFT PNEUMATICALLY ACTUATED

Description	Ordering No.
Spindle Shift Pneumatic 20 Nm - 1 Sp	8995 7102 51
Spindle Shift Pneumatic 20 Nm - 2 Sp	8995 7102 52
Spindle Shift Pneumatic 20 Nm - 3 Sp	8995 7102 53
Spindle Shift Pneumatic 20 Nm - 4 Sp	8995 7102 54
Spindle Shift Pneumatic 50 Nm - 1 Sp	8995 7102 01
Spindle Shift Pneumatic 50 Nm - 2 Sp	8995 7102 02
Spindle Shift Pneumatic 50 Nm - 3 Sp	8995 7102 03
Spindle Shift Pneumatic 50 Nm - 4 Sp	8995 7102 04
Spindle Shift Pneumatic 150 Nm - 1 Sp	8995 7103 01
Spindle Shift Pneumatic 150 Nm - 2 Sp	8995 7103 02
Spindle Shift Pneumatic 150 Nm - 3 Sp	8995 7103 03
Spindle Shift Pneumatic 150 Nm - 4 Sp	8995 7103 04
Spindle Shift Pneumatic 350 Nm - 1 Sp	8995 7104 01
Spindle Shift Pneumatic 350 Nm - 2 Sp	8995 7104 02
Spindle Shift Pneumatic 350 Nm - 3 Sp	8995 7104 03
Spindle Shift Pneumatic 350 Nm - 4 Sp	8995 7104 04
Spindle Shift Pneumatic 1000 Nm - 1 Sp	8995 7105 01
Spindle Shift Pneumatic 1000 Nm - 2 Sp	8995 7105 02
Spindle Shift Pneumatic 1000 Nm - 3 Sp	8995 7105 03
Spindle Shift Pneumatic 1000 Nm - 4 Sp	8995 7105 04

Spindle shift - electric

The Spindle Shift assembly is used to achieve multiple bolt center positions by changing or shifting the position of the spindle. The assembly is housed within the fixtured assembly and is designed specifically for the application. A linear guide assembly is used to provide linear guidance for the spindle shifting. Assemblies are configured based on the spindle torque capacity. An electric servo drive and gear unit provides the linear motion.

FEATURES

Spindle Shift

- ▶ For use in applications with (2) spindles only
- ▶ Provides variable positions throughout travel - 15 different positions are feasible (+ 1 home position)
- ▶ Positions are mechanically fixed (via trapezoidal threaded spindle)
- ▶ 100 mm of linear travel (maximum)
- ▶ Adjustment speed 1 mm/s to 15 or 18 mm/s (maximum is application specific - see below) - continuous acceleration and deceleration
- ▶ IP54 protection rating (motor and controller)



SCOPE OF SUPPLY

- ▶ Nutrunner base / linear guide plates
- ▶ Linear guide assembly
- ▶ Festo mechanical linear drive assembly DMES with parallel kit
- ▶ Festo servo drive MTR-DCI: including motor, gear unit, controller and power electronics
- ▶ External power supply (40A, 400 to 480 VAC to 24 VDC) and digital I/O expander within an enclosure
- ▶ Festo digital I/O communication cable (5 m) + 9-Pin D-Sub open end extension cable (40 m length maximum - sized per application)
- ▶ 2-Pin D-Sub power cable + power extension cable (40 m length maximum - sized per application)
- ▶ Programming cable (1.5 m)
- ▶ Covers for fixtured assembly

OPTIONS

For Position Selection

- ▶ Selector switch
- ▶ Barcode scanner
- ▶ MiniDisplay

NOTES

Maximum load for an assembly with spindles oriented horizontally

- ▶ With horizontal linear motion: 10 kg (carriage and spindles) with up to 15 mm/s adjustment speed
- ▶ With vertical linear motion: 30 kg (carriage and spindles) with up to 18 mm/s adjustment speed

Maximum load for an assembly with spindles oriented vertically

- ▶ With horizontal linear motion: 30 kg (carriage and spindles) with up to 18 mm/s adjustment speed

Spindle shift - electric

SPINDLE SHIFT - ELECTRIC

Description	Ordering No.
Spindle Shift - Electric - 20 Nm - 1 Sp	9040 0805 32
Spindle Shift - Electric - 50 Nm - 1 Sp	9040 0805 33
Spindle Shift - Electric - 150 Nm - 1 Sp	9040 0805 34
Spindle Shift - Electric - 350 Nm - 1 Sp	9040 0805 35
Spindle Shift - Electric - 1000 Nm - 1 Sp	9040 0805 36
Spindle Shift - Electric - 20 Nm - 2 Sp	9040 0805 37
Spindle Shift - Electric - 50 Nm - 2 Sp	9040 0805 38
Spindle Shift - Electric - 150 Nm - 2 Sp	9040 0805 39
Spindle Shift - Electric - 350 Nm - 2 Sp	9040 0805 40
Spindle Shift - Electric - 1000 Nm - 2 Sp	9040 0805 41

Spindle shift - electric

The principle of the Spindle Shift Electric mechanism enables an electrical stepless spindle shift for two nutrunners moving to the desired positions. Using standard design principles, this spindle shift device is engineered specifically for the application using high precision linear bearing devices and actuated electrically.

SCOPE OF SUPPLY

- ▶ Variable fixed positions
- ▶ Positions are mechanically fixed (trapezoid threaded spindle)
- ▶ Electrical stepless spindle shift for 2 nutrunners - 16 different positions feasible
- ▶ Stroke max. 100 mm
- ▶ Festo Servo Drive MTR-DCI, with integrated drive, gear unit, controller and power electronics
- ▶ Adjustment speed 1 mm/s to 18 mm/s – continuous acceleration and deceleration
- ▶ Protection category IP54
- ▶ Cover for fixtured housing



NOTES

- ▶ Maximum operation load each carriage for unit mounting orientation horizontal plain: 30 kg with up to 18 mm/s adjustment speed.
- ▶ Maximum operation load each carriage for unit mounting orientation horizontal upright: 30 kg with up to 18 mm/s adjustment speed.
- ▶ Maximum operation load each carriage for unit mounting orientation vertical: 10 kg with up to 15 mm/s adjustment speed.

SPINDLE SHIFT ELECTRICALLY ACTUATED

Description	Ordering No.
Spindle Shift Electric 20 Nm - 2 Sp	8439 4716 03
Spindle Shift Electric 50 Nm - 2 Sp	8439 4716 04
Spindle Shift Electric 150 Nm - 2 Sp	8439 4716 05
Spindle Shift Electric 350 Nm - 2 Sp	8439 4716 06
Spindle Shift Electric 1000 Nm - 2 Sp	8439 4716 08

Handle kits

Handle Kits for fixture assemblies.



NOTES

Two-Sided Configurations

- Duplication of handle configuration on opposite side of tooling

HANDLE KITS - PLASTIC HAND GRIP

Description	Ordering No.
Standard Operator Handle Kit - Front	8439 3500 10
Standard Operator Handle Kit - Rear	8439 3500 11
Two-Hand Start Operator Handle Kit - Front	8439 3500 12
Two-Hand Start Operator Handle Kit - Rear	8439 3500 13
Standard Operator Handle Kit with Hoist Control - Front	8439 3500 14
Standard Operator Handle Kit with Hoist Control - Rear	8439 3500 15
Double Start Handle - Front	8439 3500 16
Double Start Handle - Rear	8439 3500 17
Standard Operator Handle Kit - Two-Sided Operation - Front	8439 3500 18
Standard Operator Handle Kit - Two-Sided Operation - Rear	8439 3500 19
Two-Hand Start Operator Handle - Two-Sided Operation - Front	8439 3500 20
Two-Hand Start Operator Handle - Two-Sided Operation - Rear	8439 3500 21
Standard Operator Handle Kit with Hoist Control - Two-Sided Operation - Front	8439 3500 22
Standard Operator Handle Kit with Hoist Control - Two-Sided Operation - Rear	8439 3500 23

HANDLE KITS - RUBBER HAND GRIP

Description	Ordering No.
Standard Operator Handle Kit - Front	8439 3500 30
Standard Operator Handle Kit - Rear	8439 3500 31
Two-Hand Start Operator Handle Kit - Front	8439 3500 32
Two-Hand Start Operator Handle Kit - Rear	8439 3500 33
Standard Operator Handle Kit with Hoist Control - Front	8439 3500 34
Standard Operator Handle Kit with Hoist Control - Rear	8439 3500 35
Double Start Handle - Front	8439 3500 36
Double Start Handle - Rear	8439 3500 37
Standard Operator Handle Kit - Two-Sided Operation - Front	8439 3500 38
Standard Operator Handle Kit - Two-Sided Operation - Rear	8439 3500 39
Two-Hand Start Operator Handle - Two-Sided Operation - Front	8439 3500 40
Two-Hand Start Operator Handle - Two-Sided Operation - Rear	8439 3500 41
Standard Operator Handle Kit with Hoist Control - Two-Sided Operation - Front	8439 3500 42
Standard Operator Handle Kit with Hoist Control - Two-Sided Operation - Rear	8439 3500 43

Handle kits

DESCRIPTIONS

STANDARD OPERATOR HANDLE KIT - FRONT

- ▶ Includes an Operator Handle and Dead Handle. The Operator Handle includes a start trigger with forward / reverse switch.



STANDARD OPERATOR HANDLE KIT - REAR

- ▶ Includes an Operator Handle and Dead Handle. The Operator Handle includes a start trigger with forward / reverse switch.



TWO-HAND START OPERATOR HANDLE KIT - FRONT

- ▶ Includes (2) Operator Handles. The Operator Handle includes a start trigger with forward / reverse switch. The two hand start complies with EN 574 class I. This option is to be used either with the indicator box or the operator panel.



TWO-HAND START OPERATOR HANDLE KIT - REAR

- ▶ Includes (2) Operator Handles. The Operator Handle includes a start trigger with forward / reverse switch. The two hand start complies with EN 574 class I. This option is to be used either with the indicator box or the operator panel.



STANDARD OPERATOR HANDLE KIT WITH HOIST CONTROL - FRONT

- ▶ Includes an Operator Handle and Dead Handle with Hoist Control Module. The Operator Handle includes a start trigger with forward / reverse switch.



Handle kits

DESCRIPTIONS

STANDARD OPERATOR HANDLE KIT WITH HOIST CONTROL - REAR

- ▶ Includes an Operator Handle and Dead Handle with Hoist Control Module. The Operator Handle includes a start trigger with forward / reverse switch.



DOUBLE START HANDLE - FRONT

- ▶ For applications requiring a two hand start, this option provides two operator handles hoist. The two hand start complies with EN 574 class I. This option is to be used either with the indicator box or the operator panel.



DOUBLE START HANDLE - REAR

- ▶ For applications requiring a two hand start, this option provides two operator handles hoist. The two hand start complies with EN 574 class I. This option is to be used either with the indicator box or the operator panel.



NOTES

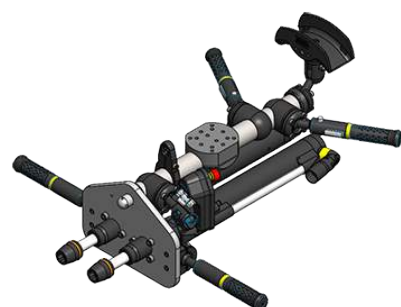
Two-Sided Configurations

- ▶ Duplication of handle configuration on opposite side of tooling

Two-Handed Configuration



Two-Sided Configuration



Fixture accessories

Accessories for fixture assemblies.



Cable Support Single Add-On Kit
(10-20 Cables)



Cable Support Double Add-On Kit
(20-30 Cables)



Rotary Selector Mounting Kit
(Ball Bone)

ACCESSORIES FOR FIXTURE ASSEMBLIES

Description	Ordering No.
Cable Support Single Add-On Kit (10-20 Cables)	9040 0000 97
Cable Support Double Add-On Kit (20-30 Cables)	9040 0000 98
Rotary Selector Mounting Kit (Ball Bone)	9040 5305 10
Light Assembly with M12 4-Pin Male Connector	9040 5305 13
Locating / Centering Device	9040 0801 07

Kick-off system

The Kick-Off System is used to disengage a multi-spindle fixture from the part after the fastening cycle has completed. A cylinder extends a bumper to push the unit away from the part. For use on the Horizontal Rotate Fixtures.

SCOPE OF SUPPLY

- ▶ Cylinder
- ▶ Bumper
- ▶ Mounting bracket
- ▶ Pneumatic circuit including control valve and flow controls

REQUIRED EQUIPMENT

- ▶ I/O Expander - Sealed and I/O Bus Cable
- ▶ M12 4-Pin Extension Cable



KICK-OFF SYSTEM

Description	Ordering No.
Kick-Off System	9040 0801 09

REQUIRED INPUTS AND OUTPUTS - KICK-OFF SYSTEM

Description	Required Inputs	Required Outputs	Required Cable Qty .
Advance Solenoid Valve	-	1	1

Inline transducer device

Inline level for inline transducer device with cover.

SCOPE OF SUPPLY

- ▶ Guiding bearing support in second base plate
- ▶ Intermediate removable drive shaft per nutrunner
- ▶ Extended socket holder per nutrunner

REQUIRED EQUIPMENT

- ▶ The transducer and sockets are not included in the scope of supply and needs to be ordered separately.



INLINE TRANSDUCER DEVICE

Description	Ordering No.
Inline Transducer Device 150 Nm - 1 Sp	8995 7101 01
Inline Transducer Device 150 Nm - 2 Sp	8995 7101 02
Inline Transducer Device 150 Nm - 3 Sp	8995 7101 03
Inline Transducer Device 150 Nm - 4 Sp	8995 7101 04
Inline Transducer Device 150 Nm - 5 Sp	8995 7101 05
Inline Transducer Device 150 Nm - 6 Sp	8995 7101 06
Inline Transducer Device 150 Nm - 7 Sp	8995 7101 07
Inline Transducer Device 150 Nm - 8 Sp	8995 7101 08
Inline Transducer Device 150 Nm - 9 Sp	8995 7101 09
Inline Transducer Device 150 Nm - 10 Sp	8995 7101 10
Inline Transducer Device 150 Nm - 11 Sp	8995 7101 11
Inline Transducer Device 150 Nm - 12 Sp	8995 7101 12
Inline Transducer Device 150 Nm - 13 Sp	8995 7101 13
Inline Transducer Device 150 Nm - 14 Sp	8995 7101 14
Inline Transducer Device 150 Nm - 15 Sp	8995 7101 15
Inline Transducer Device 150 Nm - 16 Sp	8995 7101 16
Inline Transducer Device 150 Nm - 17 Sp	8995 7101 17
Inline Transducer Device 150 Nm - 18 Sp	8995 7101 18
Inline Transducer Device 150 Nm - 19 Sp	8995 7101 19
Inline Transducer Device 150 Nm - 20 Sp	8995 7101 20

Inline transducer device

OPERATOR HANDLES

Nutrunner	Square Drive in	Length L mm
QST34-20CT	3/8	280
QST42-20CT	3/8	280
QST42-20COT	3/8	280
QST42-50CT	1/2	280
QST42-50COT	1/2	280
QST50-90CT	1/2	280
QST50-90COT	1/2	280
QST50-150CT	1/2	280
QST50-150COT	1/2	280
QST62-150CT	1/2	350
QST62-150COT	1/2	350
QST62-230CT	3/4	350
QST62-230COT	3/4	350
QST62-350CT	3/4	350
QST62-350COT	3/4	350
ETX42-20CT	3/8	280
ETX42-20COT	3/8	280
ETX42-50CT	1/2	280
ETX42-50COT	1/2	280
ETX50-90CT	1/2	280
ETX50-90COT	1/2	280
ETX50-150CT	1/2	280
ETX50-150COT	1/2	280
ETX62-150CT	1/2	350
ETX62-150COT	1/2	350
ETX62-230CT	3/4	350
ETX62-230COT	3/4	350
ETX62-350CT	3/4	350
ETX62-350COT	3/4	350



Accessories for fixtured housings

JUNCTION PLATE

Description	Ordering No.
Small junction plate for 1-4 cables	8995 7121 01
Medium junction plate for 5-8 cables	8995 7121 02
Complex junction plate for 9-12 cables	8995 7121 03

Suspension systems

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Reaction Suspension Systems - HTS

Reaction Suspension System - HTS was designed specifically for hand tool applications; reacting the torque generated by a tool – eliminating the impact to the operator. This suspension includes a linear motion device that provides vertical travel for positioning and torque reaction of the tool.

FEATURES

- ▶ HTS 1 - 150 Nm torque capacity
- ▶ HTS 2 - 250 Nm torque capacity
- ▶ Vertical travel distance - optional: 300, 450, 600, 750, 900, 1050, and 1200 mm (Travel limited by tightening orientation – refer to Tightening Orientation Selection Guide)
- ▶ Atlas Copco WP Balancer
- ▶ Extension tube height adjustment: ± 100 mm with 50 mm increments (200 mm total)
- ▶ Internal bumpers for impact dampening
- ▶ Upper and lower pivots for position compliance
- ▶ Lower clevis for tool holder mounting
- ▶ Integrated cable management

BENEFITS

- ▶ Reduces operator fatigue
- ▶ Lightweight and smooth movement for ease of handling
- ▶ Low handling forces for improved ergonomics
- ▶ WP Balancer for tool balancing and lift assist
- ▶ Adaptable for various tools
- ▶ Easy to assemble and maintain

Equipped with a WP Balancer, the system provides a lift assist for the operator, offering low handling forces and smooth movement. The balancer can be set to hold at a balanced position along the vertical travel or set to raise to the upper travel position.

Torque can be applied in either a horizontal or vertical tightening orientation.

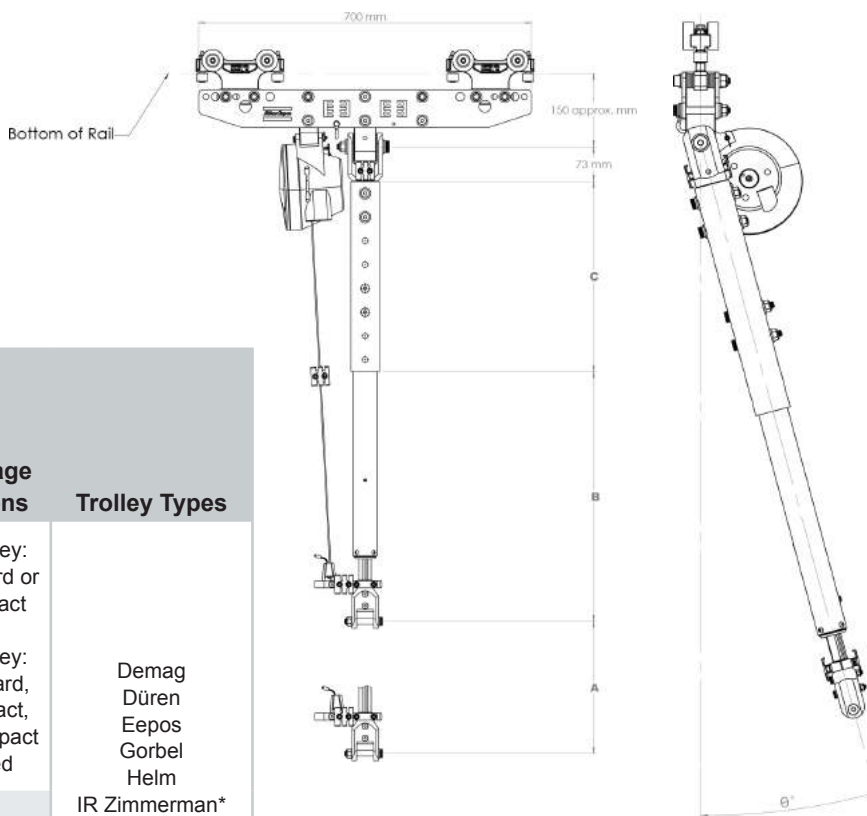


Reaction Suspension Systems - HTS

- technical data

MODEL SPECIFICATIONS

Model	Ordering No.	Model	Lifting Capacity kg (lb)	Weight kg (lb)	A Travel mm (in)	B	B	B
						Recommended Set-up Length mm (in)	Minimum Length mm (in)	Maximum Length mm (in)
HTS1	8439 5001 01	HTS1-300	14.2 (31.3)	5 (11)	300 (11.8)	525 (20.7)	425 (16.7)	625 (24.6)
	8439 5001 02	HTS1-450	13.6 (30)	5.8 (12.8)	450 (17.7)	675 (26.6)	575 (22.6)	775 (30.5)
	8439 5001 03	HTS1-600	13.1 (28.8)	6.7 (14.8)	600 (23.6)	825 (32.5)	725 (28.5)	925 (36.4)
	8439 5001 04	HTS1-750	12.5 (27.6)	7.7 (17)	750 (29.5)	700 (27.6)	875 (34.4)	1075 (42.3)
	8439 5001 05	HTS1-900	11.9 (26.3)	8.5 (18.7)	900 (35.4)	850 (33.5)	1025 (40.4)	1225 (48.2)
	8439 5001 06	HTS1-1050	11.4 (25.1)	9.4 (20.7)	1050 (41.3)	1000 (39.4)	1175 (46.3)	1375 (54.1)
	8439 5001 07	HTS1-1200	10.8 (23.8)	10.2 (22.5)	1200 (47.2)	1150 (45.3)	1325 (52.2)	1525 (60)
HTS2	8439 5002 01	HTS2-300	16.7 (28)	6.8 (15)	300 (11.8)	675 (26.6)	575 (22.6)	775 (30.5)
	8439 5002 02	HTS2-450	15.9 (26.2)	7.9 (17.4)	450 (17.7)	825 (32.5)	725 (28.5)	925 (36.4)
	8439 5002 03	HTS2-600	15.1 (24.5)	9.1 (20.1)	600 (23.6)	975 (38.4)	875 (34.4)	1075 (42.3)
	8439 5002 04	HTS2-750	14.3 (31.5)	10.3 (22.7)	750 (29.5)	1125 (44.3)	1025 (40.4)	1225 (48.2)
	8439 5002 05	HTS2-900	13.5 (29.7)	11.4 (25.1)	900 (35.4)	1275 (50.2)	1175 (46.3)	1375 (54.1)
	8439 5002 06	HTS2-1050	12.7 (27.9)	12.6 (27.8)	1050 (41.3)	1425 (56.1)	1325 (52.2)	1525 (60)
	8439 5002 07	HTS2-1200	11.8 (26.1)	13.6 (30)	1200 (47.2)	1575 (62)	1475 (58.1)	1675 (65.9)



C Extension Tube mm (in)	Lifting Method	Maximum Torque Nm	Carriage Options	Trolley Types
200 (7.9) 400 (15.7) 600 (23.6) 800 (31.5) 1000 (39.4) 1200 (47.2) 1400 (55.1) 1600 (63) 1800 (70.9) 2000 (78.7)	Spring Balancer	150	1-Trolley: Standard or Compact 2-Trolley: Standard, Compact, or Compact -Fixed	Demag Düren Eepos Gorbel Helm IR Zimmerman* Knight Industries* Movomech Unified Industries* Wamplfer
		250	2-Trolley: Standard, Compact, or Compact -Fixed	

* Indicates 1-Trolley availability for HTS 150

Reaction Suspension Systems - HTS - balancers

The WP Balancer is used as a lift-assist and offers near-to-weightless position balancing. It can be adjusted for the load requirements within the balancing capacity range. The balancer can be set to hold at a balanced position along the vertical travel or set to rise to the upper travel position.

BALANCING CAPACITY - HTS1

Model	Balancer Model	Balancing Capacity	
		Minimum kg (lb)	Maximum kg (lb)
300 mm Travel			
HTS1-300	WP 10-4.5	1.7 (3.7)	4.2 (9.2)
HTS1-300	WP 10-6	3.2 (7)	7.2 (15.8)
HTS1-300	WP 10-9	6.2 (13.6)	11.2 (24.6)
HTS1-300	WP 10-13	10.2 (22.4)	14.2 (31.2)
450 mm Travel			
HTS1-450	WP 10-4.5	1.1 (2.4)	3.6 (7.9)
HTS1-450	WP 10-6	2.6 (5.7)	6.6 (14.5)
HTS1-450	WP 10-9	5.6 (12.3)	10.6 (23.3)
HTS1-450	WP 10-13	9.6 (21.1)	13.6 (29.9)
600 mm Travel			
HTS1-600	WP 10-4.5	0.6 (1.3)	3.1 (6.8)
HTS1-600	WP 10-6	2.1 (4.6)	6.1 (13.4)
HTS1-600	WP 10-9	5.1 (11.2)	10.1 (22.2)
HTS1-600	WP 10-13	9.1 (20)	13.1 (28.8)
750 mm Travel			
HTS1-750	WP 10-4.5	0 (0)	2.5 (5.5)
HTS1-750	WP 10-6	1.5 (3.3)	5.5 (12.1)
HTS1-750	WP 10-9	4.5 (9.9)	9.5 (20.9)
HTS1-750	WP 10-13	8.5 (18.7)	12.5 (27.5)
900 mm Travel			
HTS1-900	WP 10-4.5	0.6 (1.3)	1.9 (4.2)
HTS1-900	WP 10-6	0.9 (2)	4.9 (10.8)
HTS1-900	WP 10-9	3.9 (8.6)	8.9 (19.6)
HTS1-900	WP 10-13	7.9 (17.4)	11.9 (26.2)
1050 mm Travel			
HTS1-1050	WP 10-4.5	0 (0)	1.4 (3.1)
HTS1-1050	WP 10-6	0.4 (0.9)	4.4 (9.7)
HTS1-1050	WP 10-9	3.4 (7.5)	8.4 (18.5)
HTS1-1050	WP 10-13	7.4 (16.3)	11.4 (25.1)
1200 mm Travel			
HTS1-1200	WP 10-4.5	0 (0)	0.8 (1.8)
HTS1-1200	WP 10-6	0 (0)	3.8 (8.4)
HTS1-1200	WP 10-9	2.8 (6.2)	7.8 (17.2)
HTS1-1200	WP 10-13	6.8 (15)	10.8 (23.8)



Balancing capacity values have been adjusted to compensate for the internal weight of the shaft/clevis assembly of the Torque Reaction Suspension. The weight of the tool, tool holder, socket, extensions, and attachments, etc. should be used to determine the load requirement.

Reaction Suspension Systems - HTS - balancers

BALANCING CAPACITY - HTS2

Model	Balancer Model	Balancing Capacity	
		Minimum kg (lb)	Maximum kg (lb)
300 mm Travel			
HTS2-300	WP 10-6	1.7 (3.7)	5.7 (12.5)
HTS2-300	WP 10-9	4.7 (10.3)	9.7 (21.3)
HTS2-300	WP 10-13	8.7 (19.1)	12.7 (27.9)
HTS2-300	WP 10-16	11.7 (25.7)	16.7 (36.7)
450 mm Travel			
HTS2-450	WP 10-6	0.9 (2)	4.9 (10.8)
HTS2-450	WP 10-9	3.9 (8.6)	8.9 (19.6)
HTS2-450	WP 10-13	7.9 (17.4)	11.9 (26.2)
HTS2-450	WP 10-16	10.9 (24)	15.9 (35)
600 mm Travel			
HTS2-600	WP 10-6	0.1 (0.2)	4.1 (9)
HTS2-600	WP 10-9	3.1 (6.8)	8.1 (17.8)
HTS2-600	WP 10-13	7.1 (15.6)	11.1 (24.4)
HTS2-600	WP 10-16	10.1 (22.2)	15.1 (33.2)
750 mm Travel			
HTS2-750	WP 10-6	0 (0)	3.3 (7.3)
HTS2-750	WP 10-9	2.3 (5.1)	7.3 (16.1)
HTS2-750	WP 10-13	6.3 (13.9)	10.3 (22.7)
HTS2-750	WP 10-16	9.3 (20.5)	14.3 (31.5)
900 mm Travel			
HTS2-900	WP 10-6	0 (0)	2.5 (5.5)
HTS2-900	WP 10-9	1.5 (3.3)	6.5 (14.3)
HTS2-900	WP 10-13	5.5 (12.1)	9.5 (20.9)
HTS2-900	WP 10-16	8.5 (18.7)	13.5 (29.7)
1050 mm Travel			
HTS2-1050	WP 10-6	0 (0)	1.7 (3.7)
HTS2-1050	WP 10-9	0.7 (1.5)	5.7 (12.5)
HTS2-1050	WP 10-13	4.7 (10.3)	8.7 (19.1)
HTS2-1050	WP 10-16	7.7 (16.9)	12.7 (27.9)
1200 mm Travel			
HTS2-1200	WP 10-6	0 (0)	0.8 (1.8)
HTS2-1200	WP 10-9	0 (0)	4.8 (10.6)
HTS2-1200	WP 10-13	3.8 (8.4)	7.8 (17.2)
HTS2-1200	WP 10-16	6.8 (15)	11.8 (26)



SPRING BALANCER - HTS1 / HTS2

Model	Weight kg (lb)	Height mm (in)	Ordering No.
WP 10-4.5	3.1 (6.8)	-	8202 0779 01
WP 10-6	3.2 (7.1)	-	8202 0779 02
WP 10-9	3.4 (7.5)	-	8202 0779 03
WP 10-13	3.6 (7.9)	-	8202 0779 04
WP 10-16	3.8 (8.4)	-	8202 0779 05

Reaction Suspension Systems - HTS

- extension tubes

The Extension Tube is used to connect the trolley carriage to the torque reaction assembly. The length of the extension tube should be selected based on the height requirements of the application. The tubes are available in standard lengths of 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800 and 2000 mm. Height adjustment capability is integral to the design; ± 100 mm of adjustment in 50 mm increments is included. Height adjustment is not included in the 200 mm length extension tube.

EXTENSION TUBES - HTS1

Model	Weight kg (lb)	Height mm (in)	Ordering No.
HTS1			
200 mm	1 (2.2)	200 (7.9)	8439 5001 11
400 mm	2.1 (4.6)	400 (15.7)	8439 5001 12
600 mm	3.2 (7.1)	600 (23.6)	8439 5001 13
800 mm	4.3 (9.5)	800 (31.5)	8439 5001 14
1000 mm	5.4 (11.9)	1000 (39.4)	8439 5001 15
1200 mm	6.5 (14.3)	1200 (47.2)	8439 5001 16
1400 mm	7.6 (16.8)	1400 (55.1)	8439 5001 17
1600 mm	8.7 (19.2)	1600 (63)	8439 5001 18
1800 mm	9.8 (21.6)	1800 (70.9)	8439 5001 19
2000 mm	10.9 (24)	2000 (78.7)	8439 5001 20



EXTENSION TUBES - HTS2

Model	Weight kg (lb)	Height mm (in)	Ordering No.
HTS2			
200 mm	0.4 (0.9)	200 (7.9)	8439 5002 11
400 mm	0.8 (1.8)	400 (15.7)	8439 5002 12
600 mm	1.0 (2.2)	600 (23.6)	8439 5002 13
800 mm	3.8 (8.4)	800 (31.5)	8439 5002 14
1000 mm	4.8 (10.6)	1000 (39.4)	8439 5002 15
1200 mm	5.8 (12.8)	1200 (47.2)	8439 5002 16
1400 mm	6.7 (14.8)	1400 (55.1)	8439 5002 17
1600 mm	7.5 (16.5)	1600 (63)	8439 5002 18
1800 mm	8.4 (18.5)	1800 (70.9)	8439 5002 19
2000 mm	9.3 (20.5)	2000 (78.7)	8439 5002 20

Reaction Suspension Systems - HTS - trolley carriages

The Trolley Carriage supports the HTS assembly and provides linear travel capability within a suspension rail system. Two types of carriages are available: 1-Trolley or 2-Trolley. The 1-Trolley Carriage is available in a Standard or Compact version and the 2-Trolley Carriage is available in Standard, Compact, or Compact-Fixed version.

The carriage type selection is based on the torque level of the system. The carriage version selection is based on the height constraints of the application.

Carriages include integrated trolleys as a part of the standard assembly with trolley types from a variety of common rail manufacturers. Assemblies are also available without integrated trolleys.

TROLLEY CARRIAGE TYPES

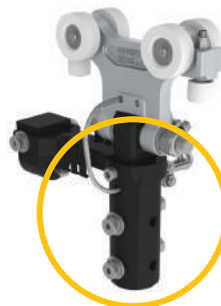
1-TROLLEY CARRIAGE

- ▶ Available carriage versions: Standard or Compact
- ▶ Used with HTS1 only - limited to certain rail manufacturers
- ▶ 70 Nm maximum vertical torque

2-TROLLEY CARRIAGE

- ▶ Available carriage versions: Standard, Compact, or Compact-Fixed
- ▶ Used with HTS1 and HTS2

All carriages are available without trolley versions



Standard
1-Trolley Carriage



Compact
1-Trolley Carriage

TROLLEY CARRIAGE VERSIONS

STANDARD

- ▶ Includes Upper Pivot
- ▶ Extension tube required

COMPACT - FIXED

- ▶ No Upper Pivot included (Fixed mounting)
- ▶ Mounts directly to the torque reaction housing – no extension tube required

COMPACT

- ▶ Includes Upper Pivot
- ▶ Mounts directly to the torque reaction housing – no extension tube required



Compact
2-Trolley Carriage



Standard
2-Trolley Carriage



Compact - Fixed
2-Trolley Carriage

Reaction Suspension Systems - HTS - trolley carriages

1-TROLLEY CARRIAGE – HTS1

Model	Weight kg (lb)	Ordering No.
Standard		
IR Zimmerman ZRA1	4.8 (10.6)	8439 5003 01
IR Zimmerman ZRA2	5 (11)	8439 5003 02
Knight Industries RAD4100	4.2 (9.3)	8439 5003 03
Knight Industries RAD7500	5.3 (11.7)	8439 5003 04
Unified Industries ETA-4	4.7 (10.4)	8439 5003 05
Unified Industries ETA-8	5.5 (12.1)	8439 5003 06

Model	Weight kg (lb)	Ordering No.
Compact		
IR Zimmerman ZRA1	4.2 (9.3)	8439 5007 61
IR Zimmerman ZRA2	4 (8.8)	8439 5007 62
Knight Industries RAD4100	3.4 (7.5)	8439 5007 63
Knight Industries RAD7500	4.5 (9.9)	8439 5007 64
Unified Industries ETA-4	3.9 (8.6)	8439 5007 65
Unified Industries ETA-8	4.7 (10.4)	8439 5007 66

2-TROLLEY CARRIAGE – HTS1

Model	Weight kg (lb)	Ordering No.
Standard		
Demag KBK I Ergo	8.6 (19)	8439 5003 21
Demag KBK II Ergo	18.2 (40.1)	8439 5003 22
Düren DR I	8.4 (18.5)	8439 5003 23
Düren DR II	8.2 (18.1)	8439 5003 24
eepos S/M/L	8.3 (18.3)	8439 5003 25
Gorbel AL 1000	10.2 (22.5)	8439 5003 26
Gorbel AL 2000	10.7 (23.6)	8439 5003 27
Helm/Metreel 400	9.3 (20.5)	8439 5003 28
Helm/Metreel 500	11.5 (25.4)	8439 5003 29
Helm/Metreel 600	13.9 (30.6)	8439 5003 30
IR Zimmerman ZRA1	9.7 (21.4)	8439 5003 31
IR Zimmerman ZRA2	13.2 (29.1)	8439 5003 32
Knight Industries RAD4100	8.3 (18.3)	8439 5003 33
Knight Industries RAD7500	10.6 (23.4)	8439 5003 34
Movomech AHB1	10.5 (23.1)	8439 5003 35
Movomech AHB3	10.9 (24)	8439 5003 36
Unified Industries ETA-4	8.6 (19)	8439 5003 37
Unified Industries ETA-8	10.3 (22.7)	8439 5003 38
Wampfler C50	7.8 (17.2)	8439 5003 39
Wampfler C63	8.4 (18.5)	8439 5003 40
Wampfler C80	8.4 (18.5)	8439 5003 41
Unified Industries MT-250-B-325	10.1 (22.3)	8439 5003 42

Reaction Suspension Systems - HTS - trolley carriages

2-TROLLEY CARRIAGE – HTS2

Model	Weight kg (lb)	Ordering No.
Standard		
Demag KBK I Ergo	8.8 (19.4)	8439 5003 81
Demag KBK II Ergo	18.4 (40.6)	8439 5003 82
Düren DR I	8.5 (18.7)	8439 5003 83
Düren DR II	8.4 (18.5)	8439 5003 84
eepos S/M/L	8.5 (18.7)	8439 5003 85
Gorbel AL 1000	10.4 (22.9)	8439 5003 86
Gorbel AL 2000	10.8 (23.8)	8439 5003 87
Helm/Metreel 400	9.5 (20.9)	8439 5003 88
Helm/Metreel 500	11.6 (25.6)	8439 5003 89
Helm/Metreel 600	14.1 (31.1)	8439 5003 90
IR Zimmerman ZRA1	9.8 (21.6)	8439 5003 91
IR Zimmerman ZRA2	13.2 (29.1)	8439 5003 92
Knight Industries RAD4100	8.5 (18.7)	8439 5003 93
Knight Industries RAD7500	10.8 (23.8)	8439 5003 94
Movomech AHB1	10.6 (23.4)	8439 5003 95
Movomech AHB3	11.1 (24.5)	8439 5003 96
Unified Industries ETA-4	8.7 (19.2)	8439 5003 97
Unified Industries ETA-8	10.4 (22.9)	8439 5003 98
Wampfler C50	8.0 (17.6)	8439 5003 99
Wampfler C63	8.5 (18.7)	8439 5004 00
Wampfler C80	8.5 (18.7)	8439 5004 01
Unified Industries MT-250-B-325	10.2 (22.5)	8439 5004 02

Reaction Suspension Systems - HTS - trolley carriages

2-TROLLEY CARRIAGE – HTS1

Model	Weight kg (lb)	Ordering No.
Compact		
Demag KBK I Ergo	8.6 (19)	8439 5007 71
Demag KBK II Ergo	18.2 (40.1)	8439 5007 72
Düren DR I	8.4 (18.5)	8439 5007 73
Düren DR II	8.2 (18.1)	8439 5007 74
eepos S/M/L	8.3 (18.3)	8439 5007 75
Gorbel AL 1000	10.2 (22.5)	8439 5007 76
Gorbel AL 2000	10.7 (23.6)	8439 5007 77
Helm/Metreel 400	9.3 (20.5)	8439 5007 78
Helm/Metreel 500	11.5 (25.4)	8439 5007 79
Helm/Metreel 600	13.9 (30.6)	8439 5007 80
IR Zimmerman ZRA1	9.7 (21.4)	8439 5007 81
IR Zimmerman ZRA2	13.2 (29.1)	8439 5007 82
Knight Industries RAD4100	8.3 (18.3)	8439 5007 83
Knight Industries RAD7500	10.6 (23.4)	8439 5007 84
Movomech AHB1	10.5 (23.1)	8439 5007 85
Movomech AHB3	10.9 (24)	8439 5007 86
Unified Industries ETA-4	8.6 (19)	8439 5007 87
Unified Industries ETA-8	10.3 (22.7)	8439 5007 88
Wampfler C50	7.8 (17.2)	8439 5007 89
Wampfler C63	8.4 (18.5)	8439 5007 90
Wampfler C80	8.4 (18.5)	8439 5007 91
Unified Industries MT-250-B-325	10.1 (22.3)	8439 5007 92

Reaction Suspension Systems - HTS - trolley carriages

2-TROLLEY CARRIAGE – HTS2

Model	Weight kg (lb)	Ordering No.
Compact		
Demag KBK I Ergo	8.8 (19.4)	8439 5008 01
Demag KBK II Ergo	18.4 (40.6)	8439 5008 02
Düren DR I	8.5 (18.7)	8439 5008 03
Düren DR II	8.4 (18.5)	8439 5008 04
eepos S/M/L	8.5 (18.7)	8439 5008 05
Gorbel AL 1000	10.4 (22.9)	8439 5008 06
Gorbel AL 2000	10.8 (23.8)	8439 5008 07
Helm/Metreel 400	9.5 (20.9)	8439 5008 08
Helm/Metreel 500	11.6 (25.6)	8439 5008 09
Helm/Metreel 600	14.1 (31.1)	8439 5008 10
IR Zimmerman ZRA1	9.8 (21.6)	8439 5008 11
IR Zimmerman ZRA2	13.2 (29.1)	8439 5008 12
Knight Industries RAD4100	8.5 (18.7)	8439 5008 13
Knight Industries RAD7500	10.8 (23.8)	8439 5008 14
Movomech AHB1	10.6 (23.4)	8439 5008 15
Movomech AHB3	11.1 (24.5)	8439 5008 16
Unified Industries ETA-4	8.7 (19.2)	8439 5008 17
Unified Industries ETA-8	10.4 (22.9)	8439 5008 18
Wampfler C50	8.0 (17.6)	8439 5008 19
Wampfler C63	8.5 (18.7)	8439 5008 20
Wampfler C80	8.5 (18.7)	8439 5008 21
Unified Industries MT-250-B-325	10.2 (22.5)	8439 5008 22

Reaction Suspension Systems - HTS - trolley carriages

2-TROLLEY CARRIAGE – HTS1

Model	Weight kg (lb)	Ordering No.
Compact - Fixed		
Demag KBK I Ergo	7.6 (16.8)	8439 5008 41
Demag KBK II Ergo	17.2 (37.9)	8439 5008 42
Düren DR I	7.4 (16.3)	8439 5008 43
Düren DR II	7.2 (15.9)	8439 5008 44
eepos S/M/L	7.3 (16.1)	8439 5008 45
Gorbel AL 1000	9.2 (20.3)	8439 5008 46
Gorbel AL 2000	9.7 (21.4)	8439 5008 47
Helm/Metreel 400	8.3 (18.3)	8439 5008 48
Helm/Metreel 500	10.5 (23.1)	8439 5008 49
Helm/Metreel 600	12.9 (28.4)	8439 5008 50
IR Zimmerman ZRA1	8.7 (19.2)	8439 5008 51
IR Zimmerman ZRA2	12.2 (26.9)	8439 5008 52
Knight Industries RAD4100	7.3 (16.1)	8439 5008 53
Knight Industries RAD7500	9.6 (21.2)	8439 5008 54
Movomech AHB1	9.5 (20.9)	8439 5008 55
Movomech AHB3	9.9 (21.8)	8439 5008 56
Unified Industries ETA-4	7.6 (16.8)	8439 5008 57
Unified Industries ETA-8	9.3 (20.5)	8439 5008 58
Wampfler C50	6.8 (15)	8439 5008 59
Wampfler C63	7.4 (16.3)	8439 5008 60
Wampfler C80	7.4 (16.3)	8439 5008 61
Unified Industries MT-250-B-325	9.1 (20.1)	8439 5008 62

Reaction Suspension Systems - HTS - trolley carriages

2-TROLLEY CARRIAGE – HTS2

Model	Weight kg (lb)	Ordering Number
Compact - Fixed		
Demag KBK I Ergo	7.8 (17.2)	8439 5008 71
Demag KBK II Ergo	17.4 (38.4)	8439 5008 72
Düren DR I	7.5 (16.5)	8439 5008 73
Düren DR II	7.4 (16.3)	8439 5008 74
eepos S/M/L	7.5 (16.5)	8439 5008 75
Gorbel AL 1000	9.4 (20.7)	8439 5008 76
Gorbel AL 2000	9.8 (21.6)	8439 5008 77
Helm/Metreel 400	8.5 (18.7)	8439 5008 78
Helm/Metreel 500	10.6 (23.4)	8439 5008 79
Helm/Metreel 600	13.1 (28.9)	8439 5008 80
IR Zimmerman ZRA1	8.8 (19.4)	8439 5008 81
IR Zimmerman ZRA2	12.2 (26.9)	8439 5008 82
Knight Industries RAD4100	7.5 (16.5)	8439 5008 83
Knight Industries RAD7500	9.8 (21.6)	8439 5008 84
Movomech AHB1	9.6 (21.2)	8439 5008 85
Movomech AHB3	10.1 (22.3)	8439 5008 86
Unified Industries ETA-4	7.7 (17)	8439 5008 87
Unified Industries ETA-8	9.4 (20.7)	8439 5008 88
Wampfler C50	7 (15.4)	8439 5008 89
Wampfler C63	7.5 (16.5)	8439 5008 90
Wampfler C80	7.5 (16.5)	8439 5008 91
Unified Industries MT-250-B-325	9.2 (20.3)	8439 5008 92

Reaction Suspension Systems - HTS - tool holders

Reaction Suspension System - HTS supports a series of standard tool holders that are designed to enable various tool and position configurations. There are four standard tool holder types, each designed to adapt to different tool type and size. All tool holders mount directly to the lower clevis of the suspension.

FIXED PLATE - STRAIGHT

The Fixed Plate Straight Tool Holder is configurable for horizontal or vertical tightening orientations. It mounts rigidly to the lower clevis and has provisions to mount two handle mounting assemblies.

FIXED CLAMP - ANGLE

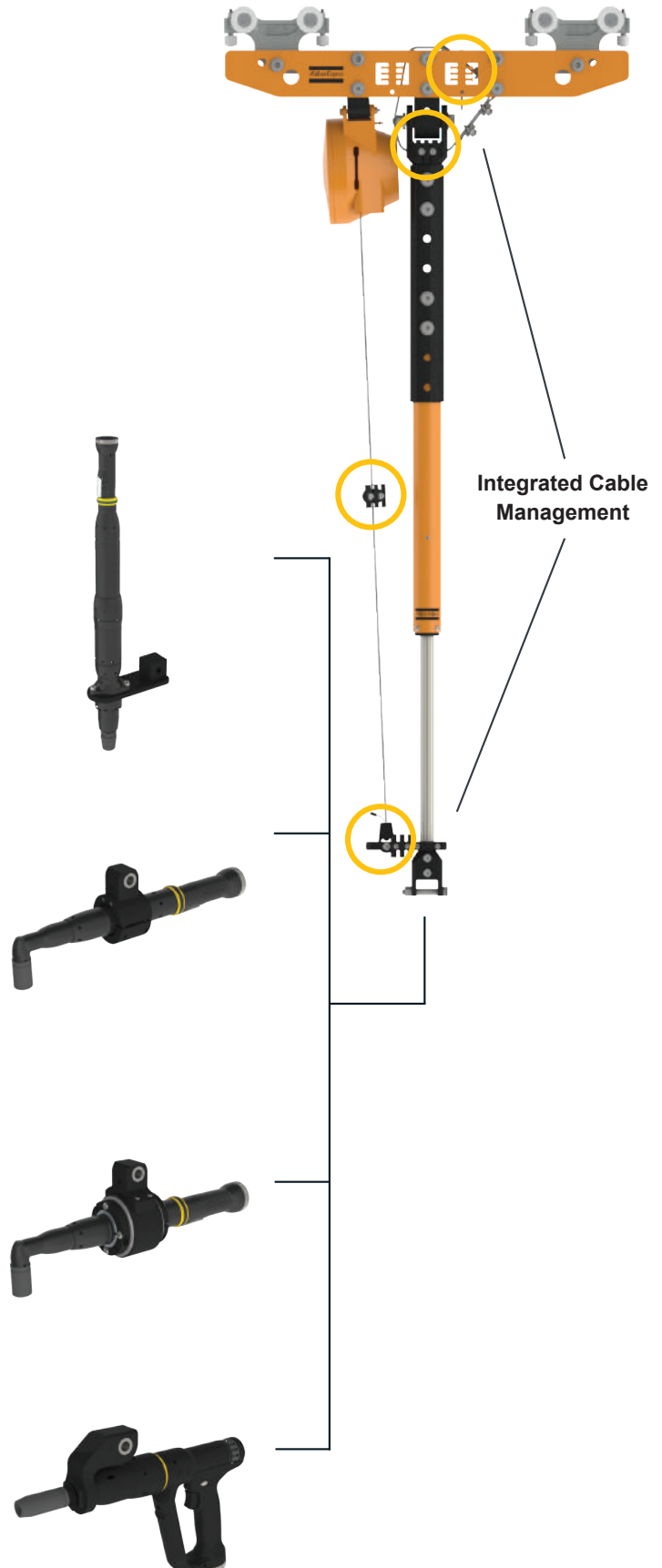
The Fixed Clamp Angle Tool Holder can be used for horizontal or vertical applications. The tool holder clamps to the grip area of an angle tool. It has a pivot for tool angle compliance and can be locked if fixed mounting is desired. The tool body can be configured either parallel or perpendicular to the pivot axis and Flanged Bushings are used to increase performance and longevity of the tool.

ROTATING BODY - ANGLE

The Rotating Body Angle Tool Holder clamps to the grip area of an angle tool. It allows the tool to rotate up to 345° to accommodate horizontal and vertical tightening orientations. Adjustable rotational stops are included to limit tool rotation and Flanged Bushings are used to increase performance and longevity of the tool. It also has a pivot for tool angle compliance and can be locked if fixed mounting is desired.

FIXED PLATE - PISTOL

The Fixed Plate Pistol Tool Holder is designed for horizontal tightening orientations utilizing a pistol tool. It has a pivot for tool angle compliance and can be locked if fixed mounting is desired. Flanged Bushings are also used to increase performance and longevity of the tool.



Reaction Suspension Systems - HTS - tool holder features



LOWER PIVOT FIXING ASSEMBLY

A Lower Pivot Fixing Assembly is used to lock the lower pivot. This can be easily removed for applications where a pivot is required for compliance.

CLEVIS/TOOL HOLDER INTERFACE

The tool holders mount to the Lower Clevis and can be easily integrated.



FLANGED BUSHINGS

Fixed clamp and rotating body tool holders include Flanged Bushings, which increase performance and longevity.

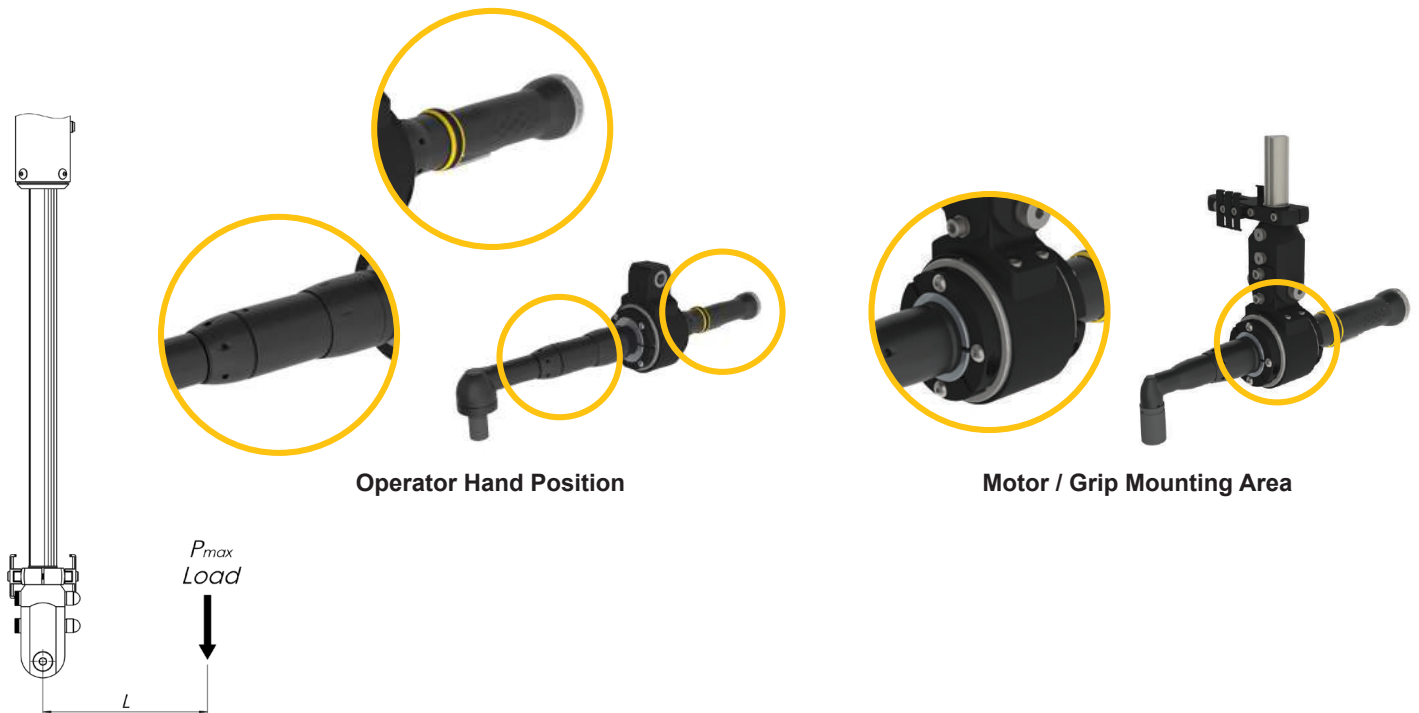
Reaction Suspension Systems - HTS - tool holder mounting

Mounting to the motor/grip area provides the largest clearance between fastening and tool mounting (motor/grip) areas. The operator holds the tool, utilizing the gear area and the trigger handle. Generally, this hand positioning is more ergonomic for the operator.

Maximum offset load is 10 kg (22 lbs) with center of mass at a distance of 100 mm (4 in) from shaft center axis.

The weight of the tool, tool holder, socket, extensions, attachments, etc. should be used to determine the maximum load.

*If $L > 100$ mm, $P_{max} = 10 \text{ kg} * 100 \text{ mm} / L \text{ mm}$
 $1 \text{ kg} = 2.2 \text{ lbs}$*



Reaction Suspension Systems - HTS - tool holders

TOOL HOLDERS – HTS1

HTS1 Model	Torque Range (Nm)	Mounting Type	Weight kg (lb)	Height mm (in)	Fixed Plate - Straight	Fixed Clamp - Angle	Rotating - Body Angle	Fixed Plate - Pistol
Right Angle - Mounting Type								
ETD ST31	5 - 20	M - 39	0.5 (1.1)	55 (2.2)	-	8439 5005 21	-	-
	5 - 20	M - 39	1.2 (2.7)	70 (2.8)	-	-	8439 5005 41	-
ETD ST61	28 - 70	M - 39	0.5 (1.1)	55 (2.2)	-	8439 5005 21	-	-
	28 - 70	M - 39	1.2 (2.7)	70 (2.8)	-	-	8439 5005 41	-
	100 - 200	M - 39	0.5 (1.1)	55 (2.2)	-	8439 5005 21	-	-
	100 - 200	M - 39	1.2 (2.7)	70 (2.8)	-	-	8439 5005 41	-
ETV ST81	50 - 70	M - 43	0.5 (1.1)	55 (2.2)	-	8439 5005 22	-	-
	50 - 70	M - 43	1.2 (2.7)	70 (2.8)	-	-	8439 5005 42	-
	100 - 200	M - 43	0.5 (1.1)	55 (2.2)	-	8439 5005 22	-	-
	100 - 200	M - 43	1.2 (2.7)	70 (2.8)	-	-	8439 5005 42	-
ETV ST101	100 - 200	M - 54.4	0.8 (1.8)	66 (2.6)	-	8439 5005 23	-	-
Straight - Mounting Type								
ETD ST31	5 - 10	Dia 24 mm	0.6 (1.3)	17 (0.7)	8439 5005 01	-	-	-
ETD ST61	15 - 30	Dia 24 mm	0.6 (1.3)	17 (0.7)	8439 5005 01	-	-	-
	50 - 90	Spline 2	0.6 (1.3)	17 (0.7)	8439 5005 02	-	-	-
ETD ST61	10 - 30	Spline 2	0.6 (1.3)	17 (0.7)	8439 5005 02	-	-	-
ETD ST61 Telescopic	50 - 120	Spline 3	0.6 (1.3)	17 (0.7)	8439 5005 03	-	-	-
ETD ST81	30	Dia 24 mm	0.6 (1.3)	17 (0.7)	8439 5005 01	-	-	-
	50 - 120	Spline 2	0.6 (1.3)	17 (0.7)	8439 5005 02	-	-	-
ETD ST81 Telescopic	30 - 50	Spline 2	0.6 (1.3)	17 (0.7)	8439 5005 02	-	-	-
	70 - 120	Spline 3	0.6 (1.3)	17 (0.7)	8439 5005 03	-	-	-
ETD ST101	100 - 120	Flange (2) M8	0.8 (1.8)	17 (0.7)	8439 5005 04	-	-	-
	150 - 200	Flange (2) M10	0.8 (1.8)	17 (0.7)	8439 5005 05	-	-	-
Pistol - Mounting Type								
ETP ST Revo	200	Spline 3	-	-	-	-	-	-
ETD STR61	20 - 30	Dia 24 mm	0.2 (0.5)	50 (2)	-	-	-	8439 5005 61
	50 - 120	Spline 2	0.3 (0.6)	50 (2)	-	-	-	8439 5005 62

Reaction Suspension Systems - HTS - tool holders

TOOL HOLDERS – HTS2

HTS2 Model	Torque Range (Nm)	Mounting Type	Weight kg (lb)	Height mm (in)	Fixed Plate - Straight	Fixed Clamp - Angle	Rotating - Body Angle	Fixed Plate - Pistol
Right Angle - Mounting Type								
ETD ST31	5 - 20	M - 39	0.9 (1.9)	65 (2.6)	-	8439 5005 91	-	-
	5 - 20	M - 39	2.5 (5.5)	90 (3.5)	-	-	8439 5006 11	-
ETD ST61	28 - 70	M - 39	0.9 (1.9)	65 (2.6)	-	8439 5005 91	-	-
	28 - 70	M - 39	2.5 (5.5)	90 (3.5)	-	-	8439 5006 11	-
	100 - 200	M - 39	0.9 (1.9)	65 (2.6)	-	8439 5005 91	-	-
	100 - 200	M - 39	2.5 (5.5)	90 (3.5)	-	-	8439 5006 11	-
ETV ST81	50 - 70	M - 43	0.9 (1.9)	65 (2.6)	-	8439 5005 92	-	-
	50 - 70	M - 43	2.4 (5.3)	90 (3.5)	-	-	8439 5006 12	-
	100 - 200	M - 43	0.9 (1.9)	65 (2.6)	-	8439 5005 92	-	-
	100 - 200	M - 43	2.4 (5.3)	90 (3.5)	-	-	8439 5006 12	-
ETV ST101	100 - 200	M - 54.4	1 (2.2)	70 (2.8)	-	8439 5005 93	-	-
	100 - 200	M - 54.4	2.2 (4.8)	90 (3.5)	-	-	8439 5006 13	-
Straight - Mounting Type								
ETD ST31	5 - 10	Dia 24 mm	-	-	-	-	-	-
ETD ST61	15 - 30	Dia 24 mm	-	-	-	-	-	-
	50 - 90	Spline 2	1.3 (2.9)	22 (0.9)	8439 5005 81	-	-	-
ETD ST61 Telescopic	10 - 30	Spline 2	1.3 (2.9)	22 (0.9)	8439 5005 81	-	-	-
	50 - 120	Spline 3	1.3 (2.9)	22 (0.9)	8439 5005 82	-	-	-
ETD ST81	30	Dia 24 mm	-	-	-	-	-	-
	50 - 120	Spline 2	1.3 (2.9)	22 (0.9)	8439 5005 81	-	-	-
ETD ST81 Telescopic	30 - 50	Spline 2	1.3 (2.9)	22 (0.9)	8439 5005 81	-	-	-
	70 - 120	Spline 3	1.3 (2.9)	22 (0.9)	8439 5005 82	-	-	-
ETD ST101	100 - 120	Flange (2) M8	1.3 (2.9)	22 (0.9)	8439 5005 83	-	-	-
	150 - 200	Flange (2) M10	1.2 (2.6)	22 (0.9)	8439 5005 84	-	-	-
Pistol - Mounting Type								
ETP ST Revo	200	Spline 3	0.4 (0.8)	60 (2.4)	-	-	-	8439 5006 32
ETD STR61	20 - 30	Dia 24 mm	-	-	-	-	-	-
	50 - 120	Spline 2	0.4 (0.8)	50 (2)	-	-	-	8439 5006 31



Fixed Clamp - Angle



Rotating Body - Angle



Fixed Plate - Pistol

Reaction Suspension Systems - HTS - optional accessories

Standard accessories are available to enhance the system configuration.



HANDLE MOUNTING ASSEMBLY

The Handle Mounting Assembly mounts directly to predrilled threaded holes in a Fixed Plate Straight Tool Holder. The handle is separate from the assembly.



UPPER PIVOT FIXING ASSEMBLY

The Upper Pivot Fixing Assembly is used to lock the upper pivot. It is ideal for vertical applications using a Fixed Plate Straight Tool Holder or applications with bridge rails.



CABLE CLAMP

The Cable Clamp secures the cables to the balancer cable. One (1) Cable Clamp is included with the main assembly.

ACCESSORIES – HTS1 / HTS2

Model	Weight kg (lb)	Ordering No.
Cable Clamp	0.1 (0.1)	8439 5006 50
Lower Pivot Fixing Assembly - HTS1	0.1 (0.2)	8439 5006 51
Lower Pivot Fixing Assembly - HTS2	0.2 (0.4)	8439 5006 52
Upper Pivot Fixing Assembly - HTS1/HTS2	0.6 (1.3)	8439 5006 53
Handle Mounting Assembly	0.3 (0.7)	8439 5006 54
Spring Balancer Cable Extension - 1 m	0.1 (0.2)	8439 5006 55
Spring Balancer Cable Extension - 2 m	0.1 (0.2)	8439 5006 56
Safety Cable	1 (2.2)	8439 5006 57

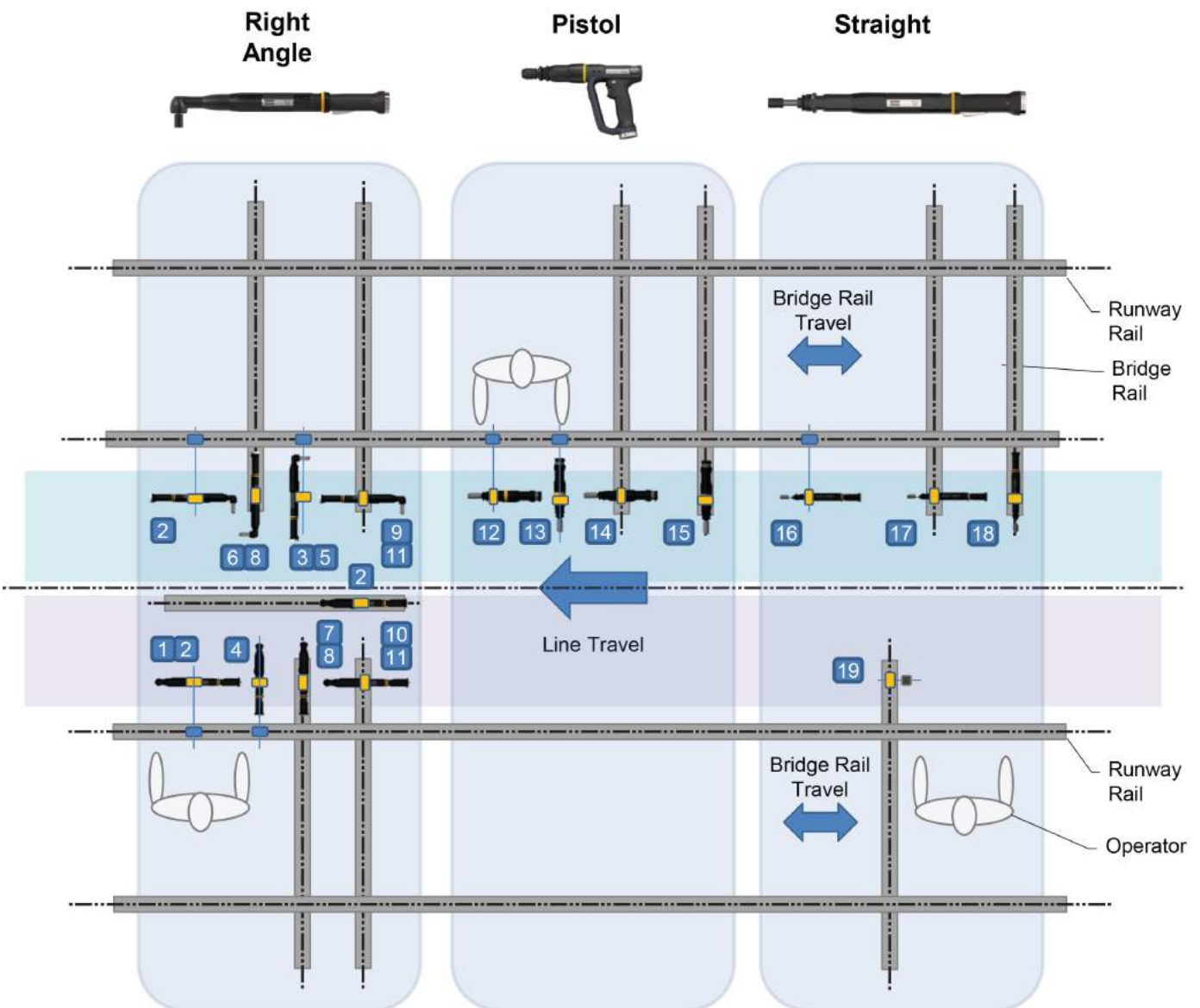
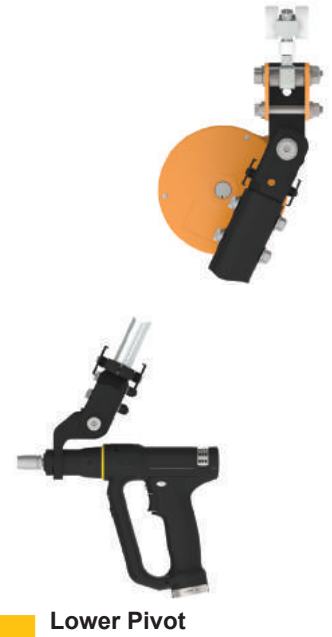
Reaction Suspension Systems - HTS - configuration guide

Upper Pivot

The diagram below represents different tool configurations within an assembly line. Each configuration is identified by a configuration number corresponding to the following table. The configurations are dependent on the type of tool and the tightening orientation.

The diagram shows three areas (from left to right) representing the tool type: right angle, pistol or straight and two portions (upper and lower) representing the tool tightening orientation: horizontal or vertical.

The upper portion of the diagram represents tools in the horizontal tightening orientation – the lower portion represents tools in the vertical tightening orientation.



Reaction Suspension Systems - HTS - configuration guide

Configuration	Tightening Orientation	Tool Rail Type	Rail Orientation to Line Travel	Position of Lower Pivot During Tightening	Tool Body Orientation to Rail	Lower Pivot	Single Trolley Carriage	Tool Holder Type
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Right Angle



1	Vertical	Runway	Parallel	Offset from Rail	Parallel	Non-fixed //	✓	Fixed Clamp - Angle
2	Horizontal / Vertical	Runway	Parallel	Offset from Rail	Parallel	Fixed +		Rotating Body - Angle
3	Horizontal	Runway	Parallel	Offset from Rail	Perpendicular (Tipped on Angle)	Fixed ⊥	✓	Fixed Clamp - Angle
4	Vertical	Runway	Parallel	Offset from Rail	Perpendicular	Non-fixed ⊥	✓	Fixed Clamp - Angle
5	Horizontal (2 x 180°)	Runway	Parallel	Offset from Rail	Perpendicular (Tipped on Angle)	Fixed	✓	Rotating Body - Angle
6	Horizontal	Bridge	Perpendicular	Inline with Rail	Parallel	Fixed //		Fixed Clamp - Angle
7	Vertical	Bridge	Perpendicular	Inline with Rail	Parallel	Fixed //	✓	Fixed Clamp - Angle
8	Horizontal / Vertical	Bridge	Perpendicular	Inline with Rail	Parallel	Fixed		Rotating Body - Angle
9	Horizontal	Bridge	Perpendicular	Inline with Rail	Perpendicular	Fixed ⊥	✓	Fixed Clamp - Angle
10	Vertical	Bridge	Perpendicular	Inline with Rail	Perpendicular	Fixed ⊥	✓	Fixed Clamp - Angle
11	Horizontal / Vertical	Bridge	Perpendicular	Inline with Rail	Perpendicular	Fixed	✓	Rotating Body - Angle

Pistol



12	Horizontal	Runway	Parallel	Offset from Rail	Parallel	Non-fixed		Fixed Plate - Pistol
13	Horizontal	Runway	Parallel	Offset from Rail	Perpendicular	Non-fixed		Fixed Plate - Pistol
14	Horizontal	Bridge	Perpendicular	Inline with Rail	Perpendicular	Non-fixed		Fixed Plate - Pistol
15	Horizontal	Bridge	Perpendicular	Inline with Rail	Parallel	Fixed +	✓	Fixed Plate - Pistol

Straight



16	Horizontal	Runway	Parallel	Offset from Rail	Parallel	Fixed +	✓	Fixed Plate - Straight
17	Horizontal	Bridge	Perpendicular	Inline with Rail	Perpendicular	Fixed		Fixed Plate - Straight
18	Horizontal	Bridge	Perpendicular	Inline with Rail	Parallel	Fixed +	✓	Fixed Plate - Straight
19	Vertical	Bridge	Perpendicular	Inline with Rail	Perpendicular (Vertically)	Fixed	✓	Fixed Plate - Straight

// Lower pivot parallel to tool body
 ⊥ Lower pivot perpendicular to tool body
 + Upper and lower pivots are perpendicular

The following table corresponds with the previous diagram and shows the relationship between the tool tightening orientation, tool position, rail type, and rail orientation within an assembly station. It also provides information regarding the type of tool holder, pivot, and trolley based on the configuration.

Reaction Suspension Systems - HTS

- selection guide

HTS1 / HTS2 TIGHTENING ORIENTATION SELECTION GUIDE

Vertical Tightening Orientation									
Travel		HTS1					HTS2		
mm	in	Torque (Nm)							
		70	90	100	120	150	180	200	250
300	11.8								
450	17.7								
600	23.6								
750	29.5								
900	35.4								
1050	41.3								
1200	47.2								

Horizontal Tightening Orientation									
Travel		HTS1					HTS2		
mm	in	Torque (Nm)							
		70	90	100	120	150	180	200	250
300	11.8								
450	17.7								
600	23.6								
750	29.5								
900	35.4								
1050	41.3								
1200	47.2								

For vertical applications:

- Maximum torque for a single trolley carriage is 70 Nm.
- Bridge rails should use fixed or rigid end trucks to keep rail stable.

A bridge rail should be used for applications using Compact-Fixed HTS versions.

Torque tube suspension

Torque Tubes are designed for single or multi-spindle hand tool or fixtured nutrunner assemblies.

FEATURES

- ▶ Pneumatic cylinder or spring balancer for lift assist
- ▶ Atlas Copco standard colors: Yellow and Black
- ▶ Integrated extension tube - for height adjustment
- ▶ All bolted joints are safety wired or with Nylock nut
- ▶ Joints are dual welded, where feasible, for added robustness

OPTIONS

- ▶ Vertical travel
- ▶ Extension tubes for additional height
- ▶ Trolley carriage - trolley/rail type to be specified
- ▶ Controls: Balance or Hoist
- ▶ Tool holders for Tensor, ETX, and QST
- ▶ Vertical, horizontal, angular applications
- ▶ Inline, right angle, pistol grip tools
- ▶ Rotate tool holders with position lock
- ▶ Axial rotation

NOTES

- ▶ A line pressure of 4.1 bar (60 PSI) minimum is required to achieve the stated balancing capacities
- ▶ A service shut-off valve, 40 μm filter minimum (5 μm recommended), and pressure regulator required - by customer
- ▶ PC = Pneumatic Cylinder
- ▶ SB = Spring Balancer



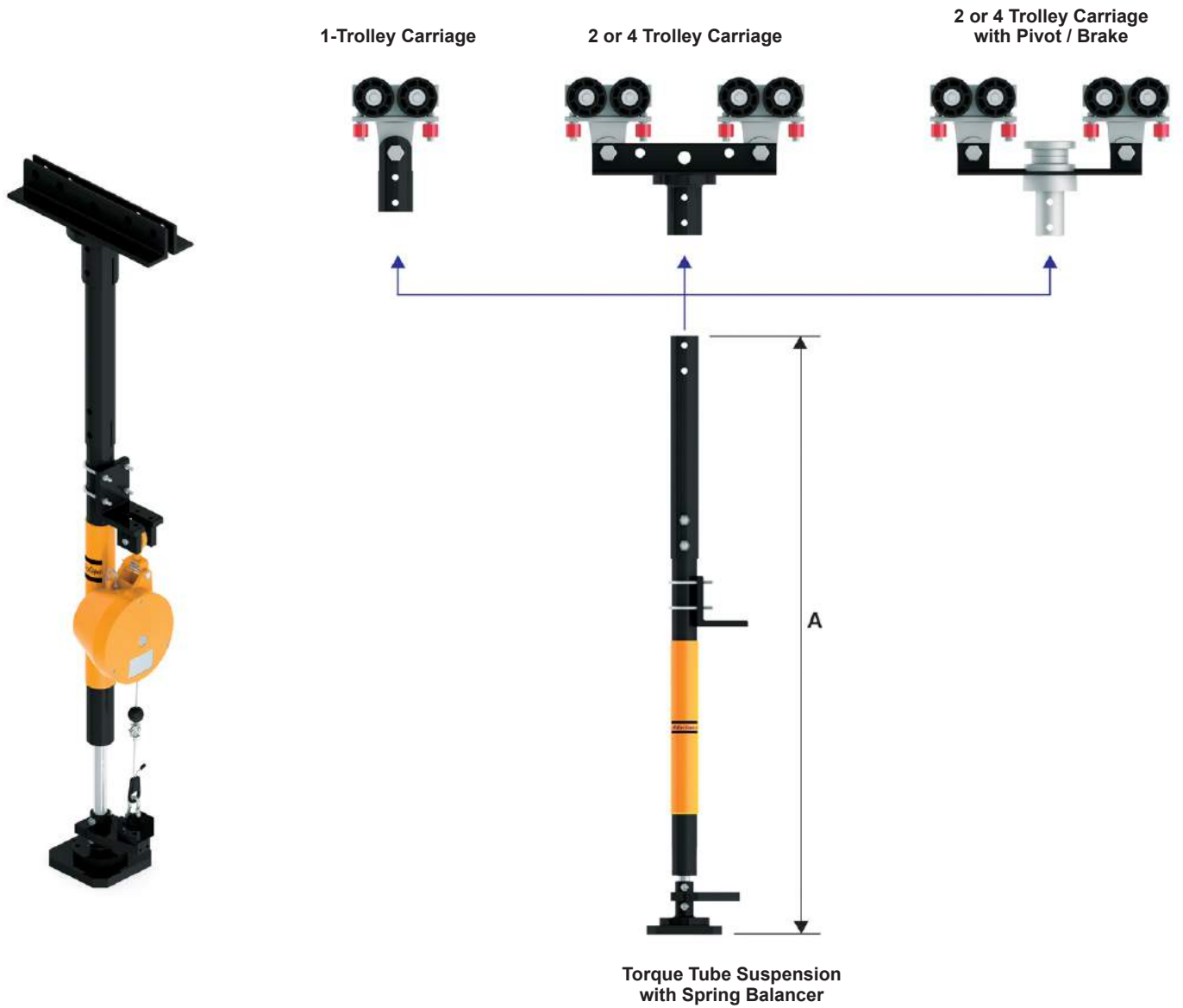
Pneumatic Cylinder



Spring Balancer

Torque tube suspension - spring balancers

RANGE AND SELECTION GUIDE



Torque tube suspension - spring balancers

RANGE AND SELECTION GUIDE

RANGE - TORQUE TUBE SUSPENSION - SPRING BALANCERS

Description	Torque Capacity Nm	Lifting Capacity		Vertical Travel				
		Range kg (lb)	mm (in) 152 (6)	mm (in) 305 (12)	mm (in) 457 (18)	mm (in) 610 (24)	mm (in) 762 (30)	mm (in) 914 (36)
Torque Tube - SB - 150 Nm	150	2.3 - 94.3 (5 - 208)	✓	✓	✓	✓	-	-
Torque Tube - SB - 250 Nm	250	5 - 140.5 (11 - 310)	✓	✓	✓	✓	-	-
Torque Tube - SB - 500 Nm	500	11.3 - 284.7 (25 - 628)	✓	✓	✓	✓	✓	✓
Torque Tube - SB - 1000 Nm	1000	15 - 272.9 (33 - 602)	✓	✓	✓	✓	✓	✓

SELECTION GUIDE - TORQUE TUBE SUSPENSIONS - SPRING BALANCERS

Description	1-Trolley Carriage	2-Trolley Carriage	4-Trolley Carriage	Hand Tool Application	Multi-Spindle Application
Torque Tube - SB - 150 Nm	✓	✓	-	✓	-
Torque Tube - SB - 250 Nm	-	✓	✓	✓	✓
Torque Tube - SB - 500 Nm	-	✓	✓	✓	✓
Torque Tube - SB - 1000 Nm	-	✓	✓	✓	✓

Torque tube suspension - spring balancers

150 NM TORQUE TUBE - SPRING BALANCERS - 6" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-12	WP 30-12	2.3 (5) - 6.3 (14)	9040 7210 31
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-20	WP 30-20	5.4 (12) - 10.4 (23)	9040 7210 32
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-30	WP 30-30	9.5 (21) - 13.1 (29)	9040 7210 33
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-45	WP 30-45	12.2 (27) - 17.2 (38)	9040 7210 34
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-60	WP 30-60	8.2 (18) - 16.3 (36)	9040 7210 35
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-75	WP 30-75	16.3 (36) - 26.3 (58)	9040 7210 36
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 30-90	WP 30-90	26.3 (58) - 41.3 (91)	9040 7210 37
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 40-100	WP 40-100	41.3 (91) - 56.2 (124)	9040 7210 38
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 40-115	WP 40-115	56.2 (124) - 71.2 (157)	9040 7210 39
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 40-130	WP 40-130	71.2 (157) - 86.1 (190)	9040 7210 40
Torque Tube Suspension - SB - 150 Nm - 6" Travel - WP 40-140	WP 40-140	86.1 (190) - 96.1 (212)	9040 7210 41

150 NM TORQUE TUBE - SPRING BALANCERS - 12" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-12	WP 30-12	1.4 (3) - 5.4 (12)	9040 7210 51
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-20	WP 30-20	4.5 (10) - 9.5 (21)	9040 7210 52
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-30	WP 30-30	8.6 (19) - 12.2 (27)	9040 7210 53
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-45	WP 30-45	11.3 (25) - 16.3 (36)	9040 7210 54
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-60	WP 30-60	7.3 (16) - 15.4 (34)	9040 7210 55
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-75	WP 30-75	15.4 (34) - 25.4 (56)	9040 7210 56
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 30-90	WP 30-90	25.4 (56) - 40.3 (89)	9040 7210 57
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 40-100	WP 40-100	40.3 (89) - 55.3 (122)	9040 7210 58
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 40-115	WP 40-115	55.3 (122) - 70.3 (155)	9040 7210 59
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 40-130	WP 40-130	70.3 (155) - 85.2 (188)	9040 7210 60
Torque Tube Suspension - SB - 150 Nm - 12" Travel - WP 40-140	WP 40-140	85.2 (188) - 95.2 (210)	9040 7210 61

Torque tube suspension - spring balancers

150 NM TORQUE TUBE - SPRING BALANCERS - 18" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-12	WP 30-12	0.9 (2) - 5 (11)	9040 7210 71
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-20	WP 30-20	4.1 (9) - 9.1 (20)	9040 7210 72
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-30	WP 30-30	8.2 (18) - 11.8 (26)	9040 7210 73
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-45	WP 30-45	10.9 (24) - 15.9 (35)	9040 7210 74
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-60	WP 30-60	6.8 (15) - 15 (33)	9040 7210 75
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-75	WP 30-75	15 (33) - 24.9 (55)	9040 7210 76
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 30-90	WP 30-90	24.9 (55) - 39.9 (88)	9040 7210 77
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 40-100	WP 40-100	39.9 (88) - 54.9 (121)	9040 7210 78
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 40-115	WP 40-115	54.9 (121) - 69.8 (154)	9040 7210 79
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 40-130	WP 40-130	69.8 (154) - 84.8 (187)	9040 7210 80
Torque Tube Suspension - SB - 150 Nm - 18" Travel - WP 40-140	WP 40-140	84.8 (187) - 94.7 (209)	9040 7210 81

150 NM TORQUE TUBE - SPRING BALANCERS - 24" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-12	WP 30-12	0.5 (1) - 4.5 (10)	9040 7210 91
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-20	WP 30-20	3.6 (8) - 8.6 (19)	9040 7210 92
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-30	WP 30-30	7.7 (17) - 11.3 (25)	9040 7210 93
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-45	WP 30-45	10.4 (23) - 15.4 (34)	9040 7210 94
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-60	WP 30-60	6.3 (14) - 14.5 (32)	9040 7210 95
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-75	WP 30-75	14.5 (32) - 24.5 (54)	9040 7210 96
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 30-90	WP 30-90	24.5 (54) - 39.4 (87)	9040 7210 97
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 40-100	WP 40-100	39.4 (87) - 54.4 (120)	9040 7210 98
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 40-115	WP 40-115	54.4 (120) - 69.4 (153)	9040 7210 99
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 40-130	WP 40-130	69.4 (153) - 84.3 (186)	9040 7211 00
Torque Tube Suspension - SB - 150 Nm - 24" Travel - WP 40-140	WP 40-140	84.3 (186) - 94.3 (208)	9040 7211 01

250 NM TORQUE TUBE - SPRING BALANCERS - 6" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-12	WP 30-12	5 (11) - 13.1 (29)	9040 7211 11
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-20	WP 30-20	13.1 (29) - 23.1 (51)	9040 7211 12
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-30	WP 30-30	23.1 (51) - 38.1 (84)	9040 7211 13
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-45	WP 30-45	38.1 (84) - 53 (117)	9040 7211 14
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-60	WP 30-60	53 (117) - 68 (150)	9040 7211 15
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-75	WP 30-75	68 (150) - 83 (183)	9040 7211 16
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 30-90	WP 30-90	83 (183) - 92.9 (205)	9040 7211 17
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 40-100	WP 40-100	92.9 (205) - 108.3 (239)	9040 7211 18
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 40-115	WP 40-115	108.3 (239) - 123.3 (272)	9040 7211 19
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 40-130	WP 40-130	123.3 (272) - 133.3 (294)	9040 7211 20
Torque Tube Suspension - SB - 250 Nm - 6" Travel - WP 40-140	WP 40-140	133.3 (294) - 143.2 (316)	9040 7211 21

Torque tube suspension - spring balancers

250 NM TORQUE TUBE - SPRING BALANCERS - 12" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-12	WP 30-12	4.1 (9) - 12.2 (27)	9040 7211 31
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-20	WP 30-20	12.2 (27) - 22.2 (49)	9040 7211 32
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-30	WP 30-30	22.2 (49) - 37.2 (82)	9040 7211 33
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-45	WP 30-45	37.2 (82) - 52.1 (115)	9040 7211 34
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-60	WP 30-60	52.1 (115) - 67.1 (148)	9040 7211 35
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-75	WP 30-75	67.1 (148) - 82 (181)	9040 7211 36
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 30-90	WP 30-90	82 (181) - 92 (203)	9040 7211 37
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 40-100	WP 40-100	92 (203) - 107.4 (237)	9040 7211 38
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 40-115	WP 40-115	107.4 (237) - 122.4 (270)	9040 7211 39
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 40-130	WP 40-130	122.4 (270) - 132.4 (292)	9040 7211 40
Torque Tube Suspension - SB - 250 Nm - 12" Travel - WP 40-140	WP 40-140	132.4 (292) - 142.3 (314)	9040 7211 41

250 NM TORQUE TUBE - SPRING BALANCERS - 18" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-12	WP 30-12	3.2 (7) - 11.3 (25)	9040 7211 51
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-20	WP 30-20	11.3 (25) - 21.3 (47)	9040 7211 52
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-30	WP 30-30	21.3 (47) - 36.3 (80)	9040 7211 53
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-45	WP 30-45	36.3 (80) - 51.2 (113)	9040 7211 54
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-60	WP 30-60	51.2 (113) - 66.2 (146)	9040 7211 55
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-75	WP 30-75	66.2 (146) - 81.1 (179)	9040 7211 56
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 30-90	WP 30-90	81.1 (179) - 91.1 (201)	9040 7211 57
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 40-100	WP 40-100	91.1 (201) - 106.5 (235)	9040 7211 58
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 40-115	WP 40-115	106.5 (235) - 121.5 (268)	9040 7211 59
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 40-130	WP 40-130	121.5 (268) - 131.5 (290)	9040 7211 60
Torque Tube Suspension - SB - 250 Nm - 18" Travel - WP 40-140	WP 40-140	131.5 (290) - 141.4 (312)	9040 7211 61

250 NM TORQUE TUBE - SPRING BALANCERS - 24" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-12	WP 30-12	2.3 (5) - 10.4 (23)	9040 7211 71
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-20	WP 30-20	10.4 (23) - 20.4 (45)	9040 7211 72
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-30	WP 30-30	20.4 (45) - 35.4 (78)	9040 7211 73
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-45	WP 30-45	35.4 (78) - 50.3 (111)	9040 7211 74
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-60	WP 30-60	50.3 (111) - 65.3 (144)	9040 7211 75
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-75	WP 30-75	65.3 (144) - 80.2 (177)	9040 7211 76
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 30-90	WP 30-90	80.2 (177) - 90.2 (199)	9040 7211 77
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 40-100	WP 40-100	90.2 (199) - 105.6 (233)	9040 7211 78
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 40-115	WP 40-115	105.6 (233) - 120.6 (266)	9040 7211 79
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 40-130	WP 40-130	120.6 (266) - 130.6 (288)	9040 7211 80
Torque Tube Suspension - SB - 250 Nm - 24" Travel - WP 40-140	WP 40-140	130.6 (288) - 140.5 (310)	9040 7211 81

Torque tube suspension - spring balancers

500 NM TORQUE TUBE - SPRING BALANCERS - 6" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-20	WP 30-20	11.3 (25) - 21.3 (47)	9040 7211 91
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-30	WP 30-30	21.3 (47) - 36.3 (80)	9040 7211 92
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-45	WP 30-45	36.3 (80) - 51.2 (113)	9040 7211 93
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-60	WP 30-60	51.2 (113) - 66.2 (146)	9040 7211 94
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-75	WP 30-75	66.2 (146) - 81.1 (179)	9040 7211 95
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-90	WP 30-90	81.1 (179) - 91.1 (201)	9040 7211 96
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-100	WP 40-100	91.1 (201) - 106.5 (235)	9040 7211 97
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-115	WP 40-115	106.5 (235) - 121.5 (268)	9040 7211 98
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-130	WP 40-130	121.5 (268) - 131.5 (290)	9040 7211 99
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-140	WP 40-140	131.5 (290) - 141.4 (312)	9040 7212 00
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-75-2	WP 30-75-2	141 (311) - 170.9 (377)	9040 7212 01
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 30-90-2	WP 30-90-2	170.9 (377) - 190.8 (421)	9040 7212 02
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-100-2	WP 40-100-2	190.8 (421) - 221.7 (489)	9040 7212 03
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-115-2	WP 40-115-2	221.7 (489) - 251.6 (555)	9040 7212 04
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-130-2	WP 40-130-2	251.6 (555) - 271.5 (599)	9040 7212 05
Torque Tube Suspension - SB - 500 Nm - 6" Travel - WP 40-140-2	WP 40-140-2	271.5 (599) - 291.5 (643)	9040 7212 06

500 NM TORQUE TUBE - SPRING BALANCERS - 12" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-20	WP 30-20	10 (22) - 19.9 (44)	9040 7212 11
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-30	WP 30-30	19.9 (44) - 34.9 (77)	9040 7212 12
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-45	WP 30-45	34.9 (77) - 49.9 (110)	9040 7212 13
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-60	WP 30-60	49.9 (110) - 64.8 (143)	9040 7212 14
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-75	WP 30-75	64.8 (143) - 79.8 (176)	9040 7212 15
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-90	WP 30-90	79.8 (176) - 89.8 (198)	9040 7212 16
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-100	WP 40-100	89.8 (198) - 105.2 (232)	9040 7212 17
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-115	WP 40-115	105.2 (232) - 120.1 (265)	9040 7212 18
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-130	WP 40-130	120.1 (265) - 130.1 (287)	9040 7212 19
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-140	WP 40-140	130.1 (287) - 140.1 (309)	9040 7212 20
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-75-2	WP 30-75-2	139.6 (308) - 169.5 (374)	9040 7212 21
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 30-90-2	WP 30-90-2	169.5 (374) - 189.5 (418)	9040 7212 22
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-100-2	WP 40-100-2	189.5 (418) - 220.3 (486)	9040 7212 23
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-115-2	WP 40-115-2	220.3 (486) - 250.2 (552)	9040 7212 24
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-130-2	WP 40-130-2	250.2 (552) - 270.2 (596)	9040 7212 25
Torque Tube Suspension - SB - 500 Nm - 12" Travel - WP 40-140-2	WP 40-140-2	270.2 (596) - 290.1 (640)	9040 7212 26

Torque tube suspension - spring balancers

500 NM TORQUE TUBE - SPRING BALANCERS - 18" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-20	WP 30-20	8.6 (19) - 18.6 (41)	9040 7212 31
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-30	WP 30-30	18.6 (41) - 33.5 (74)	9040 7212 32
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-45	WP 30-45	33.5 (74) - 48.5 (107)	9040 7212 33
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-60	WP 30-60	48.5 (107) - 63.5 (140)	9040 7212 34
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-75	WP 30-75	63.5 (140) - 78.4 (173)	9040 7212 35
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-90	WP 30-90	78.4 (173) - 88.4 (195)	9040 7212 36
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-100	WP 40-100	88.4 (195) - 103.8 (229)	9040 7212 37
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-115	WP 40-115	103.8 (229) - 118.8 (262)	9040 7212 38
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-130	WP 40-130	118.8 (262) - 128.7 (284)	9040 7212 39
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-140	WP 40-140	128.7 (284) - 138.7 (306)	9040 7212 40
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-75-2	WP 30-75-2	138.3 (305) - 168.2 (371)	9040 7212 41
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 30-90-2	WP 30-90-2	168.2 (371) - 188.1 (415)	9040 7212 42
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-100-2	WP 40-100-2	188.1 (415) - 218.9 (483)	9040 7212 43
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-115-2	WP 40-115-2	218.9 (483) - 248.9 (549)	9040 7212 44
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-130-2	WP 40-130-2	248.9 (549) - 268.8 (593)	9040 7212 45
Torque Tube Suspension - SB - 500 Nm - 18" Travel - WP 40-140-2	WP 40-140-2	268.8 (593) - 288.8 (637)	9040 7212 46

500 NM TORQUE TUBE - SPRING BALANCERS - 24" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-20	WP 30-20	7.3 (16) - 17.2 (38)	9040 7212 51
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-30	WP 30-30	17.2 (38) - 32.2 (71)	9040 7212 52
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-45	WP 30-45	32.2 (71) - 47.1 (104)	9040 7212 53
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-60	WP 30-60	47.1 (104) - 62.1 (137)	9040 7212 54
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-75	WP 30-75	62.1 (137) - 77.1 (170)	9040 7212 55
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-90	WP 30-90	77.1 (170) - 87 (192)	9040 7212 56
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-100	WP 40-100	87 (192) - 102.4 (226)	9040 7212 57
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-115	WP 40-115	102.4 (226) - 117.4 (259)	9040 7212 58
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-130	WP 40-130	117.4 (259) - 127.4 (281)	9040 7212 59
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-140	WP 40-140	127.4 (281) - 137.4 (303)	9040 7212 60
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-75-2	WP 30-75-2	136.9 (302) - 166.8 (368)	9040 7212 61
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 30-90-2	WP 30-90-2	166.8 (368) - 186.8 (412)	9040 7212 62
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-100-2	WP 40-100-2	186.8 (412) - 217.6 (480)	9040 7212 63
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-115-2	WP 40-115-2	217.6 (480) - 247.5 (546)	9040 7212 64
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-130-2	WP 40-130-2	247.5 (546) - 267.5 (590)	9040 7212 65
Torque Tube Suspension - SB - 500 Nm - 24" Travel - WP 40-140-2	WP 40-140-2	267.5 (590) - 287.4 (634)	9040 7212 66

Torque tube suspension - spring balancers

500 NM TORQUE TUBE - SPRING BALANCERS - 30" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-20	WP 30-20	5.9 (13) - 15.9 (35)	9040 7212 71
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-30	WP 30-30	15.9 (35) - 30.8 (68)	9040 7212 72
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-45	WP 30-45	30.8 (68) - 45.8 (101)	9040 7212 73
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-60	WP 30-60	45.8 (101) - 60.7 (134)	9040 7212 74
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-75	WP 30-75	60.7 (134) - 75.7 (167)	9040 7212 75
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-90	WP 30-90	75.7 (167) - 85.7 (189)	9040 7212 76
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-100	WP 40-100	85.7 (189) - 101.1 (223)	9040 7212 77
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-115	WP 40-115	101.1 (223) - 116 (256)	9040 7212 78
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-130	WP 40-130	116 (256) - 126 (278)	9040 7212 79
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-140	WP 40-140	126 (278) - 136 (300)	9040 7212 80
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-75-2	WP 30-75-2	135.5 (299) - 165.5 (365)	9040 7212 81
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 30-90-2	WP 30-90-2	165.5 (365) - 185.4 (409)	9040 7212 82
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-100-2	WP 40-100-2	185.4 (409) - 216.2 (477)	9040 7212 83
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-115-2	WP 40-115-2	216.2 (477) - 246.1 (543)	9040 7212 84
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-130-2	WP 40-130-2	246.1 (543) - 266.1 (587)	9040 7212 85
Torque Tube Suspension - SB - 500 Nm - 30" Travel - WP 40-140-2	WP 40-140-2	266.1 (587) - 286 (631)	9040 7212 86

500 NM TORQUE TUBE - SPRING BALANCERS - 36" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-20	WP 30-20	4.5 (10) - 14.5 (32)	9040 7212 91
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-30	WP 30-30	14.5 (32) - 29.5 (65)	9040 7212 92
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-45	WP 30-45	29.5 (65) - 44.4 (98)	9040 7212 93
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-60	WP 30-60	44.4 (98) - 59.4 (131)	9040 7212 94
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-75	WP 30-75	59.4 (131) - 74.3 (164)	9040 7212 95
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-90	WP 30-90	74.3 (164) - 84.3 (186)	9040 7212 96
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-100	WP 40-100	84.3 (186) - 99.7 (220)	9040 7212 97
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-115	WP 40-115	99.7 (220) - 114.7 (253)	9040 7212 98
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-130	WP 40-130	114.7 (253) - 124.7 (275)	9040 7212 99
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-140	WP 40-140	124.7 (275) - 134.6 (297)	9040 7213 00
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-75-2	WP 30-75-2	134.2 (296) - 164.1 (362)	9040 7213 01
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 30-90-2	WP 30-90-2	164.1 (362) - 184 (406)	9040 7213 02
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-100-2	WP 40-100-2	184 (406) - 214.9 (474)	9040 7213 03
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-115-2	WP 40-115-2	214.9 (474) - 244.8 (540)	9040 7213 04
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-130-2	WP 40-130-2	244.8 (540) - 264.7 (584)	9040 7213 05
Torque Tube Suspension - SB - 500 Nm - 36" Travel - WP 40-140-2	WP 40-140-2	264.7 (584) - 284.7 (628)	9040 7213 06

Torque tube suspension - spring balancers

1000 NM TORQUE TUBE - SPRING BALANCERS - 6" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-30	WP 30-30	15 (33) - 29.9 (66)	9040 7213 11
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-45	WP 30-45	29.9 (66) - 44.9 (99)	9040 7213 12
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-60	WP 30-60	44.9 (99) - 59.8 (132)	9040 7213 13
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-75	WP 30-75	59.8 (132) - 74.8 (165)	9040 7213 14
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-90	WP 30-90	74.8 (165) - 84.4 (187)	9040 7213 15
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-100	WP 40-100	84.8 (187) - 100.2 (221)	9040 7213 16
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-115	WP 40-115	100.2 (221) - 115.1 (254)	9040 7213 17
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-130	WP 40-130	115.1 (254) - 125.1 (276)	9040 7213 18
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-140	WP 40-140	125.1 (276) - 135.1 (298)	9040 7213 19
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-75-2	WP 30-75-2	134.6 (297) - 164.4 (363)	9040 7213 20
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 30-90-2	WP 30-90-2	164.6 (363) - 184.5 (407)	9040 7213 21
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-100-2	WP 40-100-2	184.5 (407) - 215.3 (475)	9040 7213 22
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-115-2	WP 40-115-2	215.3 (475) - 245.2 (541)	9040 7213 23
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-130-2	WP 40-130-2	245.2 (541) - 265.2 (585)	9040 7213 24
Torque Tube Suspension - SB - 1000 Nm - 6" Travel - WP 40-140-2	WP 40-140-2	265.2 (585) - 285.1 (629)	9040 7213 25

1000 NM TORQUE TUBE - SPRING BALANCERS - 12" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-30	WP 30-30	12.7 (28) - 27.7 (61)	9040 7213 31
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-45	WP 30-45	27.7 (61) - 42.6 (94)	9040 7213 32
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-60	WP 30-60	42.6 (94) - 57.3 (127)	9040 7213 33
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-75	WP 30-75	57.6 (127) - 72.5 (160)	9040 7213 34
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-90	WP 30-90	72.5 (160) - 82.5 (182)	9040 7213 35
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-100	WP 40-100	82.5 (182) - 97.9 (216)	9040 7213 36
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-115	WP 40-115	97.9 (216) - 112.9 (249)	9040 7213 37
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-130	WP 40-130	112.9 (249) - 122.8 (271)	9040 7213 38
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-140	WP 40-140	122.8 (271) - 132.8 (293)	9040 7213 39
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-75-2	WP 30-75-2	132.4 (292) - 162.3 (358)	9040 7213 40
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 30-90-2	WP 30-90-2	162.3 (358) - 182.2 (402)	9040 7213 41
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-100-2	WP 40-100-2	182.2 (402) - 213.1 (470)	9040 7213 42
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-115-2	WP 40-115-2	213.1 (470) - 243 (536)	9040 7213 43
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-130-2	WP 40-130-2	243 (536) - 262.9 (580)	9040 7213 44
Torque Tube Suspension - SB - 1000 Nm - 12" Travel - WP 40-140-2	WP 40-140-2	262.9 (580) - 282.9 (624)	9040 7213 45

Torque tube suspension - spring balancers

1000 NM TORQUE TUBE - SPRING BALANCERS - 18" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-30	WP 30-30	10 (22) - 24.9 (55)	9040 7213 51
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-45	WP 30-45	24.9 (55) - 39.9 (88)	9040 7213 52
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-60	WP 30-60	39.9 (88) - 54.9 (121)	9040 7213 53
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-75	WP 30-75	54.9 (121) - 69.8 (154)	9040 7213 54
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-90	WP 30-90	69.8 (154) - 79.8 (176)	9040 7213 55
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-100	WP 40-100	79.8 (176) - 95.2 (210)	9040 7213 56
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-115	WP 40-115	95.2 (210) - 110.2 (243)	9040 7213 57
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-130	WP 40-130	110.2 (243) - 120.1 (265)	9040 7213 58
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-140	WP 40-140	120.1 (265) - 130.1 (287)	9040 7213 59
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-75-2	WP 30-75-2	129.6 (286) - 159.6 (352)	9040 7213 60
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 30-90-2	WP 30-90-2	159.6 (352) - 179.5 (396)	9040 7213 61
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-100-2	WP 40-100-2	179.5 (396) - 210.3 (464)	9040 7213 62
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-115-2	WP 40-115-2	210.3 (464) - 240.3 (530)	9040 7213 63
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-130-2	WP 40-130-2	240.3 (530) - 260.2 (574)	9040 7213 64
Torque Tube Suspension - SB - 1000 Nm - 18" Travel - WP 40-140-2	WP 40-140-2	260.2 (574) - 280.1 (618)	9040 7213 65

1000 NM TORQUE TUBE - SPRING BALANCERS - 24" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-30	WP 30-30	7.7 (17) - 22.7 (50)	9040 7213 71
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-45	WP 30-45	22.7 (50) - 37.6 (83)	9040 7213 72
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-60	WP 30-60	37.6 (83) - 52.6 (116)	9040 7213 73
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-75	WP 30-75	52.6 (116) - 67.5 (149)	9040 7213 74
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-90	WP 30-90	67.5 (149) - 77.5 (171)	9040 7213 75
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-100	WP 40-100	77.5 (171) - 92.9 (205)	9040 7213 76
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-115	WP 40-115	92.9 (205) - 107.9 (238)	9040 7213 77
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-130	WP 40-130	107.9 (238) - 117.9 (260)	9040 7213 78
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-140	WP 40-140	117.9 (260) - 127.8 (282)	9040 7213 79
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-75-2	WP 30-75-2	127.4 (281) - 157.3 (347)	9040 7213 80
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 30-90-2	WP 30-90-2	157.3 (347) - 177.2 (391)	9040 7213 81
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-100-2	WP 40-100-2	177.2 (391) - 208.1 (459)	9040 7213 82
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-115-2	WP 40-115-2	208.1 (459) - 238 (525)	9040 7213 83
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-130-2	WP 40-130-2	238 (525) - 257.9 (569)	9040 7213 84
Torque Tube Suspension - SB - 1000 Nm - 24" Travel - WP 40-140-2	WP 40-140-2	257.9 (569) - 277.9 (613)	9040 7213 85

Torque tube suspension - spring balancers

1000 NM TORQUE TUBE - SPRING BALANCERS - 30" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-30	WP 30-30	5.4 (12) - 20.4 (45)	9040 7213 91
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-45	WP 30-45	20.4 (45) - 35.4 (78)	9040 7213 92
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-60	WP 30-60	35.4 (78) - 50.3 (111)	9040 7213 93
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-75	WP 30-75	50.3 (111) - 65.3 (144)	9040 7213 94
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-90	WP 30-90	65.3 (144) - 75.2 (166)	9040 7213 95
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-100	WP 40-100	75.2 (166) - 90.7 (200)	9040 7213 96
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-115	WP 40-115	90.7 (200) - 105.6 (233)	9040 7213 97
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-130	WP 40-130	105.6 (233) - 115.6 (255)	9040 7213 98
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-140	WP 40-140	115.6 (255) - 125.6 (277)	9040 7213 99
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-75-2	WP 30-75-2	125.1 (276) - 155 (342)	9040 7214 00
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 30-90-2	WP 30-90-2	155 (342) - 175 (386)	9040 7214 01
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-100-2	WP 40-100-2	175 (386) - 205.8 (454)	9040 7214 02
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-115-2	WP 40-115-2	205.8 (454) - 235.7 (520)	9040 7214 03
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-130-2	WP 40-130-2	235.7 (520) - 255.7 (564)	9040 7214 04
Torque Tube Suspension - SB - 1000 Nm - 30" Travel - WP 40-140-2	WP 40-140-2	255.7 (564) - 275.6 (608)	9040 7214 05

1000 NM TORQUE TUBE - SPRING BALANCERS - 36" TRAVEL

Description	Spring Balancer Type	Capacity Range kg (lb)	Ordering No.
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-30	WP 30-30	2.7 (6) - 17.7 (39)	9040 7214 11
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-45	WP 30-45	17.7 (39) - 32.6 (72)	9040 7214 12
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-60	WP 30-60	32.6 (72) - 47.6 (105)	9040 7214 13
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-75	WP 30-75	47.6 (105) - 62.6 (138)	9040 7214 14
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-90	WP 30-90	62.6 (138) - 72.5 (160)	9040 7214 15
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-100	WP 40-100	72.5 (160) - 87.9 (194)	9040 7214 16
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-115	WP 40-115	87.9 (194) - 102.9 (227)	9040 7214 17
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-130	WP 40-130	102.9 (227) - 112.9 (249)	9040 7214 18
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-140	WP 40-140	112.9 (249) - 122.8 (271)	9040 7214 19
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-75-2	WP 30-75-2	122.4 (270) - 152.3 (336)	9040 7214 20
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 30-90-2	WP 30-90-2	152.3 (336) - 172.3 (380)	9040 7214 21
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-100-2	WP 40-100-2	172.3 (380) - 203.1 (448)	9040 7214 22
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-115-2	WP 40-115-2	203.1 (448) - 233 (514)	9040 7214 23
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-130-2	WP 40-130-2	233 (514) - 252.9 (558)	9040 7214 24
Torque Tube Suspension - SB - 1000 Nm - 36" Travel - WP 40-140-2	WP 40-140-2	252.9 (558) - 272.9 (602)	9040 7214 25

Torque tube suspension accessories

Trolley Carriages

REQUIRED EQUIPMENT

- ▶ Torque Tube Suspension
- ▶ Trolleys

Description	Ordering No.
Trolley Carriage - 50 Nm - 2 Trolley	9040 7206 11
Trolley Carriage - 150 Nm - 2 Trolley	9040 7206 13
Trolley Carriage - 250 Nm - 2 Trolley	9040 7206 15
Trolley Carriage - 250 Nm - 4 Trolley	9040 7206 16
Trolley Carriage - 500 Nm - 2 Trolley	9040 7206 17
Trolley Carriage - 500 Nm - 4 Trolley	9040 7206 18
Trolley Carriage - 1000 Nm - 2 Trolley	9040 7206 19
Trolley Carriage - 1000 Nm - 4 Trolley	9040 7206 20



TROLLEYS

- ▶ Trolleys for Spring Balancer and Torque Tube Suspension

Description	1-Trolley Carriage	2-Trolley Carriage	4-Trolley Carriage	Ordering No.
Trolley - Bolt Perp. - Demag KBK I, Ergo (98061044) - 300 kg - 661 lb	✓	✓	✓	9040 7207 00
Trolley - Bolt Perp. - Demag KBK II, II-L, Ergo (98211044) - 600 kg - 1322 lb	✓	✓	✓	9040 7207 01
Trolley - Bolt Perp. - Gorbel 250 (A0251) - 250 lb	✓	✓	✓	9040 7207 10
Trolley - Bolt Perp. - Gorbel 500 (A0501) - 500 lb	✓	✓	✓	9040 7207 11
Trolley - Bolt Perp. - Gorbel 1000 (A1001) - 1000 lb	✓	✓	✓	9040 7207 12
Trolley - Bolt Perp. - Gorbel 2000 (A2001) - 2000 lb	✓	✓	✓	9040 7207 13
Trolley - 3-Hole - IR Zimmerman ZRAT (31056) - 500 lb	✓	✓	-	9040 7207 16
Trolley - Yoke - IR Zimmerman ZRAT (ZHS31058) - 500 lb	-	-	✓	9040 7207 17
Trolley - 3-Hole - IR Zimmerman ZRA1 (30279) - 500 lb	✓	✓	-	9040 7207 21
Trolley - Yoke - IR Zimmerman ZRA1 (ZHS30313) - 500 lb	-	-	✓	9040 7207 22
Trolley - 3-Hole - IR Zimmerman ZRA2 (30015) - 1000 lb	✓	✓	-	9040 7207 26
Trolley - Yoke - IR Zimmerman ZRA2 (ZHS30314) - 1000 lb	-	-	✓	9040 7207 27
Trolley - 3-Hole - IR Zimmerman ZRS2/3 (ZHS30510) - 1000 lb	✓	✓	-	9040 7207 31
Trolley - Yoke - IR Zimmerman ZRS2/3 (30315) - 1000 lb	-	-	✓	9040 7207 32
Trolley - 3-Hole - Knight Industries RAD4100 (MRTA4001) - 500 lb	✓	✓	-	9040 7207 36
Trolley - Yoke - Knight Industries RAD4100 (MRTA4009) - 500 lb	-	-	✓	9040 7207 37
Trolley - 3-Hole - Knight Industries RAD7500 (MRTA7706) - 1000 lb	✓	✓	-	9040 7207 41
Trolley - Yoke - Knight Industries RAD7500 (MRTA7723) - 1000 lb	-	-	✓	9040 7207 42
Trolley - 3-Hole - Unified Industries ETA-4 (400C/20115) - 500 lb	✓	✓	-	9040 7207 46
Trolley - Yoke - Unified Industries ETA-4 (400B/404 - 20110/25240) - 500 lb	-	-	✓	9040 7207 47
Trolley - 3-Hole - Unified Industries ETA-8 (100C/20021) - 1000 lb	✓	✓	-	9040 7207 51
Trolley - Yoke - Unified Industries ETA-8 (100B/404 - 20020/25040) - 1000 lb	-	-	✓	9040 7207 52
Trolley - 3-Hole - Anti-Kick-Up - Unified Industries ETA-8 (112C/20065) - 1000 lb	✓	✓	-	9040 7207 54

Torque tube suspension accessories

TORQUE TUBE SUSPENSION - EXTENSION TUBES

Description	Ordering No.
Extension Tube - 50 Nm - 27" L	9040 7205 80
Extension Tube - 50 Nm - 39" L	9040 7205 81
Extension Tube - 50 Nm - 51" L	9040 7205 82
Extension Tube - 150 Nm - 27" L	9040 7205 85
Extension Tube - 150 Nm - 39" L	9040 7205 86
Extension Tube - 150 Nm - 51" L	9040 7205 87
Extension Tube - 250 Nm - 24" L	9040 7205 90
Extension Tube - 250 Nm - 36" L	9040 7205 91
Extension Tube - 250 Nm - 48" L	9040 7205 92
Extension Tube - 250 Nm - 60" L	9040 7205 93
Extension Tube - 500 Nm - 24" L	9040 7205 95
Extension Tube - 500 Nm - 36" L	9040 7205 96
Extension Tube - 500 Nm - 48" L	9040 7205 97
Extension Tube - 500 Nm - 60" L	9040 7205 98
Extension Tube - 1000 Nm - 24" L	9040 7206 00
Extension Tube - 1000 Nm - 36" L	9040 7206 01
Extension Tube - 1000 Nm - 48" L	9040 7206 02
Extension Tube - 1000 Nm - 60" L	9040 7206 03



TORQUE TUBE SUSPENSION - PIVOTS

Description	Ordering No.
Pivot (without brake) - 50 Nm	9040 7206 31
Pivot (without brake) - 150 Nm	9040 7206 32
Pivot (without brake) - 250 Nm	9040 7206 33
Pivot (without brake) - 500 Nm	9040 7206 34
Pivot (without brake) - 1000 Nm	9040 7206 35
Pivot with Brake - 50 Nm	9040 7206 36
Pivot with Brake - 150 Nm	9040 7206 37
Pivot with Brake - 250 Nm	9040 7206 38
Pivot with Brake - 500 Nm	9040 7206 39
Pivot with Brake - 1000 Nm	9040 7206 40



ALIGNMENT COMPENSATOR

Description	Ordering No.
Alignment Compensator - Under 100 lbs	9040 7000 51
Alignment Compensator - 150 - 200 lbs	9040 7000 52
Alignment Compensator - 300 lbs +	9040 7000 53
Alignment Compensator - Locking Angle	9040 7001 68
Alignment Compensator - Locking Angle / One Direction	9040 7001 69



Hoist / balance control

Hoist control is used to control the lowering and raising of a load held by a suspension device that utilizes a lift cylinder. Used typically on pneumatic torque tube suspensions.

FEATURES

The hoist control is equipped with precision pressure regulators that allow for fine adjustment of the lowering and raising speeds.

- ▶ Normally mounts to the suspension
- ▶ Clean, dry air is required
- ▶ Minimum 60 PSI air pressure required

CONTROL TYPE

- ▶ Down - allows load to be lowered
- ▶ Up - allows load to be raised
- ▶ Auto-up - raises load upon cycle/e-stop condition
- ▶ E-stop stops all motion - load stops in current position upon cycle/e-stop condition
- ▶ Balance - load in a balance state, operator manually raises or lowers load with minimal force



REQUIRED EQUIPMENT

- ▶ Hoist Control Module/Handle
- ▶ M12 4-Pin Extension Cable - interconnects solenoid valve(s) to I/O device
- ▶ I/O Expander - Sealed
- ▶ M12 8-Pin
- ▶ I/O Bus Cables

HOIST / BALANCE CONTROL

Description	Ordering No.
Hoist Control-Down/Auto Up/E-Stop Up (3 .25" Bore & Smaller)	9040 1700 03
Hoist Control-Up/Down/E-Stop Stops all Motion (3 .25" Bore & Smaller)	9040 1700 04
Hoist Control-Up/Down w/ Zero-G/E-Stop to Balance (3 .25" Bore & Smaller)	9040 1700 06
Hoist Control-Up/Down w/ Zero-G Air Piloted (3 .25" Bore & Smaller)	9040 1700 07
Hoist Control-Down/Auto Up/E-Stop Up (4" Bore & Larger)	9040 1700 08
Hoist Control-Down/Auto Up/E-Stop Up (Dual 4" Bore)	9040 1700 10
Hoist Control-Up/Down/E-Stop Stops all Motion (4" Bore & Larger)	9040 1700 11
Hoist Control-Up/Down/E-Stop Stops all Motion (Dual 4" Bore)	9040 1700 12
Balance Control	9040 1700 14

REQUIRED INPUTS AND OUTPUTS - HOIST / BALANCE CONTROL

Description	Required Inputs	Required Outputs	Required Cable Qty .
Down / Auto-Up / E-stop Up (1 Solenoid)	-	1	1
Up / Down / E-stops all Motion (2 Solenoids)	-	2	2
Up / Down with Zero-G / E-stop to Balance (2 Solenoids)	-	2	2
Up / Down with Zero-G Air Piloted (3 .25" Bore & Smaller)	-	-	-
Balance	-	-	-

Air preparation

Air preparation for pneumatic systems.

FEATURES

Lock-out Valve

- ▶ Allows for the supply air to be shut-off from the system.

Filter

- ▶ Protects the system by filtering particulates from the air supply. Includes 5 µm filter.

Regulator

- ▶ Reduces pressure to the required working pressure.

AIR PREPARATION

Description	Ordering No.
Air Preparation - Lock-Out Valve / Filter / Regulator Assembly - 1/4" NPT	9040 1700 15
Air Preparation - Lock-Out Valve / Filter / Regulator Assembly - 3/8" NPT	9040 1700 16
Air Preparation - Lock-Out Valve / Filter / Regulator Assembly - 1/2" NPT	9040 1700 17
Air Preparation - Lock-Out Valve / Filter / Regulator Assembly - 3/4" NPT	9040 1700 18
Air Preparation - Lock-Out Valve / Filter / Regulator Assembly - 1" NPT	9040 1700 19

Air cylinder suspension

For control of the up / down movement of a fixtured housing.

- ▶ 320 mm stroke

SCOPE OF SUPPLY

- ▶ FESTO air cylinder with locking device Festo DNCxx-320PPVAKP
- ▶ Two position sensors (up/down)
- ▶ Festo pneumatic control box including filter unit and pressure gauge
- ▶ Steel chain with height adjustment in 25 mm steps, max. load 2,5 t
- ▶ Rail trolley interface
- ▶ Safety belt (1 for 150 kg weight)
- ▶ Cable management strain relief
- ▶ Control system interface for Power MACS



REQUIRED EQUIPMENT

The trolleys for the rail system are not included in the scope of supply and need to be ordered separately.

- ▶ Power MACS control system
- ▶ Dry and oil free air supply with minimum air pressure of 5 bar

AIR CYLINDER

Description	Load Max. kg	Diameter mm	Weight kg	Height L Min. mm	Height L Max. mm	Ordering No.
Air cylinder suspension for PowerMacs, max. load 100 kg	100	63	20	900	2.000	8995 7001 20
Air cylinder suspension for PowerMacs, max. load 155 kg	155	80	22	920	2.000	8995 7001 00
Air cylinder suspension for PowerMacs, max. load 250 kg	250	100	25	940	2.000	8995 7001 01
Air cylinder suspension for PowerMacs, max. load 400 kg	400	125	32	1.000	2.000	8995 7001 02

Electric chain hoist suspension

For control of the up / down movement of a fixtured housing.

- ▶ 3.000 mm stroke with stepless velocity control
- ▶ Adjustable control cable length

SCOPE OF SUPPLY

- ▶ Demag DCS-PRO 5 400 H5 VS 380-480/50-60 chain hoist
- ▶ Control pendant
- ▶ Two adjustable end stops
- ▶ Interface to the rail system
- ▶ Safety belt (1 for 150 kg weight)
- ▶ Cable management strain relief

REQUIRED EQUIPMENT

The trolleys for the rail system are not included in the scope of supply and need to be ordered separately.

- ▶ Separate 400 VAC / 10 A supply (slow characteristics)



ELECTRIC CHAIN HOIST

Description	Ordering No.
Electric chain hoist, 400 VAC, max. load 400 kg, for Power MACS	8995 7001 19

ELECTRIC CHAIN HOIST - TECHNICAL INFO

Load max.	Power supply	Lifting velocity	Stroke mm	Height L Min. mm	Weight kg	Protection
400 kg	380 - 480 V	0,08 - 15 m/min	5.000	480	30	IP55 class F



High torque telescope with spring balancer

To stop torque reaction, especially for 1- or 2-nutrunner systems.

- ▶ Torque range 500 - 1000 Nm
- ▶ Standard stroke 320 mm, 500 mm, 800 mm or 1200 mm
- ▶ Increases safety and ergonomics for the operator
- ▶ Low handling forces

SCOPE OF SUPPLY

- ▶ Steel profile torque reaction suspension
- ▶ High torque linear guiding
- ▶ Atlas Copco spring balancer
- ▶ Cable management
- ▶ Safety belt (1 per 150 kg weight)
- ▶ Interface to the rail system

REQUIRED EQUIPMENT

- ▶ The trolleys for the rail system are not included in the scope of supply and need to be ordered separately.

NOTES

- ▶ Important: The workpiece should be fixed for one or two spindle applications, otherwise a movement of the workpiece could be affected by the torque of the nutrunner.

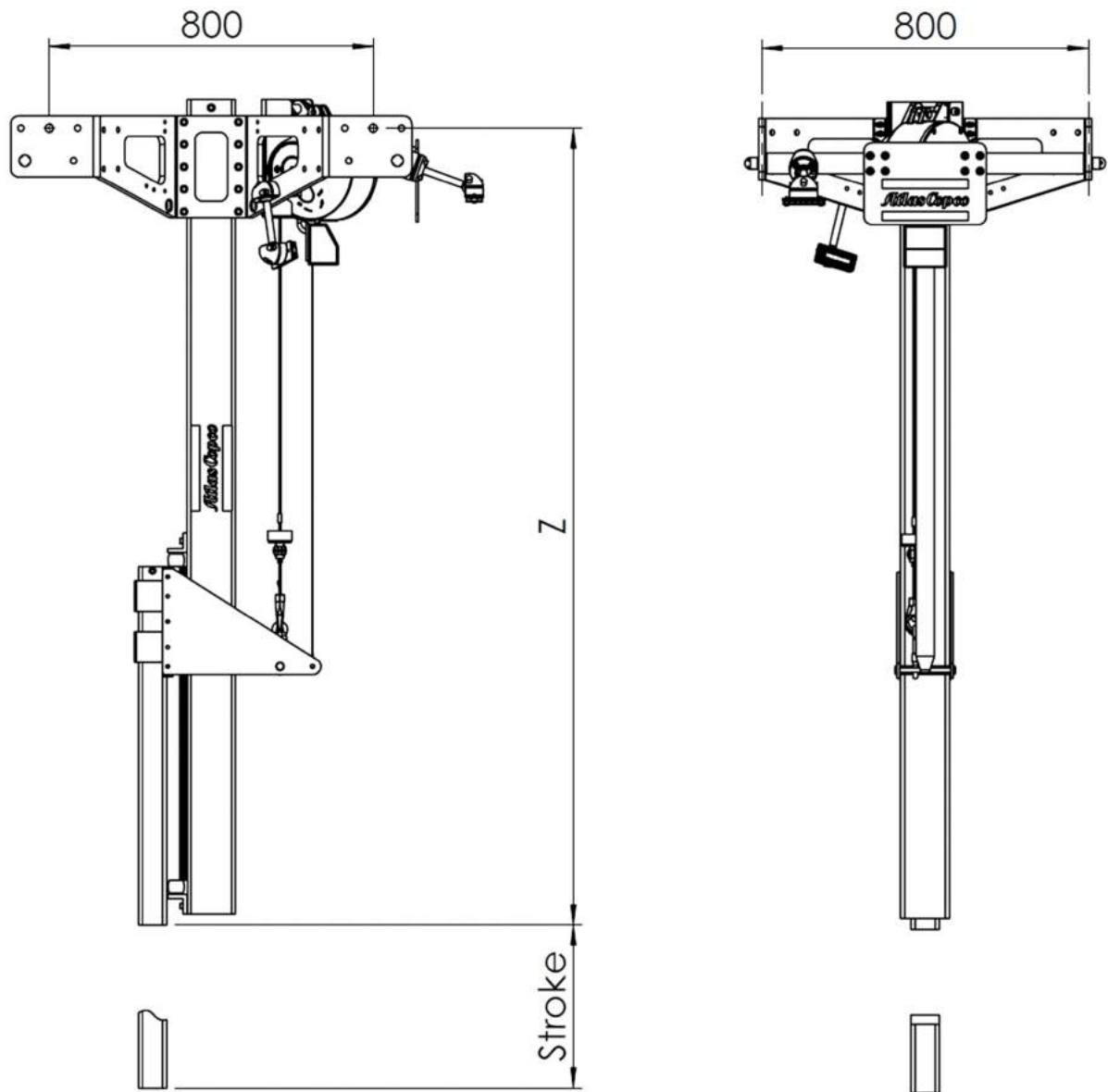


HIGH TORQUE TELESCOPE WITH SPRING BALANCER

Description	Ordering No.
High torque reaction suspension with spring balancer 1000 Nm, stroke 320 mm, load capacity 0 - 60 kg	8995 7211 00
High torque reaction suspension with spring balancer 1000 Nm, stroke 320 mm, load capacity 60 - 120 kg	8995 7211 01
High torque reaction suspension with spring balancer 1000 Nm, stroke 500 mm, load capacity 0 - 60 kg	8995 7212 00
High torque reaction suspension with spring balancer 1000 Nm, stroke 500 mm, load capacity 60 - 110 kg	8995 7212 01
High torque reaction suspension with spring balancer 800 Nm, stroke 800 mm, load capacity 0 - 50 kg	8995 7213 00
High torque reaction suspension with spring balancer 800 Nm, stroke 800 mm, load capacity 50 - 100 kg	8995 7213 01
High torque reaction suspension with spring balancer 500 Nm, stroke 1200 mm, load capacity 0 - 55 kg	8995 7214 00
High torque reaction suspension with spring balancer 500 Nm, stroke 1200 mm, load capacity 55 - 90 kg	8995 7214 01

High torque telescope with spring balancer

High Torque Telescope with Spring Balancer - Technical Info



Torque Max. Nm	Stroke mm	Heigh Z Min. mm	Heigh Z Max. mm	Netto Weight kg	Load Capacity Max. kg
1.000	320	1.185	3.740	182 - 305	120
1.000	500	1.365	3.640	195 - 301	110
800	800	1.665	3.340	218 - 295	100
500	1.200	2.065	2.940	251 - 295	90

High torque telescope with pneumatic cylinder

To stop torque reaction, especially for 1- or 2-nutrunner systems.

- ▶ Torque range 800 - 1000 Nm
- ▶ Standard stroke 320 mm, 500 mm or 800 mm
- ▶ Increases safety and ergonomics for the operator
- ▶ Low handling forces

SCOPE OF SUPPLY

Atlas Copco high torque reaction suspension including:

- ▶ Steel profile torque reaction suspension
- ▶ High torque linear guiding
- ▶ Two position sensors (up/down)
- ▶ Festo ISO pneumatic cylinder with locking device
- ▶ Festo pneumatic control box with filter unit and pressure gauge
- ▶ Control system interface
- ▶ Electrically actuated by Atlas Copco up/down handle (to be ordered separately)
- ▶ Cable management
- ▶ Safety belt (1 per 150 kg weight)
- ▶ Interface to the rail system



REQUIRED EQUIPMENT

The trolleys for the rail system and the up / down operator handle kit are not included in the scope of supply and need to be ordered separately.

- ▶ Power MACS control system
- ▶ Dry and oil free air supply with minimum air pressure of 5 bar

NOTES

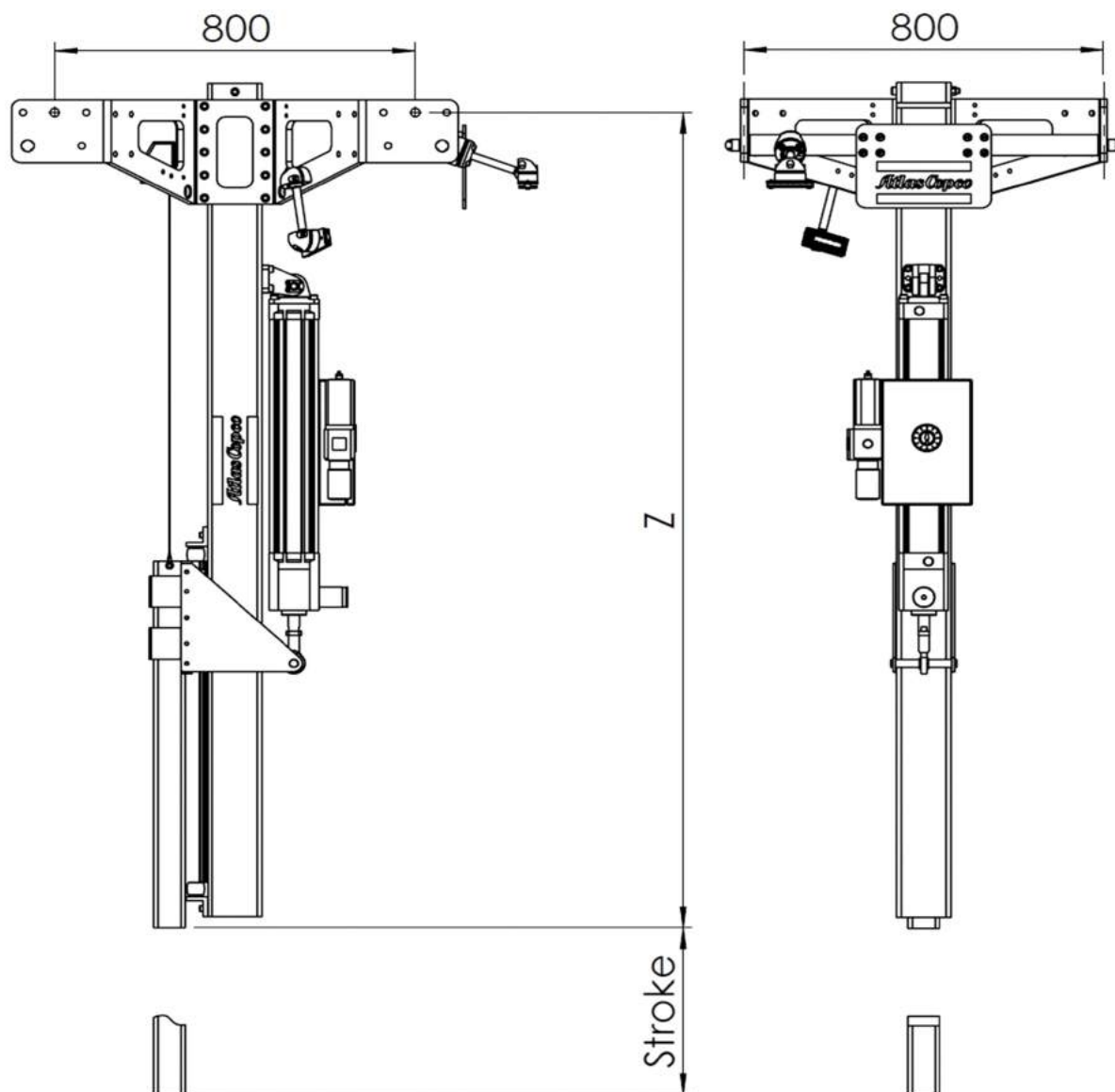
- ▶ Important: The workpiece should be fixed for one or two spindle applications, otherwise a movement of the workpiece could be affected by the torque of the nutrunner.

HIGH TORQUE TELESCOPE WITH PNEUMATIC CYLINDER

Description	Ordering No.
High torque reaction suspension with pneumatic cylinder 1000 Nm, stroke 320 mm, load capacity 125 kg	8995 7221 00
High torque reaction suspension with pneumatic cylinder 1000 Nm, stroke 320 mm, load capacity 370 kg	8995 7221 01
High torque reaction suspension with pneumatic cylinder 1000 Nm, stroke 500 mm, load capacity 115 kg	8995 7222 00
High torque reaction suspension with pneumatic cylinder 1000 Nm, stroke 500 mm, load capacity 360 kg	8995 7222 01
High torque reaction suspension with pneumatic cylinder 800 Nm, stroke 800 mm, load capacity 105 kg	8995 7223 00
High torque reaction suspension with pneumatic cylinder 800 Nm, stroke 800 mm, load capacity 350 kg	8995 7223 01

High torque telescope with pneumatic cylinder

High Torque Telescope with Pneumatic Cylinder Technical Information



Torque Max. Nm	Stroke mm	Heigth Z Min. mm	Heigth Z Max. mm	Netto Weight kg	Load Capacity Max. kg
1.000	320	1.540	3.740	190 - 295	400
1.000	500	1.820	3.640	215 - 295	400
800	800	2.420	3.340	255 - 295	400
500	1.200	2.065	2.940	251 - 295	90

High torque telescope with chain hoist

To stop torque reaction, especially for 1- or 2-nutrunner systems.

- ▶ Torque range 500 - 1000 Nm
- ▶ Standard stroke 320 mm, 500 mm, 800 mm or 1200 mm
- ▶ Increases safety and ergonomics for the operator
- ▶ Low handling forces
- ▶ Recommended for applications where fine height adjustment for high loads (above 150 kg) is necessary

SCOPE OF SUPPLY

Atlas Copco high torque reaction suspension including:

- ▶ Steel profile torque reaction suspension
- ▶ High torque linear guiding
- ▶ Demag chain hoist with up/down control unit
- ▶ Cable management
- ▶ Safety belt (1 per 150 kg weight)
- ▶ Interface to the rail system

REQUIRED EQUIPMENT

- ▶ The trolleys for the rail system are not included in the scope of supply and need to be ordered separately.

NOTES

- ▶ Important: The workpiece should be fixed for one or two spindle applications, otherwise a movement of the workpiece could be effected through the torque of the nutrunner.

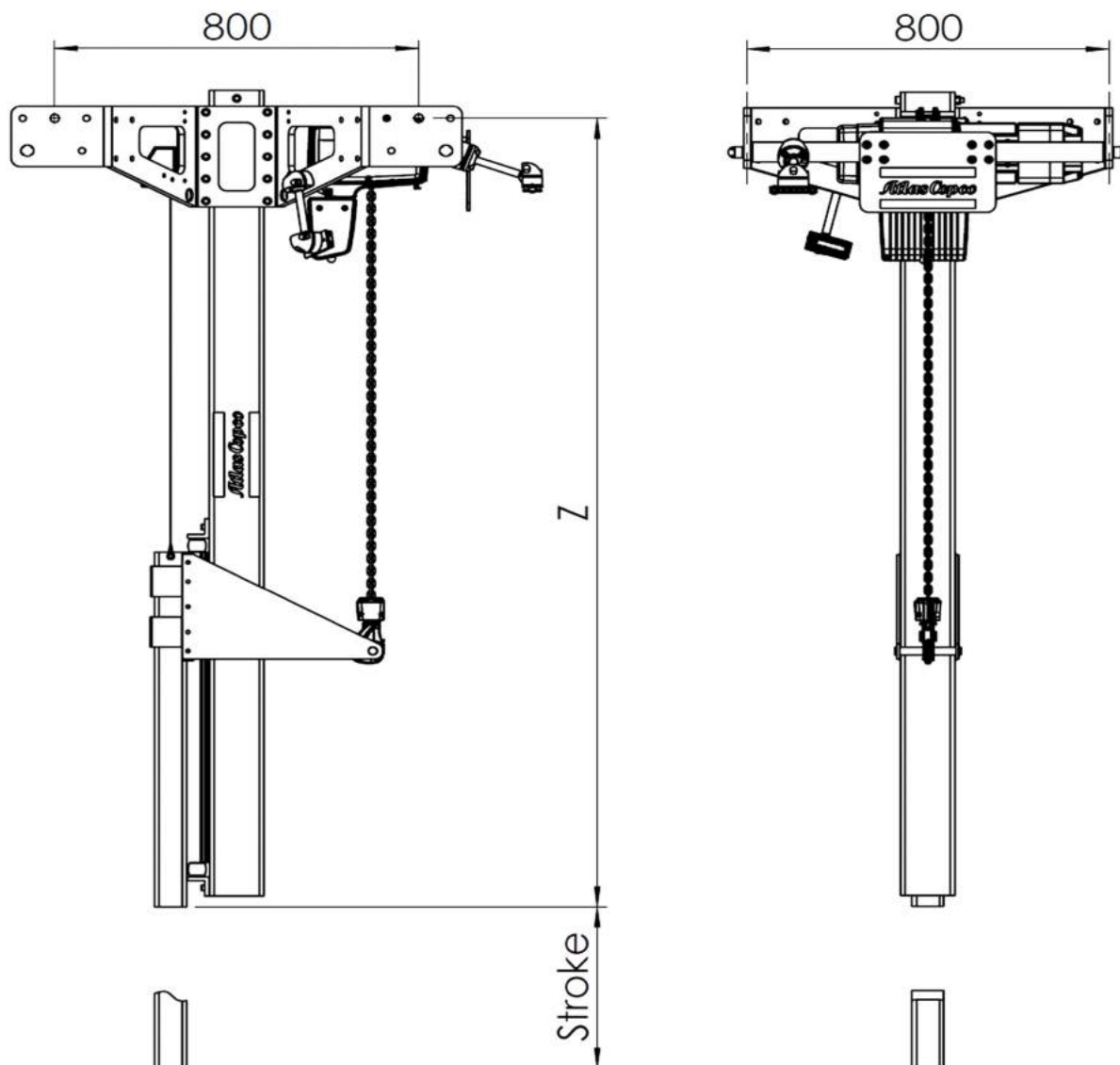


HIGH TORQUE TELESCOPE WITH CHAIN HOIST

Description	Ordering No.
High torque reaction suspension with chain hoist 1000 Nm, stroke 320 mm, load capacity 370 kg	8995 7231 00
High torque reaction suspension with chain hoist 1000 Nm, stroke 500 mm, load capacity 360 kg	8995 7232 00
High torque reaction suspension with chain hoist 800 Nm, stroke 800 mm, load capacity 350 kg	8995 7233 00
High torque reaction suspension with chain hoist 500 Nm, stroke 1200 mm, load capacity 340 kg	8995 7234 00

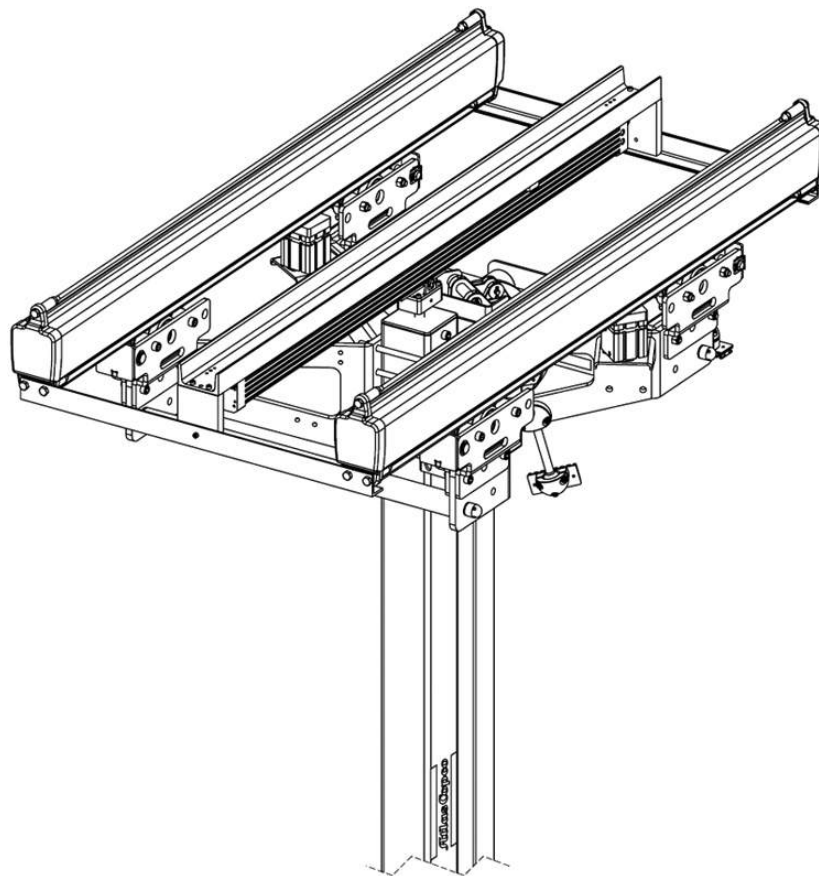
High torque telescope with chain hoist

High Torque Telescope with Chain Hoist Technical Information



Torque Max. Nm	Stroke mm	Heigth Z Min. mm	Heigth Z Max. mm	Netto Weight kg	Load Capacity Max. kg
1.000	320	1.015	3.740	176 - 307	370
1.000	500	1.195	3.640	191 - 305	360
800	800	1.495	3.340	213 - 298	350
500	1.200	1.505	2.940	246 - 295	340

High torque telescope options - movement support



RAIL BRAKE SYSTEM

- ▶ Kit with 2 cylinder units and pneumatic valve.

Description	Ordering No.
Rail brake system	8995 7235 00



PUSHING SUPPORT UNIT

- ▶ Pushing support unit to fix on tightening position. Stroke max. 1.500 mm, pushing force max. 600 N. Kit with cylinder unit and pneumatic valve.

Description	Ordering No.
Pushing support unit	8995 7235 01



High torque telescope options - fixtured housing support

FIXED ADAPTION VERTICAL

Description	Degrees of Freedom	Tool Assembly	Ordering No.
Fixed Adaption Vertical for High Torque Telescope 60 mm	Fixed	Vertical	8995 7001 80



FIXED ADAPTION HORIZONTAL

Description	Degrees of Freedom	Tool Assembly	Ordering No.
Fixed Adaption Horizontal for High Torque Telescope 60 mm	Fixed	Horizontal	8995 7001 79



SWIVEL JOINT

Description	Degrees of Freedom	Tool Assembly	Ordering No.
Swivel Joint for High Torque Telescope 60 mm	Vertical Rotation max. 330°	Horizontal	8995 7001 75



SWIVEL JOINT WITH LOCKING

Description	Degrees of Freedom	Tool Assembly	Ordering No.
Swivel Joint with Locking for High Torque Telescope 60 mm	Horizontal Rotation max. 330°	Horizontal	8995 7001 78



CLEVIS JOINT

Description	Degrees of Freedom	Tool Assembly	Ordering No.
Clevis Joint for High Torque Telescope 60 mm	Horizontal Rotation +/- 10°	Horizontal	8995 7001 76



CLEVIS JOINT SWIVELLING

Description	Degrees of Freedom	Tool Assembly	Ordering No.
Clevis Joint Swivelling for High Torque Telescope 60 mm	Vertical +/- 5° and Horizontal +/- 10°	Horizontal	8995 7001 77



AX1 Articulated Arms

AX1 Articulated Arms were developed to meet a variety of low torque and short reach applications; mainly for Powertrain. These apply high flexibility and capability to many different situations. The arm reacts the torque generated by a tool and balances the weight - eliminating the impact to the operator. Torque can be applied in a horizontal, vertical, or angular tightening orientation.



FEATURES

- ▶ 1000 mm arm sizes
- ▶ 450 and 600 mm vertical travel
- ▶ Gas spring or pneumatic cylinder
- ▶ Easily reconfigurable for right or left arm setups
- ▶ 330° rotation at pillar with adjustable rotational stops
- ▶ Adjustable leveling at pillar base
- ▶ Adjustable inner parallel arm length
- ▶ Magnetic home-position parking block
- ▶ Integrated cable management
- ▶ Workbench or pedestal mounting options
- ▶ PRS and adjustable limit switch accessories easily

BENEFITS

- ▶ Reduces operator fatigue
- ▶ Lightweight and smooth movement for ease of handling
- ▶ Low handling forces for improved ergonomics
- ▶ Gas spring or pneumatic cylinder for tool handling and lift assist
- ▶ Adaptable for various tool configurations
- ▶ Easy to assemble and maintain

Model	Weight kg (lb)	Height kg (lb)	Ordering No.
AX1-1-R	21.9 (46.3)	665 (26.2)	8439 6000 15
AX1-1-L	21.9 (46.3)	665 (26.2)	8439 6000 16

AX1 Articulated Arms

The flexibility of the AX1 Articulated Arm allows it to be used in a number of different configurations. It is easily adapted to suit a variety of unique applications.

WORKBENCH STATION

AX1 Articulated Arm - Workbench Mounted

- ▶ Balance Control – Gas Spring
- ▶ Straight Tool with Fixed Plate Tool Holder
- ▶ Controller Mounting System
- ▶ 3-Axis PRS System

Mobile Assembly Station (Cart)

- ▶ MaxiDisplay for PRS HMI
- ▶ Keyboard on large shelf accessory



CONVEYOR/POST STATION

AX1 Articulated Arm - Floor Mounted

- ▶ Balance Control – Gas Spring
- ▶ Straight Tool with Tool Holder
- ▶ Controller Mounting System
- ▶ 3-Axis PRS System

Compact Mounting System – CMS2-13

- ▶ MaxiDisplay for PRS HMI mounted on Arm
- ▶ Keyboard on Large Shelf accessory

OVERHEAD STATION

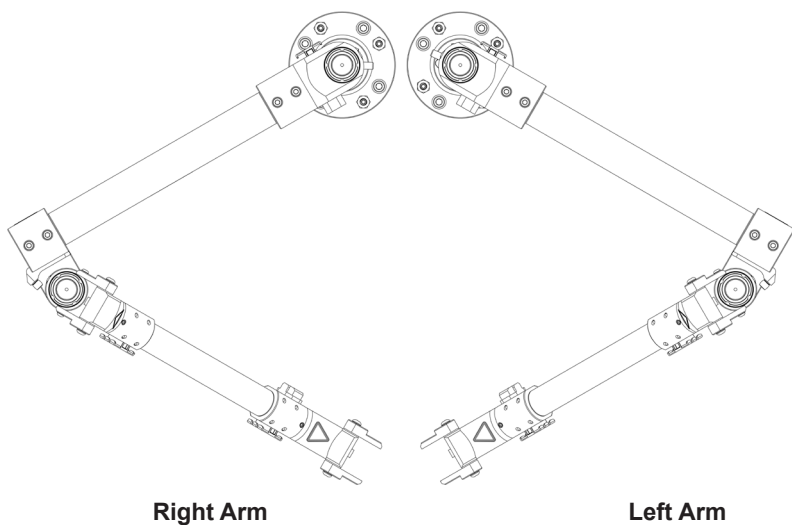
AX1 Articulated Arm - Overhead Mounted (Fixed)

- ▶ Balance Control – Gas Spring
- ▶ Rotating Hand Adapter
- ▶ Right Angle Tool with Tool Holder
- ▶ Controller Mounting System
- ▶ Fixed-position mounting

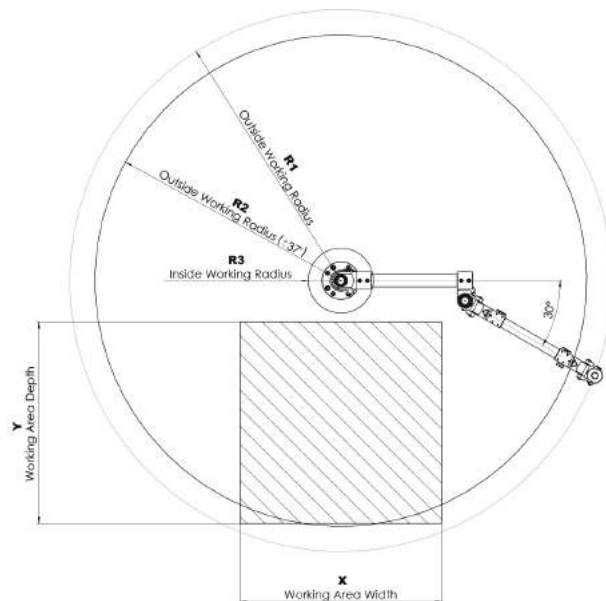


AX1 Articulated Arms - technical data

ARM CONFIGURATION

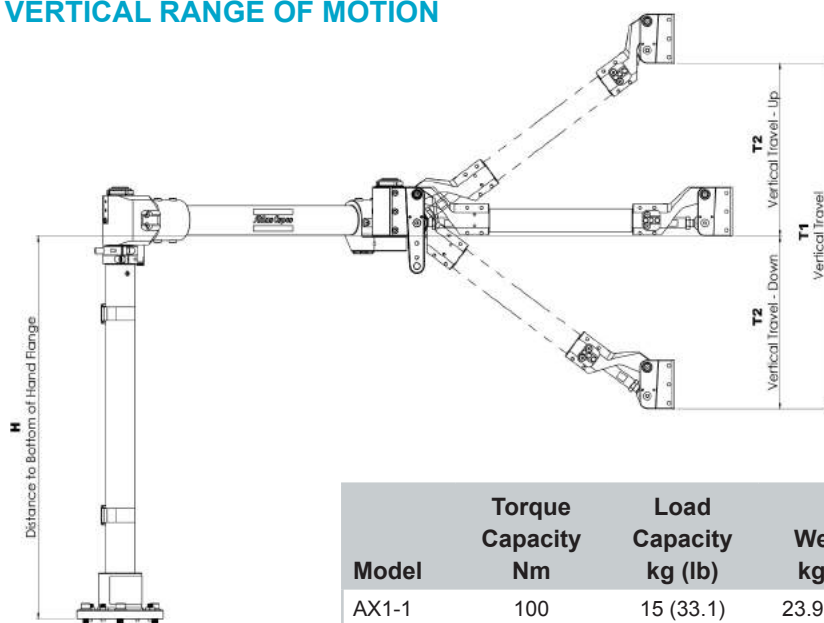


WORKING AREA



Model	X mm (in)	Y mm (in)	R1 mm (in)	R2 mm (in)	R3 mm (in)
AX1-1	800 (32)	800 (32)	1078 (42)	979 (39)	133 (5)

VERTICAL RANGE OF MOTION



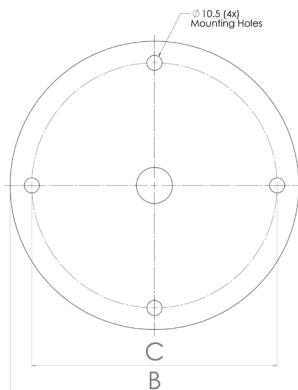
Model	Torque Capacity Nm	Load Capacity kg (lb)	Weight kg (lb)	T1 mm (in)	T2 mm (in)	H mm (in)
AX1-1	100	15 (33.1)	23.9 (52.7)	600 (24)	300 (12)	665 (26)

AX1 Articulated Arms - mounting

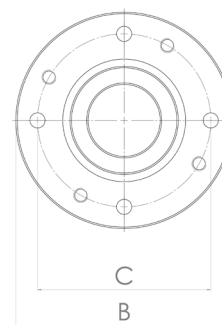
AX1 Articulated Arm can be mounted in numerous configurations based on application requirements. For workbench applications, a Workbench Mounting Plate is used as a base for the arm. Where additional height is needed, a Workbench Pedestal is available in various heights. For floor mounted applications, a Floor Pedestal is available in various heights. The workbench and floor mounting hardware is not included (options).

Description	Weight kg (lb)	Height kg (lb)	Ordering No.
Workbench Mounting Plate - AX1	2 (4.4)	15 (0.6)	8439 6011 00
Workbench Pedestal - AX1 - 100 mm	4.8 (10.6)	100 (3.9)	8439 6011 01
Workbench Pedestal - AX1 - 200 mm	5.9 (13)	200 (7.9)	8439 6011 02
Workbench Pedestal - AX1 - 300 mm	7.1 (15.7)	300 (11.8)	8439 6011 03
Floor Pedestal - AX1 - 500 mm	11.1 (24.5)	500 (19.7)	8439 6011 04
Floor Pedestal - AX1 - 750 mm	14 (30.9)	750 (29.5)	8439 6011 05
Floor Pedestal - AX1 - 1000 mm	17 (37.5)	1000 (39.4)	8439 6011 06

Description	B mm (in)	C mm (in)
Workbench Mounting Plate / Pedestal	150 (5.9)	120 (4.7)
Floor Pedestal	200 (7.9)	170 (6.7)



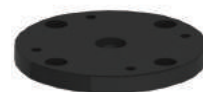
Floor Pedestal



AX1 Pillar Base Plate
Workbench Mounting
Plate / Pedestal



Floor
Pedestal



Workbench
Mounting Plate



Workbench
Pedestal

AX1 Articulated Arms - vertical rod

The vertical rod is used to connect a tool holder to the hand adapter on the articulated arm. Available in three lengths, it can be configured to suit part height requirements. The vertical rods feature a clevis interface at the lower end that adapts to all AH1-model hand tool holders.

Description	Weight kg (lb)	Height kg (lb)	Ordering No.
Vertical Rod - AX1 - 250 mm	0.9 (2)	270 (10.6)	8439 6011 40
Vertical Rod - AX1 - 350 mm	1.1 (2.4)	370 (14.6)	8439 6011 41
Vertical Rod - AX1 - 450 mm	1.4 (3.1)	470 (18.5)	8439 6011 42



AX1 Articulated Arms - balance control

The balance control is a lift-assist for easy handling of the tool. There are two types available: one that utilizes a gas spring (up or down bias with position balancing) and another that utilizes a pneumatic cylinder (position balancing). Both options can be adjusted for the load requirements within the balancing capacity range.

Gas Spring

- ▶ Up or down bias with position balancing
- ▶ Adjustable based on load



Pneumatic Cylinder

- ▶ Position balancing
- ▶ Adjustable based on load



Description	Load Capacity kg (lb)		Ordering No.
	minimum	maximum	
AX1-1 Balance Control Options			
Balance Control – AX1-1 – Pneumatic		9 @ 4 bar (20 @ 4 bar)	8439 6011 20
		13 @ 5 bar (29 @ 5 bar)	
		15 @ 6 bar (33 @ 6 bar)	
Balance Control – AX1-1 – Gas Spring – Type 1**	2.3 (5.1)	3.8 (8.4)	8439 6011 21
Balance Control – AX1-1 – Gas Spring – Type 2**	3.4 (7.5)	5.3 (11.7)	8439 6011 22
Balance Control – AX1-1 – Gas Spring – Type 3**	5 (11)	7.5 (16.5)	8439 6011 23
Balance Control – AX1-1 – Gas Spring – Type 4**	6.6 (14.6)	9.7 (21.4)	8439 6011 24
Balance Control – AX1-1 – Gas Spring – Type 5**	8.7 (19.2)	12.7 (28)	8439 6011 25

** Listed gas spring balancing capacities are rated as the highest load that will return to the center of the vertical travel. If the arm is required to automatically return to a height above the center of the vertical travel, the actual maximum load capacity may be lower than the listed value.

AX1 Articulated Arms - hand adapter

The hand adapter is used to mount the vertical rod to the articulated arm. Both fixed and rotating options are available for flexible application set-ups, with a torque reaction brake option available for vertical tightening orientation applications with rotation required.

Description	Weight kg (lb)	Vertical Application	Horizontal Application	Angular Application <small>≥ 45° from horizontal</small>	Ordering No.
Fixed Hand Adapter - AX1	1 (2.2)	✓	✓	✓	8439 6011 30
Rotating Hand Adapter - AX1	1.1 (2.4)	-	✓	✓	8439 6011 31
Rotating Hand Adapter with Brake - AX1	7 (15.4)	✓	✓	✓	8439 6011 32



**Fixed
Hand Adapter**



**Rotating
Hand Adapter**



**Rotating Hand Adapter
with Brake**

AX1 Articulated Arms - tool holders

The AX1 Articulated Arm supports a series of standard tool holders that are designed to enable various tool and position configurations. There are four standard tool holder types, each designed to adapt to different tool type and size. All tool holders mount directly to the lower clevis of the vertical rod.

FIXED PLATE - STRAIGHT

The Fixed Plate Straight Tool Holder is configurable for horizontal or vertical tightening orientations. It mounts rigidly to the lower clevis and has provisions to mount two handle mounting assemblies.

FIXED CLAMP - ANGLE

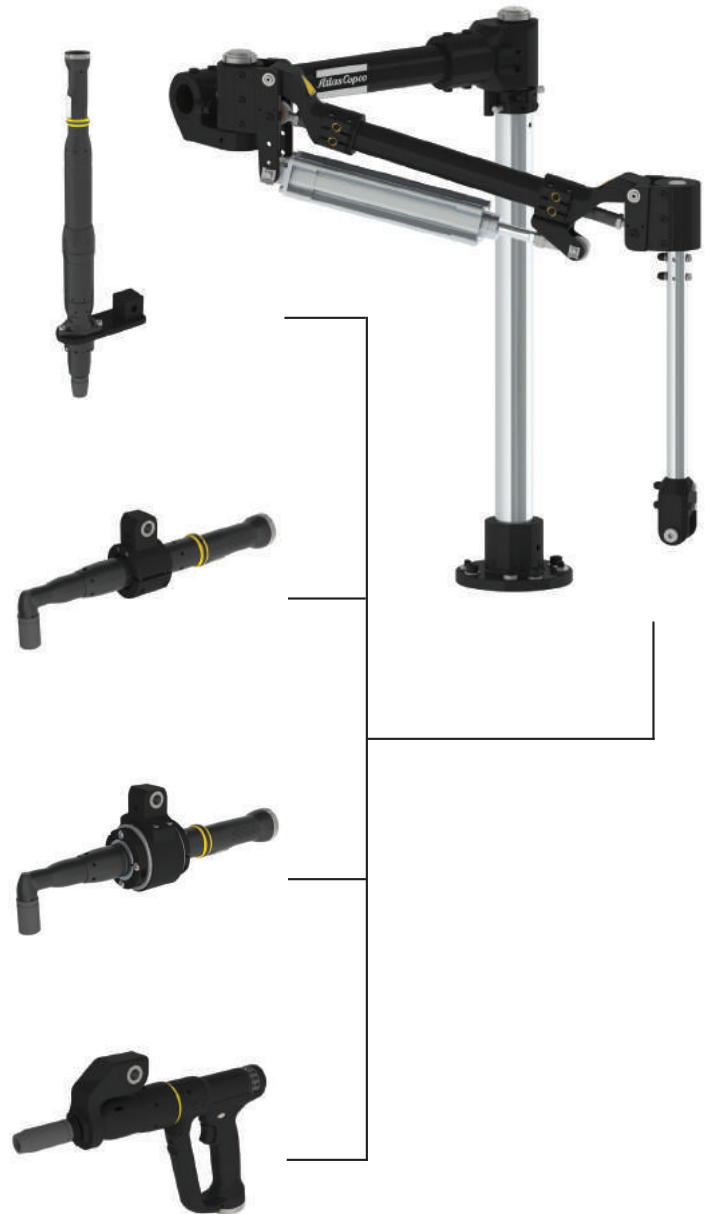
The Fixed Clamp Angle Tool Holder can be used for horizontal or vertical applications. The tool holder clamps to the grip area of an angle tool. It has a pivot for tool angle compliance and can be locked if fixed mounting is desired. The tool body can be configured either parallel or perpendicular to the pivot axis and Flanged Bushings are used to increase performance and longevity of the tool.

ROTATING BODY - ANGLE

The Rotating Body Angle Tool Holder clamps to the grip area of an angle tool. It allows the tool to rotate up to 345° to accommodate horizontal and vertical tightening orientations. Adjustable rotational stops are included to limit tool rotation and Flanged Bushings are used to increase performance and longevity of the tool. It also has a pivot for tool angle compliance and can be locked if fixed mounting is desired.

FIXED PLATE - PISTOL

The Fixed Plate Pistol Tool Holder is designed for horizontal tightening orientations utilizing a pistol tool. It has a pivot for tool angle compliance and can be locked if fixed mounting is desired. Flanged Bushings are also used to increase performance and longevity of the tool.



AX1 Articulated Arms - tool holders

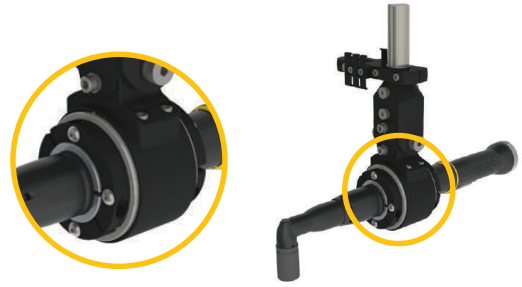
Description	Weight kg (lb)	Height mm (in)	Ordering No.
Fixed Plate - Straight			
Fixed Plate - Straight - AH1 - Dia 24 mm	0.6 (1.3)	17 (0.7)	8439 5005 01
Fixed Plate - Straight - AH1 - Spline 2	0.6 (1.3)	17 (0.7)	8439 5005 02
Fixed Plate - Straight - AH1 - Spline 3	0.6 (1.3)	17 (0.7)	8439 5005 03
Fixed Plate - Straight - AH1 - Flange (2) M8	0.8 (1.8)	17 (0.7)	8439 5005 04
Fixed Plate - Straight - AH1 - Flange (3) M108	0.8 (1.8)	17 (0.7)	8439 5005 05
Fixed Clamp - Angle			
Fixed Clamp - Angle - AH1 - M - 39	0.5 (1.1)	55 (2.2)	8439 5005 21
Fixed Clamp - Angle - AH1 - M - 43	0.5 (1.1)	55 (2.2)	8439 5005 22
Fixed Clamp - Angle - AH1 - M - 54.4	0.8 (1.8)	66 (2.6)	8439 5005 23
Rotating Body - Angle			
Rotating Body - Angle - AH1 - M - 39	1.2 (2.7)	70 (2.8)	8439 5005 41
Rotating Body - Angle - AH1 - M - 43	1.2 (2.7)	70 (2.8)	8439 5005 42
Rotating Body - Angle - AH1 - M - 54.4	2.1 (4.6)	87 (3.4)	8439 5005 43
Fixed Plate - Pistol			
Fixed Plate - Pistol - AH1 - Dia 24 mm	0.2 (0.5)	50 (2)	8439 5005 61
Fixed Plate - Pistol - AH1 - Spline 2	0.3 (0.6)	50 (2)	8439 5005 62

AX1 Articulated Arms - motor mount (grip)

Mounting to the motor/grip area provides the largest clearance between fastening and tool mounting (motor/grip) areas. The operator holds the tool utilizing the gear area and the trigger handle. Generally, this hand positioning is more ergonomic for the operator.



Operator Hand Position



Motor / Grip Mounting Area

AX1 Articulated Arms - tool holder features



CLEVIS/TOOL HOLDER INTERFACE

The tool holders mount to the Lower Clevis and can be easily integrated.



LOWER PIVOT FIXING ASSEMBLY

A Lower Pivot Fixing Assembly is used to lock the lower pivot. This can be easily removed for applications where a pivot is required for compliance.



FLANGED BUSHINGS

Fixed clamp and rotating body tool holders include Flanged Bushings, which increase performance and longevity.



HANDLE MOUNTING ASSEMBLY

The Handle Mounting Assembly mounts directly to predrilled threaded holes in a Fixed Plate Straight Tool Holder. The handle is separate from the assembly.

AX1 Articulated Arms

- tool holder mounting type guide

AX1 / HTS1						
Tool Model	Torque Range Nm	Mounting Type	Fixed Plate - Straight	Fixed Clamp - Angle	Rotating Body - Angle	Fixed Plate - Pistol
ETV ST31	5 - 20	M - 39	-	8439 5005 21	8439 5005 41	-
ETV ST61	28 - 70	M - 39	-	8439 5005 21	8439 5005 41	-
	100 - 200	M - 39	-	8439 5005 21	8439 5005 41	-
ETV ST81	50 - 70	M - 43	-	8439 5005 22	8439 5005 42	-
	100 - 200	M - 43	-	8439 5005 22	8439 5005 42	-
ETV ST101	100 - 200	M - 54.4	-	8439 5005 23	-	-
ETD ST31	5 - 10	Dia. 24 mm	8439 5005 01	-	-	-
ETD ST61	15 - 30	Dia. 24 mm	8439 5005 01	-	-	-
	50 - 90	Spline 2	8439 5005 02	-	-	-
ETD ST61 Telescopic	10 - 30	Spline 2	8439 5005 02	-	-	-
	50 - 120	Spline 3	8439 5005 03	-	-	-
ETD ST81	30	Dia. 24 mm	8439 5005 01	-	-	-
	50 - 120	Spline 2	8439 5005 02	-	-	-
ETD ST81 Telescopic	30 - 50	Spline 2	8439 5005 02	-	-	-
	70 - 120	Spline 3	8439 5005 03	-	-	-
ETD ST101	100 - 120	Flange (2) M8	8439 5005 04	-	-	-
	150 - 200	Flange (2) M10	8439 5005 05	-	-	-
ETP ST Revo	200	Spline 3	-	-	-	-
ETP STR61	20 - 30	Dia. 24 mm	-	-	-	8439 5005 61
	50 - 120	Spline 2	-	-	-	8439 5005 62

AX1 Articulated Arms

- tool holder mounting type guide

AX1 / HTS2						
Tool Model	Torque Range Nm	Mounting Type	Fixed Plate - Straight	Fixed Clamp - Angle	Rotating Body - Angle	Fixed Plate - Pistol
ETV ST31	5 - 20	M - 39	-	8439 5005 91	8439 5006 11	-
ETV ST61	28 - 70	M - 39	-	8439 5005 91	8439 5006 11	-
	100 - 200	M - 39	-	8439 5005 91	8439 5006 11	-
ETV ST81	50 - 70	M - 43	-	8439 5005 92	8439 5006 12	-
	100 - 200	M - 43	-	8439 5005 92	8439 5006 12	-
ETV ST101	100 - 200	M - 54.4	-	8439 5005 93	8439 5006 13	-
ETD ST31	5 - 10	Dia. 24 mm	-	-	-	-
ETD ST61	15 - 30	Dia. 24 mm	-	-	-	-
	50 - 90	Spline 2	8439 5005 81	-	-	-
ETD ST61 Telescopic	10 - 30	Spline 2	8439 5005 81	-	-	-
	50 - 120	Spline 3	8439 5005 82	-	-	-
ETD ST81	30	Dia. 24 mm	-	-	-	-
	50 - 120	Spline 2	8439 5005 81	-	-	-
ETD ST81 Telescopic	30 - 50	Spline 2	8439 5005 81	-	-	-
	70 - 120	Spline 3	8439 5005 82	-	-	-
ETD ST101	100 - 120	Flange (2) M8	8439 5005 83	-	-	-
	150 - 200	Flange (2) M10	8439 5005 84	-	-	-
ETP ST Revo	200	Spline 3	-	-	-	8439 5006 32
ETP STR61	20 - 30	Dia. 24 mm	-	-	-	-
	50 - 120	Spline 2	-	-	-	8439 5006 31

AX1 Articulated Arms - workbench mounting hardware

The workbench mounting hardware may be used when either a workbench mounting plate or workbench pedestal option is selected. Options are available for either direct or through-bencht top mounting. Direct version is used when arm can be bolted directly to mounting surface with threaded holes. Through version is used when arm cannot be bolted directly to mounting surface – measurement indicates maximum mounting surface thickness.

Description	Ordering No.
Workbench Mounting Hardware - Direct *Tapped hole surfaces	8439 6111 00
Workbench Mounting Hardware - Through - 40 mm *Bolt through hole surfaces	8439 6111 01
Workbench Mounting Hardware - Through - 75 mm *Bolt through hole surfaces	8439 6111 02



Through
Mounting Hardware

AX1 Articulated Arms - controller mounting system

The controller mounting system for the AX1 Articulated Arm mounts directly to the pillar to allow for a compact system size. The controller mounting system is compatible with Power Focus 4000, Power Focus 600/6000, and Power MACS 4000 controllers. It includes mounting for a stacklight and an integrated cable enclosure for total cable management.

Description	Ordering No.
Controller Mounting System - Pillar Mount	8439 6111 10



**Removable
Cable Enclosure**



AX1 Articulated Arms - MaxiDisplay mounting system

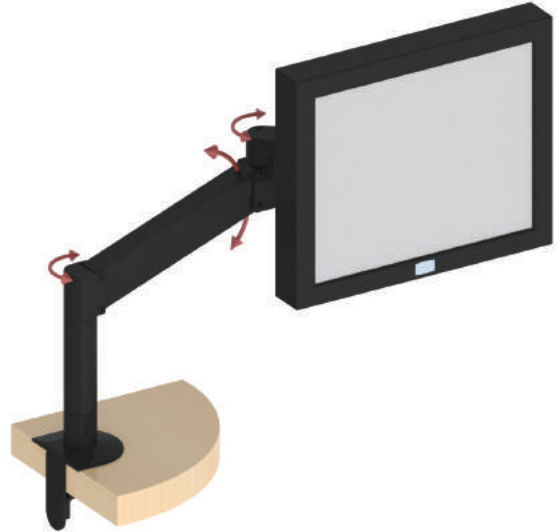
The mounting system has height and angle adjustability with a 610 mm (24 in) extended length. It includes multiple standard bench mounting configuration options.

NOTES

For HLTQ - Industrial PC compatibility use:

- ▶ CMS post (length varies)
- ▶ HLTQ mounting (8439 4452 24)
- ▶ Workbench mount (8439 4452 17)

Description	Ordering No.
MaxiDisplay Mounting System - Bench FLEXmount	8439 6111 11



AX1 Articulated Arms - Position Recognition System - PRS

The PRS is an integrated, highly flexible, standalone error-proofing solution. Combined with the AX1 Articulated Arm, the system tracks the exact position of the tool, ensuring the correct fasteners are tightened to the required torque in the proper sequence.

AX1 Articulated Arm is compatible with the full feature set of the Atlas Copco Position Recognition System - PRS. It utilizes durable, contactless encoders with integrated zero-position indicators.

POSITION RECOGNITION SYSTEM - PRS - HMI KITS

Description	Ordering No.
PRS HMI Kit - MaxiDisplay-Ethernet Cable	8439 6111 45
PRS HMI Kit - ComNode-Ethernet Cable	8439 6111 46

POSITION RECOGNITION SYSTEM - PRS - ENCODER CABLES

Description	Ordering No.
Encoder Cable Kit - 3-Axis - 1/1.5 m	8439 6111 43
Encoder Cable Kit - 4-Axis - 1/1.5 m	8439 6111 44



POSITION RECOGNITION SYSTEM - PRS HARDWARE KITS

Description	Single-Plane Vertical Applications	Multi-Plane Vertical Applications	Horizontal Applications	Ordering No.
3-Axis PRS Package - AX1	✓	✓	-	8439 6111 35
4-Axis PRS Package - for Rotate - AX1	✓	✓	✓	8439 6111 36
PRS - AX1 / AX1H - 4-Axis - for Rotate with Brake (Gen 2)	✓	✓	✓	8439 6111 37
PRS - AX1 / AX1H - 4-Axis - for Rotate with Brake (Gen 1)	✓	✓	✓	8439 6111 38

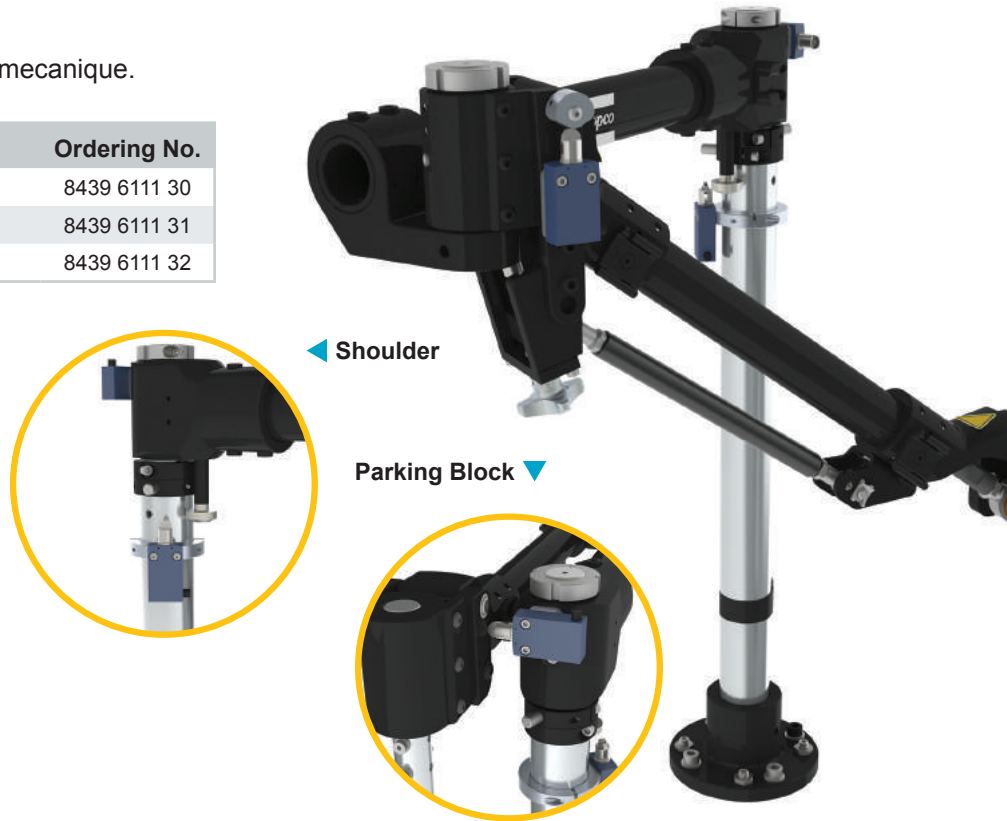
AX1 Articulated Arms - position limit switch assemblies

The available position switch assemblies utilize mechanical switches mounted at different points on the arm to indicate when the arm is in a specific position. Often used with safety systems, these switches feature open-end cables that can be adapted to various system types. Switches for each arm pivot are available.

NOTES

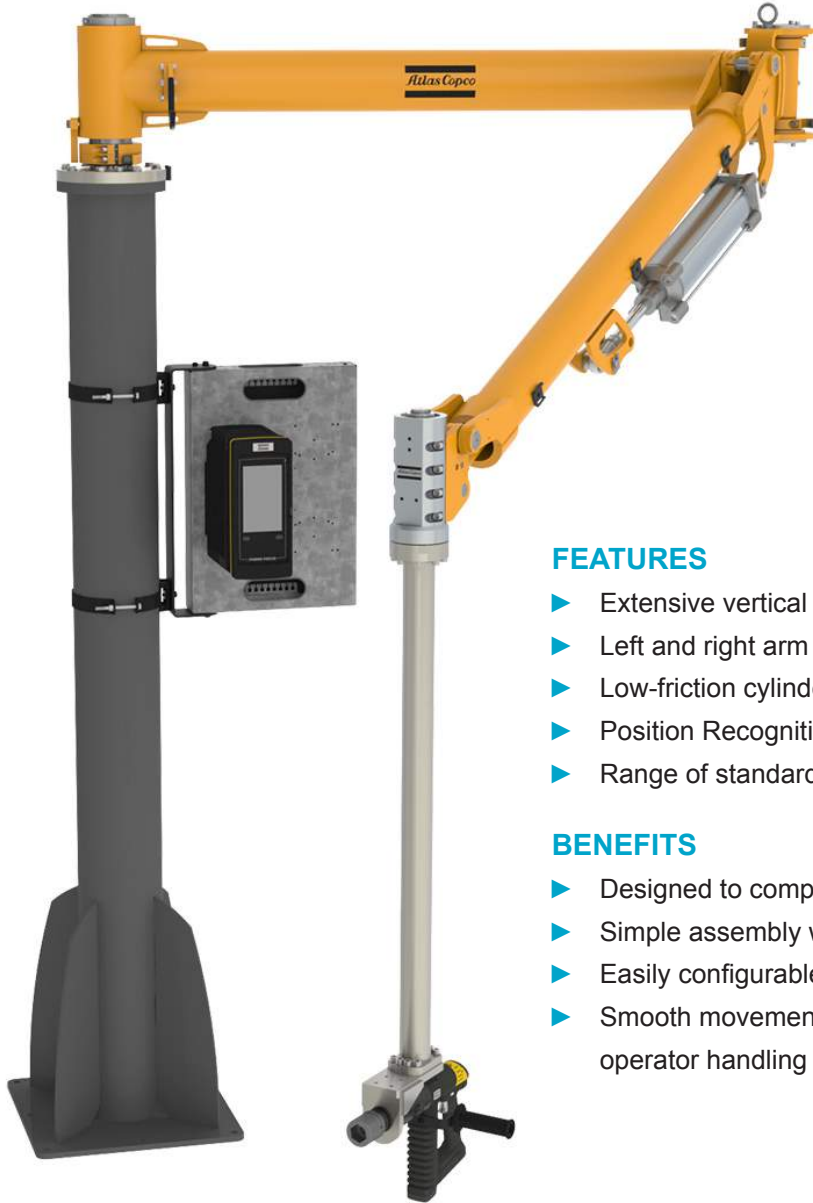
- ▶ All standard limit switches are Telemecanique.

Description	Ordering No.
Position Switch Assembly - Shoulder - AX1	8439 6111 30
Position Switch Assembly - Parking Block - AX1	8439 6111 31
Position Switch Assembly - Up-Down - AX1	8439 6111 32



AX2 - AX5 Articulated Arms

AX Articulated Arms are designed for user-friendly handling of tools in a variety of applications. The arms can be used to support single-spindle, multi-spindle or customized solutions for reach, payload capacity and handling forces, offering the best ergonomic and safe operator environment.



FEATURES

- ▶ Extensive vertical travel
- ▶ Left and right arm configurations
- ▶ Low-friction cylinders for lower handling forces
- ▶ Position Recognition System - PRS adaptable
- ▶ Range of standard tool holders and accessories

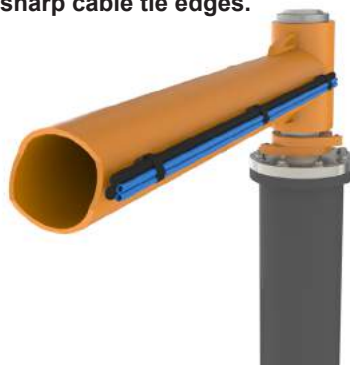
BENEFITS

- ▶ Designed to comply with ISO 14238 safety standards
- ▶ Simple assembly with low maintenance requirements
- ▶ Easily configurable to create an optimized solution
- ▶ Smooth movement and low handling forces for ease of operator handling



Adjustable Rotation Stops

Reusable / reclosable velcro cable management without sharp cable tie edges.



Reusable due to real standard and clear interfaces.



Adjustable inner parallel arm for vertical rod leveling

330° Shoulder Rotation



Rubber Coated Parking Hook

AX2 - AX5 Articulated Arms

270 NM TO 2000 NM

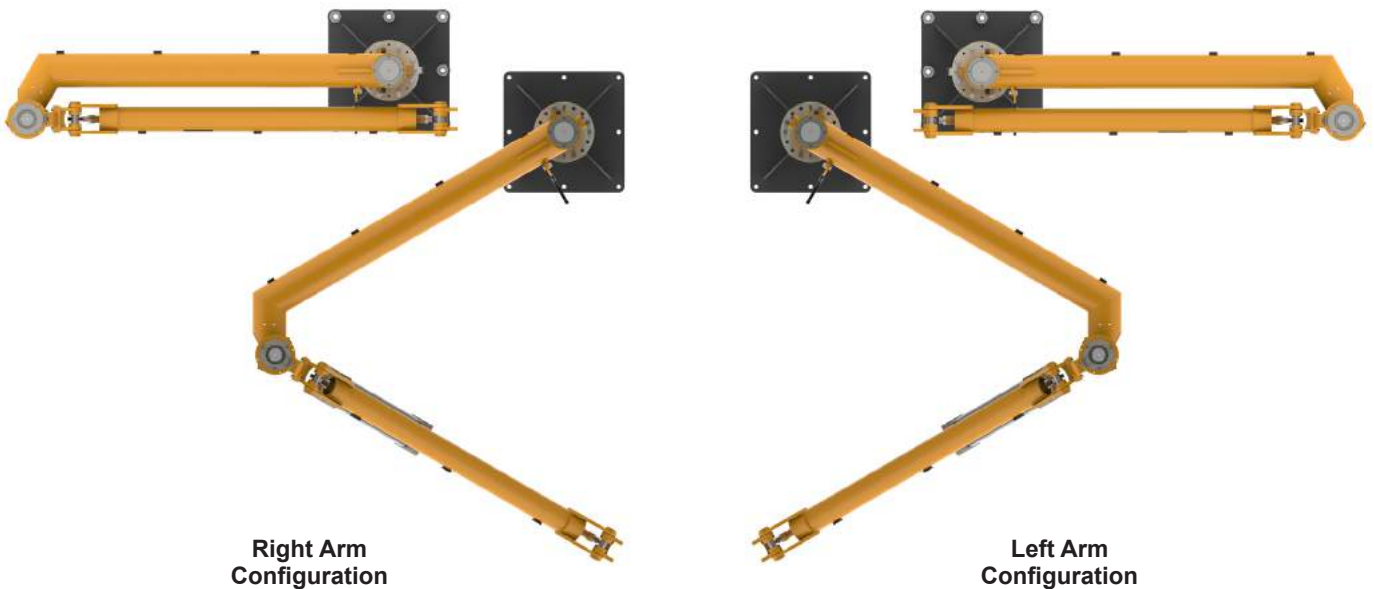
Up to 12 Configurations Available



Arm Model	Maximum Torque Nm	Maximum Payload kg (lb)	Air Supply Pressure		Vertical Travel mm (in)	Reach Length				
			bar	psi		2 m	2.5 m	3 m	4 m	5 m
AX2	270	35 (77)	4	60	750.0 (29.5)	•		•	+	
AX3	600	70 (154)	6	90	1500.0 (59.1)		•	•	+	
AX4	1000	90 (198)	6	90	1800.0 (70.9)			•	•	+
AX5	2000	100 (220)	6	90	1800.0 (70.9)				•	+
	2000	100 (220)	6	90	2400.0 (94.5)				•	
						6.6 ft	8.2 ft	9.8 ft	13.1 ft	16.4 ft

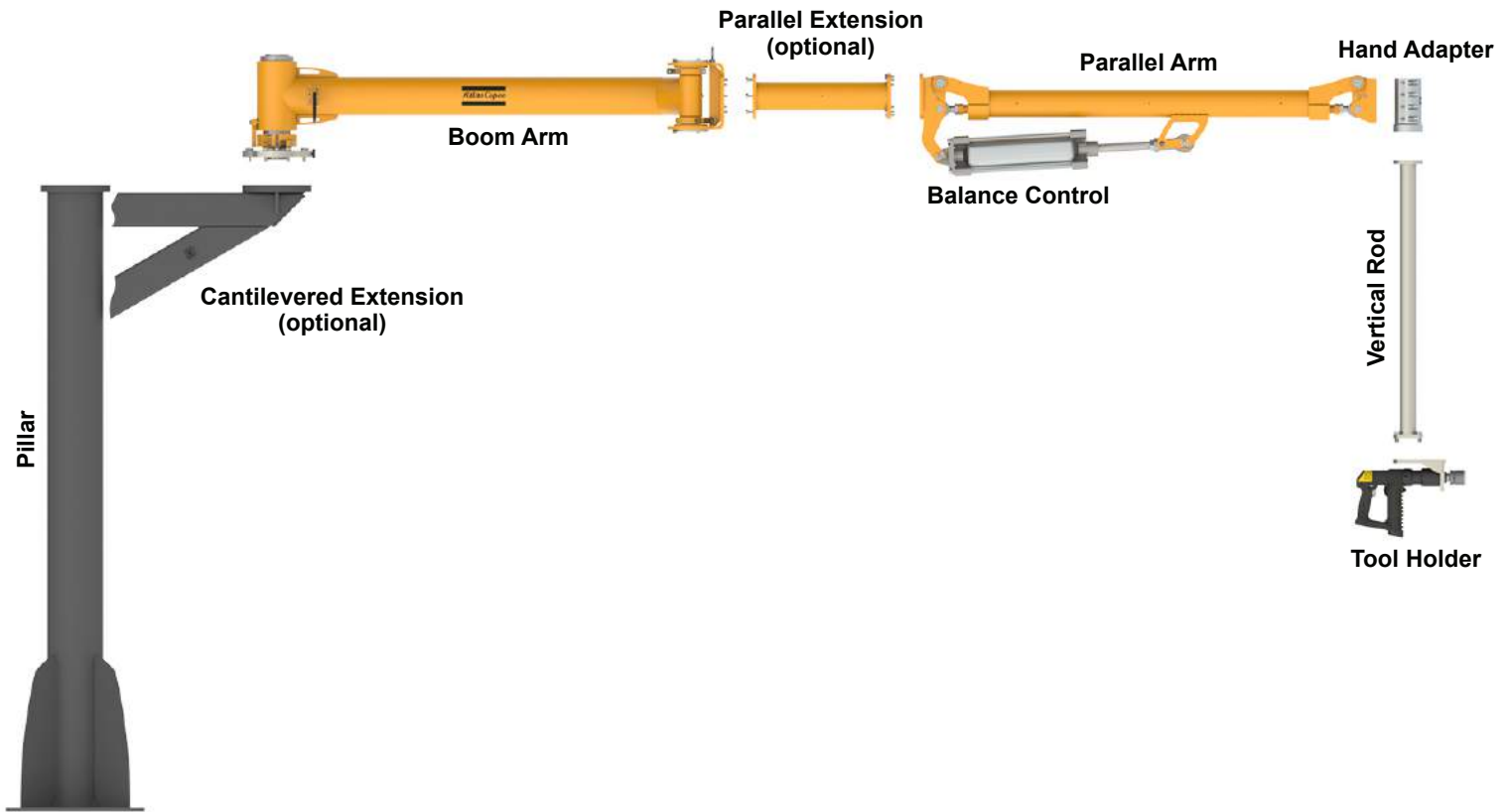
• Standard arm configuration
+ Standard arm configuration with cantilevered extension

LEFT & RIGHT HAND CONFIGURATION



AX2 - AX5 Articulated Arms

AX Articulated Arms were developed to allow for optimized systems. Components from different models can be used together to build a system optimized for reach and ease of handling. The arm series offers the ability to reuse components for other applications and/or manufacturing lines. This not only saves the customer costs, but its interchangeability is also good for the environment.



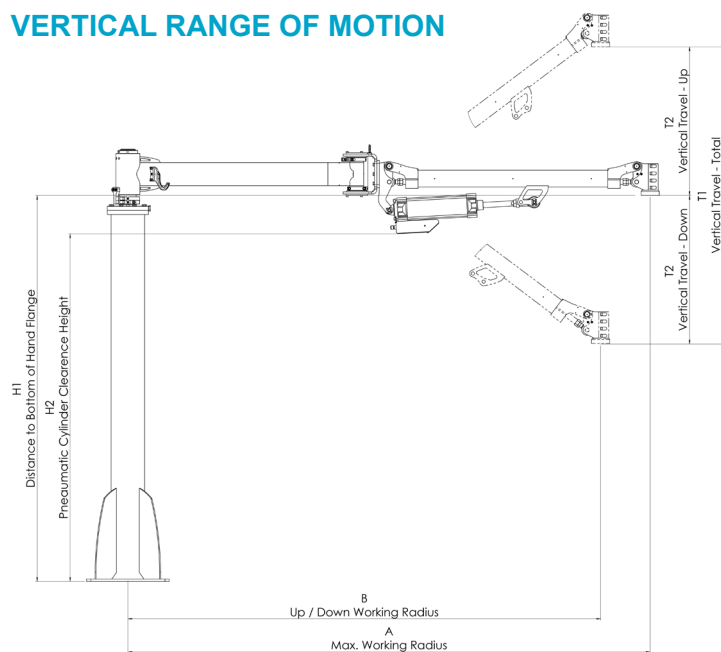
Arm Model	Pillar	Cantilevered Pillar	Boom Arm	Parallel Arm Extension	Parallel Arm	Vertical Rod / Hand Adapter
AX2	AX2-P	-	AX2-BA-1	-	AX2-PA-1	AX2
	AX3/4-P	-	AX4-BA-1.5	AX2-PE-0.5	AX2-PA-1	AX2
	-	AX3/4-CP-1	AX4-BA-1.5	AX2-PE-0.5	AX2-PA-1	AX2
AX3	AX3/4-P	-	AX3-BA-1.25	-	AX3-PA-1.25	AX3/4
	AX3/4-P	-	AX4-BA-1.5	AX3/4-PE-0.25	AX3-PA-1.25	AX3/4
	-	AX3/4-CP-1	AX4-BA-1.5	AX3/4-PE-0.25	AX3-PA-1.25	AX3/4
AX4	AX3/4-P	-	AX4-BA-1.5	-	AX4-PA-1.5	AX3/4
	AX5-P	-	AX5-BA-2	AX3/4-PE-0.5	AX4-PA-1.5	AX3/4
	-	AX3/4-CP-1	AX5-BA-2	AX3/4-PE-0.5	AX4-PA-1.5	AX3/4
AX5	AX5-P	-	AX5-BA-2	AX5-PE-0.5	AX5-PA-1.5	AX5
	AX5-P	-	AX5-BA-2	-	AX5-PA-2	AX5
	-	AX5-CP-1	AX5-BA-2	AX5-PE-0.5	AX5-PA-1.5	AX5

AX2 - AX5 Articulated Arms - technical data

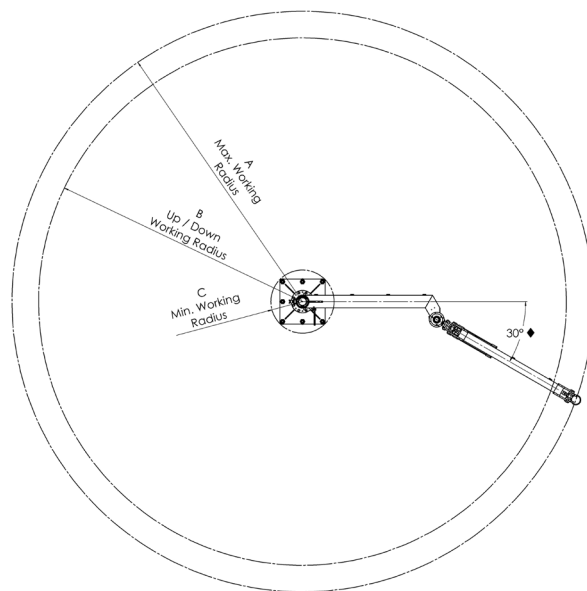
Arm Model	Right Arm Configuration	Left Arm Configuration	Weight kg (lb)	Reach m	Maximum Working Radius	Up/Down Working Radius	Minimum Working Radius	Vertical Travel Total	Height	
					A mm	B mm	C mm	T ₁ mm	H1 mm	H2 mm
AX2-2	8439 6002 02	8439 6002 03	124 (274)	2	2152	2079	243	750	2084	1905
AX2-3	8439 6002 04	8439 6002 05	247 (545)	3	3175	3102	320	750	2391	2210
AX2-4C	8439 6002 06	8439 6002 07	387 (853)	4C	3175	3102	320	750	2126	1945
AX3-2.5	8439 6003 02	8439 6003 03	240 (529)	2.5	2725	2479	354	1500	2341	2100
AX3-3	8439 6003 04	8439 6003 05	264 (583)	3	3209	3012	348	1500	2341	2100
AX3-4C	8439 6003 06	8439 6003 07	404 (891)	4C	3209	3012	348	1500	2076	1840
AX4-3	8439 6004 00	8439 6004 01	270 (595)	3	3217	2922	354	1800	2341	2105
AX4-4	8439 6004 02	8439 6004 03	423 (932)	4	4207	3913	392	1800	2366	2130
AX4-5C	8439 6004 04	8439 6004 05	509 (1122)	5C	4207	3913	348	1800	2351	2115
AX5-4	8439 6005 02	8439 6005 03	465 (1025)	4	4245	3950	422	1800	2326	2075
AX5-4T	8439 6005 04	8439 6005 05	462 (1017)	4T	4245	3852	422	2400	2326	2075
AX5-5C	8439 6005 06	8439 6005 07	671 (1480)	5C	4245	3950	422	1800	2311	2075

C - Cantilevered Extension
T - Extended Travel

VERTICAL RANGE OF MOTION



WORKING AREA



AX2 - AX5 Articulated Arms - mounting

AX Articulated Arms can be mounted in various configurations to suit numerous application requirements. If more space is needed between the assembly line and the location of the pillar, the cantilevered pillar is available, giving you up to one meter of extended reach. Two pillar types are available to suit mounting position requirements, with multiple height options available for each to meet application-specific height requirements.

FEATURES

Standard Pillar

- ▶ Shoulder pivot located directly above pillar base

Cantilevered Pillar

- ▶ Shoulder pivot offset from pillar base
- ▶ Allows mounting of arm further from part when flexibility is critical

REQUIRED EQUIPMENT

- ▶ Base plate anchors – see User Guide for more information



AX2 - AX5 Articulated Arms - mounting

Standard offering

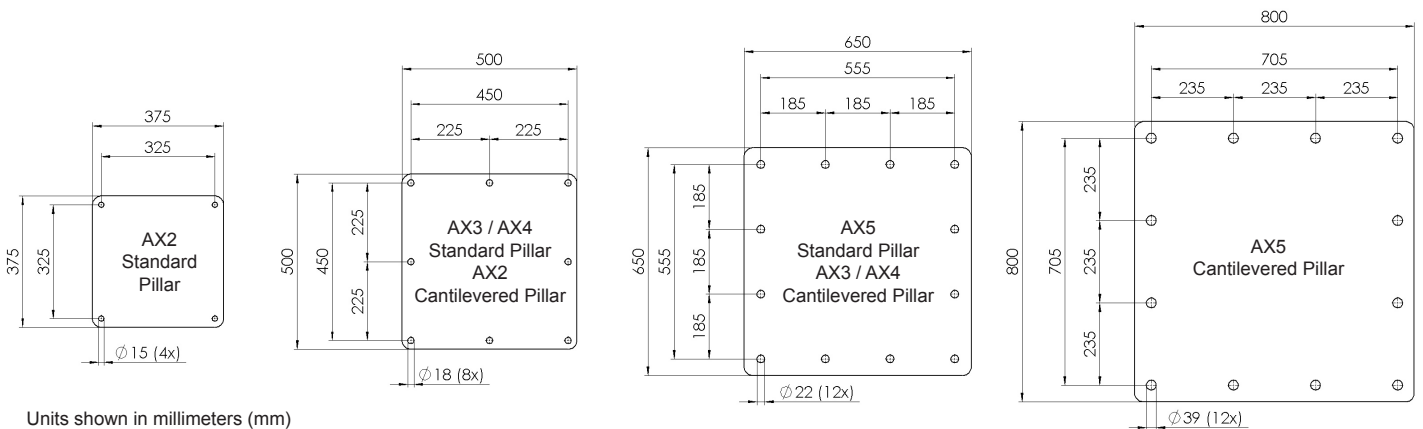
Description	AX2		AX3 / AX4		AX5	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Standard Pillar - 1000 mm	53 (117)	8439 6002 11	92 (204)	8439 6004 11	132 (292)	8439 6005 11
Standard Pillar - 1250 mm	58 (128)	8439 6002 12	100 (221)	8439 6004 12	151 (332)	8439 6005 12
Standard Pillar - 1500 mm	63 (140)	8439 6002 13	108 (237)	8439 6004 13	169 (373)	8439 6005 13
Standard Pillar - 1750 mm	69 (151)	8439 6002 14	115 (254)	8439 6004 14	187 (413)	8439 6005 14
Standard Pillar - 2000 mm	74 (163)	8439 6002 15	123 (271)	8439 6004 15	206 (454)	8439 6005 15
Standard Pillar - 2250 mm	79 (174)	8439 6002 16	131 (288)	8439 6004 16	224 (494)	8439 6005 16
Standard Pillar - 2500 mm	84 (186)	8439 6002 17	139 (305)	8439 6004 17	242 (534)	8439 6005 17
Standard Pillar - 2750 mm	90 (197)	8439 6002 18	146 (322)	8439 6004 18	261 (575)	8439 6005 18
Standard Pillar - 3000 mm	95 (209)	8439 6002 19	154 (339)	8439 6004 19	279 (616)	8439 6005 19

500 mm Cantilevered Length

Cantilevered Pillar - 500 mm L - 2000 mm H	140 (308)	8439 6002 21	92 (204)	8439 6004 21	-	-
Cantilevered Pillar - 500 mm L - 2250 mm H	-	-	100 (221)	8439 6004 22	-	-
Cantilevered Pillar - 500 mm L - 2500 mm H	155 (342)	8439 6002 22	108 (237)	8439 6004 23	-	-
Cantilevered Pillar - 500 mm L - 3000 mm H	171 (377)	8439 6002 23	115 (254)	8439 6004 24	-	-

1000 mm Cantilevered Length

Cantilevered Pillar - 1000 mm L - 2000 mm H	181 (400)	8439 6002 26	131 (288)	8439 6004 26	224 (494)	8439 6005 26
Cantilevered Pillar - 1000 mm L - 2250 mm H	-	-	139 (305)	8439 6004 27	242 (534)	8439 6005 27
Cantilevered Pillar - 1000 mm L - 2500 mm H	196 (432)	8439 6002 27	146 (322)	8439 6004 28	261 (575)	8439 6005 28
Cantilevered Pillar - 1000 mm L - 3000 mm H	212 (467)	8439 6002 28	154 (339)	8439 6004 29	279 (616)	8439 6005 29



Units shown in millimeters (mm)
Conversion factor: 25.4 mm / inch

AX2 - AX5 Articulated Arms - balance control

The balance control is a lift-assist offering zero-gravity positioning of the tool. The balance control system includes air preparation and safety components standard with the system. A balance control option is selected based on load capacity and arm model requirements with respect to the air supply pressure. The balancing force can be adjusted based on the system weight. Improvements include: tool, fixturing, holders, downtubes and end-of-arm rotate.

INCLUDED EQUIPMENT

The balance control is a lift-assist offering zero-gravity

- ▶ Pneumatic cylinder and mounting
- ▶ Precision pneumatic control circuit
- ▶ Air preparation with mounting

NOTES

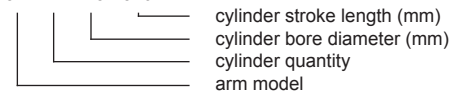
- ▶ Protective pneumatic cover available if required
- ▶ Improved control capacities and content reduction



Arm Model	Description	Maximum Balance Capacity @ supply pressure kg (lb)			Maximum Balance Capacity @ supply pressure kg (lb)			Ordering No.
		4 bar	5 bar	6 bar	60 psi	75 psi	90 psi	
AX2	Balance Control - AX2 - 1-100-125	35 (77)	35 (77)	35 (77)	35 (77)	35 (77)	35 (77)	8439 6002 61
AX3	Balance Control - AX3/4 - 1-125-320	68 (150)	70 (154)	70 (154)	70 (154)	70 (154)	70 (154)	8439 6004 62
AX4	Balance Control - AX3/4 - 1-125-320	50 (110)	71 (156)	90 (198)	53 (116)	74 (164)	90 (198)	8439 6004 62
	Balance Control - AX3/4 - 2-125-320	90 (198)	90 (198)	90 (198)	90 (198)	90 (198)	90 (198)	8439 6004 63
AX5	Balance Control - AX5 - 1-125-400	48 (107)	75 (165)	100 (220)	52 (115)	79 (175)	100 (220)	8439 6005 62
	Balance Control - AX5 - 2-125-400	100 (220)	100 (220)	100 (220)	100 (220)	100 (220)	100 (220)	8439 6005 63

Balance Control naming convention:

Balance Control - AX3/4 - 1 - 125 - 320



AX2 - AX5 Articulated Arms - parking brake

Parking Brakes are used to keep the arm from drifting while it is not in use by the operator. If a fastening sequence requires the operator to perform operations between rundowns; it can be advantageous to avoid returning the arm to its parking hook between each step. Parking Brakes ensure the unattended arm will not cause damage to parts or injure operators, when the parking brake is engaged.

INCLUDED EQUIPMENT

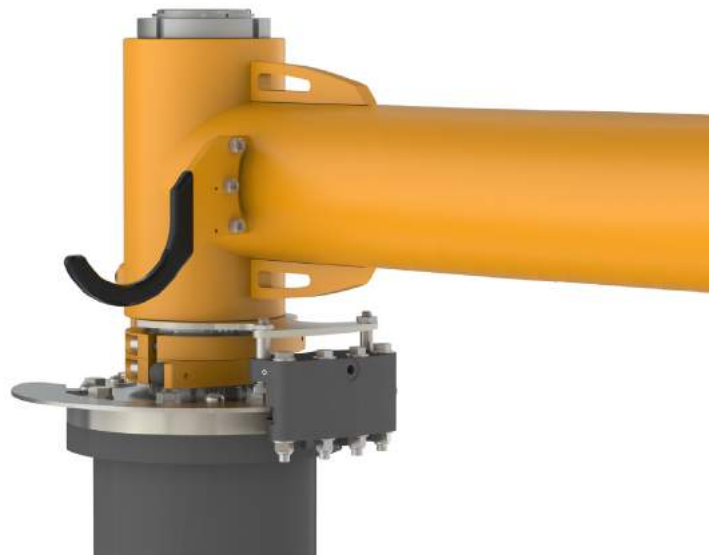
- ▶ Pneumatic parking brakes
- ▶ Pneumatic control circuit
- ▶ On/off switch and vertical rod mounting

NOTES

- ▶ Parking Brakes are not designed to react torque generated by the tool.

Standard offering

Model	Ordering No.
AX2-2	8439 6012 00
AX2-3	8439 6012 09
AX2-4C	8439 6012 09
AX3-2.5	8439 6014 00
AX3-3	8439 6014 00
AX3-4C	8439 6014 00
AX4-3	8439 6014 00
AX4-4	8439 6014 09
AX4-4C	8439 6014 09
AX5-4	8439 6015 00
AX5-4T	8439 6015 00
AX5-4C	8439 6015 00



AX2 - AX5 Articulated Arms - set-up options



Fixed Hand Adapter



Rotating Hand Adapter



Rotating Hand Adapter with Parking Brake



Rotating Hand Adapter with Reaction Brake

HAND ADAPTER



Vertical Rod - Straight



Vertical Rod - Offset



VERTICAL ROD

TOOL HOLDER



Fixed Plate - Vertical



Fixed Plate - Horizontal



Fixed Clamp - Angle



Rotating Body - Angle

AX2 - AX5 Articulated Arms - hand adapters

A hand adapter is used to mount the vertical rod to the articulated arm. Both fixed and rotating options are available for flexible application set-ups. The designs feature lightweight aluminum housings, with steel shafts on the rotating models. Roller bearings allow the handler a controlled, smooth and ergonomic tightening experience.

REQUIRED EQUIPMENT

- ▶ Arm Parking Brake accessory (for Reaction Brake only)

INCLUDED EQUIPMENT

- ▶ Hand adapter (selected per application)
- ▶ Pneumatic control circuit (for Parking / Reaction brakes only)
- ▶ Safety switch and cables (for Reaction Brake only)

Description	Vertical Application	Horizontal Application	Angular Application ≥ 45° from horizontal
Fixed Hand Adapter	✓	✓	✓
Rotating Hand Adapter	-	✓	✓
Rotating Hand Adapter with Parking Brake	-	✓	✓
Rotating Hand Adapter with Reaction Brake	✓	✓	✓



FIXED HAND ADAPTER

- ▶ Fixed position mounting
- ▶ 45° incremental positioning of vertical rod



ROTATING HAND ADAPTER

- ▶ 330° of rotational
- ▶ Integrated rotation limiter
- ▶ PRS adaptable



ROTATING HAND ADAPTER WITH PARKING BRAKE

- ▶ 330° of rotational
- ▶ PRS adaptable

ROTATING HAND ADAPTER WITH REACTION BRAKE

- ▶ 330° of rotational
- ▶ PRS adaptable



Description	AX2		AX3 / AX4		AX5	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Fixed Hand Adapter	1.4 (3.2)	8439 6002 70	4.1 (9)	8439 6004 70	8.9 (19.5)	8439 6005 70
Rotating Hand Adapter	2.3 (5.1)	8439 6002 71	6.1 (13.4)	8439 6004 71	12.5 (27.5)	8439 6005 71
Rotating Hand Adapter with Parking Brake	3.5 (7.8)	8439 6002 72	8.4 (18.4)	8439 6004 72	14.3 (31.5)	8439 6005 72
Rotating Hand Adapter with Reaction Brake	5.5 (12.1)	8439 6002 73	13.5 (29.8)	8439 6004 73	24.5 (54)	8439 6005 73

AX2 - AX5 Articulated Arms - vertical rod

The vertical rod is used to connect a tool holder to the hand adapter on the articulated arm. Available in numerous fixed lengths, it can be configured to suit part height or clearance requirements.

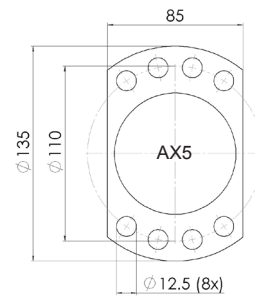
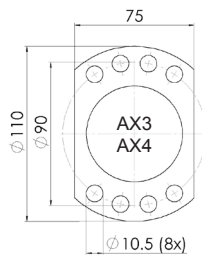
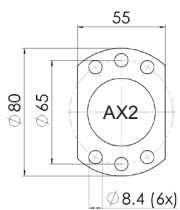
The vertical rods feature a flange interface at the upper and lower ends that adapt to all standard tool holders within its respective AX model. The top flange allows mounting in angular increments of 45° for flexible tool positioning.

Standard offering

Description	AX2		AX3 / AX4		AX5	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Vertical Rod Straight						
Vertical Rod - 500 mm	2 (4.4)	8439 6002 81	5.3 (11.7)	8439 6004 81	7.4 (16.3)	8439 6005 81
Vertical Rod - 600 mm	2.3 (5.1)	8439 6002 82	6.1 (13.4)	8439 6004 82	8.5 (18.7)	8439 6005 82
Vertical Rod - 700 mm	2.6 (5.7)	8439 6002 83	7 (15.4)	8439 6004 83	9.6 (21.2)	8439 6005 83
Vertical Rod - 800 mm	2.9 (6.4)	8439 6002 84	7.8 (17.2)	8439 6004 84	10.7 (23.6)	8439 6005 84
Vertical Rod - 900 mm	3.2 (7.1)	8439 6002 85	8.7 (19.2)	8439 6004 85	11.8 (26)	8439 6005 85
Vertical Rod - 1000 mm	3.5 (7.7)	8439 6002 86	9.5 (20.9)	8439 6004 86	12.9 (28.4)	8439 6005 86
Vertical Rod - 1100 mm	3.8 (8.4)	8439 6002 87	10.4 (22.9)	8439 6004 87	14 (30.9)	8439 6005 87
Vertical Rod - 1200 mm	4.1 (9)	8439 6002 88	11.2 (24.7)	8439 6004 88	15.1 (33.3)	8439 6005 88
Vertical Rod - 1300 mm	4.4 (9.7)	8439 6002 89	12.1 (26.7)	8439 6004 89	16.2 (35.7)	8439 6005 89
Vertical Rod - 1400 mm	4.7 (10.4)	8439 6002 90	12.9 (28.4)	8439 6004 90	17.3 (38.1)	8439 6005 90
Vertical Rod - 1500 mm	5 (11)	8439 6002 91	13.7 (30.2)	8439 6004 91	18.4 (40.6)	8439 6005 91



Reduced torque capacity - vertical application for rods longer than AX2 - 800 mm, AX3/4 - 1000 mm and AX5 - 1000 mm



AX2 - AX5 Articulated Arms - offset vertical rod

A Tool Holder Offset is used to position the tool holder away from the vertical rod when access space to a fastener is limited. The lower mounting flange interfaces with standard tool holders and allows mounting in angular increments of 22.5° for flexible tool positioning.

AX2					
Description	Weight kg (lb)	Ordering No.	Description	Weight kg (lb)	Ordering No.
Offset Vertical Rod - AX2					
500 mm H - 250 mm L	2.8 (6.1)	8439 6032 01	1000 mm H - 500 mm L	5.9 (13)	8439 6032 12
500 mm H - 500 mm L	3.5 (7.8)	8439 6032 02	1100 mm H - 250 mm L	4.6 (10.2)	8439 6032 13
600 mm H - 250 mm L	3.1 (6.8)	8439 6032 03	1100 mm H - 500 mm L	6.2 (13.7)	8439 6032 14
600 mm H - 500 mm L	4.6 (10.3)	8439 6032 04	1200 mm H - 250 mm L	4.9 (10.9)	8439 6032 15
700 mm H - 250 mm L	3.4 (7.5)	8439 6032 05	1200 mm H - 500 mm L	6.5 (14.4)	8439 6032 16
700 mm H - 500 mm L	4.9 (10.9)	8439 6032 06	1300 mm H - 250 mm L	5.2 (11.6)	8439 6032 17
800 mm H - 250 mm L	3.7 (8.2)	8439 6032 07	1300 mm H - 500 mm L	6.8 (15.1)	8439 6032 18
800 mm H - 500 mm L	5.2 (11.6)	8439 6032 08	1400 mm H - 250 mm L	5.5 (12.3)	8439 6032 19
900 mm H - 250 mm L	4 (8.9)	8439 6032 09	1400 mm H - 500 mm L	7.1 (15.7)	8439 6032 20
900 mm H - 500 mm L	5.6 (12.3)	8439 6032 10	1500 mm H - 250 mm L	6.6 (14.7)	8439 6032 21
1000 mm H - 250 mm L	4.3 (9.5)	8439 6032 11	1500 mm H - 500 mm L	7.4 (16.4)	8439 6032 22



Use of an offset vertical rod may impact arm capabilities. See Application Guide for more information.

AX2 - AX5 Articulated Arms - offset vertical rod

AX3 / AX4					
Description	Weight kg (lb)	Ordering No.	Description	Weight kg (lb)	Ordering No.
Offset Vertical Rod - AX3/4					
500 mm H - 250 mm L	7.5 (16.7)	8439 6034 01	1000 mm H - 750 mm L	17.8 (39.4)	8439 6034 23
500 mm H - 500 mm L	9.7 (21.4)	8439 6034 02	1000 mm H - 1000 mm L	19.9 (44.1)	8439 6034 24
500 mm H - 750 mm L	11.8 (26.1)	8439 6034 03	1100 mm H - 250 mm L	12.6 (28)	8439 6034 25
500 mm H - 1000 mm L	15.6 (34.7)	8439 6034 04	1100 mm H - 500 mm L	14.7 (32.7)	8439 6034 26
600 mm H - 250 mm L	8.4 (18.6)	8439 6034 05	1100 mm H - 750 mm L	18.6 (41.3)	8439 6034 27
600 mm H - 500 mm L	10.5 (23.3)	8439 6034 06	1100 mm H - 1000 mm L	20.7 (46)	8439 6034 28
600 mm H - 750 mm L	12.6 (28)	8439 6034 07	1200 mm H - 250 mm L	13.5 (29.9)	8439 6034 29
600 mm H - 1000 mm L	16.5 (36.6)	8439 6034 08	1200 mm H - 500 mm L	15.6 (34.6)	8439 6034 30
700 mm H - 250 mm L	9.2 (20.5)	8439 6034 09	1200 mm H - 750 mm L	19.4 (43.2)	8439 6034 31
700 mm H - 500 mm L	11.3 (25.2)	8439 6034 10	1200 mm H - 1000 mm L	21.6 (47.9)	8439 6034 32
700 mm H - 750 mm L	15.2 (33.8)	8439 6034 11	1300 mm H - 250 mm L	14.3 (31.7)	8439 6034 33
700 mm H - 1000 mm L	17.3 (38.5)	8439 6034 12	1300 mm H - 500 mm L	16.4 (36.4)	8439 6034 34
800 mm H - 250 mm L	10.1 (22.4)	8439 6034 13	1300 mm H - 750 mm L	20.3 (45)	8439 6034 35
800 mm H - 500 mm L	12.2 (27.1)	8439 6034 14	1300 mm H - 1000 mm L	22.4 (49.7)	8439 6034 36
800 mm H - 750 mm L	16.1 (35.7)	8439 6034 15	1400 mm H - 250 mm L	15.2 (33.6)	8439 6034 37
800 mm H - 1000 mm L	16.4 (36.4)	8439 6034 16	1400 mm H - 500 mm L	19 (42.2)	8439 6034 38
900 mm H - 250 mm L	10.9 (24.2)	8439 6034 17	1400 mm H - 750 mm L	21.1 (46.9)	8439 6034 39
900 mm H - 500 mm L	13 (28.9)	8439 6034 18	1400 mm H - 1000 mm L	23.3 (51.6)	8439 6034 40
900 mm H - 750 mm L	16.9 (37.5)	8439 6034 19	1500 mm H - 250 mm L	16 (35.5)	8439 6034 41
900 mm H - 1000 mm L	19 (42.2)	8439 6034 20	1500 mm H - 500 mm L	19.9 (44.1)	8439 6034 42
1000 mm H - 250 mm L	11.8 (26.1)	8439 6034 21	1500 mm H - 750 mm L	22 (48.8)	8439 6034 43
1000 mm H - 500 mm L	13.9 (30.8)	8439 6034 22	1500 mm H - 1000 mm L	24.1 (53.5)	8439 6034 44



Use of an offset vertical rod may impact arm capabilities. See Application Guide for more information.

AX2 - AX5 Articulated Arms - offset vertical rod

AX5					
Description	Weight kg (lb)	Ordering No.	Description	Weight kg (lb)	Ordering No.
Offset Vertical Rod - AX5					
500 mm H - 250 mm L	10.5 (23.4)	8439 6035 01	1000 mm H - 750 mm L	21.5 (47.7)	8439 6035 23
500 mm H - 500 mm L	13.3 (29.5)	8439 6035 02	1000 mm H - 1000 mm L	24.2 (53.7)	8439 6035 24
500 mm H - 750 mm L	16 (35.5)	8439 6035 03	1100 mm H - 250 mm L	17.1 (37.9)	8439 6035 25
500 mm H - 1000 mm L	18.7 (41.6)	8439 6035 04	1100 mm H - 500 mm L	19.8 (44)	8439 6035 26
600 mm H - 250 mm L	11.6 (25.8)	8439 6035 05	1100 mm H - 750 mm L	22.6 (50.1)	8439 6035 27
600 mm H - 500 mm L	14.4 (31.9)	8439 6035 06	1100 mm H - 1000 mm L	27.7 (61.5)	8439 6035 28
600 mm H - 750 mm L	17.1 (37.9)	8439 6035 07	1200 mm H - 250 mm L	18.2 (40.4)	8439 6035 29
600 mm H - 1000 mm L	19.8 (44)	8439 6035 08	1200 mm H - 500 mm L	20.9 (46.4)	8439 6035 30
700 mm H - 250 mm L	12.7 (28.2)	8439 6035 09	1200 mm H - 750 mm L	23.7 (52.5)	8439 6035 31
700 mm H - 500 mm L	15.5 (34.3)	8439 6035 10	1200 mm H - 1000 mm L	28.8 (63.9)	8439 6035 32
700 mm H - 750 mm L	18.2 (40.4)	8439 6035 11	1300 mm H - 250 mm L	19.3 (42.8)	8439 6035 33
700 mm H - 1000 mm L	20.9 (46.4)	8439 6035 12	1300 mm H - 500 mm L	22 (48.9)	8439 6035 34
800 mm H - 250 mm L	13.8 (30.7)	8439 6035 13	1300 mm H - 750 mm L	24.8 (54.9)	8439 6035 35
800 mm H - 500 mm L	16.6 (36.7)	8439 6035 14	1300 mm H - 1000 mm L	29.9 (66.4)	8439 6035 36
800 mm H - 750 mm L	19.3 (42.8)	8439 6035 15	1400 mm H - 250 mm L	20.4 (45.2)	8439 6035 37
800 mm H - 1000 mm L	22 (48.9)	8439 6035 16	1400 mm H - 500 mm L	23.1 (51.3)	8439 6035 38
900 mm H - 250 mm L	14.9 (33.1)	8439 6035 17	1400 mm H - 750 mm L	25.8 (57.4)	8439 6035 39
900 mm H - 500 mm L	17.6 (39.2)	8439 6035 18	1400 mm H - 1000 mm L	31 (68.8)	8439 6035 40
900 mm H - 750 mm L	20.4 (45.2)	8439 6035 19	1500 mm H - 250 mm L	21.5 (47.7)	8439 6035 41
900 mm H - 1000 mm L	23.1 (51.3)	8439 6035 20	1500 mm H - 500 mm L	24.2 (53.7)	8439 6035 42
1000 mm H - 250 mm L	16 (35.5)	8439 6035 21	1500 mm H - 750 mm L	26.9 (59.8)	8439 6035 43
1000 mm H - 500 mm L	18.7 (41.6)	8439 6035 22	1500 mm H - 1000 mm L	32.1 (71.2)	8439 6035 44

Use of an offset vertical rod may impact arm capabilities. See Application Guide for more information.

AX2 - AX5 Articulated Arms - tool holders

AX Articulated Arms support a series of standard tool holders that are designed to enable various tool and position configurations. There are numerous standard tool holder types, each designed to adapt to different tool types and sizes. All tool holders mount directly to the flange on the lower end of the vertical rod. See “AF Tool Holder Guide” for tool holder compatibility.

REQUIRED EQUIPMENT

- ▶ Spline plates supplied with tools (where applicable)

INCLUDED EQUIPMENT

- ▶ All required fasteners

NOTES

- ▶ See “AF Tool Holder Guide” for tool holder compatibility

Description	Tool Series		
	ST	STR	QST
Fixed Plate - Vertical	✓	✓	✓
Vertical Plate - Horizontal	✓	✓	✓
Fixed Clamp Angle	✓	✓	-
Rotating Body Angle	✓	✓	-



FIXED PLATE - VERTICAL

A Fixed Plate - Vertical tool holder is used to mount flanged and splined tools in a vertical tightening orientation. It mounts rigidly to the lower flange on the vertical rod.

- ▶ Standard options available for: ST, STR, and QST tools



FIXED CLAMP - ANGLE

A Fixed Clamp - Angle tool holder can be used to mount a tool in either a horizontal or vertical tightening orientation. The tool holder is held in a fixed orientation by clamping on the grip area of an angle tool. It mounts rigidly to the lower flange on the vertical rod.

- ▶ Standard options available for: ST and STR tools

NOTES

- ▶ Only available for tools up to 200 Nm



FIXED PLATE - HORIZONTAL

A Fixed Plate - Horizontal tool holder is used to mount flanged and splined tools in a horizontal tightening orientation. It mounts rigidly to the lower flange on the vertical rod.

- ▶ Standard options available for: ST, STR, and QST tools



ROTATING BODY - ANGLE

A Rotating Body - Angle tool holder can be used to mount a tool for use in horizontal and vertical tightening orientations.

- ▶ Standard options available for: ST and STR tools

REQUIRED EQUIPMENT

- ▶ Detent plate with necessary positions, tool mounting clamp/plate

AX2 - AX5 Articulated Arms - tool holders

AX2 TOOL HOLDERS

Tool Model	Torque Range Nm	Mounting Type	Rotating Body Tool Holder Components					
			Fixed Plate - Vertical	Fixed Plate - Horizontal	Fixed Clamp - Angle	Rotating Body - Angle	Mounting Clamp	Mounting Plate
ETV ST31	5 - 20	M 39	-	-	8439 6022 40	8439 6022 45	8439 6022 55	-
ETV STR31	5 - 20	M 40	-	-	8439 6022 43	8439 6022 45	8439 6022 60	-
ETV ST61	6 - 180	M 39	-	-	8439 6022 40	8439 6022 45	8439 6022 55	-
	200	M 39 Angle Head (4) M5	8439 6022 15	8439 6022 30	8439 6022 40	8439 6022 45	8439 6022 55	8439 6022 58
ETV STR61	6 - 180	M40	-	-	8439 6022 43	8439 6022 45	8439 6022 60	-
	200	M40 Angle Head (4) M5	8439 6022 15	8439 6022 30	8439 6022 40	8439 6022 45	8439 6022 60	8439 6022 58
ETV ST81	50 - 180	M 43	-	-	8439 6022 41	8439 6022 45	8439 6022 56	-
	200	M 43 Angle Head (4) M5	8439 6022 15	8439 6022 30	8439 6022 41	8439 6022 45	8439 6022 56	8439 6022 58
ETV ST101	100 - 180	M 54.4	-	-	8439 6022 42	8439 6024 40	8439 6022 57	-
	200	M 54.4 Angle Head (4) M5	8439 6022 15	8439 6022 30	8439 6022 42	8439 6024 40	8439 6022 57	8439 6022 58
	270	Angle Head (4) M6	8439 6022 16	8439 6022 31	-	8439 6024 40	-	8439 6024 50
ETD ST31 / STR31	5 - 10	Dia. 24 mm	8439 6022 10	8439 6022 25	-	-	-	-
ETD ST31 Telescopic	5 - 10	Dia. 28 mm	8439 6022 11	8439 6022 26	-	-	-	-
ETD ST61 / STR31	15 - 30	Dia. 24 mm	8439 6022 10	8439 6022 25	-	-	-	-
	50 - 90	Spline 2	8439 6022 12	8439 6022 27	-	-	-	-
ETD ST61 Telescopic	15 - 30	Spline 2	8439 6022 12	8439 6022 27	-	-	-	-
	50 - 120	Spline 3	8439 6022 13	8439 6022 28	-	-	-	-
ETD ST81	30	Dia. 24 mm	8439 6022 10	8439 6022 25	-	-	-	-
	50 - 120	Spline 2	8439 6022 12	8439 6022 27	-	-	-	-
ETD ST81 Telescopic	30	Spline 2	8439 6022 12	8439 6022 27	-	-	-	-
	50 - 120	Spline 3	8439 6022 13	8439 6022 28	-	-	-	-
ETD ST101	100 - 120	Flange (2) M8	8439 6022 17	8439 6022 32	-	-	-	-
	150 - 200	Flange (3) M10	8439 6022 18	8439 6022 33	-	-	-	-
ETD ST101 Telescopic	100 - 120	Flange (2) M8	8439 6022 17	8439 6022 32	-	-	-	-
	150 - 200	Flange (3) M10	8439 6022 18	8439 6022 33	-	-	-	-
ETP STR61	20 - 30	Dia. 24 mm	8439 6022 10	8439 6022 25	-	-	-	-
	50 - 120	Spline 2	8439 6022 12	8439 6022 27	-	-	-	-
QST34	8 - 20	QST34	8439 6022 20	8439 6022 35	-	-	-	-
QST42	20 - 50	QST42	8439 6022 21	8439 6022 36	-	-	-	-
QST50	90 - 150	QST50	8439 6022 22	8439 6022 37	-	-	-	-
QST62	150 - 230	QST62	8439 6022 23	8439 6022 38	-	-	-	-

AX2 - AX5 Articulated Arms - tool holders

AX3 / AX4 TOOL HOLDERS

Tool Model	Torque Range Nm	Mounting Type	Rotating Body Tool Holder Components					
			Fixed Plate - Vertical	Fixed Plate - Horizontal	Fixed Clamp - Angle	Rotating Body - Angle	Mounting Clamp	Mounting Plate
ETV ST101	370	Angle Head (4) M6	8439 6024 15	8439 6024 30	-	8439 6024 40	-	8439 6024 50
	450 - 600	Angle Head (4) M8 (88 mm Sq.)	8439 6024 16	8439 6024 31	-	8439 6024 40	-	8439 6024 51
ETV ST101 TM	600	Spline 4	8439 6024 11	8439 6024 26	-	8439 6024 40	-	8439 6024 52
	1000	Spline 5	8439 6024 12	8439 6024 27	-	8439 6024 40	-	8439 6024 53
ETD ST101	300 - 500	Flange (3) M10	8439 6024 17	8439 6024 32	-	-	-	-
	750 - 1000	Flange (4) M10 (68 mm Sq.)	8439 6024 18	8439 6024 33	-	-	-	-
ETP ST101	300	Spline 3	8439 6024 10	8439 6024 25	-	-	-	-
	500	Spline 4	8439 6024 11	8439 6024 26	-	-	-	-
	750 - 1000	Spline 5	8439 6024 12	8439 6024 27	-	-	-	-
QST62	350	QST62	8439 6024 35	8439 6024 35	-	-	-	-
QST80	450 - 600	QST80	8439 6024 36	8439 6024 36	-	-	-	-
QST90	750 - 1000	QST90	8439 6024 37	8439 6024 37	-	-	-	-

AX5 TOOL HOLDERS

Tool Model	Torque Range Nm	Mounting Type	Rotating Body Tool Holder Components					
			Fixed Plate - Vertical	Fixed Plate - Horizontal	Fixed Clamp - Angle	Rotating Body - Angle	Mounting Clamp	Mounting Plate
ETV ST101-1500-25-TM	1500 Nm	Spline 9	8439 6025 16	8439 6025 26	-	8439 6025 30	-	8439 6025 41
ETV ST101-1500-38-TM	1500 Nm	Angle Head (4) M12	8439 6025 12	8439 6025 22	-	8439 6025 30	-	8439 6025 40
ETV ST101	2000 Nm	Angle Head (4) M12	8439 6025 12	8439 6025 22	-	8439 6025 30	-	8439 6025 40
ETD ST101-1200-25-F	1200 Nm	Flange (4) M10 (68 mm Sq.)	8439 6025 10	8439 6025 20	-	-	-	-
ETD ST101-1200-25-S	1200 Nm	Spline 7	8439 6025 14	8439 6025 24	-	-	-	-
ETD ST101-1200-25-T50-F	1200 Nm	Flange (4) M10 (68 mm Sq.)	8439 6025 10	8439 6025 20	-	-	-	-
ETD ST101-1200-25-T50-S-F	1200 Nm	Spline 7	8439 6025 14	8439 6025 24	-	-	-	-
ETD ST101-2000-38-F	2000 Nm	Flange (4) M12 (88 mm Sq.)	8439 6025 11	8439 6025 21	-	-	-	-
ETD ST101-2000-38-S-F	2000 Nm	Spline 8	8439 6025 15	8439 6025 25	-	-	-	-
ETD ST101-2000-38-T50-F	2000 Nm	Flange (4) M12 (88 mm Sq.)	8439 6025 11	8439 6025 21	-	-	-	-
ETD ST101-2000-38-T50-S-F	2000 Nm	Spline 8	8439 6025 15	8439 6025 25	-	-	-	-
ETP ST101	1500 Nm	Spline 9	8439 6025 16	8439 6025 26	-	-	-	-
	2000 Nm	Spline 7	8439 6025 14	8439 6025 24	-	-	-	-
QST95	1750 Nm	QST95	8439 6025 17	8439 6025 27	-	-	-	-

AX2 - AX5 Articulated Arms - tool holder accessories



HANDLE ROTATE

Used to provide an ergonomic handling solution for vertical down applications when working on a large part. Handles allow flexible operator positioning.

NOTES

- ▶ Handle Rotate accessory must be designed per application; non-standard design

HANDLE MOUNTING

The Handle Mounting assembly is used to adapt a handle to predrilled holes in tool holders. A handle is not included with the mounting accessory.

REQUIRED EQUIPMENT

- ▶ Fixed Plate – Vertical / Horizontal tool holder, or rotating body tool holder
Mounting Plate



ROTATE

A Rotate tool holder accessory can be used to mount a tool holder when multiple tightening orientations are required. The accessory is combined with a standard or custom-position detent plate to meet complex application requirements. It adds one additional degree of rotational freedom.

REQUIRED EQUIPMENT

- ▶ Detent plate with desired positions

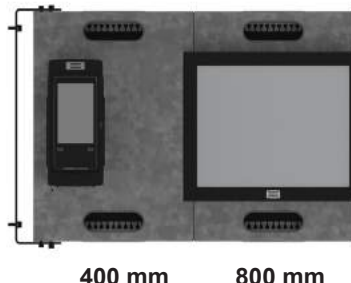
Description	AX2		AX3 / AX4		AX5	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Handle Mounting - Tool Holder	0.9 (2)	8439 6024 79	0.9 (2)	8439 6024 79	0.9 (2)	8439 6024 79
Rotate	2.3 (5)	8439 6022 72	5.5 (12.1)	8439 6024 72	9 (19.8)	8439 6025 72
Detent Plates						
Blank	1.2 (2.6)	8439 6022 73	1.8 (4)	8439 6024 73	3.1 (6.9)	8439 6025 73
4-Position - 90 Degrees	1.1 (2.5)	8439 6022 74	1.7 (3.8)	8439 6024 74	3 (6.7)	8439 6025 74
8-Position - 45 Degrees	1.1 (2.4)	8439 6022 75	1.6 (3.5)	8439 6024 75	2.9 (6.4)	8439 6025 75
16-Position - 22.5 Degrees	1 (2.2)	8439 6022 76	1.4 (3.1)	8439 6024 76	2.7 (5.8)	8439 6025 76

AX2 - AX5 Articulated Arms - controller and hmi mounting

Controller and HMI Mounting Systems enable compact, all-in-one solutions. Using accessory mounting straps, the systems can be positioned anywhere along the pillar for optimum visibility. Cables are contained and protected within the mounting enclosure.

COMPATIBLE WITH

- ▶ The systems accommodate Power Focus 4000 / 600 / 6000 controllers, Power MACS 4000 controllers, and ComNode / MaxiDisplay HMIs.



Description	AX2-2		AX2-3 AX2-4C AX3	AX4 AX5-4 AX5-4T	AX5-5C	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Controller Mounting System - 400 mm	12.8 (28.3)	8439 6012 01	12.4 (27.3)	8439 6014 01	-	8439 6014 01
Controller Mounting System - 800 mm	21 (46.3)	8439 6012 02	21.4 (47.5)	8439 6014 02	-	8439 6014 02
Controller Mounting Assembly - 400 mm	11.1 (24.5)	8439 6014 03	11.1 (24.5)	8439 6014 03	11.1 (24.5)	8439 6014 03
Controller Mounting Assembly - 800 mm	19.3 (42.6)	8439 6014 04	19.3 (42.6)	8439 6014 04	19.3 (42.6)	8439 6014 04
Controller Mounting Extension - 400 mm*	8.2 (18)	8439 6014 05	8.2 (18)	8439 6014 05	8.2 (18)	8439 6014 05
Controller Mounting Shelf	4.9 (10.8)	8439 6014 06	4.9 (10.8)	8439 6014 06	4.9 (10.8)	8439 6014 06

* Controller Mounting Extension 400 mm only compatible with 400 mm controller mounting accessories, cannot be used to extend 800 mm accessories



CONTROLLER MOUNTING SYSTEM

A Controller Mounting System mounts to the pillar. Accessory Mounting Straps allow flexible system orientation. A removable back cover enables clean, safe management of cables and power supply.

INCLUDED EQUIPMENT

- ▶ (2) Accessory Mounting Straps with Brackets

CONTROLLER MOUNTING ASSEMBLY

A Controller Mounting Assembly is used to mount to an existing structure. The Controller Mounting Assembly includes all benefits of the Controller Mounting Systems, but doesn't include the Accessory Mounting Straps.

INCLUDED EQUIPMENT

- ▶ (2) M10 mounting screws



CONTROLLER MOUNTING SHELF

A Controller Mounting Shelf provides an ergonomic work area for an HMI-connected keyboard or other quality assurance accessories such as barcode scanners and socket trays.

INCLUDED EQUIPMENT

- ▶ 250 mm Ballbone extension, mounting hardware

AX2 - AX5 Articulated Arms - optional accessories

The Accessory Mounting System has been designed to allow simple configuration of purpose-built systems. The system supports various Atlas Copco Quality Integrated Fastening products and other accessories. Options exist for both pillar and vertical rod mounting to ensure optimal accessibility of accessories.

REQUIRED EQUIPMENT

- ▶ Mounting Option for Pillar or Vertical Rod mounting
 - Accessory Mounting Strap with Bracket includes (1) Bracket
 - Maximum of (2) Accessory Mounting Brackets per strap
- ▶ Quality Integrated Fastening hardware (where applicable)
- ▶ Operator Handle (where applicable)

Description	Mounting Option		Weight kg (lb)	Ordering No.
	Pillar Mount	Vertical Rod Mount Single Double		
Shelf - Small	•		2.6 (5.8)	8439 6014 10
Shelf - Large	•		3 (6.7)	8439 6014 11
Bin Rack Assembly - (3 Bins) Black	•		5 (11)	8439 6014 12
Bin Rack Assembly - (3 Bins) Blue	•		5 (11)	8439 6014 13
Bin Rack Assembly - (3 Bins) Red	•		5 (11)	8439 6014 14
Bin Rack Assembly - (3 Bins) Yellow	•		5 (11)	8439 6014 15
Bin Rack Assembly - (3 Bins) Blue / Red / Yellow	•		5 (11)	8439 6014 16
Selector 4 / Bit Selector 8 Mounting	•	•	3.4 (7.6)	8439 6014 20
Selector 8 / Selector for Large Sockets Mounting	•		5 (11)	8439 6014 21
Stacklight Mounting	•	•	0.8 (1.9)	8439 6014 22
Operator Panel Mounting	•	•	3.1 (6.7)	8439 6014 23
Indicator Box Mounting		•	1.4 (3)	8439 6014 24
MiniDisplay Mounting		•	1.4 (3)	8439 6014 25
MaxiDisplay Mounting		•	2.8 (6.2)	8439 6014 26
Handle Mounting		•	0.8 (1.8)	8439 6014 27
Bar Code Reader Mounting	•	•	-	8439 6014 29
Brake On/Off Mounting – Pneumatic Switch		•	0.6 (1.4)	8439 6014 34



Operator Panel



MiniDisplay



Stacklight



Shelf



Bar Code Reader



Bin Rack



Socket Selector 4 /
Bit Selector 8



Operator Handle

AX2 - AX5 Articulated Arms - optional accessories

Description	AX2-2		AX2-3 AX2-4C AX3	AX4 AX5
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Accessory Mounting Strap with Bracket	0.8 (1.9)	8439 6012 50	1 (2.2)	8439 6014 50
Accessory Mounting Strap	0.6 (1.2)	8439 6012 51	0.8 (1.7)	8439 6014 51
Accessory Mounting Bracket	0.3 (0.6)	8439 6014 52	0.3 (0.6)	8439 6014 52

Description	AX2		AX3 / AX4		AX5	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Vertical Rod Accessory Mounting - Single Clamp	0.4 (0.8)	8439 6012 55	0.4 (0.9)	8439 6014 55	0.5 (1.1)	8439 6015 55
Vertical Rod Accessory Mounting - Double Clamp	0.7 (1.5)	8439 6012 56	0.8 (1.8)	8439 6014 56	1 (2.2)	8439 6015 56
Accessory Offset - Angular - 70 mm	1.8 (4)	8439 6014 60	1.8 (4)	8439 6014 60	1.8 (4)	8439 6014 60
Accessory Offset - Angular - 140 mm	2 (4)	8439 6014 61	2 (4)	8439 6014 61	2 (4)	8439 6014 61
Accessory Offset - Angular - 250 mm	2.2 (4.9)	8439 6014 62	2.2 (4.9)	8439 6014 62	2.2 (4.9)	8439 6014 62
Accessory Offset - Angular - 400 mm	2.5 (5.4)	8439 6014 63	2.5 (5.4)	8439 6014 63	2.5 (5.4)	8439 6014 63
Accessory Offset - Straight - 70 mm	1.9 (4.2)	8439 6014 64	1.9 (4.2)	8439 6014 64	1.9 (4.2)	8439 6014 64
Accessory Offset - Straight - 140 mm	2.1 (4.6)	8439 6014 65	2.1 (4.6)	8439 6014 65	2.1 (4.6)	8439 6014 65
Accessory Offset - Straight - 250 mm	2.3 (5.1)	8439 6014 66	2.3 (5.1)	8439 6014 66	2.3 (5.1)	8439 6014 66
Accessory Offset - Straight - 400 mm	2.6 (5.6)	8439 6014 67	2.6 (5.6)	8439 6014 67	2.6 (5.6)	8439 6014 67

Accessory Offset compatible with Pillar and Vertical Rod mounts



**Accessory Offset -
Angular**



**Accessory Mounting
Strap with Bracket**



**Vertical Rod
Accessory Mounting - Single**

AX2 - AX5 Articulated Arms - park-position lock

A Park-Position Lock is used to ensure the articulated arm stays in a consistent, secure position. The lock is useful for applications where the arm is mounted on a mobile or portable base, and needs to be securely retained while the system is moved around. The locking system is also useful for applications requiring an accurate, repeatable location to return to when calibrating the Position Recognition System.

Utilizing a spring-loaded position pin, the lock restrains the arm movement in all directions.



Description	AX2-2		AX3-2.5 AX3-3 AX4-3		AX5-4 AX5-4T	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Park-Position Lock	2 (4.4)	8439 6022 06	2.5 (5.5)	8439 6024 06	2.8 (6.2)	8439 6025 06

Cantilevered Pillars require a customized solution

AX2 - AX5 Articulated Arms - pillar base plate extension

AX Articulated Arms feature compact base plates to reduce the footprint of an installed system. When the concrete foundation requirements of this smaller base plate cannot be met, a Pillar Base Extension Plate can be used to accommodate for the lower-grade foundation.

These base plates can also be used to adapt an AX Articulated Arm to existing anchors for a first-generation Atlas Copco Articulated Arm.

REQUIRED EQUIPMENT

- ▶ Base plate anchors – see User Guide for more information



Description	Arm 250 Conversion		Arm 500/1000 Conversion		Arm 2000 Conversion	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Pillar Base Plate Extension	39.5 (87)	8439 6022 07	AX2-2	AX2-3	AX2-4C	AX4-5C
			AX3-2.5	AX3-3	AX3-4C	AX5-4
			AX4-3	AX4-4	AX5-4T	
					126.5 (278.8)	8439 6025 07

AX2 - AX5 Articulated Arms - vertical travel limiter

A Travel Limiter is used when the extensive standard vertical travel of an articulated arm can pose a risk to operator or equipment safety. This is most commonly an issue when there is limited clearance height above the arm. The up/down limiter can be adjusted to limit travel independently in either direction (up/down). The down stroke limiter allows only down direction travel limiting.

Cylinder Configuration	Down-Stroke		Up / Down Stroke	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
1 - 100	0.1 (0.3)	8439 6024 01	3.8 (8.4)	8439 6024 04
1 - 125	0.2 (0.4)	8439 6024 03	5.1 (11.3)	8439 6024 05
2 - 125	0.3 (0.7)	8439 6025 01	-	-



AX2 - AX5 Articulated Arms - Position Recognition System - PRS

The PRS is an integrated, standalone error-proofing system that is highly flexible. Combined with an Atlas Copco AX Articulated Arm, the system tracks the exact position of the tool, ensuring the correct fasteners are tightened to the correct torque and always in the correct sequence.

The PRS offers high-level process security for applications that range from simple to complex. The system incorporates the functionality of a Power Focus 4000 / 600 / 6000 or Power MACS 4000 tightening system with position control.

BENEFITS

- ▶ Maintains a high quality standard regardless of the operator
- ▶ Reduces the need for additional quality checks later
- ▶ Ensures all process documentation is available per application and fastener



Operation Mode



AX2 - AX5 Articulated Arms - Position Recognition System - PRS

Position Recognition System - Description	Ordering No.
PRS - AX2-2 - 3-Axis	8439 6012 70
PRS - AX2-2 - 4-Axis - for Rotating Hand Adapter	8439 6012 71
PRS - AX2-2 - 4-Axis - for Rotating Hand Adapter with Reaction Brake	8439 6012 72
PRS - AX2 - +1-Axis - for Rotate Accessory	8439 6012 73
PRS - AX2-3 / AX2-4C - 3-Axis	8439 6012 75
PRS - AX2-3 / AX2-4C - 4-Axis - for Rotating Hand Adapter	8439 6012 76
PRS - AX2-3 / AX2-4C - 4-Axis - for Rotating Hand Adapter with Reaction Brake	8439 6012 77
PRS - AX3-2.5 / AX3-3 / AX3-4C / AX4-3 - 3-Axis	8439 6014 70
PRS - AX3-2.5 / AX3-3 / AX3-4C / AX4-3 - 4-Axis - for Rotating Hand Adapter	8439 6014 71
PRS - AX3-2.5 / AX3-3 / AX3-4C / AX4-3 - 4-Axis - for Rotating Hand Adapter with Reaction Brake	8439 6014 72
PRS - AX3/4 - +1-Axis - for Rotate Accessory	8439 6014 73
PRS - AX4-4 / AX4-5C - 3-Axis	8439 6014 75
PRS - AX4-4 / AX4-5C - 4-Axis - for Rotating Hand Adapter	8439 6014 76
PRS - AX4-4 / AX4-5C - 4-Axis - for Rotating Hand Adapter with Reaction Brake	8439 6014 77
PRS - AX5-4 / AX5-4T / AX5-4C - 3-Axis	8439 6015 70
PRS - AX5-4 / AX5-4T / AX5-4C - 4-Axis - for Rotating Hand Adapter	8439 6015 71
PRS - AX5-4 / AX5-4T / AX5-4C - 4-Axis - for Rotating Hand Adapter with Reaction Brake	8439 6015 72
PRS - AX5 - +1-Axis - for Rotate Accessory	8439 6015 73

PRS Encoder Cables - Description	Ordering No.
Encoder Cable Kit - 3-Axis - 1.3 m	8439 6015 85
Encoder Cable Kit - 3-Axis - 2 / 2.5 m	8439 6015 86
Encoder Cable Kit - 3-Axis - 3 m	8439 6015 87
Encoder Cable Kit - 3-Axis - 4 / 5 m	8439 6015 88
Encoder Cable Kit - 4-Axis - 1.3 m	8439 6015 89
Encoder Cable Kit - 4-Axis - 2 / 2.5 m	8439 6015 90
Encoder Cable Kit - 4-Axis - 3 m	8439 6015 91
Encoder Cable Kit - 4-Axis - 4 / 5 m	8439 6015 92
Encoder Cable Kit - 5-Axis - 1.3 m	8439 6015 93
Encoder Cable Kit - 5-Axis - 2 / 2.5 m	8439 6015 94
Encoder Cable Kit - 5-Axis - 3 m	8439 6015 95
Encoder Cable Kit - 5-Axis - 4 / 5 m	8439 6015 96

PRS HMI Kits - Description	Ordering No.
PRS HMI Kit - MaxiDisplay-Ethernet Cable	8439 6014 90
PRS HMI Kit - ComNode-Ethernet Cable	8439 6014 91
PRS HMI Kit - HLTQ-Ethernet Cable	8439 6014 92

AX2 - AX5 Articulated Arms - position switch assemblies

The available position switch assemblies utilize mechanical switches mounted at different points on the arm to indicate when the arm is in a specific position. These switches are often used in conveyor lines to ensure that all tools are clear of the conveyor before advancing the parts. Standard position limit switch assemblies are available for each pivot.

FEATURES

Position Switch Assembly – Shoulder

- ▶ Indicates when shoulder joint is rotated to a specific position

Position Switch Assembly – Parking Hook

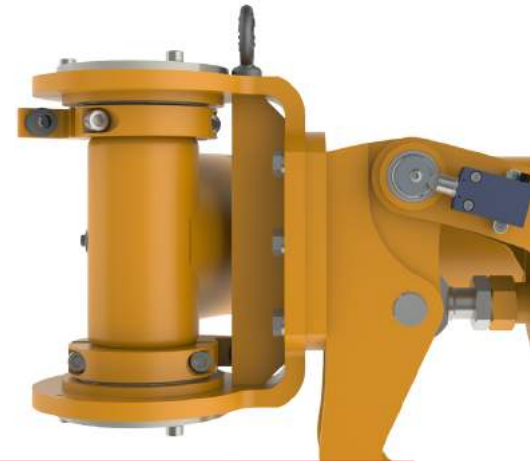
- ▶ Indicates when parallel arm is parked in the parking hook

Position Switch Assembly – Parallel Up/Down

- ▶ Indicates when the arm is at a specified range in its vertical travel

INCLUDED EQUIPMENT

- ▶ Switch with 1 meter open-end cable and mounting



Description	AX2-2		AX2-3 AX2-4C	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Position Switch Assembly - Shoulder	-	8439 6012 97	-	8439 6014 97
Position Switch Assembly - Parking Hook	-	8439 6012 98	-	8439 6012 98
Position Switch Assembly - Parallel Up/Down	-	8439 6012 99	-	8439 6012 99

Description	AX3-2.5 AX3-3 AX3-4C AX4-3		AX4-4 AX4-4C		AX5-4 AX5-4T AX5-4C	
	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.	Weight kg (lb)	Ordering No.
Position Switch Assembly - Shoulder	-	8439 6014 97	-	8439 6015 97	-	8439 6015 97
Position Switch Assembly - Parking Hook	-	8439 6014 98	-	8439 6014 98	-	8439 6015 98
Position Switch Assembly - Parallel Up/Down	-	8439 6014 99	-	8439 6014 99	-	8439 6015 99

Solutions

Mobile Horizontal Rotate Fixtures 160

Excavator Counterweight 162



Mobile wheel nutrunner application - mobile fixture / ETD-S9

This horizontal rotating housing is used for 2 nutrunner ETD S9 applications (maximum 1000 Nm). It is for use on a workshop floor to tighten bus and truck wheels etc.

The control system (DS Drive) is mounted in the base of the unit.

SCOPE OF SUPPLY

- ▶ Steering wheel
- ▶ Swivelling nutrunner mounting device
- ▶ Manual height adjustment 500 - 900 mm
- ▶ Standard pitch diameter 335 mm
- ▶ Interface for nutrunner type ETD-S9 with DS-Controller
- ▶ Base frame with wheels for operation on workshop floors
- ▶ Control box with start / stop / parameter select functions

REQUIRED EQUIPMENT

- ▶ The torque reaction bar and sockets are not included in the scope of supply and need to be ordered separately.

NOTES

- ▶ Important: Nutrunner has to be operated with a torque reaction bar which is not included in the scope of supply.

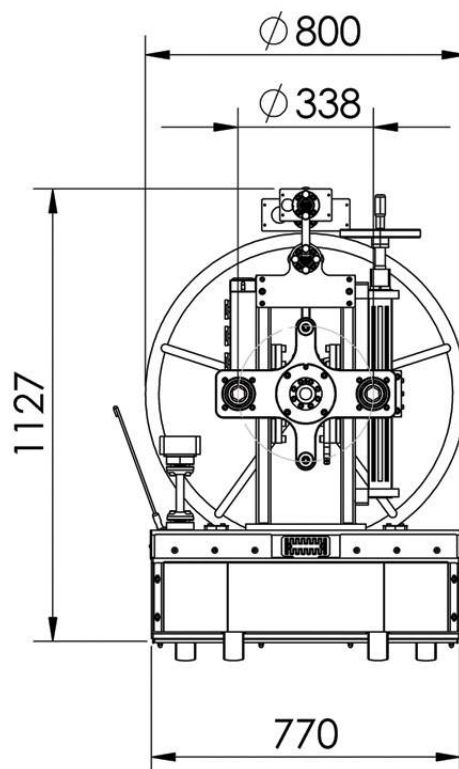
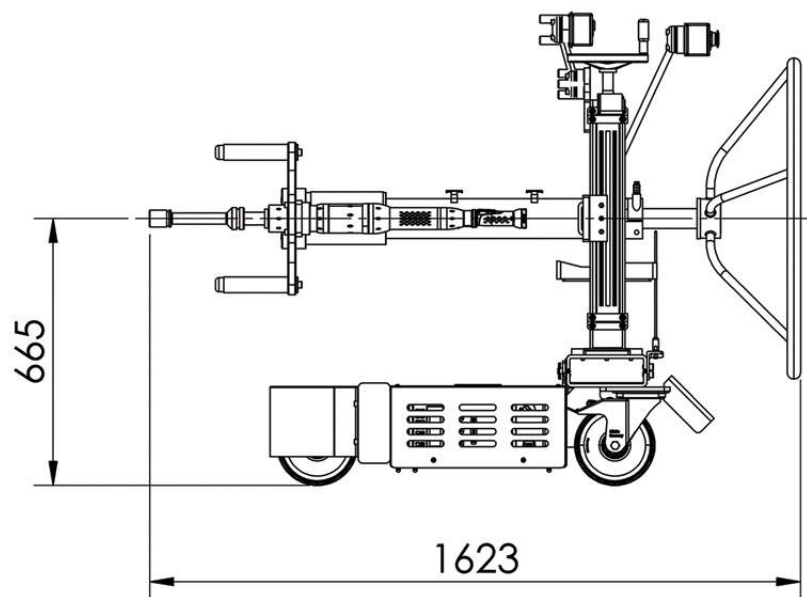
MOBILE WHEEL NUTRUNNER APPLICATION

Description	Ordering No.
Mobile Wheel Nutrunner Application - Mobile Fixture / ETD-S9	8995 7010 03



Mobile wheel nutrunner application - mobile fixture / ETD-S9

Dimensions



Excavator counterweight application - mobile fixture with Articulated Arm / ETP ST Revo / PF 6000

This solution is configured specifically for an Excavator Counterweight tightening application and consists of a mobile fixture equipped with an ETP ST Revo tool mounted vertically to an articulated arm. The mobile fixture, designed for use on a workshop floor, allows the operator to easily position the tool in relation to the part. The pneumatically controlled articulated arm allows for fine positioning and provides a lift assist for the operator when handling the tool. The control system, a Power Focus 6000, is mounted in the base of the fixture unit. Maximum capacity is 4000 Nm.

FEATURES

- ▶ The mobile fixture allows the operator to easily position the tool in relation to the part.
- ▶ Pneumatically controlled articulated arm assists the operator with handling of tool, providing a lift assist.
- ▶ Controller is housed within the cart, providing protection against damage.
- ▶ Large wheel casters provide ease of movement and handling.

SCOPE OF SUPPLY

- ▶ Base fixture with wheels for operation on workshop floors
- ▶ Handles for steering
- ▶ Operator Panel with parameter select functions
- ▶ Dead handle and start handle with up / down control and start / reverse
- ▶ Pneumatically balanced vertical linear guide assembly
- ▶ Pneumatic Control System
- ▶ Articulated arm with tool holder
- ▶ ETP ST Revo with Power Focus 6000 Controller
- ▶ Adjustable torque reaction spindle
- ▶ Cable management



REQUIRED EQUIPMENT

- ▶ Socket

NOTES

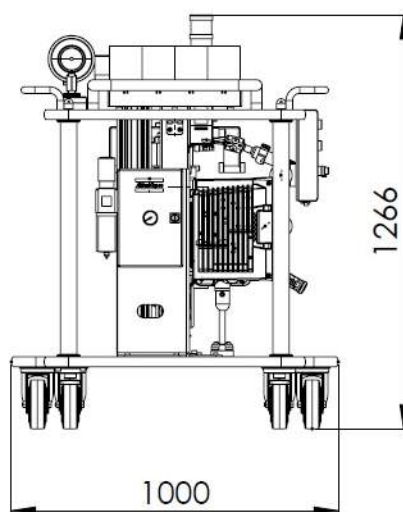
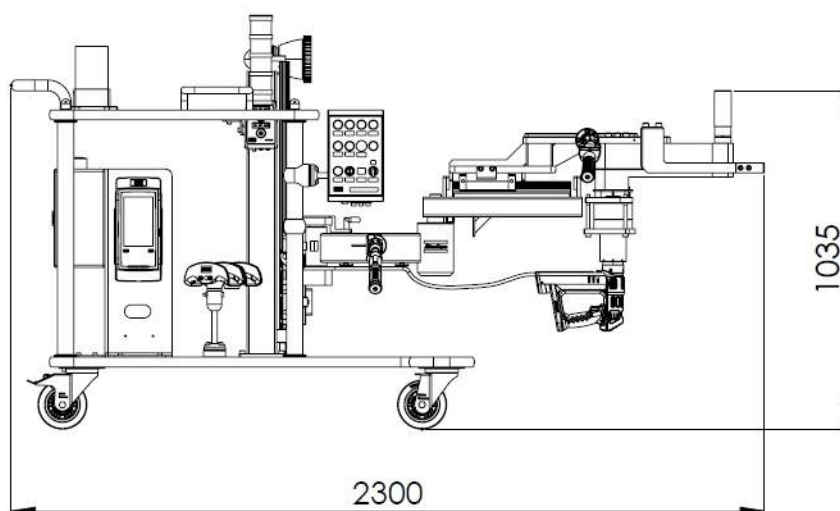
- ▶ Socket selector, stacklight, lamp are not included in the scope of supply and need to be ordered separately. Pneumatic air supply is required.
- ▶ Power Focus 6000 controller might not be available in your country yet. Please contact the Application Center's Proposal & Support Team upfront.

EXCAVATOR COUNTERWEIGHT APPLICATION

Description	Ordering No.
Excavator Counterweight Application - Mobile Fixture with Articulated Arm / ETP ST Revo / PF 6000	8439 3371 04

Excavator counterweight application - mobile fixture with Articulated Arm / ETP ST Revo / PF 6000

Dimensions



Rails and accessories

Suspension Rail Systems	165
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Suspension rail systems

Atlas Copco offers Suspension Rail Systems from several manufacturers for a complete turn-key system. All systems are enclosed rail type and are made of either aluminum or steel construction.

SCOPE OF SUPPLY

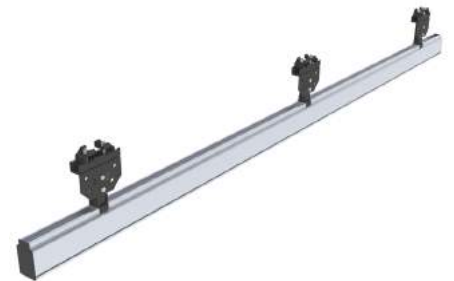
- ▶ **Single Bridge Rail Kits**
 - Span Dual Runways with Single Bridge Rail
- ▶ **Single Runway Rail Kits**
 - Offered as a Single Runway Rail - Select two Single Runway Rail to create a Dual Runway System
- ▶ **Accessories**
 - Customize your system for unique applications
 - Extend runways by selecting additional rail length, hangers and splice kits
- ▶ **Trolleys**
 - Load trolleys for mounting spring balancers or torque reaction
 - Cable Festooning Trolleys will manage and protect cables



Dual Runway with Single Bridge Rail

SUSPENSION RAIL SYSTEMS

Manufacturer	Rail System Type
Demag	KBK I and KBK II
Gorbel	AL1000 and AL2000
IR Zimmerman	ZRA1 and ZRA2
Knight Industries	RAD4100 and RAD7500
Unified Industries	ETA-4 and ETA-8



Single Runway

Demag KBK I suspension rail system

SINGLE BRIDGE RAIL KITS - DEMAG KBK I ON KBK I

SCOPE OF SUPPLY

- ▶ (1) Single enclosed steel bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



Single Bridge Rail

Description	Ordering No.
Single Bridge Rail Kit - Demag KBK I on KBK I - 4 ft	9040 7220 04
Single Bridge Rail Kit - Demag KBK I on KBK I - 5 ft	9040 7220 05
Single Bridge Rail Kit - Demag KBK I on KBK I - 6 ft	9040 7220 06
Single Bridge Rail Kit - Demag KBK I on KBK I - 7 ft	9040 7220 07
Single Bridge Rail Kit - Demag KBK I on KBK I - 8 ft	9040 7220 08
Single Bridge Rail Kit - Demag KBK I on KBK I - 9 ft	9040 7220 09
Single Bridge Rail Kit - Demag KBK I on KBK I - 10 ft	9040 7220 10
Single Bridge Rail Kit - Demag KBK I on KBK I - 11 ft	9040 7220 11
Single Bridge Rail Kit - Demag KBK I on KBK I - 12 ft	9040 7220 12



Single Runway

SINGLE BRIDGE RAIL KITS - DEMAG KBK I ON KBK II

SCOPE OF SUPPLY

- ▶ (1) Single enclosed steel bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - Demag KBK I on KBK II - 4 ft	9040 7220 14
Single Bridge Rail Kit - Demag KBK I on KBK II - 5 ft	9040 7220 15
Single Bridge Rail Kit - Demag KBK I on KBK II - 6 ft	9040 7220 16
Single Bridge Rail Kit - Demag KBK I on KBK II - 7 ft	9040 7220 17
Single Bridge Rail Kit - Demag KBK I on KBK I - 8 ft	9040 7220 18
Single Bridge Rail Kit - Demag KBK I on KBK II - 9 ft	9040 7220 19
Single Bridge Rail Kit - Demag KBK I on KBK II - 10 ft	9040 7220 20
Single Bridge Rail Kit - Demag KBK I on KBK II - 11 ft	9040 7220 21
Single Bridge Rail Kit - Demag KBK I on KBK II - 12 ft	9040 7220 22



Dual Runway with Single Bridge Rail

Demag KBK I suspension rail system

SINGLE RUNWAY RAIL KITS - DEMAG KBK I

SCOPE OF SUPPLY

- ▶ (1) Single enclosed steel runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Demag KBK I - 4 ft	9040 7220 24
Single Runway Rail Kit - Demag KBK I - 5 ft	9040 7220 25
Single Runway Rail Kit - Demag KBK I - 6 ft	9040 7220 26
Single Runway Rail Kit - Demag KBK I - 7 ft	9040 7220 27
Single Runway Rail Kit - Demag KBK I - 8 ft	9040 7220 28
Single Runway Rail Kit - Demag KBK I - 9 ft	9040 7220 29
Single Runway Rail Kit - Demag KBK I - 10 ft	9040 7220 30
Single Runway Rail Kit - Demag KBK I - 11 ft	9040 7220 31
Single Runway Rail Kit - Demag KBK I - 12 ft	9040 7220 32
Single Runway Rail Kit - Demag KBK I - 13 ft	9040 7220 33
Single Runway Rail Kit - Demag KBK I - 14 ft	9040 7220 34
Single Runway Rail Kit - Demag KBK I - 15 ft	9040 7220 35
Single Runway Rail Kit - Demag KBK I - 16 ft	9040 7220 36
Single Runway Rail Kit - Demag KBK I - 17 ft	9040 7220 37
Single Runway Rail Kit - Demag KBK I - 18 ft	9040 7220 38
Single Runway Rail Kit - Demag KBK I - 19 ft	9040 7220 39
Single Runway Rail Kit - Demag KBK I - 20 ft	9040 7220 40

ACCESSORIES - DEMAG KBK I

Description	Ordering No.
Adjustable Rail Stop - Demag KBK I (98013044)	9040 7220 45
Runway Rail Splice Kit - Demag KBK I (98027344)	9040 7220 46
Single Aluminum Rail - Demag KBK I - per ft length	9040 7220 47
Hanger Assembly - Adjustable - Demag KBK I	9040 7220 48
Hanger Assembly - Non-adjustable - Demag KBK I	9040 7220 49

TROLLEYS - DEMAG KBK I

Description	Ordering No.
Trolley - Bolt Perp. - Demag KBK I, Ergo (98061044) - 300 kg - 661 lb	9040 7207 00

Demag KBK II suspension rail system

SINGLE BRIDGE RAIL KITS - DEMAG KBK II ON KBK II

SCOPE OF SUPPLY

- ▶ (1) Single enclosed steel bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



Single Bridge Rail

Description	Ordering No.
Single Bridge Rail Kit - Demag KBK II on KBK II - 4 ft	9040 7220 54
Single Bridge Rail Kit - Demag KBK II on KBK II - 5 ft	9040 7220 55
Single Bridge Rail Kit - Demag KBK II on KBK II - 6 ft	9040 7220 56
Single Bridge Rail Kit - Demag KBK II on KBK II - 7 ft	9040 7220 57
Single Bridge Rail Kit - Demag KBK II on KBK II - 8 ft	9040 7220 58
Single Bridge Rail Kit - Demag KBK II on KBK II - 9 ft	9040 7220 59
Single Bridge Rail Kit - Demag KBK II on KBK II - 10 ft	9040 7220 60
Single Bridge Rail Kit - Demag KBK II on KBK II - 11 ft	9040 7220 61
Single Bridge Rail Kit - Demag KBK II on KBK II - 12 ft	9040 7220 62



Single Runway

SINGLE RUNWAY RAIL KITS - DEMAG KBK II

SCOPE OF SUPPLY

- ▶ (1) Single enclosed steel runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Demag KBK II - 4 ft	9040 7220 74
Single Runway Rail Kit - Demag KBK II - 5 ft	9040 7220 75
Single Runway Rail Kit - Demag KBK II - 6 ft	9040 7220 76
Single Runway Rail Kit - Demag KBK II - 7 ft	9040 7220 77
Single Runway Rail Kit - Demag KBK II - 8 ft	9040 7220 78
Single Runway Rail Kit - Demag KBK II - 9 ft	9040 7220 79
Single Runway Rail Kit - Demag KBK II - 10 ft	9040 7220 80
Single Runway Rail Kit - Demag KBK II - 11 ft	9040 7220 81
Single Runway Rail Kit - Demag KBK II - 12 ft	9040 7220 82
Single Runway Rail Kit - Demag KBK II - 13 ft	9040 7220 83
Single Runway Rail Kit - Demag KBK II - 14 ft	9040 7220 84
Single Runway Rail Kit - Demag KBK II - 15 ft	9040 7220 85
Single Runway Rail Kit - Demag KBK II - 16 ft	9040 7220 86
Single Runway Rail Kit - Demag KBK II - 17 ft	9040 7220 87
Single Runway Rail Kit - Demag KBK II - 18 ft	9040 7220 88
Single Runway Rail Kit - Demag KBK II - 19 ft	9040 7220 89
Single Runway Rail Kit - Demag KBK II - 20 ft	9040 7220 90



Dual Runway with Single Bridge Rail

Demag KBK II suspension rail system

ACCESSORIES - DEMAG KBK II

Description	Ordering No.
Adjustable Rail Stop - Demag KBK II (98212044)	9040 7221 95
Runway Rail Splice Kit - Demag KBK II (98227344)	9040 7221 96
Single Aluminum Rail - Demag KBK II - per ft length	9040 7221 97
Hanger Assembly - Adjustable - Demag KBK II	9040 7221 98
Hanger Assembly - Non-adjustable - Demag KBK II	9040 7221 99

TROLLEYS - DEMAG KBK II

Description	Ordering No.
Trolley - Bolt Perp. - Demag KBK II, II-L, Ergo (98211044) - 600 kg - 1322 lb	9040 7207 01

Gorbel AL1000 suspension rail system

SINGLE BRIDGE RAIL KITS - GORBEL AL1000 ON AL1000

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



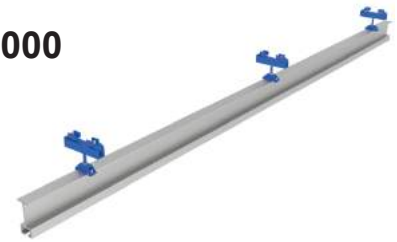
Single Bridge Rail

Description	Ordering No.
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 4 ft	9040 7222 04
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 5 ft	9040 7222 05
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 6 ft	9040 7222 06
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 7 ft	9040 7222 07
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 8 ft	9040 7222 08
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 9 ft	9040 7222 09
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 10 ft	9040 7222 10
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 11 ft	9040 7222 11
Single Bridge Rail Kit - Gorbel AL1000 on AL1000 - 12 ft	9040 7222 12

SINGLE BRIDGE RAIL KITS - GORBEL AL1000 ON AL2000

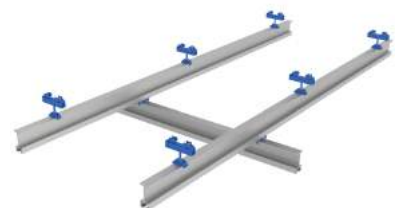
SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



Single Runway

Description	Ordering No.
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 4 ft	9040 7222 14
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 5 ft	9040 7222 15
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 6 ft	9040 7222 16
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 7 ft	9040 7222 17
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 8 ft	9040 7222 18
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 9 ft	9040 7222 19
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 10 ft	9040 7222 20
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 11 ft	9040 7222 21
Single Bridge Rail Kit - Gorbel AL1000 on AL2000 - 12 ft	9040 7222 22



Dual Runway with Single Bridge Rail

Gorbel AL1000 suspension rail system

SINGLE RUNWAY RAIL KITS - GORBEL AL1000

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Gorbel AL1000 - 4 ft	9040 7222 24
Single Runway Rail Kit - Gorbel AL1000 - 5 ft	9040 7222 25
Single Runway Rail Kit - Gorbel AL1000 - 6 ft	9040 7222 26
Single Runway Rail Kit - Gorbel AL1000 - 7 ft	9040 7222 27
Single Runway Rail Kit - Gorbel AL1000 - 8 ft	9040 7222 28
Single Runway Rail Kit - Gorbel AL1000 - 9 ft	9040 7222 29
Single Runway Rail Kit - Gorbel AL1000 - 10 ft	9040 7222 30
Single Runway Rail Kit - Gorbel AL1000 - 11 ft	9040 7222 31
Single Runway Rail Kit - Gorbel AL1000 - 12 ft	9040 7222 32
Single Runway Rail Kit - Gorbel AL1000 - 13 ft	9040 7222 33
Single Runway Rail Kit - Gorbel AL1000 - 14 ft	9040 7222 34
Single Runway Rail Kit - Gorbel AL1000 - 15 ft	9040 7222 35
Single Runway Rail Kit - Gorbel AL1000 - 16 ft	9040 7222 36
Single Runway Rail Kit - Gorbel AL1000 - 17 ft	9040 7222 37
Single Runway Rail Kit - Gorbel AL1000 - 18 ft	9040 7222 38
Single Runway Rail Kit - Gorbel AL1000 - 19 ft	9040 7222 39
Single Runway Rail Kit - Gorbel AL1000 - 20 ft	9040 7222 40

ACCESSORIES - GORBEL AL1000

Description	Ordering No.
Adjustable Rail Stop - Gorbel AL1000 (98013044)	9040 7222 45
Runway Rail Splice Kit - Gorbel AL1000 (98027344)	9040 7222 46
Single Aluminum Rail - Gorbel AL1000 - per ft length	9040 7222 47
Hanger Assembly - Adjustable - Gorbel AL1000	9040 7222 48
Hanger Assembly - Non-adjustable - Gorbel AL1000	9040 7222 49

TROLLEYS - GORBEL AL1000

Description	Ordering No.
Trolley - Bolt Perp. - Gorbel 1000 (A1001) - 1000 lb	9040 7207 12

Gorbel AL2000 suspension rail system

SINGLE BRIDGE RAIL KITS - GORBEL AL2000 ON AL2000

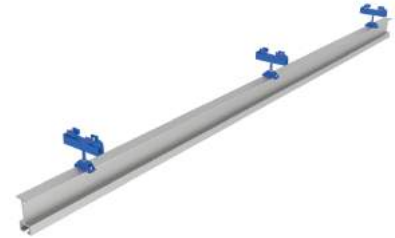
SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



Single Bridge Rail

Description	Ordering No.
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 4 ft	9040 7222 54
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 5 ft	9040 7222 55
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 6 ft	9040 7222 56
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 7 ft	9040 7222 57
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 8 ft	9040 7222 58
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 9 ft	9040 7222 59
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 10 ft	9040 7222 60
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 11 ft	9040 7222 61
Single Bridge Rail Kit - Gorbel AL2000 on AL2000 - 12 ft	9040 7222 62



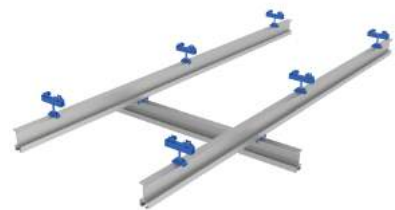
Single Runway

SINGLE RUNWAY RAIL KITS - GORBEL AL2000

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Gorbel AL2000 - 4 ft	9040 7222 74
Single Runway Rail Kit - Gorbel AL2000 - 5 ft	9040 7222 75
Single Runway Rail Kit - Gorbel AL2000 - 6 ft	9040 7222 76
Single Runway Rail Kit - Gorbel AL2000 - 7 ft	9040 7222 77
Single Runway Rail Kit - Gorbel AL2000 - 8 ft	9040 7222 78
Single Runway Rail Kit - Gorbel AL2000 - 9 ft	9040 7222 79
Single Runway Rail Kit - Gorbel AL2000 - 10 ft	9040 7222 80
Single Runway Rail Kit - Gorbel AL2000 - 11 ft	9040 7222 81
Single Runway Rail Kit - Gorbel AL2000 - 12 ft	9040 7222 82
Single Runway Rail Kit - Gorbel AL2000 - 13 ft	9040 7222 83
Single Runway Rail Kit - Gorbel AL2000 - 14 ft	9040 7222 84
Single Runway Rail Kit - Gorbel AL2000 - 15 ft	9040 7222 85
Single Runway Rail Kit - Gorbel AL2000 - 16 ft	9040 7222 86
Single Runway Rail Kit - Gorbel AL2000 - 17 ft	9040 7222 87
Single Runway Rail Kit - Gorbel AL2000 - 18 ft	9040 7222 88
Single Runway Rail Kit - Gorbel AL2000 - 19 ft	9040 7222 89
Single Runway Rail Kit - Gorbel AL2000 - 20 ft	9040 7222 90



Dual Runway with Single Bridge Rail

Gorbel AL2000 suspension rail system

ACCESSORIES - GORBEL AL2000

Description	Ordering No.
Adjustable Rail Stop - Gorbel AL2000 (98212044)	9040 7222 95
Runway Rail Splice Kit - Gorbel AL2000 (98227344)	9040 7222 96
Single Aluminum Rail - Gorbel AL2000 - per ft length	9040 7222 97
Hanger Assembly - Adjustable - Gorbel AL2000	9040 7222 98
Hanger Assembly - Non-adjustable - Gorbel AL2000	9040 7222 99

TROLLEYS - GORBEL AL2000

Description	Ordering No.
Trolley - Bolt Perp. - Gorbel 2000 (A2001) - 2000 lb	9040 7207 13

IR Zimmerman ZRA1 suspension rail system

SINGLE BRIDGE RAIL KITS - IR ZIMMERMAN ZRA1 ON ZRA1

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 4 ft	9040 7223 04
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 5 ft	9040 7223 05
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 6 ft	9040 7223 06
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 7 ft	9040 7223 07
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 8 ft	9040 7223 08
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 9 ft	9040 7223 09
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 10 ft	9040 7223 10
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 11 ft	9040 7223 11
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA1 - AL2000 - 12 ft	9040 7223 12



Single Bridge Rail



Single Runway

SINGLE BRIDGE RAIL KITS - IR ZIMMERMAN ZRA1 ON ZRA2

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 4 ft	9040 7223 14
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 5 ft	9040 7223 15
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 6 ft	9040 7223 16
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 7 ft	9040 7223 17
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 8 ft	9040 7223 18
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 9 ft	9040 7223 19
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 10 ft	9040 7223 20
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 11 ft	9040 7223 21
Single Bridge Rail Kit - IR Zimmerman ZRA1 on ZRA2 - 12 ft	9040 7223 22



Dual Runway with Single Bridge Rail

IR Zimmerman ZRA1 suspension rail system

SINGLE RUNWAY RAIL KITS - IR ZIMMERMAN ZRA1

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - IR Zimmerman ZRA1 - 4 ft	9040 7223 24
Single Runway Rail Kit - IR Zimmerman ZRA1 - 5 ft	9040 7223 25
Single Runway Rail Kit - IR Zimmerman ZRA1 - 6 ft	9040 7223 26
Single Runway Rail Kit - IR Zimmerman ZRA1 - 7 ft	9040 7223 27
Single Runway Rail Kit - IR Zimmerman ZRA1 - 8 ft	9040 7223 28
Single Runway Rail Kit - IR Zimmerman ZRA1 - 9 ft	9040 7223 29
Single Runway Rail Kit - IR Zimmerman ZRA1 - 10 ft	9040 7223 30
Single Runway Rail Kit - IR Zimmerman ZRA1 - 11 ft	9040 7223 31
Single Runway Rail Kit - IR Zimmerman ZRA1 - 12 ft	9040 7223 32
Single Runway Rail Kit - IR Zimmerman ZRA1 - 13 ft	9040 7223 33
Single Runway Rail Kit - IR Zimmerman ZRA1 - 14 ft	9040 7223 34
Single Runway Rail Kit - IR Zimmerman ZRA1 - 15 ft	9040 7223 35
Single Runway Rail Kit - IR Zimmerman ZRA1 - 16 ft	9040 7223 36
Single Runway Rail Kit - IR Zimmerman ZRA1 - 17 ft	9040 7223 37
Single Runway Rail Kit - IR Zimmerman ZRA1 - 18 ft	9040 7223 38
Single Runway Rail Kit - IR Zimmerman ZRA1 - 19 ft	9040 7223 39
Single Runway Rail Kit - IR Zimmerman ZRA1 - 20 ft	9040 7223 40

ACCESSORIES - IR ZIMMERMAN ZRA1

Description	Ordering No.
Adjustable Rail Stop - IR Zimmerman ZRA1 (98013044)	9040 7223 45
Runway Rail Splice Kit - IR Zimmerman ZRA1 (98027344)	9040 7223 46
Single Aluminum Rail - IR Zimmerman ZRA1 - per ft length	9040 7223 47
Hanger Assembly - Adjustable - IR Zimmerman ZRA1	9040 7223 48
Hanger Assembly - Non-adjustable - IR Zimmerman ZRA1	9040 7223 49

TROLLEYS - IR ZIMMERMAN ZRA1

Description	Ordering No.
Trolley - Inline Bolt - IR Zimmerman ZRA1 (ZHS30304) - 500 lb	9040 7207 20
Trolley - 3-Hole - IR Zimmerman ZRA1 (30279) - 500 lb	9040 7207 21
Trolley - Yoke - IR Zimmerman ZRA1 (ZHS30313) - 500 lb	9040 7207 22
Trolley - IR Zimmerman ZRA1 (30204) - 500 lb	9040 7207 23

IR Zimmerman ZRA2 suspension rail system

SINGLE BRIDGE RAIL KITS - IR ZIMMERMAN ZRA2 ON ZRA2

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 4 ft	9040 7223 54
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 5 ft	9040 7223 55
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 6 ft	9040 7223 56
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 7 ft	9040 7223 57
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 8 ft	9040 7223 58
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 9 ft	9040 7223 59
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 10 ft	9040 7223 60
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 11 ft	9040 7223 61
Single Bridge Rail Kit - IR Zimmerman ZRA2 on ZRA2 - 12 ft	9040 7223 62



Single Bridge Rail



Single Runway

SINGLE RUNWAY RAIL KITS - IR ZIMMERMAN ZRA2

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - IR Zimmerman ZRA2 - 4 ft	9040 7223 74
Single Runway Rail Kit - IR Zimmerman ZRA2 - 5 ft	9040 7223 75
Single Runway Rail Kit - IR Zimmerman ZRA2 - 6 ft	9040 7223 76
Single Runway Rail Kit - IR Zimmerman ZRA2 - 7 ft	9040 7223 77
Single Runway Rail Kit - IR Zimmerman ZRA2 - 8 ft	9040 7223 78
Single Runway Rail Kit - IR Zimmerman ZRA2 - 9 ft	9040 7223 79
Single Runway Rail Kit - IR Zimmerman ZRA2 - 10 ft	9040 7223 80
Single Runway Rail Kit - IR Zimmerman ZRA2 - 11 ft	9040 7223 81
Single Runway Rail Kit - IR Zimmerman ZRA2 - 12 ft	9040 7223 82
Single Runway Rail Kit - IR Zimmerman ZRA2 - 13 ft	9040 7223 83
Single Runway Rail Kit - IR Zimmerman ZRA2 - 14 ft	9040 7223 84
Single Runway Rail Kit - IR Zimmerman ZRA2 - 15 ft	9040 7223 85
Single Runway Rail Kit - IR Zimmerman ZRA2 - 16 ft	9040 7223 86
Single Runway Rail Kit - IR Zimmerman ZRA2 - 17 ft	9040 7223 87
Single Runway Rail Kit - IR Zimmerman ZRA2 - 18 ft	9040 7223 88
Single Runway Rail Kit - IR Zimmerman ZRA2 - 19 ft	9040 7223 89
Single Runway Rail Kit - IR Zimmerman ZRA2 - 20 ft	9040 7223 90



Dual Runway with Single Bridge Rail

IR Zimmerman ZRA2 suspension rail system

ACCESSORIES - IR ZIMMERMAN ZRA2

Description	Ordering No.
Adjustable Rail Stop - IR Zimmerman ZRA2 (ZHS30733)	9040 7223 95
Runway Rail Splice Kit - IR Zimmerman ZRA2 (30057)	9040 7223 96
Single Aluminum Rail - IR Zimmerman ZRA2 - per ft length	9040 7223 97
Hanger Assembly - Adjustable - IR Zimmerman ZRA2 (30195)	9040 7223 98
Hanger Assembly - Non-adjustable - IR Zimmerman ZRA2 (30193)	9040 7223 99

TROLLEYS - IR ZIMMERMAN ZRA2

Description	Ordering No.
Trolley - Inline Bolt - IR Zimmerman ZRA2 (30923) - 1000 lb	9040 7207 25
Trolley - 3-Hole - IR Zimmerman ZRA2 (30015) - 1000 lb	9040 7207 26
Trolley - Yoke - IR Zimmerman ZRA2 (ZHS30314) - 1000 lb	9040 7207 27
Trolley - IR Zimmerman ZRA2 (30011) - 1000 lb	9040 7207 28

Knight Industries RAD4100 suspension rail system

SINGLE BRIDGE RAIL KITS - KNIGHT INDUSTRIES RAD4100 ON RAD4100

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 4 ft	9040 7224 04
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 5 ft	9040 7224 05
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 6 ft	9040 7224 06
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 7 ft	9040 7224 07
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 8 ft	9040 7224 08
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 9 ft	9040 7224 09
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 10 ft	9040 7224 10
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 11 ft	9040 7224 11
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD4100 - 12 ft	9040 7224 12

SINGLE BRIDGE RAIL KITS - KNIGHT INDUSTRIES RAD4100 ON RAD7500

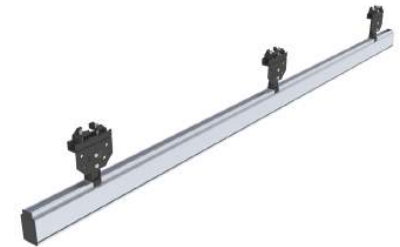
SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 4 ft	9040 7224 14
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 5 ft	9040 7224 15
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 6 ft	9040 7224 16
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 7 ft	9040 7224 17
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 8 ft	9040 7224 18
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 9 ft	9040 7224 19
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 10 ft	9040 7224 20
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 11 ft	9040 7224 21
Single Bridge Rail Kit - Knight Industries RAD4100 on RAD7500 - 12 ft	9040 7224 22



Single Bridge Rail



Single Runway



Dual Runway with Single Bridge Rail

Knight Industries RAD4100 suspension rail system

SINGLE RUNWAY RAIL KITS - KNIGHT INDUSTRIES RAD4100

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Knight Industries RAD4100 - 4 ft	9040 7224 24
Single Runway Rail Kit - Knight Industries RAD4100 - 5 ft	9040 7224 25
Single Runway Rail Kit - Knight Industries RAD4100 - 6 ft	9040 7224 26
Single Runway Rail Kit - Knight Industries RAD4100 - 7 ft	9040 7224 27
Single Runway Rail Kit - Knight Industries RAD4100 - 8 ft	9040 7224 28
Single Runway Rail Kit - Knight Industries RAD4100 - 9 ft	9040 7224 29
Single Runway Rail Kit - Knight Industries RAD4100 - 10 ft	9040 7224 30
Single Runway Rail Kit - Knight Industries RAD4100 - 11 ft	9040 7224 31
Single Runway Rail Kit - Knight Industries RAD4100 - 12 ft	9040 7224 32
Single Runway Rail Kit - Knight Industries RAD4100 - 13 ft	9040 7224 33
Single Runway Rail Kit - Knight Industries RAD4100 - 14 ft	9040 7224 34
Single Runway Rail Kit - Knight Industries RAD4100 - 15 ft	9040 7224 35
Single Runway Rail Kit - Knight Industries RAD4100 - 16 ft	9040 7224 36
Single Runway Rail Kit - Knight Industries RAD4100 - 17 ft	9040 7224 37
Single Runway Rail Kit - Knight Industries RAD4100 - 18 ft	9040 7224 38
Single Runway Rail Kit - Knight Industries RAD4100 - 19 ft	9040 7224 39
Single Runway Rail Kit - Knight Industries RAD4100 - 20 ft	9040 7224 40

ACCESSORIES - KNIGHT INDUSTRIES RAD4100

Description	Ordering No.
Adjustable Rail Stop - Knight Industries RAD4100 (MRAA4455)	9040 7224 45
Runway Rail Splice Kit - Knight Industries RAD4100 (MRHA4445)	9040 7224 46
Single Aluminum Rail - Knight Industries RAD4100 - per ft length	9040 7224 47
Hanger Assembly - Adjustable - Knight Industries (MRHS4045)	9040 7224 48
Hanger Assembly - Non-adjustable - Knight Industries (MRHS4342)	9040 7224 49

TROLLEYS - KNIGHT INDUSTRIES RAD4100

Description	Ordering No.
Trolley - Inline Bolt - Knight Industries RAD4100 (MRTA4003) - 500 lb	9040 7207 35
Trolley - 3-Hole - Knight Industries RAD4100 (MRTA4001) - 500 lb	9040 7207 36
Trolley - Yoke - Knight Industries RAD4100 (MRTA4009) - 500 lb	9040 7207 37
Trolley - Knight Industries RAD4100 (MRMA4019) - 100 lb	9040 7207 38

Knight Industries RAD7500 suspension rail system

SINGLE BRIDGE RAIL KITS - KNIGHT INDUSTRIES RAD7500 ON RAD7500

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



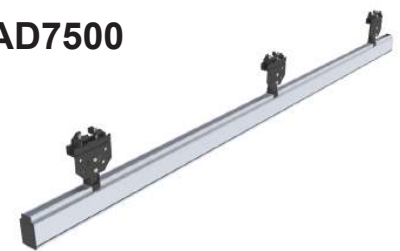
Single Bridge Rail

Description	Ordering No.
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 4 ft	9040 7224 54
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 5 ft	9040 7224 55
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 6 ft	9040 7224 56
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 7 ft	9040 7224 57
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 8 ft	9040 7224 58
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 9 ft	9040 7224 59
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 10 ft	9040 7224 60
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 11 ft	9040 7224 61
Single Bridge Rail Kit - Knight Industries RAD7500 on RAD7500 - 12 ft	9040 7224 62

SINGLE RUNWAY RAIL KITS - KNIGHT INDUSTRIES RAD7500

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



Single Runway

Description	Ordering No.
Single Runway Rail Kit - Knight Industries RAD7500 - 4 ft	9040 7224 74
Single Runway Rail Kit - Knight Industries RAD7500 - 5 ft	9040 7224 75
Single Runway Rail Kit - Knight Industries RAD7500 - 6 ft	9040 7224 76
Single Runway Rail Kit - Knight Industries RAD7500 - 7 ft	9040 7224 77
Single Runway Rail Kit - Knight Industries RAD7500 - 8 ft	9040 7224 78
Single Runway Rail Kit - Knight Industries RAD7500 - 9 ft	9040 7224 79
Single Runway Rail Kit - Knight Industries RAD7500 - 10 ft	9040 7224 80
Single Runway Rail Kit - Knight Industries RAD7500 - 11 ft	9040 7224 81
Single Runway Rail Kit - Knight Industries RAD7500 - 12 ft	9040 7224 82
Single Runway Rail Kit - Knight Industries RAD7500 - 13 ft	9040 7224 83
Single Runway Rail Kit - Knight Industries RAD7500 - 14 ft	9040 7224 84
Single Runway Rail Kit - Knight Industries RAD7500 - 15 ft	9040 7224 85
Single Runway Rail Kit - Knight Industries RAD7500 - 16 ft	9040 7224 86
Single Runway Rail Kit - Knight Industries RAD7500 - 17 ft	9040 7224 87
Single Runway Rail Kit - Knight Industries RAD7500 - 18 ft	9040 7224 88
Single Runway Rail Kit - Knight Industries RAD7500 - 19 ft	9040 7224 89
Single Runway Rail Kit - Knight Industries RAD7500 - 20 ft	9040 7224 90



***Dual Runway with
Single Bridge Rail***

Knight Industries RAD7500 suspension rail system

ACCESSORIES - KNIGHT INDUSTRIES RAD7500

Description	Ordering No.
Adjustable Rail Stop - Knight Industries RAD7500 (MRAA7511)	9040 7224 95
Runway Rail Splice Kit - Knight Industries RAD7500 (MRHA7503)	9040 7224 96
Single Aluminum Rail - Knight Industries RAD7500 - per ft length	9040 7224 97
Hanger Assembly - Adjustable - Knight Industries (MRHS4045)	9040 7224 98
Hanger Assembly - Non-adjustable - Knight Industries (MRHS4342)	9040 7224 99

TROLLEYS - KNIGHT INDUSTRIES RAD7500

Description	Ordering No.
Trolley - Inline Bolt - Knight Industries RAD7500 (MRTA7002) - 1000 lb	9040 7207 40
Trolley - 3-Hole - Knight Industries RAD7500 (MRTA7706) - 1000 lb	9040 7207 41
Trolley - Yoke - Knight Industries RAD7500 (MRTA7723) - 1000 lb	9040 7207 42
Trolley - Knight Industries RAD7500 (MRMA4814) - 100 lb	9040 7207 43

Unified Industries ETA-4 suspension rail system

SINGLE BRIDGE RAIL KITS - UNIFIED INDUSTRIES ETA-4 ON ETA-4

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



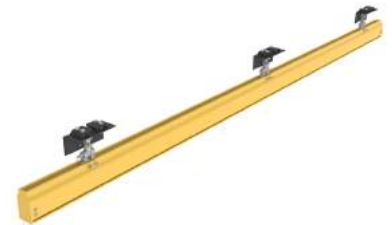
Single Bridge Rail

Description	Ordering No.
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 4 ft	9040 7225 04
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 5 ft	9040 7225 05
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 6 ft	9040 7225 06
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 7 ft	9040 7225 07
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 8 ft	9040 7225 08
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 9 ft	9040 7225 09
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 10 ft	9040 7225 10
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 11 ft	9040 7225 11
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-4 - 12 ft	9040 7225 12

SINGLE BRIDGE RAIL KITS - UNIFIED INDUSTRIES ETA-4 ON ETA-8

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops



Single Runway

Description	Ordering No.
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 4 ft	9040 7225 14
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 5 ft	9040 7225 15
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 6 ft	9040 7225 16
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 7 ft	9040 7225 17
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 8 ft	9040 7225 18
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 9 ft	9040 7225 19
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 10 ft	9040 7225 20
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 11 ft	9040 7225 21
Single Bridge Rail Kit - Unified Industries ETA-4 on ETA-8 - 12 ft	9040 7225 22



Dual Runway with Single Bridge Rail

Unified Industries ETA-4 suspension rail system

SINGLE RUNWAY RAIL KITS - UNIFIED INDUSTRIES ETA-4

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Unified Industries ETA-4 - 4 ft	9040 7225 24
Single Runway Rail Kit - Unified Industries ETA-4 - 5 ft	9040 7225 25
Single Runway Rail Kit - Unified Industries ETA-4 - 6 ft	9040 7225 26
Single Runway Rail Kit - Unified Industries ETA-4 - 7 ft	9040 7225 27
Single Runway Rail Kit - Unified Industries ETA-4 - 8 ft	9040 7225 28
Single Runway Rail Kit - Unified Industries ETA-4 - 9 ft	9040 7225 29
Single Runway Rail Kit - Unified Industries ETA-4 - 10 ft	9040 7225 30
Single Runway Rail Kit - Unified Industries ETA-4 - 11 ft	9040 7225 31
Single Runway Rail Kit - Unified Industries ETA-4 - 12 ft	9040 7225 32
Single Runway Rail Kit - Unified Industries ETA-4 - 13 ft	9040 7225 33
Single Runway Rail Kit - Unified Industries ETA-4 - 14 ft	9040 7225 34
Single Runway Rail Kit - Unified Industries ETA-4 - 15 ft	9040 7225 35
Single Runway Rail Kit - Unified Industries ETA-4 - 16 ft	9040 7225 36
Single Runway Rail Kit - Unified Industries ETA-4 - 17 ft	9040 7225 37
Single Runway Rail Kit - Unified Industries ETA-4 - 18 ft	9040 7225 38
Single Runway Rail Kit - Unified Industries ETA-4 - 19 ft	9040 7225 39
Single Runway Rail Kit - Unified Industries ETA-4 - 20 ft	9040 7225 40

ACCESSORIES - UNIFIED INDUSTRIES ETA-4

Description	Ordering No.
Adjustable Rail Stop - Unified Industries ETA-4 (422A)	9040 7225 45
Runway Rail Splice Kit - Unified Industries ETA-4	9040 7225 46
Single Aluminum Rail - Unified Industries ETA-4- per ft length	9040 7225 47
Hanger Assembly - Adjustable - Unified Industries ETA-4 (586/490)	9040 7225 48
Hanger Assembly - Non-adjustable Block - Unified Industries ETA-4 (415/458)	9040 7225 49
Hanger Assembly - Non-adjustable - Unified Industries ETA-4	9040 7225 50

TROLLEYS - UNIFIED INDUSTRIES ETA-4

Description	Ordering No.
Trolley - Inline Bolt - Unified Industries ETA-4 (400B/20110) - 500 lb	9040 7207 45
Trolley - 3-Hole - Unified Industries ETA-4 (400C/20115) - 500 lb	9040 7207 46
Trolley - Yoke - Unified Industries ETA-4 (400B/404 - 20110/25240) - 500 lb	9040 7207 47
Trolley - Unified Industries ETA-4 (495A/20150) - 100 lb	9040 7207 48

Unified Industries ETA-8 suspension rail system

SINGLE BRIDGE RAIL KITS - UNIFIED INDUSTRIES ETA-8 ON ETA-8

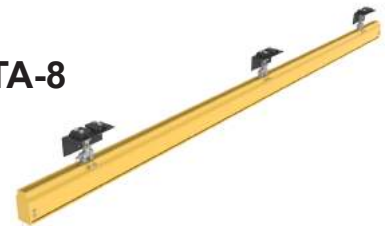
SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum bridge rail
- ▶ (2) Dual trolley rigid end trucks and safety cables (6" from each end)
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 4 ft	9040 7225 54
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 5 ft	9040 7225 55
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 6 ft	9040 7225 56
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 7 ft	9040 7225 57
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 8 ft	9040 7225 58
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 9 ft	9040 7225 59
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 10 ft	9040 7225 60
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 11 ft	9040 7225 61
Single Bridge Rail Kit - Unified Industries ETA-8 on ETA-8 - 12 ft	9040 7225 62



Single Bridge Rail



Single Runway

SINGLE RUNWAY RAIL KITS - UNIFIED INDUSTRIES ETA-8

SCOPE OF SUPPLY

- ▶ (1) Single enclosed aluminum runway rail
- ▶ Hanger assemblies with safety cables
- ▶ (2) End caps with redundant stops and safety cables
- ▶ (2) Adjustable rail stops

Description	Ordering No.
Single Runway Rail Kit - Unified Industries ETA-8 - 4 ft	9040 7225 74
Single Runway Rail Kit - Unified Industries ETA-8 - 5 ft	9040 7225 75
Single Runway Rail Kit - Unified Industries ETA-8 - 6 ft	9040 7225 76
Single Runway Rail Kit - Unified Industries ETA-8 - 7 ft	9040 7225 77
Single Runway Rail Kit - Unified Industries ETA-8 - 8 ft	9040 7225 78
Single Runway Rail Kit - Unified Industries ETA-8 - 9 ft	9040 7225 79
Single Runway Rail Kit - Unified Industries ETA-8 - 10 ft	9040 7225 80
Single Runway Rail Kit - Unified Industries ETA-8 - 11 ft	9040 7225 81
Single Runway Rail Kit - Unified Industries ETA-8 - 12 ft	9040 7225 82
Single Runway Rail Kit - Unified Industries ETA-8 - 13 ft	9040 7225 83
Single Runway Rail Kit - Unified Industries ETA-8 - 14 ft	9040 7225 84
Single Runway Rail Kit - Unified Industries ETA-8 - 15 ft	9040 7225 85
Single Runway Rail Kit - Unified Industries ETA-8 - 16 ft	9040 7225 86
Single Runway Rail Kit - Unified Industries ETA-8 - 17 ft	9040 7225 87
Single Runway Rail Kit - Unified Industries ETA-8 - 18 ft	9040 7225 88
Single Runway Rail Kit - Unified Industries ETA-8 - 19 ft	9040 7225 89
Single Runway Rail Kit - Unified Industries ETA-8 - 20 ft	9040 7225 90



Dual Runway with Single Bridge Rail

Unified Industries ETA-8 suspension rail system

ACCESSORIES - UNIFIED INDUSTRIES ETA-8

Description	Ordering No.
Adjustable Rail Stop - Unified Industries ETA-8 (176A)	9040 7225 95
Runway Rail Splice Kit - Unified Industries ETA-8	9040 7225 96
Single Aluminum Rail - Unified Industries ETA-8 - per ft length	9040 7225 97
Hanger Assembly - Adjustable - Unified Industries ETA-8 (586/590)	9040 7225 98
Hanger Assembly - Non-adjustable Block - Unified Industries ETA-8 (215/258)	9040 7225 99
Hanger Assembly - Non-adjustable - Unified Industries ETA-8	9040 7226 00

TROLLEYS - UNIFIED INDUSTRIES ETA-8

Description	Ordering No.
Trolley - Inline Bolt - Unified Industries ETA-8 (100B/20020) - 1000 lb	9040 7207 50
Trolley - 3-Hole - Unified Industries ETA-8 (100C/20021) - 1000 lb	9040 7207 51
Trolley - Yoke - Unified Industries ETA-8 (100B/404 - 20020/25040) - 1000 lb	9040 7207 52
Trolley - Inline Bolt - Anti-Kick-Up - Unified Industries ETA-8 (112A/20060) - 1000 lb	9040 7207 53
Trolley - 3-Hole - Anti-Kick-Up - Unified Industries ETA-8 (112C/20065) - 1000 lb	9040 7207 54
Trolley - Unified Industries ETA-8 (195A/20090) - 100 lb	9040 7207 55

Suspension accessories

SUSPENSION ACCESSORIES

Description	Ordering No.
Safety Cable Kit - 3/16" Dia - 1.5 m	9040 0901 21
Safety Cable Kit - 3/16" Dia - 2 m	9040 0901 22
Safety Cable Kit - 3/16" Dia - 3 m	9040 0901 23
Safety Cable Kit - 3/16" Dia - 4 m	9040 0901 24
Safety Cable Kit - 1/4" Dia - 1.5 m	9040 0901 25
Safety Cable Kit - 1/4" Dia - 2 m	9040 0901 26
Safety Cable Kit - 1/4" Dia - 3 m	9040 0901 27
Safety Cable Kit - 1/4" Dia - 4 m	9040 0901 28



Assist cylinder

The Assist Cylinder assembly mounts directly to a bridge rail suspension. This assembly assists the operator by pushing the suspension and single- or multispindle hand tool or fixtured nutrunner assembly to the part. The cylinder is actuated when the operator initiates the start trigger and the tool is within close proximity to the part. The system holds the tool to the part until the fastening cycle is complete allowing the operator the freedom to move away from the tool until the next job is in position to be fastened.

SCOPE OF SUPPLY

- ▶ 24" Stroke rodless cylinder
- ▶ Pusher with bumper and shock absorber
- ▶ Cylinder mounting brackets
- ▶ Pneumatic circuit including control valve (double solenoid) and flow controls
- ▶ Trip dog
- ▶ (2) Trip limit switches - forward and rear position



REQUIRED EQUIPMENT

- ▶ Torque Reaction Suspension
- ▶ M12 4-Pin Extension Cables
- ▶ I/O Expander - Sealed
- ▶ M12 8-Pin
- ▶ I/O Bus Cables

ASSIST CYLINDER

Description	Ordering No.
Assist Cylinder	9040 0801 08

REQUIRED INPUTS AND OUTPUTS - ASSIST CYLINDER

Description	Required Input	Required Output	Required Cable Qty.
Advance Solenoid Valve	-	1	1
Return Solenoid Valve	-	1	1
Forward Position Limit Switch	1	-	1
Rear Position Limit Switch	1	-	1

Rail system DEMAG

Demag "X-Y" system offered in KBK I and KBK II sizes

SCOPE OF SUPPLY

- ▶ Supplied as a kit. Simulation of fixtured housing carried out in our workshop with existing rail systems.

NOTES

- ▶ Material: Steel, colour RAL 2002 (red)
- ▶ Attachable load according to ordering text.
- ▶ For excentric loads the Ergo series is also available.



(1) Double-double rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 5 cable trolleys

(2) Double-single rails, 4 x 2 m

Set including:

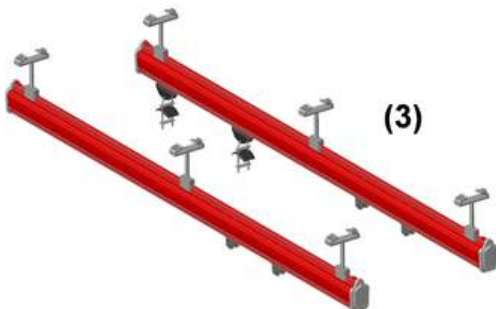
- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 5 cable trolleys



(3) Double rail, 2 m

Set including:

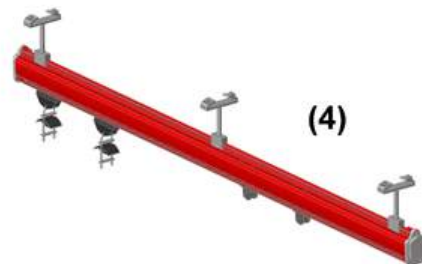
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 2 cable trolleys



4) Single rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 2 cable trolleys



Rail system DEMAG

RAIL SYSTEM DEMAG KBK I

Description	Ordering No.
KBK1 Double-double rails 4x2m, 600kg	8995 7000 30
KBK1 Double-single rails 4x2m, 300kg	8995 7000 31
KBK1 Double rails 2m, 600kg	8995 7000 32
KBK1 Single rail 2m, 300kg	8995 7000 33
KBK1 Single trolley, max. 300kg	8995 7000 34
KBK1 Extra single rail length 1m	8995 7000 35
KBK1 Cable trolley	8995 7000 36

RAIL SYSTEM DEMAG KBK II

Description	Ordering No.
KBK2 Double-double rails 4x2m, 1400kg	8995 7000 40
KBK2 Double-single rails 4x2m, 700kg	8995 7000 41
KBK2 Double rails 2m, 1400kg	8995 7000 42
KBK2 Single rail 2m, 700kg	8995 7000 43
KBK2 Single trolley, max. 600kg	8995 7000 44
KBK2 Extra single rail length 1m	8995 7000 45
KBK2 Cable trolley	8995 7000 46

RAIL SYSTEM DEMAG KBK I ERGO

Description	Ordering No.
KBK1 Ergo Double-double rails 4x2m, 600kg	8995 7000 80
KBK1 Ergo Double-single rails 4x2m, 300kg	8995 7000 81
KBK1 Ergo Double rails 2m, 600kg	8995 7000 82
KBK1 Ergo Single rail 2m, 300kg	8995 7000 83
KBK1 Ergo Single trolley, max. 300kg	8995 7000 84

RAIL SYSTEM DEMAG KBK II ERGO

Description	Ordering No.
KBK2 Ergo Double-double rails 4x2m, 1200kg	8995 7000 90
KBK2 Ergo Double-single rails 4x2m, 600kg	8995 7000 91
KBK2 Ergo Double rails 2m, 1200kg	8995 7000 92
KBK2 Ergo Single rail 2m, 600kg	8995 7000 93
KBK2 Ergo Single trolley, max. 600kg	8995 7000 94

Rail system Wampfler

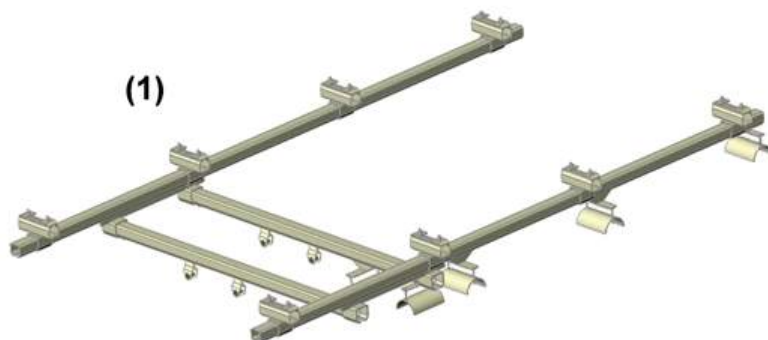
Wampfler "X-Y" system offered in C50, C63 and C80 sizes.

SCOPE OF SUPPLY

- ▶ Supplied as a kit.

NOTES

- ▶ Material: Steel, zinc surface finish.
- ▶ Attachable load according to ordering text.



(1) Double-double rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 5 cable trolleys

(2) Double-single rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 5 cable trolleys



(3) Double rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 2 cable trolleys



4) Single rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 2 cable trolleys



Rail system Wampfler

RAIL SYSTEM WAMPFLER C50

Description	Ordering No.
C50 Double-double rails 4x2m, 300kg	8995 7000 00
C50 Double-single rails 4x2m, 150kg	8995 7000 01
C50 Double rails 2m, 300kg	8995 7000 02
C50 Single rail 2m, 150kg	8995 7000 03
C50 Single trolley, 150kg	8995 7000 04
C50 Extra single rail length 1m	8995 7000 05
C50 Cable trolley	8995 7000 06

RAIL SYSTEM WAMPFLER C63

Description	Ordering No.
C63 Double-double rails 4x2m, 500kg	8995 7000 10
C63 Double-single rails 4x2m, 250kg	8995 7000 11
C63 Double rails 2m, 500kg	8995 7000 12
C63 Single rail 2m, 250kg	8995 7000 13
C63 Single trolley, 250kg	8995 7000 14
C63 Extra single rail length 1m	8995 7000 15
C63 Cable trolley	8995 7000 16

RAIL SYSTEM WAMPFLER C80

Description	Ordering No.
C80 Double-double rails 4x2m, 800kg	8995 7000 20
C80 Double-single rails 4x2m, 400kg	8995 7000 21
C80 Double rails 2m, 800kg	8995 7000 22
C80 Single rail 2m, 400kg	8995 7000 23
C80 Single trolley, 400kg	8995 7000 24
C80 Extra single rail length 1m	8995 7000 25
C80 Cable trolley	8995 7000 26

Rail system Helm (Metreel compatible)

Helm "X-Y" system offered in 400, 500 and 600 sizes.

SCOPE OF SUPPLY

- ▶ Supplied as a kit.

NOTES

- ▶ Material: Steel, zinc surface finish.
- ▶ Attachable load according to ordering text.



(1) Double-double rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 5 cable trolleys

(2) Double-single rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 5 cable trolleys



(2)

(3) Double rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 2 cable trolleys

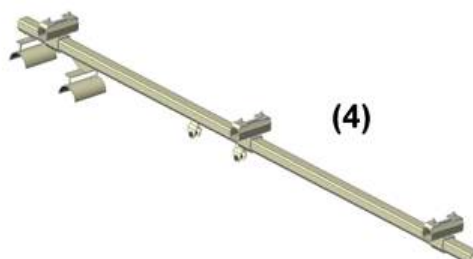


(3)

4) Single rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 2 cable trolleys



(4)

Rail system Helm (Metreel compatible)

RAIL SYSTEM HELM (METREEL COMPATIBLE) 400

Description	Ordering No.
400 Double-double rails 4x2m, 300kg	8995 7013 00
400 Double-single rails 4x2m, 150kg	8995 7013 01
400 Double rails 2m, 300kg	8995 7013 02
400 Single rail 2m, 150kg	8995 7013 03
400 Single trolley, 150kg	8995 7013 04
400 Extra single rail length 1m	8995 7013 05
400 Cable trolley	8995 7013 06

RAIL SYSTEM HELM (METREEL COMPATIBLE) 500

Description	Ordering No.
500 Double-double rails 4x2m, 500kg	8995 7013 10
500 Double-single rails 4x2m, 25	8995 7013 11
500 Double rails 2m, 500kg	8995 7013 12
500 Single rail 2m, 250kg	8995 7013 13
500 Single trolley, 250kg	8995 7013 14
500 Extra single rail length 1m	8995 7013 15
500 Cable trolley	8995 7013 16

RAIL SYSTEM HELM (METREEL COMPATIBLE) 600

Description	Ordering No.
600 Double-double rails 4x2m, 800kg	8995 7013 20
600 Double-single rails 4x2m, 400kg	8995 7013 21
600 Double rails 2m, 800kg	8995 7013 22
600 Single rail 2m, 400kg	8995 7013 23
600 Single trolley, 400kg	8995 7013 24
600 Extra single rail length 1m	8995 7013 25
600 Cable trolley	8995 7013 26

Rail system Movomech

Movomech "X-Y" system offered in AHB1 and AHB3 sizes.

SCOPE OF SUPPLY

- ▶ Supplied as a kit.

NOTES

- ▶ Material: Aluminium.
- ▶ Attachable load according to ordering text.



(1) Double-double rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 5 cable trolleys



(2) Double-single rails, 4 x 2 m

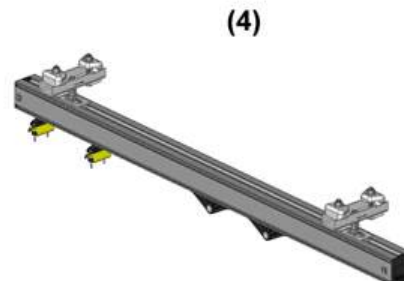
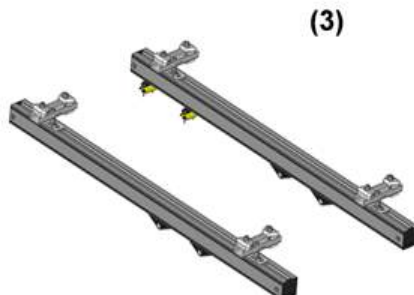
Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 5 cable trolleys

(3) Double rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 2 cable trolleys



4) Single rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 2 cable trolleys

Rail system Movomech

RAIL SYSTEM MOVOMECH AHB1

Description	Ordering No.
AHB1 Double-double rails 4x2m, 500kg	8995 7000 60
AHB1 Double-single rails 4x2m, 250kg	8995 7000 61
AHB1 Double rails 2m, 500kg	8995 7000 62
AHB1 Single rail 2m, 250kg	8995 7000 63
AHB1 Single trolley, max. 250kg	8995 7000 64
AHB1 Extra single rail length 1m	8995 7000 65

RAIL SYSTEM MOVOMECH AHB3

Description	Ordering No.
AHB3 Double-double rails 4x2m, 1000kg	8995 7000 70
AHB3 Double-single rails 4x2m, 500kg	8995 7000 71
AHB3 Double rails 2m, 1000kg	8995 7000 72
AHB3 Single rail 2m, 500kg	8995 7000 73
AHB3 Single trolley, max. 500kg	8995 7000 74
AHB3 Extra single rail length 1	8995 7000 75
AHB1-AHB3 Cable trolley	8995 7000 76

Rail system eepos

eepos "X-Y" system offered in XS profile type.

SCOPE OF SUPPLY

- ▶ Supplied as a kit.

NOTES

- ▶ Material: Aluminium.
- ▶ Attachable load according to ordering text.



(1) Double-double rails, 4 x 2 m

Set including:

- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 5 cable trolleys

(2) Double-single rails, 4 x 2 m

Set including:

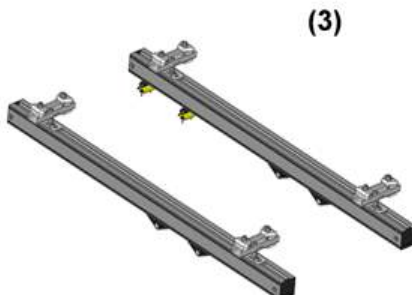
- 4 m rails in x-direction
- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 5 cable trolleys



(3) Double rail, 2 m

Set including:

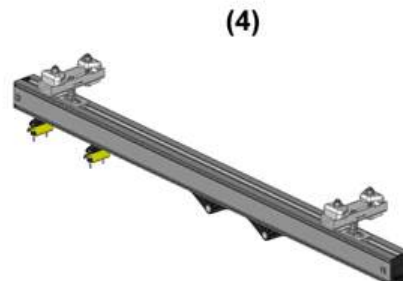
- 2 m rails in y-direction
- Fasteners, various types
- 4 rail trolleys
- 2 cable trolleys



4) Single rail, 2 m

Set including:

- 2 m rails in y-direction
- Fasteners, various types
- 2 rail trolleys
- 2 cable trolleys



Rail system eepos

RAIL SYSTEM EEPOS S/M/L

Description	Ordering No.
Profile type L/M: Double-double rail 4x2m, 1000kg	8995 7000 50
Profile type M/M: Double-single rail 4x2m, 500kg	8995 7000 51
Profile type M: Double rail 2m, 1000kg	8995 7000 52
Profile type M: Single rail 2m, 500kg	8995 7000 53
Profile type M/S: Double-double rail 4x2m, 1000kg	8995 7000 54
Profile type S/S: Double-single rail 4x2m, 500kg	8995 7000 55
Profile type S: Double rail 2m, 1000kg	8995 7000 56
Profile type S: Single rail 2m, 500kg	8995 7000 57
Trolley AL 600/600	8995 7000 58
Trolley PA 300/300	8995 7000 59
Cable trolley	8995 7000 49

Ergonomic Workstations

Compact Mounting System - CMS

199



Compact Mounting System - CMS

Compact Mounting System was developed to meet customer demands with the highest standard of quality.

Designed for applications with limited available workspace, the flexible, ergonomic workstation is a space-efficient solution for mounting Atlas Copco tools, controllers, HMIs, and accessories.

FEATURES

- ▶ Accommodates Power Focus 600, 4000 and 6000 Controllers
- ▶ Controller mounting with additional ComNode, MaxiDisplay and HLTQ HMI mounting options
- ▶ 800, 1200, and 1800 mm stand heights
- ▶ Integrated cable management
- ▶ Variety of accessory mounting options

BENEFITS

- ▶ Small footprint for compact working areas
- ▶ Configurable for a variety of applications and workflow optimization
- ▶ Easy to assemble and install

The modular mounting system allows for unlimited configurations of various controller/HMI mounting types, post lengths, base options, and accessories to suit even the most difficult application requirements – enabling workflow and ergonomic setup optimization.

Systems can be easily configured to create a basic single controller/HMI station or a larger, full workstation with multiple components and accessories.



Compact Mounting System - CMS

The flexibility of the Compact Mounting System allows it to be used in a number of different configurations. It can be easily adapted to suit a variety of unique applications.

1 & 2-CONTROLLER STATION

- ▶ Controller Mounting – 1 & 2-Controller
- ▶ Stand
 - Post 1800 mm
 - Fixed Floor/Workbench Mount
- ▶ Large Shelf with Socket Tray and Battery Charger
- ▶ Tool Holder for Straight / Right Angle tools
- ▶ Cable Management

CONTROLLER AND MAXIDISPLAY / COMNODE STATION

- ▶ Controller + ComNode / MaxiDisplay Mounting (MaxiDisplay Shown)
- ▶ Stand
 - Post 1800 mm
 - Fixed Floor/Workbench Mount
- ▶ Large Shelf with Keyboard
- ▶ Accessory Offset
- ▶ Cable Management

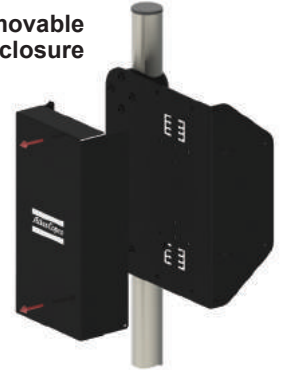
HMI STATION

- ▶ ComNode / MaxiDisplay / HLTQ HMI Mounting (HLTQ Shown)
- ▶ Stand
 - Post 1800 mm
 - Fixed Floor/Workbench Mount
- ▶ Large Shelf with Keyboard
- ▶ Cable Management

Cable management with entry from overhead



Removable Cable Enclosure



1-Controller Station



Cable management with entry from floor

Controller and MaxiDisplay Station



HMI Station

Compact Mounting System - CMS

PRS ARM / CONVEYOR STATION

Compact Mounting System – Arm Mount

- ▶ MaxiDisplay Mounting - Arm Mount for PRS HMI
- ▶ Stand
 - Post 1200 mm
 - Fixed Floor/Workbench Mount
- ▶ Large Shelf with Keyboard



PRS Arm /
Conveyor Station

AX1-1 Articulated Arm

- ▶ Balance Control – Gas Spring
- ▶ Straight Tool with Tool Holder
- ▶ Controller Mounting – 1-Controller – Pillar Mount
- ▶ 3-Axis PRS System

CONVEYOR STATION

- ▶ ComNode / MaxiDisplay Mounting
- ▶ Stand
 - Post 1000 mm
 - Fixed Wall Mount
- ▶ Large Shelf with Keyboard



Conveyor Station

WORKBENCH STATION

- ▶ Controller Mounting – 1-Controller
- ▶ Stand
 - Post 800 mm
 - Fixed Floor/Workbench Mount
- ▶ Tool Holder – Pistol – Small
- ▶ Stacklight Mounting
- ▶ Battery Charger
- ▶ Bin Rack Assemblies
- ▶ Large Shelf
- ▶ Cable Management
- ▶ Stand
 - Direct/Through Version (shown)



Workbench Station

Model	Weight kg (lb)	Ordering No.
Direct *Tapped hole surfaces	0.1 (0.2)	8439 6111 00
Through - 40 mm *Bolt through hole surfaces	1 (2.2)	8439 6111 01
Through - 75 mm *Bolt through hole surfaces	1.1 (2.4)	8439 6111 02

Compact Mounting System - CMS - controller and hmi mounting

CONTROLLER + COMNODE / MAXIDISPLAY MOUNTING

- ▶ Compatible with Power Focus 600, 4000 and 6000 Controllers
- ▶ Stacklight mounting
- ▶ ComNode / MaxiDisplay mounting
- ▶ Removable cable enclosure
- ▶ Left or right mounting



CONTROLLER MOUNTING - 1-CONTROLLER

- ▶ Compatible with Power Focus 600, 4000 and 6000 Controllers
- ▶ Stacklight mounting
- ▶ Removable cable enclosure
- ▶ Left or right mounting



CONTROLLER + HLTQ HMI MOUNTING

- ▶ Compatible with Power focus 600, 4000, and 6000 Controllers
- ▶ Stacklight mounting
- ▶ HLT15Q/HLT19Q Mounting
- ▶ Left or right mounting
- ▶ Removable cable enclosure



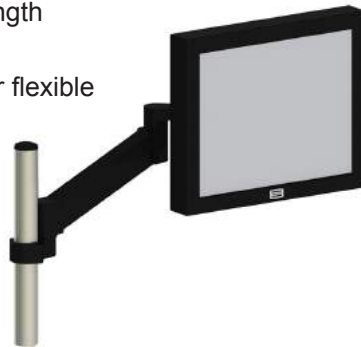
CONTROLLER MOUNTING - 2-CONTROLLER

- ▶ Compatible with Power Focus 600, 4000 and 6000 Controllers
- ▶ Stacklight mounting
- ▶ Removable cable enclosure



MAXIDISPLAY MOUNTING - ARM MOUNT

- ▶ 61 cm (24 in) extended length
- ▶ Height adjustable
- ▶ Clamp mounting allows for flexible positioning on stand



COMNODE / MAXIDISPLAY MOUNTING

- ▶ Compatible with ComNode and MaxiDisplay



HLTQ HMI MOUNTING

- ▶ Compatible with HLT15Q and HLT19Q
- ▶ Flexible mounting orientation



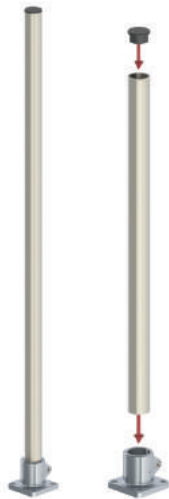
Model	Weight kg (lb)	Ordering No.
Controller Mounting - 1-Controller	5.5 (12.1)	8439 4452 20
Controller Mounting - 2-Controller	8.5 (18.8)	8439 4452 21
ComNode / MaxiDisplay Mounting	4.5 (10)	8439 4452 22
Controller + ComNode / MaxiDisplay Mounting	8.2 (18.1)	8439 4452 23
MaxiDisplay Mounting - Arm Mount	8.3 (18.3)	8439 6111 12
HLTQ - Industrial PC Mounting	3.4 (7.5)	8439 4452 24
Controller + HLTQ HMI Mounting	7.9 (17.5)	8439 4452 25

Compact Mounting System - CMS

- stand and post

STAND

Stands consist of a post and base and can be configured by selecting a specific post length and base type. Bolted assembly makes installation and configuration easy.



POST

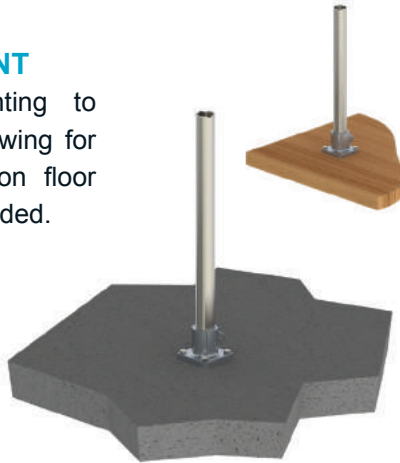
- ▶ Available in various lengths: 800, 1200, and 1800 mm
- ▶ Standard diameter of 50 mm
- ▶ (4) Cable Straps included with each post

Model	Weight kg (lb)	Height mm (in)	Ordering No.
800 mm	3.7 (8)	800 (31.5)	8439 4452 72
1200 mm	5.5 (12.1)	1200 (47.2)	8439 4452 74
1800 mm	8.2 (18.1)	1800 (70.9)	8439 4452 77

Compact Mounting System - CMS - base options

FIXED FLOOR / WORKBENCH MOUNT

Provides direct mounting to floor or workbench allowing for optimized use of station floor space. Anchors not included.



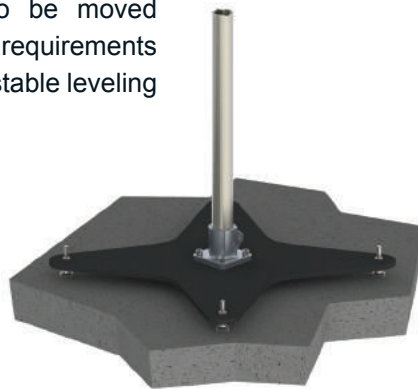
FIXED WALL MOUNT

Provides direct mounting to wall or vertical surface allowing for optimized use of station floor space. Anchors not included.



PORTABLE BASE

Base allows stand to be moved easily as station layout requirements change. Includes adjustable leveling mounts.



MOBILE BASE

Base allows stand to be freely moved to required location. Includes (2) lockable casters.

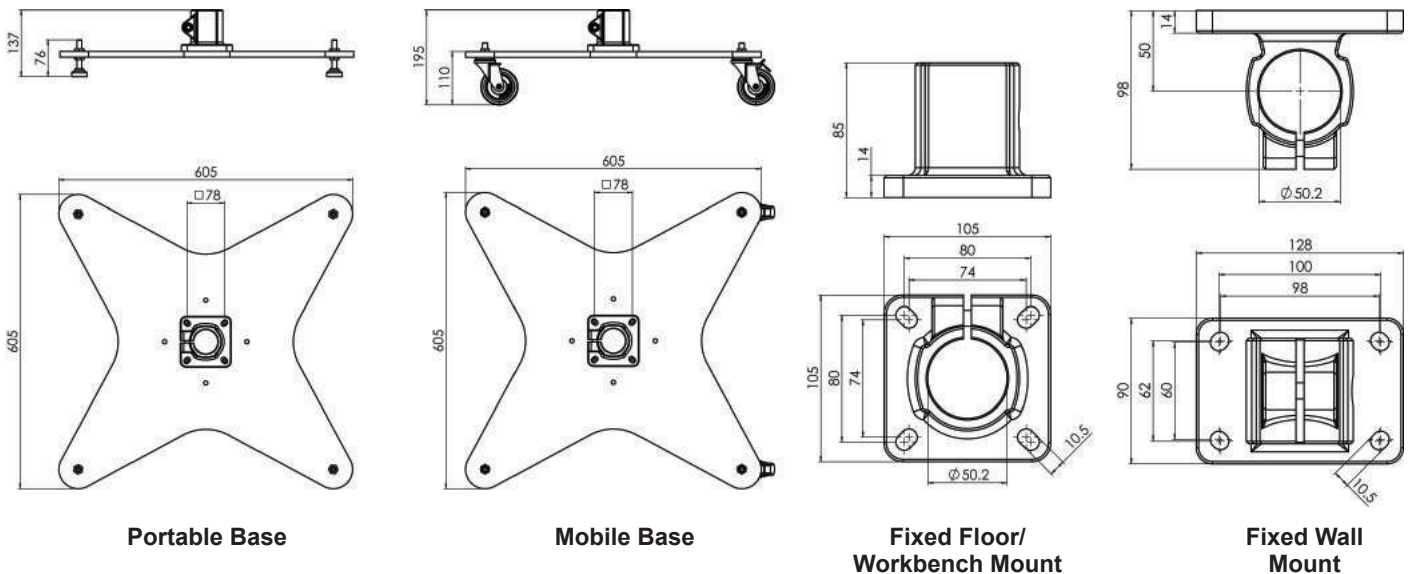
NOTES

- ▶ Casters not for heavy industrial use



Model	Weight kg (lb)	Ordering No.
Fixed Floor/Workbench Mount	0.6 (1.3)	8439 4452 17
Fixed Wall Mount	0.6 (1.3)	8439 4452 18
Portable Base	22.7 (50)	8439 4452 15
Mobile Base	24.4 (53.8)	8439 4452 16

BASE DIMENSIONS



Compact Mounting System - CMS

- optional accessories

Standard accessories are available to enhance the system configuration. Included mounting clamps allow easy assembly and flexible positioning of accessories. These accessories enable compact, ergonomic, all-in-one mounting solutions.

TOOL HOLDER - RIGHT ANGLE / STRAIGHT - OFFSET

- ▶ Accommodates ST and STR tools
- ▶ Adjustable tool cradles



TOOL HOLDER - PISTOL - BCP

- ▶ Accommodates BCP BL, ETP SB, and ETP ES tools
- ▶ Adjustable tool cradle



TOOL HOLDER - PISTOL - SMALL

- ▶ Accommodates ST and STR tools
- ▶ Adjustable tool tilt angle



TOOL HOLDER - PISTOL - LARGE

- ▶ Accommodates ST and STR tools
- ▶ Adjustable tool tilt angle



TOOL HOLDER - RIGHT ANGLE / STRAIGHT - DIRECT

- ▶ Accommodates ST and STR tools
- ▶ Adjustable tool cradles
- ▶ Low profile



TOOL HOLDER - PISTOL - HOLSTER

- ▶ Accommodates ETP STB and ETP ST tools
- ▶ Adjustable tool cradle



Model	Weight kg (lb)	Ordering No.
Tool Holder Assembly - Right Angle / Straight - Offset	4.2 (9.2)	8439 4452 30
Tool Holder Assembly - Pistol Grip - Small	1.9 (4.1)	8439 4452 31
Tool Holder Assembly - Pistol Grip - Large	1.3 (2.8)	8439 4452 32
Tool Holder Assembly - Pistol Grip - Holster	1.2 (2.6)	8439 4452 33
Tool Holder Assembly - Pistol Grip - BCP	1.2 (2.6)	8439 4452 34
Tool Holder Assembly - Right Angle / Straight - Direct	2.1 (4.6)	8439 4452 35

Compact Mounting System - CMS

- optional accessories



MINIDISPLAY MOUNTING

- ▶ Accommodates MiniDisplay
- ▶ Flexible mounting orientation



STACKLIGHT MOUNTING

- ▶ Accommodates Stacklight
- ▶ Mounts directly to post



SHELVES - SMALL AND LARGE

- ▶ Accommodates a Selector 4 with Charger or a Selector 8
- ▶ Can be used as a keyboard shelf



OPERATOR PANEL MOUNTING ASSEMBLY

- ▶ Accommodates Operator Panel
- ▶ Flexible mounting orientation



BIN RACK ASSEMBLY

- ▶ Bin color is available in all black, red, yellow, or blue or in blue / red / yellow
- ▶ 275 mm L x 104 mm W x 100 mm H



ACCESSORY OFFSET

- ▶ Capable of offsetting an accessory 250 mm from the stand
- ▶ Flexible mounting orientation



CABLE STRAP

- ▶ Additional Cable Straps
- ▶ Cinch style straps

Model	Weight kg (lb)	Ordering No.
MiniDisplay Mounting Assembly	1.5 (3.3)	8439 4452 42
Stacklight Mounting Assembly	0.7 (1.6)	8439 4452 43
Shelf - Small	3 (6.5)	8439 4452 44
Shelf - Large	3.4 (7.4)	8439 4452 45
Bin Rack Assembly - (3 Bins) Black	4.3 (9.4)	8439 4452 46
Bin Rack Assembly - (3 Bins) Blue	4.3 (9.4)	8439 4452 47
Bin Rack Assembly - (3 Bins) Red	4.3 (9.4)	8439 4452 48
Bin Rack Assembly - (3 Bins) Yellow	4.3 (9.4)	8439 4452 49
Bin Rack Assembly - (3 Bins) Blue / Red / Yellow	4.3 (9.4)	8439 4452 50
Operator Panel Mounting Assembly	3 (6.5)	8439 4452 51
Accessory Offset - 250 mm	1.7 (3.7)	8439 4452 61
Cable Strap	-	8439 9920 01

Controls

POWER FOCUS 4000

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POWER MACS 4000

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Power Focus 4000 floor stands

The Floor Stand Kits from Atlas Copco offer a new and improved controller mounting technique.

FEATURES

- ▶ Accommodates Power Focus 4000 Controllers
- ▶ Enclosed Frame - houses and protects the cables from within
- ▶ Mounting Plates - controllers are mounted on pre-drilled mounting plates
- ▶ Cover Plates - maintenance friendly with quick release connectors; allows access to cables
- ▶ Blind Plates - maintenance friendly with quick release connectors, located on the rear side of stand

OPTIONS

- ▶ Disconnect switch mounting
- ▶ ComNode mounting
- ▶ Keyboard shelf
- ▶ Stacklight mounting
- ▶ Document enclosure

NOTES

- ▶ Tightening Controllers are mounted on the front side of stand
- ▶ Power Distribution and special boxes are mounted on rear side of stand



Lifting Eye



Cable Guiding



Quick Mounting



Easy Bolt Down Feet

POWER FOCUS 4000 FLOOR STANDS

Description	No. of Controllers	Type	Total Width mm	Ordering No.
PF 4000 FS600	1 - 4	One-sided Mounting	600	9040 1902 91
PF 4000 FS1000	5 - 8	One-sided Mounting	1000	9040 1902 92
PF 4000 FS1300	9 - 10	One-sided Mounting	1300	9040 1902 93
PF 4000 FS600-2	1 - 4	Two-sided Mounting	600	9040 1902 94
PF 4000 FS1000-2	5 - 8	Two-sided Mounting	1000	9040 1902 95
PF 4000 FS1300-2	9 - 10	Two-sided Mounting	1300	9040 1902 96

Power Focus 4000 bronze/silver floor stand systems

A complete tightening system.

SCOPE OF SUPPLY

- ▶ Power Focus 4000 Floor Stand
- ▶ Start Box (cycle start circuit) - located on backside of stand
- ▶ MS25-Pin Open End Cable 1 m for Multifunction Handle (2 spindles or greater only)

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 Controllers Bronze or Silver RBUs
- ▶ Tensor DS, S, SL, ST, or STR Nutrunner(s)
- ▶ Tensor Cable(s)

OPTIONS

- ▶ Multifunction Handle and Cable
- ▶ ToolsTalk Power Focus Software
- ▶ Power Focus 4000 FS Disconnect Switch/Power Distribution Kit

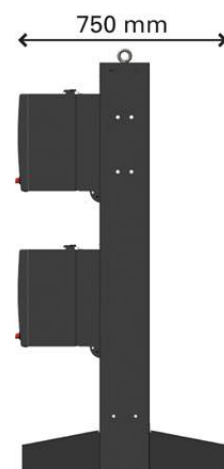
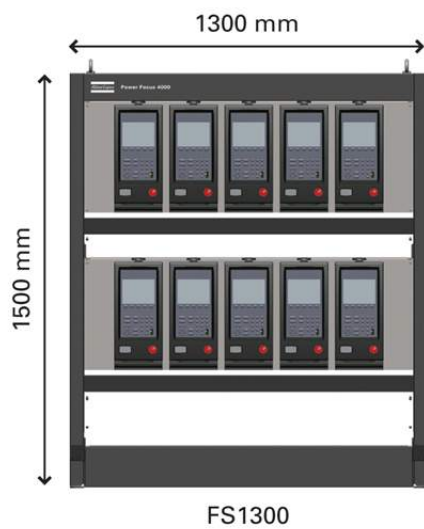
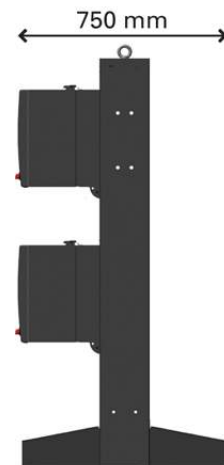
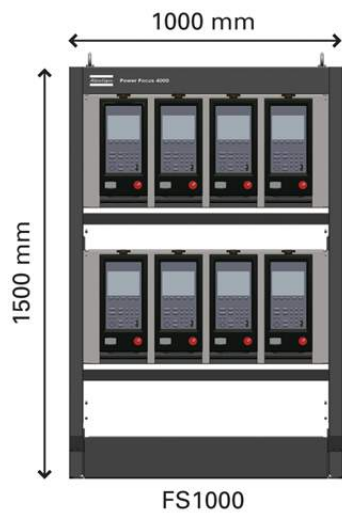
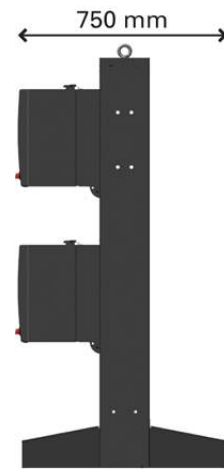
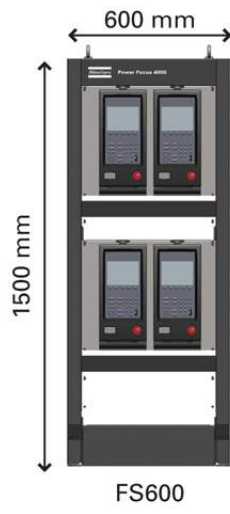


POWER FOCUS 4000 BRONZE/SILVER FLOOR STAND SYSTEMS

Description	No. of Controllers				Total Width mm	Ordering No.
		FS600	FS1000	FS1300		
PF 4000 Bronze/Silver FS System Kit - 1 Sp (FS600)	1	1	-	-	600	9040 1217 01
PF 4000 Bronze/Silver FS System Kit - 2 Sp (FS600)	2	1	-	-	600	9040 1217 02
PF 4000 Bronze/Silver FS System Kit - 3 Sp (FS600)	3	1	-	-	600	9040 1217 03
PF 4000 Bronze/Silver FS System Kit - 4 Sp (FS600)	4	1	-	-	600	9040 1217 04
PF 4000 Bronze/Silver FS System Kit - 5 Sp (FS1000)	5	-	1	-	1000	9040 1217 05
PF 4000 Bronze/Silver FS System Kit - 6 Sp (FS1000)	6	-	1	-	1000	9040 1217 06
PF 4000 Bronze/Silver FS System Kit - 7 Sp (FS1000)	7	-	1	-	1000	9040 1217 07
PF 4000 Bronze/Silver FS System Kit - 8 Sp (FS1000)	8	-	1	-	1000	9040 1217 08
PF 4000 Bronze/Silver FS System Kit - 9 Sp (FS1300)	9	-	-	1	1300	9040 1217 09
PF 4000 Bronze/Silver FS System Kit - 10 Sp (FS1300)	10	-	-	1	1300	9040 1217 10

Power Focus 4000 bronze/silver floor stand systems

DIMENSIONS



Power Focus bronze/silver floor stand kits

The Floor Stand Kits from Atlas Copco offer a new and improved controller mounting technique.

FEATURES

Flexible mounting possibilities

A unique future proof feature of this concept is the flexible controller mounting. There are four mounting possibilities, two on each side. Each Blind Plate can be replaced with a Mounting Plate / Cover Plate combination.

SCOPE OF SUPPLY

- ▶ Enclosed Framework (a)
 - Cables are contained and protected within
- ▶ Mounting Plates (c)
 - Controllers are mounted on pre-drilled mounting
- ▶ Cover Plates (d)
 - Maintenance friendly with quick release connector
- ▶ Blind Plates (b)
 - Maintenance friendly with quick release connector at the rear side. Future upgrades can be easily handled by replacing them with the Mounting Plate and Cover Plate combination
- ▶ Bolt down holes
 - Easily accessible from the side or top
- ▶ Power Distribution
 - Receptacle strip, 230 VAC, IP44
- ▶ Startbox (from 2 to 8 channels)
 - Distributes the signals coming from the multifunction handle to controllers and coming from the controllers to LED's of multifunction handle; (OK, NOK, Running)
- ▶ Main Switch Module MSM
 - With use of PF controls for multiple nut runners a common isolator (main switch) is to be provided
- ▶ System Test / Documentation
 - System test according to internal test routine, one binder and CD with standard documentation

REQUIRED EQUIPMENT

- ▶ Power Focus Controller
- ▶ Tensor S/ Tensor ST/ Tensor STR Nutrunners
- ▶ Tensor Tool cables
- ▶ RBU Bronze/ Silver
- ▶ Multifunction Handle 1...8 ch

OPTIONS

- ▶ Selectorswitch
- ▶ Selector
- ▶ Rotary Selector

NOTES

- ▶ Power Requirements
 - Feed Voltage: 90-120 VAC / 180-240 VAC
 - Frequency: 50-60 Hz

Power Focus bronze/silver floor stand kits

Fuse rating (approximation to be confirmed per project):

- 1 - 3 Channels 1 x 16A
- 1 - 6 Channels 2 x 16A
- 1 - 8 Channels 3 x 16A

Maximum ambient operating temperature: 40°C / 104°F.

- 1 = Single side mounting
- 2 = Double side mounting
- 3 = Lifting eye
- 4 = Cable guiding
- 5 = Quick mounting
- 6 = Easy bolt down feet



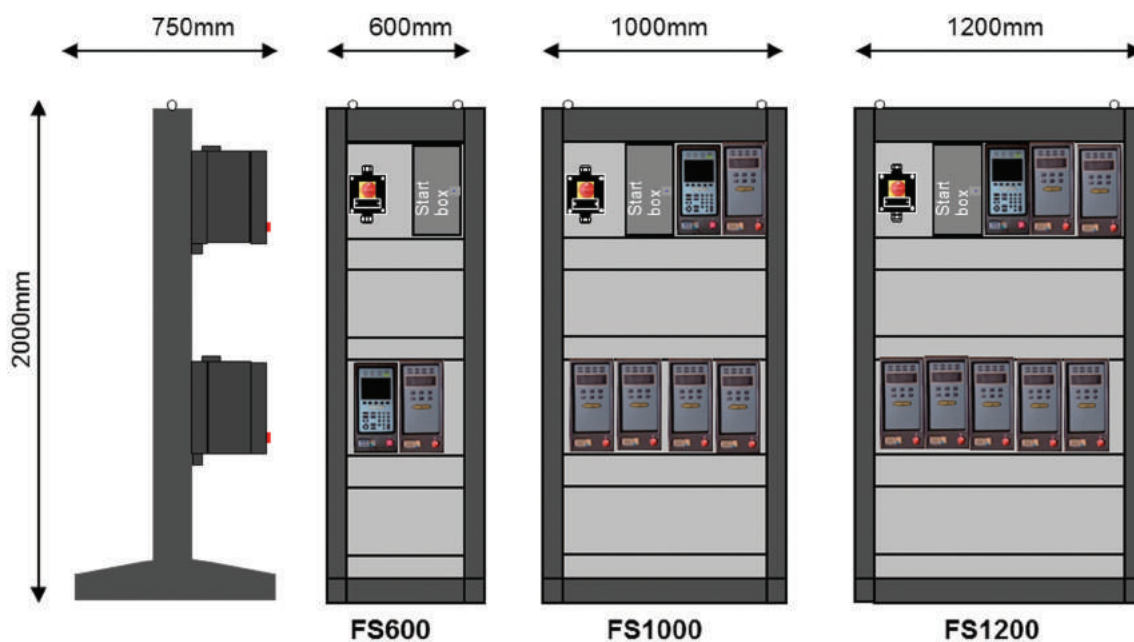
FLOOR STAND DIMENSION POWER FOCUS (BRONZE, SILVER)

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Total Height mm	Total Depth mm
8439 0231 xx	1 - 8	600	1.200	2.000	750
8439 0232 xx	3 - 9	600	1.000	2.000	750

Power Focus bronze/silver floor stand kits

POWER FOCUS (BRONZE, SILVER) FLOOR STAND ONE SIDED MOUNTING

Description	No. of Controllers	FS 600	FS 1000	FS 1200	Total Width mm	Fuse Rating	Nutrunner Type	Ordering No.
PF4000 kit 01ch FS06-1 Bronze, Silver	1	1	-	-	600	1 x 16 A	S/ST/STR	8439 0231 01
PF4000 kit 02ch FS06-1 Bronze, Silver	2	1	-	-	600	1 x 16 A	S/ST/STR	8439 0231 02
PF4000 kit 03ch FS10-1 Bronze, Silver	3	-	1	-	1.000	1 x 16 A	S/ST/STR	8439 0231 03
PF4000 kit 04ch FS10-1 Bronze, Silver	4	-	1	-	1.000	2 x 16 A	S/ST/STR	8439 0231 04
PF4000 kit 05ch FS10-1 Bronze, Silver	5	-	1	-	1.000	2 x 16 A	S/ST/STR	8439 0231 05
PF4000 kit 06ch FS10-1 Bronze, Silver	6	-	1	-	1.000	2 x 16 A	S/ST/STR	8439 0231 06
PF4000 kit 07ch FS12-1 Bronze, Silver	7	-	-	1	1.200	3 x 16 A	S/ST/STR	8439 0231 07
PF4000 kit 08ch FS12-1 Bronze, Silver	8	-	-	1	1.200	3 x 16 A	S/ST/STR	8439 0231 08

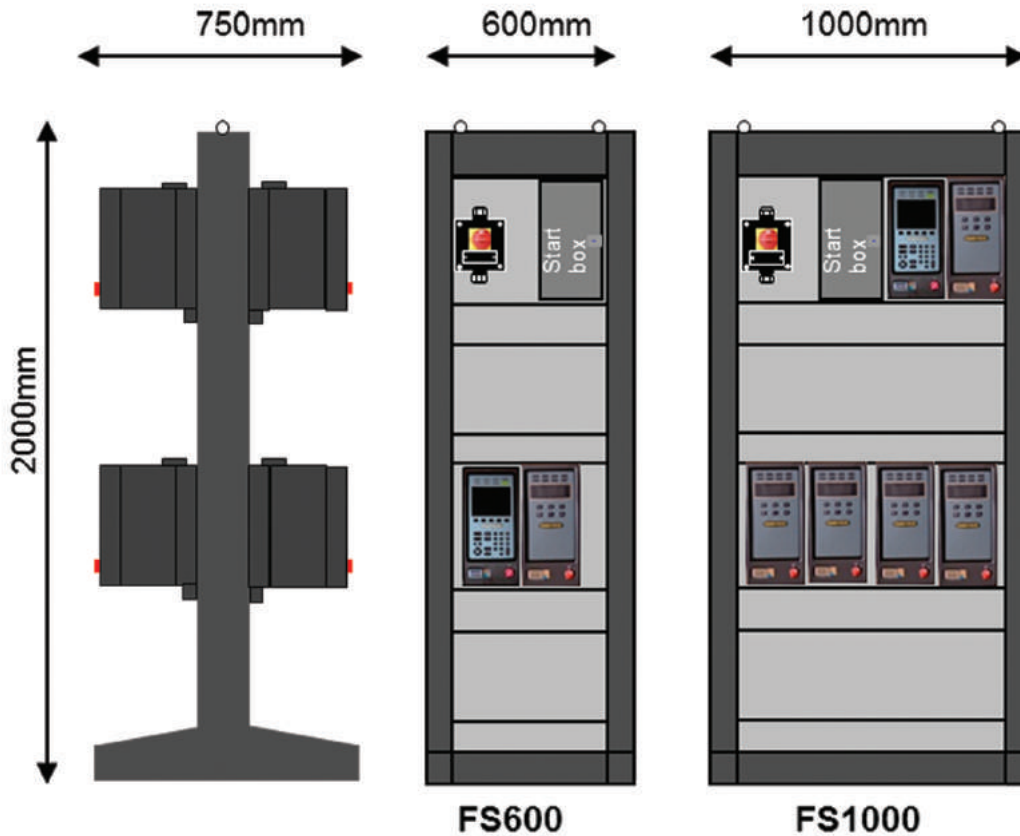


Floor Stand one sided mounting 8439 0231 xx

Power Focus bronze/silver floor stand kits

POWER FOCUS (BRONZE, SILVER) FLOOR STAND TWO SIDED MOUNTING

Description	No. of Controllers	FS 600	FS 1000	Total Width mm	Fuse Rating	Nutrunner Type	Ordering No.
PF4000 kit 03ch FS06-2 Bronze, Silver	3	1	-	600	1 x 16 A	S/ST/STR	8439 0232 03
PF4000 kit 04ch FS06-2 DS, Bronze, Silver	4	1	-	600	2 x 16 A	S/ST/STR	8439 0232 04
PF4000 kit 05ch FS06-2 Bronze, Silver	5	1	-	600	2 x 16 A	S/ST/STR	8439 0232 05
PF4000 kit 06ch FS06-2 Bronze, Silver	6	1	-	600	2 x 16 A	S/ST/STR	8439 0232 06
PF4000 kit 07ch FS10-2 Bronze, Silver	7	-	1	1.000	3 x 16 A	S/ST/STR	8439 0232 07
PF4000 kit 08ch FS10-2 Bronze, Silver	8	-	1	1.000	3 x 16 A	S/ST/STR	8439 0232 08
PF4000 kit 09ch FS10-2 Bronze, Silver	9	-	1	1.000	3 x 16 A	S/ST/STR	8439 0232 09



Floor Stand two sided mounting 8439 0232 xx

Power Focus 4000 bronze/silver mounting plate systems

A complete tightening system.

SCOPE OF SUPPLY

- ▶ Power Focus 4000 mounting plates and hardware
- ▶ Start Box (cycle start circuit)
- ▶ MS25-Pin Open End Cable 1 m for Multifunction Handle (2 spindles or greater only)

REQUIRED EQUIPMENT

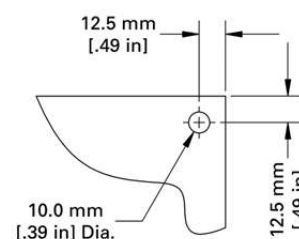
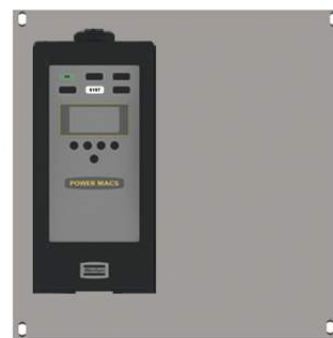
- ▶ Power Focus 4000 Controllers with Bronze or Silver RBUs
- ▶ Tensor S, SL, ST, or STR Nutrunner(s)
- ▶ Tensor or ETX Cable(s)

OPTIONS

- ▶ Multifunction Handle and Cable
- ▶ ToolsTalk Power Focus Software
- ▶ Power Focus 4000 MP Disconnect Switch/Power Distribution Kit

NOTES

- ▶ Mounting Plate System Kits cannot be used with Floor Stands
- ▶ 330 mm minimum vertical distance required between mounting plates to open the controller



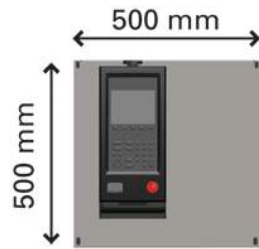
Mounting Holes
Note: (1) Hole in each corner of plate.

POWER FOCUS 4000 BRONZE/SILVER MOUNTING PLATE SYSTEMS

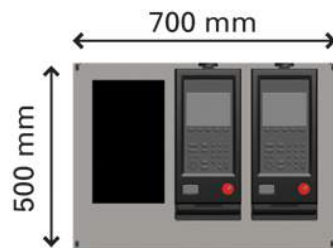
Description	No. of Controllers	Plate Width				mm	Ordering No.
		MP500	MP700	MP900	MP1200		
PF 4000 Bronze/Silver MP System Kit - 1 Sp (MP500)	1	1	-	-	-	500	9040 1217 51
PF 4000 Bronze/Silver MP System Kit - 2 Sp (MP700)	2	-	1	-	-	700	9040 1217 52
PF 4000 Bronze/Silver MP System Kit - 3 Sp (MP900)	3	-	-	1	-	900	9040 1217 53
PF 4000 Bronze/Silver MP System Kit - 4 Sp (MP1200)	4	-	-	-	1	1200	9040 1217 54
PF 4000 Bronze/Silver MP System Kit - 5 Sp (MP1200)	5	-	-	-	1	1200	9040 1217 55
PF 4000 Bronze/Silver MP System Kit - 6 Sp (MP900-2)	6	-	-	2	-	900	9040 1217 56
PF 4000 Bronze/Silver MP System Kit - 7 Sp (MP1200-2)	7	-	-	-	2	1200	9040 1217 57
PF 4000 Bronze/Silver MP System Kit - 8 Sp (MP1200-2)	8	-	-	-	2	1200	9040 1217 58
PF 4000 Bronze/Silver MP System Kit - 9 Sp (MP1200-2)	9	-	-	-	2	1200	9040 1217 59
PF 4000 Bronze/Silver MP System Kit - 10 Sp (MP1200-2)	10	-	-	-	2	1200	9040 1217 60

Power Focus 4000 bronze/silver mounting plate systems

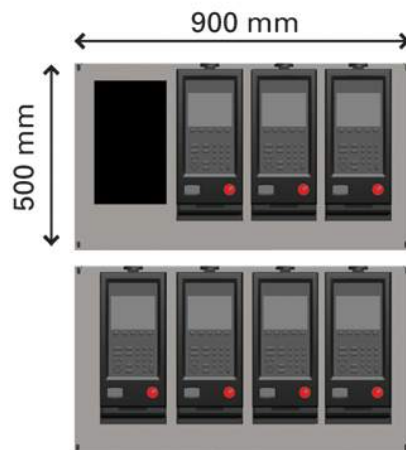
DIMENSIONS



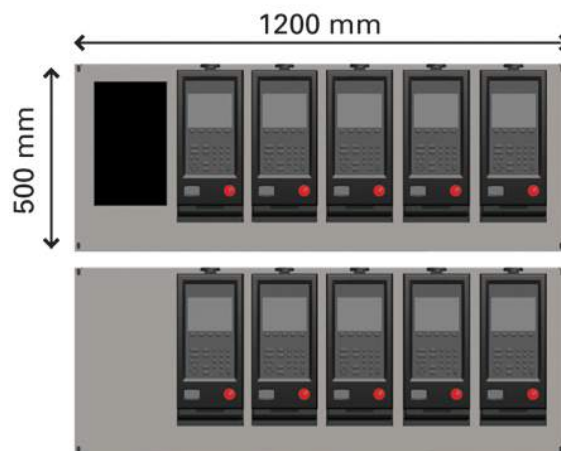
MP500



MP700



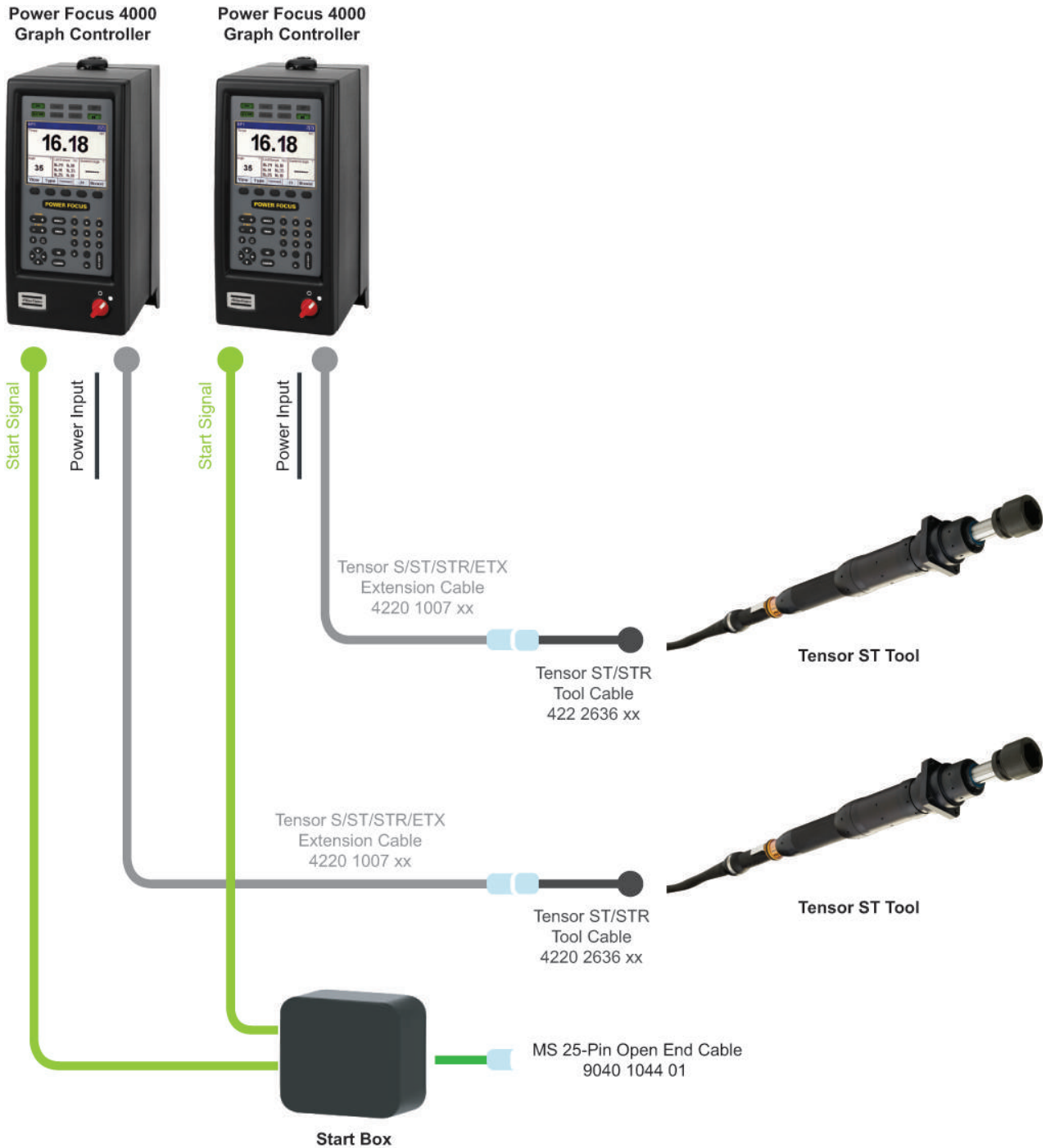
MP900



MP1200

Power Focus 4000 bronze/silver mounting plate systems

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus bronze/silver mounting plate kits

The Mounting Plate Kits from Atlas Copco offer an open controller mounting system prepared for customer integration.

SCOPE OF SUPPLY

- ▶ Mounting Plate
 - Controllers are mounted on pre-drilled mounting
- ▶ Cable hooks
 - Easy cable handling
- ▶ Power Distribution
 - Receptacle strip, 230 VAC, IP44
- ▶ Startbox (from 2 to 9 channels)
 - Distributes the signals coming from the multifunction handle to controllers and coming from the controllers to LED's of multifunction handle; (OK, NOK, Running)
- ▶ Main Switch Module MSM
 - With use of PF controls for multiple nutrunners, a common isolator (main switch) is to be provided
- ▶ System Test / Documentation
 - System test according to internal test routine, one binder and CD of standard documentation

REQUIRED EQUIPMENT

- ▶ Power Focus Controller
- ▶ Tensor S/ Tensor ST/ Tensor STR Nutrunners
- ▶ Tensor Tool cables
- ▶ RBU Bronze/ Silver
- ▶ Multifunction Handle 1...9 ch

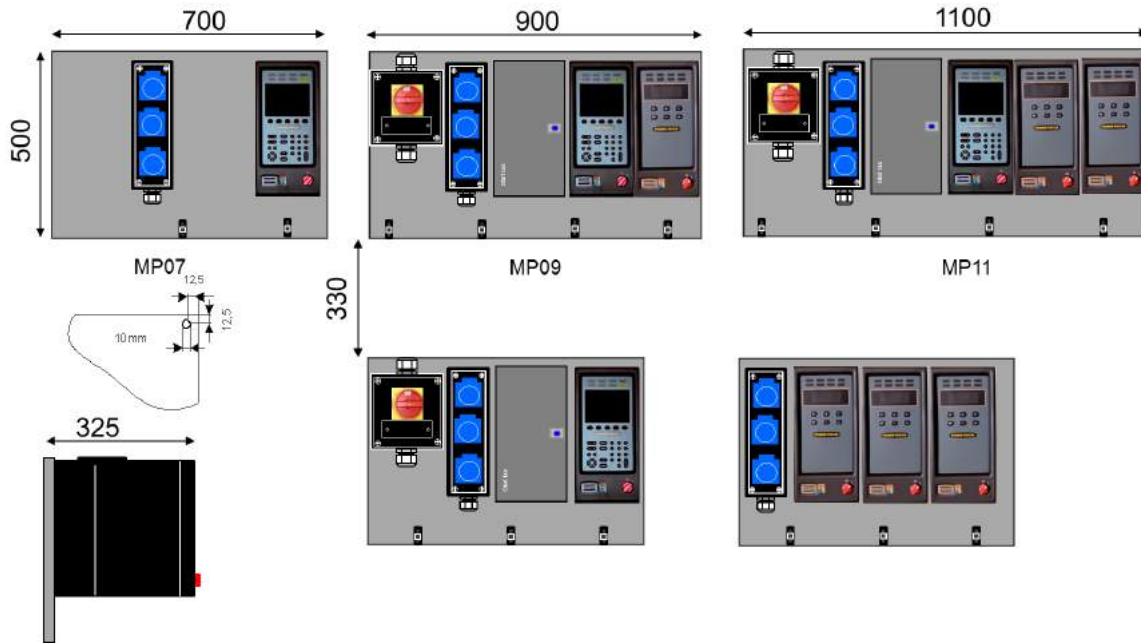
OPTIONS

- ▶ Selectorswitch
- ▶ Selector
- ▶ Rotary Selector

NOTES

- ▶ Power Requirements
 - Feed Voltage: 90-120 VAC / 180-240 VAC
 - Frequency: 50-60 Hz
- ▶ Fuse Rating (approximation to be confirmed per project)
 - 1 - 3 Channels: 1 x 16A
 - 1 - 6 Channels: 2 x 16A
 - 1 - 9 Channels: 3 x 16A
- ▶ Maximum Ambient Operating Temperature: 40°C / 104°F
 - Mounting Plate Kits cannot be used with Floor stands

Power Focus bronze/silver mounting plate kits



MOUNTING PLATE DIMENSION POWER FOCUS (BRONZE, SILVER)

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Max. Total Height mm	Total Depth mm
8439 0211 xx	1 - 9	700	1.100	2.160	325

POWER FOCUS (BRONZE, SILVER) MOUNTING PLATE KITS AND OPTIONS

Description	No. of Controllers	MP07	MP09	MP11	Total Width mm	Fuse Rating	Nutrunner Type	Ordering No.
PF4000 kit 01ch MP07-1 Bronze, Silver	1	1	-	-	700	1 x 16 A	S/ST/STR	8439 0211 01
PF4000 kit 02ch MP09-1 Bronze, Silver	2	-	1	-	900	1 x 16 A	S/ST/STR	8439 0211 02
PF4000 kit 03ch MP11-1 Bronze, Silver	3	-	-	1	1.100	1 x 16 A	S/ST/STR	8439 0211 03
PF4000 kit 04ch MP07-2 Bronze, Silver	4	2	-	-	700	2 x 16 A	S/ST/STR	8439 0211 04
PF4000 kit 05ch MP07-3 Bronze, Silver	5	3	-	-	700	2 x 16 A	S/ST/STR	8439 0211 05
PF4000 kit 06ch MP07-3 Bronze, Silver	6	3	-	-	700	2 x 16 A	S/ST/STR	8439 0211 06
PF4000 kit 07ch MP07-3 Bronze, Silver	7	3	-	-	700	3 x 16 A	S/ST/STR	8439 0211 07
PF4000 kit 08ch MP11-3 Bronze, Silver	8	2	-	1	1.100	3 x 16 A	S/ST/STR	8439 0211 08
PF4000 kit 09ch MP11-3 Bronze, Silver	9	2	-	1	1.100	3 x 16 A	S/ST/STR	8439 0211 09
Options								
Modification MPxx PF4000 Bronze, Silver								8995 3328 11

Power Focus 4000 gold/ETX floor stand systems

A complete tightening system.

SCOPE OF SUPPLY

- ▶ Power Focus 4000 Floor Stand
- ▶ I/O Bus Cables and Terminator(s)
- ▶ Ethernet Switch(es)
- ▶ Ethernet Cable(s) (2 spindles or greater only)

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 Controllers with Gold or ETX RBUs
- ▶ Tensor S, SL, ST, STR or ETX Nutrunner(s)
- ▶ Tensor or ETX Cables
- ▶ Ground Cable for ETX Nutrunners Only

OPTIONS

- ▶ Operator Interface / Kit(s) and Cable(s)
- ▶ ToolsTalk Power Focus Software
- ▶ Power Focus 4000 FS Disconnect Switch/Power Distribution Kit

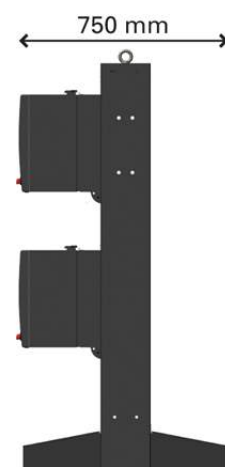
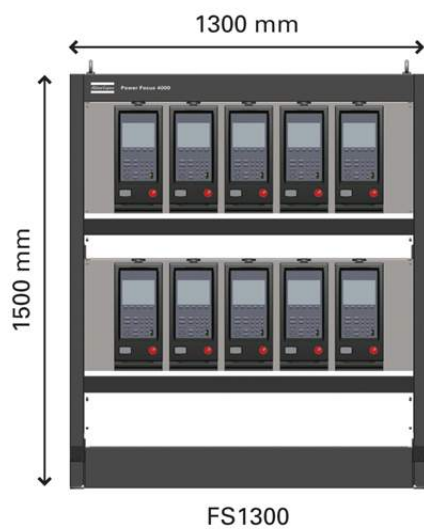
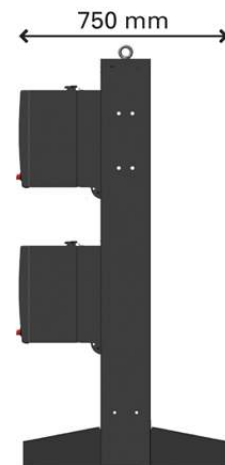
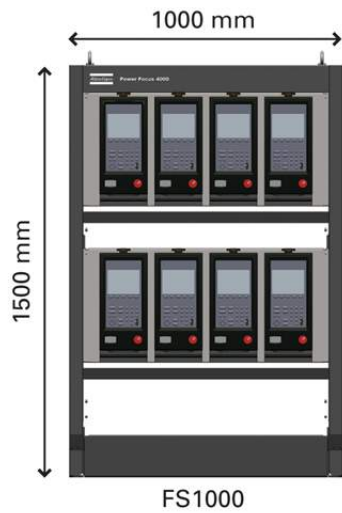
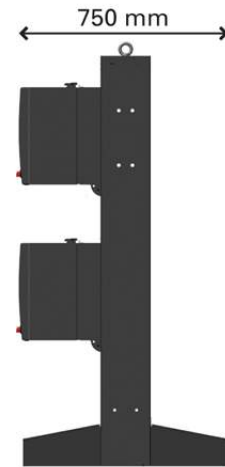
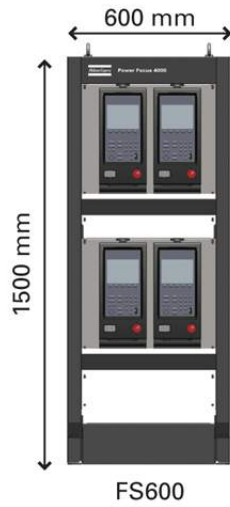


POWER FOCUS 4000 GOLD/ETX FLOOR STAND SYSTEMS

Description	No. of Controllers	Plate Width			mm	Ordering No.
		FS600	FS1000	FS1300		
PF 4000 Gold/ETX FS System Kit - 1 Sp (FS600)	1	1	-	-	600	9040 1218 01
PF 4000 Gold/ETX FS System Kit - 2 Sp (FS600)	2	1	-	-	600	9040 1218 02
PF 4000 Gold/ETX FS System Kit - 3 Sp (FS600)	3	1	-	-	600	9040 1218 03
PF 4000 Gold/ETX FS System Kit - 4 Sp (FS600)	4	1	-	-	600	9040 1218 04
PF 4000 Gold/ETX FS System Kit - 5 Sp (FS1000)	5	-	1	-	1000	9040 1218 05
PF 4000 Gold/ETX FS System Kit - 6 Sp (FS1000)	6	-	1	-	1000	9040 1218 06
PF 4000 Gold/ETX FS System Kit - 7 Sp (FS1000)	7	-	1	-	1000	9040 1218 07
PF 4000 Gold/ETX FS System Kit - 8 Sp (FS1000)	8	-	1	-	1000	9040 1218 08
PF 4000 Gold/ETX FS System Kit - 9 Sp (FS1300)	9	-	-	1	1300	9040 1218 09
PF 4000 Gold/ETX FS System Kit - 10 Sp (FS1300)	10	-	-	1	1300	9040 1218 10

Power Focus 4000 gold/ETX floor stand systems

DIMENSIONS



Power Focus gold/ETX floor stand kits

The Floor Stand Kits from Atlas Copco offer a new and improved controller mounting technique.

FEATURES

Flexible mounting possibilities

A unique future proof feature of this concept is the flexible controller mounting. There are four mounting possibilities, two on each side. Each Blind Plate can be replaced with a Mounting Plate / Cover Plate combination.

SCOPE OF SUPPLY

- ▶ Enclosed Framework (a)
 - Cables are contained and protected within
- ▶ Mounting Plates (c)
 - Controllers are mounted on pre-drilled mounting
- ▶ Cover Plates (d)
 - Maintenance friendly with quick release connector
- ▶ Blind Plates (b)
 - Maintenance friendly with quick release connector at the rear side. Future upgrades can be easily handled by replacing them with the Mounting Plate and Cover Plate combination
- ▶ Bolt down holes
 - Easily accessible from the side or top
- ▶ Power Distribution
 - Receptacle strip, 230 VAC, IP44
- ▶ Ethernet Switch
 - Cell networking gives process security with Ethernet networking
- ▶ Controller level
 - Real-time communication over I/O bus
- ▶ Main Switch Module MSM
 - With use of PF controls for multiple nutrunners, a common isolator (main switch) is to be provided
- ▶ System Test / Documentation
 - System test according to internal test routine, one binder and CD of standard documentation

REQUIRED EQUIPMENT

- ▶ Power Focus Controller
- ▶ Tensor S/ Tensor ST/Tensor STR/ ETX Nutrunners
- ▶ Tensor Tool cables
- ▶ RBU Gold / X

NOTES

- ▶ Power Requirements
 - Feed Voltage: 90-120 VAC / 180-240 VAC
 - Frequency: 50-60 Hz
- ▶ Fuse Rating (approximation to be confirmed per project)
 - 1 - 3 Channels: 1 x 16A
 - 1 - 6 Channels: 2 x 16A
 - 1 - 9 Channels: 3 x 16A

Power Focus gold/ETX floor stand kits

Maximum ambient operating temperature: 40°C / 104°F.



- 1 = Single side mounting
- 2 = Double side mounting
- 3 = Lifting eye
- 4 = Cable guiding
- 5 = Quick mounting
- 6 = Easy bolt down feet

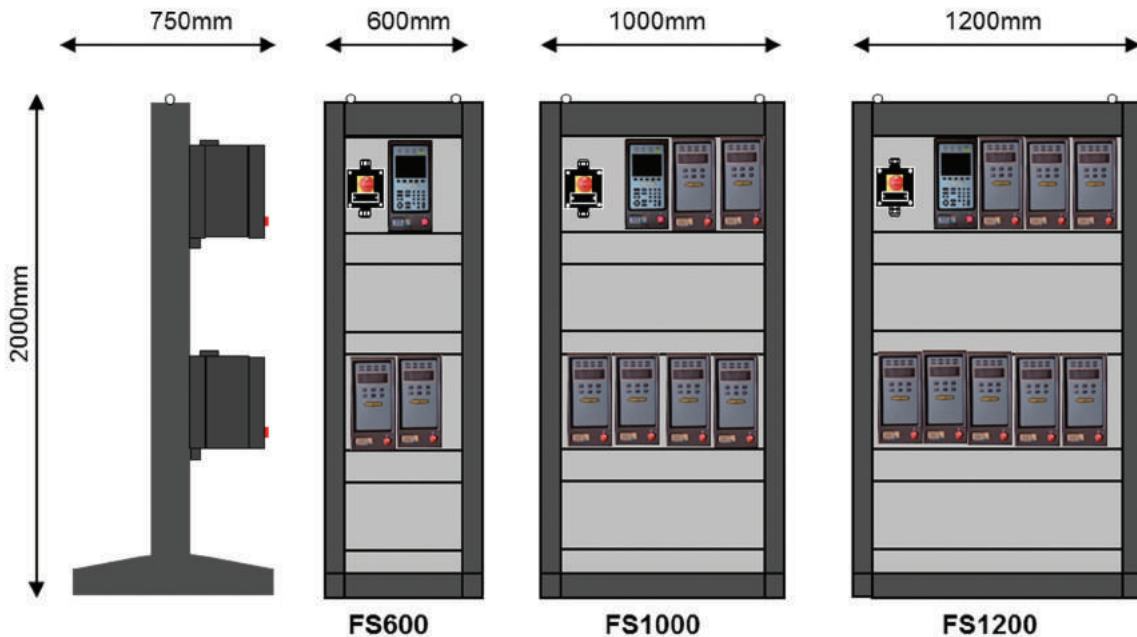
Power Focus gold/ETX floor stand kits

FLOOR STAND DIMENSION POWER FOCUS (GOLD, ETX)

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Total Height mm	Total Depth mm
8439 0241 xx	1 - 9	600	1.200	2.000	750
8439 0242 xx	4 - 9	600	1.000	2.000	750

POWER FOCUS (GOLD, ETX) FLOOR STAND ONE SIDED MOUNTING

Description	No. of Controllers	FS600	FS1000	FS1200	Total Width mm	Fuse Rating	Nutrunner Type	Ordering No.
PF4000 kit 01ch FS06-1 Gold & ETX	1	1	-	-	600	1 x 16 A	S/ST/STR/ETX	8439 0241 01
PF4000 kit 02ch FS06-1 Gold & ETX	2	1	-	-	600	1 x 16 A	S/ST/STR/ETX	8439 0241 02
PF4000 kit 03ch FS06-1 Gold & ETX	3	1	-	-	600	1 x 16 A	S/ST/STR/ETX	8439 0241 03
PF4000 kit 04ch FS10-1 Gold & ETX	4	-	1	-	1.000	2 x 16 A	S/ST/STR/ETX	8439 0241 04
PF4000 kit 05ch FS10-1 Gold & ETX	5	-	1	-	1.000	2 x 16 A	S/ST/STR/ETX	8439 0241 05
PF4000 kit 06ch FS10-1 Gold & ETX	6	-	1	-	1.000	2 x 16 A	S/ST/STR/ETX	8439 0241 06
PF4000 kit 07ch FS10-1 Gold & ETX	7	-	1	-	1.000	3 x 16 A	S/ST/STR/ETX	8439 0241 07
PF4000 kit 08ch FS12-1 Gold & ETX	8	-	-	1	1.200	3 x 16 A	S/ST/STR/ETX	8439 0241 08
PF4000 kit 09ch FS12-1 Gold & ETX	9	-	-	1	1.200	3 x 16 A	S/ST/STR/ETX	8439 0241 09

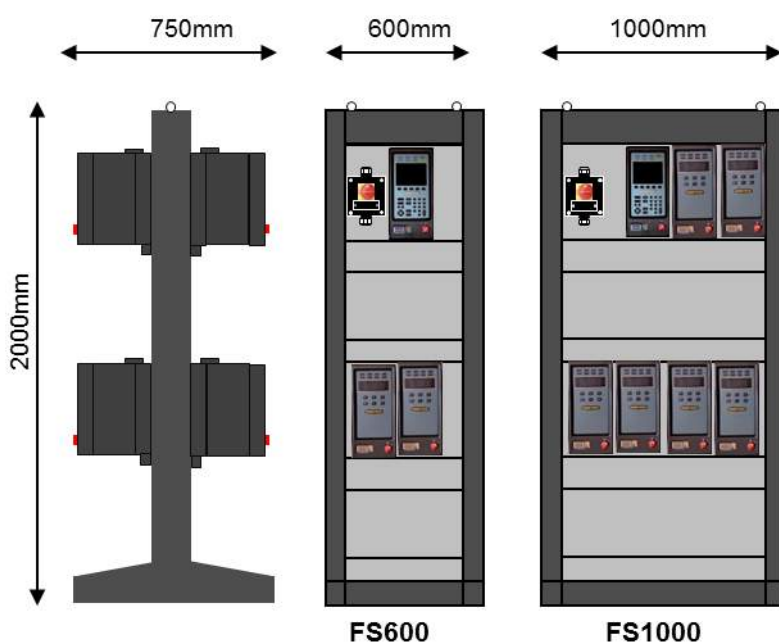


Floor Stand one sided mounting 8439 0241 xx

Power Focus gold/ETX floor stand kits

POWER FOCUS (GOLD, ETX) FLOOR STAND TWO SIDED MOUNTING

Description	No. of Controllers	FS600	FS1000	Total Width mm	Fuse Rating	Nutrunner Type	Ordering No.
PF4000 kit 04ch FS06-2 Gold & ETX	4	1	-	600	2 x 16 A	S/ST/STR/ETX	8439 0242 04
PF4000 kit 05ch FS06-2 Gold & ETX	5	1	-	600	2 x 16 A	S/ST/STR/ETX	8439 0242 05
PF4000 kit 06ch FS06-2 Gold & ETX	6	1	-	600	2 x 16 A	S/ST/STR/ETX	8439 0242 06
PF4000 kit 07ch FS10-2 Gold & ETX	7	-	1	1.000	3 x 16 A	S/ST/STR/ETX	8439 0242 07
PF4000 kit 08ch FS10-2 Gold & ETX	8	-	1	1.000	3 x 16 A	S/ST/STR/ETX	8439 0242 08
PF4000 kit 09ch FS10-2 Gold & ETX	9	-	1	1.000	3 x 16 A	S/ST/STR/ETX	8439 0242 09



Floor Stand two sided mounting 8439 0242 xx

Power Focus 4000 gold/ETX mounting plate systems

A complete tightening system.

SCOPE OF SUPPLY

- ▶ Power Focus 4000 mounting plates and hardware
- ▶ I/O Bus Cables and Terminator(s)
- ▶ Ethernet Switch(es)
- ▶ Ethernet Cable(s) (2 spindles or greater only)

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 Controllers with Gold or ETX RBUs
- ▶ Tensor S, SL, ST, STR or ETX Nutrunner(s)
- ▶ Tensor or ETX Cable(s)
- ▶ Ground Cable for ETX Nutrunners Only

OPTIONS

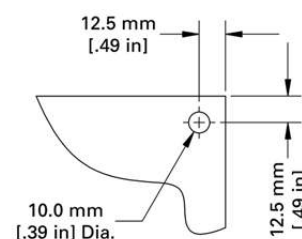
- ▶ Operator Interface / Kit(s) and Cable(s)
- ▶ ToolsTalk Power Focus Software
- ▶ Power Focus 4000 MP Disconnect Switch/Power Distribution Kit

NOTES

- ▶ Mounting Plate System Kits cannot be used with Floor Stands
- ▶ 330 mm minimum vertical distance required between mounting plates to open the controller

POWER FOCUS 4000 GOLD/ETX MOUNTING PLATE SYSTEMS

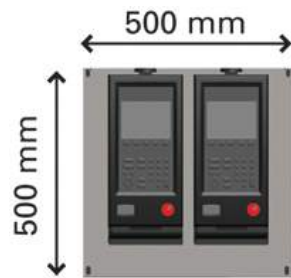
Description	No. of Controllers	Plate Width			mm	Ordering No.
		MP500	MP900	MP1200		
PF 4000 Gold/ETX MP System Kit - 1 Sp (MP500)	1	1	-	-	500	9040 1218 51
PF 4000 Gold/ETX MP System Kit - 2 Sp (MP500)	2	1	-	-	500	9040 1218 52
PF 4000 Gold/ETX MP System Kit - 3 Sp (MP900)	3	-	1	-	900	9040 1218 53
PF 4000 Gold/ETX MP System Kit - 4 Sp (MP900)	4	-	1	-	900	9040 1218 54
PF 4000 Gold/ETX MP System Kit - 5 Sp (MP1200)	5	-	-	1	1200	9040 1218 55
PF 4000 Gold/ETX MP System Kit - 6 Sp (MP900-2)	6	-	2	-	900	9040 1218 56
PF 4000 Gold/ETX MP System Kit - 7 Sp (MP900-2)	7	-	2	-	900	9040 1218 57
PF 4000 Gold/ETX MP System Kit - 8 Sp (MP900-2)	8	-	2	-	900	9040 1218 58
PF 4000 Gold/ETX MP System Kit - 9 Sp (MP1200-2)	9	-	-	2	1200	9040 1218 59
PF 4000 Gold/ETX MP System Kit - 10 Sp (MP1200-2)	10	-	-	2	1200	9040 1218 60



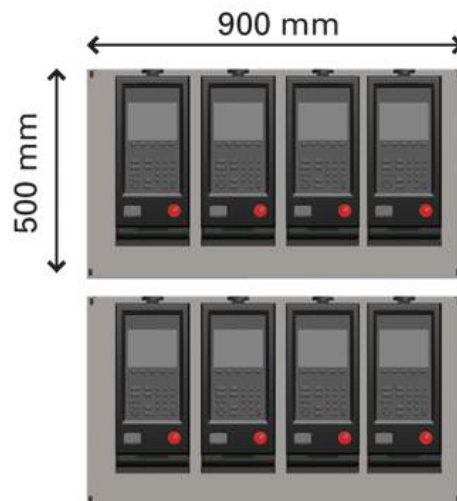
Mounting Holes
Note: (1) Hole in each corner of plate.

Power Focus 4000 gold/ETX mounting plate systems

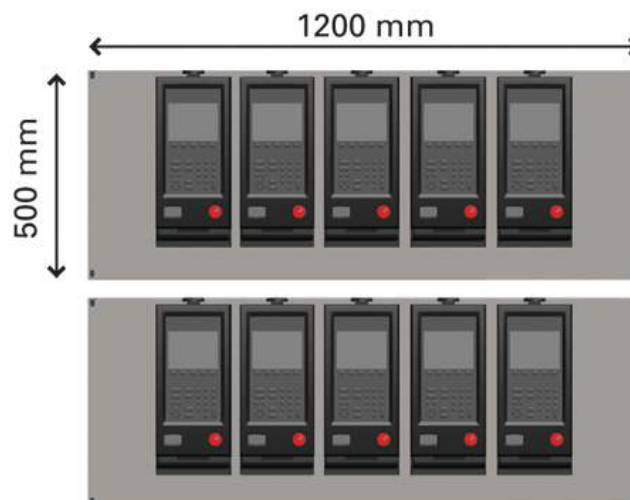
DIMENSIONS



MP500



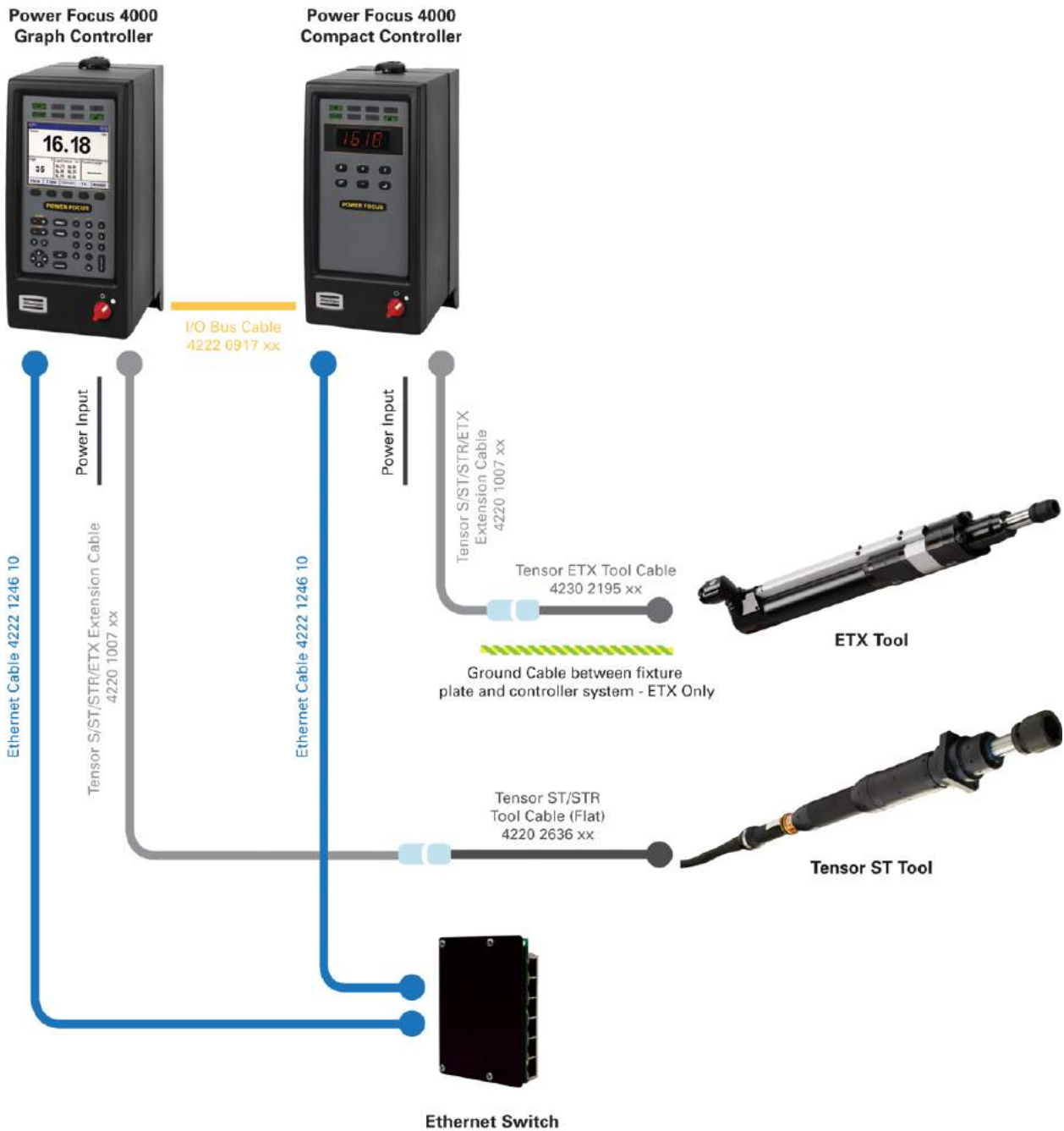
MP900



MP1200

Power Focus 4000 gold/ETX mounting plate systems

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus gold/ETX mounting plate kits

The Mounting Plate Kits from Atlas Copco offer an open controller mounting system prepared for customer integration.

SCOPE OF SUPPLY

- ▶ Mounting Plate
 - Controllers are mounted on pre-drilled mounting
- ▶ Cable hooks
 - Easy cable handling
- ▶ Power Distribution
 - Receptacle strip, 230 VAC, IP44
- ▶ Ethernet Switch
 - Cell networking gives process security with Ethernet networking
- ▶ Controller level
 - Realtime communication over I/O bus
- ▶ Main Switch Module MSM
 - With use of PF controls for multiple nutrunners, a common isolator (main switch) is to be provided
- ▶ System Test / Documentation
 - System test according to internal test routine, one binder and CD of standard documentation

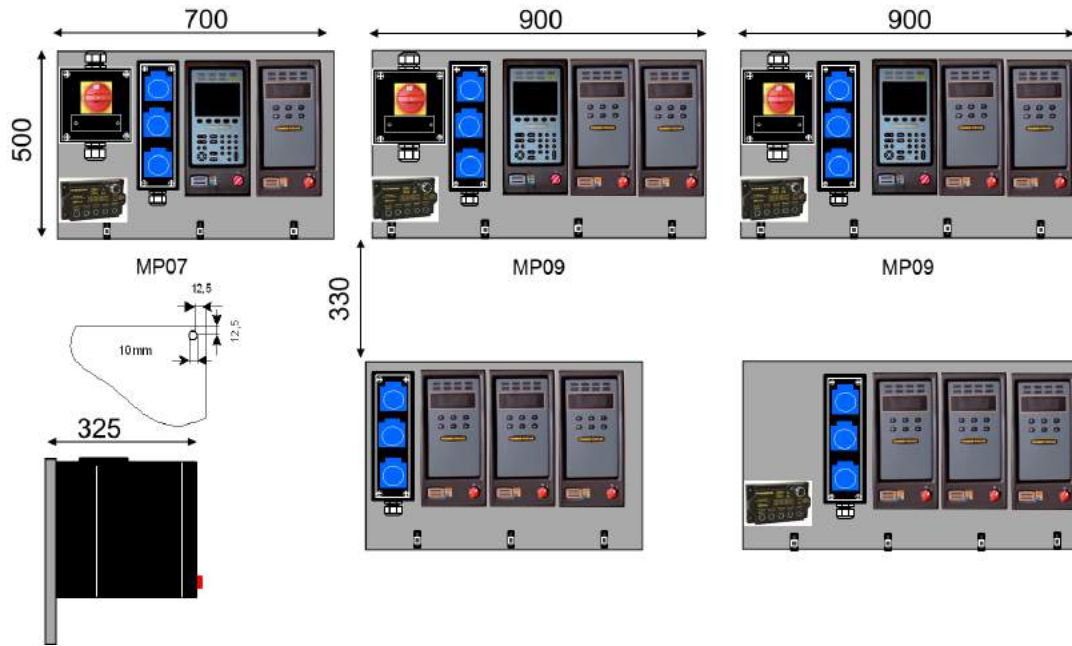
REQUIRED EQUIPMENT

- ▶ Power Focus Controller
- ▶ Tensor S/ Tensor ST/Tensor STR/ ETX Nutrunners
- ▶ Tensor Tool cables
- ▶ RBU Gold / X

NOTES

- ▶ Power Requirements
 - Feed Voltage: 90-120 VAC / 180-240 VAC
 - Frequency: 50-60 Hz
- ▶ Fuse Rating (approximation to be confirmed per project)
 - 1 - 3 Channels: 1 x 16A
 - 1 - 6 Channels: 2 x 16A
 - 1 - 9 Channels: 3 x 16A
- ▶ Maximum Ambient Operating Temperature: 40°C / 104°F
 - Mounting Plate Kits cannot be used with Floor stands

Power Focus gold/ETX mounting plate kits



MOUNTING PLATE DIMENSION POWER FOCUS (GOLD, ETX)

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Max. Total Height mm	Total Depth mm
8439 0221 xx	1 - 9	700	900	2.160	325

POWER FOCUS (GOLD, ETX) MOUNTING PLATE KITS AND OPTIONS

Description	No. of Controllers	MP07	MP09	Total Width mm	Fuse Rating	Nutrunner Type	Ordering No.
PF4000 kit 01ch MP07-1 Gold & ETX	1	1	-	700	1 x 16 A	S/ST/STR/ETX	8439 0221 01
PF4000 kit 02ch MP07-1 Gold & ETX	2	-	1	900	1 x 16 A	S/ST/STR/ETX	8439 0221 02
PF4000 kit 03ch MP09-1 Gold & ETX	3	-	1	900	1 x 16 A	S/ST/STR/ETX	8439 0221 03
PF4000 kit 04ch MP07-2 Gold & ETX	4	2	-	700	1 x 16 A	S/ST/STR/ETX	8439 0221 04
PF4000 kit 05ch MP07-2 Gold & ETX	5	2	-	700	2 x 16 A	S/ST/STR/ETX	8439 0221 05
PF4000 kit 06ch MP07-3 Gold & ETX	6	3	-	700	2 x 16 A	S/ST/STR/ETX	8439 0221 06
PF4000 kit 07ch MP07-3 Gold & ETX	7	3	-	700	3 x 16 A	S/ST/STR/ETX	8439 0221 07
PF4000 kit 08ch MP07-3 Gold & ETX	8	3	-	700	3 x 16 A	S/ST/STR/ETX	8439 0221 08
PF4000 kit 09ch MP09-3 Gold & ETX	9	-	3	900	3 x 16 A	S/ST/STR/ETX	8439 0221 09
Options							
Modification MPxx PF4000 Gold & ETX							8995 3328 12

Power Focus 4000 floor stand disconnect switch

SCOPE OF SUPPLY

- ▶ Disconnect switch - flange style
- ▶ (3) Fuses
- ▶ Mounting bracket and hardware
- ▶ Interconnecting cable/conduit

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 FS System Kit
- ▶ Power Focus 4000 FS Power Distribution Kit



NOTES

- ▶ Fuse size to be determined by Atlas Copco engineering

POWER FOCUS 4000 FLOOR STAND DISCONNECT SWITCH KITS SQUARE D - NEMA12

Description	No. of Controllers	Disconnect Size Amp	Ordering No.
PF 4000 FS Disconnect Switch Kit - Square D - NEMA12 - 30 Amp	1 - 7	30	9040 1219 74
PF 4000 FS Disconnect Switch Kit - Square D - NEMA12 - 60 Amp	8 - 10	60	9040 1219 75

POWER FOCUS 4000 FLOOR STAND DISCONNECT SWITCH KITS ALLEN-BRADLEY - NEMA12

Description	No. of Controllers	Disconnect Size Amp	Ordering No.
PF 4000 FS Disconnect Switch Kit - Allen-Bradley - NEMA12 - 30 Amp	1 - 7	30	9040 1219 77
PF 4000 FS Disconnect Switch Kit - Allen-Bradley - NEMA12 - 60 Amp	8 - 10	60	9040 1219 78

POWER FOCUS 4000 DISCONNECT SWITCH - OPTION FOR FLOOR STAND

Description	Ordering No.
Normally Open Auxiliary Contact - Square D 30 Amp Kit	9040 1203 90
Normally Open Auxiliary Contact - Square D 60/100 Amp Kit	9040 1203 91

Power Focus 4000 floor stand disconnect switch

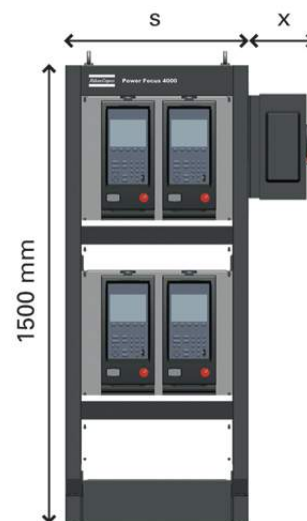
DIMENSIONS

DIMENSIONS - POWER FOCUS 4000 FLOOR STAND DISCONNECT SWITCH

Description	Width (x) mm (in)
Square D - NEMA12 - 30 Amp	204 (8)
Square D - NEMA12 - 60 Amp	254 (10)
Allen-Bradley - NEMA12 - 30 Amp	277 (10.9)
Allen-Bradley - NEMA12 - 60 Amp	277 (10.9)

DIMENSIONS - POWER FOCUS 4000 FLOOR STAND

Description	Width (s) mm (in)
PF 4000 FS600	600 (23.6)
PF 4000 FS1000	1000 (39.4)
PF 4000 FS1300	1300 (51.2)



Power Focus 4000 floor stand power distribution

SCOPE OF SUPPLY

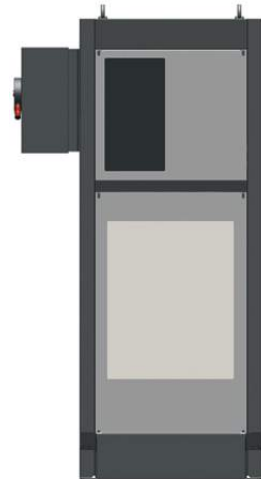
- ▶ Power Distribution Box(es)
- ▶ 480VAC Transformer
- ▶ Interconnecting cable/conduit
- ▶ Mounting hardware

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 FS System Kit
- ▶ Power Focus 4000 FS Disconnect Switch Kit

NOTES

- ▶ Fuse size to be determined by Atlas Copco engineering



POWER FOCUS 4000 BRONZE/SILVER FS POWER DISTRIBUTION KIT

Description	No. of Controllers	FS 600	FS 1000	FS 1300	Total Width mm	Ordering No.
PF 4000 Bronze/Silver FS Power Distribution Kit - 1 Sp (FS600)	1	1	-	-	600	9040 1219 01
PF 4000 Bronze/Silver FS Power Distribution Kit - 2 Sp (FS600)	2	1	-	-	600	9040 1219 02
PF 4000 Bronze/Silver FS Power Distribution Kit - 3 Sp (FS600)	3	1	-	-	600	9040 1219 03
PF 4000 Bronze/Silver FS Power Distribution Kit - 4 Sp (FS600)	4	1	-	-	600	9040 1219 04
PF 4000 Bronze/Silver FS Power Distribution Kit - 5 Sp (FS1000)	5	-	1	-	1000	9040 1219 05
PF 4000 Bronze/Silver FS Power Distribution Kit - 6 Sp (FS1000)	6	-	1	-	1000	9040 1219 06
PF 4000 Bronze/Silver FS Power Distribution Kit - 7 Sp (FS1000)	7	-	1	-	1000	9040 1219 07
PF 4000 Bronze/Silver FS Power Distribution Kit - 8 Sp (FS1000)	8	-	1	-	1000	9040 1219 08
PF 4000 Bronze/Silver FS Power Distribution Kit - 9 Sp (FS1300)	9	-	-	1	1300	9040 1219 09
PF 4000 Bronze/Silver FS Power Distribution Kit - 10 Sp (FS1300)	10	-	-	1	1300	9040 1219 10

POWER FOCUS 4000 GOLD/ETX FS POWER DISTRIBUTION KITS

Description	No. of Controllers	FS 600	FS 1000	FS 1300	Total Width mm	Ordering No.
PF 4000 Gold/ETX FS Power Distribution Kit - 1 Sp (FS600)	1	1	-	-	600	9040 1219 21
PF 4000 Gold/ETX FS Power Distribution Kit - 2 Sp (FS600)	2	1	-	-	600	9040 1219 22
PF 4000 Gold/ETX FS Power Distribution Kit - 3 Sp (FS600)	3	1	-	-	600	9040 1219 23
PF 4000 Gold/ETX FS Power Distribution Kit - 4 Sp (FS600)	4	1	-	-	600	9040 1219 24
PF 4000 Gold/ETX FS Power Distribution Kit - 5 Sp (FS1000)	5	-	1	-	1000	9040 1219 25
PF 4000 Gold/ETX FS Power Distribution Kit - 6 Sp (FS1000)	6	-	1	-	1000	9040 1219 26
PF 4000 Gold/ETX FS Power Distribution Kit - 7 Sp (FS1000)	7	-	1	-	1000	9040 1219 27
PF 4000 Gold/ETX FS Power Distribution Kit - 8 Sp (FS1000)	8	-	1	-	1000	9040 1219 28
PF 4000 Gold/ETX FS Power Distribution Kit - 9 Sp (FS1300)	9	-	-	1	1300	9040 1219 29
PF 4000 Gold/ETX FS Power Distribution Kit - 10 Sp (FS1300)	10	-	-	1	1300	9040 1219 30

POWER FOCUS 4000 POWER DISTRIBUTION - OPTION FOR FLOOR STAND

Description	Ordering No.
PF 4000 Power Distribution 120VAC Duplex Receptacle Kit	9040 1219 70

Power Focus 4000 mounting plate disconnect switch

SCOPE OF SUPPLY

- ▶ Disconnect switch - flange style
- ▶ (3) Fuses
- ▶ Interconnecting cable/conduit
- ▶ Mounting hardware

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 MP System Kit
- ▶ Power Focus 4000 MP Power Distribution Kit



NOTES

- ▶ Fuse size to be determined by Atlas Copco engineering

POWER FOCUS 4000 MOUNTING PLATE DISCONNECT SWITCH KITS SQUARE D - NEMA12

Description	No. of Controllers	Disconnect Size Amp	Ordering No.
PF 4000 MP Disconnect Switch Kit - Square D - NEMA12 - 30 Amp	1 - 7	30	9040 1219 84
PF 4000 MP Disconnect Switch Kit - Square D - NEMA12 - 60 Amp	8 - 10	60	9040 1219 85

POWER FOCUS 4000 MOUNTING PLATE DISCONNECT SWITCH KITS ALLEN-BRADLEY - NEMA12

Description	No. of Controllers	Disconnect Size Amp	Ordering No.
PF 4000 MP Disconnect Switch Kit - Allen-Bradley - NEMA12 - 30 Amp	1 - 7	30	9040 1219 87
PF 4000 MP Disconnect Switch Kit - Allen-Bradley - NEMA12 - 60 Amp	8 - 10	60	9040 1219 88

POWER FOCUS 4000 DISCONNECT SWITCH - OPTIONS

Description	Ordering No.
Normally Open Auxiliary Contact - Square D 30 Amp Kit	9040 1203 90
Normally Open Auxiliary Contact - Square D 60/100 Amp Kit	9040 1203 91

Power Focus 4000 mounting plate power distribution

SCOPE OF SUPPLY

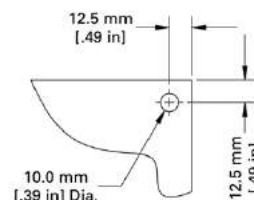
- ▶ Power Distribution Box(es)
- ▶ 480VAC Transformer
- ▶ Interconnecting cable/conduit
- ▶ Mounting hardware

REQUIRED EQUIPMENT

- ▶ Power Focus 4000 MP System Kit
- ▶ Power Focus 4000 MP Disconnect Switch Kit

NOTES

- ▶ Fuse size to be determined by Atlas Copco engineering
- ▶ Mounting Plate System Kits cannot be used with Floor Stand



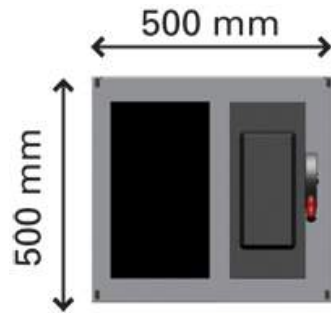
Mounting Holes
Note: (1) Hole in each corner of plate.

POWER FOCUS 4000 MOUNTING PLATE POWER DISTRIBUTION KITS

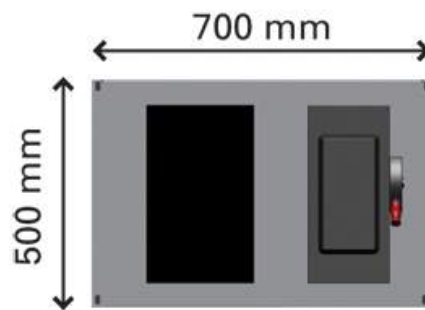
Description	No. of Controllers	MP 500	MP 700	MP 900	MP 1200	Plate Width mm	Ordering No.
PF 4000 MP Power Distribution Kit - 1 Sp (MP500)	1	1	-	-	-	500	9040 1219 51
PF 4000 MP Power Distribution Kit - 2 Sp (MP700)	2	-	1	-	-	700	9040 1219 52
PF 4000 MP Power Distribution Kit - 3 Sp (MP900)	3	-	-	1	-	900	9040 1219 53
PF 4000 MP Power Distribution Kit - 4 Sp (MP1200)	4	-	-	-	1	1200	9040 1219 54
PF 4000 MP Power Distribution Kit - 5 Sp (MP1200)	5	-	-	-	1	1200	9040 1219 55
PF 4000 MP Power Distribution Kit - 6 Sp (MP900)	6	-	-	2	-	900	9040 1219 56
PF 4000 MP Power Distribution Kit - 7 Sp (MP1200)	7	-	-	-	2	1200	9040 1219 57
PF 4000 MP Power Distribution Kit - 8 Sp (MP1200)	8	-	-	-	2	1200	9040 1219 58
PF 4000 MP Power Distribution Kit - 9 Sp (MP1200)	9	-	-	-	2	1200	9040 1219 59
PF 4000 MP Power Distribution Kit - 10 Sp (MP1200)	10	-	-	-	2	1200	9040 1219 60
Options							
PF 4000 Power Distribution 120VAC Duplex Receptacle Kit							9040 1219 70

Power Focus 4000 mounting plate power distribution

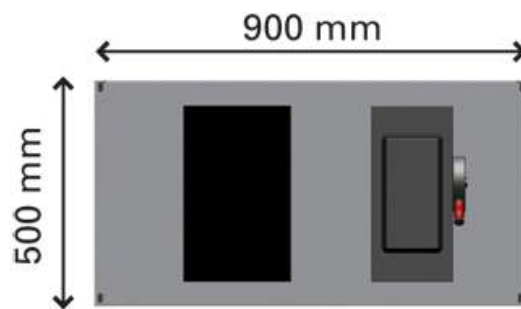
DIMENSIONS



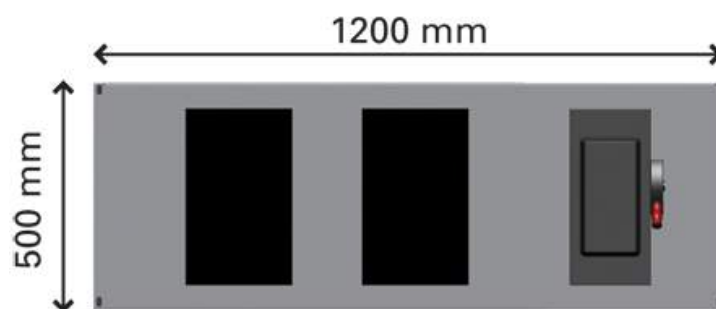
MP500



MP700



MP900

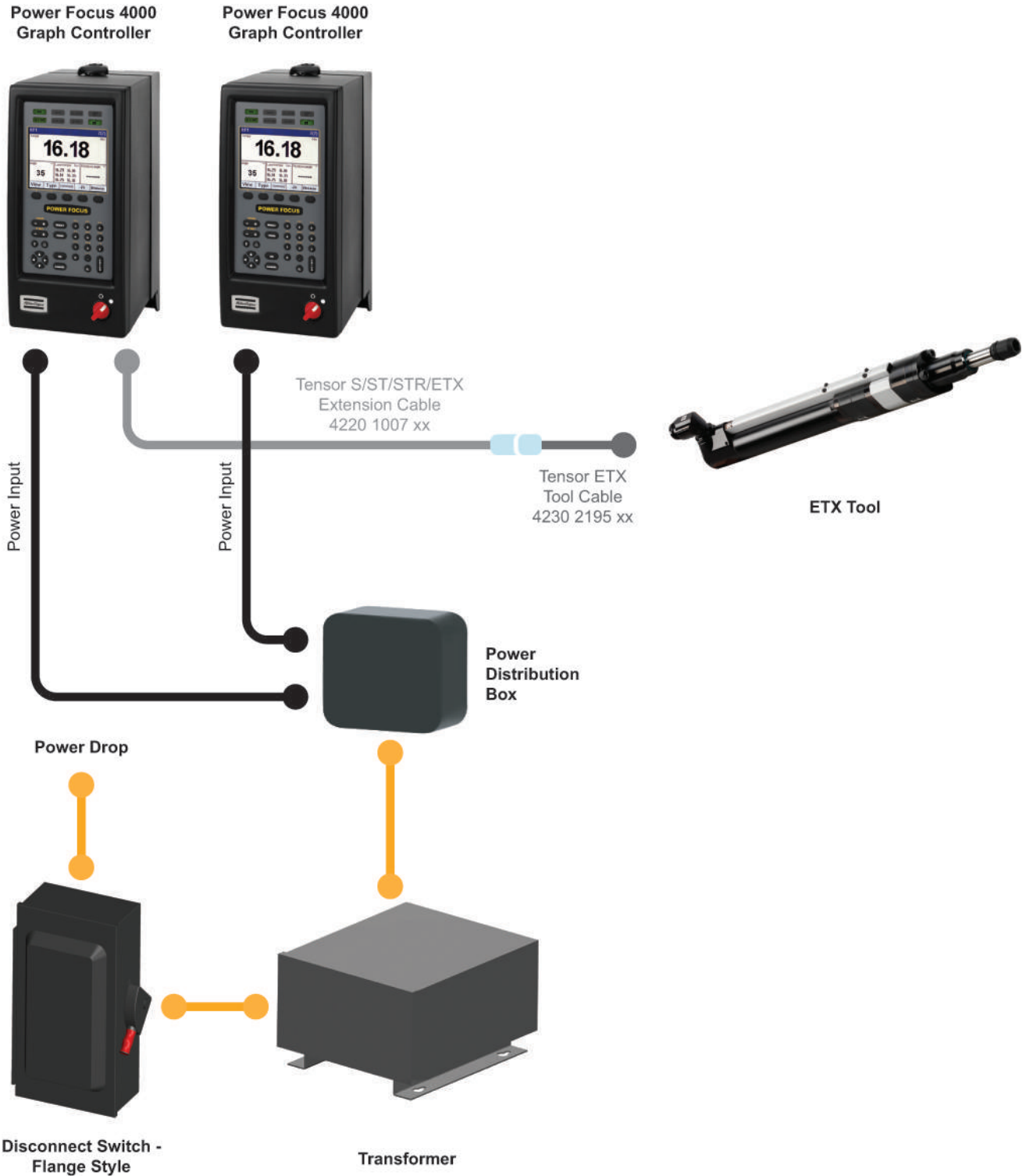


MP1200

Power Focus 4000 power distribution CONNECTIVITY

NOTES

Power Focus 4000 Floor Stand Disconnect Switch Kit components (i.e., power distribution box(es) and transformer) are mounted on the backside of the Floor Stand.



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus 4000 floor stand accessories

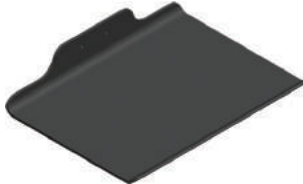
POWER FOCUS 4000 FLOOR STAND ACCESSORIES

SCOPE OF SUPPLY

- ▶ Brackets
- ▶ Mounting Hardware



FS ComNode
Mounting
Bracket



FS Keyboard
Tray



FS Stacklight
Mounting
Bracket



Disconnect
Switch
Mounting
Bracket



Description	Ordering No.
FS ComNode Mounting Bracket	9040 1903 10
FS Keyboard Tray	9040 1903 11
FS Document Enclosure	9040 1903 12
FS Stacklight Mounting Bracket	9040 1903 13

POWER FOCUS 4000 FS DISCONNECT SWITCH MOUNTING BRACKETS SQUARE D - NEMA12

SCOPE OF SUPPLY

- ▶ Brackets
- ▶ Mounting Hardware

Description	Width mm	Ordering No.
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 30 Amp	204	9040 1903 04
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 60 Amp	254	9040 1903 05
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 100 Amp	254	9040 1903 06
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 200 Amp	458	9040 1903 07

POWER FOCUS 4000 FS DISCONNECT SWITCH MOUNTING BRACKETS ALLEN-BRADLEY - NEMA12

SCOPE OF SUPPLY

- ▶ Brackets
- ▶ Mounting Hardware

Description	Width mm	Ordering No.
Mounting Bracket - FS Disconnect Switch - Allen-Bradley - NEMA12 - 30/60 Amp	277	9040 1903 25
Mounting Bracket - FS Disconnect Switch - Allen-Bradley - NEMA12 - 100 Amp	277	9040 1903 26
Mounting Bracket - FS Disconnect Switch - Allen-Bradley - NEMA12 - 200 Amp	277	9040 1903 27

Power Focus 4000 floor stand accessories

POWER FOCUS 4000 FLOOR STAND FRAMES

SCOPE OF SUPPLY

- ▶ Steel Construction
- ▶ Assembly Hardware

Description	Ordering No.
FS600 Frame	9040 1903 60
FS1000 Frame	9040 1903 61
FS1300 Frame	9040 1903 62



Power Focus 4000 Floor Stand Frame

POWER FOCUS 4000 TC MOUNTING/COVER PLATE KITS

SCOPE OF SUPPLY

- ▶ TC Mounting Plate
- ▶ Cover Plate
- ▶ Mounting Hardware

Description	Ordering No.
PF 4000 FS600 TC Mounting/Cover Plate Kit	9040 1903 70
PF 4000 FS1000 TC Mounting/Cover Plate Kit	9040 1903 71
PF 4000 FS1300 TC Mounting/Cover Plate Kit	9040 1903 72



Power Focus 4000 Floor Stand TC Mounting on Front Side

POWER FOCUS 4000 PD MOUNTING/COVER PLATE KITS

SCOPE OF SUPPLY

- ▶ PD Mounting Plate
- ▶ Cover Plate
- ▶ Mounting Hardware

Description	Ordering No.
PF 4000 FS600 PD Mounting/Cover Plate Kit	9040 1903 80
PF 4000 FS1000 PD Mounting/Cover Plate Kit	9040 1903 81
PF 4000 FS1300 PD Mounting/Cover Plate Kit	9040 1903 82



Power Focus 4000 Floor Stand PD Mounting on Back Side

POWER FOCUS 4000 BLIND PLATE KITS

SCOPE OF SUPPLY

- ▶ Blind Plates
- ▶ Mounting Hardware

Description	Ordering No.
FS600 Blind Plate Kit	9040 1903 85
FS1000 Blind Plate Kit	9040 1903 86
FS1300 Blind Plate Kit	9040 1903 87



Power Focus 4000 Floor Stand Blind Plate on Back Side

Power Focus 4000 options - Indicator Box

Indicator Box is a flexible indicator to be used with the operator handle for indication of status signals from the controller.

SCOPE OF SUPPLY

Indicator Box

- ▶ LED matrix for monitoring (red or green LED's) up to 10 spindles
- ▶ LED indicators for forward and reverse
- ▶ I/O-Bus connection
- ▶ Cycle Stop (Power Focus) / E-stop (Power MACS)
- ▶ (2) M12-4 Pin Connectors for operator handles

Indicator Box Power Focus Kit

- ▶ (1) Indicator Box
- ▶ (1) Indicator Box M23 Power Focus 4000 Cable (19-Pin) 2 m
- ▶ Integration and Set-up

REQUIRED EQUIPMENT

- ▶ Integration and Set-up

INDICATOR BOX - POWER FOCUS 4000

Description	Ordering No.
Indicator Box	8435 3010 04
Indicator Box Power Focus Kit	9040 1064 70



Power Focus 4000 options - Indicator Box

CONNECTIVITY

Power Focus 4000
Graph Controller



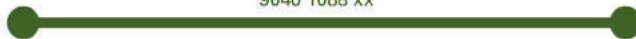
Indicator Box PF 4000 Cable
4243 0280 80



Indicator Box M23 Extension Cable
4243 0282 xx



Indicator Box



M12 4-Pin Extension Cable
9040 1088 xx



Operator Handle

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus 4000 options - Indicator Box

Indicator Box Kit Power Focus

FUNCTIONS

- ▶ Emergency Stop / Machine Stop
- ▶ Forward / Reverse LED Indicators
- ▶ LED matrix for monitoring (dual coloured red and green LEDs) up to 10 spindles
- ▶ I/O-Bus connection
- ▶ Connector for second Start handle
- ▶ Stop-Category B (EN 13849-1)

SCOPE OF SUPPLY

- ▶ Indicator Box
- ▶ M23 Extension Cable, 15 m
- ▶ M23 Power Focus Cable, 2 m

REQUIRED EQUIPMENT

- ▶ Operator Handle
- See Mechanical Systems

OPTIONS

Extension cables or other cable lengths must be ordered separately.
See Accessories

- ▶ Indicator Box Cable

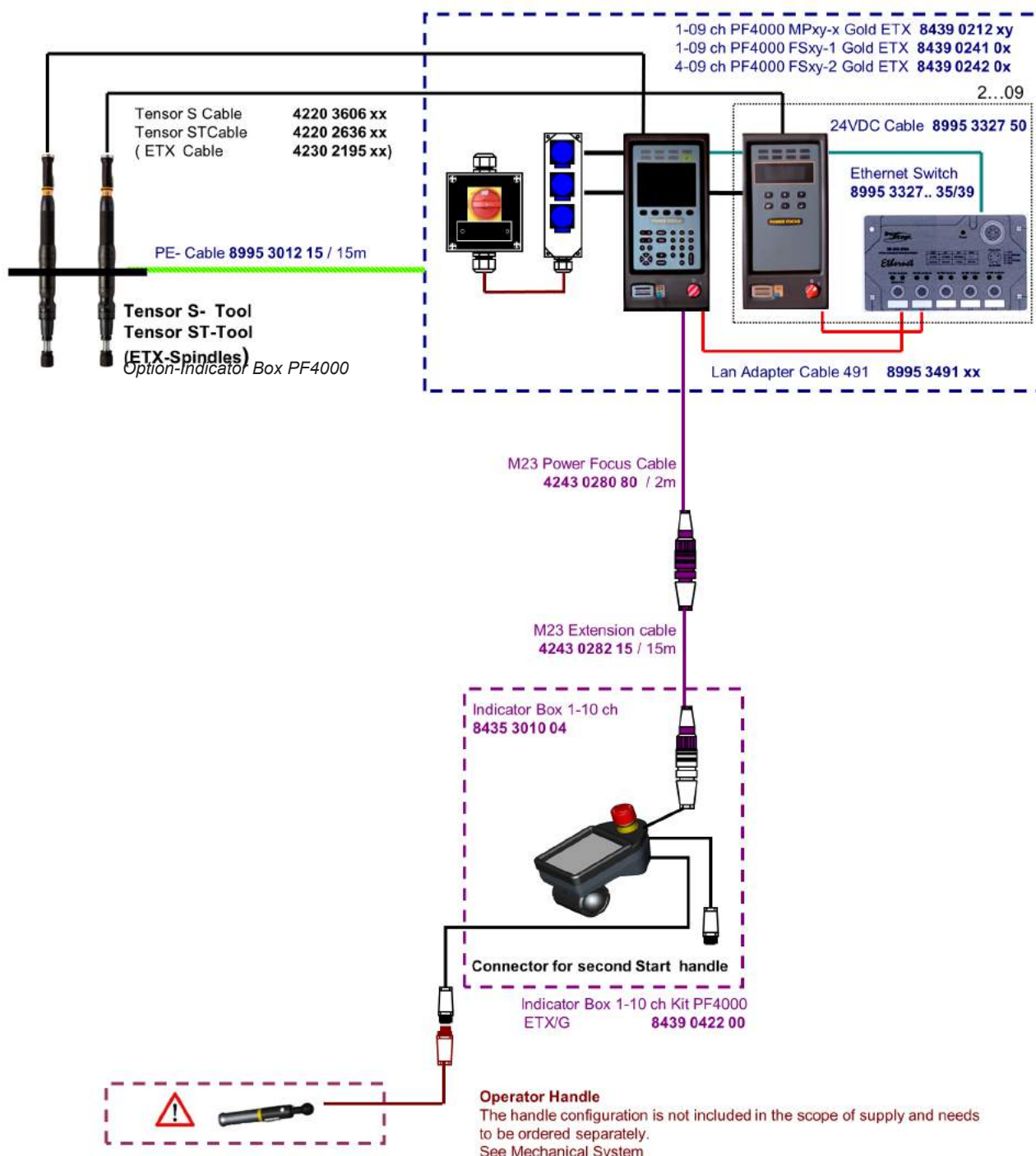


POWER FOCUS INDICATOR BOX KIT AND OPTIONS

Description	Ordering No.
Indicator Box 1-10 ch Kit Power Focus ETX/G	8439 0422 00
Options	
Mechanical connection for Indicator Box	8995 7890 02

Power Focus 4000 options - Indicator Box

CONNECTIVITY



Power Focus 4000 options - Operator Panel

Operator Panel offers high flexibility including configurable switches, lamps and buttons as well as display and external I/O's.

SCOPE OF SUPPLY

Operator Panel - Basic

- ▶ (3) Configurable lamp positions
- ▶ (2) Configurable button positions
- ▶ (1) Lamp test
- ▶ (1) Switch
- ▶ (1) Display for running Pset

Operator Panel - Advanced

- ▶ (4) Configurable lamp positions
- ▶ (3) Configurable button positions
- ▶ (1) Lamp test
- ▶ (1) Switch, (1) Key switch and (1) Selector switch
- ▶ (2) Displays for selector switch position and running Pset

Operator Panel (Basic and Advanced) Kit

- ▶ (1) Standard Operator Panel
- ▶ Integration and Set-up

Operator Panel (Basic and Advanced) Custom Configuration Kit

- ▶ (1) Customized Operator Panel
- ▶ Integration and Set-up
- ▶ Configuration must be identified at time of order

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable

OPERATOR PANEL - POWER FOCUS 4000

Description	Ordering No.
Operator Panel Advanced	8433 0565 00
Operator Panel Basic	8433 0565 10
Operator Panel Basic Kit	9040 1064 65
Operator Panel Basic Custom Configuration Kit	9040 1064 66
Operator Panel Advanced Kit	9040 1064 67
Operator Panel Advanced Custom Configuration Kit	9040 1064 68



Operator Panel - Advanced

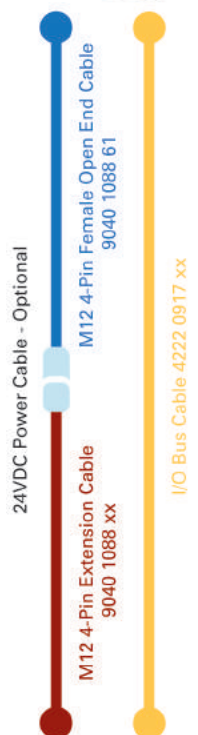


Operator Panel - Basic

Power Focus 4000 options - Operator Panel

CONNECTIVITY

Power Focus 4000
Graph Controller



I/O Bus Cable



Operator Panel



Operator Handle

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus options - Operator Panel

A key phrase in today's production is Error Proofing. The Controllers of the series Power Focus can be equipped with standard solutions for the worker support. The Operator Panel offers a high flexibility including configurable switches, lamps and buttons as well as displays and external I/O's. It is easy to connect to the I/O Bus port on the Power Focus Controller.

- ▶ Operator Panel Advanced
- ▶ Operator Panel Basic

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 467; 15 m

REQUIRED EQUIPMENT

- ▶ E-Stop Operator Panel might be required
- ▶ Operator Handle might be required

See Mechanical Systems

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ I/O Bus Cable

NOTES

The operator handle can be connected directly to the Operator Panel with the "E-Stop with Connection Start Kit PF400 ETX/G" 8995 3130 31.

POWER FOCUS OPERATOR PANEL KIT AND OPTIONS

Description	Ordering No.
Operator Panel Advanced Kit PF4000 ETX/G	8439 0421 00
Operator Panel Basic Kit PF4000 ETX/G	8439 0421 01
Modification Operator Panel Power Focus	8995 3328 70
Options	
Mechanical connection for Operator Panel	8995 7890 01



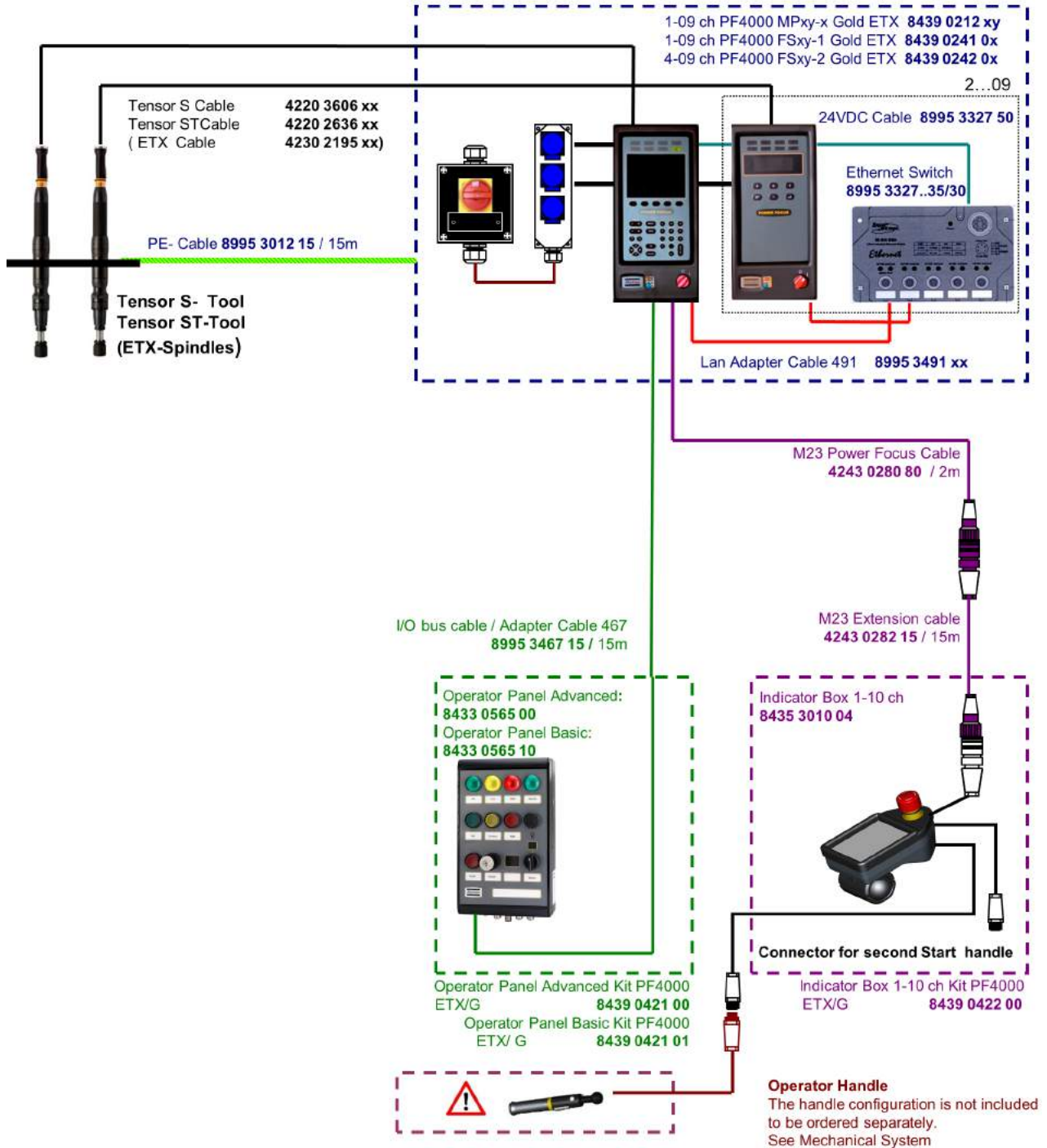
Operator Panel - Advanced



Operator Panel - Basic

Power Focus options - Operator Panel

CONNECTIVITY



Power Focus options - Operator Panel E-Stop

The Emergency Stop pushbutton is placed in Pos I on the Operator Panel.

- ▶ Stop category B (EN 13849-1)
- ▶ The control cable 542 connects the Operator Panel to the Power Focus
- ▶ The operator handle must be connected to the control cable 542

SCOPE OF SUPPLY

- ▶ Actuator mushroom-shaped pushbutton maintained-contact type 40 mm
- ▶ Control Adapter Cable 542; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Control Cable



POWER FOCUS OPERATOR PANEL E-STOP KIT

Description	Ordering No.
E-Stop OP with Connection Start Kit PF4000 ETX/G	8995 3130 31

POWER FOCUS ACCESSORIES OPERATOR PANEL E-STOP

Description	Ordering No.
Push turn function pushbutton "Ronis"	8995 6016 87
Push turn function pushbutton "CES"	8995 6016 88
Push turn function pushbutton "BKS S1"	8995 6016 89
Push turn function pushbutton "OMR"	8995 6016 90

Power Focus 4000 options - MiniDisplay 2

MiniDisplay 2 is a remote HMI that can be connected to Power Focus or Pulsor Focus controllers. It runs the Operator Guidance application that will give the best visual operator support in production.

FEATURES

- ▶ LCD - 6.5" TFT LCD Resolution VGA 640 x 480
- ▶ Dimensions (LxWxH) - 268 x 46 x 173 mm
- ▶ Processor - Intel® IXP420 XScale® 533 MHz
- ▶ System memory - 128 MB on-board RAM
- ▶ Storage memory - 32 MB on-board flash
- ▶ Compact Flash - 128 MB (included)
- ▶ OS - Windows® CE 5.0
- ▶ Ports - 2 x 10/100 Mbps Ethernet, 2 x USB 2.0
- ▶ Industrial protection - IP 65
- ▶ Backlight life - 50,000 hours



MINIDISPLAY 2 - POWER FOCUS 4000

REQUIRED EQUIPMENT

- ▶ MiniDisplay Ethernet Cable
- ▶ M12 4-Pin Extension and Open End Cable (to power unit)

Description	Ordering No.
MiniDisplay 2 6.5" including Operator Guidance Software - 1 User License	8435 3071 00
Operator Guidance Software - 1 User License	8092 1185 01

MINIDISPLAY 2 KIT - POWER FOCUS 4000

SCOPE OF SUPPLY

- ▶ MiniDisplay 2
- ▶ M12 4-Pin Open End Cable
- ▶ Integration and Set-up

REQUIRED EQUIPMENT

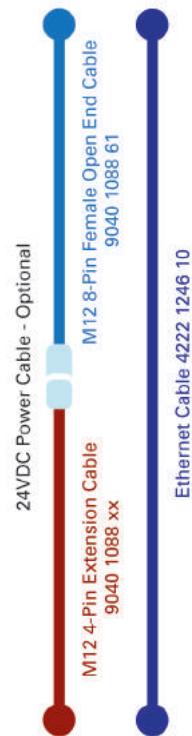
- ▶ MiniDisplay Ethernet Cable
- ▶ M12 4-Pin Extension

Description	Ordering No.
MiniDisplay 2 Integration Kit	9040 1064 75

Power Focus 4000 options - MiniDisplay 2

CONNECTIVITY

Power Focus 4000
Graph Controller



24VDC Power Cable - Optional

M12 8-Pin Female Open End Cable
9040 1088 61

M12 4-Pin Extension Cable
9040 1088 xx

Ethernet Cable 4222 1246 10



MiniDisplay 2

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus 4000 options - HLTQ - Industrial PC

HLTQ is an Industrial PC station that can be connected to Power Focus 4000 through ethernet with expandable I/O.

FEATURES

- ▶ 15" or 19" Screen - Robust glass touch screen
- ▶ AMD® G-Series GX-424CA (Quad-Core 2.4 GHz), L2 2 MB, 25 W
- ▶ 64 GB SSD Mass Storage, 2.5", SATA 3 interface, quick release cartridge
- ▶ 4 GB RAM, DDR3, FSB 1600/1333 MHz
- ▶ Ports
 - 1x LAN Gigabit Intel i210-AT, with NCSI support
 - 1x LAN Gigabit Intel i211-AT
 - 2x USB 3.0, 2x USB 2.0 (internal accessible)
 - 5x COM RS232, each with 5V configurable
 - 1x RS232 / RS422 / RS485, each with 5V configurable
 - Digital Input: 8 x 24VDC
 - Digital Output: 8 x 24VDC, 100mA (single) or 400mA (complete) loadable
 - 1x extension connector (RJ45) - 7 extension modules connectable
 - 1x miniPCI express slot



REQUIRED EQUIPMENT

- ▶ Ethernet Cable
- ▶ Error-Proofing Software

OPTIONS

- ▶ Additional SSD available
- ▶ Operator scanning cards
- ▶ 1x USB 2.0 (external accessible)
- ▶ Additional SSD, 2.5", SATA 3 interface, quick release cartridge
- ▶ 8 GB, DDR3, FSB 1600/1333 MHz
- ▶ WiFi
 - WLAN Client Interface (802.00 a/b/g/n)
- ▶ User Identification
 - RFID Reader 13,56 MHz and 125 kHz * (Only US)
 - Fingerprint reader * (Only US)
 - LEGIC reader with ID badge holder * (Not Available in US)
 - Mifare reader * (Not Available in US)
 - Euchner reader * (Not Available in US)
 - Euchner electronic key system EKS * - available on demand (Not Available in US)
- ▶ RAID1 configuration (mirrored system, quick release cartridge for two SSD's and second 2.5" SSD, min. 64 GB necessary, needs miniPCI express slot)
- ▶ Windows 7 Pro: 64 Bit (Not Available in US)
- ▶ Windows Embedded Standard 7: 32 Bit / 64 Bit (Only US)

* One of the user identification options is selectable

NOTES

- ▶ Power Supply: 100 - 200 VAC
- ▶ Power Rating: Max. 70W
- ▶ Current Rating: Max. 1A
- ▶ Future Integration Kits to come

Power Focus 4000 options - HLTQ - Industrial PC

HLTQ INTERFACE - POWER FOCUS 4000

Description	Ordering No.
HLT15Q	8439 0100 05
HLT19Q	8439 0100 06

HLTQ INTERFACE OPTIONS - POWER FOCUS 4000

Description	Ordering No.
PLTH15i (Body Tracking PC incl. drawer, keyboard, floor stand)	8439 0100 15
PLTH15 Rittal Floor Stand	8439 0100 19
Fingerprint Reader	8439 0100 20
Euchner Reader (Not Available in US)	8439 0100 21
Legic Reader s. r. (Not Available in US)	8439 0100 22
Legic Reader in-place (Not Available in US)	8439 0100 23
Euchner Key System (Not Available in US)	8439 0100 24
Mifare-Reader phg (Not Available in US)	8439 0100 25
WLAN client	8439 0100 26
USB port on backside	8439 0100 27
Upgrade to RAM 8 GB	8439 0100 28
Upgrade to 1 x 2.5" SSD, 128 GB	8439 0100 33
Upgrade to 1 x 2.5" SSD, 256 GB	8439 0100 34
Upgrade to 2 x 2.5" SSD, 64 GB - Must Order Cartridge for 2 SSDs	8439 0100 29
Upgrade to 2 x 2.5" SSD, 128 GB - Must Order Cartridge for 2 SSDs	8439 0100 30
Upgrade to 2 x 2.5" SSD, 256 GB - Must Order Cartridge for 2 SSDs	8439 0100 31
Cartridge for 2 SSDs	8439 0100 38
RAID1	8439 0100 32
Touch Over RS232	8439 0100 37
Ethernet Multi I/O Master Module	8439 0100 84
Windows 7, 64 Bit, English (Not Available in US)	8439 0100 92
Windows 7, 64 Bit, German (Not Available in US)	8439 0100 93
Win Embedded Standard 7, 32 Bit - Language Selectable (US Only)	8439 0100 94
Win Embedded Standard 7, 64 Bit - Language Selectable (US Only)	8439 0100 95

ATLAS COPCO ERROR-PROOFING SOFTWARE

Description	Ordering No.
Single Quality Solution	8434 2380 00

Power Focus 4000 options - HLTQ - Industrial PC

CONNECTIVITY

Power Focus 4000
Graph Controller



Ethernet Cable 4222 1246 10



HLTQ

Barcode Scanner



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus 4000 options - MaxiDisplay 3

The MaxiDisplay is a remote HMI that can be connected to a Power Focus 4000 controller.

FEATURES

- ▶ Display: 19" TFT Resistive, 1280 x 1024 SXGA - Touch Screen
- ▶ Power supply: Power Adapter DC 19V / 90W

SCOPE OF SUPPLY

- ▶ Microsoft Windows 7 Professional

REQUIRED EQUIPMENT

- ▶ Ethernet Cable
- ▶ External power source
- ▶ Guidance Software



MaxiDisplay 3

MAXIDISPLAY 3 - POWER FOCUS 4000

Description	Ordering No.
MaxiDisplay 3	8435 3070 20
Operator Guidance Software - 1 User License	8092 1185 01

MAXIDISPLAY 3 INTEGRATION KIT - POWER FOCUS 4000

SCOPE OF SUPPLY

- ▶ MaxiDisplay and Guidance Software
- ▶ Integration and Set-up

Description	Ordering No.
MaxiDisplay 3 Integration Kit	9040 1064 82



MaxiDisplay 3 Back View

Power Focus 4000 options - MaxiDisplay 3

CONNECTIVITY

Power Focus 4000
Graph Controller



Ethernet Cable 4222 1246 xx



MaxiDisplay 3



110VAC Power Cable

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus options - HMI

This HMI touch panel display is preinstalled with the Operator Guidance application, making it possible to interact with the tightening system. It is easy to connect to the I/O Bus port on the Power Focus Controller.

SCOPE OF SUPPLY

MiniDisplay 2 Kit PF4000 ETX/G

- ▶ MiniDisplay 2
- ▶ LAN Adapter Cable 498; 15 m

MaxiDisplay 3 Kit PF4000 ETX/G

- ▶ MaxiDisplay 3
- ▶ LAN Adapter Cable 491; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ LAN Cable

NOTES

- ▶ 230V Power Supply to be supplied from customer

POWER FOCUS HMI KIT AND OPTIONS

Description	Ordering No.
MiniDisplay 2 Kit Power Focus	8439 0427 02
MaxiDisplay 3 Kit Power Focus	8439 0427 03
Options	
Mechanical connection for HMI	8995 7890 07



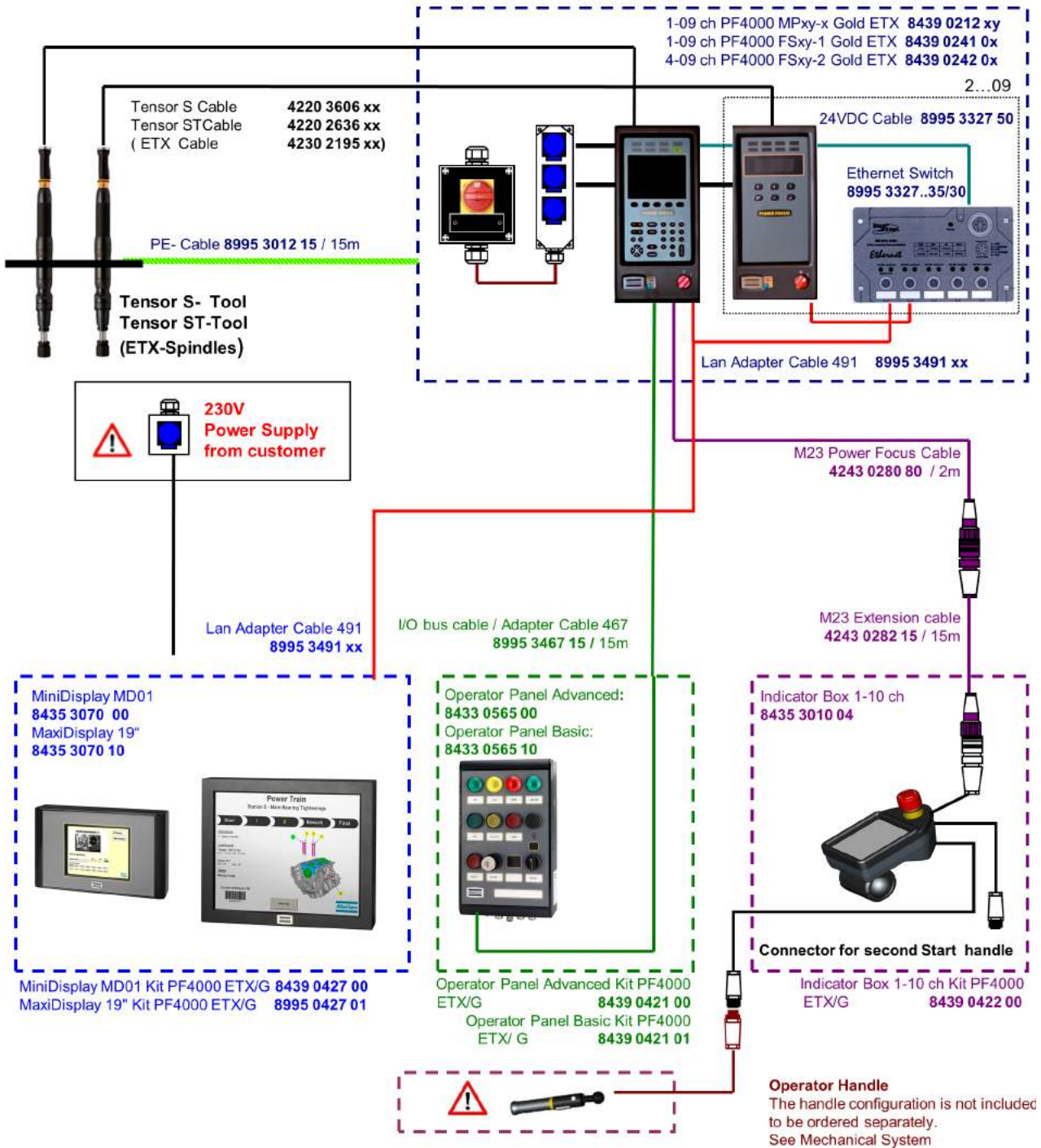
MaxiDisplay 3



MaxiDisplay 3 Back View



MiniDisplay



Power Focus 4000 options - ComNode 3

The ComNode 3 is an industrial grade computer system with a touch screen. ComNodes can be used for protocol conversion, local databases, process sequence control or computer based visualization.

FEATURES

- ▶ Display: 15" TFT, 1024 x 768 XGA, 260 K, 6 bit/color, 16.7 M, 8 bit/color - Touch Screen
- ▶ Power: Input 24 V
- ▶ Power Input: from 100 - 240 V source possible (Power cord included)
- ▶ External Output: 24 VDC, 48 VDC, 0.5 Amp.
- ▶ (2) Ethernet Ports

SCOPE OF SUPPLY

- ▶ Microsoft Windows 7 Professional

REQUIRED EQUIPMENT

- ▶ Ethernet Cable
- ▶ External power source

COMNODE 3 - POWER FOCUS 4000

Description	Ordering No.
ComNode 3 Touch	8433 2712 00

KEYBOARDS

Description	Ordering No.
Keyboard with Touchpad PS/2 for Stand Alone System (Adesso/Silver)	9040 1300 34
Keyboard with Touchpad USB for Stand Alone System (Adesso/Silver)	9040 1300 35



ComNode 3



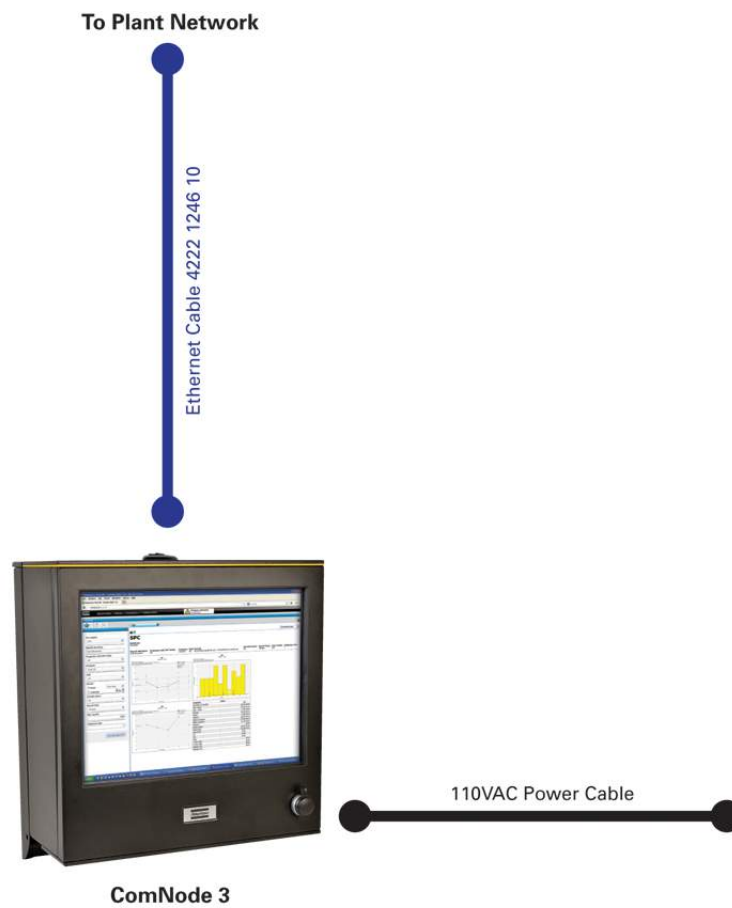
ComNode 3 Sideview



Keyboard - Silver

Power Focus 4000 options - ComNode 3

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus options - ComNode 3

The ComNode 3 is an industrial grade touch screen computer. ComNodes can be used for protocol conversion, local databases, process sequence control or computer based visualization. The ComNode is also available with integrated digital I/O modules.

FEATURES

- ▶ Processor: Intel i5-520M 2.40 GHz.
- ▶ RAM: 4 GB, DDR3, 1066/800 SO-DIMM.
- ▶ Storage: 2 x Serial ATA, 300MB/s transfer rate, installed: 1 x 2,5" 160,0 GB
- ▶ LAN 1: Intel 82583V PCIe Gigabit Ethernet
- ▶ LAN 2: USB-to-LAN Bridge Connector Module
- ▶ Passive Ethernet switch with 5 ports
- ▶ Ports: 3 x RS-232 + 1 x RS-232/422/485. (Two RS232 will have power supply possibility 5V and 12 V (0,5 A)), 4 x USB 2.0 (1 x USB in the front, 3 x USB In the back), 2x PS/2 interface (for mouse and keyboard)
- ▶ I/O: DIO Module. (Optional)
- ▶ Audio: Realtek ALC662 HD. (not connected)
- ▶ Display: 15" TFT, 1024 x 768 XGA, 260K, 6bit/color, 16.7M, 8 bit/colour. Luminance 450 cd/m², contrast 450:1
- ▶ Touch Screen: Resistive
- ▶ Uninterruptible Power Supply: At power loss lasting more then 30 sek the UPS starts shut down process and closing all running applications. At power return the system automatically starts up.
- ▶ Size: W x H x D, 370 x 390 x 260 mm
- ▶ Weight: 16 kg
- ▶ Power: Input 24 V and 230V/110V transformer
- ▶ Power output: 24 VDC or 48 VDC @ 0,5 Amp.
- ▶ Shock test: 10G peak acceleration (hard drive) 9.8 m/s² (1.0 G) zero to peak (Display)
- ▶ Front IP class: NEMA4/ IP65
- ▶ Operating temperature: 0 - 45° C. (motherboard -20° till +70° C)
- ▶ Operating system: Windows 7 Professional - 32 bit - SP 1



REQUIRED EQUIPMENT

- ▶ Ethernet Cable

OPTIONS

An optional I/O expansion card is available consisting of 4 solid state outputs, 4 relay outputs and 8 opto-coupled inputs. I/O connections and 24V power are connected via a screw-socket. Inputs and outputs are easily accessible through software. 24V power for the I/O expansion is shared with the 24V port on the back-plate, the total combined current is 1A max.

ATLAS COPCO COMNODE TOUCH

Description	Ordering No.
ComNode 3 Touch	8433 2712 00
ComNode IO Card	4222 0961 80
Options	
Mechanical connection for ComNode	8995 7890 00

Power Focus 4000 options - Stacklight

Stacklight for visual indication of events.

FEATURES

- ▶ (4) Configurable Lights to indicate event(s) (red, orange, green, blue)
- possible to use up to five lights
- ▶ (1) Configurable Pushbutton
- ▶ (1) Configurable Key Switch, 1-0-2 Positions (No Spring Return)
- ▶ (1) Configurable Buzzer to indicate event(s)
- ▶ External 24VDC In Connector
- ▶ (2) External Output/Input Connector
- ▶ I/O Bus Connection

SCOPE OF SUPPLY

- ▶ (1) Standard Stacklight with Mounting Kit
- ▶ Integration and Set-up

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable

STACKLIGHT - POWER FOCUS 4000

Description	Ordering No.
Stacklight ESL-04	8433 0570 13



STACKLIGHT CUSTOM CONFIGURATION KIT

SCOPE OF SUPPLY

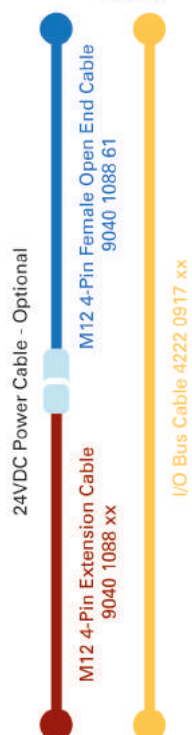
- ▶ (1) Customized Stacklight
- ▶ Integration and Set-up
- ▶ Stacklight configuration must be identified at time of order

Description	Ordering No.
Stacklight Custom Configuration Kit	9040 1064 81
Stacklight Custom Configuration Kit - Buzzer/Key Switch	9040 1065 00
Stacklight Custom Configuration Kit - Buzzer/Key Switch/1-Light	9040 1065 01
Stacklight Custom Configuration Kit - Buzzer/Key Switch/2-Light	9040 1065 02
Stacklight Custom Configuration Kit - Buzzer/Key Switch/3-Light	9040 1065 03
Stacklight Custom Configuration Kit - Buzzer/Key Switch/4-Light	9040 1065 04

Power Focus 4000 options - Stacklight

CONNECTIVITY

Power Focus 4000
Graph Controller



I/O Bus Cable



Stacklight

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus options - Stacklight

The Stacklight provides a cost effective quality integrated fastening solution for today's production. The Power Focus control units and advanced drives from Tensor DS, can now be provided with an effective standard solution for the operator interface. The Stacklight ESL-04 is a standard device which can be easily installed and adapted to your process. It is easy to connect to the I/O Bus port on the Power Focus Controller.

- ▶ Stacklight ESL-04 Standard
- ▶ Stacklight ESL-04 Red: Red light rotates
- ▶ Stacklight ESL-04 Yellow: Yellow light rotates
- ▶ Stacklight ESL-04 Siren: Siren on top
- ▶ Stacklight ESL-04 Compact: h = 100 mm Ø = 20 mm

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 467; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

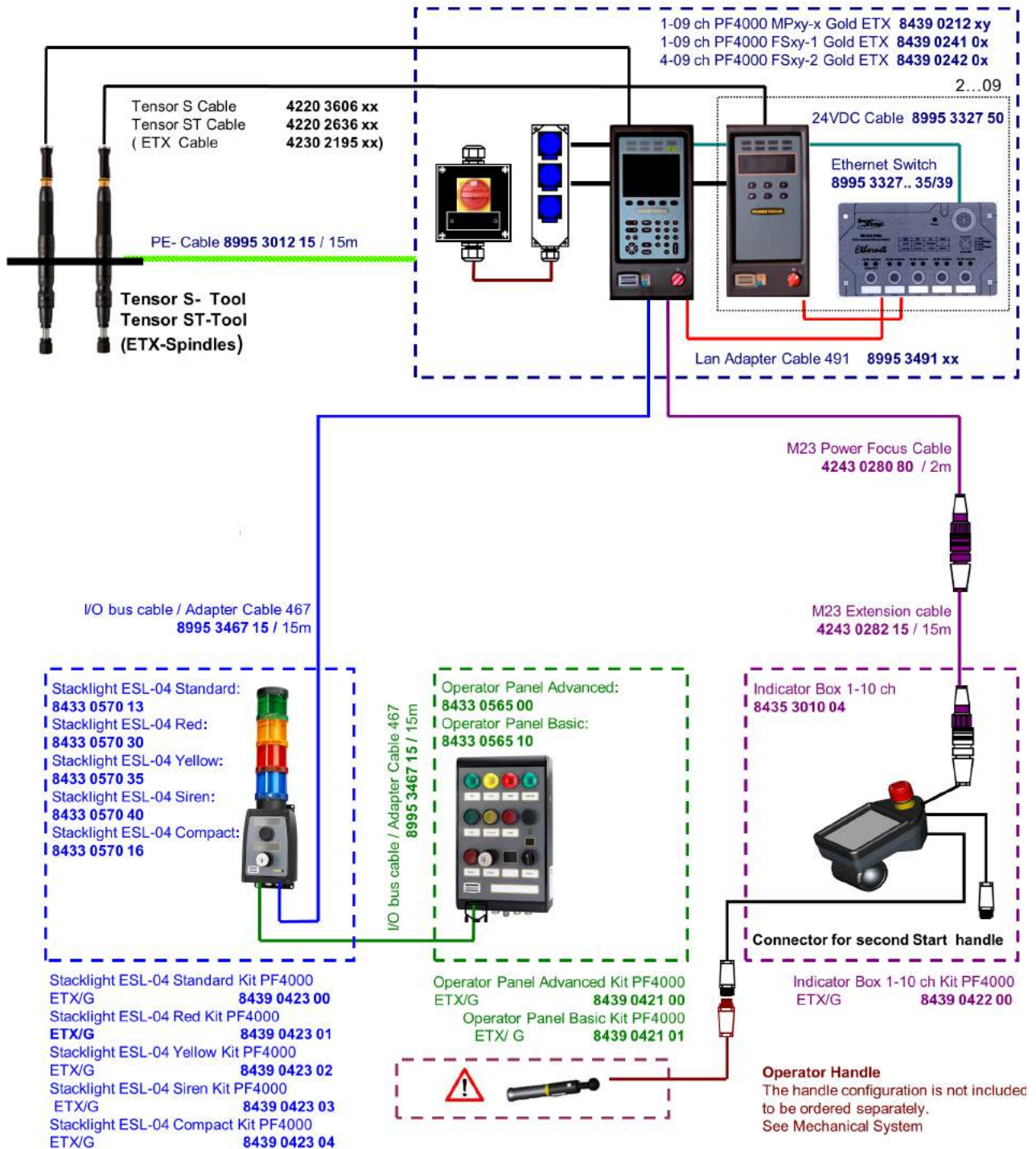
See Accessories

- ▶ I/O Bus Cable

POWER FOCUS STACKLIGHT KIT AND OPTIONS

Description	Ordering No.
Stacklight ESL-04 Standard PF4000 ETX/G	8439 0423 00
Stacklight ESL-04 Red Kit PF4000 ETX/G	8439 0423 01
Stacklight ESL-04 Yellow Kit PF4000 ETX/G	8439 0423 02
Stacklight ESL-04 Siren Kit PF4000 ETX/G	8439 0423 03
Stacklight ESL-04 Compact Kit PF4000 ETX/G	8439 0423 04
Modification Stacklight ESL-04 Power Focus	8995 3328 51
Options	
Mechanical connection for Stacklight	8995 7890 03





Power Focus 4000 options - Selectors

Socket and Bit Selector for parameter selection.

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable

NOTES

- ▶ Maximum Socket Outer Diameter
 - Selector 4 and 8 - 44 mm [1.75 in]
 - Selector for large sockets - x mm [in]

SELECTORS - POWER FOCUS 4000

Description	Ordering No.
Socket - Selector 4	8433 0610 04
Socket - Selector 8	8433 0610 08
Socket - Selector for Large Sockets	8433 0610 44
Bit Selector 8 - Single	4222 0933 91
Bit Selector 8 - Double	4222 0933 92



Socket - Selector 4



Socket - Selector 8



Socket - Large Selector



Bit Selector

Power Focus 4000 options - Selectors

CONNECTIVITY

Power Focus 4000
Graph Controller



I/O Bus Cable 4222 0917 xx



I/O Bus Cable

Socket Selectors



Socket Tray - Selector 4

Socket Tray - Selector 8

Socket Tray - Large Selector

Bit Selector

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus options - Selectors

These selectors are designed for up to 4 or 8 different sockets and are easy to connect to the I/O Bus port on the Power Focus Controller.

- ▶ Selector 4
- ▶ Selector 8
- ▶ Selector bit
- ▶ Selector large

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 467; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ I/O Bus Cable

POWER FOCUS SELECTOR KIT AND OPTIONS

Description	Ordering No.
Selector 4 Kit PF4000 ETX/G	8439 0424 00
Selector 8 Kit PF4000 ETX/G	8439 0424 01
Selector bit Kit PF4000 ETX/G	8439 0424 02
Selector large Kit PF4000 ETX/G	8439 0424 03
Options	
Mechanical connection for Selector	8995 7890 04
Retooling selector box to tool size - Selector 4	8995 7894 00
Retooling selector box to the tool size - Selector 8	8995 7894 01
Retooling selector box to the tool size - Selector Bit	8995 7894 02
Retooling selector box to the tool size - Selector large	8995 7894 03



Socket - Selector 4



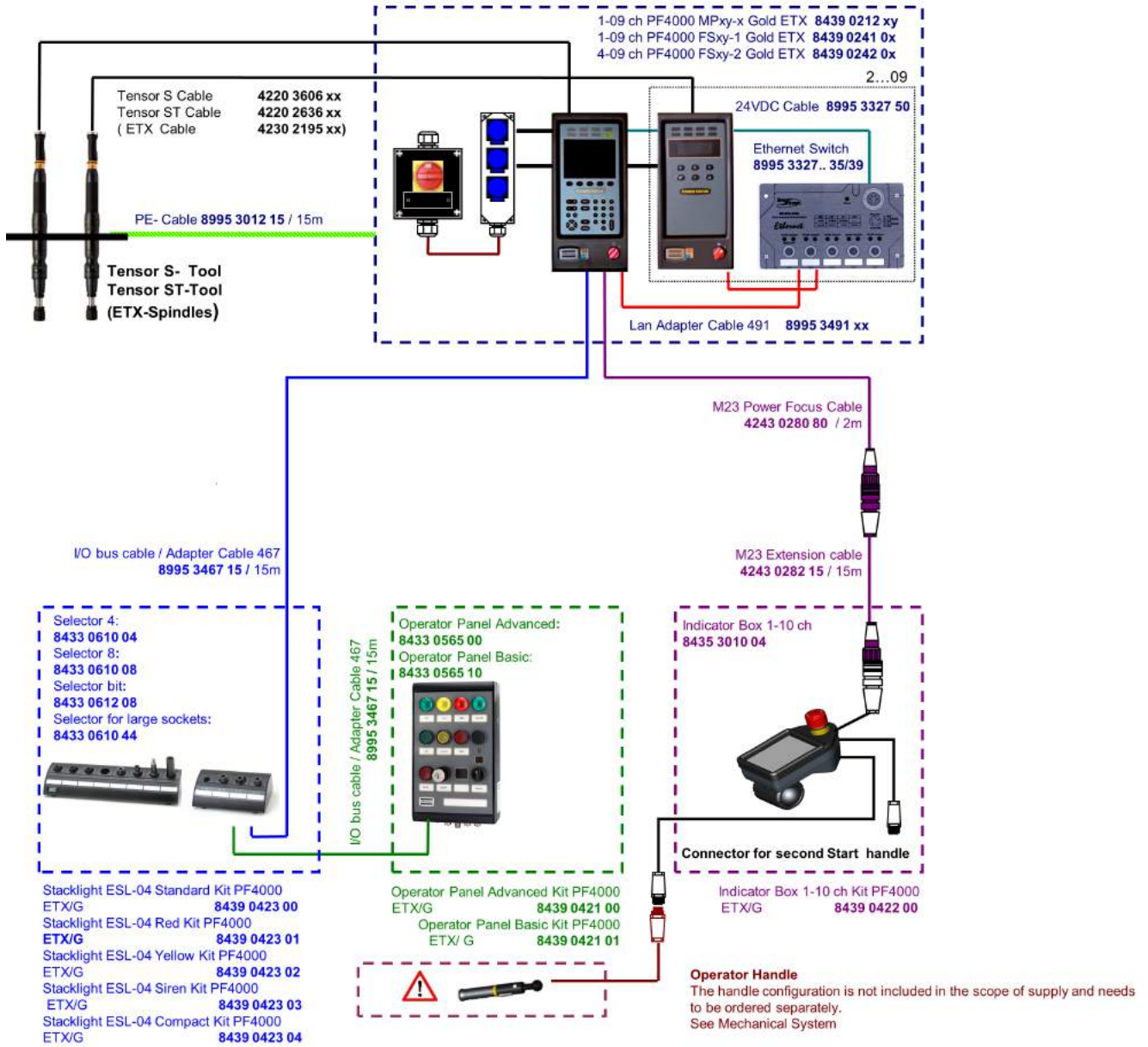
Socket - Selector 8



Socket - Large Selector



Bit Selector



Power Focus options - Wireless Socket Tray

The wireless Socket Tray recognizes the used socket and provides this kind of information via the I/O bus to the Power Focus controller (PF4000). This unit could be used as any other Atlas Copco Socket Tray box.

FEATURES

- ▶ Red LED: Socket is used and not in the tray
- ▶ Green LED: Worker is requested to use this socket
- ▶ Yellow LED: Battery status is low
- ▶ Wireless Broadcasting according IEEE802.15.4
- ▶ Europe: 868 MHz
- ▶ Global: 2,4 GHz
- ▶ Operating range 50 - 100 m



SCOPE OF SUPPLY

- ▶ Mobile Wireless Socket Tray
- ▶ Base station (24 VDC via Power Focus I/O Bus Cable)
- ▶ Up to 8 socket tray inserts
- ▶ Battery charging station 230 VAC
- ▶ 2 Batteries
- ▶ I/O Bus Cable / Adapter Cable 467; 15 m

REQUIRED EQUIPMENT

- ▶ Toolbox to be supplied by customer

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ I/O Bus Cable

NOTES

- ▶ Power Requirements
 - Feed Voltage: 24 VDC (Base Station) 230 VAC (Charger)
 - Frequency: 50-60 Hz
- ▶ Maximum Ambient Operating Temperature: 50°C / 122°F
- ▶ ATTENTION: 230V Power Supply to be supplied from customer

POWER FOCUS WIRELESS SOCKET TRAY KIT AND OPTIONS

Description	Ordering No.
Wireless Selector 868 MHz 4 Tray Kit Power Focus	8439 0424 04
Wireless Selector 868 MHz 6 Tray Kit Power Focus	8439 0424 05
Wireless Selector 868 MHz 8 Tray Kit Power Focus	8439 0424 06
Wireless Selector 2,4GHz 4 Tray Kit Power Focus	8439 0424 07
Wireless Selector 2,4GHz 6 Tray Kit Power Focus	8439 0424 08
Wireless Selector 2,4GHz 8 Tray Kit Power Focus	8439 0424 09
Options	
Mechanical connection for Wireless Socket Tray	8995 7890 38
Retooling selector box to tool size -Wireless Selector 4	8995 7894 04
Retooling selector box to tool size -Wireless Selector 6	8995 7894 05
Retooling selector box to tool size -Wireless Selector 8	8995 7894 06
Removable Battery Wireless Socket 4 Tray	8995 3114 90

Power Focus 4000 options - I/O Expander

The I/O Expander is designed to expand the I/O to 8 digital inputs and 8 digital outputs.

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable
- ▶ M12 4-Pin Extension and Open End Cables for devices connectivity or external power - required for solenoid valves
- ▶ M12 4-Pin Extension and Open End Cables for device connectivity

I/O EXPANDERS - POWER FOCUS 4000

Description	Ordering No.
I/O Expander - Open	8433 0564 39
I/O Expander - Sealed	8433 0564 45



I/O Expander - Open



I/O Expander - Sealed

Power Focus 4000 options - I/O Expander

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

REQUIRED INPUTS AND OUTPUTS - I/O EXPANDER BOX - POWER FOCUS 4000

Description	Required Inputs	Required Outputs
Solenoid 1 (Valve)	-	1
Solenoid 2 (Valve)	-	1
Proximity Switch	1	-

Power Focus options - I/O Expander

The I/O Expander is designed to extend I/O with 8 digital inputs and 8 relay outputs. It is easy to connect to the I/O Bus port on the Power Focus Controller.

- ▶ IO Expander
- ▶ IO Expander Sealed

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 467; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.
See Accessories

- ▶ I/O Bus Cable

POWER FOCUS I/O EXPANDER KIT AND OPTIONS

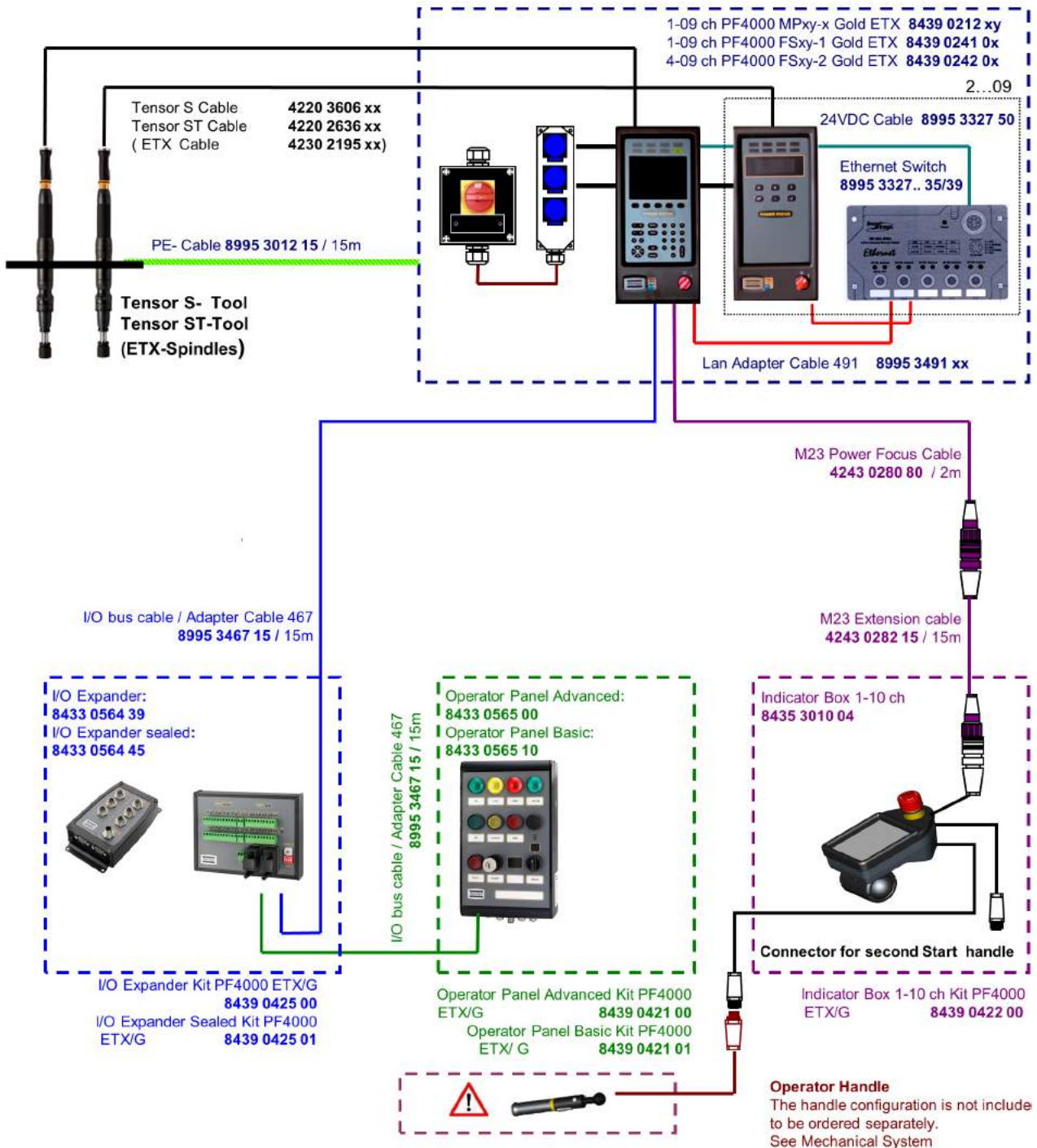
Description	Ordering No.
I/O Expander Kit PF4000 ETX/G	8439 0425 00
I/O Expander Sealed Kit PF4000 ETX/G	8439 0425 01
Options	
Mechanical connection for IO-Expander	8995 7890 05



I/O Expander - Open



I/O Expander - Sealed



Power Focus 4000 options - Rotary Selectors

Rotary Selector for parameter selection.

SCOPE OF SUPPLY

Rotary Selector 15-Position

- ▶ 5 m Cable with connector - connects directly to controller

Rotary Selector 15-Position with M12 8-Pin

- ▶ 5 m Cable with M12 8-Pin connector - allows connectivity to M12 8-Pin Extension and Open End Cable

OPTIONS

- ▶ M12 8-Pin Extension and Open End Cables

ROTARY SELECTORS - POWER FOCUS 4000

Description	Ordering No.
Rotary Selector 15-Position	8433 0606 15
Rotary Selector 15-Position with M12 8-Pin	9040 1510 00



Power Focus 4000 options - Rotary Selectors

CONNECTIVITY

Power Focus 4000
Graph Controller



Rotary Selector

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus bronze/silver options - Selector

Rotary Selector, Socket and Bit Selector for parameter selection.

SCOPE OF SUPPLY

Selectorswitch 0-11 Kit PF4000

- ▶ Parameterswitch 12
- ▶ Control Cable 530, 15 m

Selector 4 Kit PF4000

- ▶ Selector 4
- ▶ Control Cable 536, 15 m

Rotary Selector Kit PF4000

- ▶ Rotary Selector
- ▶ Includes Cable, 5 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.
See Accessories

- ▶ Control Cable 3055
- ▶ Control Control / Extension Cable 3054

NOTES

- ▶ Selection one out of three only

POWER FOCUS (BRONZE, SILVER) SELECTOR KITS AND OPTIONS

Description	Ordering No.
Selectorswitch 0-11 Kit PF4000 B/S	8995 3240 01
Selector 4 Kit PF4000 B/S	8995 3240 10
Rotary Selector Kit PF4000 B/S	8995 3240 11
Options	
Mechanical connection for Selector PF	8995 7890 08



Parameterswitch 0-11



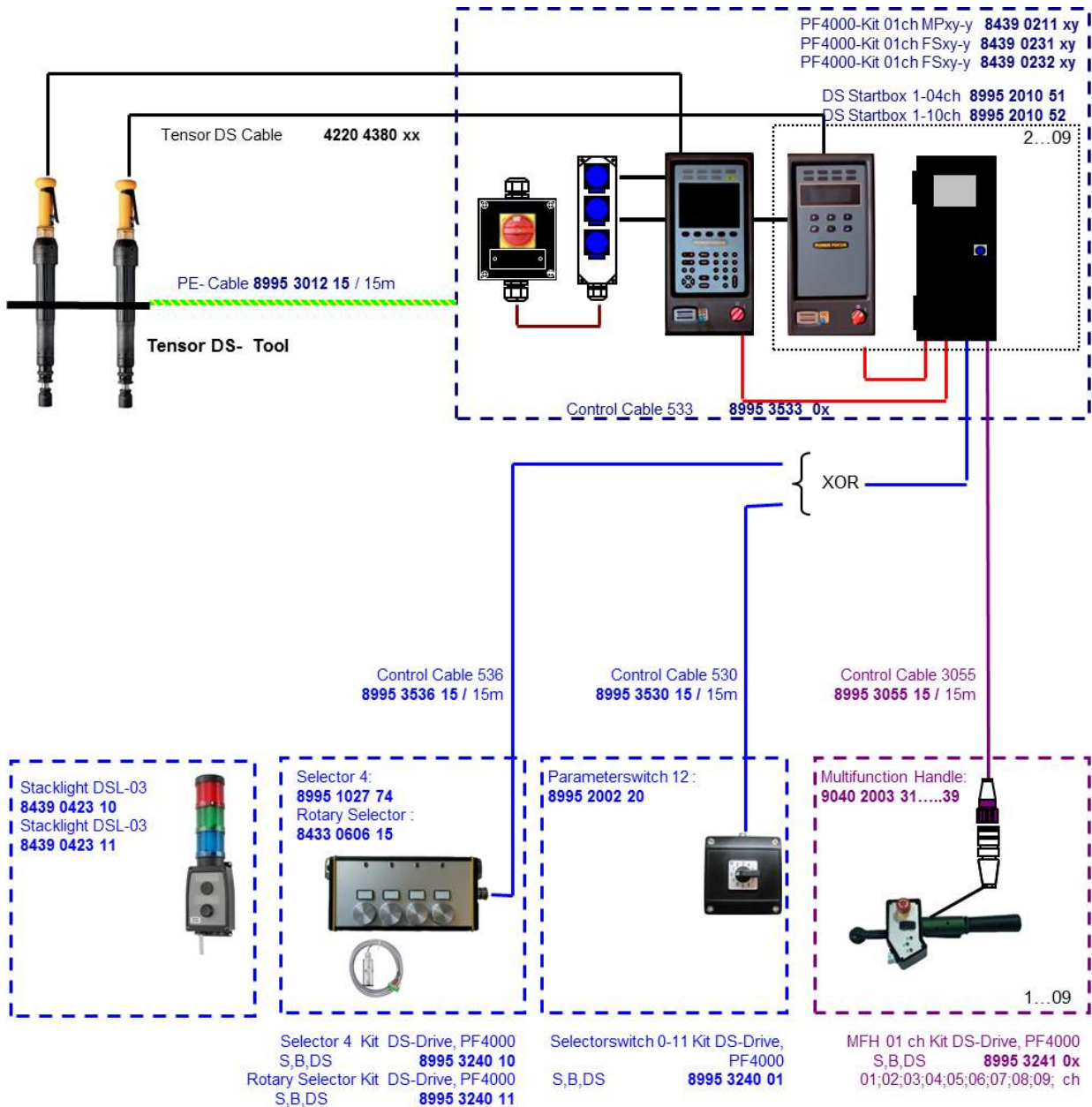
Selector 4



Rotary Selector

Power Focus bronze/silver options - Selector

CONNECTIVITY



Power Focus 4000 options - Barcode Scanner

The Barcode Scanner can scan an ID of 1 - 40 characters long and can be used to select a P-set. It is connected to the Power Focus 4000 Controller through the serial port connector (Serial #1 or Serial #2).

Available in Power Focus Silver, Gold, or ETX. Not Available in DS/DL 300/312 or in Power Focus Bronze.

SCOPE OF SUPPLY

Barcode Scanner Corded Kit

- ▶ Symbol LS3408-FZ Logic Corded Scanner
- ▶ Scanner Wall Mount Holder
- ▶ 100-230VAC Universal Power Supply
- ▶ 120VAC Line Cord, 1.8 m (6 ft.) - connects to Universal Power Supply to 120VAC outlet
- ▶ RS232 Cable STD-DB9 Female TxD on 2, 6.1 m (20 ft.) Coiled Cable - connects scanner to controller
- ▶ Gender Changer



Barcode Scanner Cordless Kit

- ▶ Symbol LS3578-FZ Logic Cordless Scanner
- ▶ Radio-Charging Cradle
- ▶ 100-230VAC Universal Power Supply
- ▶ 120VAC Line Cord, 1.8 m (6 ft.) - connects to Universal Power Supply to 120VAC outlet
- ▶ RS232 Cable STD-DB9 Female TxD on 2, 2.1 m (7 ft.)
- ▶ Straight Cable - connects scanner to controller
- ▶ Gender Changer

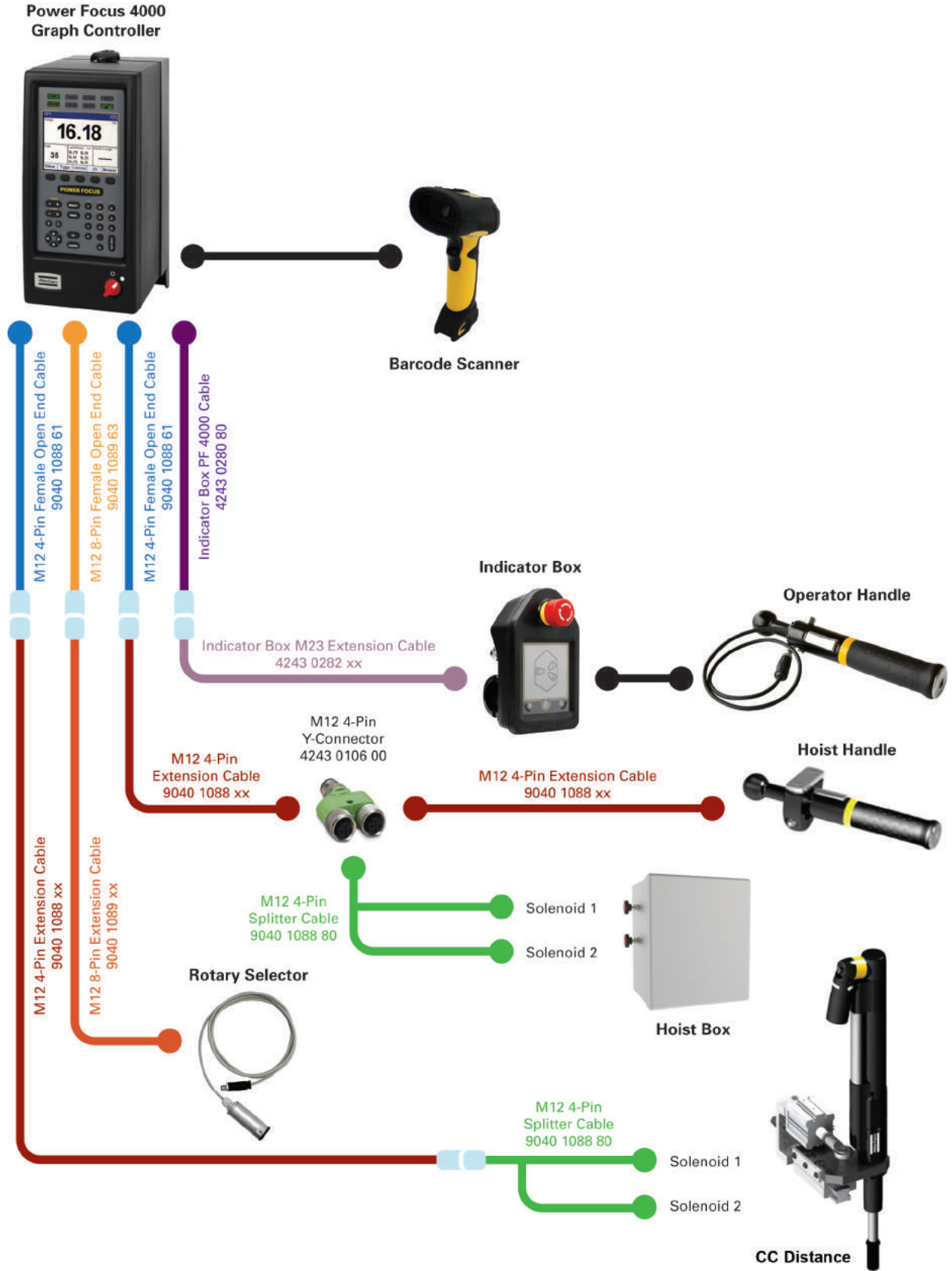


BARCODE SCANNER - POWER FOCUS 4000

Description	Ordering No.
Barcode Scanner Corded Kit	9040 1295 13
Barcode Scanner Cordless Kit	9040 1295 28

Power Focus 4000 options - Barcode Scanner

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power Focus options - Scanner

The Scanner is connected to the Power Focus Controller via the serial port. The up to four scanned ID numbers are merged with the tightening results. Scanned ID's can be used to control PSets or Jobs. It is easy to connect to the Serial port 1/2 on the Power Focus Controller.

SCOPE OF SUPPLY

Handheld scanner Kits (Datalogic)

- ▶ Datalogic Premium Line Scanner
- ▶ Desk/Wall Holder (HLD-8000)
- ▶ Cable (CAB-433 RS232), 2 m
- ▶ Power Supply (PG12-10P55-EU)
- ▶ Gender Changer 9pol male/male
- ▶ Cordless scanners will be supplied with charger base and Power Supply unit 12 VDC



Scanner PD8330

Stationary scanner Kits (Sick)

- ▶ Line scanner (CLV430-0010)
- ▶ Sick Interface RS422-20mA (CDM420-0001)
- ▶ PowerSupply (CMP400)
- ▶ Connection Device Modular (CDM420-00001)
- ▶ Control Cable 535, 15 m
- ▶ Data Cable includes cables and installation to the control system max. cable length 15 m



Scanner PM8330

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Data Cable
- ▶ Control Cable

NOTES

- ▶ 230V Power Supply to be supplied from customer
- ▶ Programming and testing of the Barcode Scanner not included, but quoted according to customer's specification on request.

POWER FOCUS SCANNER AND OPTIONS

Description	Ordering No.
Scanner PD8330 kit PF4000	8995 3180 21
Scanner PM8300 cordless kit PF4000	8995 3180 22
Scanner PM8300/D with display cordless kit PF4000	8995 3180 23
Scanner PM8300/DK with display / Keypad cordless kit PF4000	8995 3180 28
2D Scanner PD8530 kit PF4000	8995 3180 25
2D Scanner PM8500 cordless kit PF4000	8995 3180 26
2D Scanner PM8500/D with display cordless kit PF4000	8995 3180 27
Mechanical connection for Scanner	8995 7890 12
Options	
Mechanical connection for Scanner	8995 7890 12



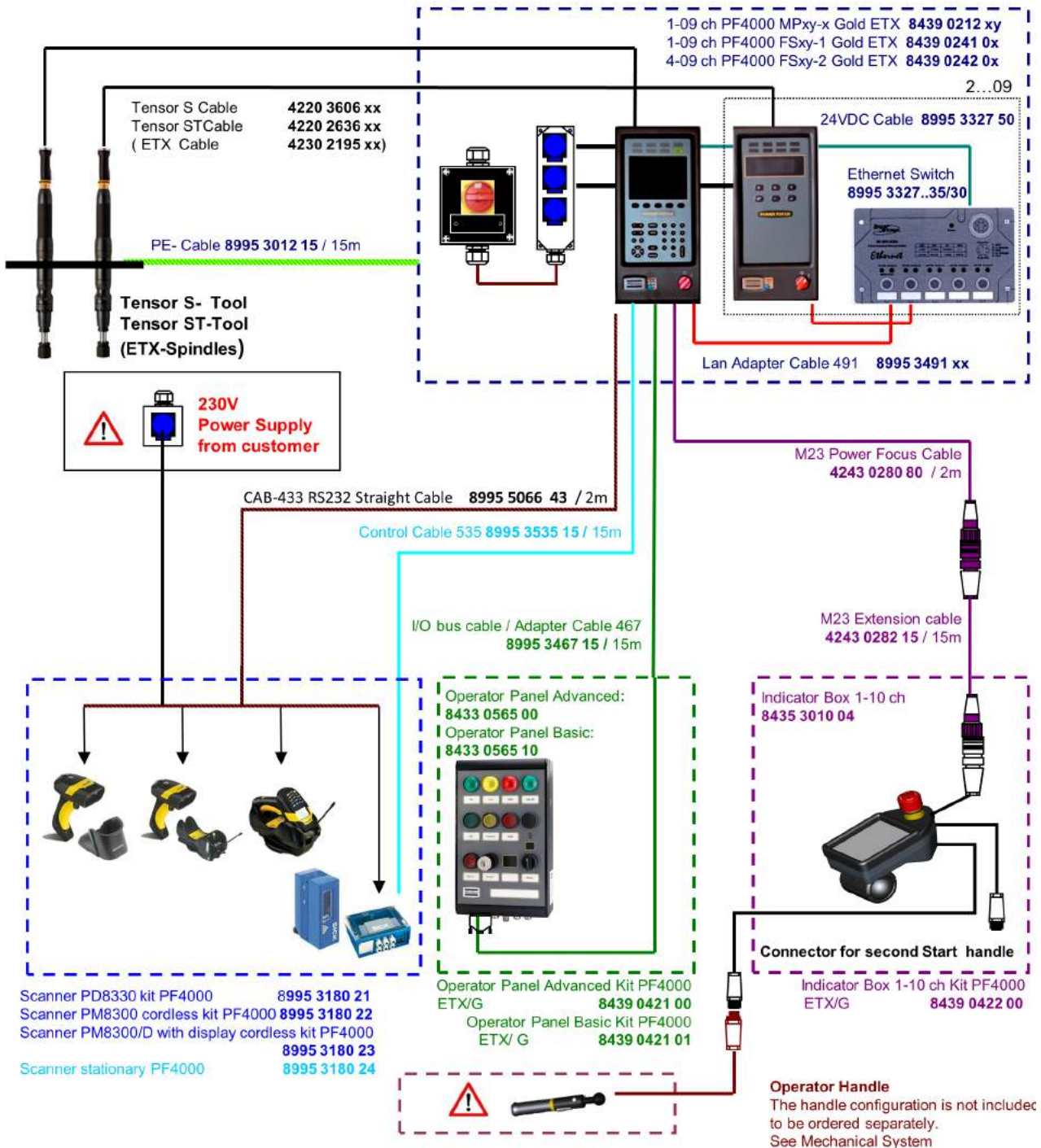
Scanner PM8300/D



Scanner PM8300/DK

POWER FOCUS SCANNER STATIONARY KIT

Description	Ordering No.
Scanner stationary PF4000	8995 3180 24



Power Focus options - re-alarm

The Re-Alarm is designed to remotely indicate the status of tightenings. It is easy to connect to the I/O Bus port on the Power Focus Controller.

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 467; 15 m
- ▶ RE-Alarm

OPTIONS

Extension cables or other cable lengths must be ordered separately.

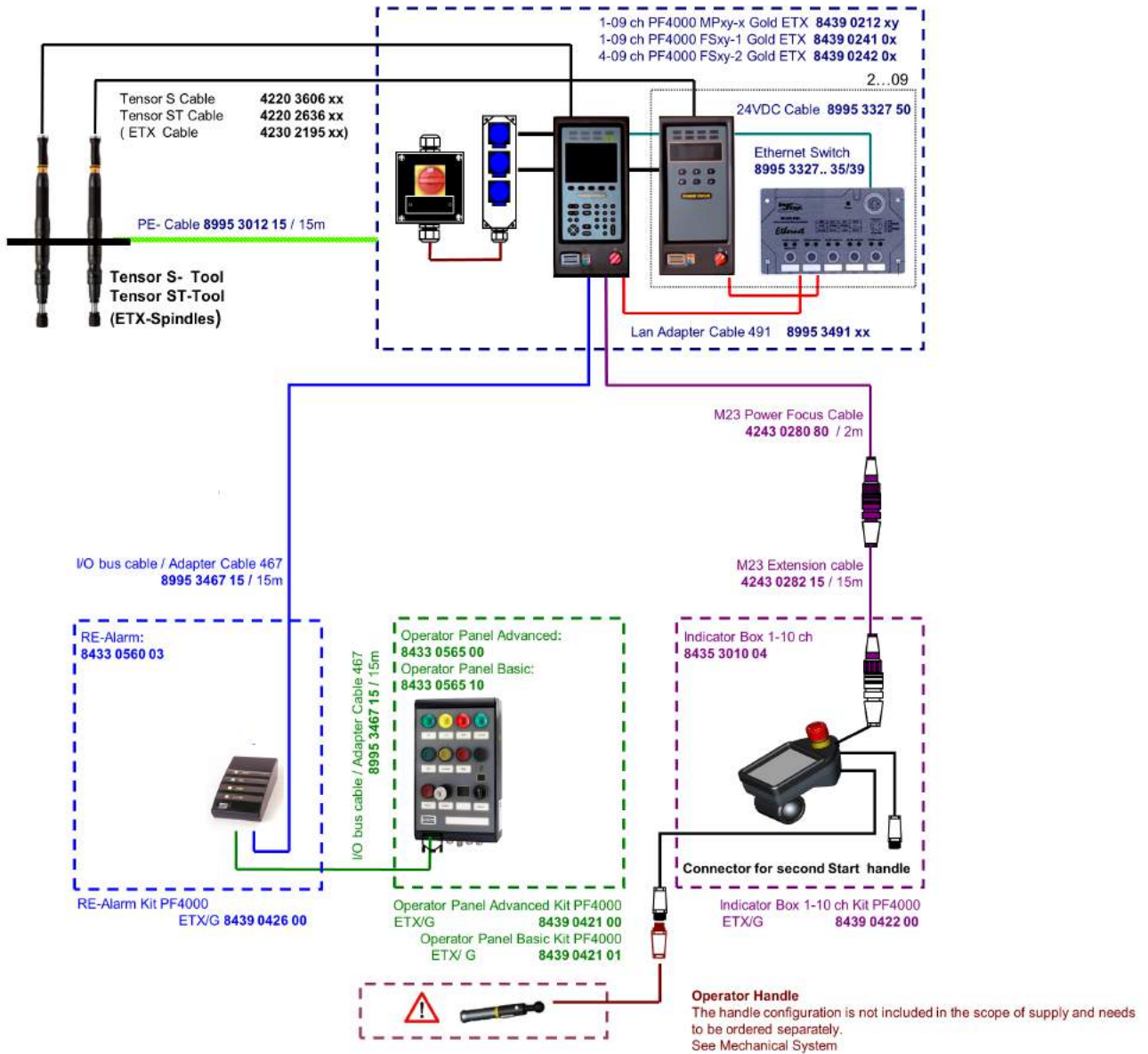
See Accessories

- ▶ I/O Bus Cable



POWER FOCUS RE-ALARM KIT AND OPTIONS

Description	Ordering No.
RE-Alarm Kit PF4000 ETX/G	8439 0426 00
Options	
Mechanical connection for RE-Alarm	8995 7890 06



Power Focus options - e-stop extern

The Emergency Stop pushbutton is built into an industrial housing.

- ▶ Stop Category B (EN 13849-1)
- ▶ The control cable 537 connects the E Stop pushbutton box to the PF
- ▶ The operator handle can be connected directly to the E-Stop Panel.

SCOPE OF SUPPLY

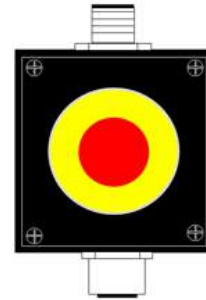
- ▶ E-Stop Panel Red 8995 3118 01
- ▶ Control Cable 537; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Control Cable



POWER FOCUS E-STOP EXTERN KIT

Description	Ordering No.
E-Stop Ext with Connection Start Kit PF4000 ETX/G	8995 3130 41
Options	
Mechanical connection for Emergency Stop Button	8995 7890 10

Power MACS 4000 power distribution

FEATURES

Main Switch Box - MSB

- ▶ The MSB is used for power distribution and makes power management easy. It is designed to be fed with 380-480VAC 3-phase without requiring an external transformer.
- ▶ Each MSB supplies up to 6 controllers with power.

Distribution Box - DB

- ▶ The DB provides the same functionality as the MSB except for the main switch and is used as a complement to the MSB for systems with more than 6 channels.
 - DB II complies with all North American Electrical Codes.

General Box - GB

- ▶ An empty DB, suitable for external system devices.

Service Box - SB

- ▶ The SB converts 480VAC to 120VAC and includes (2) GFCI 120VAC duplex receptacles for powering external devices (e.g., ComNode, PCs, Barcode Scanner, etc.).
 - The SB is not to be used to power Power Focus Controllers.



Main Switch Box - MSB



Distribution Box - DB and DB II

MAIN SWITCH BOX - MSB

Description	Ordering No.
MSB (Max 6 channels)	8435 5660 00

DISTRIBUTION BOX - DB

Description	Ordering No.
DB - Distribution Box (Max 6 channels) + Power cable 1800 mm	8435 6560 50
DB II - Distribution Box (Max 6 channels) + Power cable 1800 mm (North American Version)	8435 5660 10

GENERAL BOX - GB

Description	Ordering No.
General Box	4222 1249 85

SERVICE BOX - SB

Description	Ordering No.
Service Box	9040 1102 10

Power MACS 4000 floor stands

Floor Stand Kits from Atlas Copco offer a new and improved controller mounting technique.

FEATURES

- ▶ Accommodates Power MACS 4000 Controllers
- ▶ Enclosed Frame - houses and protects the cables from within
- ▶ Mounting Plates - controllers are mounted on pre-drilled mounting plates
- ▶ Cover Plates - maintenance friendly with quick release connectors; allows access to cables
- ▶ Blind Plates - maintenance friendly with quick release connectors, located on the rear side of stand

NOTES

- ▶ Tightening Controllers are mounted on the front side of stand
- ▶ Power Distribution and special boxes are mounted on rear side of stand



Lifting Eye



Cable Guiding



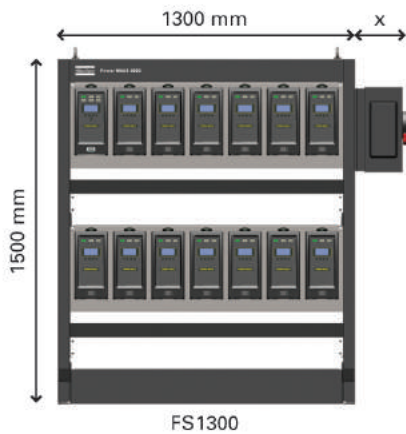
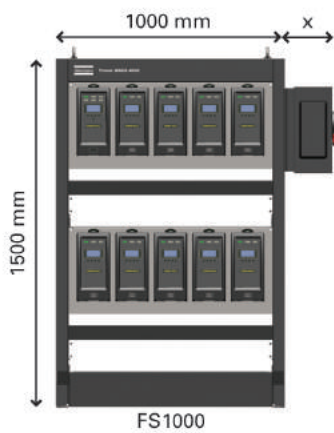
Quick Mounting



Easy Bolt Down Feet

POWER MACS 4000 FLOOR STANDS

Description	No. of Controllers	Total Width mm	Ordering No.
PM 4000 FS600	1 - 6	600	9040 1902 21
PM 4000 FS1000	7 - 10	1000	9040 1902 22
PM 4000 FS1300	11 - 14	1300	9040 1902 23
PM 4000 FS600+FS1000	15 - 16	1600	9040 1902 24
PM 4000 FS600+FS1300	17 - 20	1900	9040 1902 25
PM 4000 FS1000+FS1300	21 - 24	2300	9040 1902 26
PM 4000 FS1300+FS1300	25 - 28	2600	9040 1902 27
PM 4000 FS600+FS1300+FS1300	29 - 34	3200	9040 1902 28



DIMENSIONS - POWER MACS 4000 FLOORS STAND DISCONNECT SWITCHES

Description	Width (x) mm (in)
Square D - NEMA12 - 30 Amp	204 (8)
Square D - NEMA12 - 60 Amp	254 (10)
Square D - NEMA12 - 100 Amp	254 (10)
Square D - NEMA12 - 200 Amp	458 (18)
Allen-Bradley - NEMA12 - 30/60 Amp	277 (10.9)
Allen-Bradley - NEMA12 - 100 Amp	277 (10.9)
Allen-Bradley - NEMA12 - 200 Amp	277 (10.9)

Power MACS 4000 floor stand systems

A complete tightening system.

SCOPE OF SUPPLY

- ▶ Power MACS 4000 Floor Stand
- ▶ Distribution Box(es) DB II
- ▶ Distribution Box Fuses
- ▶ Interconnecting cable/conduit
- ▶ TC Power Cable(s)
- ▶ E-stop Cable(s) (2 spindles or greater only)
- ▶ Ethernet Cable(s)
- ▶ Ethernet Switch(es)
- ▶ Ground Cable

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 FS Disconnect Switch Kit
- ▶ Power MACS 4000 Tightening Controller(s) - (1) Primary and Secondary TC(s) without Ethernet Switch(es)
- ▶ QST Nutrunner(s)
- ▶ QST Tool / Extension Cable(s)

OPTIONS

- ▶ Operator Interface / Kit(s) and Cable(s)
- ▶ ToolsTalk Power MACS Software



POWER MACS 4000 FLOOR STAND SYSTEM KITS

Description	No. of Controllers				Plate Width mm	Ordering No.
		FS600	FS1000	FS1300		
PM 4000 FS System Kit - 1 Sp (FS600)	1	1	-	-	600	9040 1215 01
PM 4000 FS System Kit - 2 Sp (FS600)	2	1	-	-	600	9040 1215 02
PM 4000 FS System Kit - 3 Sp (FS600)	3	1	-	-	600	9040 1215 03
PM 4000 FS System Kit - 4 Sp (FS600)	4	1	-	-	600	9040 1215 04
PM 4000 FS System Kit - 5 Sp (FS600)	5	1	-	-	600	9040 1215 05
PM 4000 FS System Kit - 6 Sp (FS600)	6	1	-	-	600	9040 1215 06
PM 4000 FS System Kit - 7 Sp (FS1000)	7	-	1	-	1000	9040 1215 07
PM 4000 FS System Kit - 8 Sp (FS1000)	8	-	1	-	1000	9040 1215 08
PM 4000 FS System Kit - 9 Sp (FS1000)	9	-	1	-	1000	9040 1215 09
PM 4000 FS System Kit - 10 Sp (FS1000)	10	-	1	-	1000	9040 1215 10
PM 4000 FS System Kit - 11 Sp (FS1300)	11	-	-	1	1300	9040 1215 11
PM 4000 FS System Kit - 12 Sp (FS1300)	12	-	-	1	1300	9040 1215 12
PM 4000 FS System Kit - 13 Sp (FS1300)	13	-	-	1	1300	9040 1215 13
PM 4000 FS System Kit - 14 Sp (FS1300)	14	-	-	1	1300	9040 1215 14
PM 4000 FS System Kit - 15 Sp (FS600+FS1000)	15	1	1	-	1600	9040 1215 15
PM 4000 FS System Kit - 16 Sp (FS600+FS1000)	16	1	1	-	1600	9040 1215 16
PM 4000 FS System Kit - 17 Sp (FS600+FS1300)	17	1	-	1	1900	9040 1215 17

Power MACS 4000 floor stand systems

Description	No. of Controllers	FS600	FS1000	FS1300	Plate Width	Ordering No.
					mm	
PM 4000 FS System Kit - 18 Sp (FS600+FS1300)	18	1	-	1	1900	9040 1215 18
PM 4000 FS System Kit - 19 Sp (FS600+FS1300)	19	1	-	1	1900	9040 1215 19
PM 4000 FS System Kit - 20 Sp (FS600+FS1300)	20	1	-	1	1900	9040 1215 20
PM 4000 FS System Kit - 21 Sp (FS1000+FS1300)	21	-	1	1	2300	9040 1215 21
PM 4000 FS System Kit - 22 Sp (FS1000+FS1300)	22	-	1	1	2300	9040 1215 22
PM 4000 FS System Kit - 23 Sp (FS1000+FS1300)	23	-	1	1	2300	9040 1215 23
PM 4000 FS System Kit - 24 Sp (FS1000+FS1300)	24	-	1	1	2300	9040 1215 24
PM 4000 FS System Kit - 25 Sp (FS1300+FS1300)	25	-	-	2	2600	9040 1215 25
PM 4000 FS System Kit - 26 Sp (FS1300+FS1300)	26	-	-	2	2600	9040 1215 26
PM 4000 FS System Kit - 27 Sp (FS1300+FS1300)	27	-	-	2	2600	9040 1215 27
PM 4000 FS System Kit - 28 Sp (FS1300+FS1300)	28	-	-	2	2600	9040 1215 28
PM 4000 FS System Kit - 29 Sp (FS600+FS1300+FS1300)	29	1	-	2	3200	9040 1215 29
PM 4000 FS System Kit - 30 Sp (FS600+FS1300+FS1300)	30	1	-	2	3200	9040 1215 30

Power MACS 4000 floor stand kits

The Floor Stand Kits from Atlas Copco offer a new and improved controller mounting technique.

FEATURES

Flexible mounting possibilities

A unique future proof feature of this concept is the flexible controller mounting. There are four mounting possibilities, two on each side. Each Blind Plate can be replaced with a Mounting Plate / Cover Plate combination.

SCOPE OF SUPPLY

- ▶ Enclosed Framework (a)
 - Cables are contained and protected within
- ▶ Mounting Plates (c)
 - Controllers are mounted on pre-drilled mounting
- ▶ Cover Plates (d)
 - Maintenance friendly with quick release connector
- ▶ Blind Plates (b)
 - Maintenance friendly with quick release connector at the rear side. Future upgrades can be easily handled by replacing them with the Mounting Plate and Cover Plate combination
- ▶ Bolt down holes
 - Easily accessible from the side or top
- ▶ Main Switch Box / Distribution Box (DB)
 - The MSB / DB is used for power distribution and makes power management easy
- ▶ System cable kit
 - Power, Ethernet, E-Stop and Protective-Earth (PE) cables to connect the Power MACS 4000 system
- ▶ System Test / Documentation
 - System test according to internal test routine, one binder and CD of standard documentation

REQUIRED EQUIPMENT

- ▶ Power MACS Primary Tightening Controllers (PTC)
- ▶ Power MACS Secondary Tightening Controllers (STC)
- ▶ QST Nutrunners
- ▶ QST Cables

OPTIONS

- ▶ Stacklight mounting
- ▶ ComNode mounting
- ▶ Scanner mounting
- ▶ HMI (Mini/MaxiDisplay)
- ▶ Additional Station PM4000 Hardware & Software

NOTES

- ▶ Power Requirements
 - Feed Voltage: 3 phase 400 – 480 VAC, protective earth (PE), 50 – 60Hz
 - Main supply voltage fluctuations are recommended not to reach higher voltage levels than 500V (=4% of nominal voltage: 480V) and not lower than -10% of nominal voltage.
- ▶ Fuse Rating (approximation to be confirmed per project): 16 - 63A

Power MACS 4000 floor stand kits

Maximum ambient operating temperature: 40°C / 104°F.

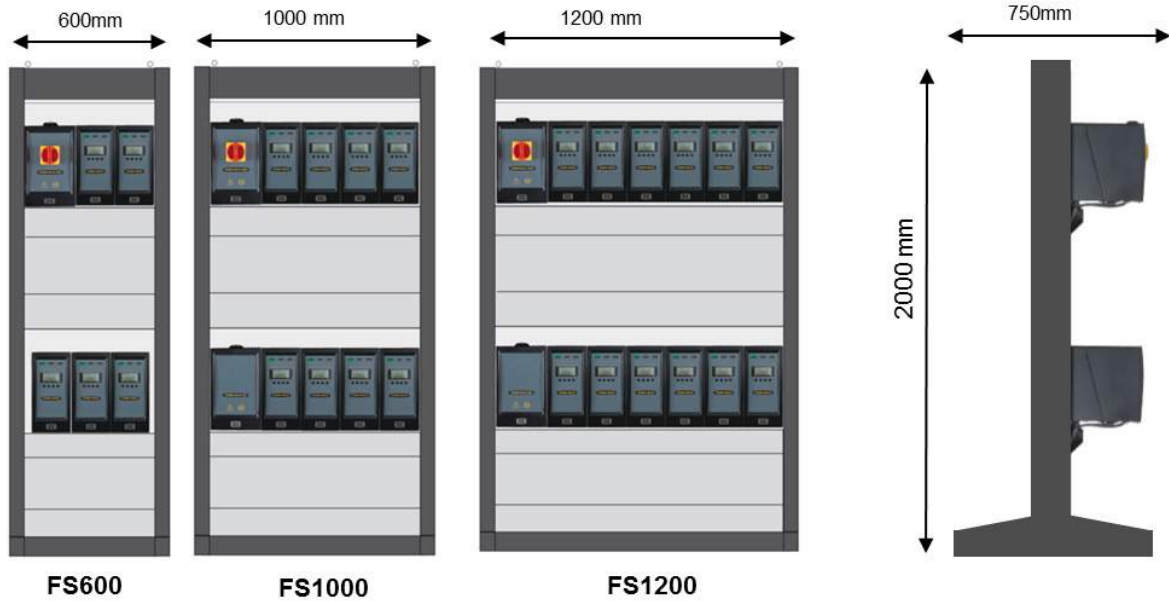


- 1 = Single side mounting
- 2 = Double side mounting
- 3 = Lifting eye
- 4 = Cable guiding
- 5 = Quick mounting
- 6 = Easy bolt down feet

FLOOR STAND DIMENSION POWER MACS 4000

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Total Height mm	Total Depth mm
8439 0031 xx	1 - 24	600	2.400	2.000	750
8439 0032 xx	6 - 20	600	1.200	2.000	750

Power MACS 4000 floor stand kits

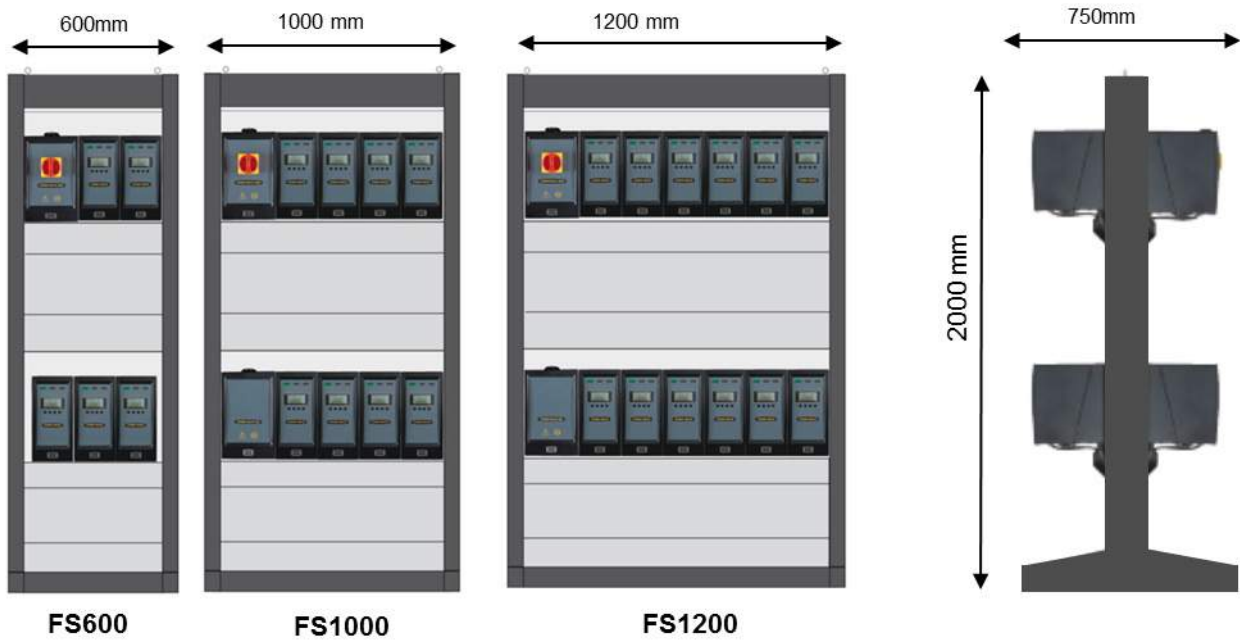


Floor Stand one sided mounting 8439 0031 xx

POWER MACS 4000 FLOOR STAND ONE SIDED MOUNTING AND OPTIONS

Description	No. of Controllers	FS 600	FS 1000	FS 1200	Total Width mm	Fuse Rating	Ethernet Switch	Ordering No.
PM4000 kit 01ch FS06-1 QST 34-90	1	1	-	-	600	16 A	x	8439 0031 01
PM4000 kit 02ch FS06-1 QST 34-90	2	1	-	-	600	16 A	x	8439 0031 02
PM4000 kit 03ch FS06-1 QST 34-90	3	1	-	-	600	16 A	x	8439 0031 03
PM4000 kit 04ch FS06-1 QST 34-90	4	1	-	-	600	16 A	x	8439 0031 04
PM4000 kit 05ch FS06-1 QST 34-90	5	1	-	-	600	25 A	x	8439 0031 05
PM4000 kit 06ch FS10-1 QST 34-90	6	-	1	-	1.000	25 A	2	8439 0031 06
PM4000 kit 07ch FS10-1 QST 34-90	7	-	1	-	1.000	25 A	2	8439 0031 07
PM4000 kit 08ch FS10-1 QST 34-90	8	-	1	-	1.000	25 A	2	8439 0031 08
PM4000 kit 09ch FS12-1 QST 34-90	9	-	-	1	1.200	32 A	3	8439 0031 09
PM4000 kit 10ch FS12-1 QST 34-90	10	-	-	1	1.200	32 A	3	8439 0031 10
PM4000 kit 11ch FS12-1 QST 34-90	11	-	-	1	1.200	32 A	4	8439 0031 11
PM4000 kit 12ch FS12-1 QST 34-90	12	-	-	1	1.200	32 A	4	8439 0031 12
PM4000 kit 13ch FS18-1 QST 34-90	13	1	-	1	1.800	50 A	5	8439 0031 13
PM4000 kit 14ch FS18-1 QST 34-90	14	1	-	1	1.800	50 A	5	8439 0031 14
PM4000 kit 15ch FS18-1 QST 34-90	15	1	-	1	1.800	50 A	5	8439 0031 15
PM4000 kit 16ch FS18-1 QST 34-90	16	1	-	1	1.800	50 A	5	8439 0031 16
PM4000 kit 17ch FS18-1 QST 34-90	17	1	-	1	1.800	63 A	6	8439 0031 17
PM4000 kit 18ch FS22-1 QST 34-90	18	-	1	1	2.200	63 A	6	8439 0031 18
PM4000 kit 19ch FS22-1 QST 34-62	19	-	1	1	2.200	63 A	7	8439 0031 19
PM4000 kit 20ch FS22-1 QST 34-62	20	-	1	1	2.200	63 A	7	8439 0031 20
PM4000 kit 21ch FS24-1 QST 34-62	21	-	-	2	2.400	63 A	7	8439 0031 21
PM4000 kit 22ch FS24-1 QST 34-62	22	-	-	2	2.400	63 A	7	8439 0031 22
PM4000 kit 23ch FS24-1 QST 34-62	23	-	-	2	2.400	63 A	8	8439 0031 23
PM4000 kit 24ch FS24-1 QST 34-62	24	-	-	2	2.400	63 A	8	8439 0031 24
Options								
Additional Station PM4000 Hardware & Software								8995 3324 20

Power MACS 4000 floor stand kits



Floor Stand two sided mounting 8439 0032 xx

POWER MACS 4000 FLOOR STAND TWO SIDED MOUNTING AND OPTIONS

Description	No. of Controllers	FS 600	FS 1000	FS 1200	Total Width mm	Fuse Rating	Ethernet Switch	Ordering No.
PM4000 kit 06ch FS06-2 QST 34-90	6	1	-	-	600	25 A	2	8439 0032 06
PM4000 kit 07ch FS06-2 QST 34-90	7	-	1	-	600	25 A	2	8439 0032 07
PM4000 kit 08ch FS10-2 QST 34-90	8	-	1	-	1.000	25 A	2	8439 0032 08
PM4000 kit 09ch FS10-2 QST 34-90	9	-	1	-	1.000	32 A	3	8439 0032 09
PM4000 kit 10ch FS10-2 QST 34-90	10	-	1	-	1.000	32 A	3	8439 0032 10
PM4000 kit 11ch FS10-2 QST 34-90	11	-	1	-	1.000	32 A	3	8439 0032 11
PM4000 kit 12ch FS10-2 QST 34-90	12	-	1	-	1.000	32 A	3	8439 0032 12
PM4000 kit 13ch FS10-2 QST 34-90	13	-	1	-	1.000	50 A	4	8439 0032 13
PM4000 kit 14ch FS10-2 QST 34-90	14	-	1	-	1.000	50 A	4	8439 0032 14
PM4000 kit 15ch FS12-2 QST 34-90	15	-	-	1	1.200	50 A	5	8439 0032 15
PM4000 kit 16ch FS12-2 QST 34-90	16	-	-	1	1.200	50 A	5	8439 0032 16
PM4000 kit 17ch FS12-2 QST 34-90	17	-	-	1	1.200	63 A	6	8439 0032 17
PM4000 kit 18ch FS12-2 QST 34-90	18	-	-	1	1.200	63 A	6	8439 0032 18
PM4000 kit 19ch FS12-2 QST 34-62	19	-	-	1	1.200	63 A	7	8439 0032 19
PM4000 kit 20ch FS12-2 QST 34-62	20	-	-	1	1.200	63 A	7	8439 0032 20
Options								
Additional Station PM4000 Hardware & Software								8995 3324 20

Power MACS 4000 floor stand disconnect kit

DISCONNECT SWITCH OPTIONS

- ▶ Atlas Copco MSB II
- ▶ Square D - NEMA 12
- ▶ Allen Bradley - NEMA 12

SCOPE OF SUPPLY

Power MACS 4000 Floor Stand Disconnect Kit

- ▶ Disconnect Switch
- ▶ Fuses (3)
- ▶ Power cable and conduit
- ▶ Mounting bracket and hardware for disconnect switch



Power MACS 4000 Floor Stand Disconnect with Service Box Kit

- ▶ Disconnect Switch
- ▶ Fuses (3)
- ▶ Power cable and conduit
- ▶ Mounting bracket and hardware for disconnect switch
- ▶ Service Box

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 FS System Kit

NOTES

- ▶ Select disconnect size based on nutrunner type and quantity.
- ▶ Fuse size to be determined by Atlas Copco engineering.

POWER MACS 4000 FS DISCONNECT SWITCH KITS SQUARE D - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
FS Disconnect Switch Kit - Square D - NEMA12 - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1215 65
FS Disconnect Switch Kit - Square D - NEMA12 - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1215 66
FS Disconnect Switch Kit - Square D - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 26	9040 1215 67
FS Disconnect Switch Kit - Square D - NEMA12 - 200 Amp	200	-	-	-	27 - 30	9040 1215 68

POWER MACS 4000 FS DISCONNECT SWITCH KITS ALLEN-BRADLEY - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
FS Disconnect Switch Kit - Allen-Bradley - NEMA12 - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1215 69
FS Disconnect Switch Kit - Allen-Bradley - NEMA12 - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1215 70
FS Disconnect Switch Kit - Allen-Bradley - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 26	9040 1215 71
FS Disconnect Switch Kit - Allen-Bradley - NEMA12 - 200 Amp	200	-	-	-	27 - 30	9040 1215 72

Power MACS 4000 floor stand disconnect kit

POWER MACS 4000 FS DISCONNECT SWITCH KITS MSB II

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
FS Disconnect Switch Kit - MSB II - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1215 73
FS Disconnect Switch Kit - MSB II - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1215 74

POWER MACS 4000 FS DISCONNECT SWITCH WITH SERVICE BOX KITS SQUARE D - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
FS Disconnect Switch w/SB Kit - Square D - NEMA12 - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1215 85
FS Disconnect Switch w/SB Kit - Square D - NEMA12 - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1215 86
FS Disconnect Switch w/SB Kit - Square D - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 25	9040 1215 87
FS Disconnect Switch w/SB Kit - Square D - NEMA12 - 200 Amp	200	-	-	-	26 - 30	9040 1215 88

POWER MACS 4000 FS DISCONNECT SWITCH WITH SERVICE BOX KITS ALLEN-BRADLEY - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
FS Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1215 89
FS Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1215 90
FS Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 25	9040 1215 91
FS Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 200 Amp	200	-	-	-	26 - 30	9040 1215 92

POWER MACS 4000 FS DISCONNECT SWITCH WITH SERVICE BOX KITS MSB II

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
FS Disconnect Switch w/SB Kit - MSB II - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1215 93
FS Disconnect Switch w/SB Kit - MSB II - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1215 94

Power MACS 4000 wall-mounted frame systems

The Atlas Copco Floor Wall-Mounted Frame System is a complete tightening system that utilizes the wall-mounted frame concept for mounting controllers and related accessories. The wall-mounted frame can be mounted to a machine structure or base, a custom frame, or concrete wall. The compact, modular system requires minimal floor space. Multiple frames can be connected and stacked up to three tall.

BENEFITS

- ▶ Protects controllers and accessories
- ▶ Secures tool and accessory cables within frame
- ▶ Decreases the use of floor space
- ▶ Configurable for a variety of applications
- ▶ Light weight for ease of handling



FEATURES

- ▶ Accommodates Power MACS 4000 Controllers
- ▶ Front mounting for controller and accessory mounting
- ▶ Mounting plates - controllers are mounted on pre-drilled mounting plates
- ▶ Cover plates - maintenance friendly with quick release connectors; allows access to cables
- ▶ Lifting hooks/frame connection - for handling during installation; connect up to 3 frames
- ▶ Cable management routing
- ▶ Capable of custom mounting other devices, such as ComNodes

SCOPE OF SUPPLY

- ▶ Power MACS 4000 Wall-Mounted Frame(s)
- ▶ Distribution Box(es) (DB II), fuses and power cables
- ▶ E-Stop cables
- ▶ Ethernet switch(es) and cables
- ▶ Ground cables
- ▶ Integration of controllers and interconnection

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 Wall-Mounted Frame Disconnect Switch Kit
- ▶ Power MACS 4000 Tightening Controller(s) - (1) Primary and Secondary TC(s) without Ethernet Switch(es)
- ▶ QST Nutrunner(s)
- ▶ QST Tool/Extension Cable(s)

OPTIONS

- ▶ Operator Interface / Kit(s) and Cable(s)
- ▶ ToolsTalk Power MACS Software

Power MACS 4000 wall-mounted frame systems

POWER MACS 4000 WALL-MOUNTED FRAME SYSTEMS WF600

Description	No. of TC	No. of DB	No. of Frames	Ordering No.
Wall-Mounted Frame System WF600-1 - 1 Sp	1	1	1	9040 1905 11
Wall-Mounted Frame System WF600-1 - 2 Sp	2	1	1	9040 1905 12
Wall-Mounted Frame System WF600-2 - 3 Sp	3	1	2	9040 1905 13
Wall-Mounted Frame System WF600-2 - 4 Sp	4	1	2	9040 1905 14
Wall-Mounted Frame System WF600-2 - 5 Sp	5	1	2	9040 1905 15
Wall-Mounted Frame System WF600-3 - 6 Sp	6	1	3	9040 1905 16
Wall-Mounted Frame System WF600-3 - 7 Sp	7	1	3	9040 1905 17

POWER MACS 4000 WALL-MOUNTED FRAME SYSTEMS WF1000

Description	No. of TC	No. of DB	No. of Frames	Ordering No.
Wall-Mounted Frame System WF1000-1 - 1 Sp	1	1	1	9040 1905 21
Wall-Mounted Frame System WF1000-1 - 2 Sp	2	1	1	9040 1905 22
Wall-Mounted Frame System WF1000-1 - 3 Sp	3	1	1	9040 1905 23
Wall-Mounted Frame System WF1000-1 - 4 Sp	4	1	1	9040 1905 24
Wall-Mounted Frame System WF1000-2 - 5 Sp	5	1	2	9040 1905 25
Wall-Mounted Frame System WF1000-2 - 6 Sp	6	1	2	9040 1905 26
Wall-Mounted Frame System WF1000-2 - 7 Sp	7	2	2	9040 1905 27
Wall-Mounted Frame System WF1000-2 - 8 Sp	8	2	2	9040 1905 28
Wall-Mounted Frame System WF1000-3 - 9 Sp	9	2	3	9040 1905 29
Wall-Mounted Frame System WF1000-3 - 10 Sp	10	2	3	9040 1905 30
Wall-Mounted Frame System WF1000-3 - 11 Sp	11	2	3	9040 1905 31
Wall-Mounted Frame System WF1000-3 - 12 Sp	12	2	3	9040 1905 32

POWER MACS 4000 WALL-MOUNTED FRAME SYSTEMS WF1300

Description	No. of TC	No. of DB	No. of Frames	Ordering No.
Wall-Mounted Frame System WF1300-1 - 1 Sp	1	1	1	9040 1905 41
Wall-Mounted Frame System WF1300-1 - 2 Sp	2	1	1	9040 1905 42
Wall-Mounted Frame System WF1300-1 - 3 Sp	3	1	1	9040 1905 43
Wall-Mounted Frame System WF1300-1 - 4 Sp	4	1	1	9040 1905 44
Wall-Mounted Frame System WF1300-1 - 5 Sp	5	1	1	9040 1905 45
Wall-Mounted Frame System WF1300-1 - 6 Sp	6	1	1	9040 1905 46
Wall-Mounted Frame System WF1300-2 - 7 Sp	7	2	2	9040 1905 47
Wall-Mounted Frame System WF1300-2 - 8 Sp	8	2	2	9040 1905 48
Wall-Mounted Frame System WF1300-2 - 9 Sp	9	2	2	9040 1905 49
Wall-Mounted Frame System WF1300-2 - 10 Sp	10	2	2	9040 1905 50
Wall-Mounted Frame System WF1300-2 - 11 Sp	11	2	2	9040 1905 51
Wall-Mounted Frame System WF1300-2 - 12 Sp	12	2	2	9040 1905 52
Wall-Mounted Frame System WF1300-3 - 13 Sp	13	3	3	9040 1905 53
Wall-Mounted Frame System WF1300-3 - 14 Sp	14	3	3	9040 1905 54
Wall-Mounted Frame System WF1300-3 - 15 Sp	15	3	3	9040 1905 55
Wall-Mounted Frame System WF1300-3 - 16 Sp	16	3	3	9040 1905 56
Wall-Mounted Frame System WF1300-3 - 17 Sp	17	3	3	9040 1905 57
Wall-Mounted Frame System WF1300-3 - 18 Sp	18	3	3	9040 1905 58

Power MACS 4000 wall-mounted frame disconnect kit

DISCONNECT SWITCH OPTIONS

- ▶ Atlas Copco MSB II
- ▶ Square D - NEMA 12
- ▶ Allen Bradley - NEMA 12

SCOPE OF SUPPLY

Power MACS 4000 Wall-Mounted Frame Disconnect Kit

- ▶ Disconnect switch
- ▶ Fuses (3)
- ▶ Power cable and conduit

Power MACS 4000 Wall-Mounted Frame Disconnect Kit with Service Box

- ▶ Disconnect switch
- ▶ Fuses (3)
- ▶ Power cable and conduit
- ▶ Service Box

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 Wall-Mounted Frame System

OPTIONS

- ▶ Mounting Frame WS600, WS1000 or WS1300 Kit
- ▶ Mounting Bracket (MSB II / Square D / Allen-Bradley) - mounts to side of frame
- ▶ Power cable and conduit

NOTES

- ▶ Select Disconnect size based on nutrunner type and quantity
- ▶ Fuse size to be determined by Atlas Copco engineering
- ▶ Must select Mounting Frame or Mounting Bracket (MSB II / Square D / Allen-Bradley)

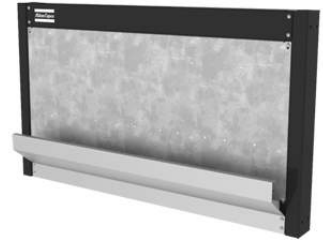
POWER MACS 4000 WALL-MOUNTED FRAME DISCONNECT KIT AND OPTIONS

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
Wall-Mounted Frame Disconnect Kit - MSB II - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1905 61
Wall-Mounted Frame Disconnect Kit - MSB II - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1905 62
Wall-Mounted Frame Disconnect Kit - Square D - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1905 63
Wall-Mounted Frame Disconnect Kit - Square D - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1905 64
Wall-Mounted Frame Disconnect Kit - Allen Bradley - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1905 65
Wall-Mounted Frame Disconnect Kit - Allen Bradley - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1905 66
Wall-Mounted Frame Disconnect w/SB Kit - MSB II - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1905 67
Wall-Mounted Frame Disconnect w/SB Kit - MSB II - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1905 68
Wall-Mounted Frame Disconnect w/SB Kit - Square D - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1905 69
Wall-Mounted Frame Disconnect w/SB Kit - Square D - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1905 70
Wall-Mounted Frame Disconnect w/SB Kit - Allen Bradley - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1905 71
Wall-Mounted Frame Disconnect w/SB Kit - Allen Bradley - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1905 72
Options						
Wall-Mounted Frame Disconnect Kit Mounting Frame - WS600						9040 1905 81
Wall-Mounted Frame Disconnect Kit Mounting Frame - WS1000						9040 1905 82
Wall-Mounted Frame Disconnect Kit Mounting Frame - WS1300						9040 1905 83
Wall-Mounted Frame Disconnect Kit - Mounting Bracket (MSB II / Square D / Allen- Bradley)						9040 1905 84

Power MACS 4000 wall-mounted frames

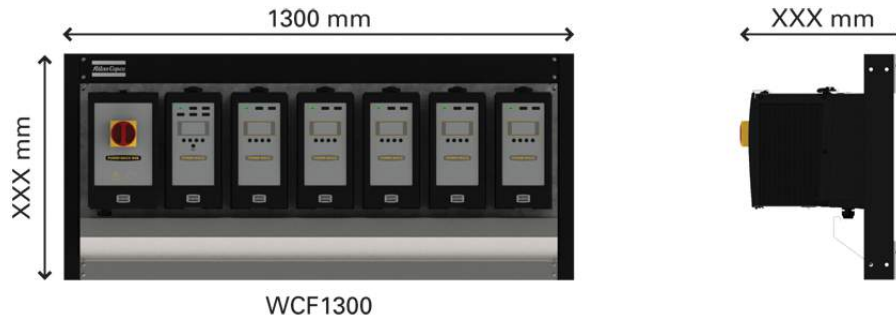
POWER MACS 4000 WALL-MOUNTED FRAMES

Description	Ordering No.
PM 4000 Wall-Mounted Frame WF600	8439 4451 01
PM 4000 Wall-Mounted Frame WF1000	8439 4451 02
PM 4000 Wall-Mounted Frame WF1300	8439 4451 03



Power MACS 4000 wall-mounted frames

DIMENSIONS



1-FRAME - POWER MACS 4000 WALL-MOUNTED FRAME DIMENSIONS

Description	Maximum No. of Distribution Boxes and Tightenings	Width mm	Height mm	Depth with Power MACS 4000 Tightening mm
WF600-1	1 DB + 2 TC	600	575	375
WF1000-1	1 DB + 4 TC	1000	575	375
WF1300-1	1 DB + 6 TC	1200	575	375

2-FRAME - POWER MACS 4000 WALL-MOUNTED FRAME DIMENSIONS

Description	Maximum No. of Distribution Boxes and Tightenings	Width mm	Height mm	Depth with Power MACS 4000 Tightening mm
WF600-2	1 DB + 5 TC	600	1150	375
WF1000-2	2 DB + 8 TC	1000	1150	375
WF1300-2	2 DB + 12 TC	1200	1150	375

3-FRAME - POWER MACS 4000 WALL-MOUNTED FRAME DIMENSIONS

Description	Maximum No. of Distribution Boxes and Tightenings	Width mm	Height mm	Depth with Power MACS 4000 Tightening mm
WF600-3	2 DB + 7 TC	600	1725	375
WF1000-3	2 DB + 12 TC	1000	1725	375
WF1300-3	3 DB + 18 TC	1200	1150	375

Power MACS 4000 wall-mounted frame systems

The Atlas Copco Floor Wall-Mounted Frame System is a complete tightening system that utilizes the wall-mounted frame concept for mounting controllers and related accessories. The wall-mounted frame can be mounted to a machine structure or base, a custom frame, or concrete wall. The compact, modular system requires minimal floor space. Multiple frames can be stacked up to three frames.

BENEFITS

- ▶ Protects controllers and accessories
- ▶ Secures tool and accessory cables within frame
- ▶ Decreases the use of floor space
- ▶ Configurable for a variety of applications
- ▶ Light weight for ease of handling

FEATURES

- ▶ Accommodates Power MACS 4000 Controllers
- ▶ Front mounting for controller and accessory mounting
- ▶ Mounting plates - controllers are mounted on pre-drilled mounting plates
- ▶ Cover plates - maintenance friendly with quick release connectors; allows access to cables
- ▶ Lifting hooks/frame connection - for handling during installation; connect up to three frames
- ▶ Cable management routing
- ▶ Capable of custom mounting other devices, such as ComNodes



SCOPE OF SUPPLY

- ▶ Power MACS 4000 Wall-Mounted Frame(s)
- ▶ Distribution Box(es) (DB II), fuses and power cables
- ▶ E-Stop cables
- ▶ Ethernet switch(es) and cables (for 2-controllers or more)
- ▶ Ground cables (for 2-controllers or more)
- ▶ Integration of controllers and interconnection

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 Wall-Mounted Frame Disconnect Switch Kit
- ▶ Power MACS 4000 Tightening Controllers: (1) Primary and Secondary without Ethernet switches
- ▶ QST Nutrunners with Tool/Extension Cables

OPTIONS

System Accessory

- ▶ Indicator Box
- ▶ Operator Panel
- ▶ MiniDisplay
- ▶ MaxiDisplay
- ▶ Stacklight
- ▶ Selector
- ▶ Wireless Selector
- ▶ Rotary Selector
- ▶ I/O Expander
- ▶ Barcode Scanner

Software

- ▶ ToolsTalk Power MACS Software

Power MACS 4000 wall-mounted frame systems

NOTES

► Power Requirements

- Feed Voltage: 3 phase 400 – 480 VAC, protective earth (PE), 50 – 60Hz
- Main supply voltage fluctuations are recommended not to reach higher voltage levels than 500V (=4% of nominal voltage: 480V) and not lower than -10% of nominal voltage.

► Fuse Rating (approximation to be confirmed per project): 16 - 63A

► Maximum ambient operating temperature: 40°C / 104°F

POWER MACS 4000 WALL FRAME KITS AND OPTIONS

Description	No. of Controllers	06WF 06	06WF 10	06WF 13	Total Width mm	Fuse Rating	Ethernet Switch	Ordering No.
PM4000 kit 01ch 06WF06-1 QST 34-90	1	1	-	-	600	16 A	1	8439 0010 31
PM4000 kit 02ch 06WF06-1 QST 34-90	2	1	-	-	600	16 A	1	8439 0010 32
PM4000 kit 03ch 06WF10-1 QST 34-90	3	-	1	-	1.000	16 A	1	8439 0010 33
PM4000 kit 04ch 06WF10-1 QST 34-90	4	-	1	-	1.000	16 A	1	8439 0010 34
PM4000 kit 05ch 06WF13-1 QST 34-90	5	1	-	-	1.300	25 A	1	8439 0010 35
PM4000 kit 06ch 06WF13-1 QST 34-90	6	1	-	-	1.300	25 A	2	8439 0010 36
PM4000 kit 07ch 06WF10-2 QST 34-90	7	-	2	-	1.000	25 A	2	8439 0010 37
PM4000 kit 08ch 06WF10-2 QST 34-90	8	-	2	-	1.000	25 A	2	8439 0010 38
PM4000 kit 09ch 06WF13-2 QST 34-90	9	-	-	2	1.300	25 A	3	8439 0010 39
PM4000 kit 10ch 06WF13-2 QST 34-90	10	-	-	2	1.300	32 A	3	8439 0010 40
PM4000 kit 11ch 06WF13-2 QST 34-90	11	-	-	2	1.300	32 A	4	8439 0010 41
PM4000 kit 12ch 06WF13-2 QST 34-90	12	-	-	2	1.300	32 A	4	8439 0010 42
PM4000 kit 13ch 06WF13-3 QST 34-90	13	-	-	3	1.300	50 A	5	8439 0010 43
PM4000 kit 14ch 06WF13-3 QST 34-90	14	-	-	3	1.300	50 A	5	8439 0010 44
PM4000 kit 15ch 06WF13-3 QST 34-90	15	-	-	3	1.300	50 A	6	8439 0010 45
PM4000 kit 16ch 06WF13-3 QST 34-90	16	-	-	3	1.300	50 A	6	8439 0010 46
PM4000 kit 17ch 06WF13-3 QST 34-90	17	-	-	3	1.300	63 A	6	8439 0010 47
PM4000 kit 18ch 06WF13-3 QST 34-90	18	-	-	3	1.300	63 A	6	8439 0010 48
Options								
Modification WFxx PM4000								8995 3328 13
Additional Station PM4000 Hardware & Software								8995 3324 20

Power MACS 4000 wall-mounted frame systems

WALL FRAME DIMENSION PM4000

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Total Height mm	Total Depth mm
8439 0010 3x	1 - 18	600	1.300	1.725	374



Power MACS 4000 mounting plate systems

A complete tightening system.

SCOPE OF SUPPLY

- ▶ Power MACS 4000 mounting plates and hardware
- ▶ Distribution Box(es) DB II
- ▶ Distribution Box Fuses
- ▶ Interconnecting cable/conduit
- ▶ TC Power Cable(s)
- ▶ E-stop Cable(s) (2 spindles or greater only)
- ▶ Ethernet Cable(s) (2 spindles or greater only)
- ▶ Ethernet Switch(es)
- ▶ Ground Cable

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 MP Disconnect Switch Kit
- ▶ Power MACS 4000 Tightening Controller(s) - (1) Primary and Secondary TC(s) without Ethernet Switch(es)
- ▶ QST Nutrunner(s)
- ▶ QST Tool/Extension Cable(s)

OPTIONS

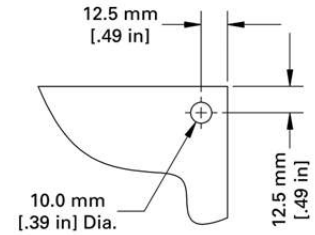
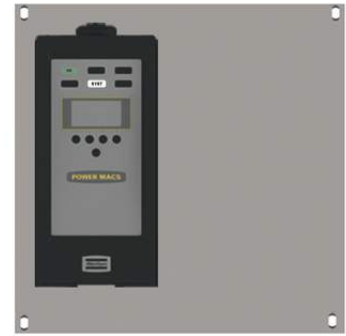
- ▶ Operator Interface / Kit(s) and Cable(s)
- ▶ ToolsTalk Power MACS Software

NOTES

- ▶ Mounting Plate System Kits cannot be used with Floor Stands

POWER MACS 4000 MOUNTING PLATE SYSTEMS

Description	No. of Controllers	Plate Width			mm	Ordering No.
		MP500	MP900	MP1200		
PM 4000 MP System Kit - 1 Sp (MP500)	1	1	-	-	500	9040 1297 01
PM 4000 MP System Kit - 2 Sp (MP900)	2	-	1	-	900	9040 1297 02
PM 4000 MP System Kit - 3 Sp (MP900)	3	-	1	-	900	9040 1297 03
PM 4000 MP System Kit - 4 Sp (MP900)	4	-	1	-	900	9040 1297 04
PM 4000 MP System Kit - 5 Sp (MP1200)	5	-	-	1	1200	9040 1297 05
PM 4000 MP System Kit - 6 Sp (MP1200)	6	-	-	1	1200	9040 1297 06
PM 4000 MP System Kit - 7 Sp (MP900-2)	7	-	2	-	900	9040 1297 07
PM 4000 MP System Kit - 8 Sp (MP900-2)	8	-	2	-	900	9040 1297 08
PM 4000 MP System Kit - 9 Sp (MP1200-2)	9	-	-	2	1200	9040 1297 09
PM 4000 MP System Kit - 10 Sp (MP1200-2)	10	-	-	2	1200	9040 1297 10
PM 4000 MP System Kit - 11 Sp (MP1200-2)	11	-	-	2	1200	9040 1297 11
PM 4000 MP System Kit - 12 Sp (MP1200-2)	12	-	-	2	1200	9040 1297 12
PM 4000 MP System Kit - 13 Sp (MP1200-3)	13	-	-	3	1200	9040 1297 13
PM 4000 MP System Kit - 14 Sp (MP1200-3)	14	-	-	3	1200	9040 1297 14
PM 4000 MP System Kit - 15 Sp (MP1200-3)	15	-	-	3	1200	9040 1297 15



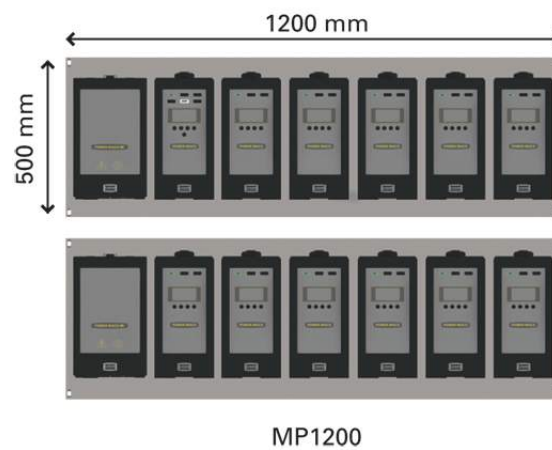
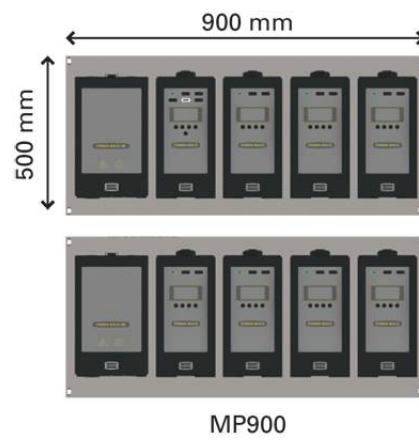
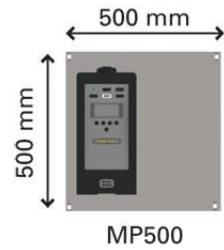
Mounting Holes
Note: (1) Hole in each corner of plate.

Power MACS 4000 mounting plate systems

Description	No. of Controllers				Plate Width mm	Ordering No.
		MP500	MP900	MP1200		
PM 4000 MP System Kit - 16 Sp (MP1200-3)	16	-	-	3	1200	9040 1297 16
PM 4000 MP System Kit - 17 Sp (MP1200-3)	17	-	-	3	1200	9040 1297 17
PM 4000 MP System Kit - 18 Sp (MP1200-3)	18	-	-	3	1200	9040 1297 18
PM 4000 MP System Kit - 19 Sp (MP1200-4)	19	-	-	4	1200	9040 1297 19
PM 4000 MP System Kit - 20 Sp (MP1200-4)	20	-	-	4	1200	9040 1297 20
PM 4000 MP System Kit - 21 Sp (MP1200-4)	21	-	-	4	1200	9040 1297 21
PM 4000 MP System Kit - 22 Sp (MP1200-4)	22	-	-	4	1200	9040 1297 22
PM 4000 MP System Kit - 23 Sp (MP1200-4)	23	-	-	4	1200	9040 1297 23
PM 4000 MP System Kit - 24 Sp (MP1200-4)	24	-	-	4	1200	9040 1297 24
PM 4000 MP System Kit - 25 Sp (MP1200-5)	25	-	-	5	1200	9040 1297 25
PM 4000 MP System Kit - 26 Sp (MP1200-5)	26	-	-	5	1200	9040 1297 26
PM 4000 MP System Kit - 27 Sp (MP1200-5)	27	-	-	5	1200	9040 1297 27
PM 4000 MP System Kit - 28 Sp (MP1200-5)	28	-	-	5	1200	9040 1297 28
PM 4000 MP System Kit - 29 Sp (MP1200-5)	29	-	-	5	1200	9040 1297 29
PM 4000 MP System Kit - 30 Sp (MP1200-5)	30	-	-	5	1200	9040 1297 30

Power MACS 4000 mounting plate systems

DIMENSIONS



Power MACS 4000 mounting plate kits

The Mounting Plate Kits from Atlas Copco offer an open controller mounting system prepared for customer integration.

SCOPE OF SUPPLY

- ▶ Mounting Plate
 - Controllers are mounted on pre-drilled mounting
- ▶ Cable hooks
 - Easy cable handling
- ▶ Main Switch Box / Distribution Box (DB)
 - The MSB / DB is used for power distribution and makes power management easy
- ▶ System cable kit
 - Power, Ethernet, E-Stop and Protective-Earth (PE) cables to connect the Power MACS 4000 system
- ▶ System Test / Documentation
 - System test according to internal test routine, one binder and CD of standard documentation

REQUIRED EQUIPMENT

- ▶ Power MACS Primary Tightening Controllers (PTC)
- ▶ Power MACS Secondary Tightening Controllers (STC)
- ▶ QST Nutrunners
- ▶ QST Cables

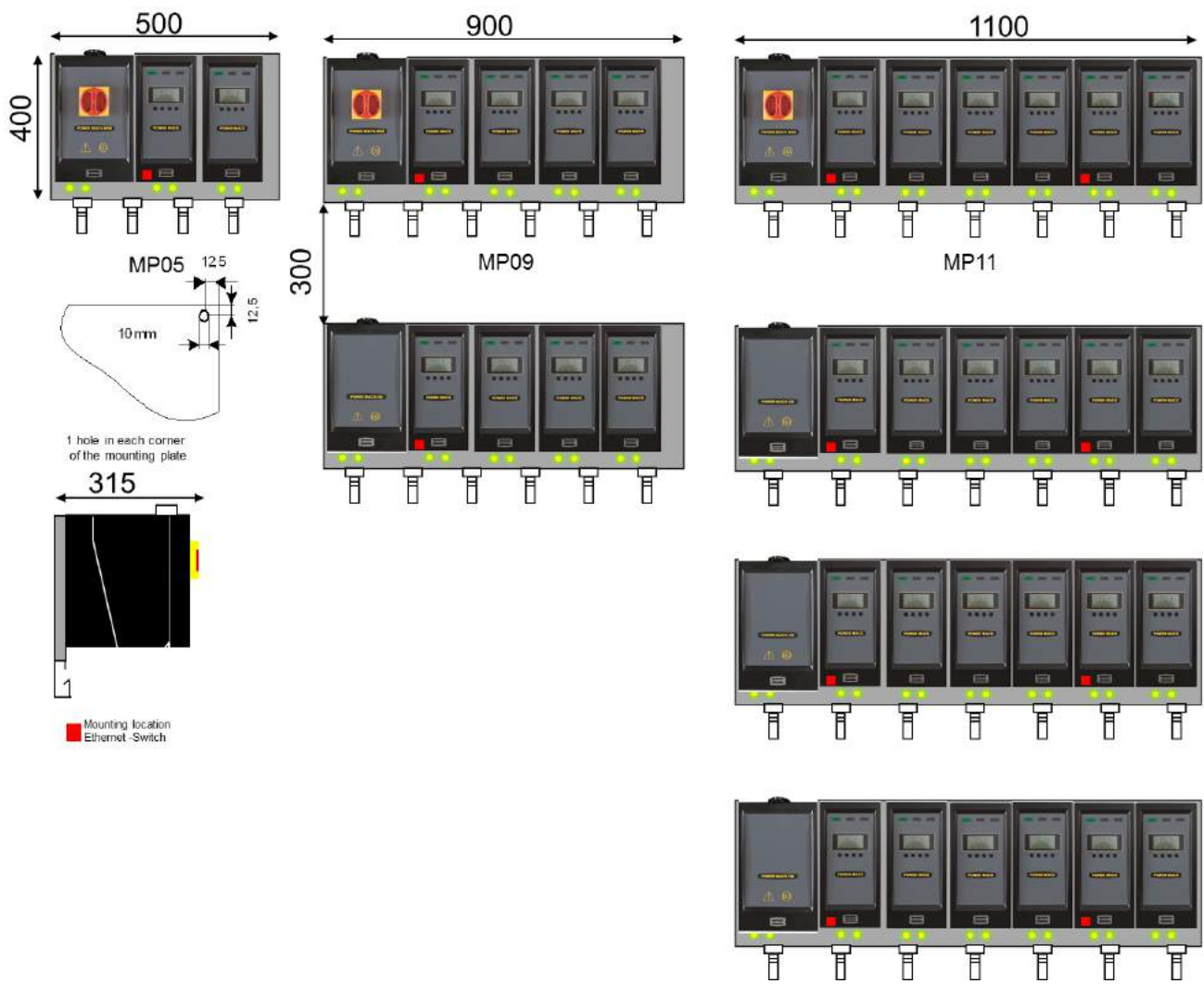
OPTIONS

- ▶ Stacklight mounting
- ▶ ComNode mounting
- ▶ Scanner mounting
- ▶ HMI (Mini/MaxiDisplay)
- ▶ Additional Station PM4000 Hardware & Software

NOTES

- ▶ Power Requirements
 - Feed Voltage: 3 phase 400 – 480 VAC, protective earth (PE), 50 – 60Hz
 - Main supply voltage fluctuations are recommended not to reach higher voltage levels than 500V (=4% of nominal voltage: 480V) and not lower than -10% of nominal voltage.
- ▶ Fuse Rating (approximation to be confirmed per project): 16 - 63A
- ▶ Maximum ambient operating temperature: 40°C / 104°F
 - Mounting Plate Kits cannot be used with Floor stands

Power MACS 4000 mounting plate kits



MP Overview Power MACS 4000

MOUNTING PLATE DIMENSION PM4000

Description	No. of Controllers	Min. Total Width mm	Max. Total Width mm	Total Height mm	Total Depth mm
8439 0010 xx	1 - 24	500	1.100	2.500	315

Power MACS 4000 mounting plate kits

POWER MACS 4000 MOUNTING PLATE KITS AND OPTIONS

Description	No. of Controllers	MP05	MP09	MP11	Total Width mm	Fuse Rating	Ethernet Switch	Ordering No.
PM4000 kit 01ch MP05-1 QST 34-90	1	1	-	-	500	16 A	1	8439 0010 01
PM4000 kit 02ch MP05-1 QST 34-90	2	1	-	-	500	16 A	1	8439 0010 02
PM4000 kit 03ch MP09-1 QST 34-90	3	-	1	-	900	16 A	1	8439 0010 03
PM4000 kit 04ch MP09-1 QST 34-90	4	-	1	-	900	16 A	1	8439 0010 04
PM4000 kit 05ch MP11-1 QST 34-90	5	1	-	-	1.100	25 A	1	8439 0010 05
PM4000 kit 06ch MP11-1 QST 34-90	6	1	-	-	1.100	25 A	2	8439 0010 06
PM4000 kit 07ch MP09-2 QST 34-90	7	-	2	-	900	25 A	2	8439 0010 07
PM4000 kit 08ch MP09-2 QST 34-90	8	-	2	-	900	25 A	2	8439 0010 08
PM4000 kit 09ch MP11-2 QST 34-90	9	-	-	2	1.100	25 A	3	8439 0010 09
PM4000 kit 10ch MP11-2 QST 34-90	10	-	-	2	1.100	32 A	3	8439 0010 10
PM4000 kit 11ch MP11-2 QST 34-90	11	-	-	2	1.100	32 A	4	8439 0010 11
PM4000 kit 12ch MP11-2 QST 34-90	12	-	-	2	1.100	32 A	4	8439 0010 12
PM4000 kit 13ch MP11-3 QST 34-90	13	-	-	3	1.100	50 A	5	8439 0010 13
PM4000 kit 14ch MP11-3 QST 34-90	14	-	-	3	1.100	50 A	5	8439 0010 14
PM4000 kit 15ch MP11-3 QST 34-90	15	-	-	3	1.100	50 A	5	8439 0010 15
PM4000 kit 16ch MP11-3 QST 34-90	16	-	-	3	1.100	50 A	5	8439 0010 16
PM4000 kit 17ch MP11-3 QST 34-90	17	-	-	3	1.100	63 A	6	8439 0010 17
PM4000 kit 18ch MP11-3 QST 34-90	18	-	-	3	1.100	63 A	6	8439 0010 18
PM4000 kit 19ch MP11-4 QST 34-62	19	-	-	4	1.100	63 A	7	8439 0010 19
PM4000 kit 20ch MP11-4 QST 34-62	20	-	-	4	1.100	63 A	7	8439 0010 20
PM4000 kit 21ch MP11-4 QST 34-62	21	-	-	4	1.100	63 A	7	8439 0010 21
PM4000 kit 22ch MP11-4 QST 34-62	22	-	-	4	1.100	63 A	7	8439 0010 22
PM4000 kit 23ch MP11-4 QST 34-62	23	-	-	4	1.100	63 A	8	8439 0010 23
PM4000 kit 24ch MP11-4 QST 34-62	24	-	-	4	1.100	63 A	8	8439 0010 24
Options								
Modification MPxx PM4000								8995 3328 00
Additional Station PM4000 Hardware & Software								8995 3324 20

Power MACS 4000 mounting plate disconnect kit

DISCONNECT SWITCH OPTIONS

- ▶ Atlas Copco MSB II
- ▶ Square D - NEMA 12
- ▶ Allen Bradley - NEMA 12

SCOPE OF SUPPLY

Power MACS 4000 Mounting Plate Disconnect Kit

- ▶ Disconnect Switch
- ▶ Fuses (3)
- ▶ Power cable and conduit
- ▶ Mounting bracket and hardware for disconnect switch



Power MACS 4000 Mounting Plate Disconnect with Service Box Kit

- ▶ Disconnect Switch
- ▶ Fuses (3)
- ▶ Power cable and conduit
- ▶ 500 mm mounting plate and hardware
- ▶ Service Box

REQUIRED EQUIPMENT

- ▶ Power MACS 4000 MP System Kit

NOTES

- ▶ Select disconnect size based on nutrunner type and quantity.
- ▶ Fuse size to be determined by Atlas Copco engineering.

POWER MACS 4000 MP DISCONNECT SWITCH KITS SQUARE D - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
MP Disconnect Switch Kit - Square D - NEMA12 - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1211 05
MP Disconnect Switch Kit - Square D - NEMA12 - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1211 06
MP Disconnect Switch Kit - Square D - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 26	9040 1211 07
MP Disconnect Switch Kit - Square D - NEMA12 - 200 Amp	200	-	-	-	27 - 30	9040 1211 08

POWER MACS 4000 MP DISCONNECT SWITCH KITS ALLEN-BRADLEY - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
MP Disconnect Switch Kit - Allen-Bradley - NEMA12 - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1211 09
MP Disconnect Switch Kit - Allen-Bradley - NEMA12 - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1211 10
MP Disconnect Switch Kit - Allen-Bradley - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 26	9040 1211 11
MP Disconnect Switch Kit - Allen-Bradley - NEMA12 - 200 Amp	200	-	-	-	27 - 30	9040 1211 12

Power MACS 4000 mounting plate disconnect kit

POWER MACS 4000 MP DISCONNECT SWITCH KITS MSB II

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
MP Disconnect Switch Kit - MSB II - 30 Amp	30	1 - 21	1 - 13	1 - 10	1 - 8	9040 1211 35
MP Disconnect Switch Kit - MSB II - 60 Amp	60	22 - 30	14 - 27	11 - 20	9 - 16	9040 1211 36

POWER MACS 4000 MP DISCONNECT SWITCH WITH SERVICE BOX KITS SQUARE D - NEMA12

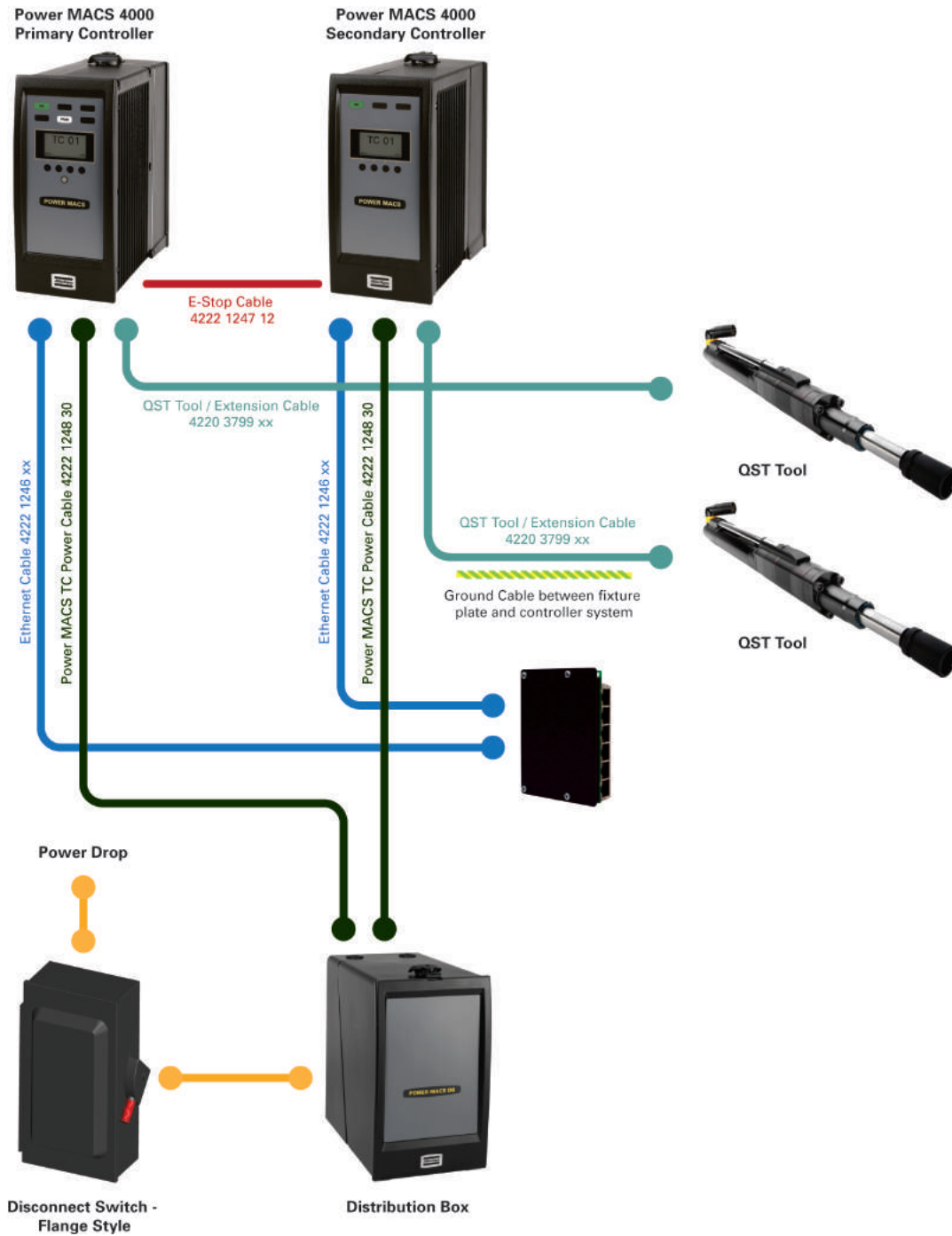
Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
MP Disconnect Switch w/SB Kit - Square D - NEMA12 - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1211 25
MP Disconnect Switch w/SB Kit - Square D - NEMA12 - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1211 26
MP Disconnect Switch w/SB Kit - Square D - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 25	9040 1211 27
MP Disconnect Switch w/SB Kit - Square D - NEMA12 - 200 Amp	200	-	-	-	26 - 30	9040 1211 28

POWER MACS 4000 MP DISCONNECT SWITCH WITH SERVICE BOX KITS ALLEN-BRADLEY - NEMA12

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
MP Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1211 29
MP Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1211 30
MP Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 100 Amp	100	-	28 - 30	21 - 30	17 - 25	9040 1211 31
MP Disconnect Switch w/SB Kit - Allen-Bradley - NEMA12 - 200 Amp	200	-	-	-	26 - 30	9040 1211 32

POWER MACS 4000 MP DISCONNECT SWITCH WITH SERVICE BOX KITS MSB II

Description	Disconnect Size Amp	QST 34/42	QST 50	QST 62	QST 80/90	Ordering No.
MP Disconnect Switch w/SB Kit - MSB II - 30 Amp	30	1 - 20	1 - 13	1 - 9	1 - 7	9040 1211 37
MP Disconnect Switch w/SB Kit - MSB II - 60 Amp	60	21 - 30	14 - 27	10 - 20	8 - 16	9040 1211 38



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 floor stand accessories

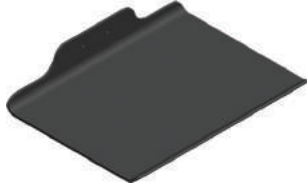
POWER MACS 4000 FLOOR STAND ACCESSORIES

SCOPE OF SUPPLY

- ▶ Brackets
- ▶ Mounting Hardware



FS ComNode Mounting Bracket



FS Keyboard Tray



FS Stacklight Mounting Bracket



Disconnect Switch Mounting Bracket



Description	Ordering No.
FS ComNode Mounting Bracket	9040 1903 10
FS Keyboard Tray	9040 1903 11
FS Document Enclosure	9040 1903 12
FS Stacklight Mounting Bracket	9040 1903 13
FS Cable Cover	9040 1903 14

POWER MACS 4000 FS DISCONNECT SWITCH MOUNTING BRACKETS SQUARE D - NEMA12

SCOPE OF SUPPLY

- ▶ Brackets
- ▶ Mounting Hardware

Description	Width mm	Ordering No.
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 30 Amp	204	9040 1903 04
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 60 Amp	254	9040 1903 05
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 100 Amp	254	9040 1903 06
Mounting Bracket - FS Disconnect Switch - Square D - NEMA12 - 200 Amp	458	9040 1903 07

POWER MACS 4000 FS DISCONNECT SWITCH MOUNTING BRACKETS ALLEN-BRADLEY - NEMA12

SCOPE OF SUPPLY

- ▶ Brackets
- ▶ Mounting Hardware

Description	Width mm	Ordering No.
Mounting Bracket - FS Disconnect Switch - Allen-Bradley - NEMA12 - 30/60 Amp	277	9040 1903 25
Mounting Bracket - FS Disconnect Switch - Allen-Bradley - NEMA12 - 100 Amp	277	9040 1903 26
Mounting Bracket - FS Disconnect Switch - Allen-Bradley - NEMA12 - 200 Amp	277	9040 1903 27

Power MACS 4000 floor stand accessories

POWER MACS 4000 FLOOR STAND FRAMES

SCOPE OF SUPPLY

- ▶ Steel Construction
- ▶ Assembly Hardware

Description	Ordering No.
FS600 Frame	9040 1903 60
FS1000 Frame	9040 1903 61
FS1300 Frame	9040 1903 62



Power MACS 4000 Floor Stand Frame

POWER MACS 4000 TC MOUNTING/COVER PLATE KITS

SCOPE OF SUPPLY

- ▶ TC Mounting Plate
- ▶ Cover Plate
- ▶ Mounting Hardware

Description	Ordering No.
PM 4000 FS600 TC Mounting/Cover Plate Kit	9040 1903 65
PM 4000 FS1000 TC Mounting/Cover Plate Kit	9040 1903 66
PM 4000 FS1300 TC Mounting/Cover Plate Kit	9040 1903 67



Power MACS 4000 Floor Stand TC Mounting and Cover Plate

POWER MACS 4000 PD MOUNTING/COVER PLATE KITS

SCOPE OF SUPPLY

- ▶ PD Mounting Plate
- ▶ Cover Plate
- ▶ Mounting Hardware

Description	Ordering No.
PM 4000 FS600 PD Mounting/Cover Plate Kit	9040 1903 75
PM 4000 FS1000 PD Mounting/Cover Plate Kit	9040 1903 76
PM 4000 FS1300 PD Mounting/Cover Plate Kit	9040 1903 77



Power MACS 4000 Floor Stand PD Mounting and Cover Plate

POWER MACS 4000 BLIND PLATE KITS

SCOPE OF SUPPLY

- ▶ Blind Plates
- ▶ Mounting Hardware

Description	Ordering No.
FS600 Blind Plate Kit	9040 1903 85
FS1000 Blind Plate Kit	9040 1903 86
FS1300 Blind Plate Kit	9040 1903 87



Power MACS 4000 Floor Stand Front Side and Back Side

Power MACS 4000 options - Indicator Box

Indicator Box is a flexible indicator to be used with the operator handle for indication of status signals from the controller.

SCOPE OF SUPPLY

Indicator Box

- ▶ LED matrix for monitoring (red or green LED's) up to 10 spindles
- ▶ LED indicators for forward and reverse
- ▶ I/O-Bus connection
- ▶ Cycle Stop (Power Focus) / E-stop (Power MACS)
- ▶ (2) M12-4 Pin Connectors for operator handles

Indicator Box Power MACS Kit

- ▶ (1) Indicator Box
- ▶ (1) Indicator Box M23 Power MACS 4000 Cable (19-Pin) 2 m
- ▶ Integration and Set-up

REQUIRED EQUIPMENT

- ▶ Indicator Box M23 Cables

POWER FOCUS INDICATOR BOX KIT

Description	Ordering No.
Indicator Box	8435 3010 04
Indicator Box Power MACS 4000 Kit	9040 1064 73



Power MACS 4000 options - Indicator Box

CONNECTIVITY

Power MACS 4000
Primary Controller



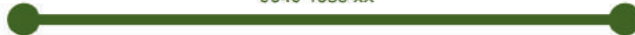
Indicator Box P/M 4000 Cable
4243 0278 80



Indicator Box M23 Extension Cable
4243 0282 xx



Indicator Box



M12 4-Pin Extension Cable
9040 1088 xx



Operator Handle

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - Indicator Box

FUNCTIONS

- ▶ Emergency Stop
- ▶ Forward / Reverse LED Indicators
- ▶ LED matrix for monitoring (dual coloured red and green LEDs) up to 10 spindles
- ▶ I/O-Bus connection
- ▶ Connector for second Start handle
- ▶ Stop-Category 3 (EN 13849-1)

SCOPE OF SUPPLY

- ▶ Indicator Box
- ▶ M23 Extension Cable, 15 m
- ▶ M23 Power MACS 4000 Cable, 2 m

REQUIRED EQUIPMENT

- ▶ Operator Handle
- See Mechanical Systems

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Indicator Box Cable

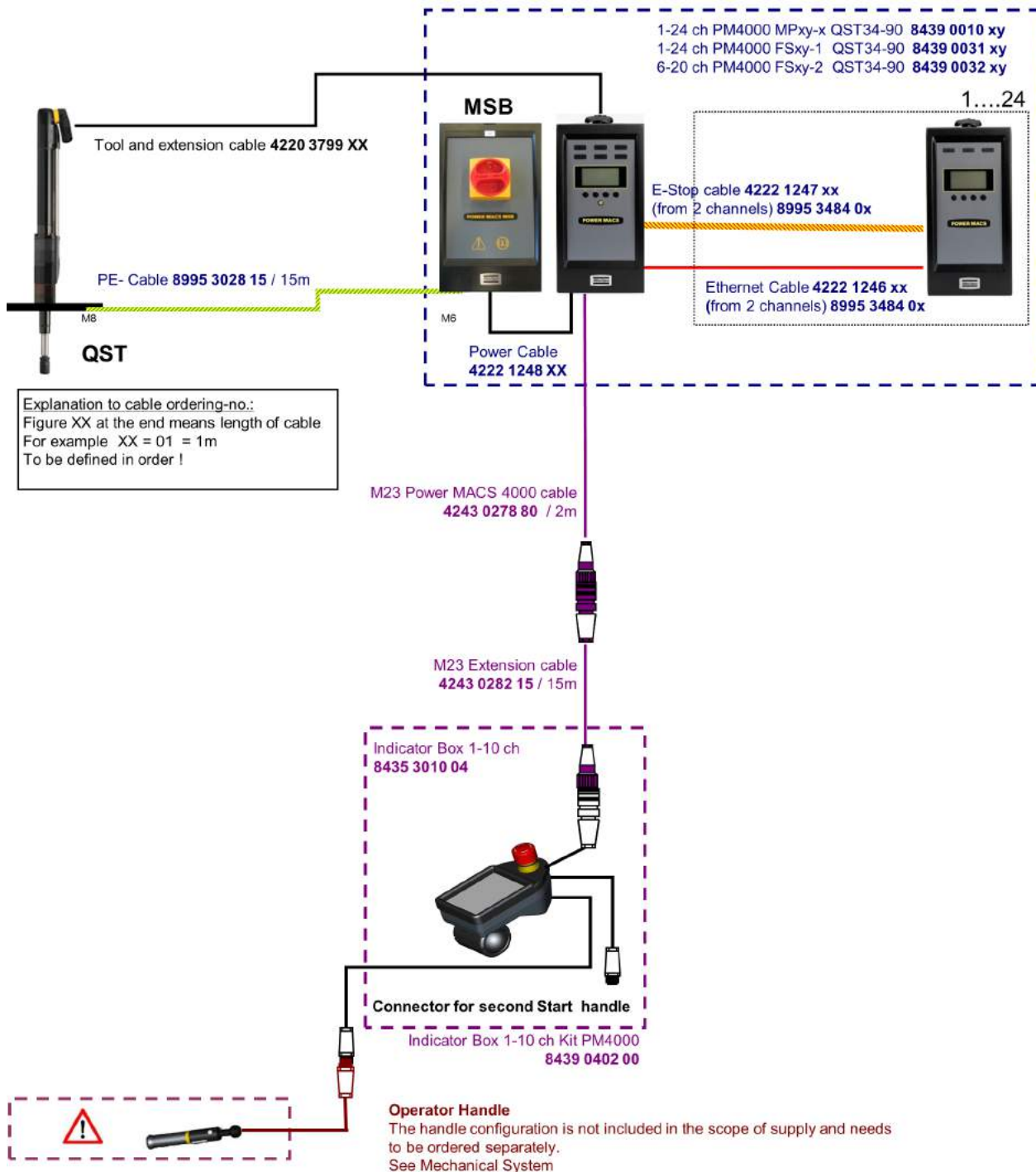


POWER MACS INDICATOR BOX KIT

Description	Ordering No.
Indicator Box 1-10 ch Kit PM4000	8439 0402 00

Power MACS 4000 options - Indicator Box

CONNECTIVITY



Power MACS 4000 options - Indicator Panel

FEATURES

- ▶ RUNNING/NOK (lamp per spindle)
- ▶ ALL OK (lamp)
- ▶ NOT OK (lamp)
- ▶ Lamptest (pushbutton)
- ▶ Control voltage on (illuminated pushbutton)
- ▶ Parameter selector switch (8 position)
- ▶ Emergency stop button (red pushbutton)
- ▶ Stop-Category 3 (EN 13849-1)
- ▶ Digital I/O's are included

SCOPE OF SUPPLY

- ▶ Indicator Panel PM4000
- ▶ Macs IO Adapter Cable 477, 15 m
- ▶ M23 Open end Cable, 1,5 m
- ▶ M23 Extension Cable, 15 m

OPTIONS

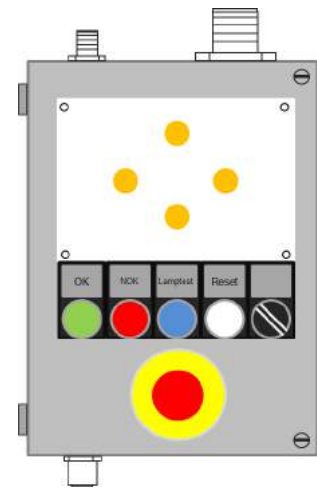
Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Macs IO Cable
- ▶ Indicator box Cable

POWER MACS INDICATOR PANEL KIT AND OPTION

Description	Ordering No.
Indicator Panel 1ch Kit PM4000	8995 3231 31
Indicator Panel 2ch Kit PM4000	8995 3231 32
Indicator Panel 3ch Kit PM4000	8995 3231 33
Indicator Panel 4ch Kit PM4000	8995 3231 34
Indicator Panel 5ch Kit PM4000	8995 3231 35
Indicator Panel 6ch Kit PM4000	8995 3231 36
Indicator Panel 7ch Kit PM4000	8995 3231 37
Indicator Panel 8ch Kit PM4000	8995 3231 38
Indicator Panel 9ch Kit PM4000	8995 3231 39
Indicator Panel 10ch Kit PM4000	8995 3231 40
Indicator Panel 11ch Kit PM4000	8995 3231 41
Indicator Panel 12ch Kit PM4000	8995 3231 42
Indicator Panel 13ch Kit PM4000	8995 3231 43
Indicator Panel 14ch Kit PM4000	8995 3231 44
Indicator Panel 15ch Kit PM4000	8995 3231 45
Indicator Panel 16ch Kit PM4000	8995 3231 46
Indicator Panel 17ch Kit PM4000	8995 3231 47
Indicator Panel 18ch Kit PM4000	8995 3231 48
Indicator Panel 19ch Kit PM4000	8995 3231 49
Indicator Panel 20ch Kit PM4000	8995 3231 50
Indicator Panel 21ch Kit PM4000	8995 3231 51
Indicator Panel 22ch Kit PM4000	8995 3231 52
Indicator Panel 23ch Kit PM4000	8995 3231 53
Indicator Panel 24ch Kit PM4000	8995 3231 54
Options	
Mechanical connection for Indicator Panel PM4000	8995 7890 41



Indicator Panel 4ch

Power MACS 4000 options - Operator Panel

Operator Panel offers high flexibility including configurable switches, lamps and buttons as well as displays and external I/O's.

SCOPE OF SUPPLY

Operator Panel - Basic

- ▶ (3) Configurable lamp positions
- ▶ (2) Configurable button positions
- ▶ (1) Lamp test
- ▶ (1) Switch
- ▶ (1) Display for running Pset

Operator Panel - Advanced

- ▶ (4) Configurable lamp positions
- ▶ (3) Configurable button positions
- ▶ (1) Lamp test
- ▶ (1) Switch, (1) Key switch and (1) Selector switch
- ▶ (2) Displays for selector switch position and running Pset

Operator Panel (Basic and Advanced) Kit

- ▶ (1) Standard Operator Panel
- ▶ Integration and Set-up

Operator Panel (Basic and Advanced) Custom Configuration Kit

- ▶ (1) Customized Operator Panel
- ▶ Integration and Set-up
- ▶ Configuration must be identified at time of order

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable

OPERATOR PANEL - POWER MACS 4000

Description	Ordering No.
Operator Panel Advanced	8433 0565 00
Operator Panel Basic	8433 0565 10
Operator Panel Basic Kit	9040 1064 65
Operator Panel Basic Custom Configuration Kit	9040 1064 66
Operator Panel Advanced Kit	9040 1064 67
Operator Panel Advanced Custom Configuration Kit	9040 1064 68



Operator Panel - Advanced

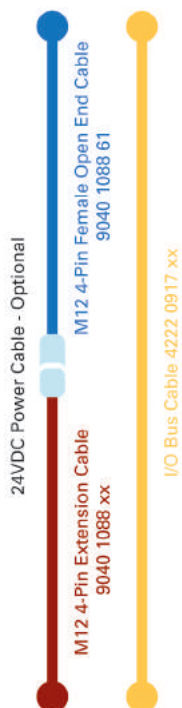


Operator Panel - Basic

Power MACS 4000 options - Operator Panel

CONNECTIVITY

Power MACS 4000
Primary Controller



I/O Bus Cable



Operator Panel



Operator Handle

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - Operator Panel

A key phrase in today's production is Error Proofing. The Controllers of the series Power MACS can be equipped with standard solutions for the worker support. The Operator Panel offers high flexibility including configurable switches, lamps and buttons as well displays and external I/O's. It is easily connected to the MACS I/O port on the Power MACS 4000 Controller.

- ▶ Operator Panel Advanced
- ▶ Operator Panel Basic

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 467; 15 m

REQUIRED EQUIPMENT

- ▶ E-Stop Operator Panel might be required
 - ▶ Operator Handle might be required
- See Mechanical Systems

OPTIONS

Extension cables or other cable lengths must be ordered separately.
See Accessories

- ▶ I/O Bus Cable

NOTES

- ▶ The operator handle can be connected directly to the Operator Panel with the control adapter cable 541 01

POWER MACS OPERATOR PANEL KIT AND OPTIONS

Description	Ordering No.
Operator Panel Advanced Kit PM4000	8439 0401 00
Operator Panel Basic Kit PM4000	8439 0401 01
Modification Operator Panel PM4000	8995 3328 60
Options	
Mechanical connection for Operator Panel PM4000	8995 7890 31



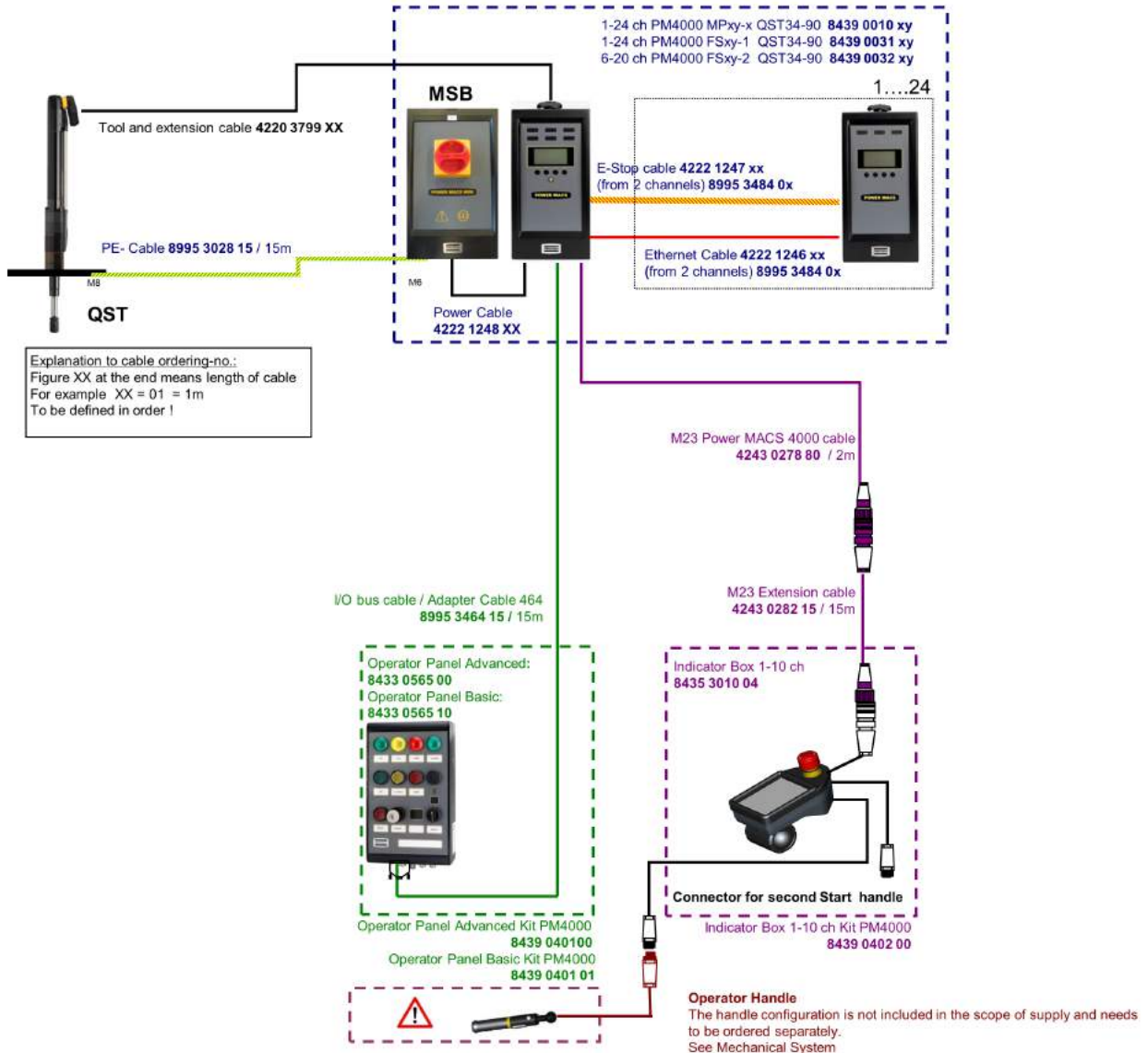
Operator Panel - Advanced



Operator Panel - Basic

Power MACS 4000 options - Operator Panel

CONNECTIVITY



Power MACS 4000 options - E-stop Operator Panel

The Emergency Stop pushbutton is placed in Pos I on the Operator Panel.

- ▶ Stop category 3 (EN 13849-1)
- ▶ The control cable 532 connects the Operator Panel to the PM.
- ▶ The operator handle can be connected directly to the Operator Panel with the control adapter cable 541 01.

SCOPE OF SUPPLY

- ▶ Actuator mushroom-shaped pushbutton maintained-contact type 40 mm
- ▶ Control Adapter Cable 532; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Control Adapter Cable



POWER MACS E-STOP OPERATOR PANEL

Description	Ordering No.
E-Stop OP with Connection Start Kit PM4000	8995 3130 03
Push turn function pushbutton "Ronis"	8995 6016 87
Push turn function pushbutton "CES"	8995 6016 88
Push turn function pushbutton "BKS S1"	8995 6016 89
Push turn function pushbutton "OMR"	8995 6016 90

Power MACS 4000 options - MiniDisplay 2

MiniDisplay 2 is a remote HMI that can be connected to Power Focus or Pulsor Focus controllers. It runs the Operator Guidance application that will give the best visual operator support in production.

FEATURES

- ▶ LCD - 6.5" TFT LCD Resolution VGA 640 x 480
- ▶ Dimensions (LxWxH) - 268 x 46 x 173 mm
- ▶ Processor - Intel® IXP420 XScale® 533 MHz
- ▶ System memory - 128 MB on-board RAM
- ▶ Storage memory - 32 MB on-board flash
- ▶ Compact Flash - 128 MB (included)
- ▶ OS - Windows® CE 5.0
- ▶ Ports - 2 x 10/100 Mbps Ethernet, 2 x USB 2.0
- ▶ Industrial protection - IP 65
- ▶ Backlight life - 50,000 hours



REQUIRED EQUIPMENT

- ▶ MiniDisplay Ethernet Cable
- ▶ M12 4-Pin Extension and Open End Cable (to power unit)

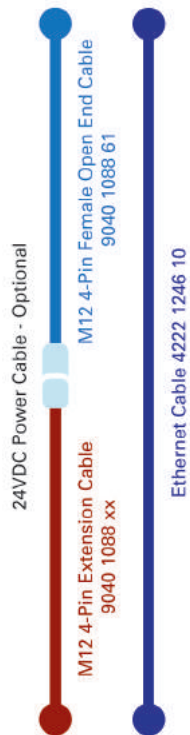
MINIDISPLAY 2 - POWER MACS 4000

Description	Ordering No.
MiniDisplay 2 6.5" including Operator Guidance Software - 1 User License	8435 3071 00
Operator Guidance Software - 1 User License	8092 1185 01

Power MACS 4000 options - MiniDisplay 2

CONNECTIVITY

Power MACS 4000
Primary Controller



MiniDisplay 2

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - MiniDisplay 2 kits

MiniDisplay 2 Kits for system integration.

SCOPE OF SUPPLY

MiniDisplay 2 Power MACS 4000 Kits

- ▶ MiniDisplay 2
- ▶ M12 4-Pin Open End Cable 1 m
- ▶ Integration and Set-up

MiniDisplay 2 Power MACS 4000 with E-Stop Kits

- ▶ MiniDisplay 2 with E-Stop Switch Box
- ▶ M12 8-Pin Open End Cable 1 m
- ▶ Integration and Set-up

MiniDisplay 2 Power MACS 4000 with E-Stop / Junction Block Kits

- ▶ MiniDisplay 2 with E-Stop Switch and Junction Block
- ▶ M23 19-Pin Open End Cable 1 m
- ▶ Integration and Set-up

REQUIRED EQUIPMENT

MiniDisplay 2 Power MACS 4000 Kits

- ▶ MiniDisplay Ethernet and M12 4-Pin Extension Cables

MiniDisplay 2 Power MACS 4000 with E-Stop Kits

- ▶ MiniDisplay Ethernet and M12 8-Pin Extension Cables

MiniDisplay 2 Power MACS 4000 with E-Stop / Junction Block Kits

- ▶ MiniDisplay Ethernet and M23 19-Pin Extension Cables

MINIDISPLAY 2 KITS - POWER MACS 4000

Description	Ordering No.
MiniDisplay 2 Integration Kit	9040 1064 75
MiniDisplay 2 with E-Stop (M12 8-Pin) Kit	9040 1296 07
MiniDisplay 2 with E-Stop / Junction Block (M23 19-Pin) Kit	9040 1296 08



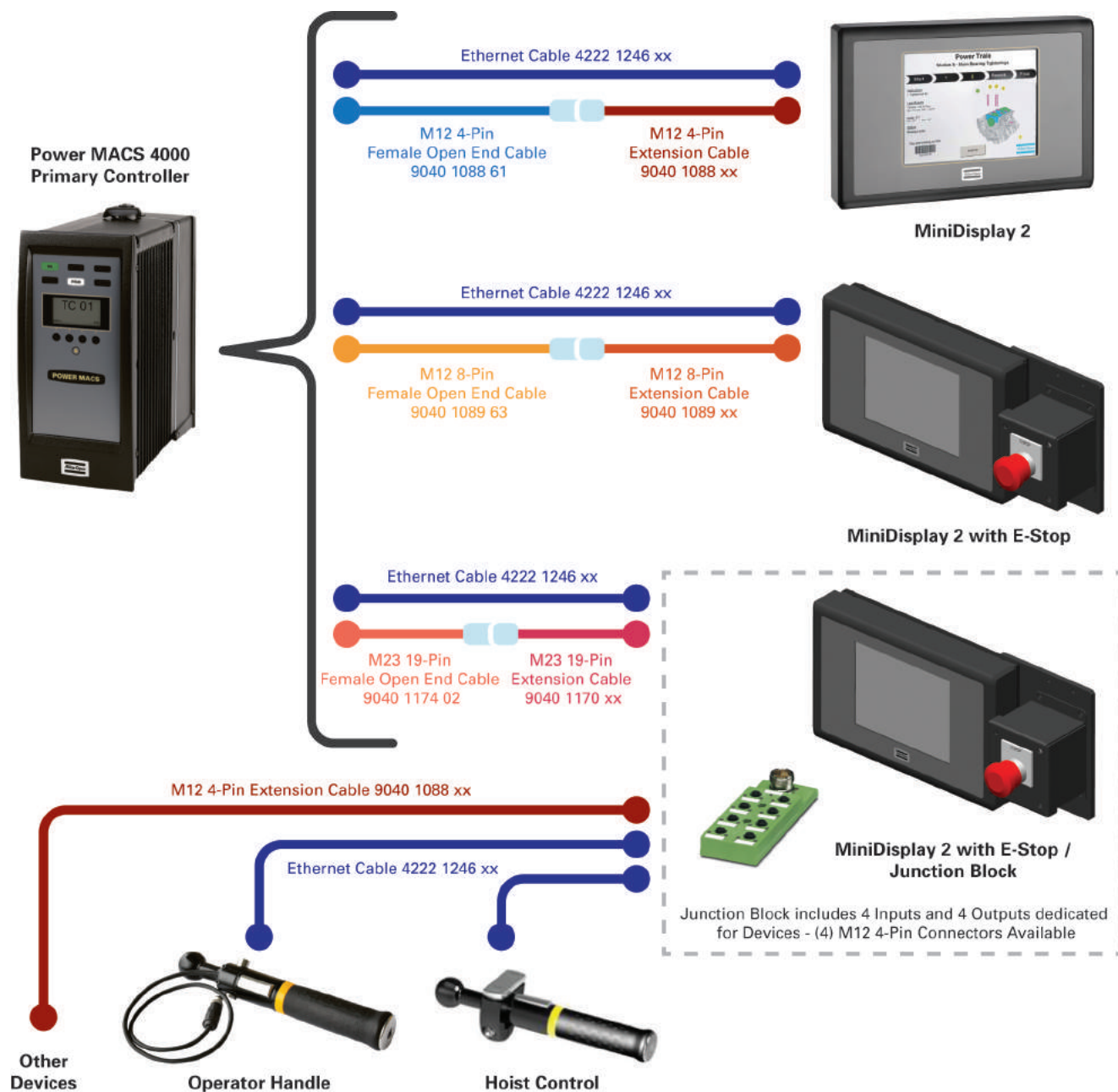
MiniDisplay 2



MiniDisplay 2 with E-Stop

Power MACS 4000 options - MiniDisplay 2 kits

CONNECTIVITY



REQUIRED INPUTS AND OUTPUTS - MINIDISPLAY 2 WITH E-STOP KIT - POWER FOCUS 4000

Description	Required Inputs	Required Outputs
Operator Handle - Start/Fwd/Rev	2	-
Hoist Control Module - Up	1	-
Hoist Control Module - Down	1	-
Solenoid 1 (Valve)	-	1
Solenoid 2 (Valve)	-	1
Proximity Switch	1	-

Power MACS 4000 options - HLTQ - Industrial PC

HLTQ is a Industrial PC station that can be connected to Power MACS 4000 through ethernet with expandable I/O.

FEATURES

- ▶ 15" or 19" Screen - Robust glass touch screen
- ▶ AMD® G-Series GX-424CA (Quad-Core 2.4 GHz), L2 2 MB, 25 W
- ▶ 64 GB SSD Mass Storage, 2.5", SATA 3 interface, quick release cartridge
- ▶ 4 GB RAM, DDR3, FSB 1600/1333 MHz
- ▶ Ports
 - 1x LAN Gigabit Intel i210-AT, with NCSI support
 - 1x LAN Gigabit Intel i211-AT
 - 2x USB 3.0, 2x USB 2.0 (internal accessible)
 - 5x COM RS232, each with 5V configurable
 - 1x RS232 / RS422 / RS485, each with 5V configurable
 - Digital Input: 8 x 24VDC
 - Digital Output: 8 x 24VDC, 100mA (single) or 400mA (complete) loadable
 - 1x extension connector (RJ45) - 7 extension modules connectable
 - 1x miniPCI express slot



REQUIRED EQUIPMENT

- ▶ Ethernet Cable
- ▶ Error-Proofing Software

OPTIONS

- ▶ Additional SSD available
- ▶ Operator scanning cards
- ▶ 1x USB 2.0 (external accessible)
- ▶ Additional SSD, 2.5", SATA 3 interface, quick release cartridge
- ▶ 8 GB, DDR3, FSB 1600/1333 MHz
- ▶ WiFi
 - WLAN Client Interface (802.00 a/b/g/n)
- ▶ User Identification
 - RFID Reader 13,56 MHz and 125 kHz * (Only US)
 - Fingerprint reader * (Only US)
 - LEGIC reader with ID badge holder * (Not Available in US)
 - Mifare reader * (Not Available in US)
 - Euchner reader * (Not Available in US)
 - Euchner electronic key system EKS * - available on demand (Not Available in US)
- ▶ RAID1 configuration (mirrored system, quick release cartridge for two SSD's and second 2.5" SSD, min. 64 GB necessary, needs miniPCI express slot)
- ▶ Windows 7 Pro: 64 Bit (Not Available in US)
- ▶ Windows Embedded Standard 7: 32 Bit / 64 Bit (Only US)

* One of the user identification options is selectable

NOTES

- ▶ Power Supply: 100 - 200 VAC
- ▶ Power Rating: Max. 70W
- ▶ Current Rating: Max. 1A
- ▶ Future Integration Kits to come

Power MACS 4000 options - HLTQ - Industrial PC

HLTQ INTERFACE - POWER MACS 4000

Description	Ordering No.
HLT15Q	8439 0100 05
HLT19Q	8439 0100 06

HLTQ INTERFACE OPTIONS - POWER MACS 4000

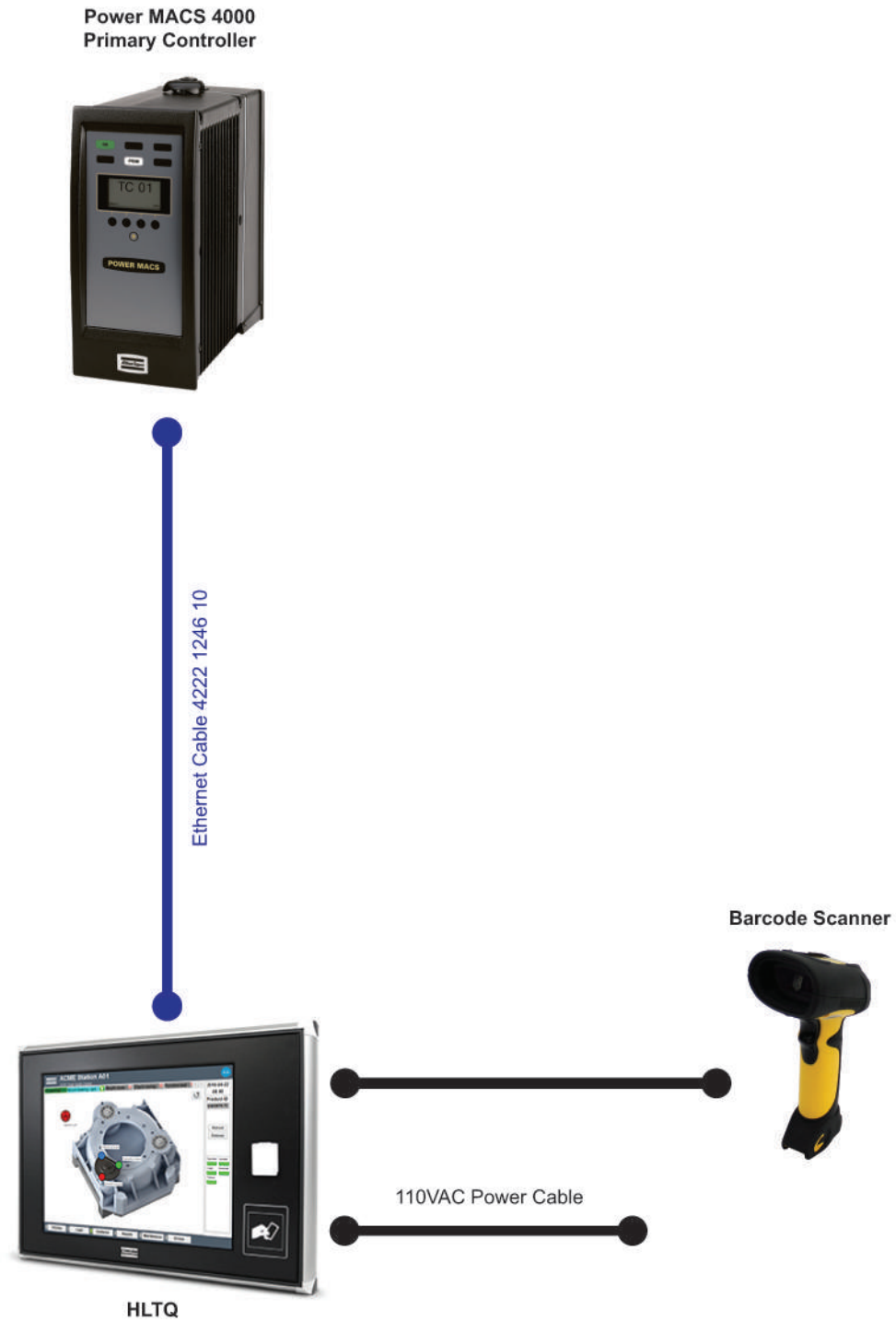
Description	Ordering No.
PLTH15i (Body Tracking PC incl. drawer, keyboard, floor stand)	8439 0100 15
PLTH15 Rittal Floor Stand	8439 0100 19
Fingerprint Reader	8439 0100 20
Euchner Reader (Not Available in US)	8439 0100 21
Legic Reader s. r. (Not Available in US)	8439 0100 22
Legic Reader in-place (Not Available in US)	8439 0100 23
Euchner Key System (Not Available in US)	8439 0100 24
Mifare-Reader phg (Not Available in US)	8439 0100 25
WLAN client	8439 0100 26
USB port on backside	8439 0100 27
Upgrade to RAM 8 GB	8439 0100 28
Upgrade to 1 x 2.5" SSD, 128 GB	8439 0100 33
Upgrade to 1 x 2.5" SSD, 256 GB	8439 0100 34
Upgrade to 2 x 2.5" SSD, 64 GB - Must Order Cartridge for 2 SSDs	8439 0100 29
Upgrade to 2 x 2.5" SSD, 128 GB - Must Order Cartridge for 2 SSDs	8439 0100 30
Upgrade to 2 x 2.5" SSD, 256 GB - Must Order Cartridge for 2 SSDs	8439 0100 31
Cartridge for 2 SSDs	8439 0100 38
RAID1	8439 0100 32
Touch Over RS232	8439 0100 37
Ethernet Multi I/O Master Module	8439 0100 84
Windows 7, 64 Bit, English (Not Available in US)	8439 0100 92
Windows 7, 64 Bit, German (Not Available in US)	8439 0100 93
Win Embedded Standard 7, 32 Bit - Language Selectable (US Only)	8439 0100 94
Win Embedded Standard 7, 64 Bit - Language Selectable (US Only)	8439 0100 95

ATLAS COPCO ERROR-PROOFING SOFTWARE

Description	Ordering No.
Single Quality Solution	8434 2380 00

Power MACS 4000 options - HLTQ - Industrial PC

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - MaxiDisplay 3

The MaxiDisplay is a remote HMI that can be connected to a Power MACS 4000 controller.

FEATURES

- ▶ Display: 19" TFT Resistive, 1280 x 1024 SXGA - Touch Screen
- ▶ Power supply: Power Adapter DC 19V / 90W

SCOPE OF SUPPLY

- ▶ Microsoft Windows 7 Professional

REQUIRED EQUIPMENT

- ▶ Ethernet Cable
- ▶ External power source
- ▶ Guidance Software



MaxiDisplay 3

MAXIDISPLAY 3 - POWER MACS 4000

Description	Ordering No.
MaxiDisplay 3	8435 3070 20
Operator Guidance Software - 1 User License	8092 1185 01

MAXIDISPLAY 3 INTEGRATION KIT - POWER MACS 4000

SCOPE OF SUPPLY

- ▶ MaxiDisplay and Guidance Software
- ▶ System integration and set-up

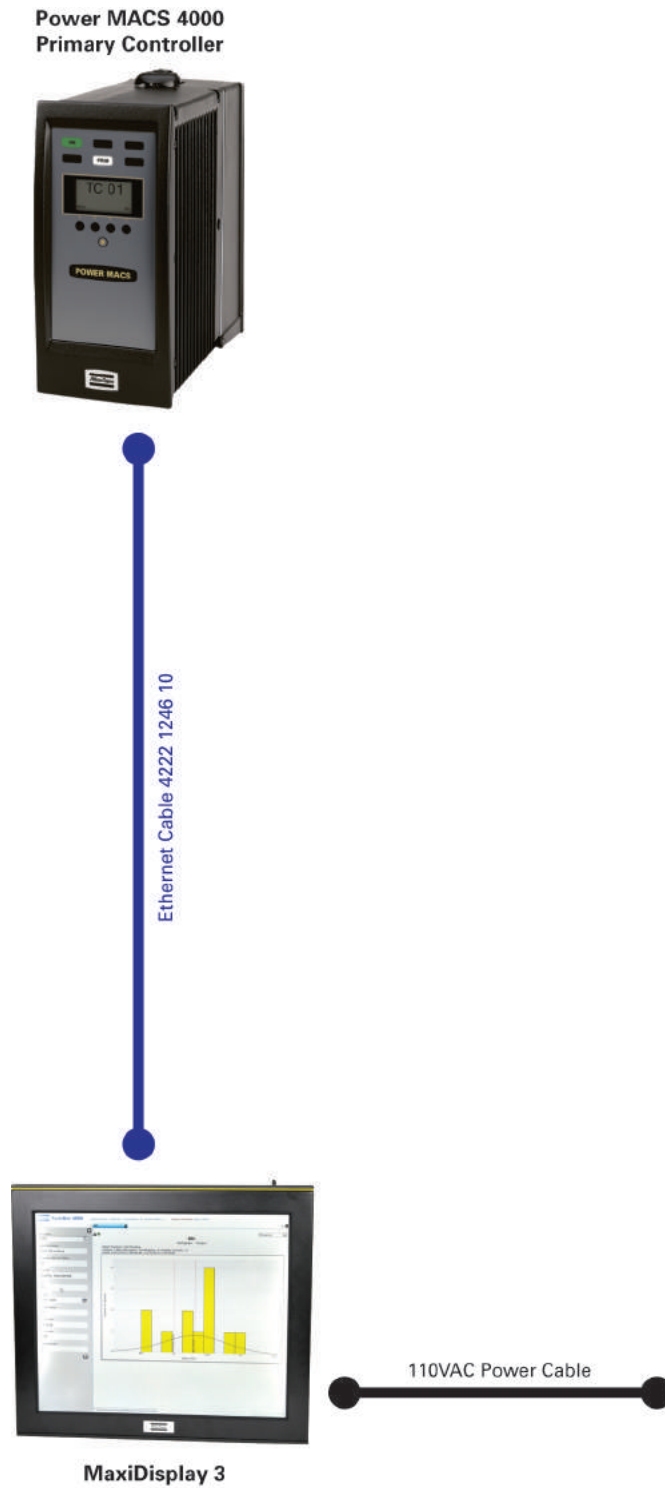
Description	Ordering No.
MaxiDisplay 3 Integration Kit	9040 1064 82



MaxiDisplay 3 Back View

Power MACS 4000 options - MaxiDisplay 3

CONNECTIVITY



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - HMI

This HMI touch panel display is preinstalled with the Operator Guidance application, making it possible to interact with the tightening system. It is easily connected to the Ethernet port on the Power MACS 4000 Controller.

SCOPE OF SUPPLY

MiniDisplay 2 Kit PM4000

- ▶ MiniDisplay 2
- ▶ LAN Cable 496; 15 m

MaxiDisplay 3 Kit PM4000

- ▶ MaxiDisplay 3
- ▶ LAN Cable 484; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.
See Accessories

- ▶ LAN Cable

NOTES

- ▶ Attention: 230V Power Supply to be supplied from customer

POWER MACS HMI KIT AND OPTIONS

Description	Ordering No.
MiniDisplay 2 Kit PM4000	8439 0407 02
MaxiDisplay 3 Kit PM4000	8439 0407 03
Options	
Mechanical connection for HMI PM4000	8995 7890 37



MaxiDisplay 3

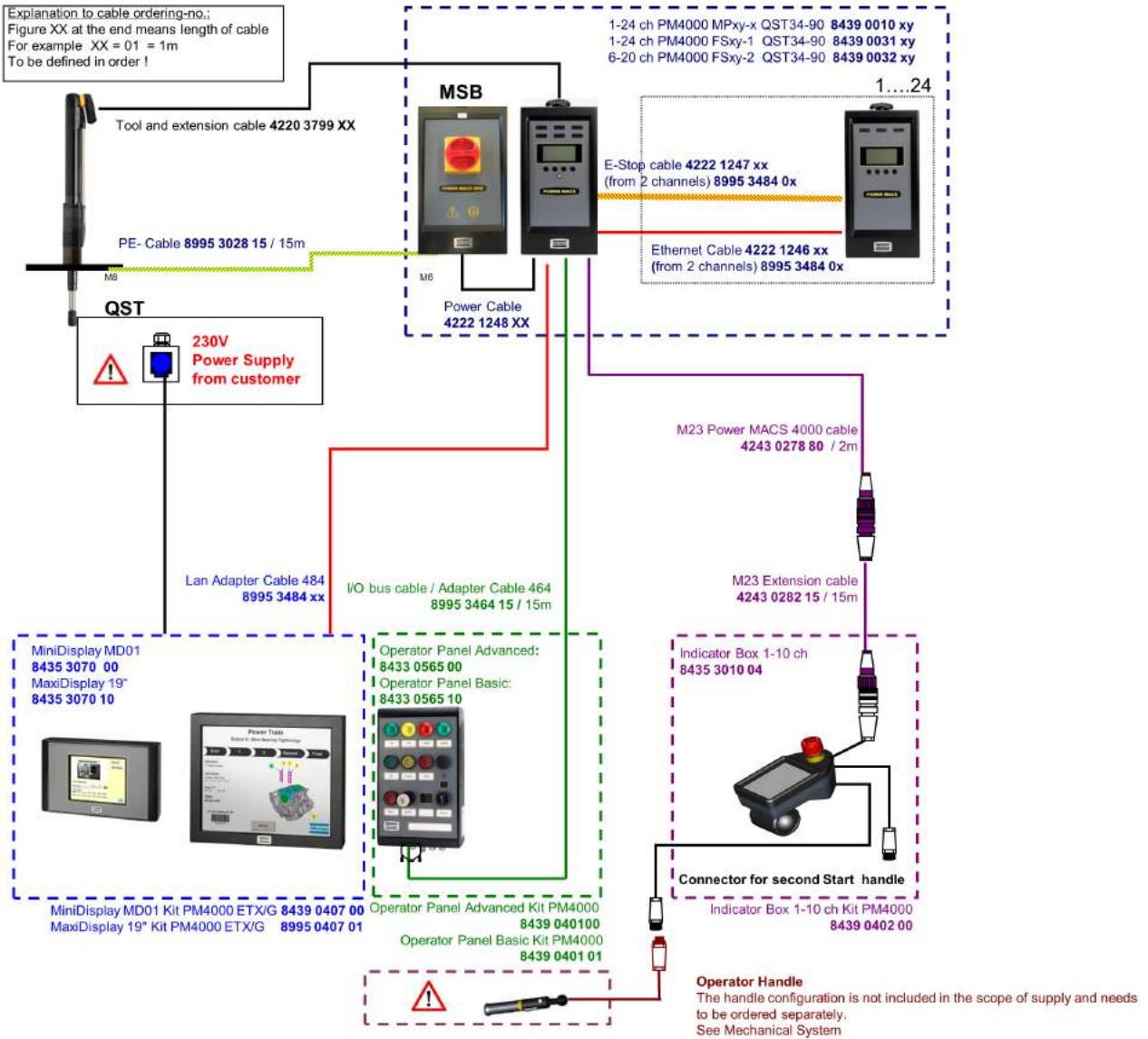


MaxiDisplay 3 Back View



MiniDisplay

Explanation to cable ordering-no.:
Figure XX at the end means length of cable
For example XX = 01 = 1m
To be defined in order !



Power MACS 4000 options - stacklights

Stacklight for visual indication of events.

FEATURES

- ▶ (4) Configurable Lights to indicate event(s) (red, orange, green, blue)
- possible to use up to five lights
- ▶ (1) Configurable Pushbutton
- ▶ (1) Configurable Key Switch, 1-0-2 Positions (No Spring Return)
- ▶ (1) Configurable Buzzer to indicate event(s)
- ▶ External 24VDC In Connector
- ▶ (2) External Output/Input Connector
- ▶ I/O Bus Connection

SCOPE OF SUPPLY

Stacklight ESL-04 Kit

- ▶ (1) Standard Stacklight with Mounting Kit
- ▶ Integration and Set-up

Stacklight Custom Configuration Kit

- ▶ (1) Customized Stacklight
- ▶ Integration and Set-up
- ▶ Stacklight configuration must be identified at time of order

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable



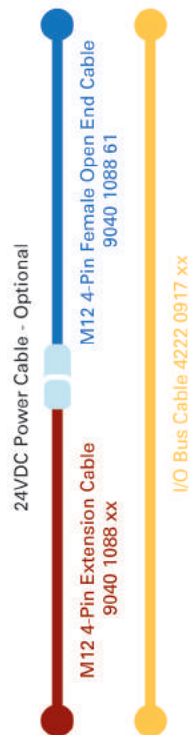
STACKLIGHTS - POWER MACS 4000

Description	Ordering No.
Stacklight ESL-04	8433 0570 13
Stacklight Custom Configuration Kit	9040 1064 81
Stacklight Custom Configuration Kit - Buzzer/Key Switch	9040 1065 00
Stacklight Custom Configuration Kit - Buzzer/Key Switch/1-Light	9040 1065 01
Stacklight Custom Configuration Kit - Buzzer/Key Switch/2-Light	9040 1065 02
Stacklight Custom Configuration Kit - Buzzer/Key Switch/3-Light	9040 1065 03
Stacklight Custom Configuration Kit - Buzzer/Key Switch/4-Light	9040 1065 04

Power MACS 4000 options - stacklights

CONNECTIVITY

Power MACS 4000
Primary Controller



I/O Bus Cable



Stacklight

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - stacklight

The Stacklight provides a cost effective quality integrated fastening solution for today's production. The Power MACS control units can now be provided with an effective standard solution for the operator interface. The Stacklight ESL-04 is a standard device which can be easily installed and adapted to your process. It is connected to the MACS I/O port on the Power MACS 4000 Controller.

- ▶ Stacklight ESL-04 Standard
- ▶ Stacklight ESL-04 Red: Red light rotates
- ▶ Stacklight ESL-04 Yellow: Yellow light rotates
- ▶ Stacklight ESL-04 Siren: Siren on top
- ▶ Stacklight ESL-04 Compact: h= 100 mm Ø= 20 mm

SCOPE OF SUPPLY

- ▶ I/O bus Cable / Adapter Cable 464; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ I/O Bus Cable



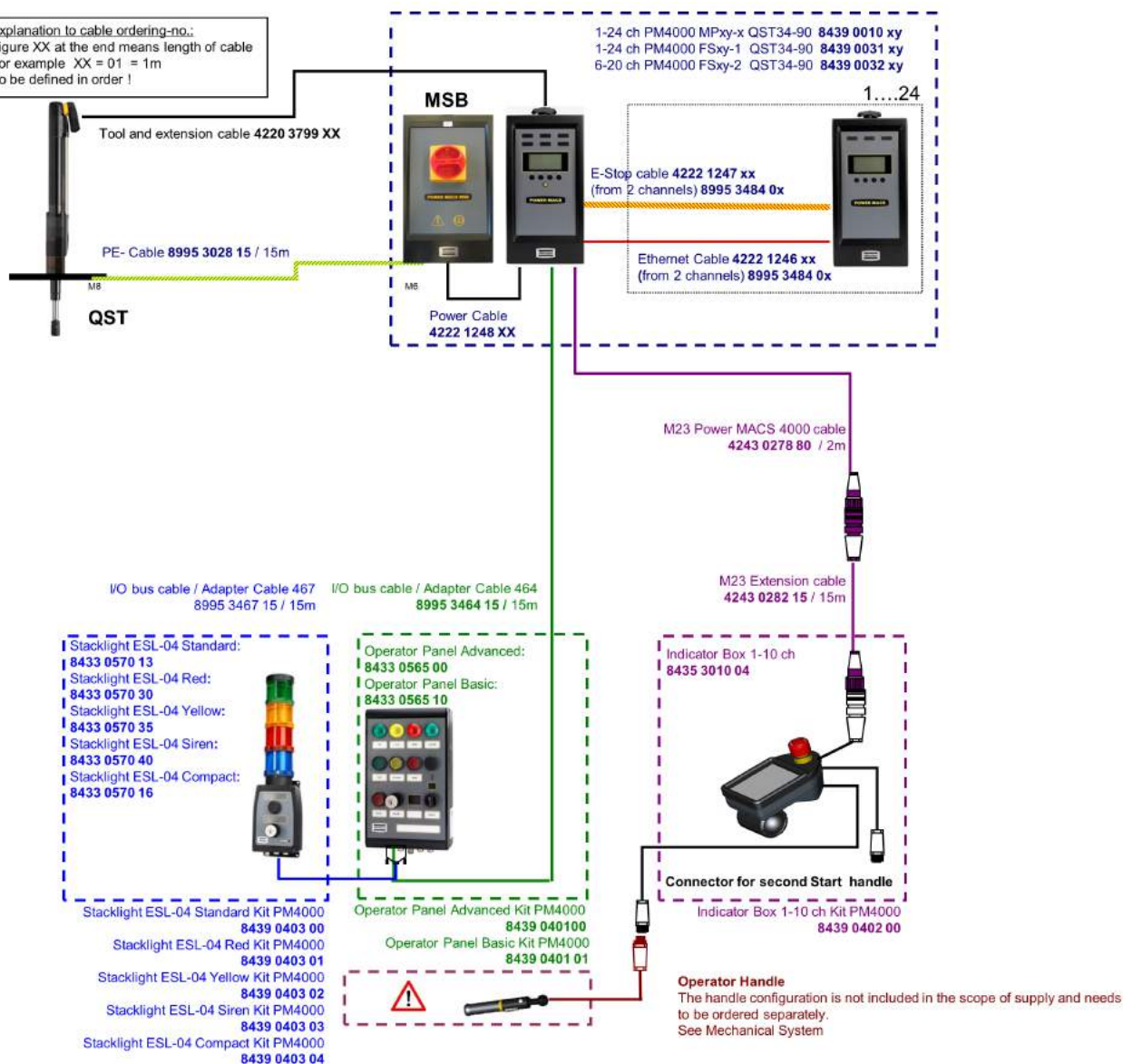
POWER MACS STACKLIGHT KIT AND OPTIONS

Description	Ordering No.
Stacklight ESL-04 Standard PM4000	8439 0403 00
Stacklight ESL-04 Red Kit PM4000	8439 0403 01
Stacklight ESL-04 Yellow Kit PM4000	8439 0403 02
Stacklight ESL-04 Siren Kit PM4000	8439 0403 03
Stacklight ESL-04 Compact Kit PM4000	8439 0403 04
Modification Stacklight ESL-04 PM4000	8995 3328 40
Options	
Mechanical connection for Stacklight PM4000	8995 7890 33

Power MACS 4000 options - stacklight

CONNECTIVITY

Explanation to cable ordering-no.:
Figure XX at the end means length of cable
For example XX = 01 = 1m
To be defined in order !



Power MACS 4000 options - selectors

Socket and Bit Selector for parameter selection.

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable

NOTES

- ▶ **Maximum socket outer diameter**
 - Selector 4 and 8 - 44 mm [1.75 in]
 - Selector for large sockets - x mm [in]

SOCKETS AND BIT SELECTORS - POWER MACS 4000

Description	Ordering No.
Socket - Selector 4	8433 0610 04
Socket - Selector 8	8433 0610 08
Socket - Selector for Large Sockets	8433 0610 44
Bit Selector 8 - Single	4222 0933 91
Bit Selector 8 - Double	4222 0933 92



Socket - Selector 4



Socket - Selector 8



Socket - Large Selector



Bit Selector

Power MACS 4000 options - selectors

CONNECTIVITY

Power MACS 4000
Primary Controller



I/O Bus Cable 4222 0917 xx



I/O Bus Cable

Socket Selectors



Socket Tray - Selector 4



Socket Tray - Selector 8



Socket Tray - Large Selector



Bit Selector

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - selector

These selectors are designed for up to 4 or 8 different sockets and are easily connected to the MACS I/O-port on the Power MACS 4000 Controller.

- ▶ Selector 4
- ▶ Selector 8
- ▶ Selector bit
- ▶ Selector large
- ▶ Selector Box design

SCOPE OF SUPPLY

- ▶ I/O Bus Cable / Adapter Cable 464; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ I/O Bus Cable

POWER MACS SELECTOR KIT AND OPTIONS

Description	Ordering No.
Selector 4 Kit PM4000	8439 0404 00
Selector 8 Kit PM4000	8439 0404 01
Selector bit Kit PM4000	8439 0404 02
Selector large Kit PM4000	8439 0404 03
Selector Box Design 4 Kit PM4000	8995 3322 20
Selector Box Design 8 Kit PM4000	8995 3322 21
Selector Box Design 12 Kit PM4000	8995 3322 22
Options	
Mechanical connection for Selector PM4000	8995 7890 34
Retooling selector box to the tool size - Selector 4 PM4000	8995 7894 10
Retooling selector box to the tool size - Selector 8 PM4000	8995 7894 11
Retooling selector box to the tool size - Selector Bit PM4000	8995 7894 12
Retooling selector box to the tool size - Selector large PM4000	8995 7894 13



Socket - Selector 4



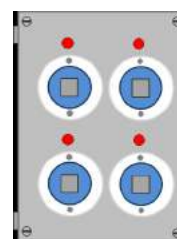
Socket - Selector 8



Socket - Large Selector



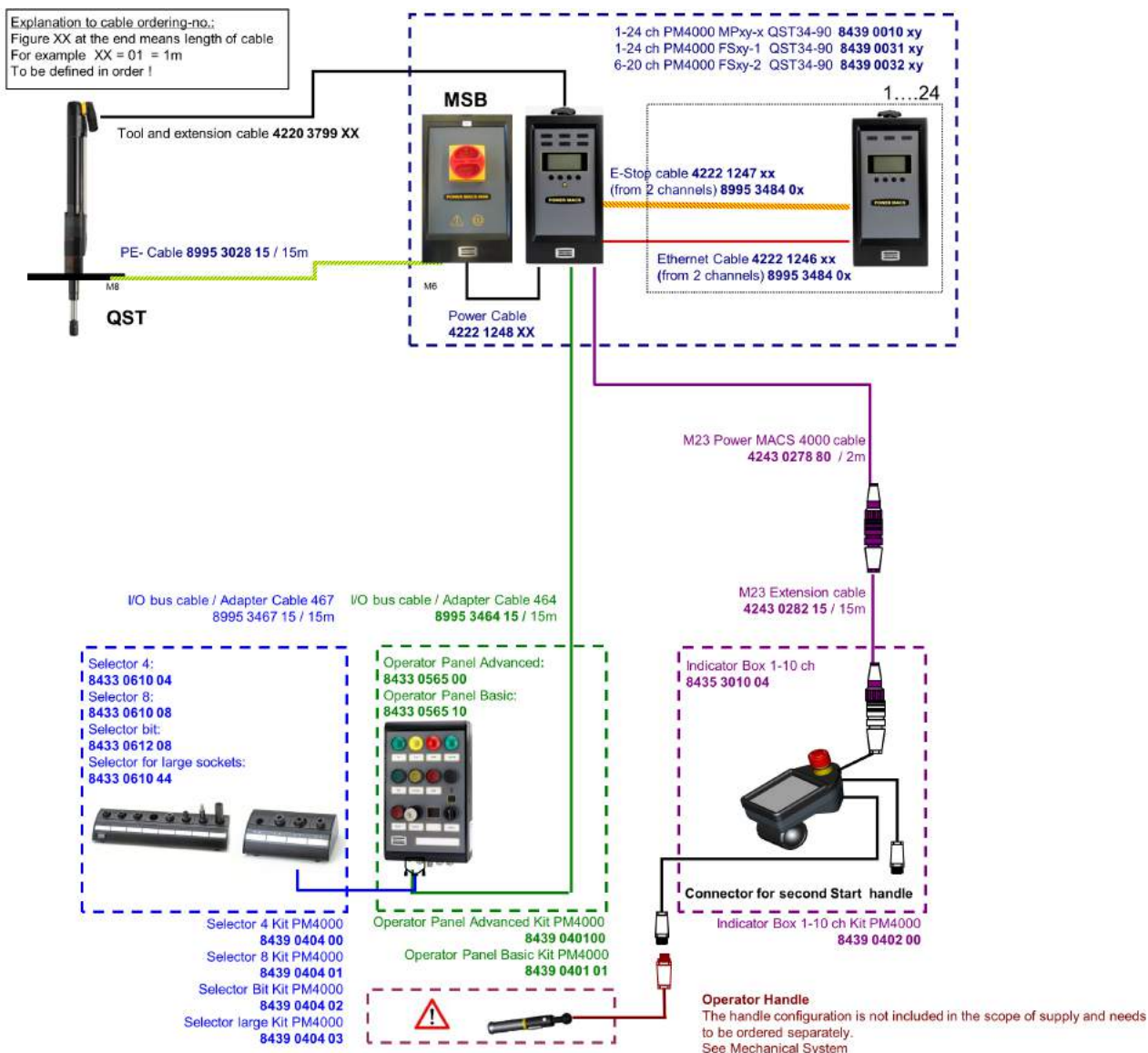
Bit Selector



Selector Box Design 4

Power MACS 4000 options - selector

CONNECTIVITY



Power MACS 4000 options - I/O expanders

The I/O-expander is designed to extend I/O with 8 digital inputs and 8 relay outputs.

REQUIRED EQUIPMENT

- ▶ I/O Bus Cable
- ▶ M12 4-Pin Extension and Open End Cables for devices connectivity or external power
- required for solenoid valves
- ▶ M12 4-Pin Extension and Open End Cables for device connectivity

I/O EXPANDERS - POWER MACS 4000

Description	Ordering No.
I/O Expander - Open	8433 0564 39
I/O Expander - Sealed	8433 0564 45



I/O Expander - Open

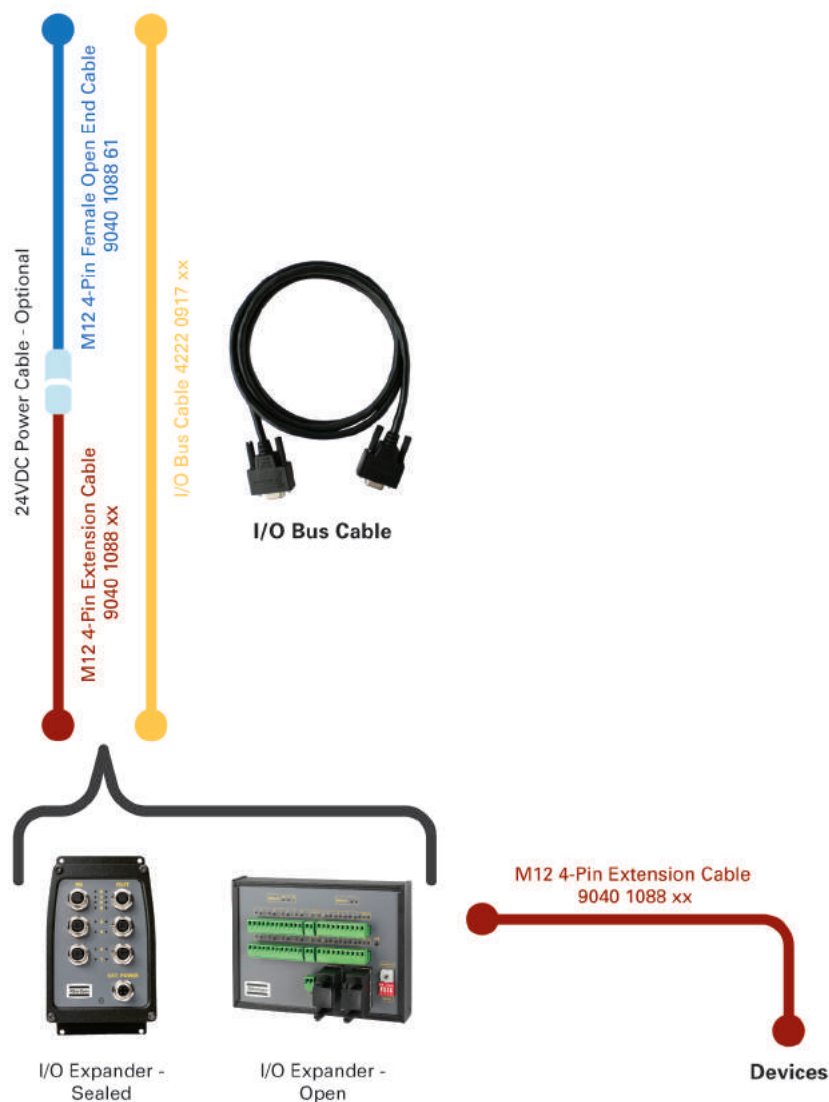


I/O Expander - Sealed

Power MACS 4000 options - I/O expanders

CONNECTIVITY

Power MACS 4000
Primary Controller



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

REQUIRED INPUTS AND OUTPUTS - I/O EXPANDER BOX - POWER MACS 4000

Description	Required Inputs	Required Outputs
Solenoid 1 (Valve)	-	1
Solenoid 2 (Valve)	-	1
Proximity Switch	1	-

Power MACS 4000 options - rotary selectors

Rotary Selector for parameter selection.

SCOPE OF SUPPLY

▶ Rotary Selector 15-Position

- 5 m cable with connector - connects directly to controller

▶ Rotary Selector 15-Position with M12 8-Pin

- 5 m cable with M12 8-pin connector - allows connectivity to M12 8-Pin extension and open end cable



ROTARY SELECTOR - POWER MACS 4000

Description	Ordering No.
Rotary Selector 15-Position	8433 0606 15
Rotary Selector 15-Position with M12 8-Pin	9040 1510 00

Power MACS 4000 options - rotary selectors

CONNECTIVITY

Power MACS 4000
Primary Controller



Rotary Selector

NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - barcode scanners

The barcode scanner can scan an ID of 1 - 40 characters long and can be used to select a P-Set or merged with the tightening results and reported via standard TTPM reports or through ToolsNet.

The barcode scanner is connected to the TC through the Serial1 and Serial2 port connector.

SCOPE OF SUPPLY

Barcode Scanner Corded Kit

- ▶ Symbol LS3408-FZ Logic Corded Scanner
- ▶ Scanner Wall Mount Holder
- ▶ 100-230VAC Universal Power Supply
- ▶ 120VAC Line Cord, 1.8 m (6 ft.) - connects to Universal Power Supply to 120VAC outlet
- ▶ RS232 Cable STD-DB9 Female TxD on 2, 6.1 m (20 ft.) Coiled Cable - connects scanner to controller
- ▶ Gender Changer



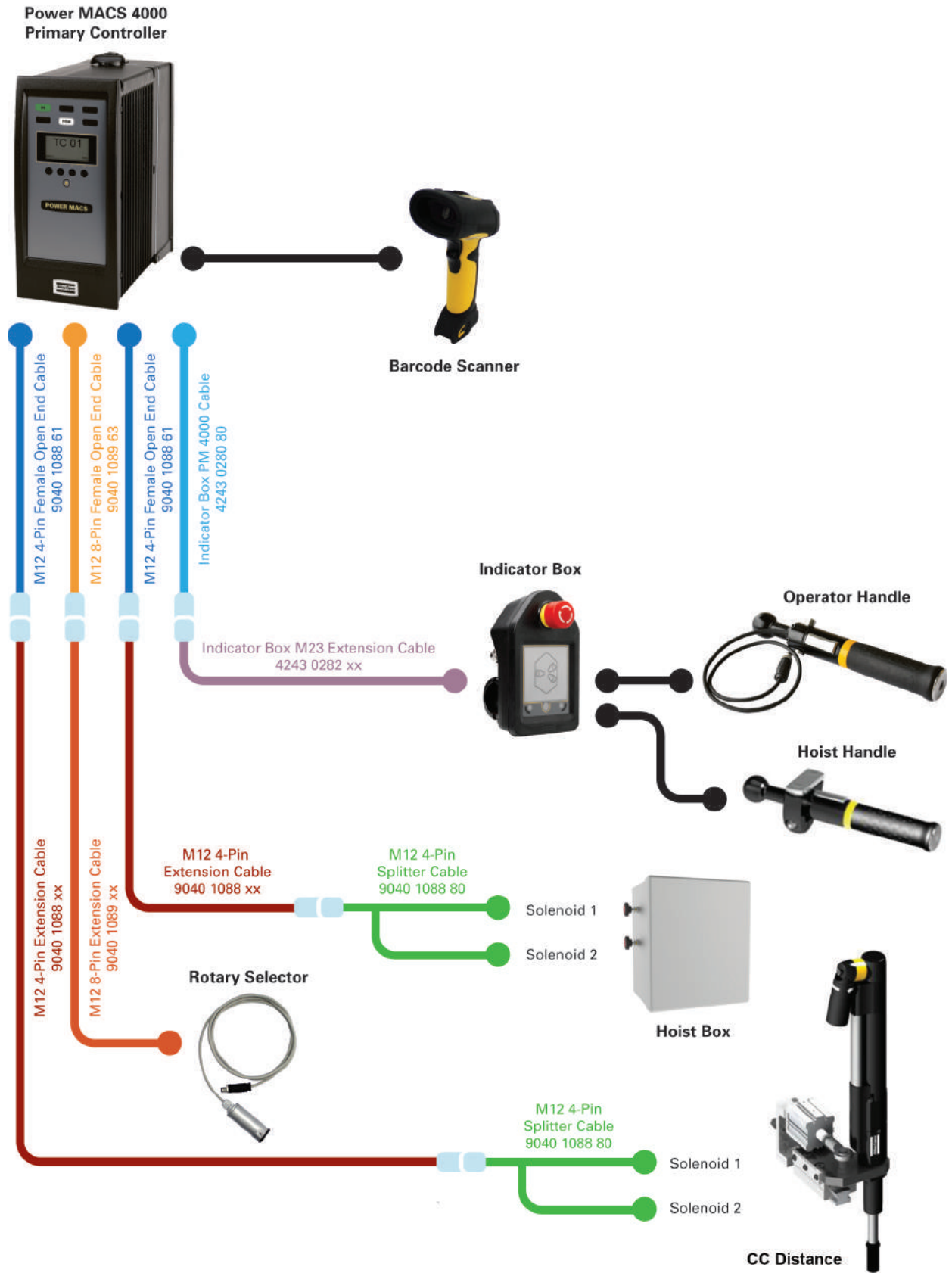
Barcode Scanner Cordless Kit

- ▶ Symbol LS3578-FZ Logic Cordless Scanner
- ▶ Radio-Charging Cradle
- ▶ 100-230VAC Universal Power Supply
- ▶ 120VAC Line Cord, 1.8 m (6 ft.) - connects to Universal Power Supply to 120VAC outlet
- ▶ RS232 Cable STD-DB9 Female TxD on 2, 2.1 m (7 ft.)
- ▶ Straight Cable - connects scanner to controller
- ▶ Gender Changer



BARCODE SCANNER - POWER MACS 4000

Description	Ordering No.
Barcode Scanner Corded Kit	9040 1295 13
Barcode Scanner Cordless Kit	9040 1295 28



NOTE: xx = Cable length in meters, Example: xx = 05 = 5 meters

Power MACS 4000 options - scanner

The scanner is connected to the Tightening Controller via the serial port. Up to four scanned ID numbers are merged with the tightening results. Scanned IDs can be used to control the process. It is easily connected to the Serial port 1 on the Power MACS 4000 Controller.

SCOPE OF SUPPLY

Handheld scanner Kits (Datalogic)

- ▶ Datalogic Premium Line Scanner
- ▶ Desk/Wall Holder (HLD-8000)
- ▶ Cable (CAB-433 RS232), 2 m
- ▶ Power Supply (PG12-10P55-EU)
- ▶ Gender Changer 9pol male/male
- ▶ Cordless scanners will be supplied with charger base and Power Supply unit 12 VDC



Scanner PD8330

Stationary scanner Kits (Sick)

- ▶ Line scanner (CLV430-0010)
- ▶ Sick Interface RS422-20mA (CDM420-0001)
- ▶ PowerSupply (CMP400)
- ▶ Connection Device Modular (CDM420-00001)
- ▶ Control Cable 535, 15 m
- ▶ Data Cable includes cables and installation to the control system max. cable length 15 m



Scanner PM8330

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Data Cable
- ▶ Control Cable

NOTES

- ▶ Attention: 230V Power Supply to be supplied from customer
- ▶ Programming and testing of the Barcode Scanner not included, but quoted according to customer's specification on request.

POWER MACS SCANNER HANDHELD KIT AND OPTIONS

Description	Ordering No.
Scanner PD8330 kit PM4000	8995 3180 01
Scanner PM8300 cordless kit PM4000	8995 3180 02
Scanner PM8300/D with display cordless kit PM4000	8995 3180 03
Scanner PM8300/DK with display / Keypad cordless kit PM4000	8995 3180 08
2D Scanner PD8530 kit PM4000	8995 3180 05
2D Scanner PM8500 cordless kit PM4000	8995 3180 06
2D Scanner PM8500/D with display cordless kit PM4000	8995 3180 07
Options	
Mechanical connection for Scanner PM4000	8995 7890 42



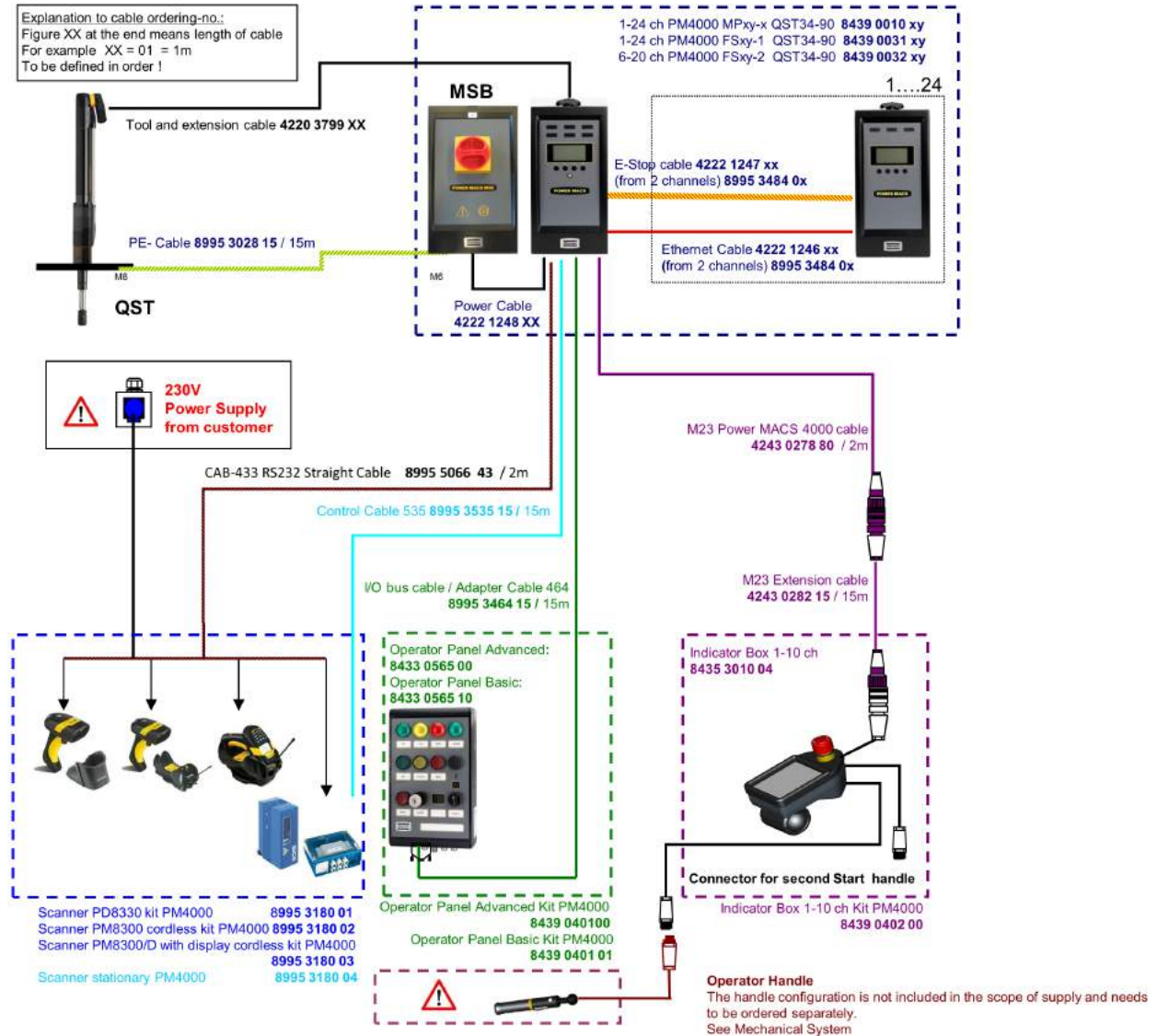
Scanner PM8300/D



Scanner PM8300/DK

POWER MACS SCANNER STATIONARY KIT

Description	Ordering No.
Scanner stationary PM4000	8995 3180 04



Power MACS 4000 options - I/O box

The I/O-Box is designed to extend I/O with 8 DI/8DO or 16 DI/16DO. It is easily connected to the MACS I/O port on the Power MACS 4000 Controller. 8 Digital outputs with E-Stop Function.

- ▶ I/O Box design 8DI/8DO
- ▶ I/O Box design 16DI/16DO

SCOPE OF SUPPLY

- ▶ Control Cable 530, 15 m
- ▶ I/O Bus Cable / Adapter Cable 477, 15 m
- ▶ E-Stop Board

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ I/O Bus Cable
- ▶ Control Cable

POWER MACS I/O BOX KIT AND OPTIONS

Description	Ordering No.
IO-Box 8DI/8DO Kit PM4000	8995 3230 02
IO-Box 16DI/16DO Kit PM4000	8995 3230 03
Options	
Mechanical connection for I/O Box PM4000	8995 7890 35

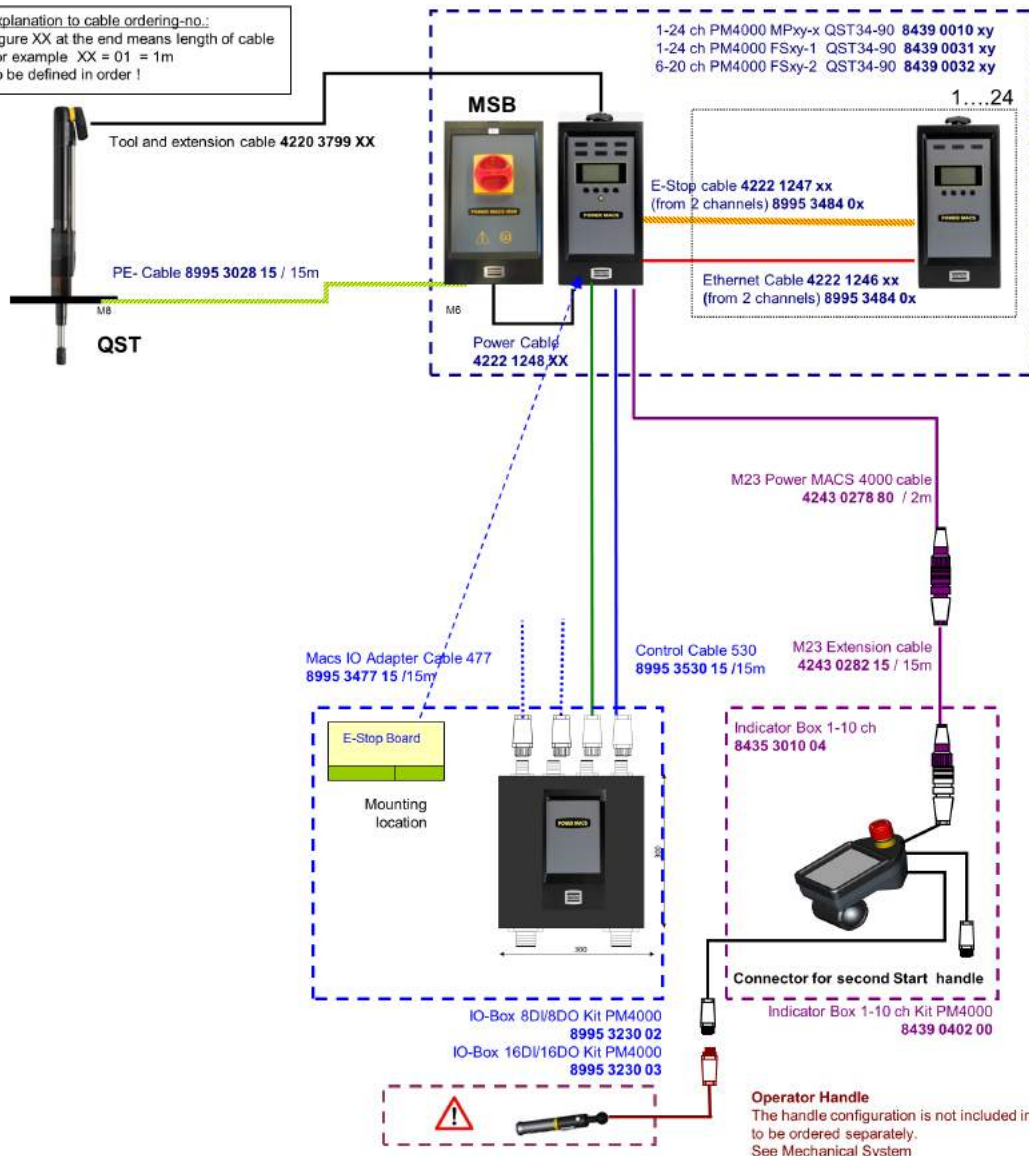


IO-Box 8DI/8DO



IO-Box 16DI/16DO

Explanation to cable ordering-no.:
Figure XX at the end means length of cable
For example XX = 01 = 1m
To be defined in order !



Power MACS 4000 options - e-stop extern

The Emergency Stop pushbutton is built into an industrial housing.

- ▶ Stop Category 3 (EN 13849-1)
- ▶ The control cable 537 connects the E Stop pushbutton box to the PM.
- ▶ The operator handle can be connected directly to the Operator Panel with the control adapter cable 541 01

SCOPE OF SUPPLY

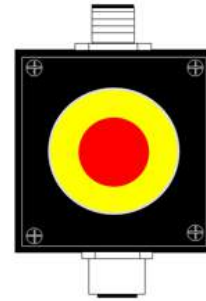
- ▶ E-Stop Panel Red 8995 3118 01
- ▶ Control Cable 537; 15 m

OPTIONS

Extension cables or other cable lengths must be ordered separately.

See Accessories

- ▶ Control Cable



POWER MACS E-STOP EXTERN KIT AND OPTIONS

Description	Ordering No.
E-Stop Ext with Connection Start Kit PM4000	8995 3130 61
Options	
Mechanical connection for Emergency Stop Button PM4000	8995 7890 40

Power MACS 4000 options - interface customer

The Customer Interface Box and Customer Interface are two ways to interface with the Power MACS systems.

FUNCTION

Interface Customer E-Stop 4DI/4DO

- ▶ 4DI / 4DO
- ▶ Stop-Category 3 (EN 13849-1)
- ▶ 24 VDC max 0,8A
- ▶ Reset E-Stop

Interface Customer E-Stop

- ▶ Stop-Category 3 (EN 13849-1)
- ▶ Reset E-Stop

SCOPE OF SUPPLY

- ▶ E-Stop Board

Interface Customer E-Stop 4DI/4DO

- ▶ Customer Interface Box design
- ▶ Control Cable 534, 15 m

OPTIONS

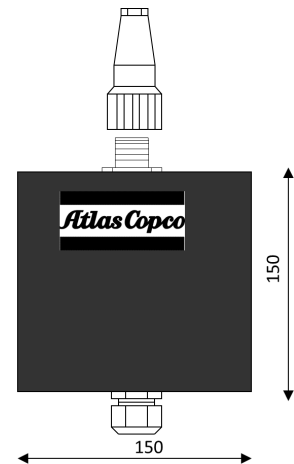
Extension cables or other cable lengths must be ordered separately.

See Accessories

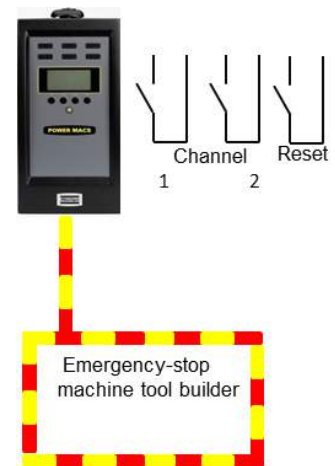
- ▶ Control Cable

POWER MACS INTERFACE CUSTOMER KIT

Description	Ordering No.
Interface customer E-Stop 4DI/4DO PM4000	8995 3230 80
Interface customer E-Stop PM4000	8995 3230 81



Interface customer E-Stop 4DI/4DO

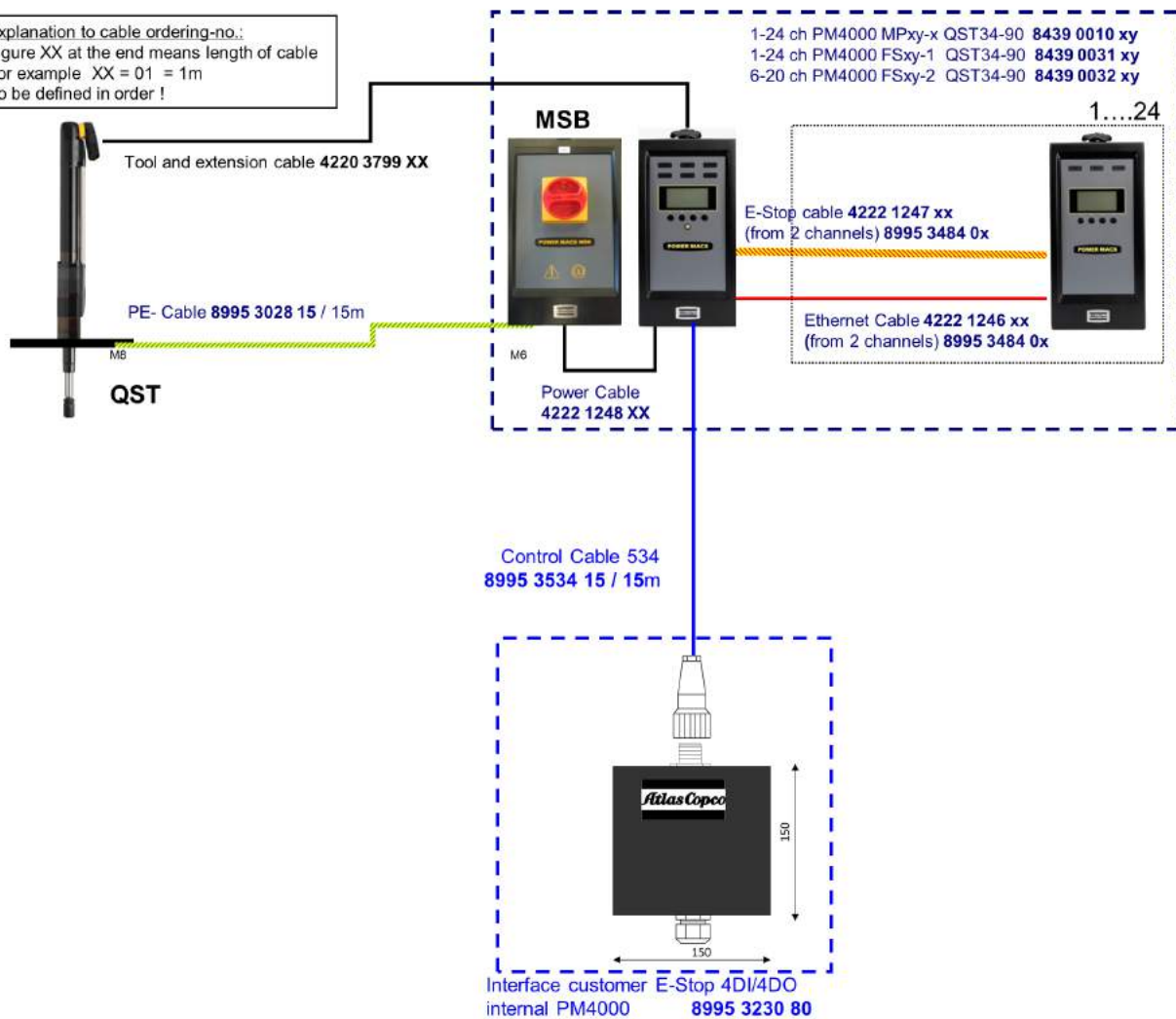


Interface customer E-Stop

Power MACS 4000 options - interface customer

CONNECTIVITY

Explanation to cable ordering-no.:
Figure XX at the end means length of cable
For example XX = 01 = 1m
To be defined in order !



Cable management

Cable Festooning Trolleys	359
Cable Management Accessories	361
Cable Tray	362



Cable festooning trolleys

Cable Festooning Trolleys are available for most common steel and aluminum rail types and manufacturers.

SCOPE OF SUPPLY

- ▶ Trolley
- ▶ Cable support shoe(s), hanger bracket and hardware
- ▶ Interconnection lanyard
- ▶ (2) Cable wraps per cable support shoe

NOTES

- ▶ (10) Tool cables per cable support



Unified Industries
ETA-4 (495A) - Single

Unified Industries
ETA-4 (495A) - Double

CABLE FESTOONING TROLLEYS - GORBEL, KNIGHT INDUSTRIES, DEMAG KBK

Description	Ordering No.
Cable Festooning Trolley - Gorbel 250 (A0251) - Single	9040 0002 12
Cable Festooning Trolley - Gorbel 250 (A0251) - Double	9040 0002 13
Cable Festooning Trolley - Gorbel 500 (A0501) - Single	9040 0002 16
Cable Festooning Trolley - Gorbel 500 (A0501) - Double	9040 0002 17
Cable Festooning Trolley - Gorbel 1000 (A1001) - Single	9040 0002 21
Cable Festooning Trolley - Gorbel 1000 (A1001) - Double	9040 0002 22
Cable Festooning Trolley - Gorbel 2000 (A2001) - Single	9040 0002 26
Cable Festooning Trolley - Gorbel 2000 (A2001) - Double	9040 0002 27
Cable Festooning Trolley - Knight Industries RAD4100 (MRMA4019) - Single	9040 0002 61
Cable Festooning Trolley - Knight Industries RAD4100 (MRMA4019) - Double	9040 0002 62
Cable Festooning Trolley - Knight Industries RAD7500 (MRMA4814) - Single	9040 0002 66
Cable Festooning Trolley - Knight Industries RAD7500 (MRMA4814) - Double	9040 0002 67
Cable Festooning Trolley - Demag KBK I, Ergo (98061044) - Single	9040 0002 81
Cable Festooning Trolley - Demag KBK I, Ergo (98061044) - Double	9040 0002 82
Cable Festooning Trolley - Demag KBK II,II-L, Ergo (98211044) - Single	9040 0002 86
Cable Festooning Trolley - Demag KBK II,II-L, Ergo (98211044) - Double	9040 0002 87

Cable festooning trolleys

CABLE FESTOONING TROLLEYS - UNIFIED INDUSTRIES, UNISTRUT, IR ZIMMERMAN

Description	Ordering No.
Cable Festooning Trolley - Unified Industries ETA-4 (495A) - Single	9040 0003 02
Cable Festooning Trolley - Unified Industries ETA-4 (495A) - Double	9040 0003 03
Cable Festooning Trolley - Unified Industries ETA-8 (195A) - Single	9040 0003 06
Cable Festooning Trolley - Unified Industries ETA-8 (195A) - Double	9040 0003 07
Cable Festooning Trolley - Unified Industries 3.25/3.33 Flat (FT-325) - Single	9040 0003 11
Cable Festooning Trolley - Unified Industries 3.25/3.33 Flat (FT-325) - Double	9040 0003 12
Cable Festooning Trolley - Unified Industries 2.33 3" S-Beam (FT-233) - Single	9040 0003 16
Cable Festooning Trolley - Unified Industries 2.33 3" S-Beam (FT-233) - Double	9040 0003 17
Cable Festooning Trolley - Unified Industries 2.66 4" S-Beam (FT-266) - Single	9040 0003 21
Cable Festooning Trolley - Unified Industries 2.66 4" S-Beam (FT-266) - Double	9040 0003 22
Cable Festooning Trolley - Unified Industries 3.33 6" S-Beam (FT-333) - Single	9040 0003 26
Cable Festooning Trolley - Unified Industries 3.33 6" S-Beam (FT-333) - Double	9040 0003 27
Cable Festooning Trolley - Unistrut P1000/P1001 (P2950) - Single	9040 0003 41
Cable Festooning Trolley - Unistrut P1000/P1001 (P2950) - Double	9040 0003 42
Cable Festooning Trolley - IR 2.66-8" S-,H-Beam (PT005-8) - Single	9040 0002 41
Cable Festooning Trolley - IR 2.66-8" S-,H-Beam (PT005-8) - Double	9040 0002 42
Cable Festooning Trolley - IR 3-8.06" S-,H-Beam (PT010-8) - Single	9040 0002 46
Cable Festooning Trolley - IR 3-8.06" S-,H-Beam (PT010-8) - Double	9040 0002 47
Cable Festooning Trolley - IR Zimmerman ZRAT (31005) - Single	9040 0003 51
Cable Festooning Trolley - IR Zimmerman ZRAT (31005) - Double	9040 0003 52
Cable Festooning Trolley - IR Zimmerman ZRA1 (30204) - Single	9040 0003 56
Cable Festooning Trolley - IR Zimmerman ZRA1 (30204) - Double	9040 0003 57
Cable Festooning Trolley - IR Zimmerman ZRA2 (30011) - Single	9040 0003 61
Cable Festooning Trolley - IR Zimmerman ZRA2 (30011) - Double	9040 0003 62
Cable Festooning Trolley - IR Zimmerman ZRS2/3 (30512) - Single	9040 0003 66
Cable Festooning Trolley - IR Zimmerman ZRS2/3 (30512) - Double	9040 0003 67

Cable management accessories

NOTES

- ▶ (10) Tool cables per cable support

CABLE MANAGEMENT ACCESSORIES

Description	Ordering No.
Cable Support Shoe	9040 0001 60
Cable Support Shoe with 20 mm Tapped Hole	9040 0001 61
Tie Bar - 18" Length	9040 0001 17
Tie Bar - 36" Length	9040 0001 18
Cable Festooning Hanger Assembly (No Trolley) - Single	9040 0001 20
Cable Festooning Hanger Assembly (No Trolley) - Double	9040 0001 51
Cable Grommet - Tensor Flat	9040 0900 51
Cable Grommet - Power MACS	9040 0900 52
J-Hook Tool/Cable Hanger	9040 0900 94
Tool/Cable Hanger with Cable Loop Support	9040 0900 95
Cable Wrap - Roll	9040 0901 99



Tool / Cable Hanger
with Cable Loop Support



J-Hook Tool / Cable Hanger



Cable Support Shoe



Cable Festooning
Hanger Assembly
(No Trolley) - Single



Cable Festooning
Hanger Assembly
(No Trolley) - Double



Cable Wrap



Cable Grommet - Power MACS



Cable Grommet - Tensor Flat



Tie Bar - 18" Length

Cable tray

Cable Tray (B-Line) Kits to route cables from control panels and floor stands to the application. Aluminum ladder type construction with 4" side rail height, 12" width and 12" rung spacing.

SCOPE OF SUPPLY

Cable Tray Kits

- ▶ (X) 12 ft. straight tray section with pair splice plates/hardware per section
- ▶ (1) 90 degree vertical outside bend with (1) pair of splice plates/hardware
- ▶ (1) Drop out tray
- ▶ (1) Spare splice plate/hardware kit
- ▶ (1) Cable tray to floor stand mounting kit



Cable Tray to Floor Stand Mounting Kits

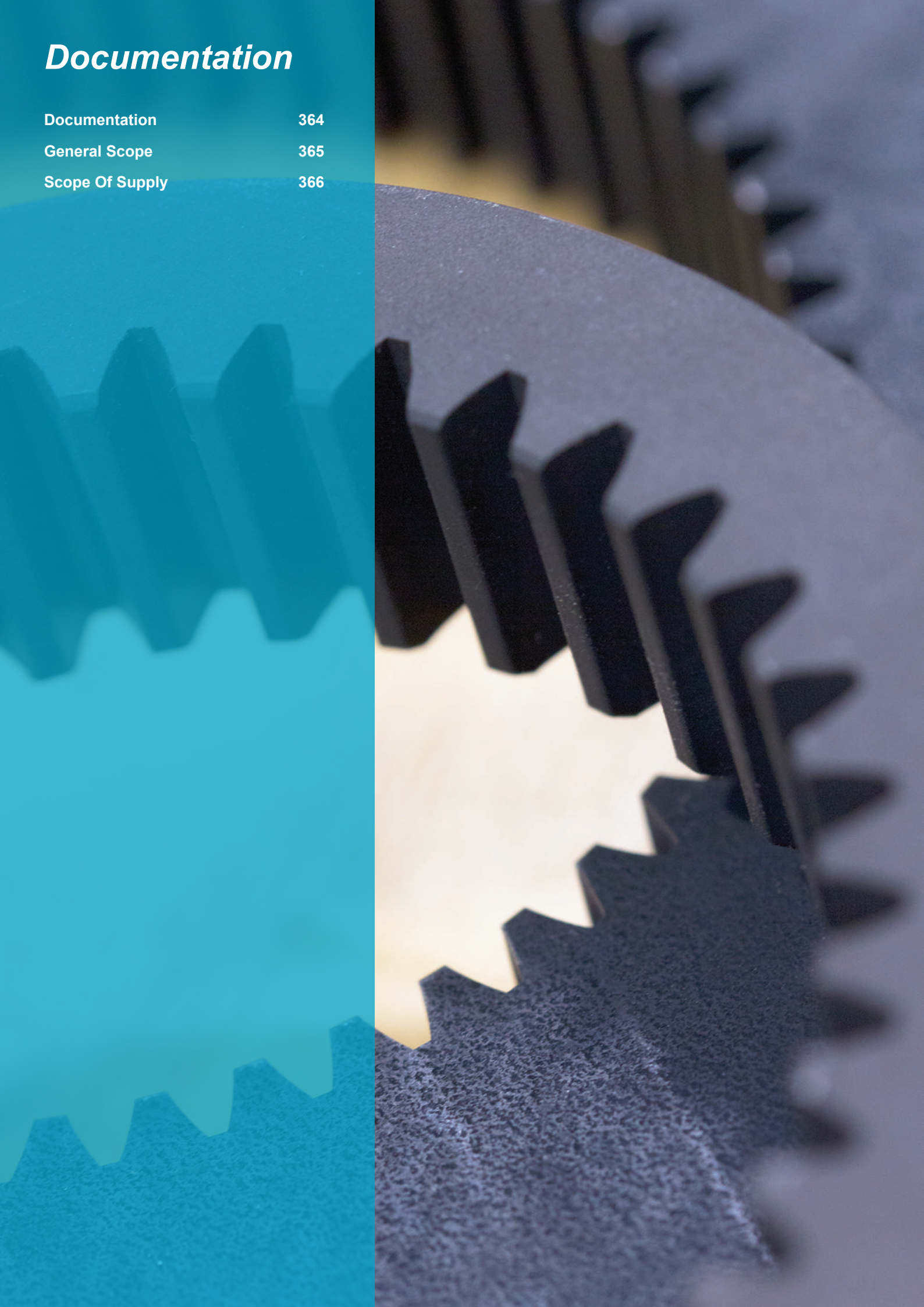
- ▶ (2) Sections of Unistrut
- ▶ Mounting hardware

CABLE TRAY

Description	Ordering No.
Cable Tray to Floor Stand Mounting Kit (12" Width)	9040 0004 00
Cable Tray Kit (2-Straight / 90 Vertical Bend Sections-12" W)	9040 0004 02
Cable Tray Kit (3-Straight / 90 Vertical Bend Sections-12" W)	9040 0004 03
Cable Tray Kit (4-Straight / 90 Vertical Bend Sections-12" W)	9040 0004 04
Cable Tray Kit (5-Straight / 90 Vertical Bend Sections-12" W)	9040 0004 05
Tray-Straight Section -12" W - 12 ft with (1) Pair Splice Pl./Hardware (24A12-12-144)	9040 0004 10
Tray-90 Deg. Vertical O. Bend-12" W with (1) Pair Splice Plate / Hardware (4A-12-90VO12)	9040 0004 11
Tray-90 Deg. Horizontal Bend-12" W with (1) Pair Splice Plate / Hardware (4A-12-90HB12)	9040 0004 12
Tray-Horizontal Tee-12" W with (2) Pair Splice Pl./Hardware (4A-12-90HT12)	9040 0004 13
Tray-Ladder Drop-Out-12" W (9A-1104-12)	9040 0004 14
Wedge Lock Splice Plates (Pair with Hardware) (9A-1004)	9040 0004 15

Documentation

Documentation	364
General Scope	365
Scope Of Supply	366



Documentation

Standard documentation for projects.

DOCUMENTATION

Description	Ordering No.
Installation Drawings	9040 0300 00
Manuals - Format: Electronic - (1) CD-Rom	9040 0801 74
Manuals - Format: Electronic - (1) CD-Rom / Hardcopy - (3) Binders	9040 0801 75
Manuals - Per Customer Specifications	9040 0801 76
ECPL Tag	9040 0801 95



General scope

Atlas Copco ACE will deliver as a standard one set of documentation including one CD-Rom with the complete documentation and the Power MACS program files or Power Focus set up files with the delivery of the components or machine. The documentation is built up according to the machinery directive 2006/42/EC. The ACE standard documentation is in two languages if necessary. See notes below.

NOTES

- ▶ According to the new machinery directive 2006/42/EC we deliver project documentation in the language of the Member State in which it is manufactured and placed on the market and/or put into service. Additionally we must deliver in the language of the country where the machinery is to be used. This is shown in the directive 2006/42/EC Annex I chapter 1.7.4 and the following 1.7.4.1
- ▶ Translation in other languages must be calculated separately.
- ▶ The standard Power MACS software manuals are in English, German or French other languages upon request.
- ▶ Translation of manuals from the Atlas Copco ACTA components is handled by the local customer center and will not be done by ACE.
- ▶ Standard scope of supply is one binder with CD-Rom. Each additional binder must be calculated separately.

Scope of supply

ACE Standard documentation acc. CE for complete systems with Mechanic and Electric as well as for components delivery. Includes binder with all files and CD-Rom.

CONTENTS

1 - General Project Information

- ▶ 1.1 - Supplier / Customer
- ▶ 1.2 - Project Information
- ▶ 1.3 - Description of the Tightening Station

2 - Machine specifications

- ▶ 2.1 - Data of nutrunner station
- ▶ 2.2 - Data sheet of the Spindle

3 - Safety instructions and regulations

- ▶ 3.1 - General safety instructions
- ▶ 3.2 - What the operator must ensure
- ▶ 3.3 - Personnel selection and qualifications
- ▶ 3.4 - Safety measures for specific operation phases
- ▶ 3.5 - Guide lines for the servicing and maintenance staff
- ▶ 3.6 - Advice regarding specific kind of dangers
- ▶ 3.7 - Safety equipment

4 - Utilisation of the tightening station

- ▶ 4.1 - Using original design or purpose
- ▶ 4.2 - Usage other than the original intention

5 - Transportation, storage and packaging

- ▶ 5.1 - Transporting the workstation or components
- ▶ 5.2 - Packaging
- ▶ 5.3 - Disposal of packaging material
- ▶ 5.4 - Transport preparation of the Nutrunner
- ▶ 5.5 - Transportation safety devices
- ▶ 5.6 - Intermediate storage
- ▶ 5.7 - Scope of supply

6 - Start-Up procedures

- ▶ 6.1 - General Advice
- ▶ 6.2 - Prerequisites for start-up
- ▶ 6.3 - Start-up
- ▶ 6.4 - Shutdown (de-installation)

7 - Instruction manual for the Nutrunner

Scope of supply

8 - Service and Maintenance

- ▶ 8.1 - General Advice
- ▶ 8.2 - Servicing the Spindle
- ▶ 8.3 - Servicing the components
- ▶ 8.4 - General information
- ▶ 8.5 - List of Spare and working parts
- ▶ 8.6 - Inspection and maintenance

9 - Control

- ▶ 9.1 - Program Printout
- ▶ 9.2 - Calibration protocol spindles
- ▶ 9.3 - Power MACS test protocol

10 - Power MACS 4000

- ▶ 10.1 - User Manual Power MACS Software
- ▶ 10.2 - Power MACS System design and installation
- ▶ 10.3 - Functional and technical description PM TC's
- ▶ 10.4 - User Manual Power MACS Controller
- ▶ 10.5 - User Manual Mainswitch Box
- ▶ 10.6 - Distribution Box

11 - Certificates and test protocols

- ▶ 11.1 - Spindle test certificates
- ▶ 11.2 - CE-Declaration of conformity
- ▶ 11.3 - Hoist ring certificates of proof test

12 - Mechanical assembly drawings and part lists (no manufacturing drawings)

13 - Electrical drawings and part lists

14 - Components (depends on the scope of supply)

- ▶ 14.1 - ASL Nutrunner
- ▶ 14.2 - Spindle drawing
- ▶ 14.3 - Balancer
- ▶ 14.4 - Fall Down Device

1 Set of paper and CD-Rom with complete documentation.

NOTES

- ▶ Translation in other languages must be calculated separately.

Description	Ordering No.
Additional Binder	8995 7900 01
Additional Language	8995 7900 02
Customer Plotframe	8995 7900 03

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