



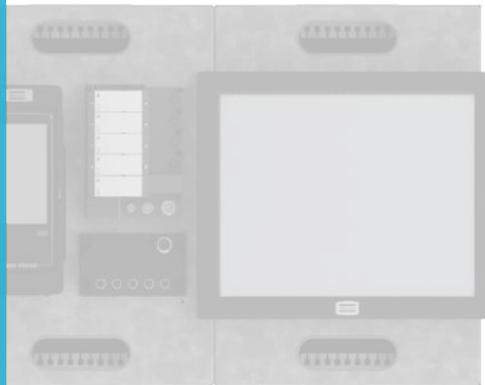
## ***AX2 - AX5 Articulated Arms***

External Product Information

***Atlas Copco***

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# 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.*

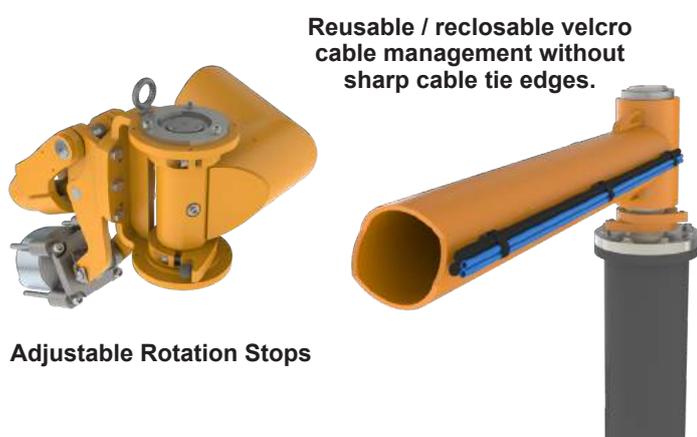


## FEATURES

- ▶ 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

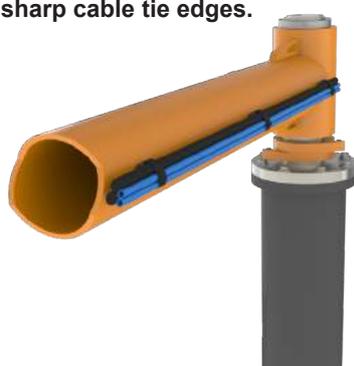
## BENEFITS

- ▶ 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

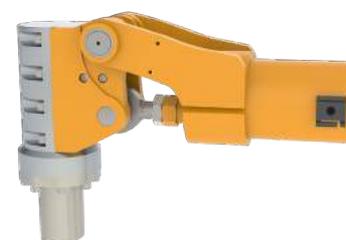


Reusable / reclosable velcro cable management without sharp cable tie edges.

Adjustable Rotation Stops



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

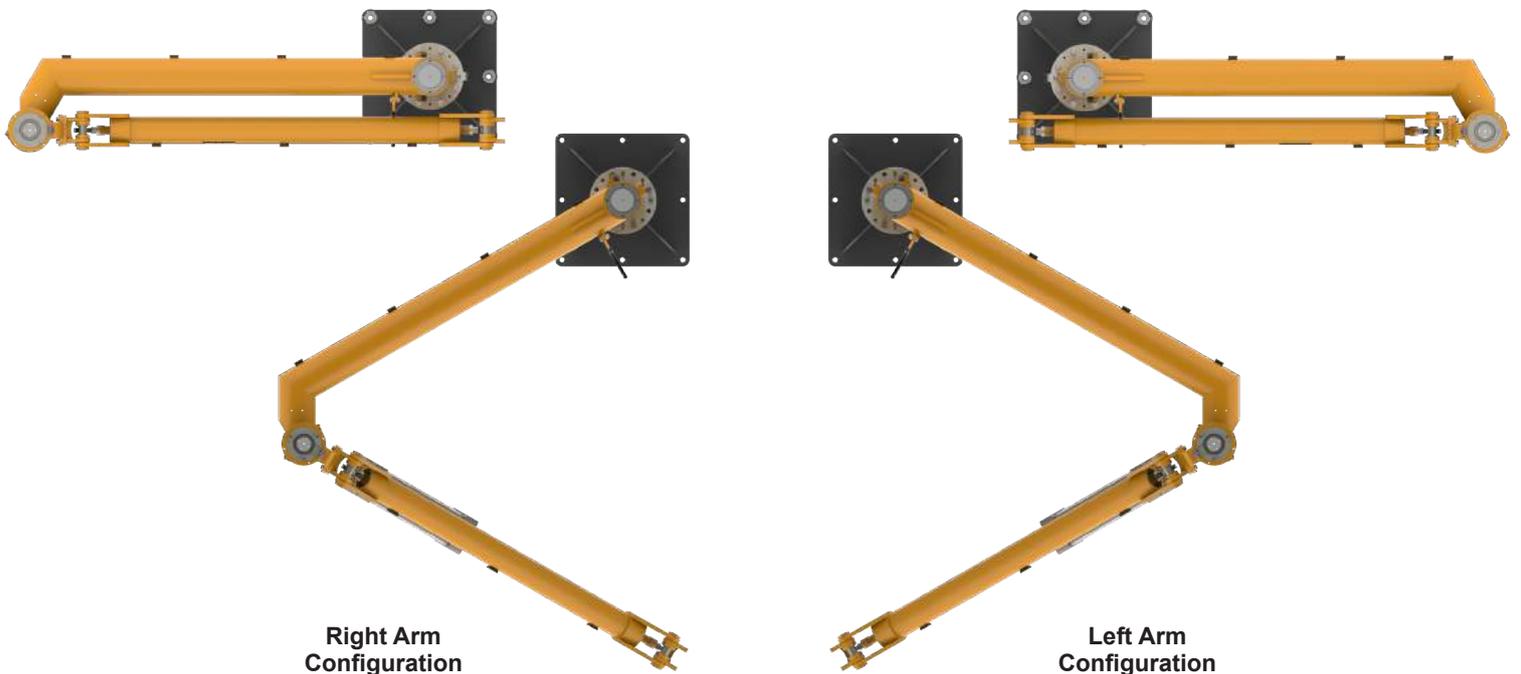
Up to 12 Configurations Available



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

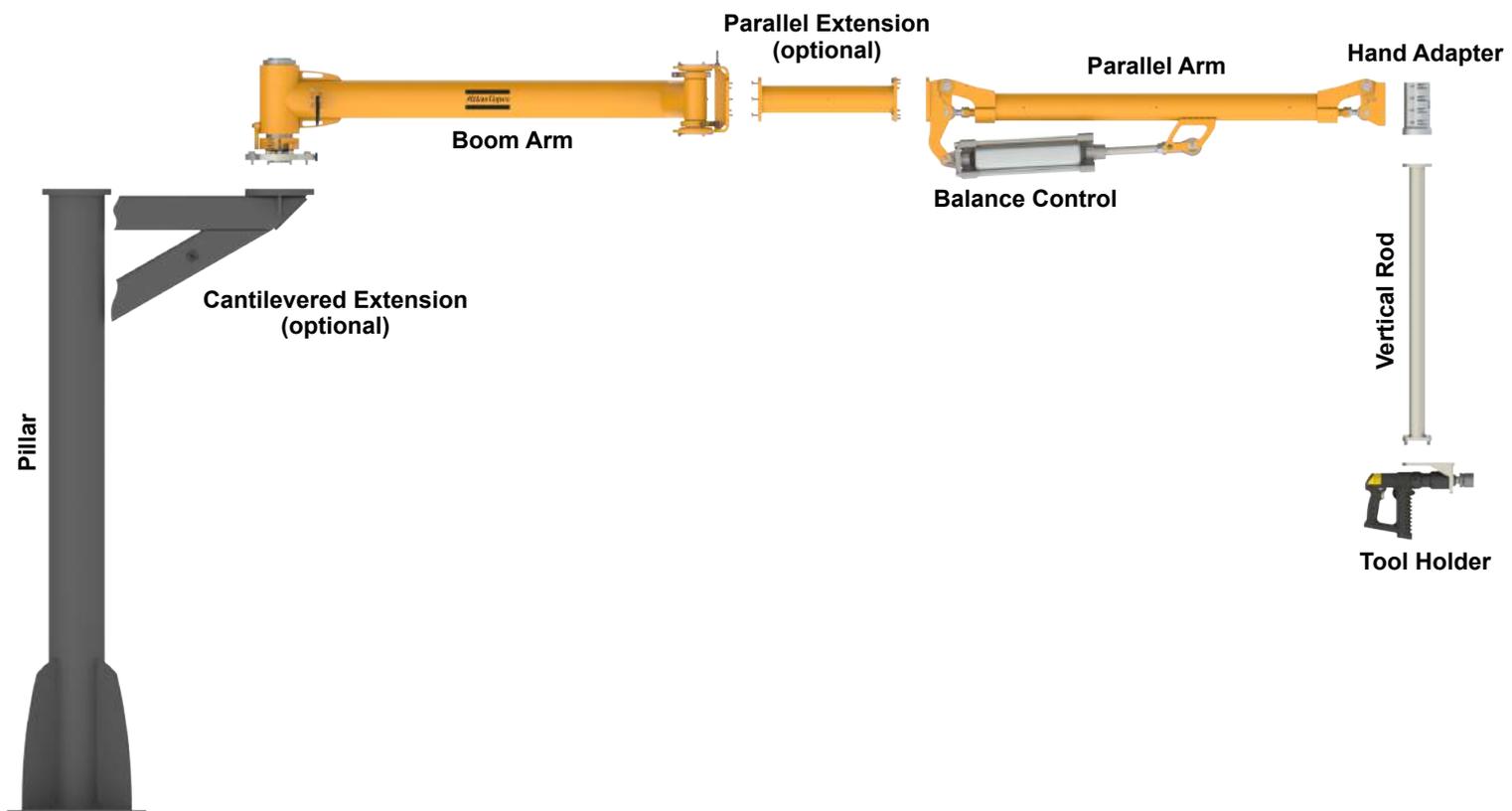
• Standard arm configuration  
+ Standard arm configuration with cantilevered extension

## 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.*



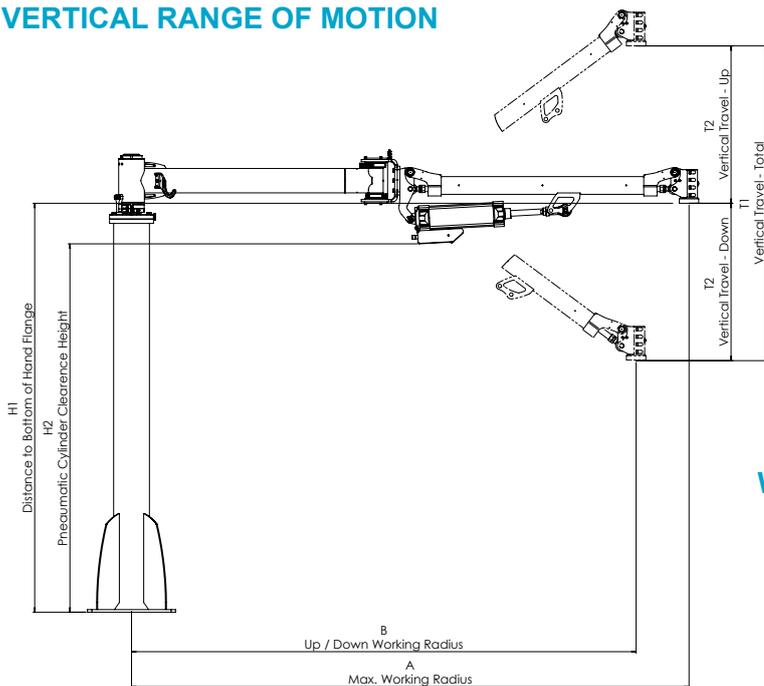
Arm Model	Pillar	Cantilevered Pillar	Boom Arm	Parallel Arm Extension	Parallel Arm	Vertical Rod / Hand Adapter
AX2	AX2-P	-	AX2-BA-1	-	AX2-PA-1	AX2
	AX3/4-P	-	AX4-BA-1.5	AX2-PE-0.5	AX2-PA-1	AX2
	-	AX3/4-CP-1	AX4-BA-1.5	AX2-PE-0.5	AX2-PA-1	AX2
AX3	AX3/4-P	-	AX3-BA-1.25	-	AX3-PA-1.25	AX3/4
	AX3/4-P	-	AX4-BA-1.5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

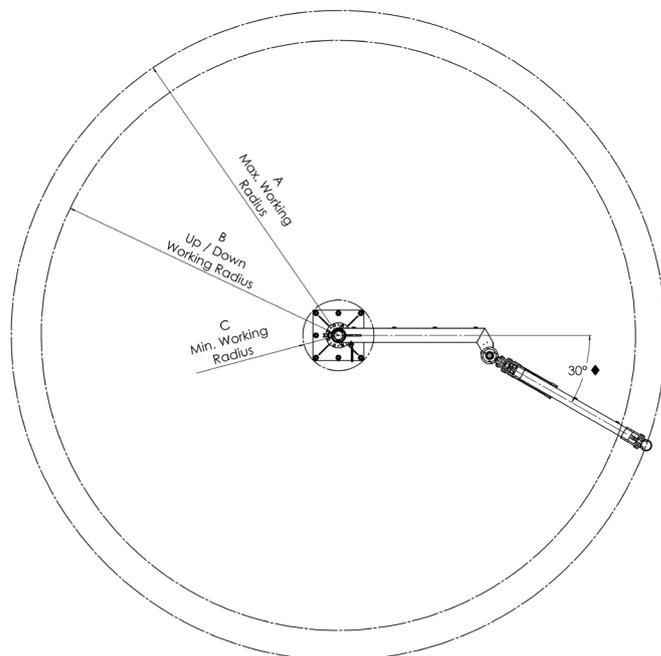
Arm Model	Weight kg (lb)	Reach m	Maximum Working Radius		Up/Down Working Radius	Minimum Working Radius	Vertical Travel Total T <sub>1</sub> mm	Height	
			A mm	B mm	C mm	H1 mm		H2 mm	
AX2-2	124 (274)	2	2152	2079	243	750	2084	1905	
AX2-3	247 (545)	3	3175	3102	320	750	2391	2210	
AX2-4C	387 (853)	4C	3175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

## 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

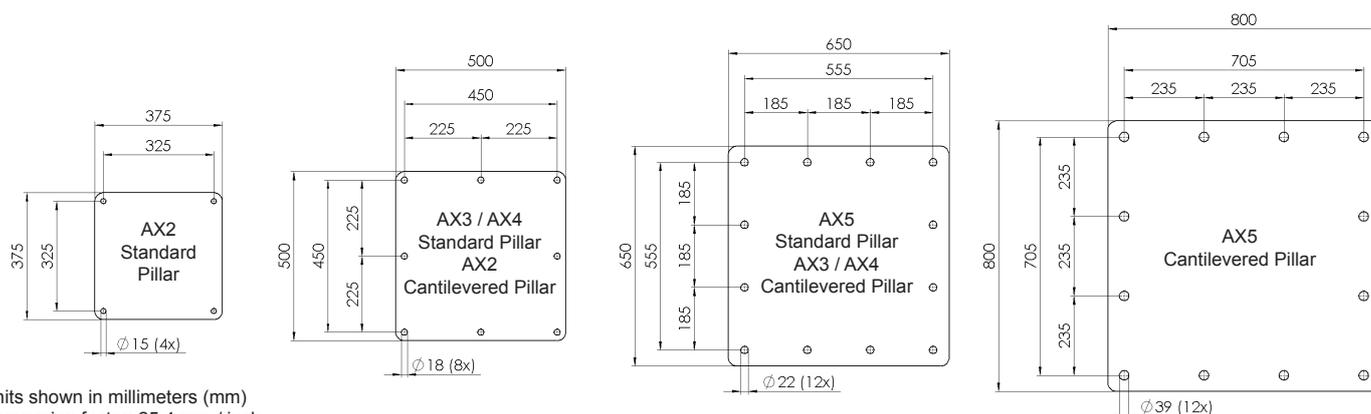


Standard offering

## REQUIRED EQUIPMENT

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

	AX2	AX3 / AX4	AX5
Description	Weight kg (lb)	Weight kg (lb)	Weight kg (lb)
Standard Pillar - 1000 mm	53 (117)	92 (204)	132 (292)
Standard Pillar - 1250 mm	58 (128)	100 (221)	151 (332)
Standard Pillar - 1500 mm	63 (140)	108 (237)	169 (373)
Standard Pillar - 1750 mm	69 (151)	115 (254)	187 (413)
Standard Pillar - 2000 mm	74 (163)	123 (271)	206 (454)
Standard Pillar - 2250 mm	79 (174)	131 (288)	224 (494)
Standard Pillar - 2500 mm	84 (186)	139 (305)	242 (534)
Standard Pillar - 2750 mm	90 (197)	146 (322)	261 (575)
Standard Pillar - 3000 mm	95 (209)	154 (339)	279 (616)
<b>500 mm Cantilevered Length</b>			
Cantilevered Pillar - 500 mm L - 2000 mm H	140 (308)	92 (204)	-
Cantilevered Pillar - 500 mm L - 2250 mm H	-	100 (221)	-
Cantilevered Pillar - 500 mm L - 2500 mm H	155 (342)	108 (237)	-
Cantilevered Pillar - 500 mm L - 3000 mm H	171 (377)	115 (254)	-
<b>1000 mm Cantilevered Length</b>			
Cantilevered Pillar - 1000 mm L - 2000 mm H	181 (400)	131 (288)	224 (494)
Cantilevered Pillar - 1000 mm L - 2250 mm H	-	139 (305)	242 (534)
Cantilevered Pillar - 1000 mm L - 2500 mm H	196 (432)	146 (322)	261 (575)
Cantilevered Pillar - 1000 mm L - 3000 mm H	212 (467)	154 (339)	279 (616)



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

# AX2 - AX5 Articulated Arms - options



## 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

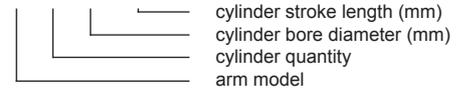
- ▶ Pneumatic cylinder and mounting
- ▶ Precision pneumatic control circuit
- ▶ Air preparation with mounting

## NOTES

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

### Balance Control naming convention:

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



Arm Model	Description	Maximum Balance Capacity @ supply pressure			Maximum Balance Capacity @ supply pressure		
		kg (lb)			kg (lb)		
		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)
AX3	Balance Control - AX3/4 - 1-125-320	68 (150)	70 (154)	70 (154)	70 (154)	70 (154)	70 (154)
AX4	Balance Control - AX3/4 - 1-125-320	50 (110)	71 (156)	90 (198)	53 (116)	74 (164)	90 (198)
	Balance Control - AX3/4 - 2-125-320	90 (198)	90 (198)	90 (198)	90 (198)	90 (198)	90 (198)
AX5	Balance Control - AX5 - 1-125-400	48 (107)	75 (165)	100 (220)	52 (115)	79 (175)	100 (220)
	Balance Control - AX5 - 2-125-400	100 (220)	100 (220)	100 (220)	100 (220)	100 (220)	100 (220)

## PARKING BRAKE

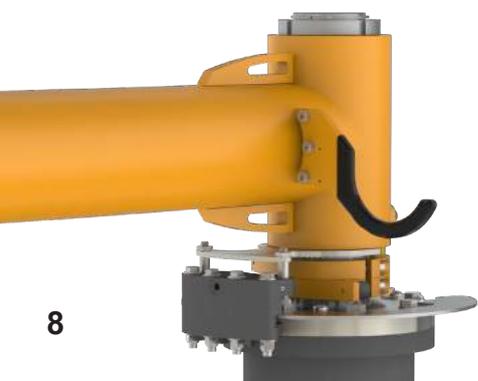
Parking Brakes are used to keep the arm from drifting while it is not in use by the operator. If a fastening sequence requires the operator to perform operations between rundowns; it can be advantageous to avoid returning the arm to its parking hook between each step. Parking Brakes ensure the unattended 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
AX2-2
AX2-3
AX2-4C
AX3-2.5
AX3-3
AX3-4C
AX4-3
AX4-4
AX4-4C
AX5-4
AX5-4T
AX5-4C

# AX2 - AX5 Articulated Arms - options



Fixed Hand Adapter



Rotating Hand Adapter



Rotating Hand Adapter with Parking Brake



Rotating Hand Adapter with Reaction Brake

HAND ADAPTER

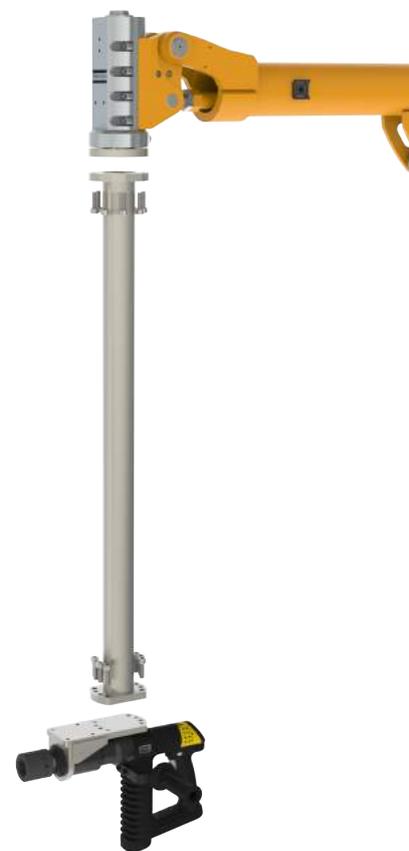
VERTICAL ROD



Vertical Rod - Straight



Vertical Rod - Offset



TOOL HOLDER



Fixed Plate - Vertical



Fixed Plate - Horizontal



Fixed Clamp - Angle



Rotating Body - Angle

# AX2 - AX5 Articulated Arms - options

## HAND ADAPTER

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 rotation
- ▶ Integrated rotation limiter
- ▶ PRS adaptable



### ROTATING HAND ADAPTER WITH PARKING BRAKE

- ▶ 330° of rotation
- ▶ PRS adaptable

### ROTATING HAND ADAPTER WITH REACTION BRAKE

- ▶ 330° of rotation
- ▶ PRS adaptable



Description	AX2	AX3 / AX4	AX5
	Weight kg (lb)	Weight kg (lb)	Weight kg (lb)
Fixed Hand Adapter	1.4 (3.2)	4.1 (9)	8.9 (19.5)
Rotating Hand Adapter	2.3 (5.1)	6.1 (13.4)	12.5 (27.5)
Rotating Hand Adapter with Parking Brake	3.5 (7.8)	8.4 (18.4)	14.3 (31.5)
Rotating Hand Adapter with Reaction Brake	5.5 (12.1)	13.5 (29.8)	24.5 (54)

# AX2 - AX5 Articulated Arms - options

## VERTICAL ROD

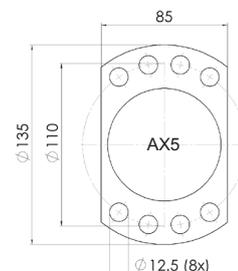
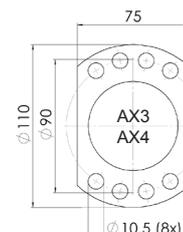
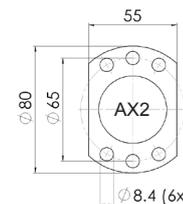
The vertical rod is used to connect a tool holder to the hand adapter on the articulated arm. Available in numerous fixed lengths, it can be configured to suit part height or clearance requirements.

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)	Weight kg (lb)	Weight kg (lb)
<b>Vertical Rod Straight</b>			
Vertical Rod - 500 mm	2 (4.4)	5.3 (11.7)	7.4 (16.3)
Vertical Rod - 600 mm	2.3 (5.1)	6.1 (13.4)	8.5 (18.7)
Vertical Rod - 700 mm	2.6 (5.7)	7 (15.4)	9.6 (21.2)
Vertical Rod - 800 mm	2.9 (6.4)	7.8 (17.2)	10.7 (23.6)
Vertical Rod - 900 mm	3.2 (7.1)	8.7 (19.2)	11.8 (26)
Vertical Rod - 1000 mm	3.5 (7.7)	9.5 (20.9)	12.9 (28.4)
Vertical Rod - 1100 mm	3.8 (8.4)	10.4 (22.9)	14 (30.9)
Vertical Rod - 1200 mm	4.1 (9)	11.2 (24.7)	15.1 (33.3)
Vertical Rod - 1300 mm	4.4 (9.7)	12.1 (26.7)	16.2 (35.7)
Vertical Rod - 1400 mm	4.7 (10.4)	12.9 (28.4)	17.3 (38.1)
Vertical Rod - 1500 mm	5 (11)	13.7 (30.2)	18.4 (40.6)

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



## 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)	Description	Weight kg (lb)
<b>Offset Vertical Rod - AX2</b>			
500 mm H - 250 mm L	2.8 (6.1)	1000 mm H - 500 mm L	5.9 (13)
500 mm H - 500 mm L	3.5 (7.8)	1100 mm H - 250 mm L	4.6 (10.2)
600 mm H - 250 mm L	3.1 (6.8)	1100 mm H - 500 mm L	6.2 (13.7)
600 mm H - 500 mm L	4.6 (10.3)	1200 mm H - 250 mm L	4.9 (10.9)
700 mm H - 250 mm L	3.4 (7.5)	1200 mm H - 500 mm L	6.5 (14.4)
700 mm H - 500 mm L	4.9 (10.9)	1300 mm H - 250 mm L	5.2 (11.6)
800 mm H - 250 mm L	3.7 (8.2)	1300 mm H - 500 mm L	6.8 (15.1)
800 mm H - 500 mm L	5.2 (11.6)	1400 mm H - 250 mm L	5.5 (12.3)
900 mm H - 250 mm L	4 (8.9)	1400 mm H - 500 mm L	7.1 (15.7)
900 mm H - 500 mm L	5.6 (12.3)	1500 mm H - 250 mm L	6.6 (14.7)
1000 mm H - 250 mm L	4.3 (9.5)	1500 mm H - 500 mm L	7.4 (16.4)

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

AX3 / AX4			
Description	Weight kg (lb)	Description	Weight kg (lb)
<b>Offset Vertical Rod - AX3/4</b>			
500 mm H - 250 mm L	7.5 (16.7)	1000 mm H - 750 mm L	17.8 (39.4)
500 mm H - 500 mm L	9.7 (21.4)	1000 mm H - 1000 mm L	19.9 (44.1)
500 mm H - 750 mm L	11.8 (26.1)	1100 mm H - 250 mm L	12.6 (28)
500 mm H - 1000 mm L	15.6 (34.7)	1100 mm H - 500 mm L	14.7 (32.7)
600 mm H - 250 mm L	8.4 (18.6)	1100 mm H - 750 mm L	18.6 (41.3)
600 mm H - 500 mm L	10.5 (23.3)	1100 mm H - 1000 mm L	20.7 (46)
600 mm H - 750 mm L	12.6 (28)	1200 mm H - 250 mm L	13.5 (29.9)
600 mm H - 1000 mm L	16.5 (36.6)	1200 mm H - 500 mm L	15.6 (34.6)
700 mm H - 250 mm L	9.2 (20.5)	1200 mm H - 750 mm L	19.4 (43.2)
700 mm H - 500 mm L	11.3 (25.2)	1200 mm H - 1000 mm L	21.6 (47.9)
700 mm H - 750 mm L	15.2 (33.8)	1300 mm H - 250 mm L	14.3 (31.7)
700 mm H - 1000 mm L	17.3 (38.5)	1300 mm H - 500 mm L	16.4 (36.4)
800 mm H - 250 mm L	10.1 (22.4)	1300 mm H - 750 mm L	20.3 (45)
800 mm H - 500 mm L	12.2 (27.1)	1300 mm H - 1000 mm L	22.4 (49.7)
800 mm H - 750 mm L	16.1 (35.7)	1400 mm H - 250 mm L	15.2 (33.6)
800 mm H - 1000 mm L	16.4 (36.4)	1400 mm H - 500 mm L	19 (42.2)
900 mm H - 250 mm L	10.9 (24.2)	1400 mm H - 750 mm L	21.1 (46.9)
900 mm H - 500 mm L	13 (28.9)	1400 mm H - 1000 mm L	23.3 (51.6)
900 mm H - 750 mm L	16.9 (37.5)	1500 mm H - 250 mm L	16 (35.5)
900 mm H - 1000 mm L	19 (42.2)	1500 mm H - 500 mm L	19.9 (44.1)
1000 mm H - 250 mm L	11.8 (26.1)	1500 mm H - 750 mm L	22 (48.8)
1000 mm H - 500 mm L	13.9 (30.8)	1500 mm H - 1000 mm L	24.1 (53.5)

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

AX5			
Description	Weight kg (lb)	Description	Weight kg (lb)
<b>Offset Vertical Rod - AX5</b>			
500 mm H - 250 mm L	10.5 (23.4)	1000 mm H - 750 mm L	21.5 (47.7)
500 mm H - 500 mm L	13.3 (29.5)	1000 mm H - 1000 mm L	24.2 (53.7)
500 mm H - 750 mm L	16 (35.5)	1100 mm H - 250 mm L	17.1 (37.9)
500 mm H - 1000 mm L	18.7 (41.6)	1100 mm H - 500 mm L	19.8 (44)
600 mm H - 250 mm L	11.6 (25.8)	1100 mm H - 750 mm L	22.6 (50.1)
600 mm H - 500 mm L	14.4 (31.9)	1100 mm H - 1000 mm L	27.7 (61.5)
600 mm H - 750 mm L	17.1 (37.9)	1200 mm H - 250 mm L	18.2 (40.4)
600 mm H - 1000 mm L	19.8 (44)	1200 mm H - 500 mm L	20.9 (46.4)
700 mm H - 250 mm L	12.7 (28.2)	1200 mm H - 750 mm L	23.7 (52.5)
700 mm H - 500 mm L	15.5 (34.3)	1200 mm H - 1000 mm L	28.8 (63.9)
700 mm H - 750 mm L	18.2 (40.4)	1300 mm H - 250 mm L	19.3 (42.8)
700 mm H - 1000 mm L	20.9 (46.4)	1300 mm H - 500 mm L	22 (48.9)
800 mm H - 250 mm L	13.8 (30.7)	1300 mm H - 750 mm L	24.8 (54.9)
800 mm H - 500 mm L	16.6 (36.7)	1300 mm H - 1000 mm L	29.9 (66.4)
800 mm H - 750 mm L	19.3 (42.8)	1400 mm H - 250 mm L	20.4 (45.2)
800 mm H - 1000 mm L	22 (48.9)	1400 mm H - 500 mm L	23.1 (51.3)
900 mm H - 250 mm L	14.9 (33.1)	1400 mm H - 750 mm L	25.8 (57.4)
900 mm H - 500 mm L	17.6 (39.2)	1400 mm H - 1000 mm L	31 (68.8)
900 mm H - 750 mm L	20.4 (45.2)	1500 mm H - 250 mm L	21.5 (47.7)
900 mm H - 1000 mm L	23.1 (51.3)	1500 mm H - 500 mm L	24.2 (53.7)
1000 mm H - 250 mm L	16 (35.5)	1500 mm H - 750 mm L	26.9 (59.8)
1000 mm H - 500 mm L	18.7 (41.6)	1500 mm H - 1000 mm L	32.1 (71.2)

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



# AX2 - AX5 Articulated Arms - options

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 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



### 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



### 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 - options

## AX2 TOOL HOLDERS

Tool Model	Torque Range Nm	Mounting Type
ETV ST31	5 - 20	M - 39
ETV STR31	5 - 20	M - 40
ETV ST61	6 - 180	M - 39
	200	M - 39 Angle Head (4) M5
ETV STR61	6 - 180	M - 40
	200	M - 40 Angle Head (4) M5
ETV ST81	50 - 180	M - 43
	200	M - 43 Angle Head (4) M5
ETV ST101	100 - 180	M - 54.4
	200	M - 54.4 Angle Head (4) M5
	270	Angle Head (4) M6
ETD ST31 / STR31	5 - 10	Dia. 24 mm
ETD ST31 Telescopic	5 - 10	Dia. 28 mm
ETD ST61 / STR31	15 - 30	Dia. 24 mm
	50 - 90	Spline 2
ETD ST61 Telescopic	15 - 30	Spline 2
	50 - 120	Spline 3
ETD ST81	30	Dia. 24 mm
	50 - 120	Spline 2
ETD ST81 Telescopic	30	Spline 2
	50 - 120	Spline 3
ETD ST101	100 - 120	Flange (2) M8
	150 - 200	Flange (3) M10
ETD ST101 Telescopic	100 - 120	Flange (2) M8
	150 - 200	Flange (3) M10
ETP STR61	20 - 30	Dia. 24 mm
	50 - 120	Spline 2
QST34	8 - 20	QST34
QST42	20 - 50	QST42
QST50	90 - 150	QST50
QST62	150 - 230	QST62

# AX2 - AX5 Articulated Arms - options

## AX3 / AX4 TOOL HOLDERS

Tool Model	Torque Range	
	Nm	Mounting Type
ETV ST101	370	Angle Head (4) M6
	450 - 600	Angle Head (4) M8 (88 mm Sq.)
ETV ST101 TM	600	Spline 4
	1000	Spline 5
ETD ST101	300 - 500	Flange (3) M10
	750 - 1000	Flange (4) M10 (68 mm Sq.)
ETP ST101	300	Spline 3
	500	Spline 4
	750 - 1000	Spline 5
QST62	350	QST62
QST80	450 - 600	QST80
QST90	750 - 1000	QST90

## AX5 TOOL HOLDERS

Tool Model	Torque Range	
	Nm	Mounting Type
ETV ST101-1500-25-TM	1500 Nm	Spline 9
ETV ST101-1500-38-TM	1500 Nm	Angle Head (4) M12
ETV ST101	2000 Nm	Angle Head (4) M12
ETD ST101-1200-25-F	1200 Nm	Flange (4) M10 (68 mm Sq.)
ETD ST101-1200-25-S	1200 Nm	Spline 7
ETD ST101-1200-25-T50-F	1200 Nm	Flange (4) M10 (68 mm Sq.)
ETD ST101-1200-25-T50-S-F	1200 Nm	Spline 7
ETD ST101-2000-38-F	2000 Nm	Flange (4) M12 (88 mm Sq.)
ETD ST101-2000-38-S-F	2000 Nm	Spline 8
ETD ST101-2000-38-T50-F	2000 Nm	Flange (4) M12 (88 mm Sq.)
ETD ST101-2000-38-T50-S-F	2000 Nm	Spline 8
ETP ST101	1500 Nm	Spline 9
	2000 Nm	Spline 7
QST95	1750 Nm	QST95

# AX2 - AX5 Articulated Arms - options



## 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

	AX2	AX3 / AX4	AX5
Description	Weight kg (lb)	Weight kg (lb)	Weight kg (lb)
Handle Mounting - Tool Holder	0.9 (2)	0.9 (2)	0.9 (2)
Rotate	2.3 (5)	5.5 (12.1)	9 (19.8)
<b>Detent Plates</b>			
Blank	1.2 (2.6)	1.8 (4)	3.1 (6.9)
4-Position - 90 Degrees	1.1 (2.5)	1.7 (3.8)	3 (6.7)
8-Position - 45 Degrees	1.1 (2.4)	1.6 (3.5)	2.9 (6.4)
16-Position - 22.5 Degrees	1 (2.2)	1.4 (3.1)	2.7 (5.8)

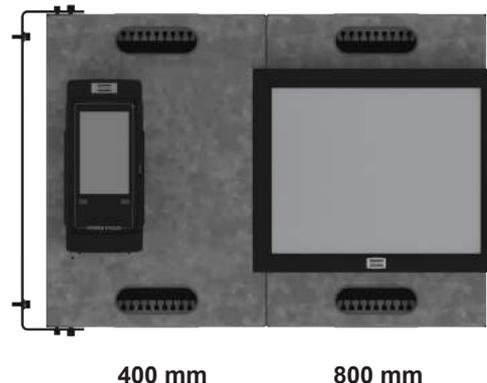
# AX2 - AX5 Articulated Arms - accessories

## 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	AX5-5C
	Weight kg (lb)	Weight kg (lb)	Weight kg (lb)
Controller Mounting System - 400 mm	12.8 (28.3)	12.4 (27.3)	-
Controller Mounting System - 800 mm	21 (46.3)	21.4 (47.5)	-
Controller Mounting Assembly - 400 mm	11.1 (24.5)	11.1 (24.5)	11.1 (24.5)
Controller Mounting Assembly - 800 mm	19.3 (42.6)	19.3 (42.6)	19.3 (42.6)
Controller Mounting Extension - 400 mm*	8.2 (18)	8.2 (18)	8.2 (18)
Controller Mounting Shelf	4.9 (10.8)	4.9 (10.8)	4.9 (10.8)

\* 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 - accessories

## ACCESSORY MOUNTING SYSTEM

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)
	Pillar Mount	Vertical Rod Mount Single    Double	
Shelf - Small	•		2.6 (5.8)
Shelf - Large	•		3 (6.7)
Bin Rack Assembly - (3 Bins) Black	•		5 (11)
Bin Rack Assembly - (3 Bins) Blue	•		5 (11)
Bin Rack Assembly - (3 Bins) Red	•		5 (11)
Bin Rack Assembly - (3 Bins) Yellow	•		5 (11)
Bin Rack Assembly - (3 Bins) Blue / Red / Yellow	•		5 (11)
Selector 4 / Bit Selector 8 Mounting	•	•	3.4 (7.6)
Selector 8 / Selector for Large Sockets Mounting	•		5 (11)
Stacklight Mounting	•	•	0.8 (1.9)
Operator Panel Mounting	•	•	3.1 (6.7)
Indicator Box Mounting		•	1.4 (3)
MiniDisplay Mounting		•	1.4 (3)
MaxiDisplay Mounting		•	2.8 (6.2)
Handle Mounting		•	0.8 (1.8)
Bar Code Reader Mounting	•	•	-
Brake On/Off Mounting – Pneumatic Switch		•	0.6 (1.4)



Operator Panel



MiniDisplay



Stacklight



Shelf



Bar Code Reader



Bin Rack



Socket Selector 4 /  
Bit Selector 8



Operator Handle

# AX2 - AX5 Articulated Arms - accessories

Description	AX2-2	AX2-3 AX2-4C AX3
	Weight kg (lb)	Weight kg (lb)
Accessory Mounting Strap with Bracket	0.8 (1.9)	1 (2.2)
Accessory Mounting Strap	0.6 (1.2)	0.8 (1.7)
Accessory Mounting Bracket	0.3 (0.6)	0.3 (0.6)

Description	AX2	AX3 /	AX5
	Weight kg (lb)	Weight kg (lb)	Weight kg (lb)
Vertical Rod Accessory Mounting - Single Clamp	0.4 (0.8)	0.4 (0.9)	0.5 (1.1)
Vertical Rod Accessory Mounting - Double Clamp	0.7 (1.5)	0.8 (1.8)	1 (2.2)
Accessory Offset - Angular - 70 mm	1.8 (4)	1.8 (4)	1.8 (4)
Accessory Offset - Angular - 140 mm	2 (4)	2 (4)	2 (4)
Accessory Offset - Angular - 250 mm	2.2 (4.9)	2.2 (4.9)	2.2 (4.9)
Accessory Offset - Angular - 400 mm	2.5 (5.4)	2.5 (5.4)	2.5 (5.4)
Accessory Offset - Straight - 70 mm	1.9 (4.2)	1.9 (4.2)	1.9 (4.2)
Accessory Offset - Straight - 140 mm	2.1 (4.6)	2.1 (4.6)	2.1 (4.6)
Accessory Offset - Straight - 250 mm	2.3 (5.1)	2.3 (5.1)	2.3 (5.1)
Accessory Offset - Straight - 400 mm	2.6 (5.6)	2.6 (5.6)	2.6 (5.6)

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 - accessories

## 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	AX3-4	AX5-4
	Weight kg (lb)				
Park-Position Lock	2 (4.4)	2.5 (5.5)	2.5 (5.5)	2.5 (5.5)	2.8 (6.2)

Cantilevered Pillars require a customized solution



## 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)	Weight kg (lb)	Weight kg (lb)
Pillar Base Plate Extension	39.5 (87)	56.9 (125.3)	126.5 (278.8)

# AX2 - AX5 Articulated Arms - accessories

## 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)	Weight kg (lb)
1 - 100	0.1 (0.3)	3.8 (8.4)
1 - 125	0.2 (0.4)	5.1 (11.3)
2 - 125	0.3 (0.7)	-



## 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 - accessories

Position Recognition System - Description
PRS - AX2-2 - 3-Axis
PRS - AX2-2 - 4-Axis - for Rotating Hand Adapter
PRS - AX2-2 - 4-Axis - for Rotating Hand Adapter with Reaction Brake
PRS - AX2 - +1-Axis - for Rotate Accessory
PRS - AX2-3 / AX2-4C - 3-Axis
PRS - AX2-3 / AX2-4C - 4-Axis - for Rotating Hand Adapter
PRS - AX2-3 / AX2-4C - 4-Axis - for Rotating Hand Adapter with Reaction Brake
PRS - AX3-2.5 / AX3-3 / AX3-4C / AX4-3 - 3-Axis
PRS - AX3-2.5 / AX3-3 / AX3-4C / AX4-3 - 4-Axis - for Rotating Hand Adapter
PRS - AX3-2.5 / AX3-3 / AX3-4C / AX4-3 - 4-Axis - for Rotating Hand Adapter with Reaction Brake
PRS - AX3/4 - +1-Axis - for Rotate Accessory
PRS - AX4-4 / AX4-5C - 3-Axis
PRS - AX4-4 / AX4-5C - 4-Axis - for Rotating Hand Adapter
PRS - AX4-4 / AX4-5C - 4-Axis - for Rotating Hand Adapter with Reaction Brake
PRS - AX5-4 / AX5-4T / AX5-4C - 3-Axis
PRS - AX5-4 / AX5-4T / AX5-4C - 4-Axis - for Rotating Hand Adapter
PRS - AX5-4 / AX5-4T / AX5-4C - 4-Axis - for Rotating Hand Adapter with Reaction Brake
PRS - AX5 - +1-Axis - for Rotate Accessory

PRS Encoder Cables - Description
Encoder Cable Kit - 3-Axis - 1.3 m
Encoder Cable Kit - 3-Axis - 2 / 2.5 m
Encoder Cable Kit - 3-Axis - 3 m
Encoder Cable Kit - 3-Axis - 4 / 5 m
Encoder Cable Kit - 4-Axis - 1.3 m
Encoder Cable Kit - 4-Axis - 2 / 2.5 m
Encoder Cable Kit - 4-Axis - 3 m
Encoder Cable Kit - 4-Axis - 4 / 5 m
Encoder Cable Kit - 5-Axis - 1.3 m
Encoder Cable Kit - 5-Axis - 2 / 2.5 m
Encoder Cable Kit - 5-Axis - 3 m
Encoder Cable Kit - 5-Axis - 4 / 5 m

PRS HMI Kits - Description
PRS HMI Kit - MaxiDisplay-Ethernet Cable
PRS HMI Kit - ComNode-Ethernet Cable
PRS HMI Kit - HLTQ-Ethernet Cable

# AX2 - AX5 Articulated Arms - accessories

## 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

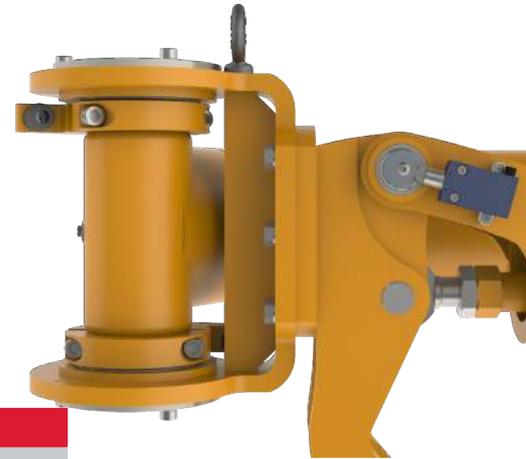
- ▶ Indicates when shoulder joint is rotated to a specific position

#### 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)	Weight kg (lb)
Position Switch Assembly - Shoulder	-	-
Position Switch Assembly - Parking Hook	-	-
Position Switch Assembly - Parallel Up/Down	-	-

Description	AX3-2.5 AX3-3 AX3-4C AX4-3	AX4-4 AX4-4C	AX5-4 AX5-4T AX5-4C
	Weight kg (lb)	Weight kg (lb)	Weight kg (lb)
Position Switch Assembly - Shoulder	-	-	-
Position Switch Assembly - Parking Hook	-	-	-
Position Switch Assembly - Parallel Up/Down	-	-	-

## *Committed to sustainable productivity*

We stand by our responsibilities towards our customers,  
towards the environment and the people around us.  
We make performance stand the test of time.  
This is what we call — Sustainable Productivity.

The Atlas Copco logo consists of the company name in a white, italicized serif font, centered between two horizontal white bars of equal length.

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