Articulated Arm

General Information

The Atlas Copco ranges of Articulated Arms have been newly designed in accordance with customer demands. The primary functions of the Articulated Arm are to React Torque and offer a close to Zero Gravity handling force for the operator.

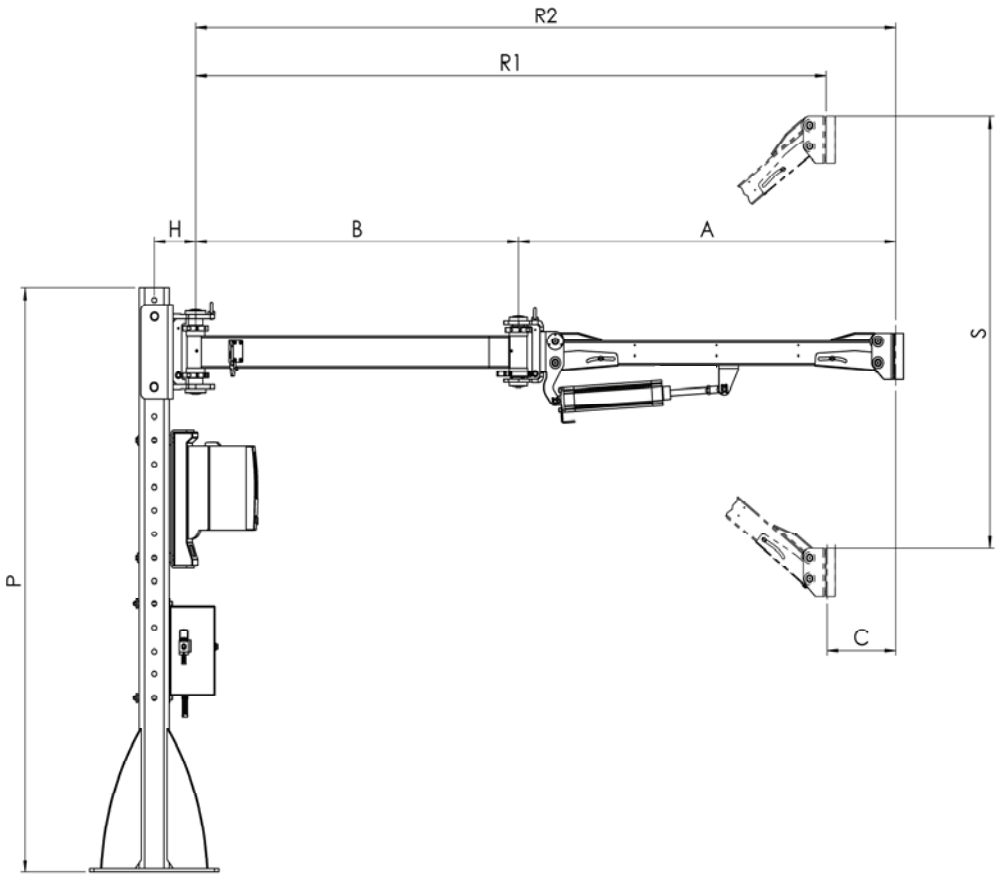
Lifting capacity dependant on model is up to 90kg, primarily for single spindle Handtool applications.

A full option package is available offering various degrees of freedom which is application specific.

The Articulated Arm systems are floor mounted, meaning complete tested systems can be delivered, installed and commissioned without the need for any external rail system etc..

Articulated Arm

System Layout



The Articulated Arm concept is built around three main system components, Pillar (P), Boom (B) and Parallel Arm (A). The pillar is fixed to the floor and the Boom / Parallel Arm arrangement can be fixed at variable heights on the predrilled pillar.

The Boom and Parallel Arm are kitted with rotational stops to be able to limit the angular rotation as required.

The balancing system is pneumatically powered from Festo. A line pressure of 6 bar is required to achieve the stated balancing capacities.

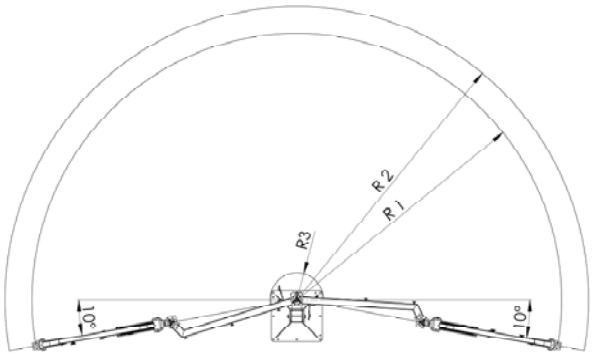
To allow a comfortable working position, the Articulated Arm can be configured either as Left or Right hand variations. See enclosed table for a further information.

Colour specification: Pillar: RAL 9005. Boom / Articulated Arm: RAL 1007. (Powder coated surface finish)

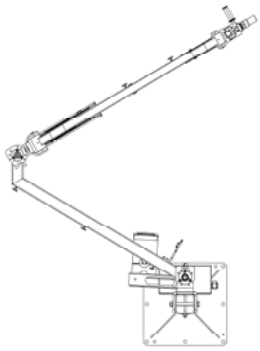
Flexible Working Areas

The working area can be seen on the graphs below. The working radius and the alternative configurations Left / Right should be considered in the planning phase. The values can be seen on the product selection tables.

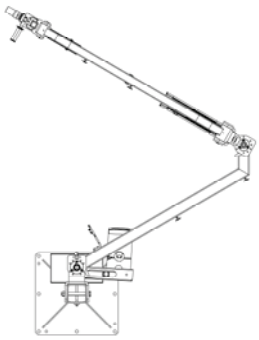
Depending on operator position and other factors such as available space, parking position etc, either a Left or Right hand configuration could be preferred.



Articulated Arm in a Left Hand configuration.



Left hand configuration



Right hand configuration

Description	Ordering Nr.	Torque range Nm	R1 mm	R2 mm	R3 mm	C mm	S mm	Approx. total weight kg	Balancing capacity @ 6 bar kg
Arm 500									
Arm 500 L 2000	8439 4000 20	100 - 500	2.040	2.250	300	210	1.200	305	60
Arm 500 R 2000	8439 4000 21	100 - 500	2.040	2.250	300	210	1.200	305	60
Arm 500 L 2500	8439 4000 30	100 - 500	2.480	2.750	300	270	1.400	330	60
Arm 500 R 2500	8439 4000 31	100 - 500	2.480	2.750	300	270	1.400	330	60
Arm 1000									
Arm 1000 L 3000	8439 4000 50	400 - 1.000	2.930	3.250	315	320	1.800	385	80
Arm 1000 R 3000	8439 4000 51	400 - 1.000	2.930	3.250	315	320	1.800	385	80
Arm 2000									
Arm 2000 L 3000	8439 4000 60	800 - 2.000	2.930	3.250	350	320	1.800	450	90
Arm 2000 R 3000	8439 4000 61	800 - 2.000	2.930	3.250	350	320	1.800	450	90
Arm 2000 L 4000	8439 4000 70	800 - 2.000	3.770	4.250	350	480	2.600	490	90
Arm 2000 R 4000	8439 4000 71	800 - 2.000	3.770	4.250	350	480	2.600	490	90

Dimensions common to all arm variants
P = 2.750mm
H = 190mm

Arm Configuration Key Description
Arm 500 **L** 2000 = **Left** Hand Arm
Arm 500 **R** 2000 = **Right** Hand Arm

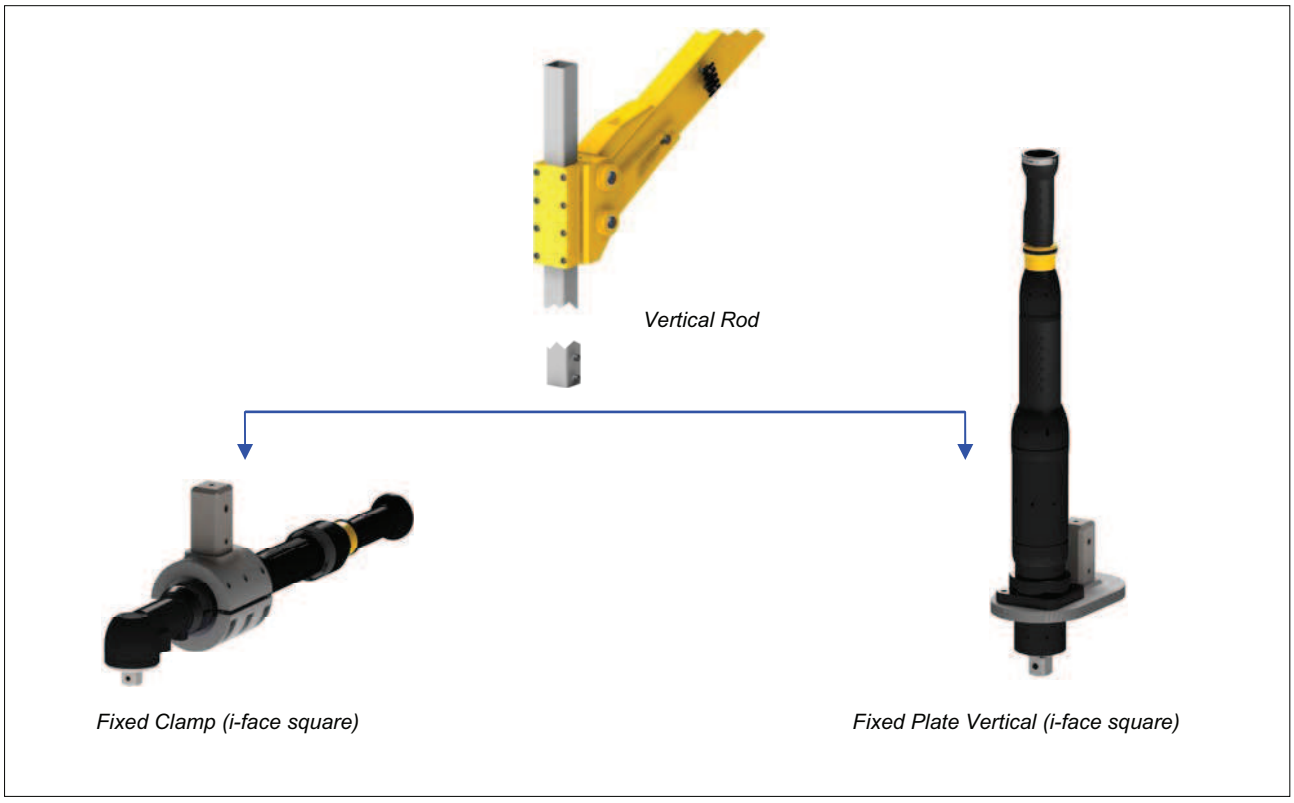
Atlas Copco
Application Center Europe

Tool Support Options

The Articulated Arm is created with a defined interface to attach the necessary tool holder support. The following pages show three potential system layouts that can be used dependant on the application.

Fixed Connection

This connection possibility is **only used for vertical fastenings**. The tool is always held fixed in relationship to the Articulated Arm, via the vertical rod.



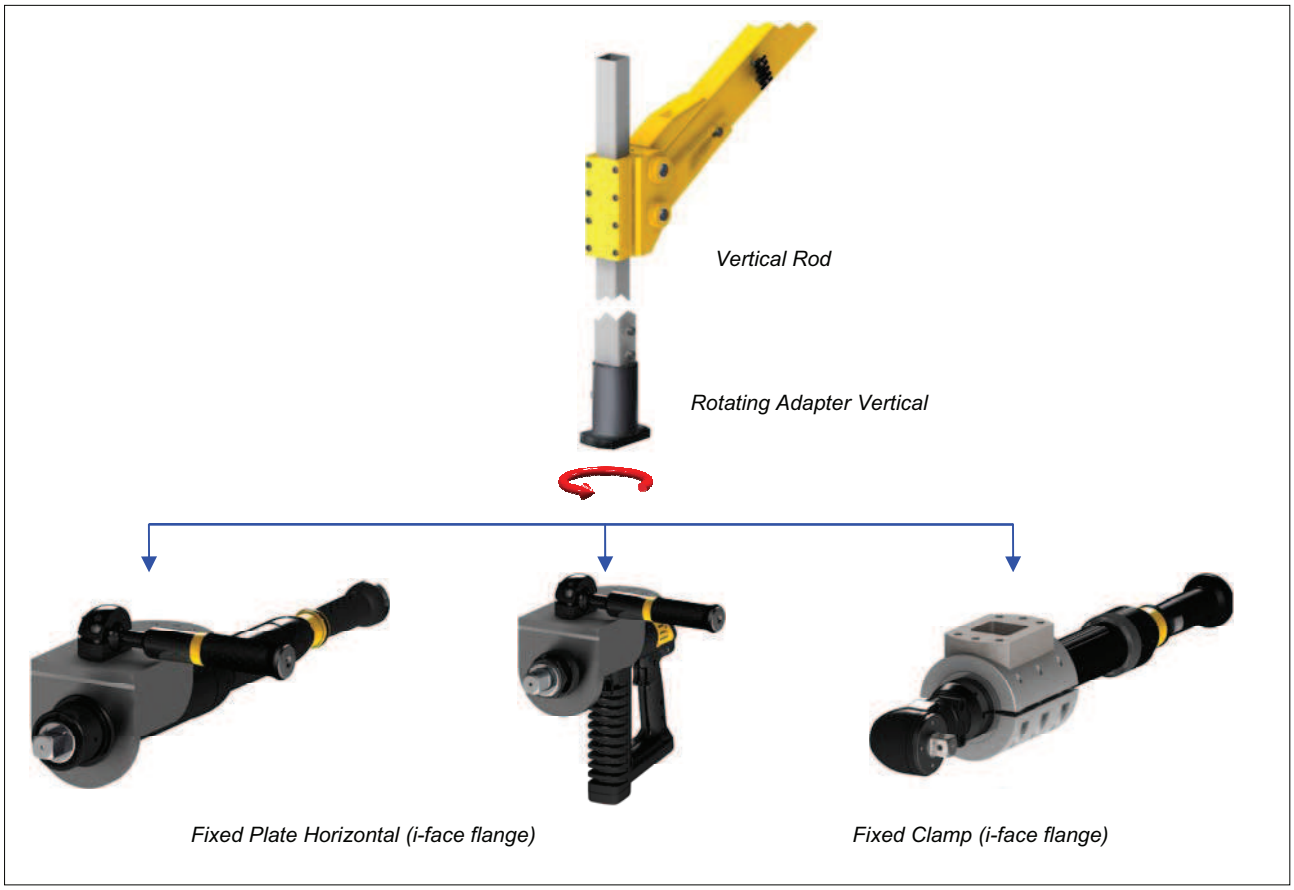
Fixed Clamp (i-face square)

Fixed Plate Vertical (i-face square)

Description	Ordering Nr.	Torque capacity (max) Nm	Weight kg	Family		
				Arm 500	Arm 1000	Arm 2000
Vertical rod (1500mm long) 50mm	8439 4001 10	1000	11	✓	✓	
Vertical rod (1500mm long) 60mm	8439 4001 11	2000	13			✓
Fixed Clamp (i-face square) 50mm	8439 4001 20	1000	6	✓	✓	
Fixed Clamp (i-face square) 60mm	8439 4001 21	2000	7			✓
Fixed Plate Vertical (i-face square) 50mm	8439 4001 30	1000	4	✓	✓	
Fixed Plate Vertical (i-face square) 60mm	8439 4001 31	2000	5			✓

Rotate Connection

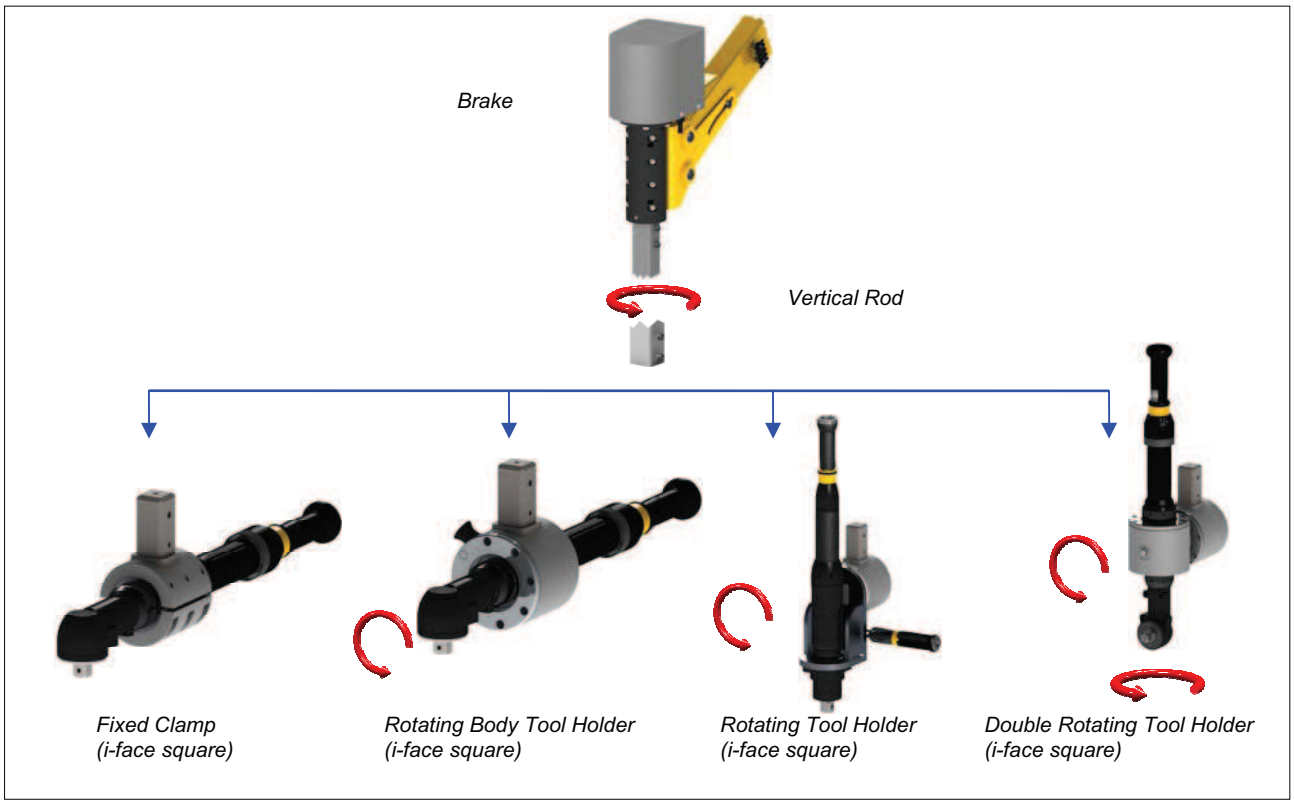
This connection possibility is **only used for horizontal fastenings**. The tool can be rotated via a rotating adapter on the end of the vertical rod.



Description	Ordering Nr.	Torque capacity (max) Nm	Weight kg	Family		
				Arm 500	Arm 1000	Arm 2000
Vertical rod (1500mm long) 50mm	8439 4001 10	1000	11	✓	✓	
Vertical rod (1500mm long) 60mm	8439 4001 11	2000	13			✓
Rotating Adapter Vertical (i-face flange) 50mm	8439 4001 40	1000	5	✓	✓	
Rotating Adapter Vertical (i-face flange) 60mm	8439 4001 41	2000	6			✓
Fixed Plate Horizontal (i-face flange) 50mm	8439 4001 36	1000	6	✓	✓	
Fixed Plate Horizontal (i-face flange) 60mm	8439 4001 37	2000	7			✓
Fixed Clamp (i-face flange) 50mm	8439 4001 26	1000	7	✓	✓	
Fixed Clamp (i-face flange) 60mm	8439 4001 27	2000	8			✓

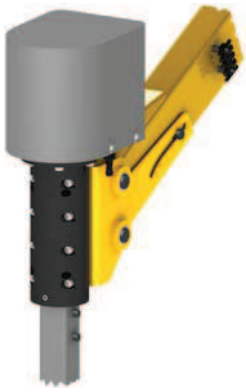
Brake Connection

This connection possibility is **used for multiple fastening orientations**. The tool is always locked prior to fastening ensuring safety for the operator.



Description	Ordering Nr.	Torque capacity (max) Nm	Weight kg	Family		
				Arm 500	Arm 1000	Arm 2000
Brake 1000 50mm	8439 4001 50	1000	19	✓	✓	
Brake 2000 60mm	8439 4001 51	2000	25			✓
Vertical rod (1500mm long) 50mm	8439 4001 10	1000	11	✓	✓	
Vertical rod (1500mm long) 60mm	8439 4001 11	2000	13			✓
Fixed Clamp (i-face square) 50mm	8439 4001 20	1000	9	✓	✓	
Fixed Clamp (i-face square) 60mm	8439 4001 21	2000	10			✓
Rotating body tool holder (i-face square) 50mm	8439 4001 70	1000	9	✓	✓	
Rotating body tool holder (i-face square) 60mm	8439 4001 71	2000	10			✓
Rotating tool holder (i-face square) 50mm	8439 4001 80	1000	15	✓	✓	
Rotating tool holder (i-face square) 60mm	8439 4001 81	2000	19			✓
Double rotating tool holder (i-face square) 50mm	8439 4001 90	1000	17	✓	✓	
Double rotating tool holder (i-face square) 60mm	8439 4001 91	2000	21			✓

Brake 1000, 2000



The Brake system from Atlas Copco enables the vertical rod to be moved freely (up to 330°) and locked during fastening. The Brake is pneumatically powered, with a normally closed function. Sensors ensure the safety of the brake function during fastening.

(When used in combination with pneumatic or DL/DS tools please contact ACE to check functionality.) Note that a Power Focus system requires a separate start trigger handle for torques higher than 270Nm. The control of the brakes consumes 1 digital input and 3 digital outputs from the Power Focus controller.

Rotating Tool Holder / Rotating Body Tool Holder / Double Rotating Tool Holder

The above options allow the Tool to be moved and locked into predefined positions. The predefined positions need to be specified on order.

Maximum rotation is limited to 330 °

Control System Support Options

Control System Support

The mounting of the Control System can be made directly to the Pillar. The kit contains the relative mounting components, allowing variable positioning dependant on operator position.

This kit must be ordered as well as the appropriate mounting plate kit.

Description	Ordering Nr.	Family		
		Arm 500	Arm 1000	Arm 2000
PF Arm mounting system kit	8439 4002 10	✓	✓	✓

Auxiliary Mounting System

This mounting system is used to mount other control system options onto the articulated arm. It is possible to mount, socket trays, printers or other application specific options.

Description	Ordering Nr.	Family		
		Arm 500	Arm 1000	Arm 2000
Auxiliary Arm mounting system kit	8439 4002 20	✓	✓	✓

Stacklight Arm Mounting

Providing process information close to the operator can be done with this device. The Stacklight can be fitted directly to the vertical rod via a flexible clamping system.

Description	Ordering Nr.	Family		
		Arm 500	Arm 1000	Arm 2000
Stacklight Arm mounting system kit 50mm	8439 4002 30	✓	✓	
Stacklight Arm mounting system kit 60mm	8439 4002 31			✓

Articulated Arm Spares

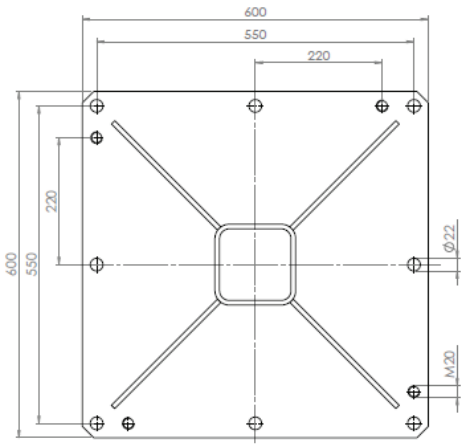
Pneumatic control system kit

The pneumatic control system is a universal control system for all Articulated Arms. All connections are quickly made via an interface surface on the base of the enclosure. (No cylinders or other connection tubes are included in this kit).

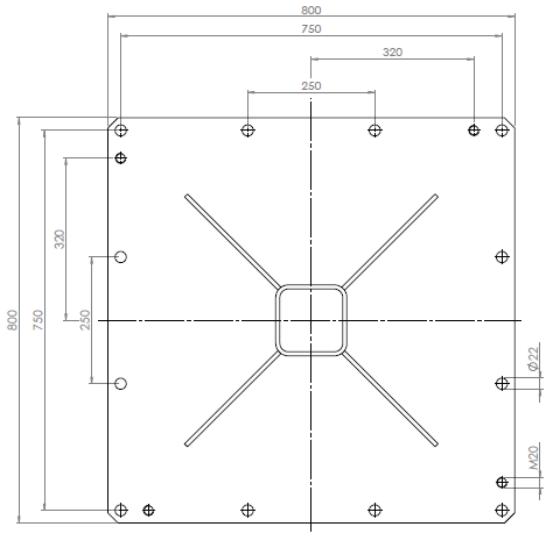
Description	Ordering Nr.	Family		
		Arm 500	Arm 1000	Arm 2000
Pneumatic control system spare	8439 4002 40	✓	✓	✓

Installation Requirements

Pillar Baseplate



Arm 500, Arm 1000 Base plate



Arm 2000 Base plate

The above two drawings show the main dimensions of the baseplates.

The floor area where the baseplate is to be installed must have the following properties:

- Reinforced concrete quality: minimum C20/25
- Depth of concrete: minimum 200mm

Note: The bolt / floor performance must have the capacity of 10kN axial load (minimum).