

Pneumatic Parallel Grippers

OPE 2-Finger

OPE is a universal two-finger parallel gripper featuring high reliability and long service life, suitable for a wide range of industrial applications.

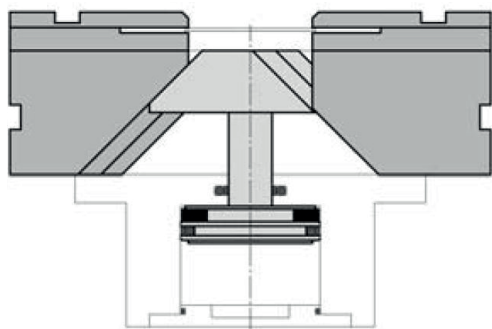
Advantages

- Robust, lightweight housing made of hard-coated aluminum alloy.
- Sturdy C-slot with hardened steel gibs for effective jaw guidance, precise handling, and easy maintenance.
- Mounting from two sides in three screw directions for versatile and flexible integration.
- Side or top finger mounting.
- Integrated permanent magnets for direct monitoring of piston movement.
- Slots for mounting and positioning of magnetic-field sensors.
- Air supply via fitting screw connections or hose-free direct connections (optional version "X").

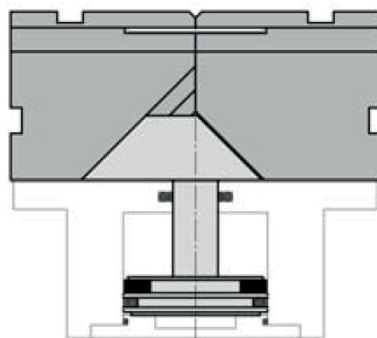


EFFECTO[®]
GROUP

Open/Close Diagram

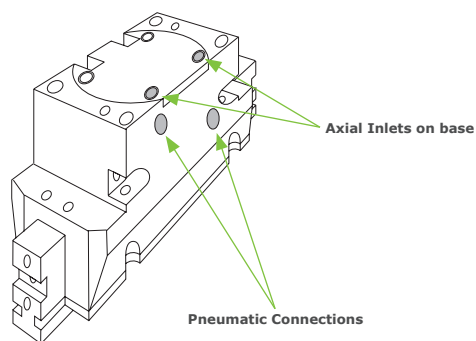


OPEN

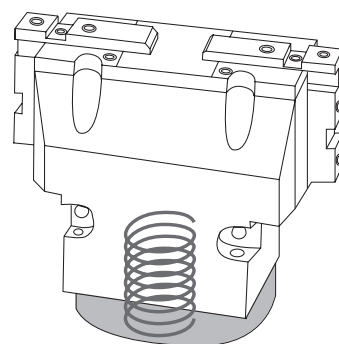


CLOSED

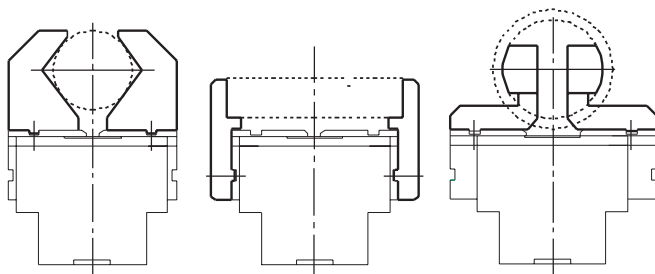
Pneumatic Feed



Force Maintenance Spring



Gripping Diagram



**External Clamping
Top fixing**

**Internal Clamping
Side fixing**

**Internal Clamping
Top fixing**

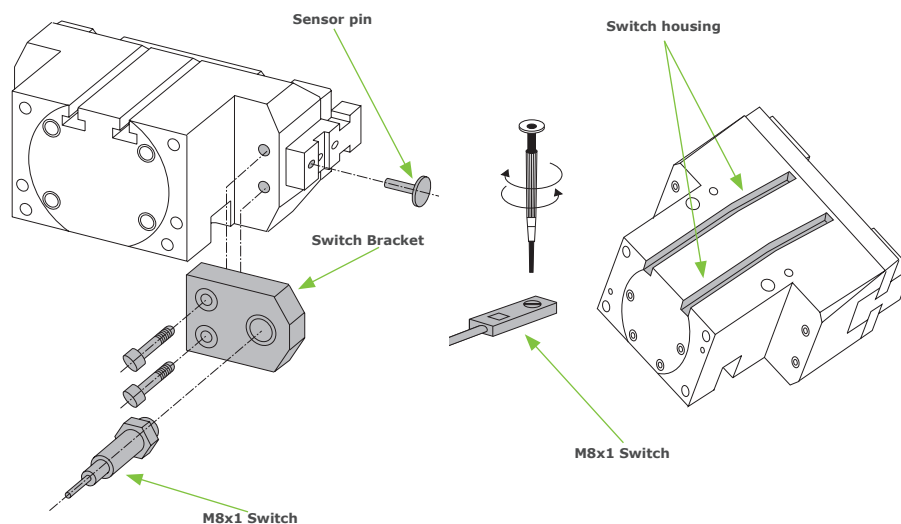
Guidelines for the selection of a gripper model

Selection of the correct gripper model depends on the workpiece's weight, the friction coefficient between the fingers and the workpiece and the required motion of the application.

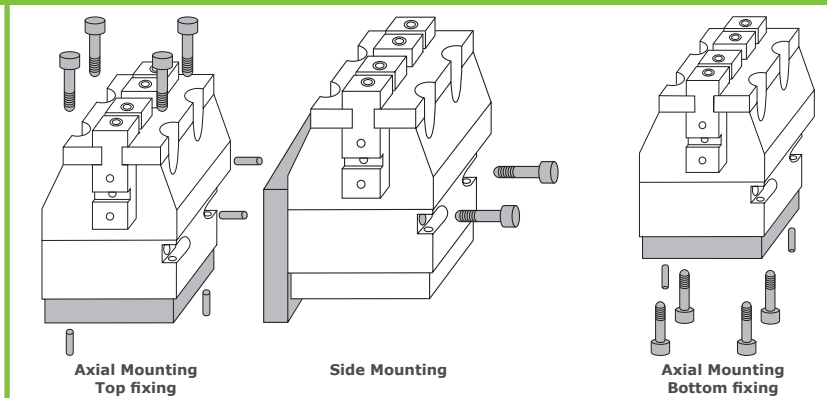
Due to inertial forces associated with motion, we recommend that the holding force of the gripper model should be from 10 to 20 times the workpiece's weight.

If the application presents high acceleration/deceleration or impacts during the motion, then a further safety margin should be considered.

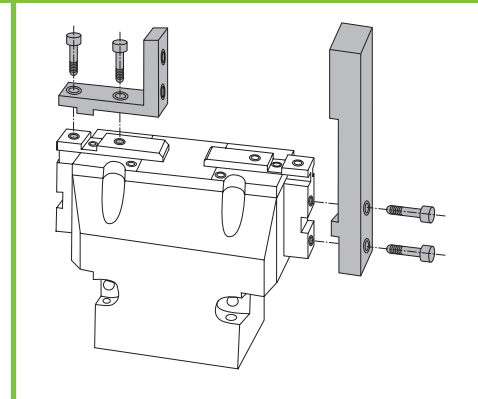
Control Diagram



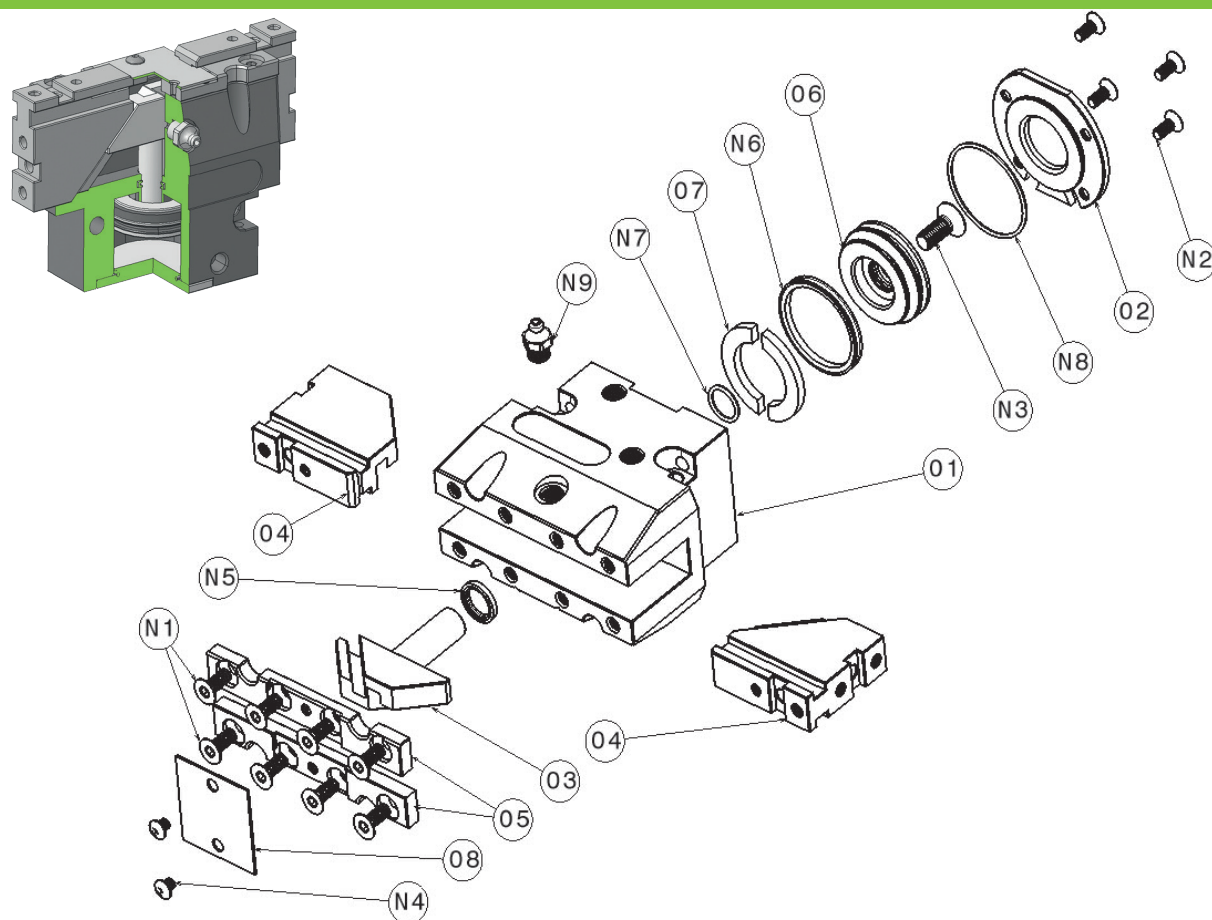
Mounting



Fingers Mounting



Construction Diagram

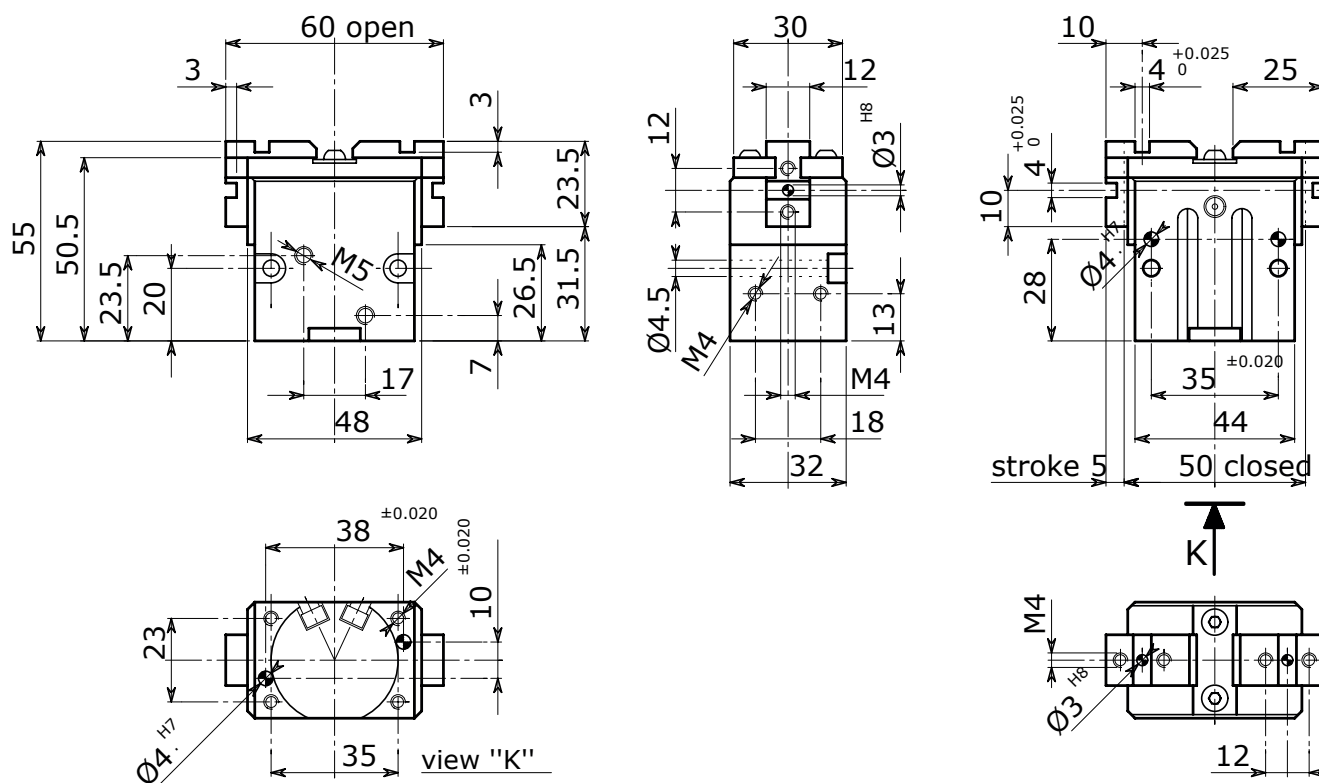


Nr.	Description	Material
01	BODY	Aluminum Alloy
02	CAP	Aluminum Alloy
03	WEDGE HOOK	Chrome Molybdenum Steel
04	JAW	Chrome Molybdenum Steel
05	GIB	Chrome Molybdenum Steel
06	PISTON	Aluminum Alloy
07	MAGNET	Rubber magnet
08	PLATE	Stainless Steel
N1	SCREW	Steel
N2	SCREW	Steel
N3	SCREW	Steel
N4	SCREW	Steel
N5	SHAFT SEAL	NBR
N6	EXT. PISTON SEAL	NBR
N7	INT. PISTON SEAL	NBR
N8	CAP SEAL	NBR
N9	LUBRICATOR	Brass

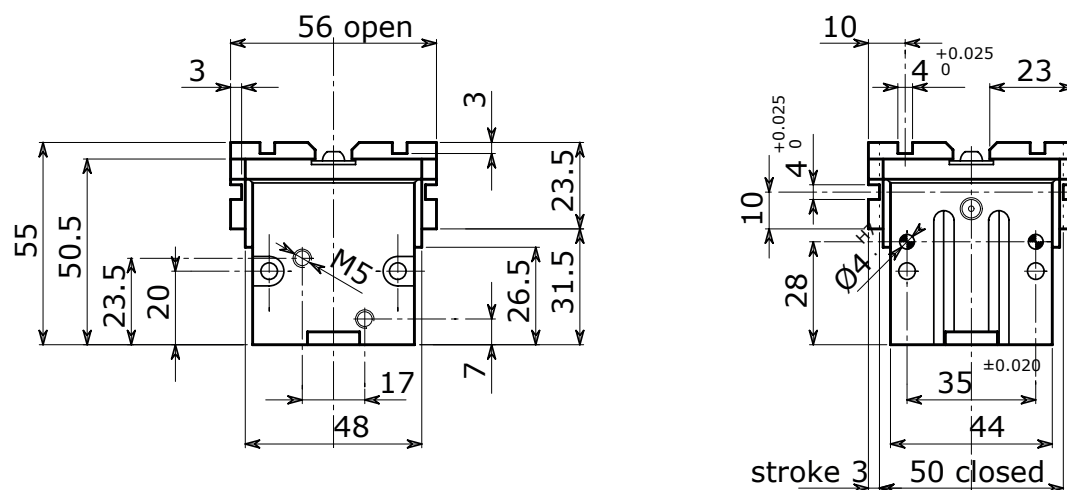
Dimensional Drawing



OPE 50



OPE 50 S



* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
Opening Pressure **2 - 12 bar (29 - 174 psi)**
Working Temperature **5 - 60 °C (41 - 140 °F)**
Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

Axial Feed

	A	B	C
mm	M3	17	10.5
in		0.6	0.4

F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 10 mm**

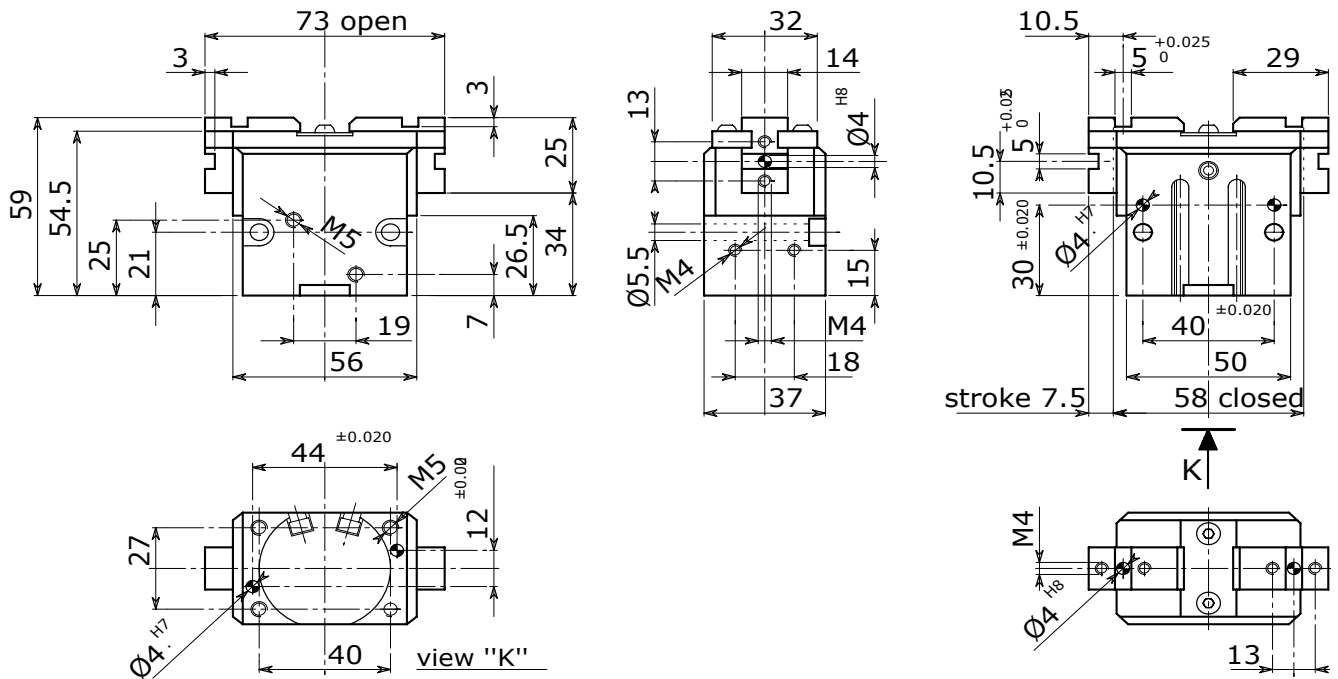
		Closed control		Open control	
		J	K	J	K
OPE 50	mm in	7 0.3	13 0.5	18 0.7	24 1.0
OPE 50S	mm in	7 0.3	13 0.5	15.5 0.6	21.5 0.9

		A	B
OPE 50/S	mm in	18 0.7	12 0.5
Pressure 3 - 10 bar (43 - 145 psi)			

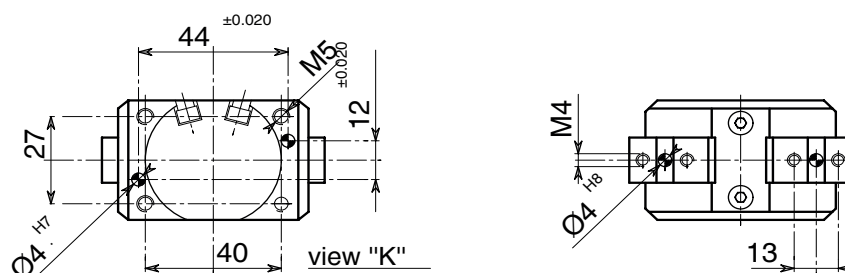
Dimensional Drawing



OPE 60



OPE 60 S



0930

* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
Opening Pressure **2 - 12 bar (29 - 174 psi)**
Working Temperature **5 - 60 °C (41 - 140 °F)**
Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

Axial Feed

Technical drawing of a mechanical part, likely a flange or a similar component. The drawing shows a cross-section of the part, which is cylindrical with a central hole. The part has a flange on the left side and a smaller cylindrical section on the right. The drawing includes dimension lines and labels A and B. Dimension A is the distance from the center of the part to the center of the hole. Dimension B is the distance from the center of the part to the center of the hole, measured along the horizontal axis.

	A	B	C
mm	M3	19	12.5
in		0.8	0.5

		Closed control		Open control	
		J	K	J	K
OPE 60	mm in	8 0.3	14 0.6	21.5 0.9	27.5 1.1
OPE 60S	mm in	8 0.3	14 0.6	17.5 0.7	23.75 0.9

Technical drawing of a mechanical part, showing a cross-section with dimensions B and ØA.

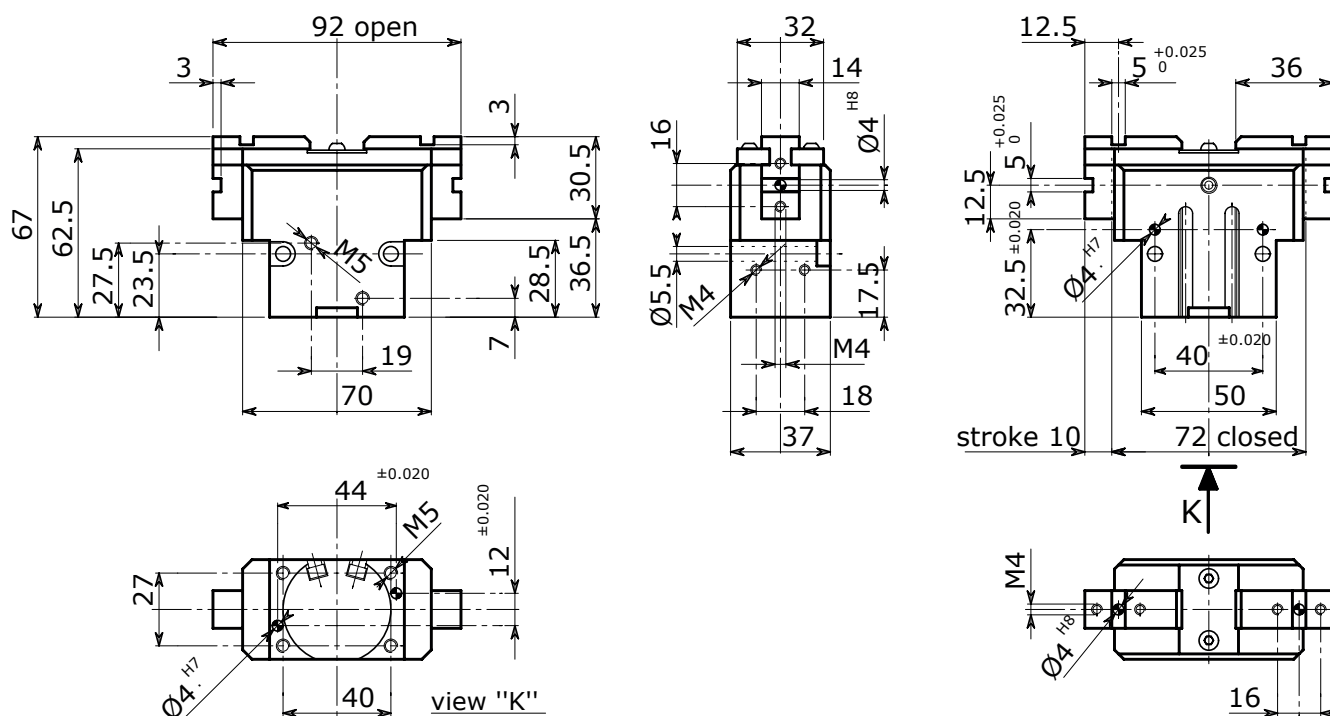
		A	B
OPE 60/S	mm	22	15
	in	0.9	0.6



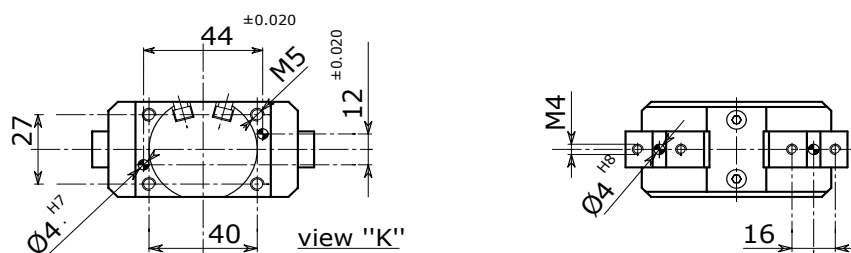
Dimensional Drawing



OPE 70



OPE70 S



02300

* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
Opening Pressure **2 - 12 bar (29 - 174 psi)**
Working Temperature **5 - 60 °C (41 - 140 °F)**
Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

Axial Feed

Technical drawing of a mechanical part, likely a flange or a mounting plate. The drawing shows a cross-section of a cylindrical component with a central hole and several smaller holes. Dimension A is indicated as the distance from the center of the main hole to the center of one of the smaller holes. Dimension B is indicated as the distance from the center of the main hole to the outer edge of the component.

	A	B	C
mm in	M3	19 0.8	12.5 0.5

		Closed control		Open control	
		J	K	J	K
OPE 70	mm in	15 0.6	21 0.8	31 1.2	37 1.5
OPE 70S	mm in	15 0.6	21 0.8	26 1.0	32 1.3

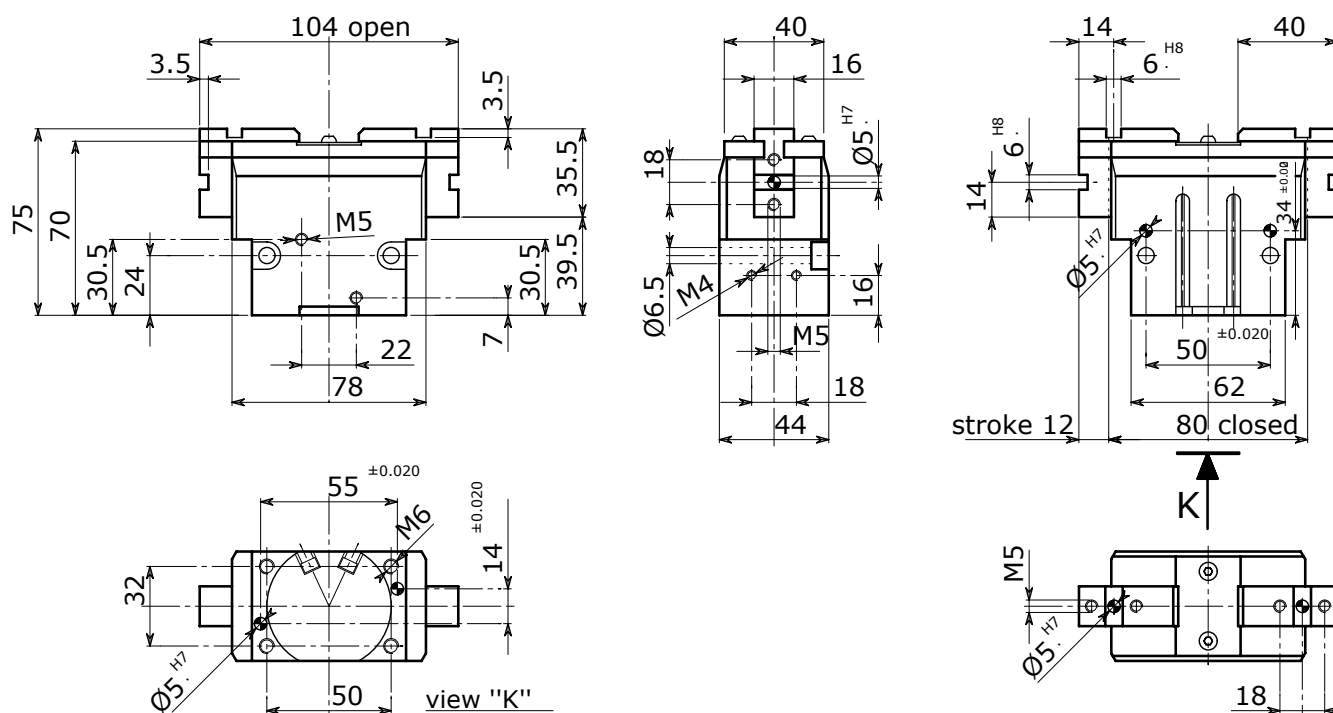
		A	B
OPE 70/S	mm	22	15
	in	0.9	0.6



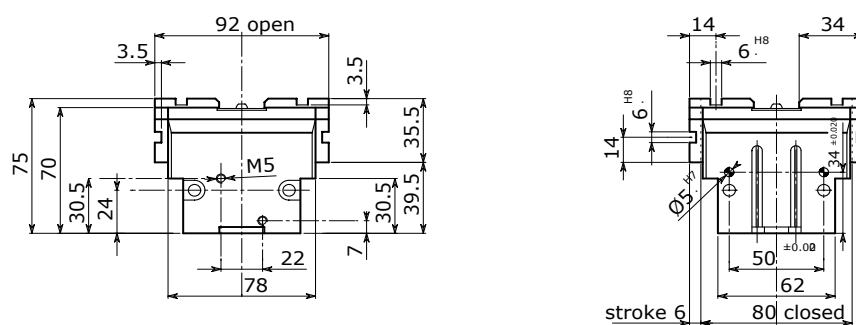
Dimensional Drawing



OPE 80



OPE 80 S



0330

* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
Opening Pressure **2 - 12 bar (29 - 174 psi)**
Working Temperature **5 - 60 °C (41 - 140 °F)**
Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

Axial Feed

Technical drawing of a mechanical part, likely a flange or a similar component. The drawing shows a cross-section of the part, which is cylindrical with a central hole. The part has a flange on the left side and a smaller cylindrical section on the right. The drawing includes dimension lines and labels A and B. Dimension A is the distance from the center of the part to the center of the hole. Dimension B is the distance from the center of the part to the center of the hole, measured along the horizontal axis.

	A	B	C
mm	M3	22	14.5
in		0.9	0.6

		Closed control		Open control	
		J	K	J	K
OPE 80	mm in	13 0.5	19 0.8	31 1.2	37 1.5
OPE 80S	mm in	13 0.5	19 0.8	25 1.0	31 1.2

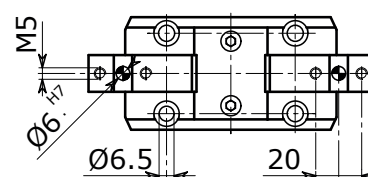
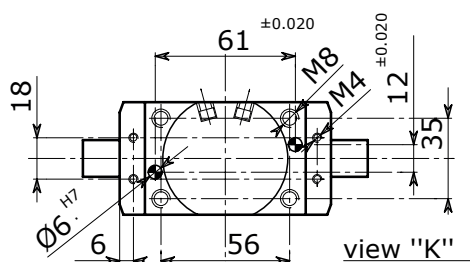
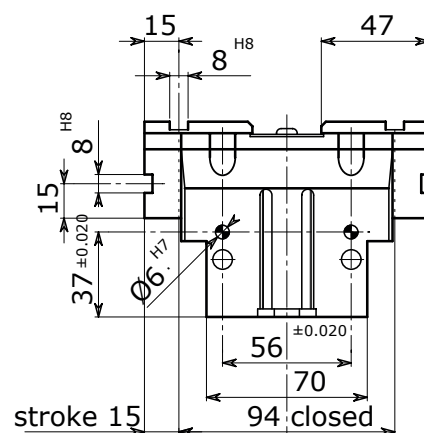
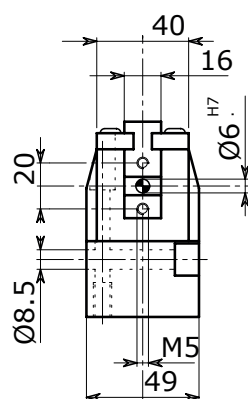
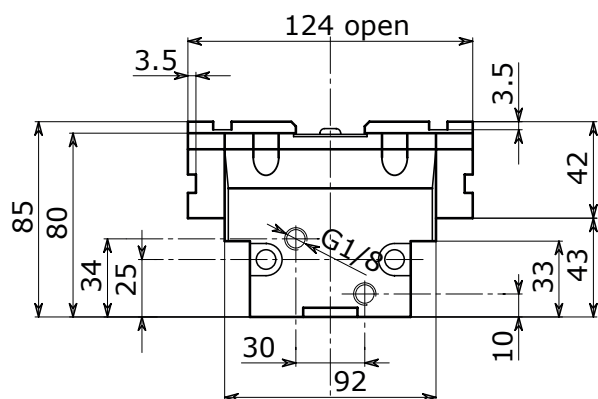
		A	B
OPE 80/S	mm	28	18
	in	1.1	0.7



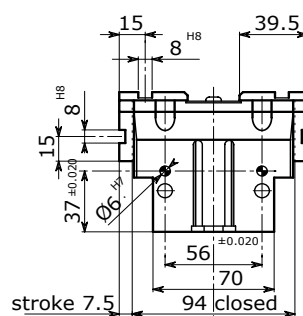
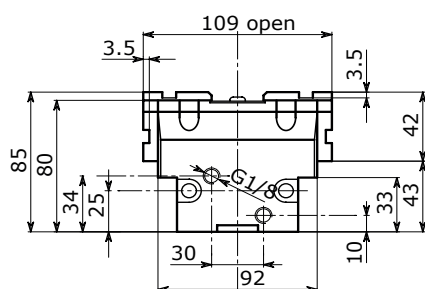
Dimensional Drawing



OPE 95



OPE 95 S



TECHNICAL DATA

		OPE 95	OPE 95 S	OPE 95 CM	OPE 95 SCM	OPE 95 CMA	OPE 95 SCMA
Stroke per jaw	mm in	15 0.6	7.5 0.3	15 0.6	7.5 0.3	15 0.6	7.5 0.3
Fluid consumption double stroke	cm ³ in ³	27.5 1.7	27.5 1.7	27.5 1.7	27.5 1.7	27.5 1.7	27.5 1.7
Closing force per jaw @ 6 bar	N lb	150 34	300 67	184 41	361 81	-	-
Opening force per jaw @ 6 bar	N lb	170 38	340 76	-	-	204 46	406 91
Total closing force @ 6 bar	N lb	300 67	600 1345	368 83	722 162	-	-
Total opening force @ 6 bar	N lb	340 76	680 153	-	-	408 91	812 205
True clamping force per jaw only with spring	N lb	-	-	34 - 74 8 - 17	66 - 147 15 - 33	34 - 74 8 - 17	66 - 147 15 - 33
Recommended workpiece weight	kg lb	1.50 3.30	3.00 6.60	1.50 3.30	3.00 6.60	1.50 3.30	3.00 6.60
Weight	kg lb	1.00 2.20	1.00 2.20	1.05 2.31	1.05 2.31	1.05 2.31	1.05 2.31
Repeat accuracy	mm in	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020

Opening Pressure **2 - 12 bar (29 - 174 psi)**

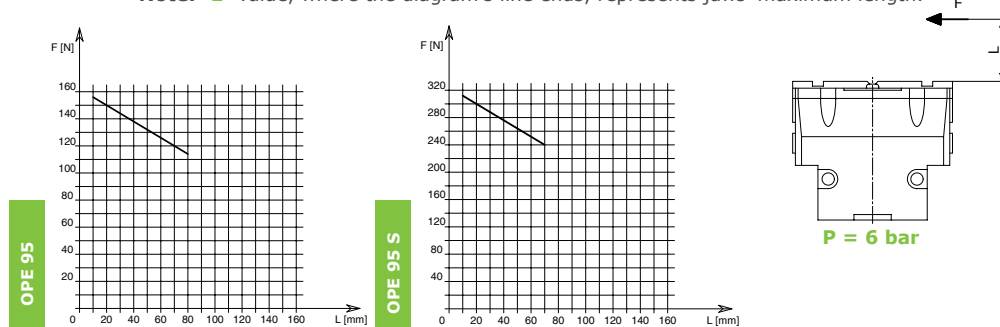
Working Temperature **5 - 60 °C (41 - 140 °F)**

Noise Emission (Sound Pressure) ≤ 70 db(A) in any direction

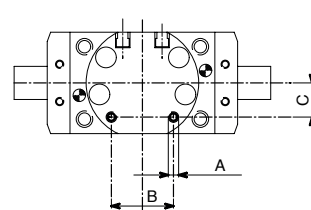
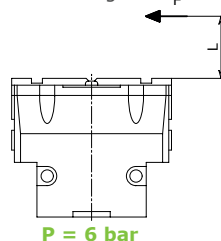
Clamping Force Diagram

Axial Feed

Note: "L" value, where the diagram's line ends, represents jaws' maximum length.

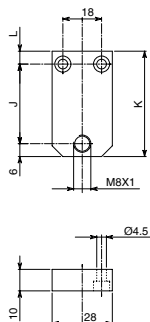


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 20 mm**



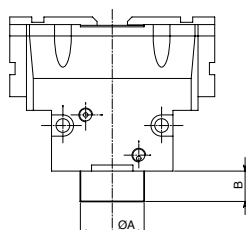
	A	B	C
mm	M3	30	16.5
in		1.2	0.7

Open-Closed Control Position with External Switches



		Closed control			Open control		
		J	K	L	J	K	L
OPE 95	mm in	11 0.4	22 0.9	5 0.2	32 1.3	43 1.7	5 0.2
OPE 95S	mm in	11 0.4	22 0.9	5 0.2	24.5 1.0	35.5 1.4	5 0.2

Force Maintenance Spring



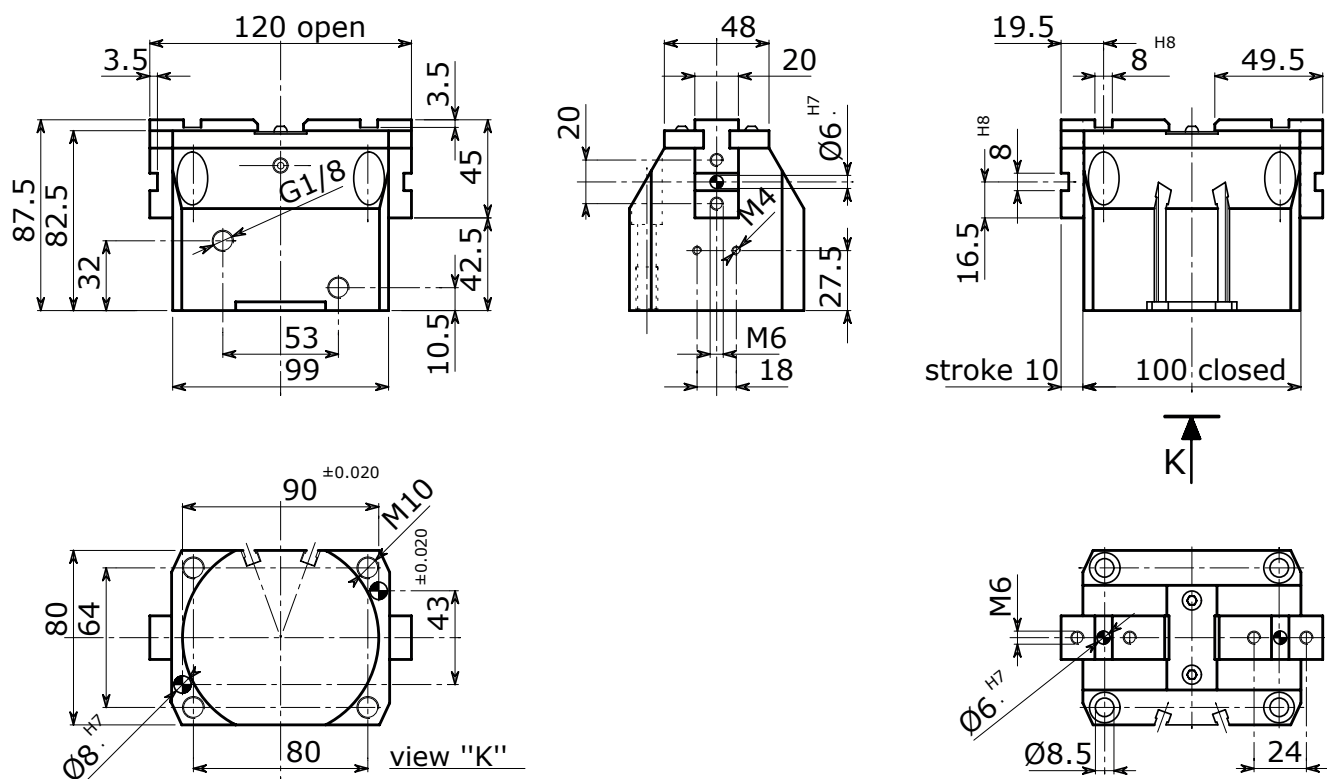
		A	B
OPE 95/S	mm	32	22
	in	1.3	0.9

Pressure 4 - 10 bar (58 - 145 psi)

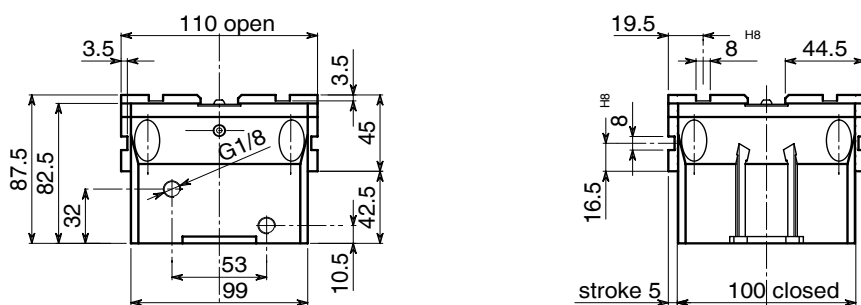
Dimensional Drawing



OPE 100



OPE 100 S



TECHNICAL DATA

		OPE 100	OPE 100 S	OPE 100 CM	OPE 100 SCM	OPE 100 CMA	OPE 100 SCMA
Stroke per jaw	mm in	10 0.4	5 0.2	10 0.4	5 0.2	10 0.4	5 0.2
Fluid consumption double stroke	cm ³ in ³	75 4.6	75 4.6	75 4.6	75 4.6	75 4.6	75 4.6
Closing force per jaw @ 6 bar	N lb	635 143	1270 286	777 175	1524 343	-	-
Opening force per jaw @ 6 bar	N lb	670 151	1340 301	-	-	803 181	1600 360
Total closing force @ 6 bar	N lb	1270 286	2540 571	1554 349	3048 685	-	-
Total opening force @ 6 bar	N lb	1340 301	2680 603	-	-	1606 361	3200 719
True clamping force per jaw only with spring	N lb	-	-	133 - 201 30 - 45	260 - 395 58 - 89	133 - 201 30 - 45	260 - 395 58 - 89
Recommended workpiece weight	kg lb	6.35 14.00	12.70 27.90	6.35 14.00	12.70 27.90	6.35 14.00	12.70 27.90
Weight	kg lb	1.90 4.18	1.90 4.18	2.10 4.63	2.10 4.63	2.10 4.63	2.10 4.63
Repeat accuracy	mm in	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020

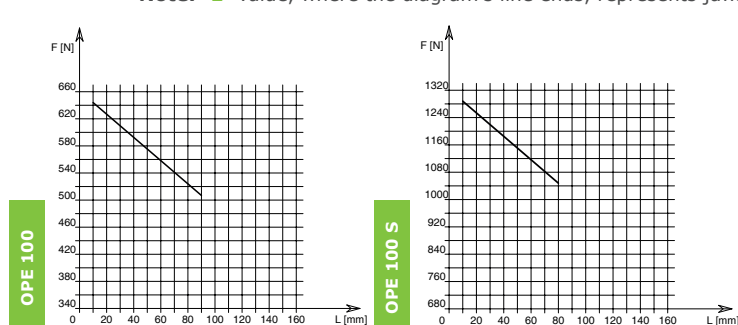
Working Temperature **5 - 60 °C (41 - 140 °F)**

Noise Emission (Sound Pressure) ≤ 70 db(A) in any direction

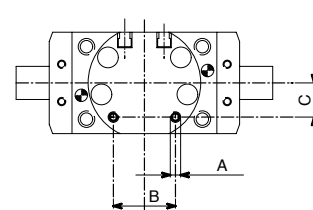
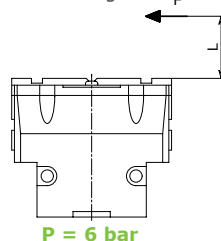
Clamping Force Diagram

Axial Feed

Note: "L" value, where the diagram's line ends, represents jaws' maximum length.

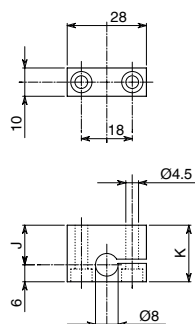


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 20 mm**



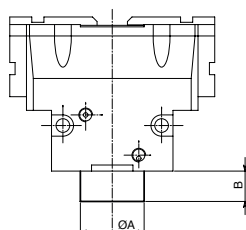
	A	B	C
mm	M4	53	30
in		2.1	1.2

Open-Closed Control Position with External Switches



		Closed control		Open control	
		J	K	J	K
OPE 100	mm in	6.5 0.3	12.5 0.5	22.5 0.9	28.5 1.1
OPE 100S	mm in	6.5 0.3	12.5 0.5	17.5 0.7	23.5 0.9

Force Maintenance Spring



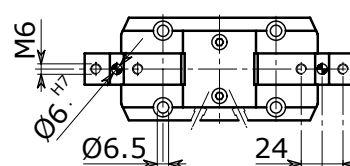
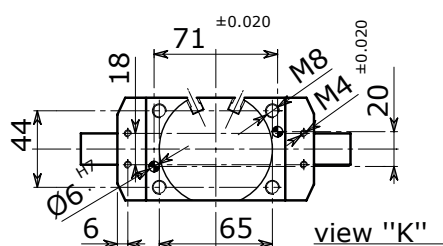
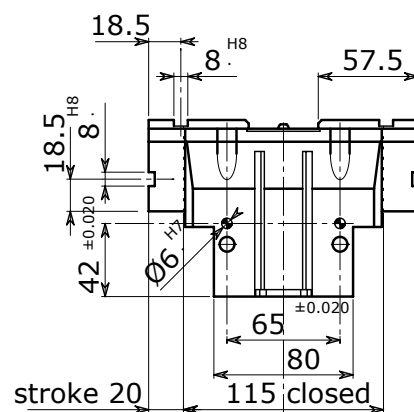
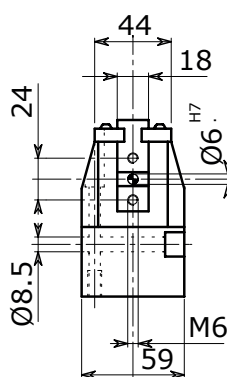
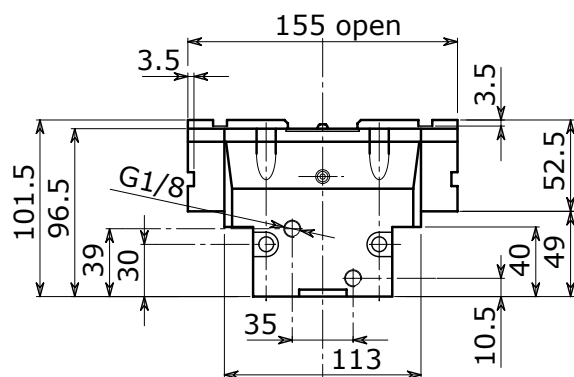
		A	B
OPE 100/S	mm	55	22
	in	2.2	0.9

Pressure 3 - 10 bar (43 - 145 psi)

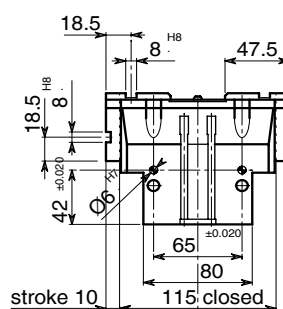
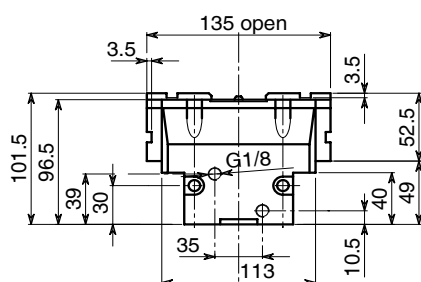
Dimensional Drawing



OPE 115



OPE 115 S



TECHNICAL DATA

[illegible]

Opening Pressure **2 - 12 bar (29 - 174 psi)**

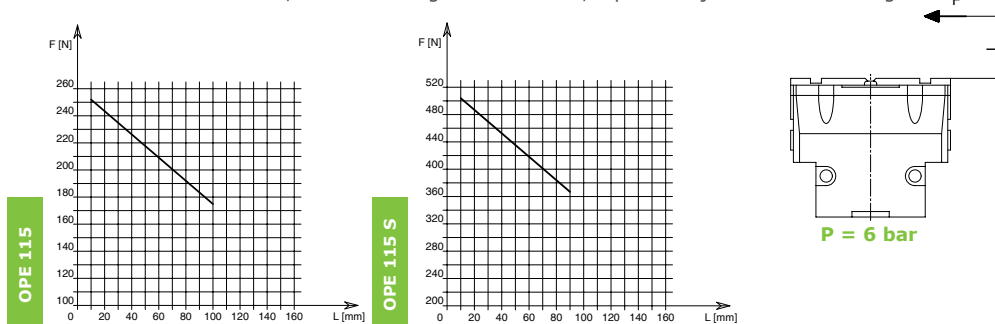
Working Temperature **5 - 60 °C (41 - 140 °F)**

Noise Emission (Sound Pressure) ≤ 70 db(A) in any direction

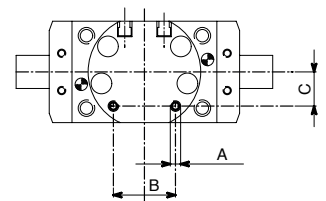
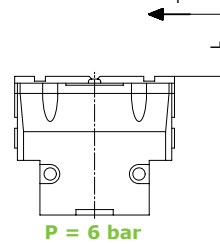
Clamping Force Diagram

Axial Feed

Note: "L" value, where the diagram's line ends, represents jaws' maximum length.

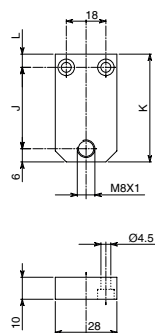


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 20 mm**



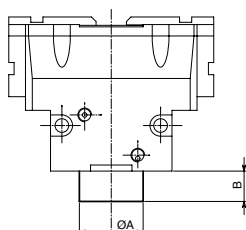
	A	B	C
mm	M4	35	21
in		1.4	0.8

Open-Closed Control Position with External Switches



		Closed control			Open control		
		J	K	L	J	K	L
OPE 115	mm in	11 0.4	23 0.9	6 0.2	37 1.5	49 1.9	6 0.2
OPE 115S	mm in	11 0.4	23 0.9	6 0.2	27 1.1	39 1.5	6 0.2

Force Maintenance Spring



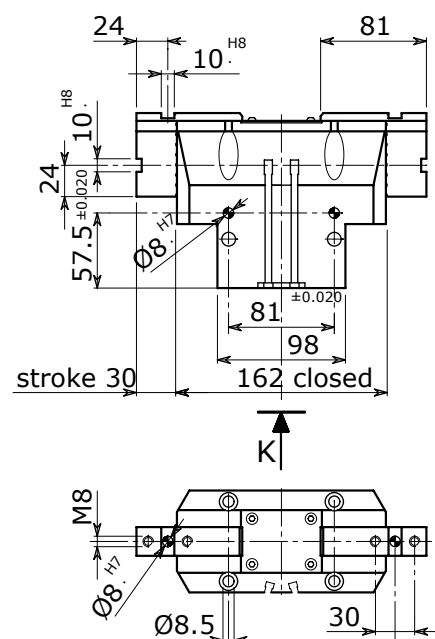
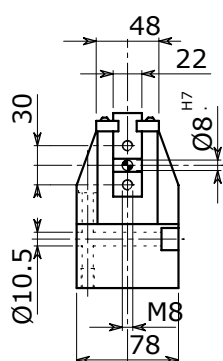
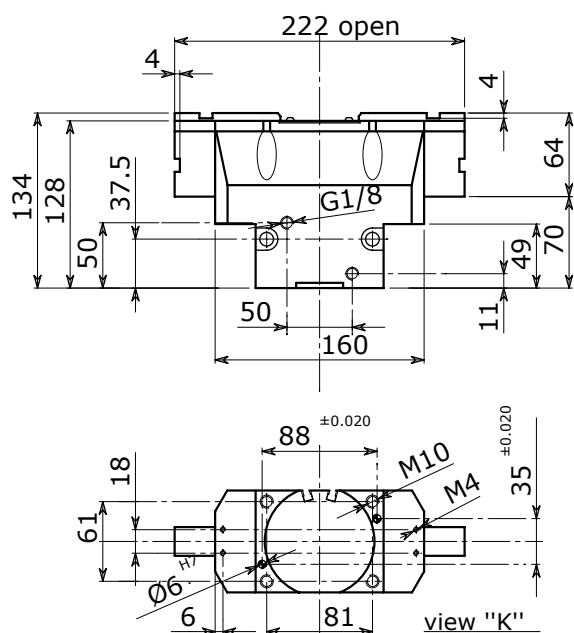
		A	B
OPE 115/S	mm	42	25
	in	1.7	1.0

Pressure **3 - 10 bar (43 - 145 psi)**

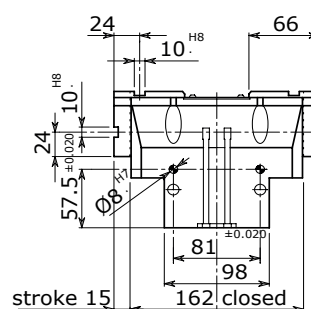
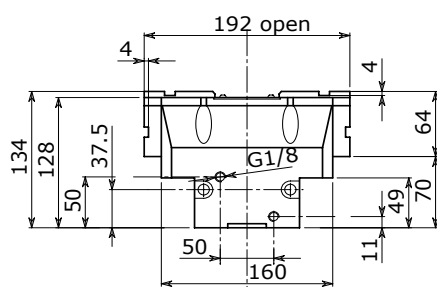
Dimensional Drawing



OPE 160



OPE 160 S



TECHNICAL DATA

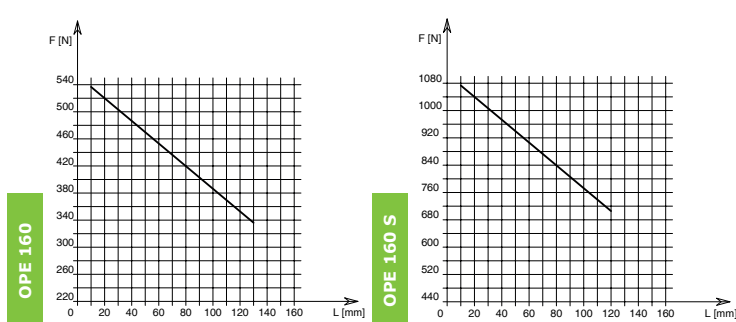
		OPE 160	OPE 160 S	OPE 160 CM	OPE 160 SCM	OPE 160 CMA	OPE 160 SCMA
Stroke per jaw	mm in	30 1.2	15 0.6	30 1.2	15 0.6	30 1.2	15 0.6
Fluid consumption double stroke	cm ³ in ³	181 11	181 11	181 11	181 11	181 11	181 11
Closing force per jaw @ 6 bar	N lb	520 117	1040 234	594 134	1167 262	-	-
Opening force per jaw @ 6 bar	N lb	557 125	1114 250	-	-	637 143	1270 286
Total closing force @ 6 bar	N lb	1040 234	2080 468	1188 267	2334 525	-	-
Total opening force @ 6 bar	N lb	1114 250	2228 501	-	-	1274 286	2540 571
True clamping force per jaw only with spring	N lb	-	-	80 - 210 18 - 47	156 - 411 35 - 92	80 - 210 18 - 47	156 - 411 35 - 92
Recommended workpiece weight	kg lb	5.20 11.40	10.40 22.90	5.20 11.40	10.40 22.90	5.20 11.40	10.40 22.90
Weight	kg lb	3.95 8.69	3.70 8.14	3.95 8.69	3.70 8.14	3.95 8.69	3.70 8.14
Repeat accuracy	mm in	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020

* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
 Opening Pressure **2 - 12 bar (29 - 174 psi)**
 Working Temperature **5 - 60 °C (41 - 140 °F)**
 Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

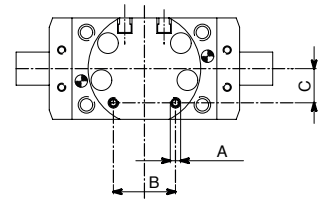
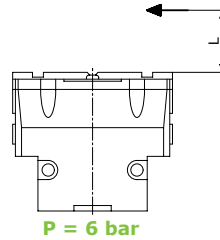
Clamping Force Diagram

Axial Feed

Note: "L" value, where the diagram's line ends, represents jaws' maximum length.

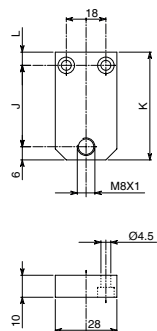


F = True clamping force per jaw - **L** = Reading distance
 Values read at a distance **L = 20 mm**



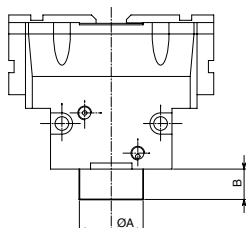
	A	B	C
mm	M4	50	28
in		2.0	1.1

Open-Closed Control Position with External Switches



		Closed control			Open control		
		J	K	L	J	K	L
OPE 160	mm in	11 0.4	23 0.9	6 0.2	47 1.9	59 2.3	6 0.2
OPE 160S	mm in	11 0.4	23 0.9	6 0.2	32 1.4	44 1.7	6 0.2

Force Maintenance Spring



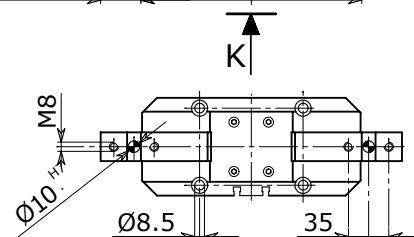
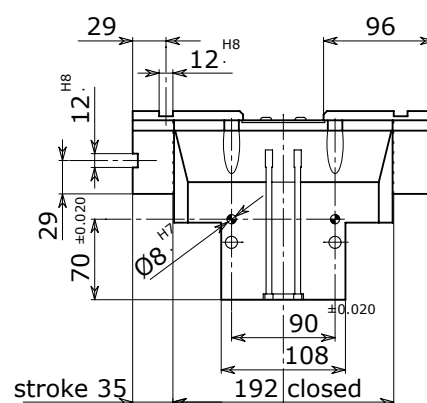
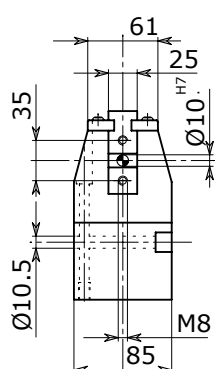
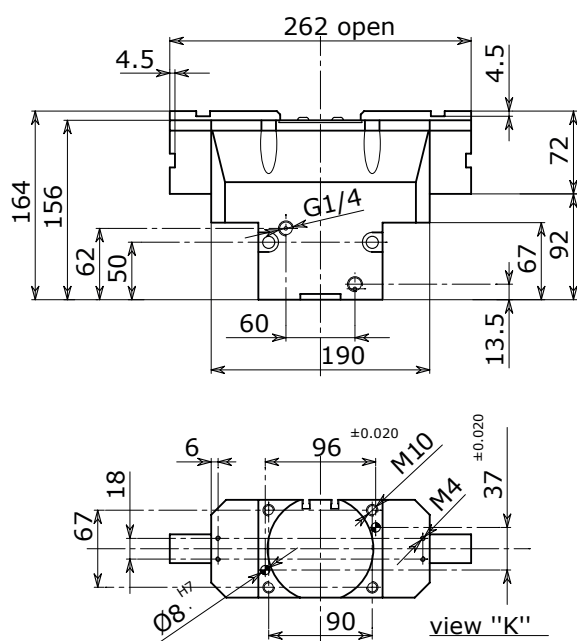
		A	B
OPE 160/S	mm in	55 2.2	26 1.0

Pressure **3.5 - 10 bar (50 - 145 psi)**

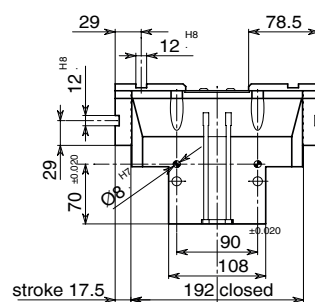
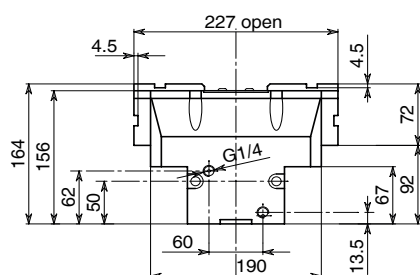
Dimensional Drawing



OPE 190



OPE 190 S



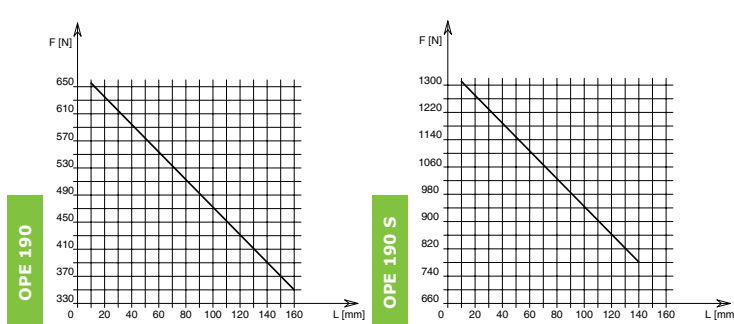
TECHNICAL DATA

[illegible]

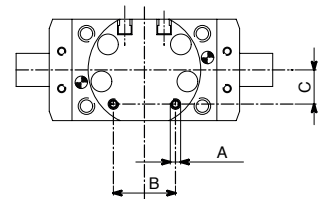
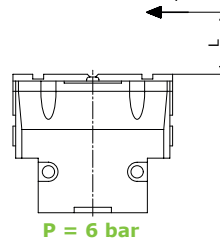
Clamping Force Diagram

Axial Feed

Note: "L" value, where the diagram's line ends, represents jaws' maximum length.

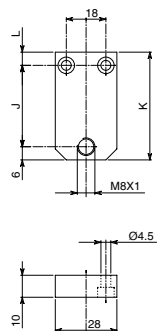


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 20 mm**



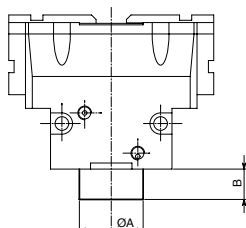
	A	B	C
mm	M4	60	27.5
in		2.4	1.1

Open-Closed Control Position with External Switches



		Closed control			Open control		
		J	K	L	J	K	L
OPE 190	mm in	11 0.4	23 0.9	6 0.2	52 2.1	64 2.5	6 0.2
OPE 190S	mm in	11 0.4	23 0.9	6 0.2	34.5 1.4	46.5 1.8	6 0.2

Force Maintenance Spring



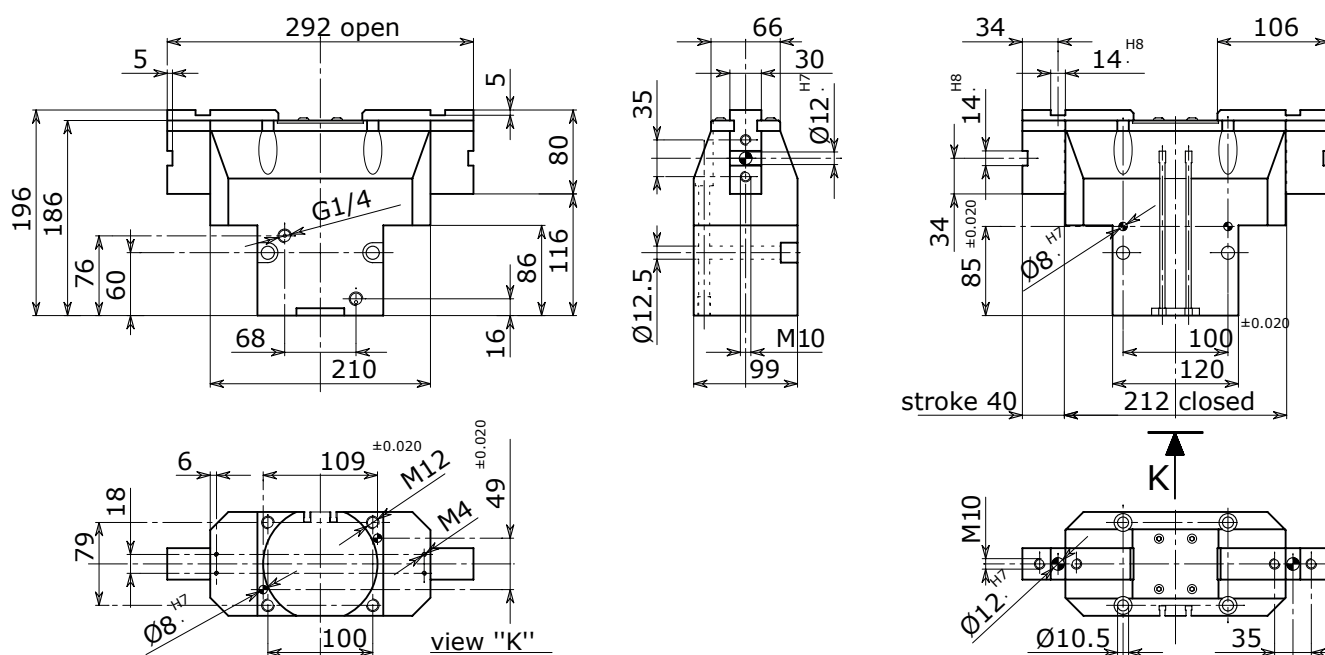
		A	B
OPE 190/S	mm	65	35
	in	2.6	1.4

Pressure 4 - 10 bar (58 - 145 psi)

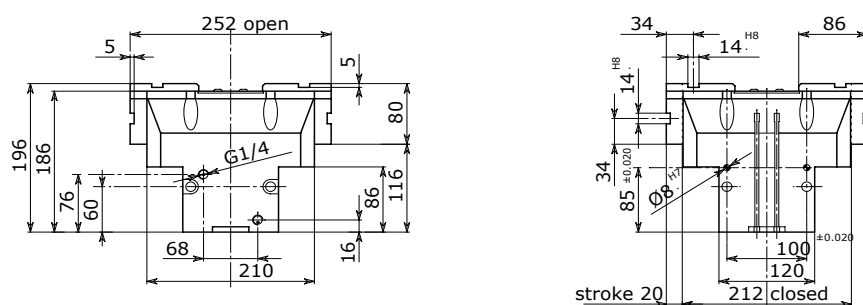
Dimensional Drawing



OPE 210



OPE 210 S



TECHNICAL DATA

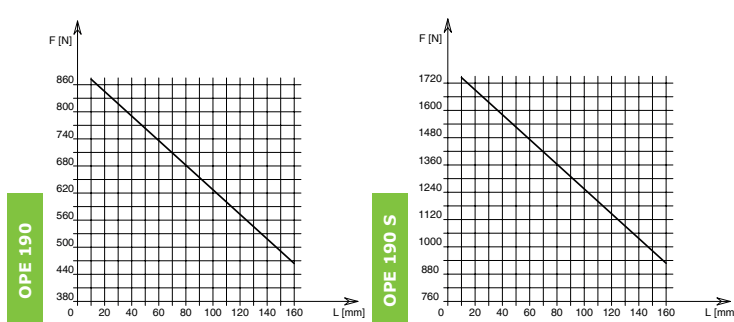
		OPE 210	OPE 210 S	OPE 210 CM	OPE 210 SCM	OPE 210 CMA	OPE 210 SCMA
Stroke per jaw	mm in	40 1.57	20 0.79	40 1.57	20 0.79	40 1.57	20 0.79
Fluid consumption double stroke	cm ³ in ³	390 23.8	390 23.8	390 23.8	390 23.8	390 23.8	390 23.8
Closing force per jaw @ 6 bar	N lb	845 190	1690 380	976 219	1915 431	-	-
Opening force per jaw @ 6 bar	N lb	902 203	1804 406	-	-	1032 232	2059 463
Total closing force @ 6 bar	N lb	1690 380	3380 760	1952 439	3830 861	-	-
Total opening force @ 6 bar	N lb	1804 406	3608 811	-	-	2064 464	4118 926
True clamping force per jaw only with spring	N lb	-	-	130 - 242 29 - 54	255 - 474 57 - 107	130 - 242 29 - 54	255 - 474 57 - 107
Recommended workpiece weight	kg lb	8.45 18.60	16.90 37.20	8.45 18.60	16.90 37.20	8.45 18.60	16.90 37.20
Weight	kg lb	9.50 20.90	9.00 19.80	11.10 24.47	11.10 24.47	11.10 24.47	11.10 24.47
Repeat accuracy	mm in	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020	± 0.05 ± 0.0020

* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
 Opening Pressure **2 - 12 bar (29 - 174 psi)**
 Working Temperature **5 - 60 °C (41 - 140 °F)**
 Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

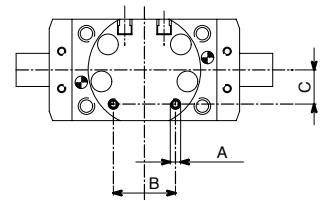
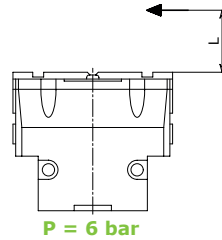
Clamping Force Diagram

Axial Feed

Note: "L" value, where the diagram's line ends, represents jaws' maximum length.

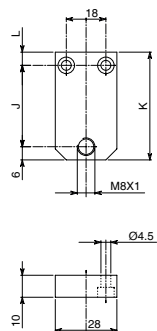


F = True clamping force per jaw - **L** = Reading distance
 Values read at a distance **L = 20 mm**



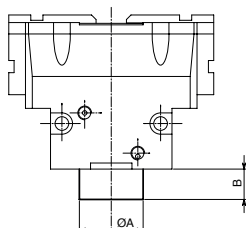
	A	B	C
mm	M5	68	35
in		2.7	1.4

Open-Closed Control Position with External Switches



		Closed control			Open control		
		J	K	L	J	K	L
OPE 210	mm in	11 0.4	23 0.9	6 0.2	57 2.2	69 2.7	6 0.2
OPE 210S	mm in	11 0.4	23 0.9	6 0.2	37 1.5	49 1.9	6 0.2

Force Maintenance Spring



		A	B
OPE 210/S	mm in	74 2.9	40 1.6

Pressure **3 - 10 bar (43 - 145 psi)**



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