

Pneumatic Parallel Grippers

OPH 2-Finger

OPH is a sealed two-finger centric gripper featuring high reliability, that is suitable for handling of rough/dirty workpieces.

Advantages

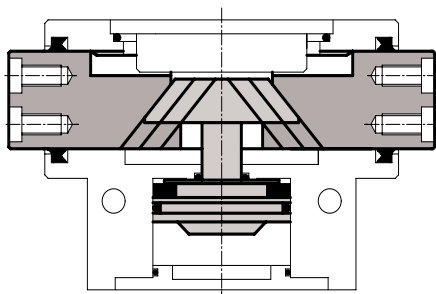
- Robust lightweight housing made of hard-coated aluminum alloy.
- IP67 protection provided by lip seals at round jaws offer permanent, secure protection.
- Compact dimensions for minimal impact in space sensitive applications.
- Mounting from two sides in three screw directions for versatile and flexible integration.
- Integrated permanent magnets for direct monitoring of piston movement.
- Slots for mounting and positioning of magnetic-field sensors.
- Air supply via hose-free direct connections or fitting screw connections.



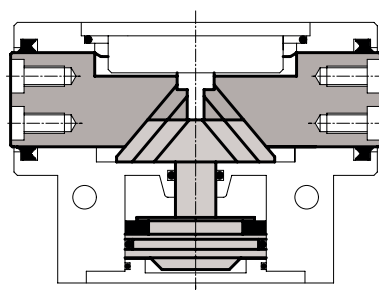
EFFECTO

GROUP

Open/Close Diagram

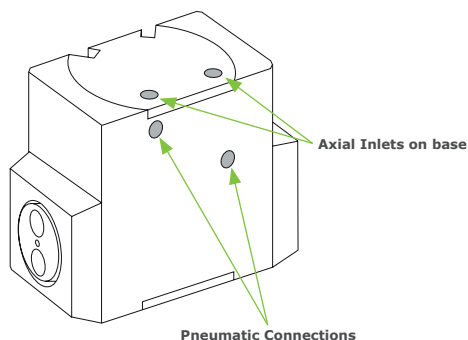


OPEN

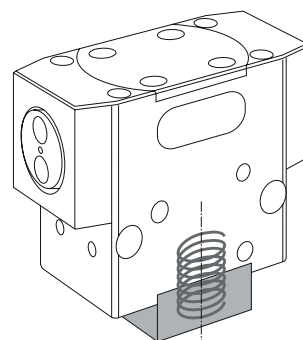


CLOSED

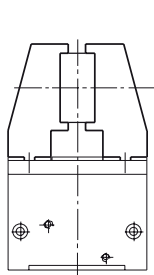
Pneumatic Feed



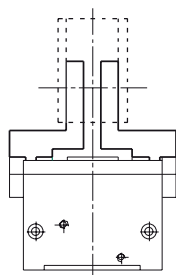
Force Maintenance Spring



Gripping Diagram



External Clamping



Internal Clamping

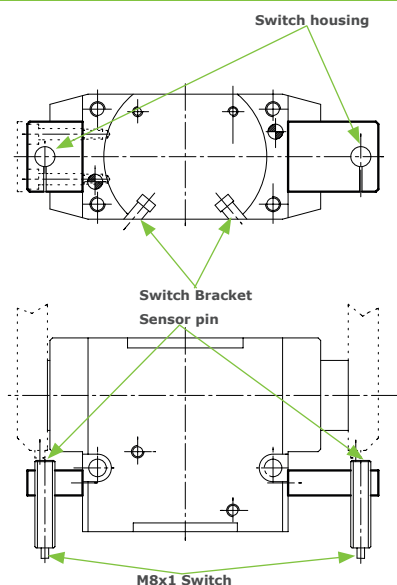
Guidelines for the selection of a gripper model

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.

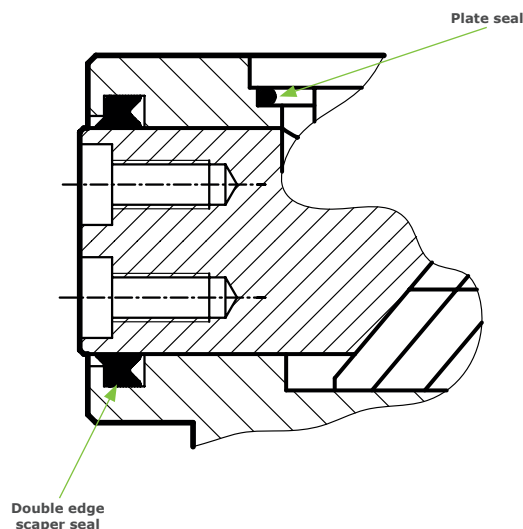
Due to inertial forces associated with motion, we recommend that the holding force of the gripper model should be from 10 to 20 times the workpiece's weight.

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

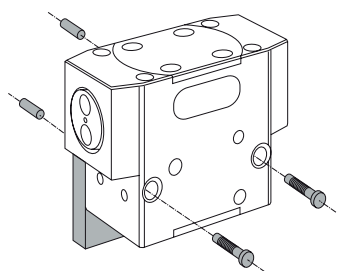
Control Diagram



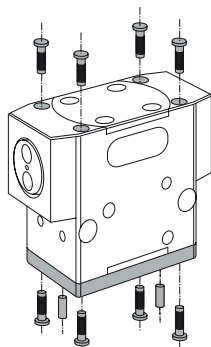
Protections Diagram



Mounting

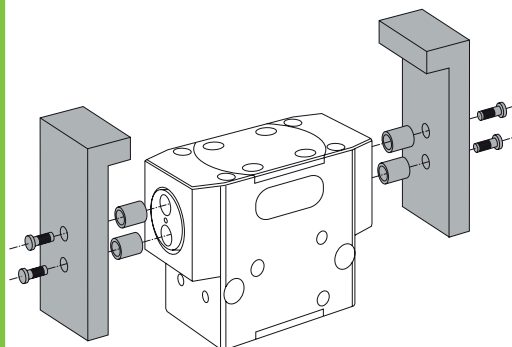


Side Mounting

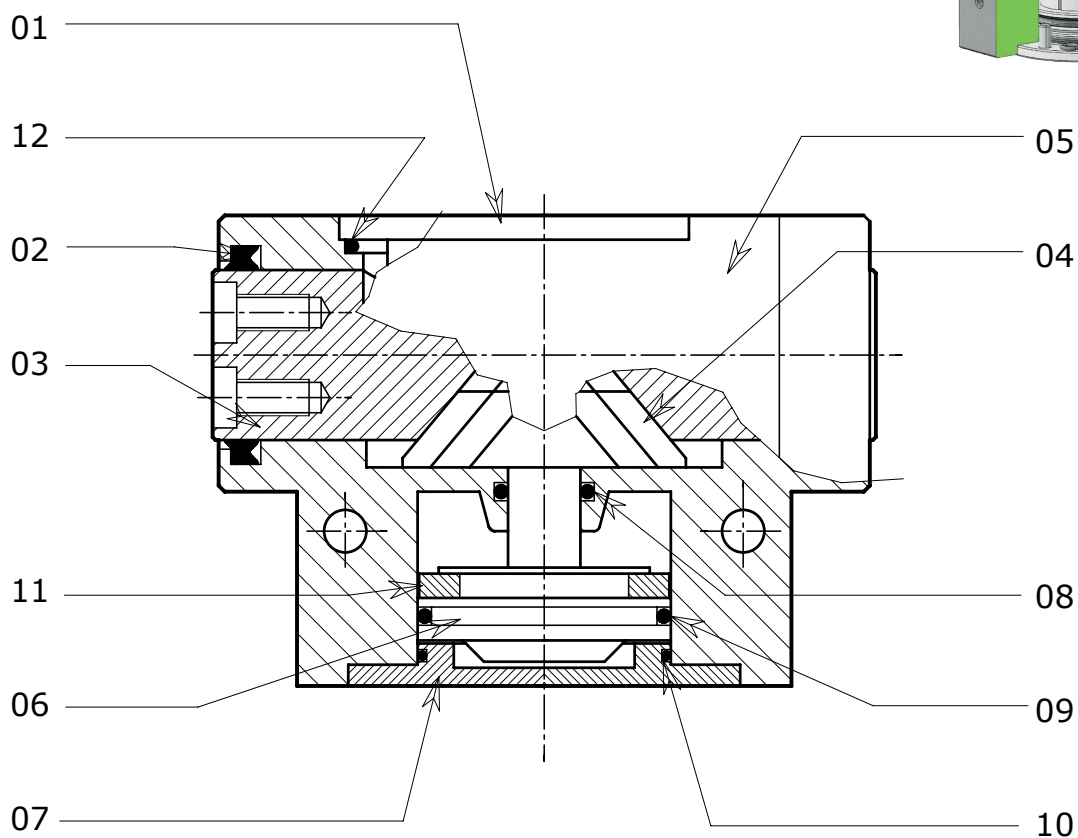
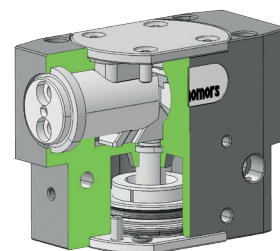


Axial Mounting
Bottom fixing

Fingers Mounting



Construction Diagram

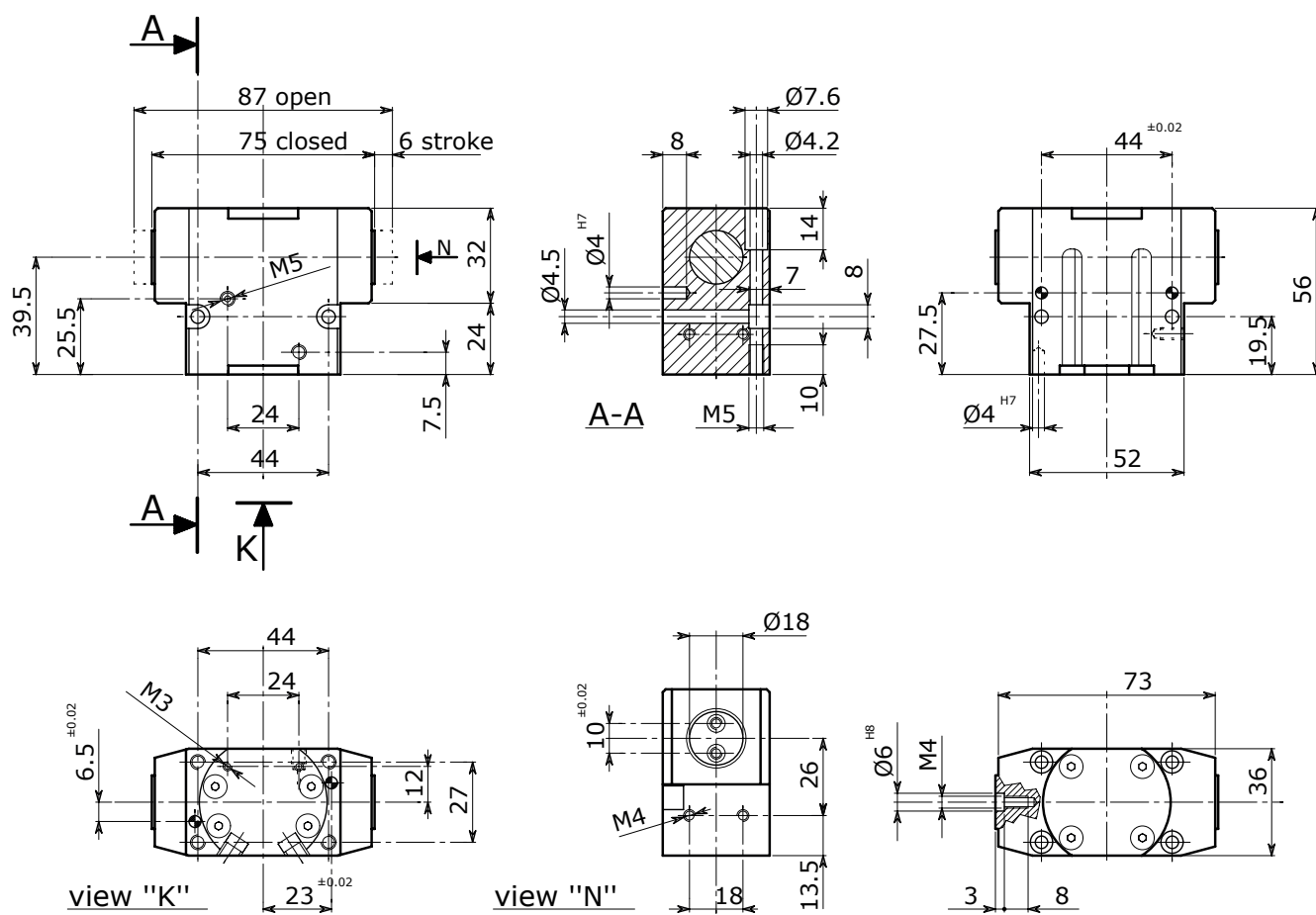


Nr.	Description	Material
01	ANTI-ROTATION PLATE	Chrome Molybdenum Steel
02	SCRAPER	NBR
03	JAW	Chrome Molybdenum Steel
04	DRIVE HUB	Chrome Molybdenum Steel
05	BODY	Aluminum Alloy
06	PISTON	Aluminum Alloy
07	CAP	Aluminum Alloy
08	SHAFT SEAL	NBR
09	PISTON SEAL	NBR
10	CAP SEAL	NBR
11	MAGNET	Rubber magnet
12	PLATE SEAL	NBR

Dimensional Drawing



OPH 73



TECHNICAL DATA

OPH 73

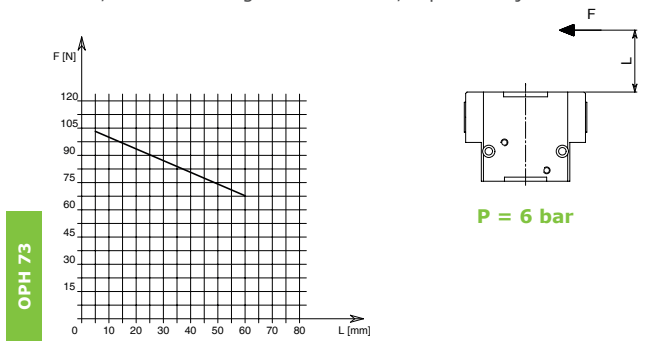
		OPH 73	OPH 73 M	OPH 73 MA
Stroke per jaw	mm in	6 0.2	6 0.2	6 0.2
Fluid consumption double stroke	cm ³ in ³	7.3 0.5	7.3 0.5	7.3 0.5
Closing force per jaw @ 6 bar	N lb	100 23	135 30	-
Opening force per jaw @ 6 bar	N lb	111 25	-	143 32
Total closing force @ 6 bar	N lb	200 45	270 60	-
Total opening force @ 6 bar	N lb	222 50	-	286 64
True clamping force per jaw only with spring	N lb	-	32 - 48 7 - 11	32 - 48 7 - 11
Recommended workpiece weight	Kg lb	1.00 2.20	1.00 2.20	1.00 2.20
Weight	Kg lb	0.48 1.06	0.51 1.12	0.51 1.12
Repeat accuracy	mm in	± 0.01 ± 0.0004	± 0.01 ± 0.0004	± 0.01 ± 0.0004

* 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 - 8 bar (29 - 116 psi)**
 Working Temperature **5 - 60 °C (41 - 140 °F)**
 Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

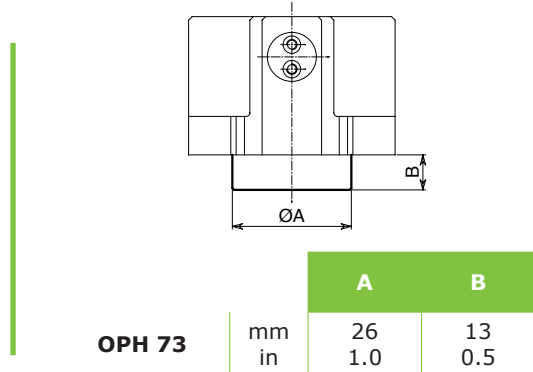
Clamping Force Diagram

Force Maintenance Spring

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

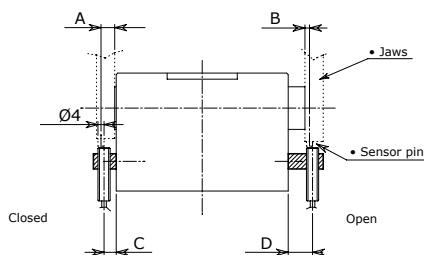


F = True clamping force per jaw - **L** = Reading distance
 Values read at a distance **L = 10 mm**

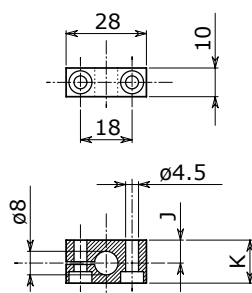


Pressure **4 - 8 bar (58 - 116 psi)**

Open-Closed Control Position with External Switches



		A	B	C	D
OPH 73	mm	3	3	12.5	22.5
	in	0.12	0.12	0.49	0.89



		Closed control		Open control	
		J	K	J	K
OPH 73	mm	12.5	19.5	22.5	29.5
	in	0.49	0.80	0.89	1.16



TECHNICAL DATA

		OPH 88	OPH 88 M	OPH 88 MA
Stroke per jaw	mm in	8 0.3	8 0.3	8 0.3
Fluid consumption double stroke	cm ³ in ³	16.5 1.0	16.5 1.0	16.5 1.0
Closing force per jaw @ 6 bar	N lb	174 39	225 51	-
Opening force per jaw @ 6 bar	N lb	191 43	-	237 53
Total closing force @ 6 bar	N lb	348 78	450 102	-
Total opening force @ 6 bar	N lb	382 86	-	474 107
True clamping force per jaw only with spring	N lb	-	46 - 88 10 - 20	46 - 88 10 - 20
Recommended workpiece weight	Kg lb	1.74 3.80	1.74 3.80	1.74 3.80
Weight	Kg lb	0.70 1.54	0.77 1.70	0.77 1.70
Repeat accuracy	mm in	± 0.01 ± 0.0004	± 0.01 ± 0.0004	± 0.01 ± 0.0004

* 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 - 8 bar (29 - 116 psi)**

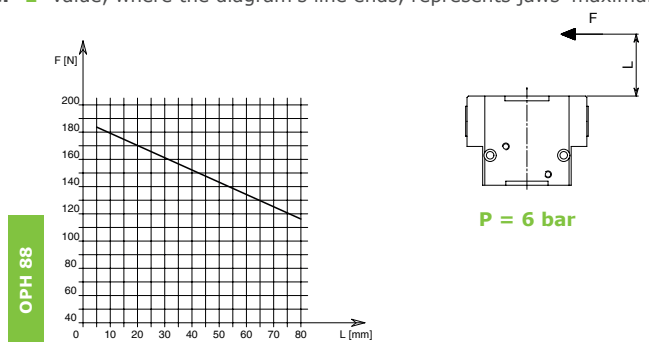
Working Temperature **5 - 60 °C (41 - 140 °F)**

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

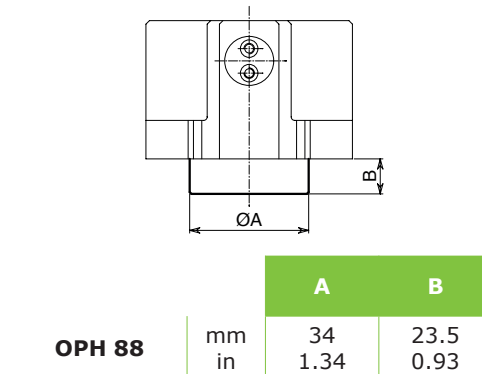
Clamping Force Diagram

Force Maintenance Spring

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

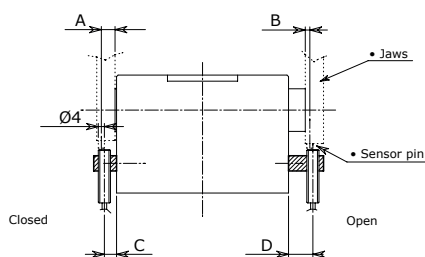


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 10 mm**

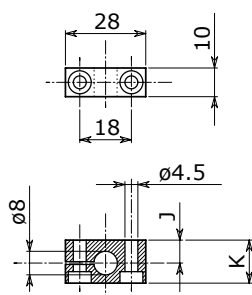


Pressure **4 - 8 bar (58 - 116 psi)**

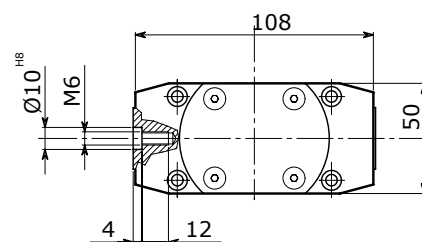
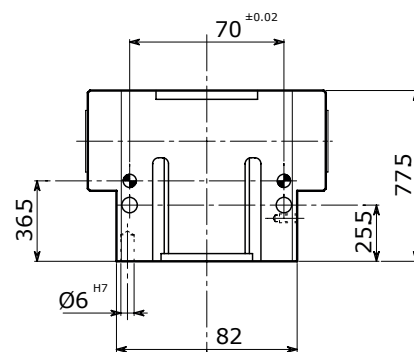
Open-Closed Control Position with External Switches



		A	B	C	D
OPH 88	mm in	3 0.12	3 0.12	13.5 0.53	25.5 1.01



		Closed control		Open control	
		J	K	J	K
OPH 88	mm in	13.5 0.53	20.5 0.81	22.5 0.89	32.5 1.28

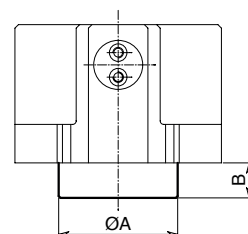


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* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.
Opening Pressure **2 - 8 bar (29 - 116 psi)**
Working Temperature **5 - 60 °C (41 - 140 °F)**
Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

Force Maintenance Spring

$P = 6 \text{ bar}$

Pressure **4 - 8 bar (58 - 116 psi)**

The diagram illustrates the gripper mechanism in two states: Closed and Open. The central body has a diameter of $\varnothing 4$. The jaws are labeled A and B. The sensor pin is labeled C and D. The diagram shows the gripper in a closed position (left) and an open position (right). The jaws are labeled "Jaws" and the sensor pin is labeled "Sensor pin".

Technical drawing of a mechanical part showing front and side views with dimensions.

Front View (Top):

- Overall width: 28
- Distance between hole centers: 18
- Overall height: 10
- Two circular holes are shown.

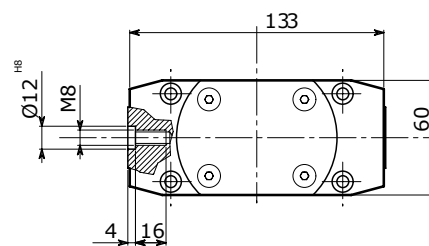
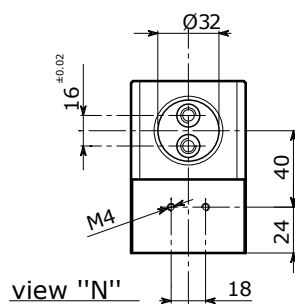
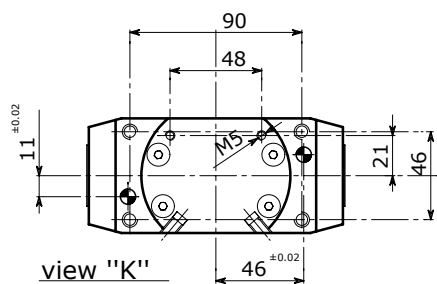
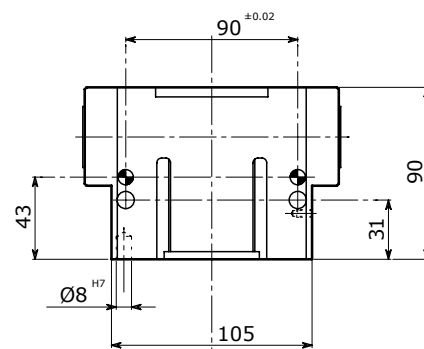
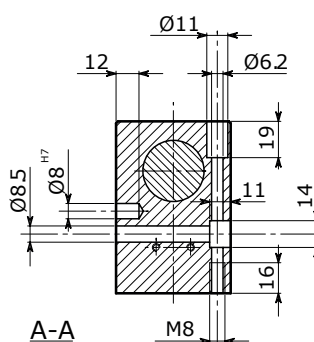
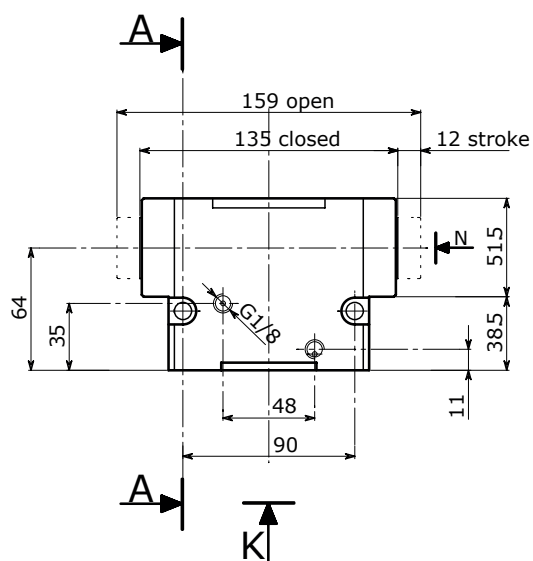
Side View (Bottom):

- Overall width: $\varnothing 8$
- Distance from left face to hole center: $\varnothing 4.5$
- Distance from hole center to right face: J
- Overall depth: K
- The part has a stepped profile with a central hole.

		Closed control		Open control	
		J	K	J	K
OPH 108	mm	15	22	29	36
	in	0.59	0.87	1.14	1.42



OPH133



TECHNICAL DATA

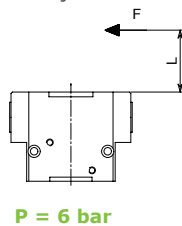
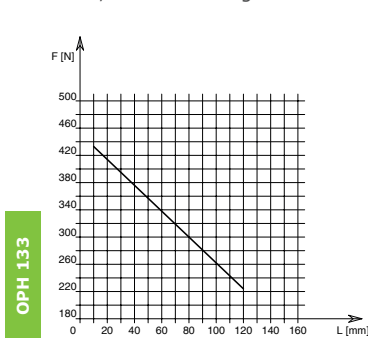
		OPH 133	OPH 133 M	OPH 133 MA
Stroke per jaw	mm in	12 0.5	12 0.5	12 0.5
Fluid consumption double stroke	cm ³ in ³	59 4	59 4	59 4
Closing force per jaw @ 6 bar	N lb	414 93	545 123	-
Opening force per jaw @ 6 bar	N lb	446 100	-	574 129
Total closing force @ 6 bar	N lb	828 186	1090 246	-
Total opening force @ 6 bar	N lb	892 201	-	1148 258
True clamping force per jaw only with spring	N lb	-	128 - 203 29 - 46	128 - 203 29 - 46
Recommended workpiece weight	Kg lb	4.14 9.10	4.14 9.10	4.14 9.10
Weight	Kg lb	2.30 5.06	2.50 5.51	2.50 5.51
Repeat accuracy	mm in	± 0.01 ± 0.0004	± 0.01 ± 0.0004	± 0.01 ± 0.0004

* 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 - 8 bar (29 - 116 psi)**
 Working Temperature **5 - 60 °C (41 - 140 °F)**
 Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

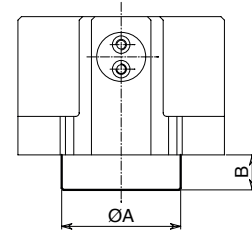
Clamping Force Diagram

Force Maintenance Spring

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**

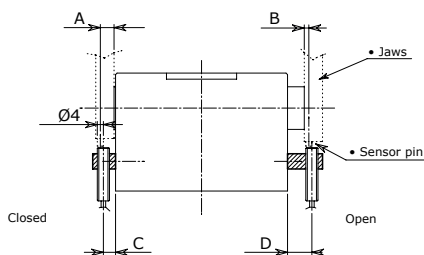


OPH 133

	A	B
mm	52	30
in	2.05	1.18

Pressure **4 - 8 bar (58 - 116 psi)**

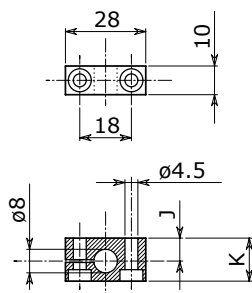
Open-Closed Control Position with External Switches



OPH 133

mm
in

A	B	C	D
3 0.12	3 0.12	16 0.63	32 1.26



OPH 133

mm
in

Closed control		Open control	
J	K	J	K
16 0.63	23 0.91	32 1.26	39 1.54



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