Pneumatic Parallel Grippers
OPH 3-Finger

OPH is a sealed three-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.

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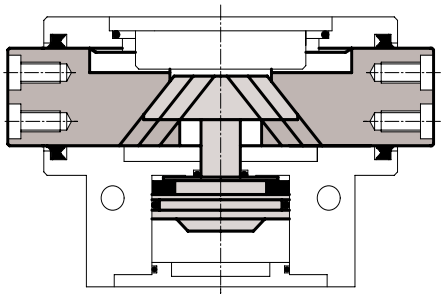
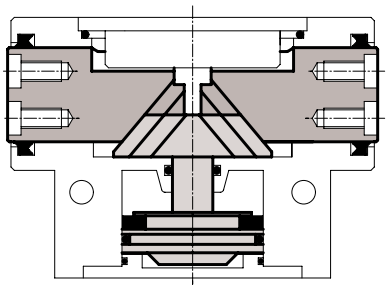
Open/Close Diagram

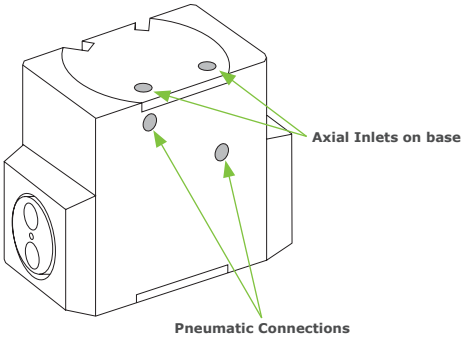


OPEN

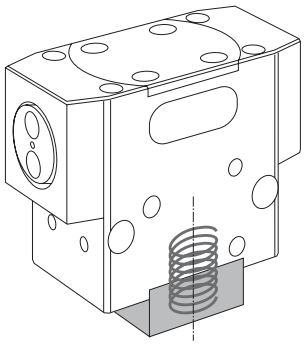


CLOSED

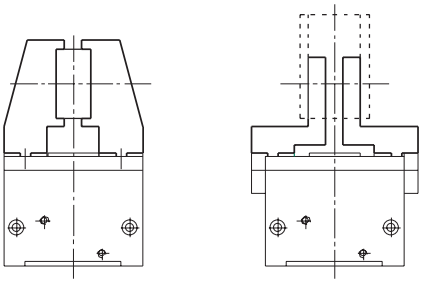
Pneumatic Feed



Force Maintenance Spring

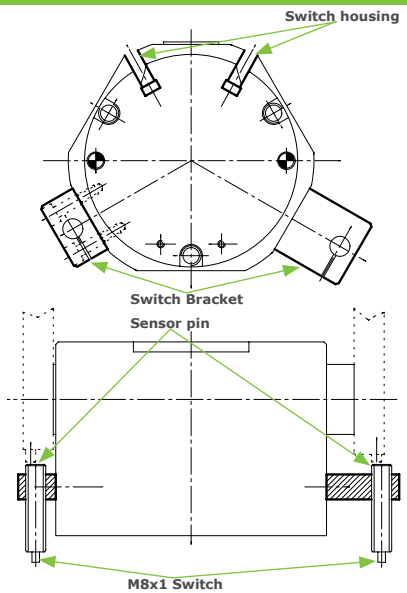


Gripping Diagram

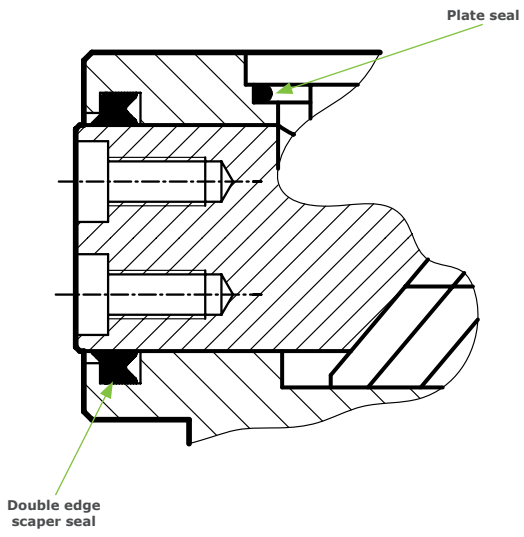


Guidelines for the selection of a gripper model
Selection of the correct gripper model depends on the workpiece's weight, the friction coefficient between the fingers and the workpiece and the required motion of the application.
Due to inertial forces associated with motion, we recommend that the holding 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.

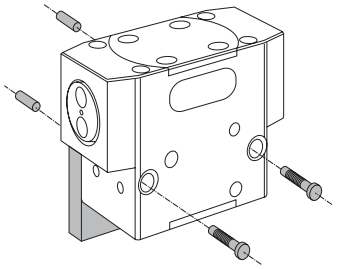
Control Diagram



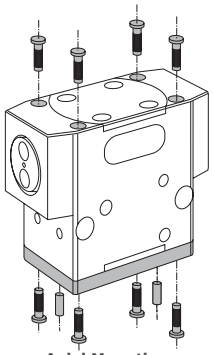
Protections Diagram



Mounting

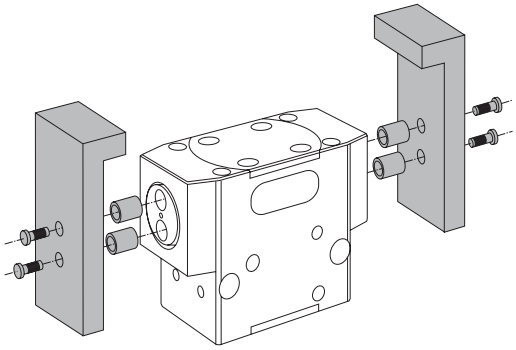


Side Mounting

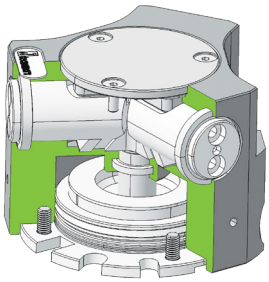


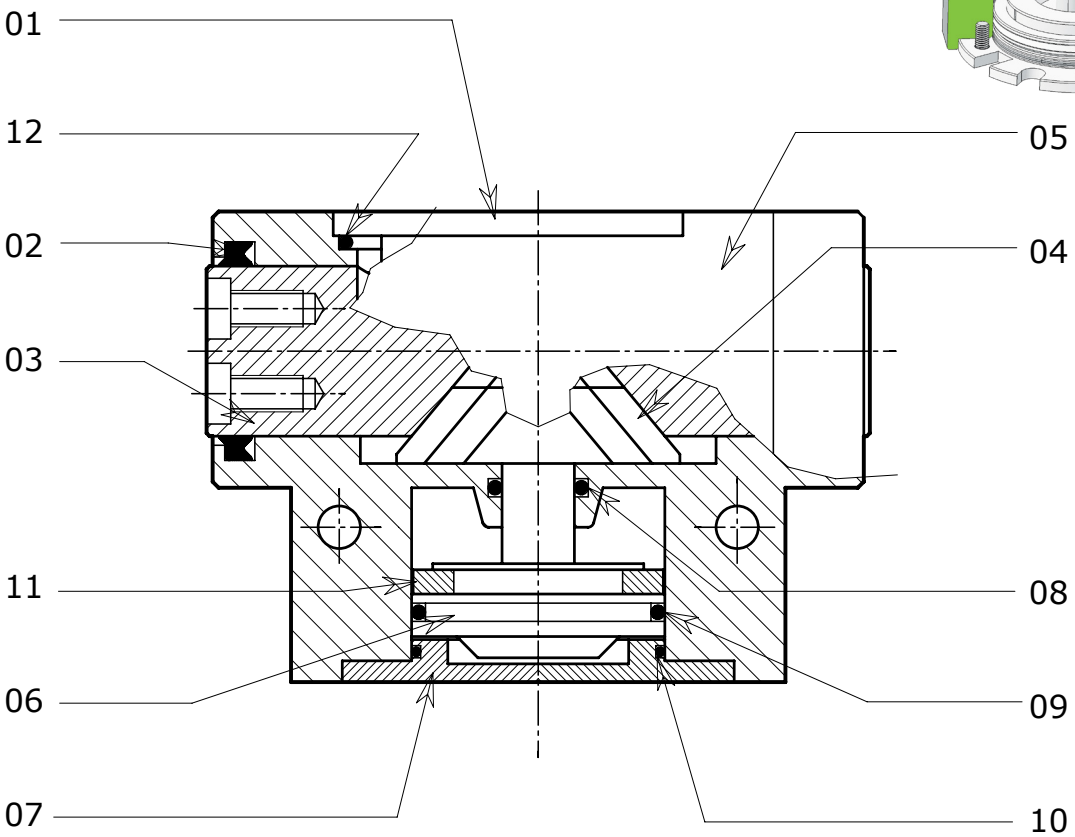
Axial Mounting
Bottom fixing

Fingers Mounting



Construction Diagram

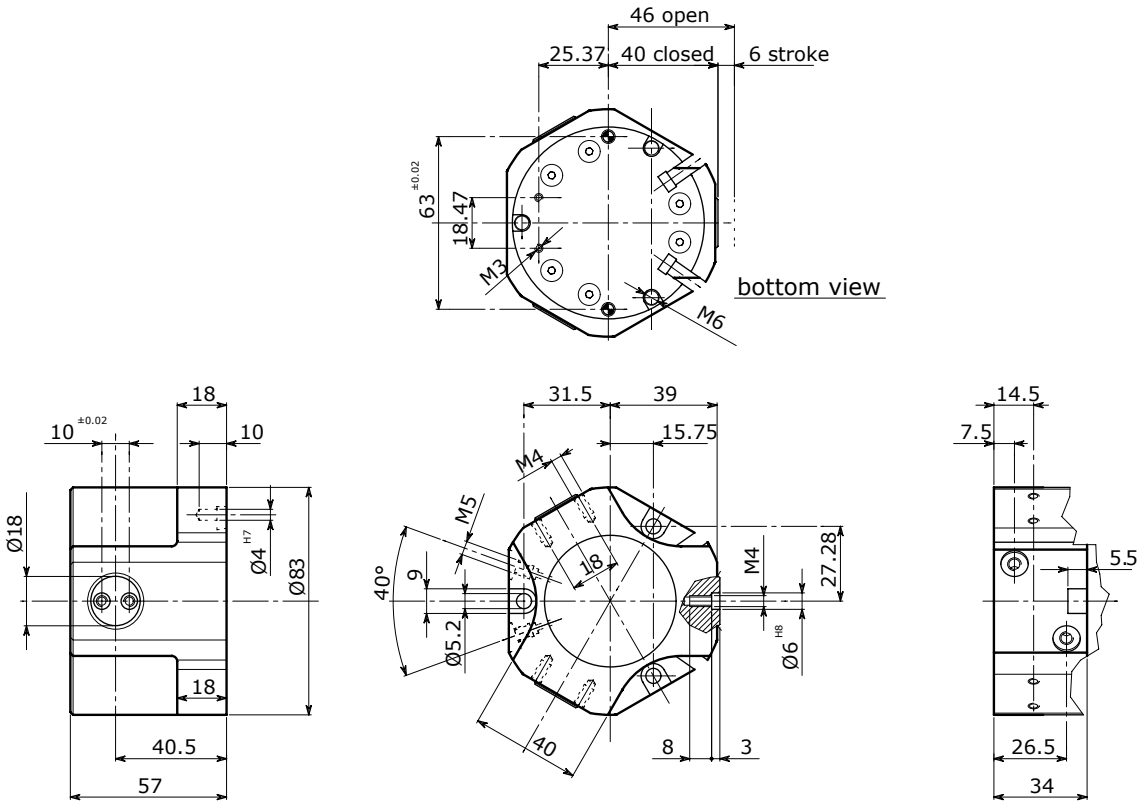




Nr.	Description	Material
01	ANTI-ROTATION PLATE	Chrome Molybdenum Steel
02	SCRAPER	NBR
03	JAW	Chrome Molybdenum Steel
04	DRIVE HUB	Chrome Molybdenum Steel
05	BODY	Aluminum Alloy
06	PISTON	Aluminum Alloy
07	CAP	Aluminum Alloy
08	SHAFT SEAL	NBR
09	PISTON SEAL	NBR
10	CAP SEAL	NBR
11	MAGNET	Rubber magnet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

Dimensional Drawing

OPH 83-3



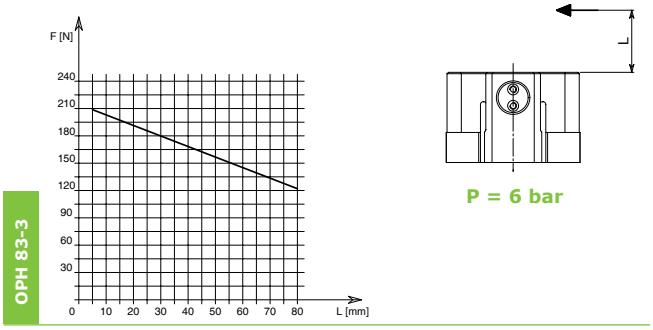
TECHNICAL DATA

		OPH 83-3	OPH 83-3 NM	OPH 83-3 NMA
Stroke per jaw	mm in	6 0.2	6 0.2	6 0.2
Fluid consumption double stroke	cm^3 in^3	23 1.4	23 1.4	23 1.4
Closing force per jaw @ 6 bar	N lb	203 46	255 57	-
Opening force per jaw @ 6 bar	N lb	213 48	-	261 59
Total closing force @ 6 bar	N lb	609 138	765 171	-
Total opening force @ 6 bar	N lb	639 138	-	783 176
True clamping force per jaw only with spring	N lb	-	48 - 78 11 - 18	48 - 78 11 - 18
Recommended workpiece weight	Kg lb	3.05 6.72	3.05 6.72	3.05 6.72
Weight	Kg lb	0.90 1.98	0.96 2.12	0.96 2.12
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

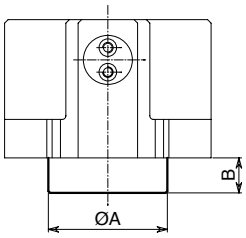
Note: "**L**" value, where the diagram's line ends, represents jaws' maximum length.



P = 6 bar

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

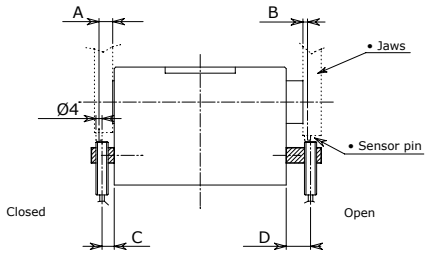
Force Maintenance Spring



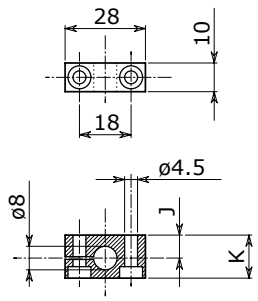
		A	B
OPH 83-3	mm in	45 1.8	13.5 0.5

Pressure **3 - 8 bar (43 - 116 psi)**

Open-Closed Control Position with External Switches



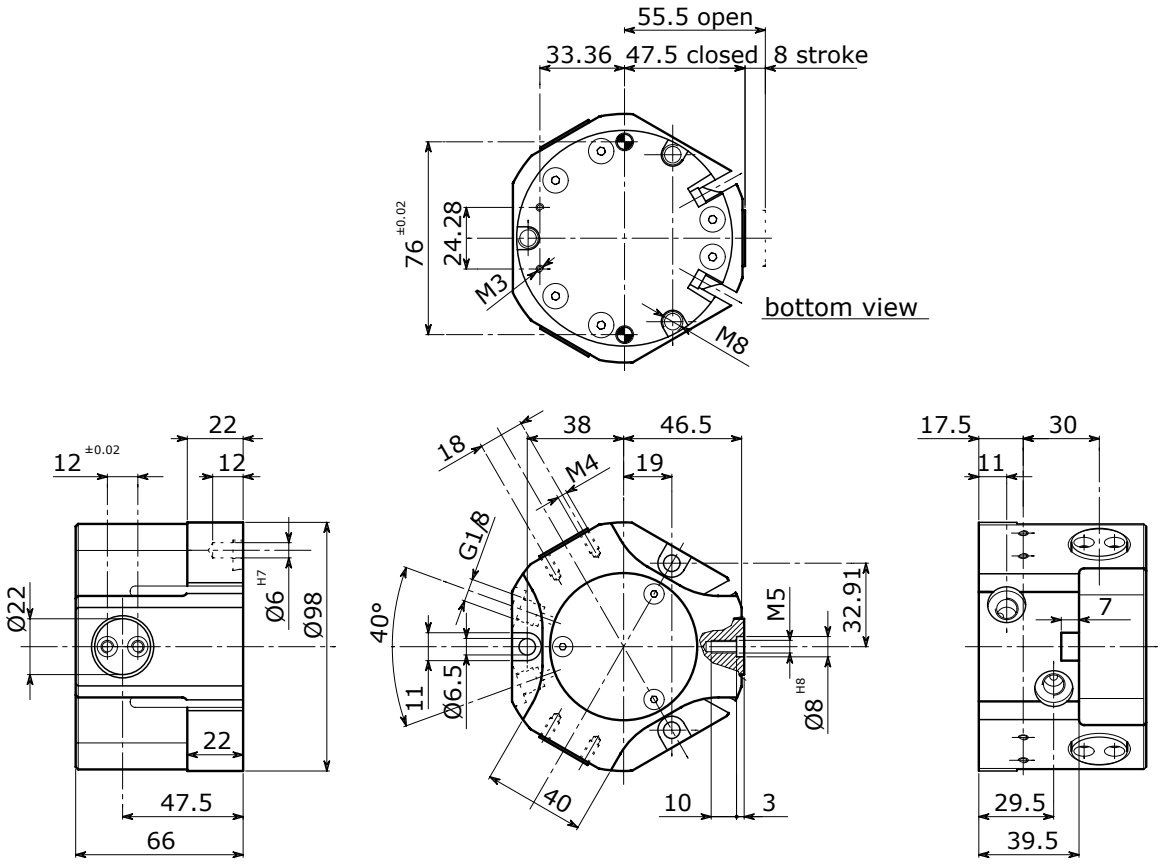
		A	B	C	D
OPH 83-3	mm in	9 0.4	3.5 0.1	8 0.3	12.5 0.49



		Closed control		Open control	
		J	K	J	K
OPH 83-3	mm in	8 0.3	15 0.6	12.5 0.49	19.5 0.8

Dimensional Drawing

OPH 98-3



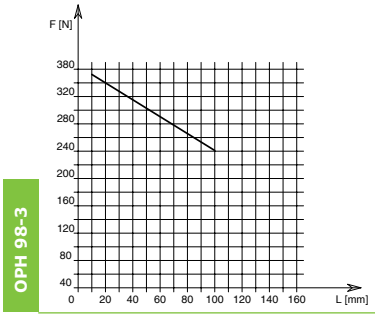
TECHNICAL DATA

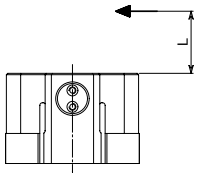
		OPH 98-3	OPH 98-3 NM	OPH 98-3 NMA
Stroke per jaw	mm in	8 0.3	8 0.3	8 0.3
Fluid consumption double stroke	cm^3 in^3	52 3.2	52 3.2	52 3.2
Closing force per jaw @ 6 bar	N lb	340 76	435 98	-
Opening force per jaw @ 6 bar	N lb	360 81	-	452 102
Total closing force @ 6 bar	N lb	1020 228	1305 294	-
Total opening force @ 6 bar	N lb	1080 243	-	1356 305
True clamping force per jaw only with spring	N lb	-	92 - 116 21 - 26	92 - 116 21 - 26
Recommended workpiece weight	Kg lb	5.10 11.24	5.10 11.24	5.10 11.24
Weight	Kg lb	1.20 2.64	1.33 2.93	1.33 2.93
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

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

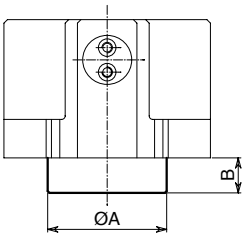




P = 6 bar

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

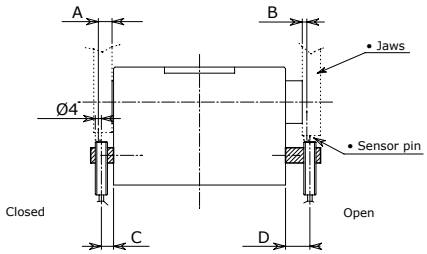
Force Maintenance Spring



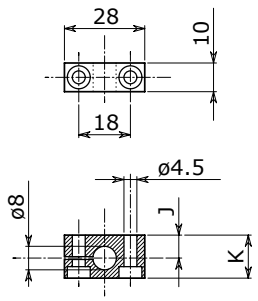
		A	B
OPH 98-3	mm in	60 2.4	15 0.6

Pressure **3 - 8 bar (43 - 116 psi)**

Open-Closed Control Position with External Switches



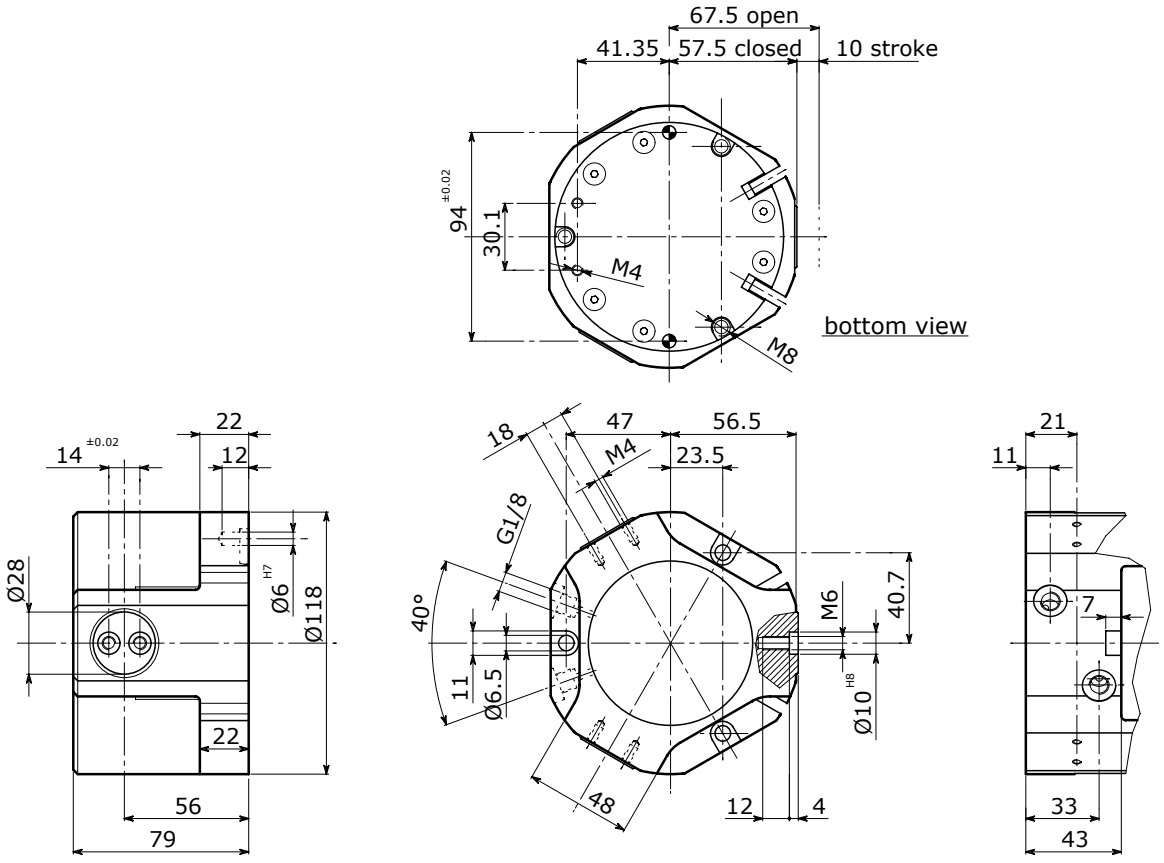
		A	B	C	D
OPH 98-3	mm in	9 0.4	4 0.2	8 0.3	15 0.6



		Closed control		Open control	
		J	K	J	K
OPH 98-3	mm in	8 0.3	15 0.6	15 0.6	22 0.9

Dimensional Drawing

OPH 118-3



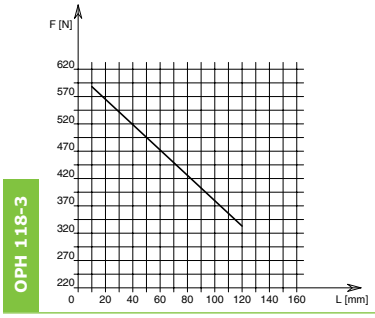
TECHNICAL DATA

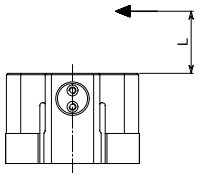
		OPH 118-3	OPH 118-3 NM	OPH 118-3 NMA
Stroke per jaw	mm in	10 0.4	10 0.4	10 0.4
Fluid consumption double stroke	cm^3 in^3	108 6.6	108 6.6	108 6.6
Closing force per jaw @ 6 bar	N lb	565 127	705 158	-
Opening force per jaw @ 6 bar	N lb	590 133	-	726 163
Total closing force @ 6 bar	N lb	1695 381	2115 474	-
Total opening force @ 6 bar	N lb	1770 399	-	2178 490
True clamping force per jaw only with spring	N lb	-	136 - 210 31 - 47	136 - 210 31 - 47
Recommended workpiece weight	Kg lb	8.48 18.70	8.48 18.70	8.48 18.70
Weight	Kg lb	2.30 5.06	2.51 5.53	2.51 5.53
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

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

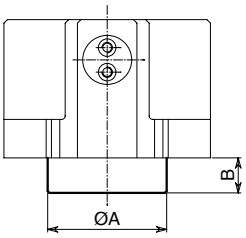




P = 6 bar

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

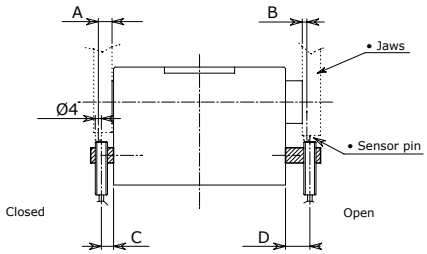
Force Maintenance Spring



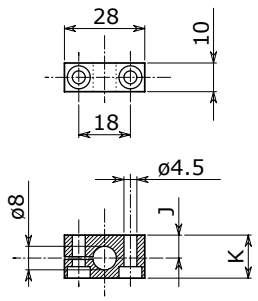
		A	B
OPH 118-3	mm in	68 2.7	20 0.8

Pressure **3 - 8 bar (43 - 116 psi)**

Open-Closed Control Position with External Switches



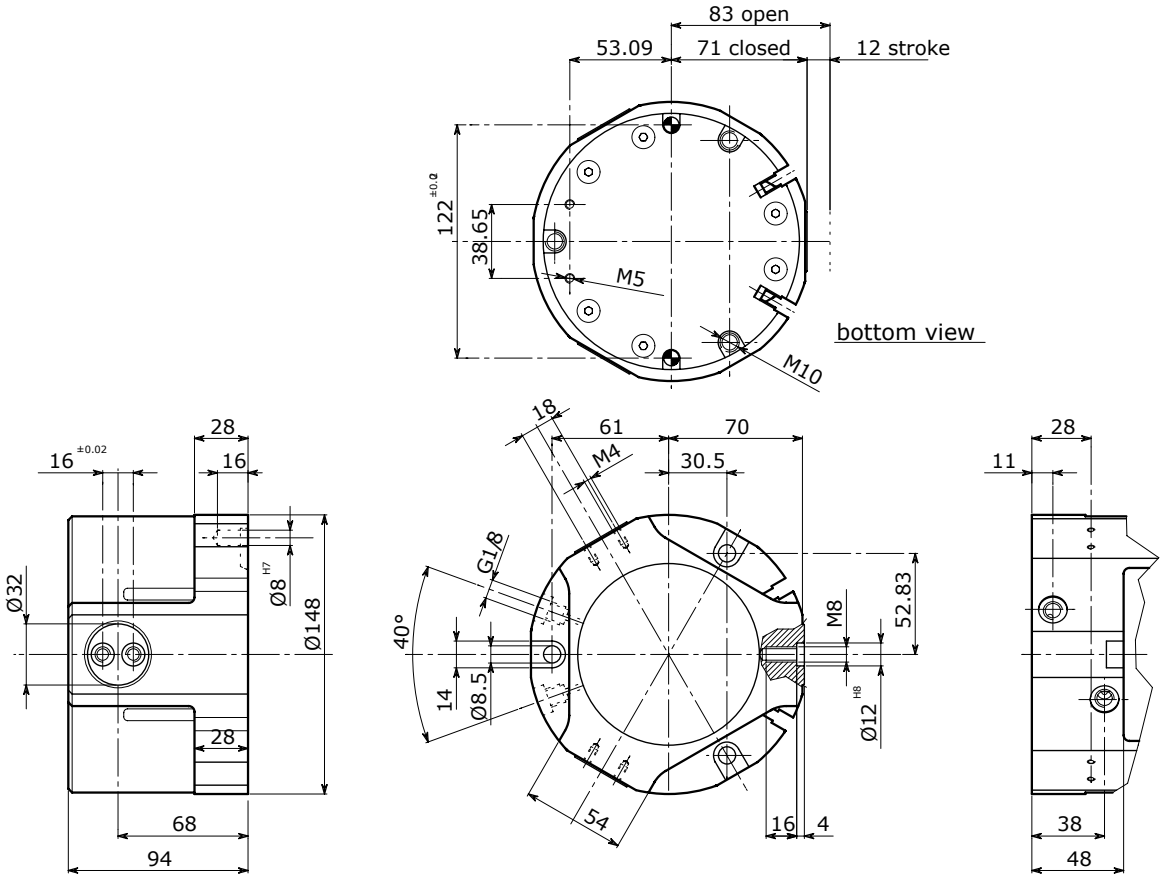
		A	B	C	D
OPH 118-3	mm in	9 0.4	3 0.1	8 0.3	16 0.6



		Closed control		Open control	
		J	K	J	K
OPH 118-3	mm in	8 0.3	15 0.6	16 0.6	23 0.9

Dimensional Drawing

OPH148-3



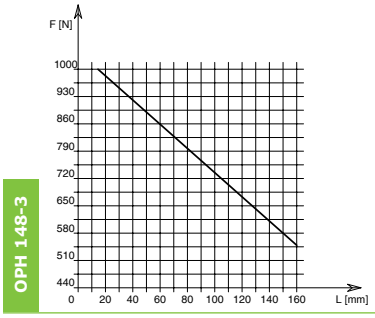
TECHNICAL DATA

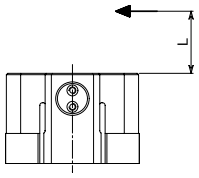
		OPH 148-3	OPH 148-3 NM	OPH 148-3 NMA
Stroke per jaw	mm in	12 0.5	12 0.5	12 0.5
Fluid consumption double stroke	cm^3 in^3	225 13.7	225 13.7	225 13.7
Closing force per jaw @ 6 bar	N lb	983 221	1225 275	-
Opening force per jaw @ 6 bar	N lb	1010 227	-	1244 280
Total closing force @ 6 bar	N lb	2949 663	3675 825	-
Total opening force @ 6 bar	N lb	3030 681	-	3732 839
True clamping force per jaw only with spring	N lb	-	234 - 360 53 - 81	234 - 360 53 - 81
Recommended workpiece weight	Kg lb	14.75 32.52	14.75 32.52	14.75 32.52
Weight	Kg lb	3.80 8.36	4.25 9.37	4.25 9.37
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

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

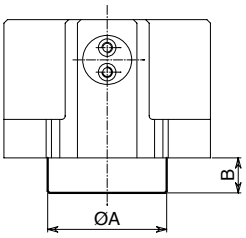




P = 6 bar

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

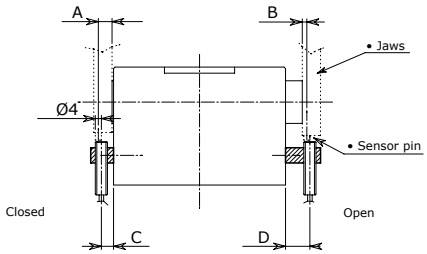
Force Maintenance Spring



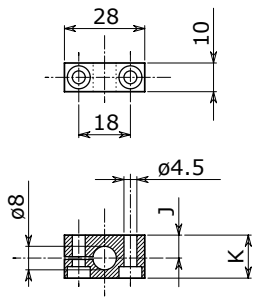
		A	B
OPH 148-3	mm in	88 3.4	25 1.0

Pressure **3 - 8 bar (43 - 116 psi)**

Open-Closed Control Position with External Switches



		A	B	C	D
OPH 148-3	mm in	9 0.4	3 0.1	8 0.3	18 0.7



		Closed control		Open control	
		J	K	J	K
OPH 148-3	mm in	8 0.3	15 0.6	18 0.7	25 1.0

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