Pneumatic Parallel Grippers
OPL 2 and 3-Finger

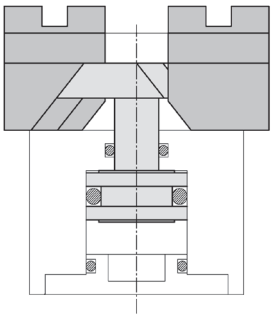
OPL is a compact two and three-finger parallel gripper featuring high reliability and a long service life, suitable for handling low weight or small components.

Advantages

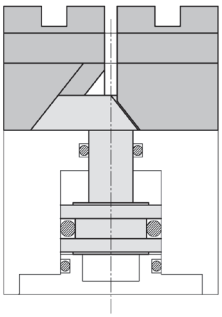
- Compact housing made of hard coated aluminum alloy.
- Sturdy C-slot with hardened steel gibs for effective jaw guidance, precise handling, and easy maintenance.
- Wedge-hook design for high-force transmission and jaw synchronization.
- Mounting from two sides in two screw directions for versatile and flexible integration
- Air supply via fitting screw connections.

EFFECTO GROUP

Open/Close Diagram

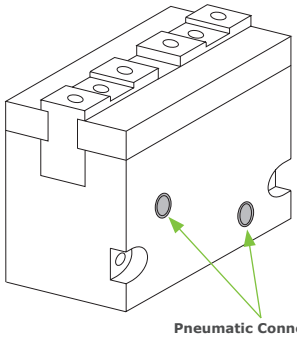


OPEN

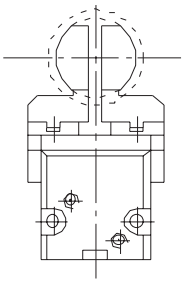


CLOSED

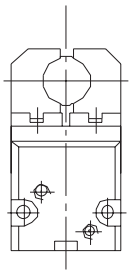
Pneumatic Feed



Gripping Diagram



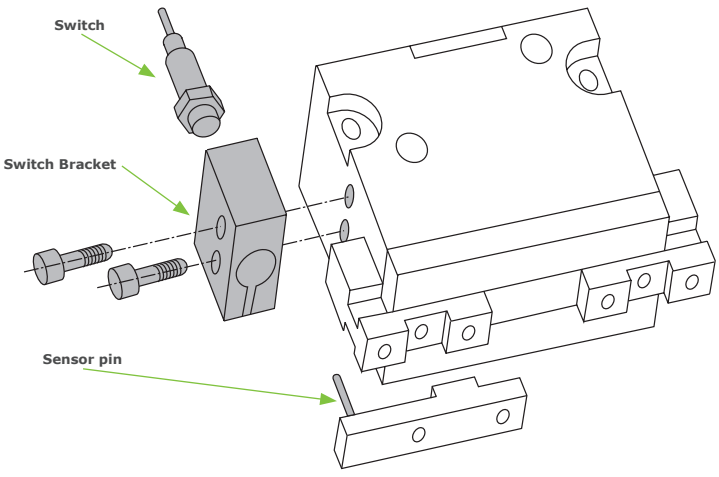
External Clamping



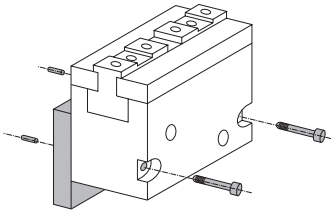
Internal Clamping

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.

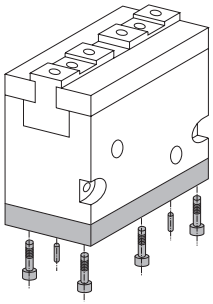
Control Diagram



Mounting

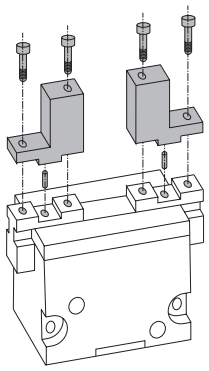


Side Mounting

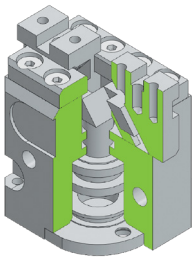


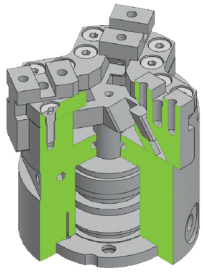
Axial Mounting
Bottom fixing

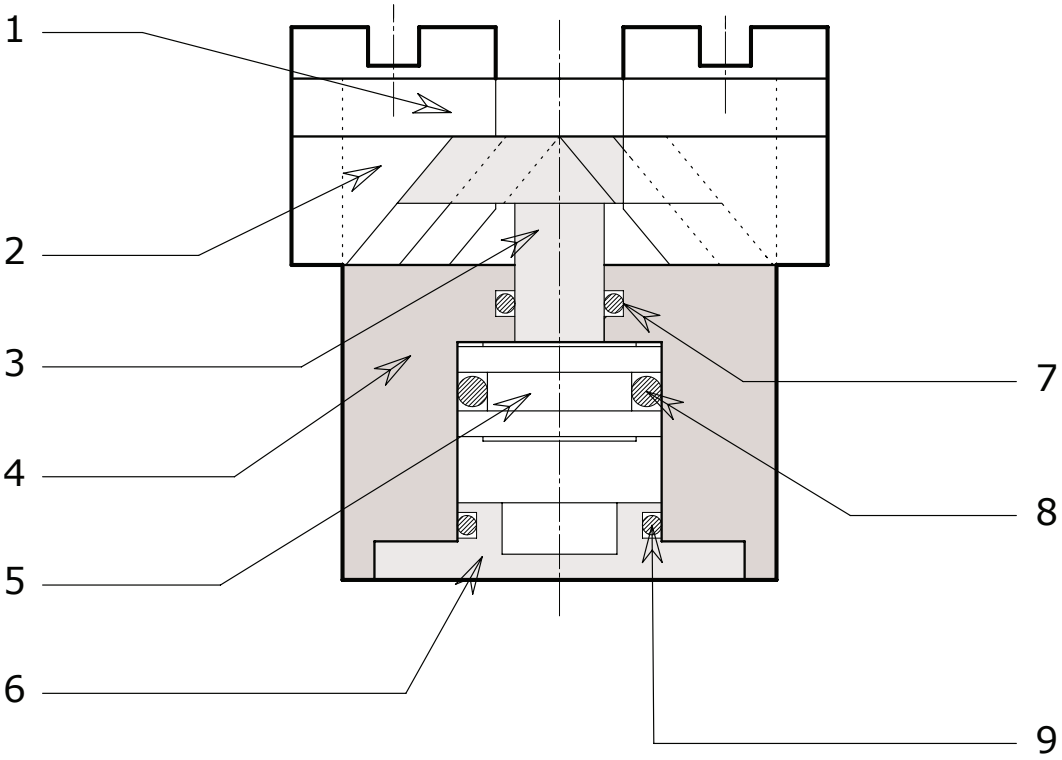
Fingers Mounting



Construction Diagram



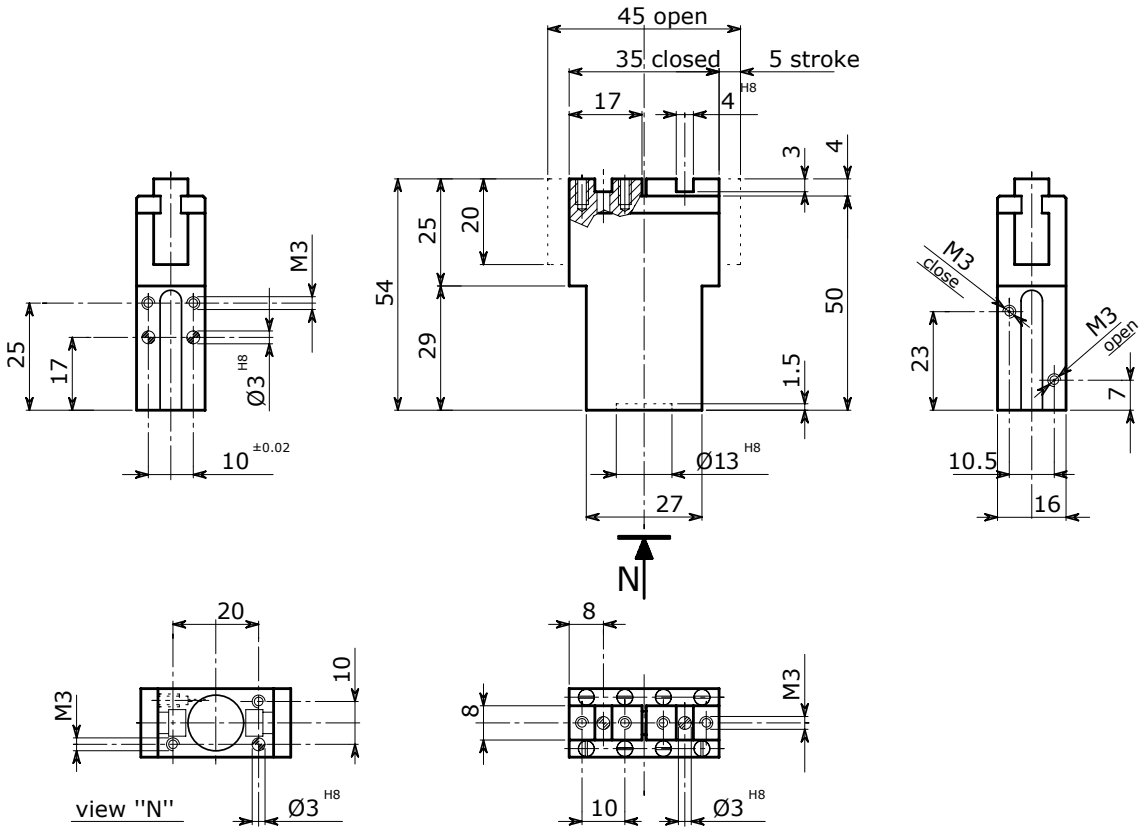




Nr.	Description	Material
01	GIB	Chrome Molybdenum Steel
02	JAW	Carbon Steel
03	DRIVE HUB	Chrome Molybdenum Steel
04	BODY	Aluminum Alloy
05	PISTON	Aluminum Alloy
06	CAP	Aluminum Alloy
07	SHAFT SEAL	NBR
08	PISTON SEAL	NBR
09	SEAL	NBR

Dimensional Drawing

OPL 12

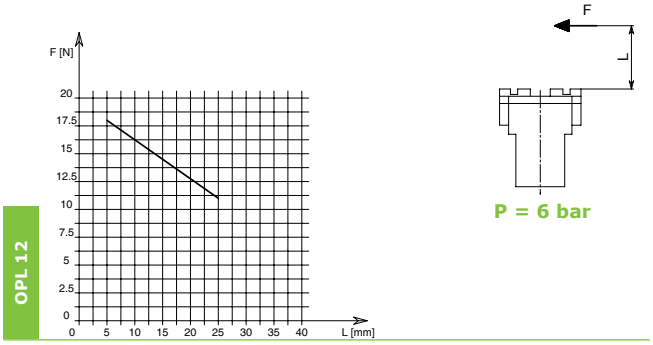


		OPL 12
Stroke per jaw	mm in	5 0.2
Fluid consumption double stroke	cm^3 in^3	1.2 0.07
Closing force per jaw @ 6 bar	N lb	18 4
Opening force per jaw @ 6 bar	N lb	24 5
Total closing force @ 6 bar	N lb	36 8
Total opening force @ 6 bar	N lb	48 11
True clamping force per jaw only with spring	N lb	-
Recommended workpiece weight	Kg lb	0.18 0.40
Weight	Kg lb	0.08 0.18
Repeat accuracy	mm in	± 0.05 ± 0.002

* 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

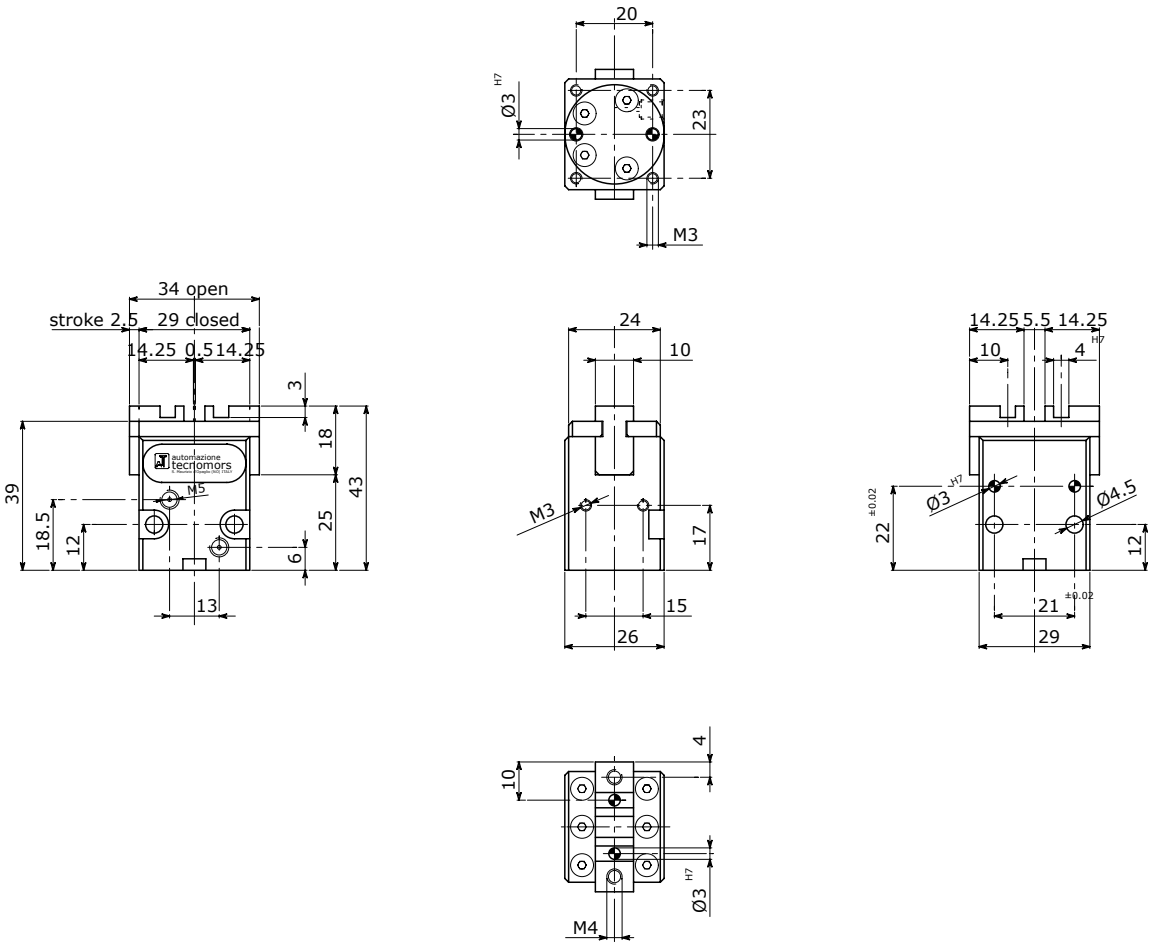
Note: "**L**" value, where the diagram's line ends, represents jaws' maximum length.



F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 5 mm**

Dimensional Drawing

OPL 30

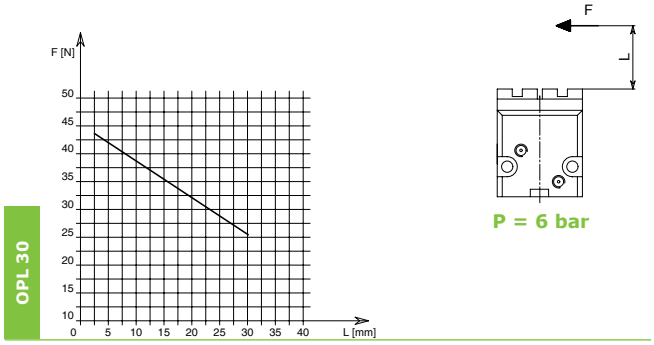


		OPL 30
Stroke per jaw	mm in	2.5 0.1
Fluid consumption double stroke	cm^3 in^3	1.4 0.09
Closing force per jaw @ 6 bar	N lb	42 9.4
Opening force per jaw @ 6 bar	N lb	54 12
Total closing force @ 6 bar	N lb	84 19
Total opening force @ 6 bar	N lb	108 24
True clamping force per jaw only with spring	N lb	-
Recommended workpiece weight	Kg lb	0.42 0.90
Weight	Kg lb	0.10 0.22
Repeat accuracy	mm in	± 0.05 ± 0.002

* 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**

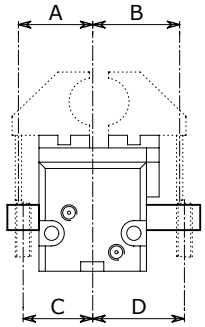
Clamping Force Diagram

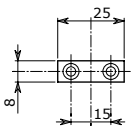
Note: "**L**" value, where the diagram's line ends, represents jaws' maximum length.

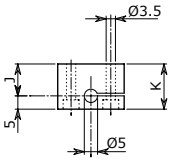


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 5 mm**

Open-Closed Control Position with External Switches





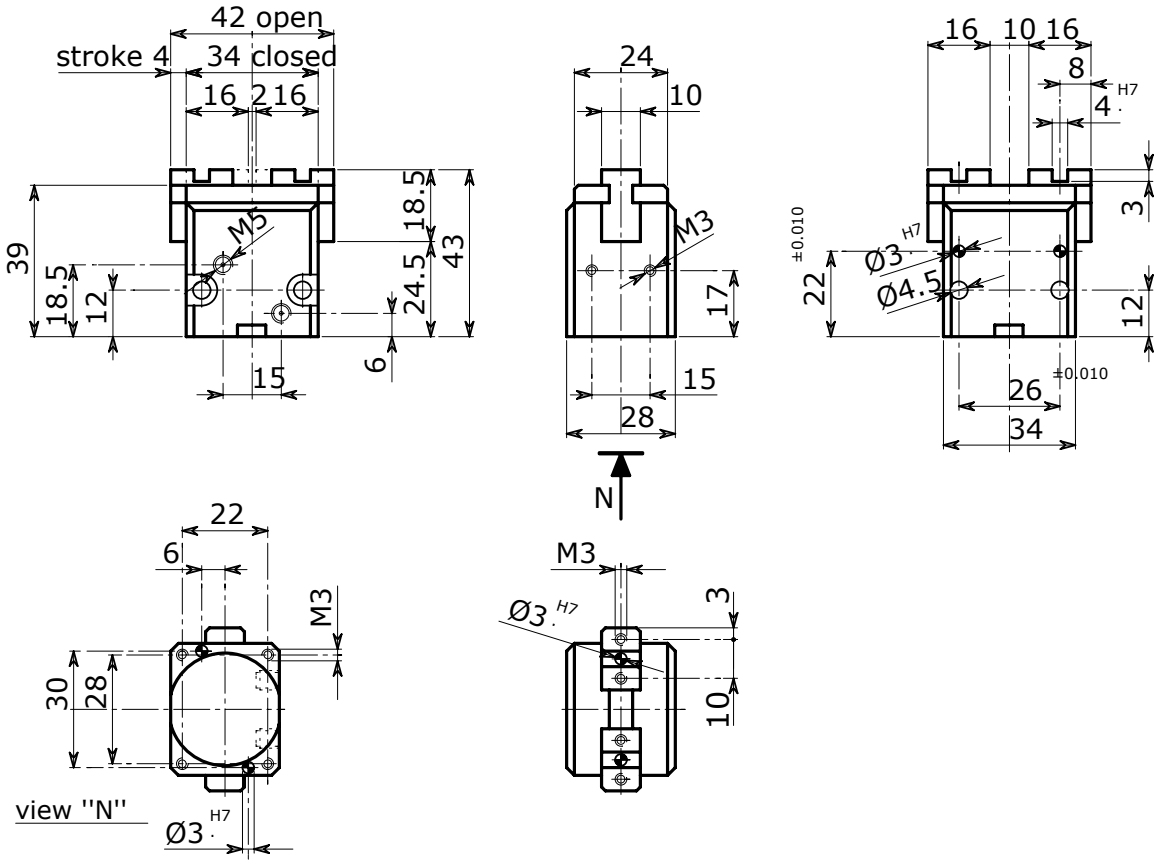


		A	B	C	D
OPL 30	mm in	21 0.83	23.5 0.93	19.5 0.77	25 0.98

		Closed control		Open control	
		J	K	J	K
OPL 30	mm in	5 0.20	10 0.40	10.5 0.41	15.5 0.61

Dimensional Drawing

OPL 35

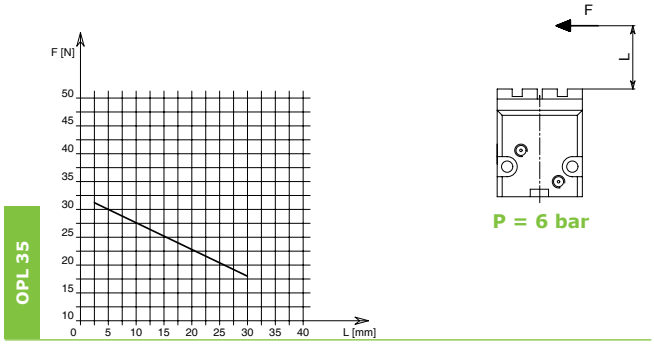


		OPL 35
Stroke per jaw	mm in	4 0.16
Fluid consumption double stroke	cm^3 in^3	1.7 0.1
Closing force per jaw @ 6 bar	N lb	30 7
Opening force per jaw @ 6 bar	N lb	43 10
Total closing force @ 6 bar	N lb	60 14
Total opening force @ 6 bar	N lb	86 19
True clamping force per jaw only with spring	N lb	-
Recommended workpiece weight	Kg lb	0.30 0.70
Weight	Kg lb	0.13 0.28
Repeat accuracy	mm in	± 0.05 ± 0.002

* 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**

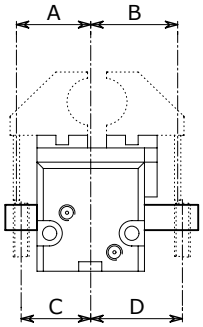
Clamping Force Diagram

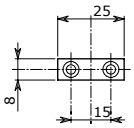
Note: "**L**" value, where the diagram's line ends, represents jaws' maximum length.

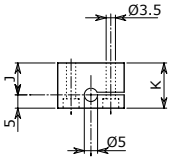


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 5 mm**

Open-Closed Control Position with External Switches





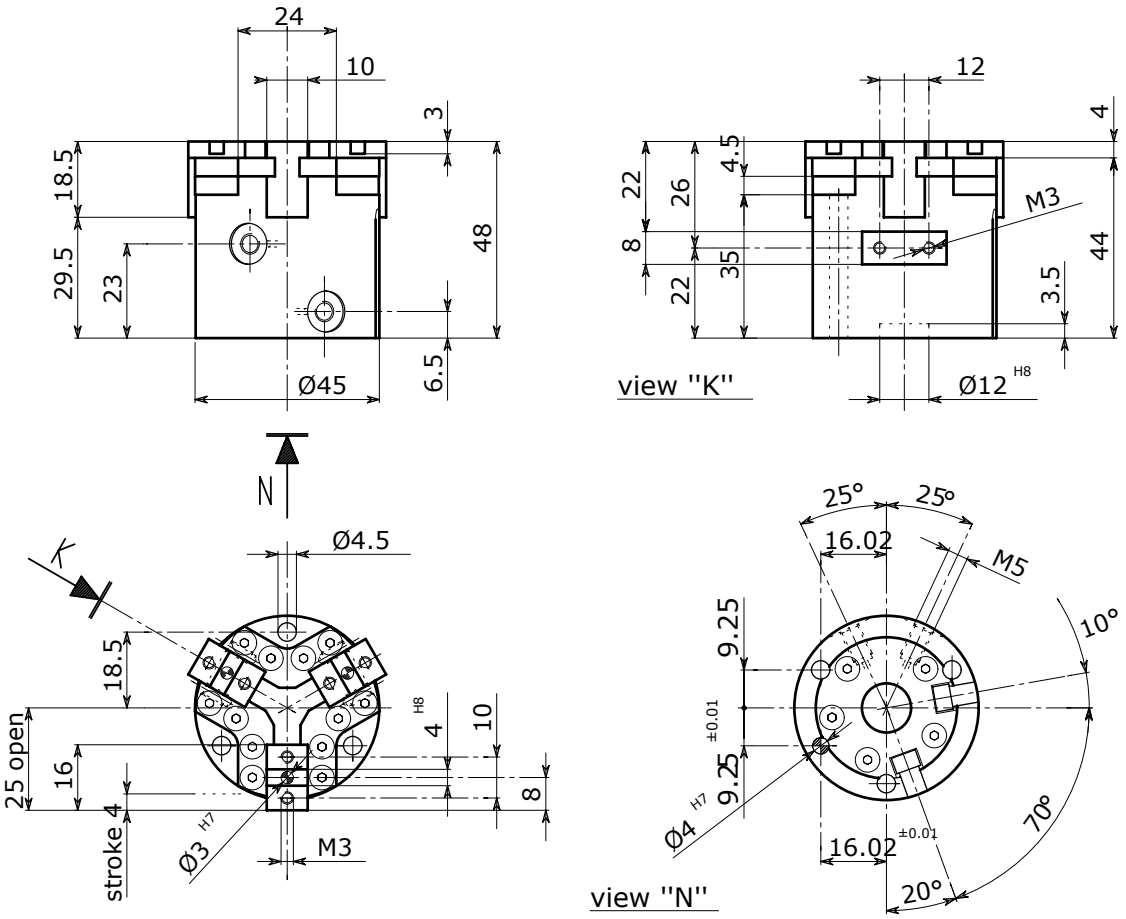


		A	B	C	D
OPL 35	mm in	23.5 0.93	27.5 1.08	22 0.87	29 1.14

		Closed control		Open control	
		J	K	J	K
OPL 35	mm in	5 1.12	10 2.25	12 0.47	17 0.67

Dimensional Drawing

OPL 45-3

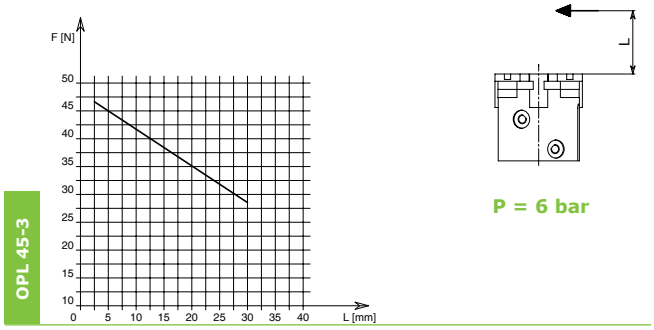


		OPL 45-3
Stroke per jaw	mm in	4 0.16
Fluid consumption double stroke	cm^3 in^3	3.4 0.21
Closing force per jaw @ 6 bar	N lb	45 10
Opening force per jaw @ 6 bar	N lb	53 12
Total closing force @ 6 bar	N lb	135 30
Total opening force @ 6 bar	N lb	159 36
True clamping force per jaw only with spring	N lb	-
Recommended workpiece weight	Kg lb	0.68 1.50
Weight	Kg lb	0.25 0.55
Repeat accuracy	mm in	± 0.05 ± 0.002

* 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 - 7 bar (29 - 102 psi)**
Working Temperature **5 - 60 °C (41 - 140 °F)**
Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

Clamping Force Diagram

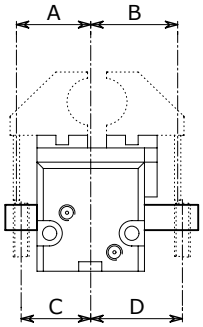
Note: "**L**" value, where the diagram's line ends, represents jaws' maximum length.

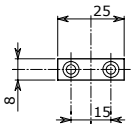


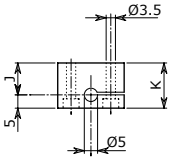
P = 6 bar

F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 5 mm**

Open-Closed Control Position with External Switches







		A	B	C	D
OPL 45-3	mm in	26.5 1.04	30.5 1.20	25 0.98	32 1.26

		Closed control		Open control	
		J	K	J	K
OPL 45-3	mm in	5 1.12	10 2.25	12 0.47	17 0.67

EFFECTO GROUP S.p.A.
Via Roma, 141/143
28017 San Maurizio d'Opaglio (NO) - Italy
Tel. +39 0322 96142 Fax +39 0322 967453
info@effectogroup.com
www.effectogroup.com