Pneumatic Parallel Grippers
QPGB 3-Finger

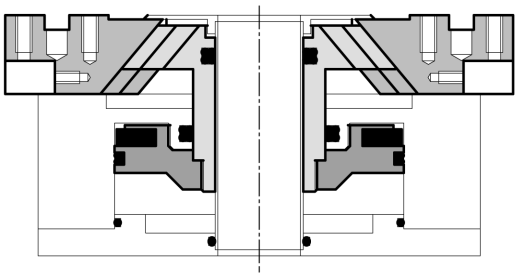
QPGB is a universal three-finger centric gripper, with a hollow center, featuring high reliability and a long service life, suitable for applications that require a center bore, (e.g. for workpiece feed, special sensor systems or optical recognition systems)

Advantages

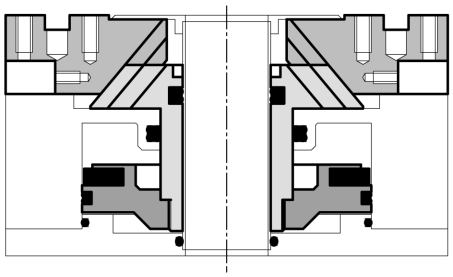
- Robust lightweight housing made of hard-coated aluminum alloy.
- Sturdy T-slot with hardened steel gibs for effective jaw guidance, precise handling, and easy maintenance.
- Central through-hole which can be used for feed through of supply hoses and utilities.
- Mounting from one side in two screw directions for versatile and flexible integration.
- Integrated permanent magnets for direct monitoring of piston movement.
- Slots for mounting and positioning magnetic-field sensors.
- Air supply via hose-free direct connections or fitting screw connections.

EFFECTO GROUP

Open/Close Diagram

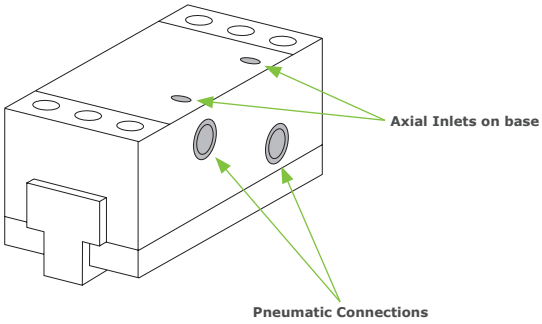


OPEN

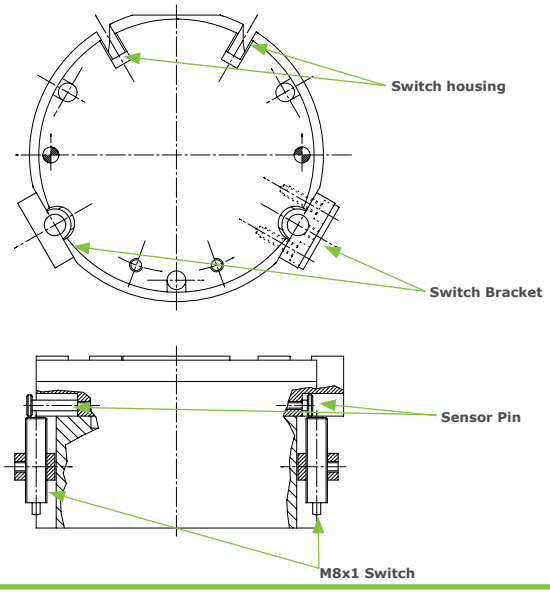


CLOSED

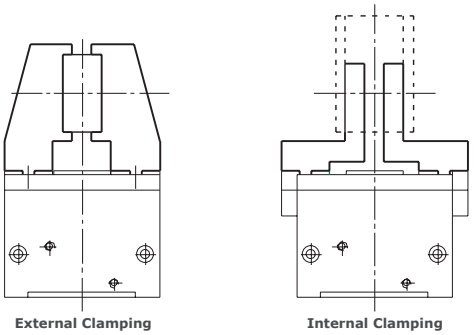
Pneumatic Feed



Control Diagram

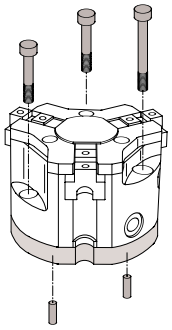


Gripping Diagram

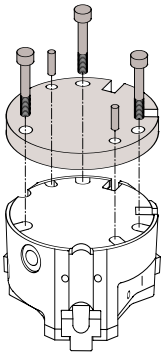


Guidelines for the selection of a gripper model
Selection of the correct gripper model depends on the workpiece's weight, the friction co-efficient between the fingers and the workpiece and the required motion of the application. Due to inertial forces associated with motion, we recommend that the holding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

Mounting

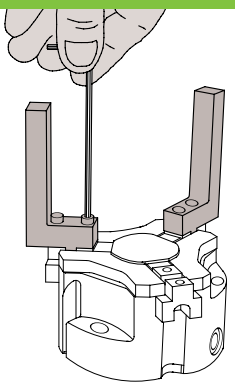


Axial Mounting - Upper Fixing

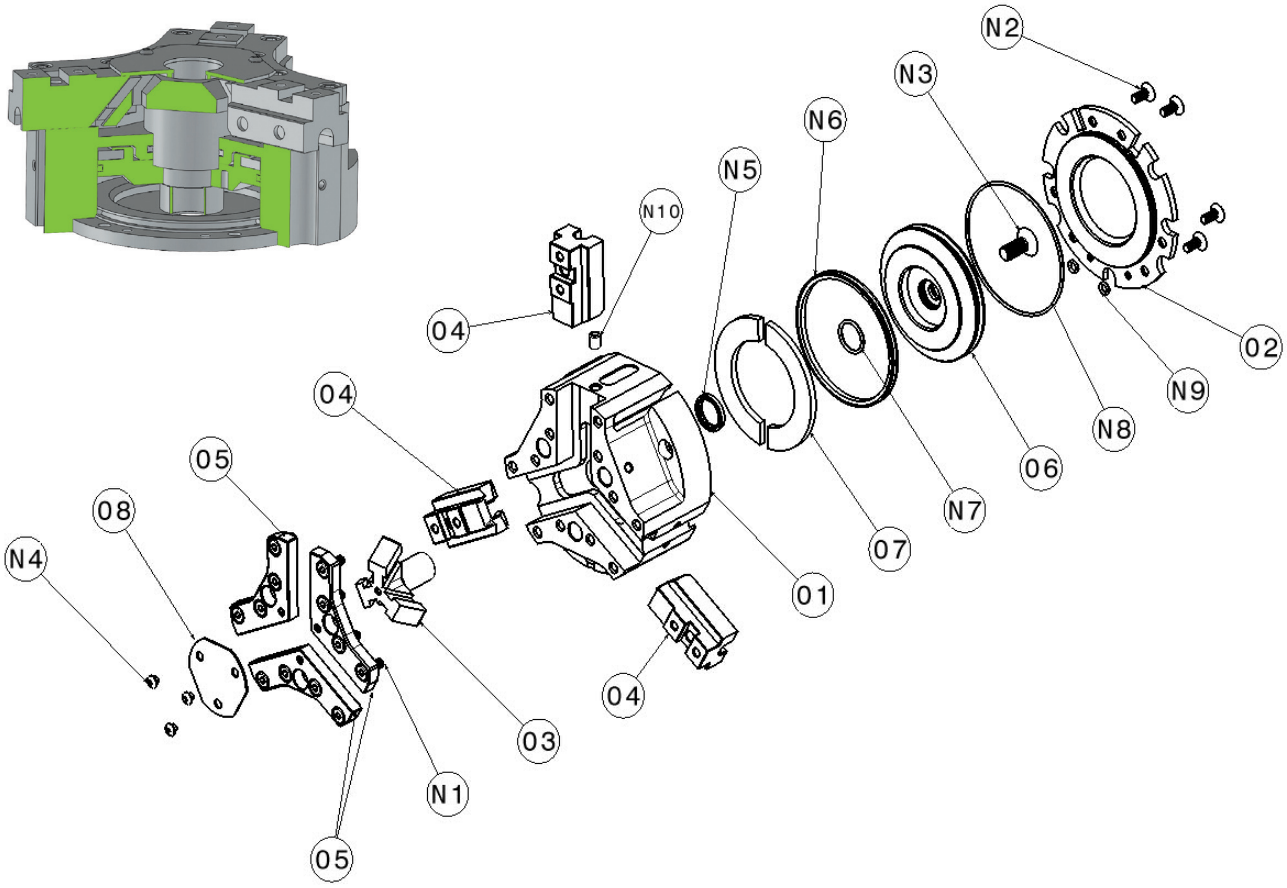


Axial Mounting - Bottom Fixing

Fingers Mounting



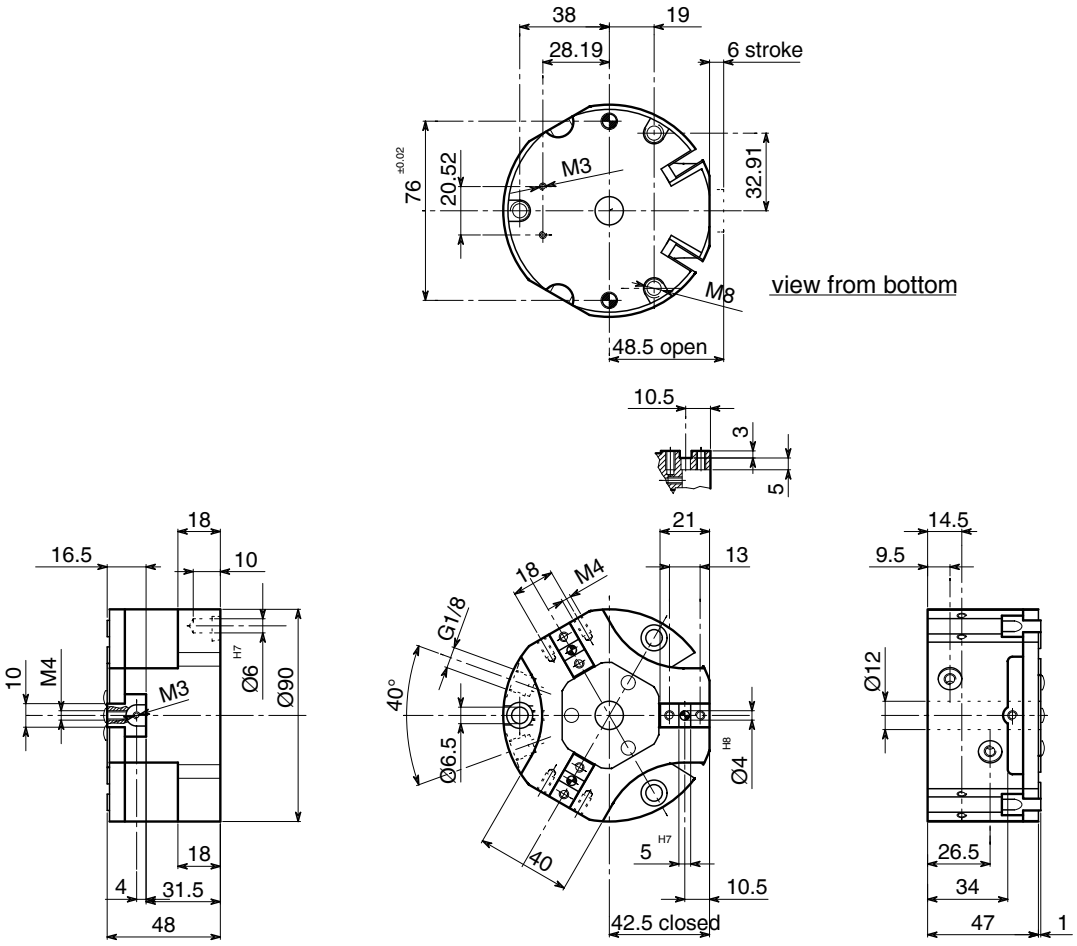
Construction Diagram



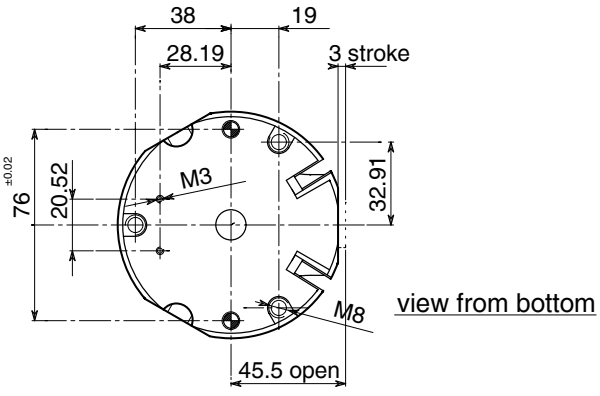
Nr.	Description	Material
01	*BODY*	*Aluminum Alloy*
02	*CAP*	*Aluminum Alloy*
03	WEDGE HOOK	*Chrome Molybdenum Steel*
04	*JAW*	*Chrome Molybdenum Steel*
05	*GIB*	*Chrome Molybdenum Steel*
06	*PISTON*	*Aluminum Alloy*
07	*MAGNET*	*Rubber magnet*
08	*PLATE*	*Stainless Steel*
N1	*SCREW*	*Steel*
N2	*SCREW*	*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	*AXIAL FEED SEAL*	*NBR*
N10	*LUBRICATOR*	*Brass*

Dimensional Drawing

QPGB 309



QPGB 309 S



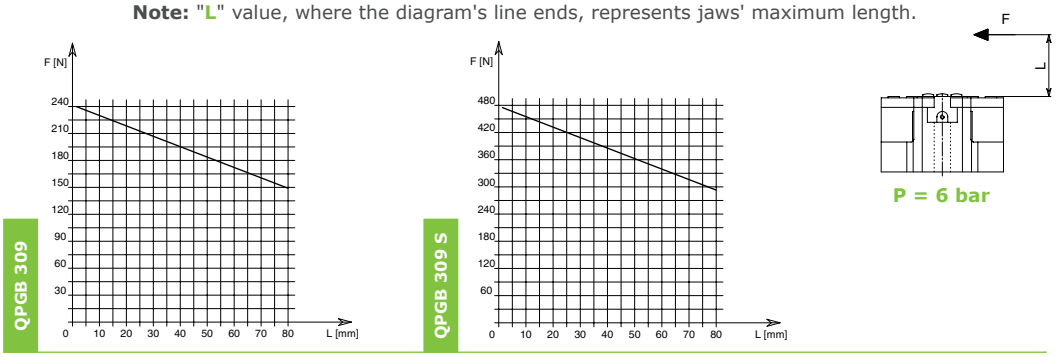
TECHNICAL DATA

		QPGB 309	QPGB 309 S
Stroke per jaw	mm in	6 0.24	3 0.12
Fluid consumption double stroke	cm^3 in^3	28.5 1.74	28.5 1.74
Closing force per jaw @ 6 bar	N lb	230 51.7	455 102.3
Opening force per jaw @ 6 bar	N lb	265 59.57	530 119.15
Total closing force @ 6 bar	N lb	690 155.1	1365 306.9
Total opening force @ 6 bar	N lb	796 178.95	1590 357.45
Recommended workpiece weight	Kg lb	2.30 5.1	4.55 10.0
Weight	Kg lb	0.85 1.87	0.85 1.87
Repeat accuracy	mm in	± 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**

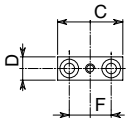
Clamping Force Diagram

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

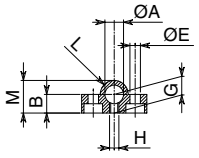


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 10 mm**

Open-Closed Control Position with External Switches



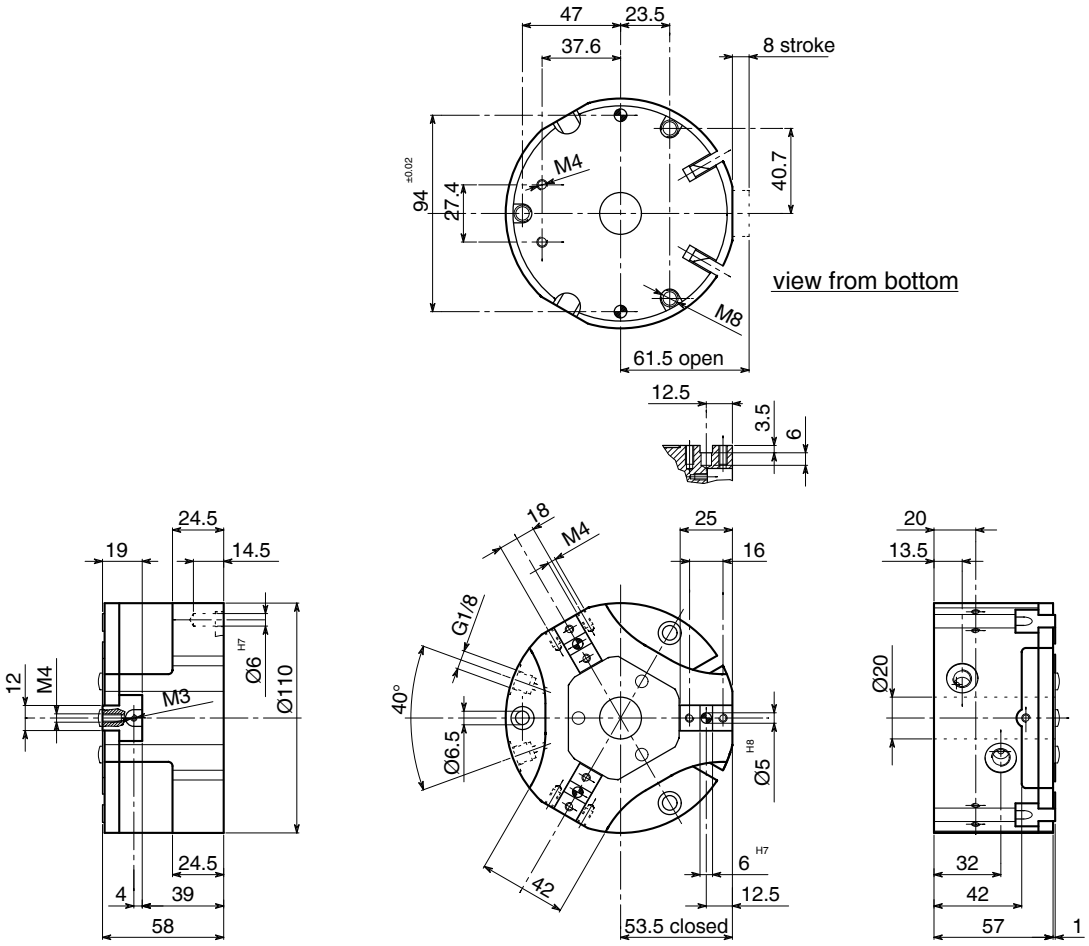
		A	B	C	D	E	F	G
QPG 309/S	mm in	8 0.31	8 0.31	28 1.10	10 0.39	4.5 0.18	18 0.71	8 0.31



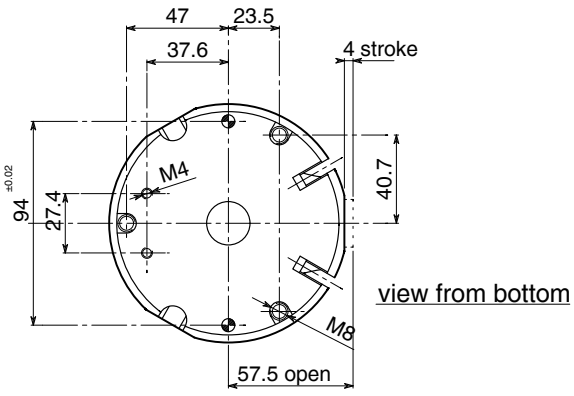
		H	L	M
QPG 309/S	mm in	M4	R6	14 0.55

Dimensional Drawing

QPGB 311



QPGB 311 S

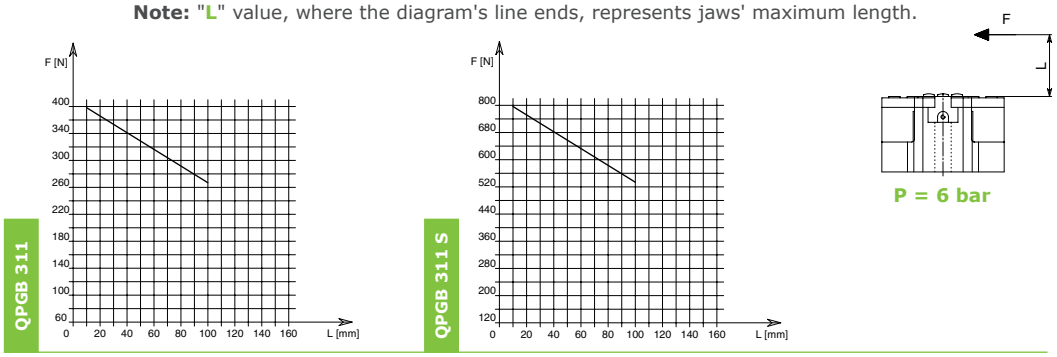


		QPGB 311	QPGB 311 S
Stroke per jaw	mm in	8 0.31	4 0.16
Fluid consumption double stroke	cm^3 in^3	66 4.03	66 4.03
Closing force per jaw @ 6 bar	N lb	385 86.5	770 173.1
Opening force per jaw @ 6 bar	N lb	452 101.61	905 203.45
Total closing force @ 6 bar	N lb	1155 259.6	2310 519.3
Total opening force @ 6 bar	N lb	1358 305.29	2715 610.36
Recommended workpiece weight	Kg lb	3.85 8.5	7.70 16.9
Weight	Kg lb	1.3 2.86	1.3 2.86
Repeat accuracy	mm in	± 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**

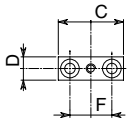
Clamping Force Diagram

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

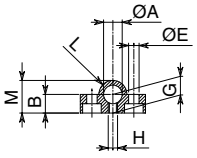


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 20 mm**

Open-Closed Control Position with External Switches



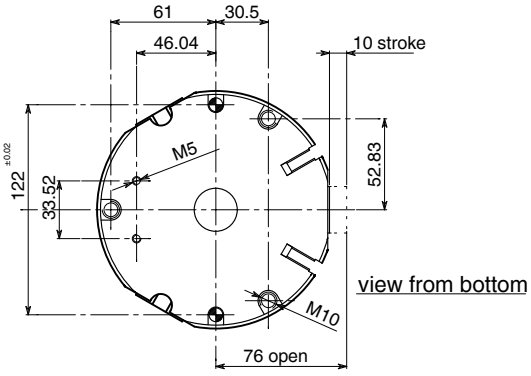
		A	B	C	D	E	F	G
QPGB 311/S	mm in	8 0.31	8 0.31	28 1.10	10 0.39	4.5 0.18	18 0.71	8 0.31

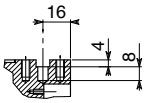


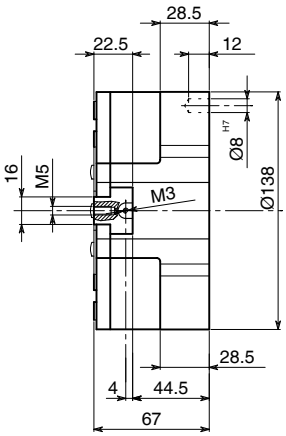
		H	L	M
QPGB 311/S	mm in	M4	R6	14 0.55

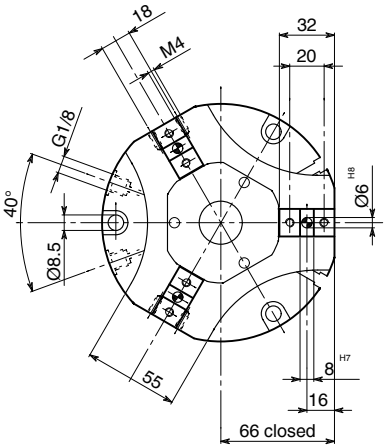
Dimensional Drawing

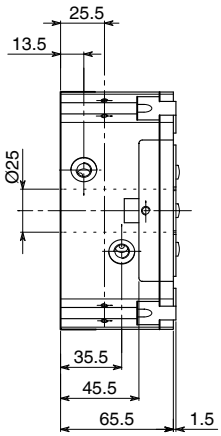
QPGB 313



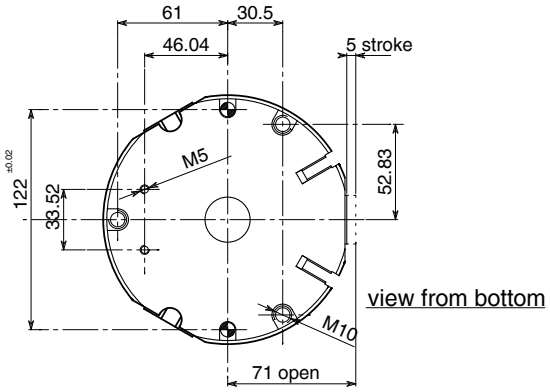








QPGB 313 S

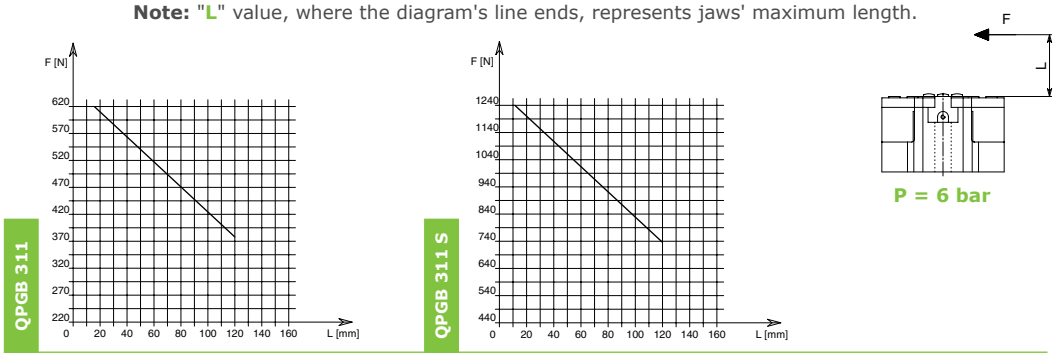


		QPGB 313	QPGB 313 S
Stroke per jaw	mm in	10 0.39	5 0.20
Fluid consumption double stroke	cm^3 in^3	130 7.93	130 7.93
Closing force per jaw @ 6 bar	N lb	610 137.1	1200 269.8
Opening force per jaw @ 6 bar	N lb	716 160.96	1415 318.10
Total closing force @ 6 bar	N lb	1830 411.4	3600 809.3
Total opening force @ 6 bar	N lb	2148 482.89	4245 954.31
Recommended workpiece weight	Kg lb	6.10 13.4	12.00 26.4
Weight	Kg lb	2 4.40	2 4.40
Repeat accuracy	mm in	± 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**

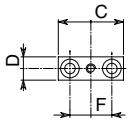
Clamping Force Diagram

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

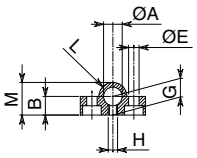


F = True clamping force per jaw - **L** = Reading distance
Values read at a distance **L = 20 mm**

Open-Closed Control Position with External Switches



		A	B	C	D	E	F	G
QPGB 313/S	mm in	8 0.31	8 0.31	28 1.10	10 0.39	4.5 0.18	18 0.71	8 0.31



		H	L	M
QPGB 313/S	mm in	M4	R6	14 0.55

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