

grippers

PG Series
Low Profile Grippers



numatics

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Air-Oil Systems, Inc. www.airoil.com



Gripper summary of Operation

PG-Series Has true parallel motion that is generated by a pinion mechanism Powered by a double acting piston.

A. Body

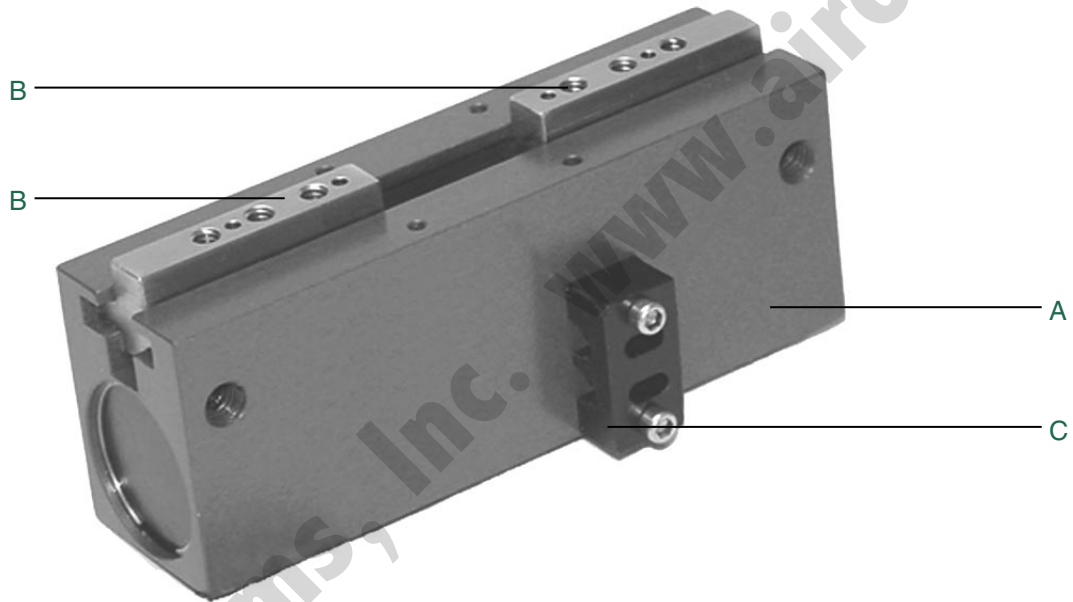
Hardcoat Anodized, Teflon impregnated inside & out.
2 different strokes same size low profile body.

B. Jaws

Jaws are aluminum bronze alloy and T-Slot style to prevent Jaw breakage and offers superior load bearing capabilities.

C. Sensing

Reed & Hall effect sensing is available to sense open & closed position.



How to Order

PG S 35 1 1 C X

Gripper Stroke
S = Short Stroke
L = Long Stroke

Gripper Series
25
35

Seal Type
1 = Buna-n
2 = Viton

Special Options
X = No Options

Sensing Position
A = Single Position Open
B = Single Position Close
C = Two Position Sensing
D = No Sensing

Sensing Type
Standard Cord Set
1 = Hall Switch - PNP (sourcing)
2 = Hall Switch - NPN (sinking)
6 = No Sensing
Quick Disconnect Cord Set
Z = Hall Switch - PNP (sourcing)
Y = Hall Switch - NPN (sinking)
See Sensor section.

When ordering additional switches:

SWITCH DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
Hall Effect-PNP (Sourcing)	CS-20TP	CS-20TP-QD
Hall Effect-NPN (Sinking)	CS-20TN	CS-20TN-QD

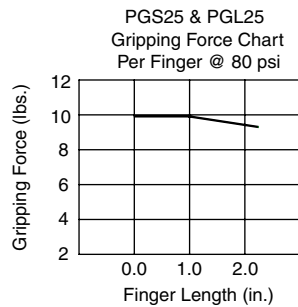


PG Series Parallel Gripper

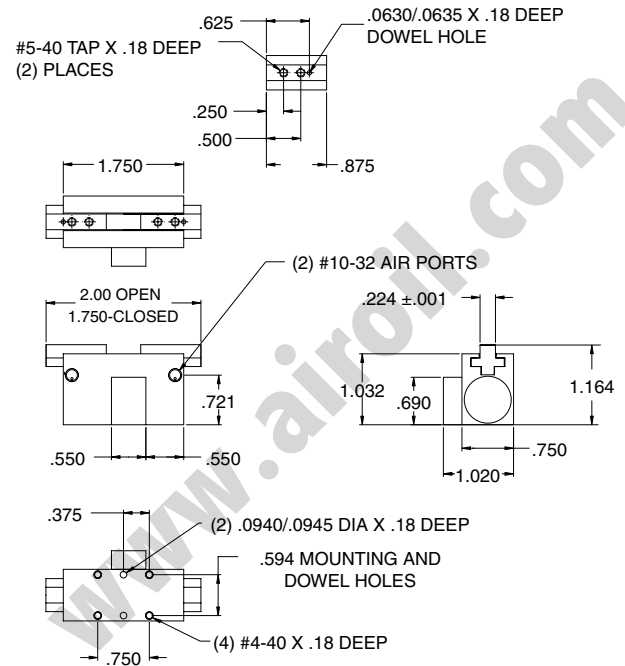
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Specifications

	PGS25	PGL25
Grip Force @ 100 psi	27 lbs	27 lbs
Stroke	0.25	0.50
Repeatability	+/- .001	+/- .001
Bore Dia.	0.625	0.625
Operating Temperature		
Buna-N	-30° to 180°F	-30° to 180°F
Viton	-20° to 300°F	-20° to 300°F
Max. Actuation Speed	0.12 sec	0.12 sec
Displacement	0.3 cu in	0.3 cu in
Maximum Pressure	120 psi	120 psi
Unit Weight	2 oz	2 oz



PGS25



Grip Force vs. Finger Length

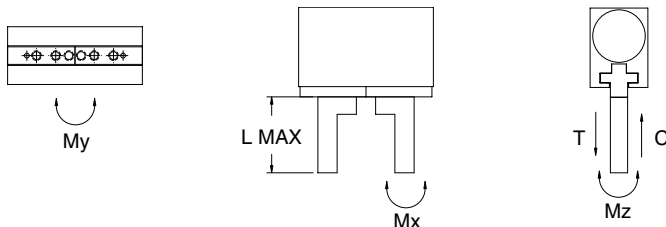
L-FINGER LENGTH	PGS25	PGL25
1	25 lbs.	25 lbs.
2	20 lbs.	20 lbs.
3	15 lbs.	15 lbs.
4	N/A	N/A
5	N/A	N/A

Static Condition

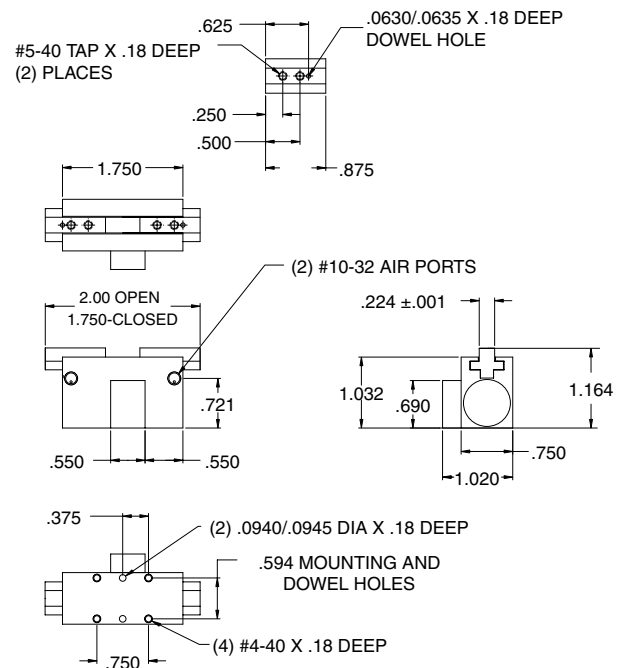
LOAD CAPACITY	PGS25	PGL25
C-compression	65 lbs.	65 lbs.
T-tension	65 lbs.	65 lbs.
Mx	45 lbs.	45 lbs.
My	60	60
Mz	40	45

Dynamic Condition

LOAD CAPACITY	PGS25	PGL25
C-compression	25 lbs.	25 lbs.
T-tension	25 lbs.	25 lbs.
Mx	20 in.-lbs.	20 in.-lbs.
My	25 in.-lbs.	25 in.-lbs.
Mz	20 in.-lbs.	20 in.-lbs.



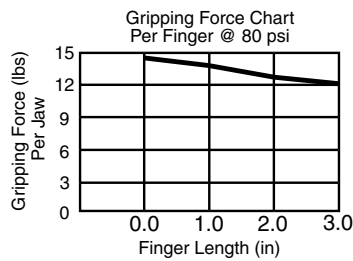
PGL25



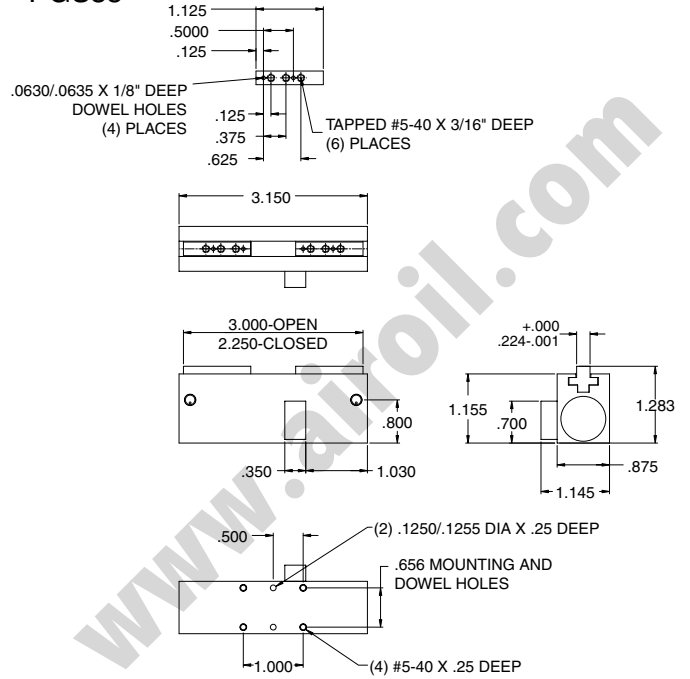


Specifications

	PGS35	PGL35
Grip Force @ 100 psi	35 lbs	35 lbs
Stroke	0.75	1.00
Repeatability	+/- .001	+/- .001
Bore Dia.	0.70	0.70
Operating Temp.		
Buna-N	-30° to 180°F	-30° to 180°F
Viton	-20° to 300°F	-20° to 300°F
Max. Actuation Speed	0.12 sec	0.12 sec
Displacement	0.38 cu in	0.38 cu in
Maximum Pressure	120 psi	120 psi
Unit Weight	5 oz	5 oz



PGS35



Grip Force vs. Finger Length

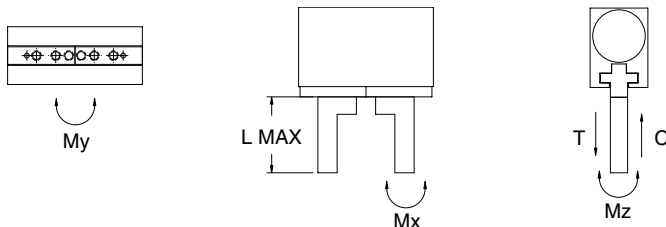
L-FINGER LENGTH	PGS35	PGL35
1	28 lbs.	28 lbs.
2	26 lbs.	26 lbs.
3	24 lbs.	24 lbs.
4	19 lbs.	19 lbs.
5	8 lbs.	8 lbs.

Static Condition

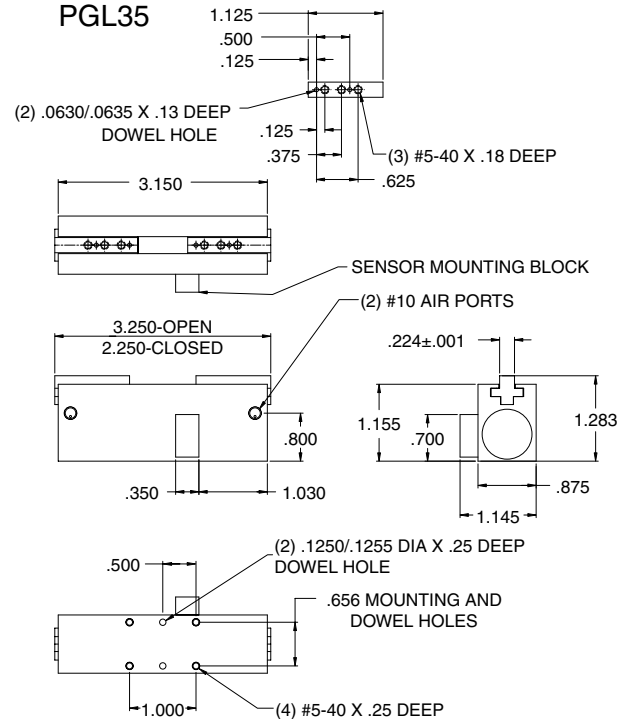
LOAD CAPACITY	PGS35	PGL35
C-compression	80 lbs.	80 lbs.
T-tension	80 lbs.	80 lbs.
Mx	80 in.-lbs.	80 in.-lbs.
My	100 in.-lbs.	100 in.-lbs.
Mz	80 in.-lbs.	80 in.-lbs.

Dynamic Condition

LOAD CAPACITY	PGS35	PGL35
C-compression	45 lbs.	45 lbs.
T-tension	45 lbs.	45 lbs.
Mx	30 in.-lbs.	30 in.-lbs.
My	40 in.-lbs.	40 in.-lbs.
Mz	30 in.-lbs.	30 in.-lbs.



PGL35



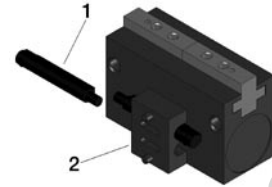


PG Series Parallel Gripper

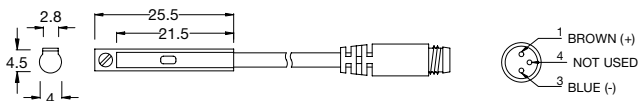
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PG Series Switch Information

SWITCH OR BRACKET DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
1 Hall Effect PNP (Sourcing) 4mm	CS-20TP	CS-20TP-QD
1 Hall Effect NPN (Sinking) 4mm	CS-20TN	CS-20TN-QD
1 Reed Switch 4mm	CS-20TR	CS-20TR-QD
2 Switch Bracket	PGSB	PGSB

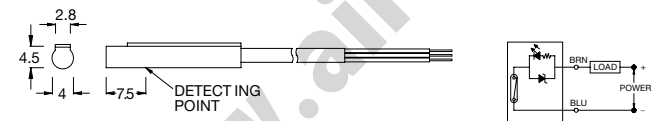


Reed Switch (AC/DC NO) 8 mm Connector - CS-20TR-QD



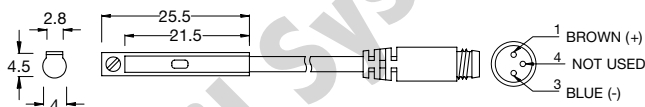
Sensor Type	Reed Switch
Switching Logic	SPST Normally Open
Output	–
Operating Voltage	5-120V DC/AC 50/60 Hz
Switching Current	50mA max. (Resistive)
Power Rating*	6 Watts
Voltage Drop	2.5V
Current Consumption	–
Leakage Current	–
LED Indicator	Red
Operating Frequency	200 Hz
Temperature Range	–
Shock / Vibration	30G/9G
Protection Circuit	None
Set Screw Max. Torque	–

Reed Switch (AC/DC NO) Flying Lead - CS-20TR



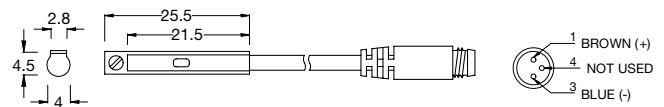
Sensor Type	Reed Switch
Switching Logic	SPST Normally Open
Output	–
Operating Voltage	5-120V DC/AC 50/60 Hz
Switching Current	50mA max. (Resistive)
Power Rating*	6 Watts
Voltage Drop	2.5 max.
Current Consumption	–
Leakage Current	–
LED Indicator	Red
Operating Frequency	200 Hz
Temperature Range	–
Shock / Vibration	30G/9G
Protection Circuit	None
Set Screw Max. Torque	–

Electro Switch (PNP NO) 8 mm Connector - CS-20TP-QD



Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	PNP Current Spurcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	1.5 V @ 25 mA max.
Current Consumption	15 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Green
Cable	–
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

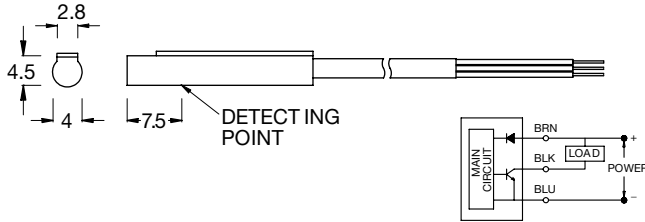
Electro Switch (NPN NO) 8 mm Connector - CS-20TN-QD



Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Spurcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	0.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Red
Cable	–
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

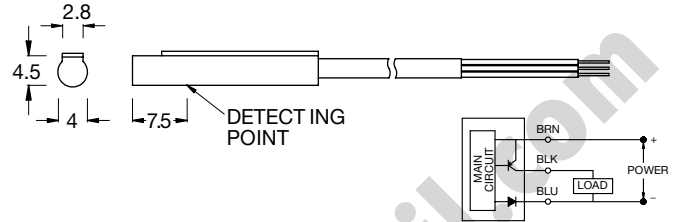


Electro Switch (NPN NO) Flying Lead - CS-20TN



Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	NPN Current Spourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	0.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Red
Cable	-
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

Electro Switch (PNP NO) Flying Lead - CS-20TP



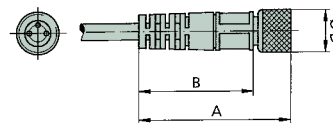
Sensor Type	Solid State Output
Switching Logic	Normally Open
Output	PNP Current Spourcing
Operating Voltage	5-30 VDC
Switching Current	50mA max.
Power Rating*	1.5 Watts
Voltage Drop	1.5 V @ 25 mA max.
Current Consumption	12 mA @ 24 VDC max.
Leakage Current	0.01 mA max.
LED Indicator	Green
Cable	Abrasion resistant polyurethane
	(PUR) jacket, PVC insulation
Operating Frequency	1000 Hz
Magnetic Requirement	40 Gauss parallel
Temperature Range	14 to 158°F (-10 to 70°C)
Shock / Vibration	50G/9G
Enclosure Classification	IEC 529 IP67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression
Set Screw Max. Torque	1.77 in-lbs (0.2 N-m)

Female Connectors for Reed Switches and Hall Effect Sensors

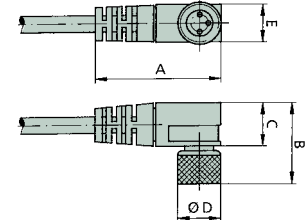
Dimensions (mm)

TYPE	ORDER CODE
Straight, 5 m Cable	PXCST
Elbow, 5 m Calbe	PXC90

Straight Type



Elbow Type



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