

grippers

WG Series
Double Guided Wedge Grippers



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

NUMATICS®

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WGS-50 Parallel Gripper Double Guided Wedge

Gripper summary of Operation:

Synchronous motion is achieved with a double acting piston attached via the piston shaft to a double sided wedge. The double sided angles of the wedge convert vertical motion to synchronous horizontal motion of the jaws.

A. Body

Hardcoat Anodized Teflon impregnated aluminum inside and out. Ultra high gripping force to weight ratio.

B. Jaws

Jaws machined from S7 tool steel to prevent jaw breakage.

C. Switches

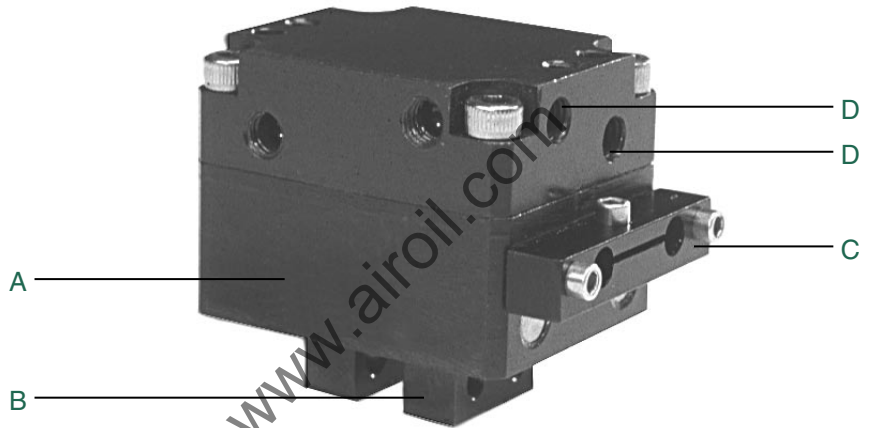
Proximity switches are available to monitor open and closed position of the jaws.

D. Side Ports

Additional side mounting holes and side air ports for optional mounting and porting.

E. Lubrication

Units are permanently lubricated for non-lube air operation, this allowing for compliance with OSHA regulations.



WGL-50 Long Stroke and WGS-90 Short Stroke Parallel Grippers Double Guided Wedge

Gripper summary of Operation:

Synchronous motion is achieved with a double acting piston attached via the piston shaft to a double sided wedge. The double sided angles of the wedge convert vertical motion to synchronous horizontal motion of the jaws.

A. Body

Hardcoat Anodized Teflon impregnated aluminum inside and out. Ultra high gripping force to weight ratio.

B. Jaws

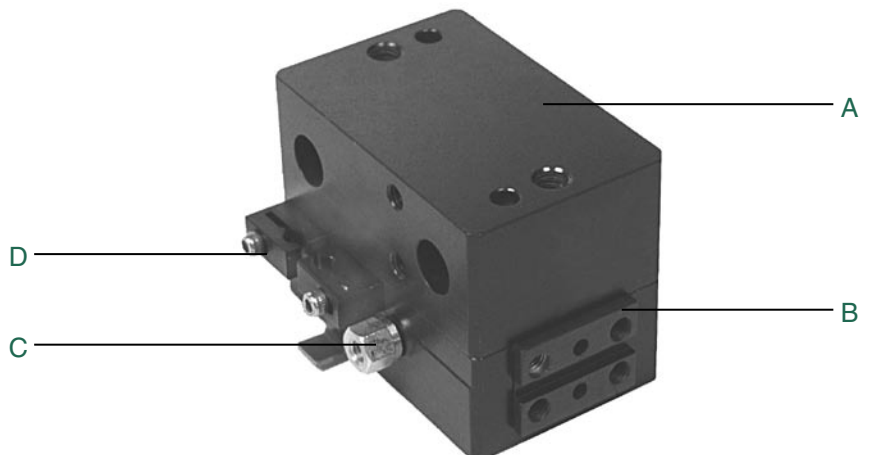
Hardcoat Anodized Teflon impregnated aluminum. Lightweight, Durable, high strength.

C. Purge Port

Unit can be slightly pressurized to prevent debris or coolant from entering. A vacuum can be applied to evacuate contaminants from inside the unit in a clean room environment.

D. Switches

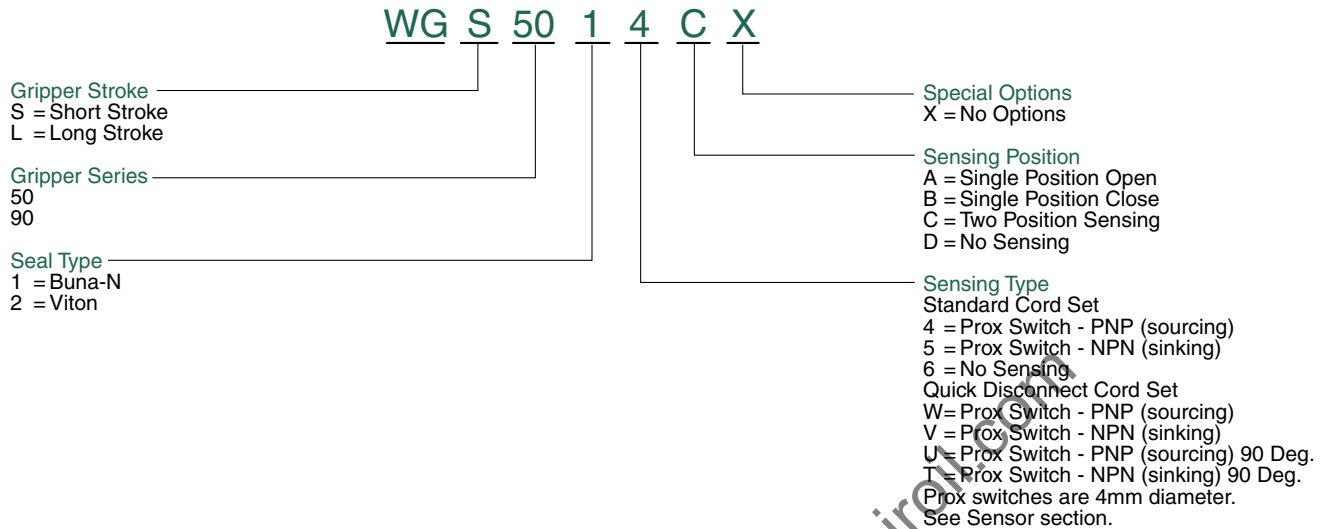
Proximity switches are available to monitor open and closed position of the jaws.





WG Series Parallel Gripper Double Guided Wedge

How to Order



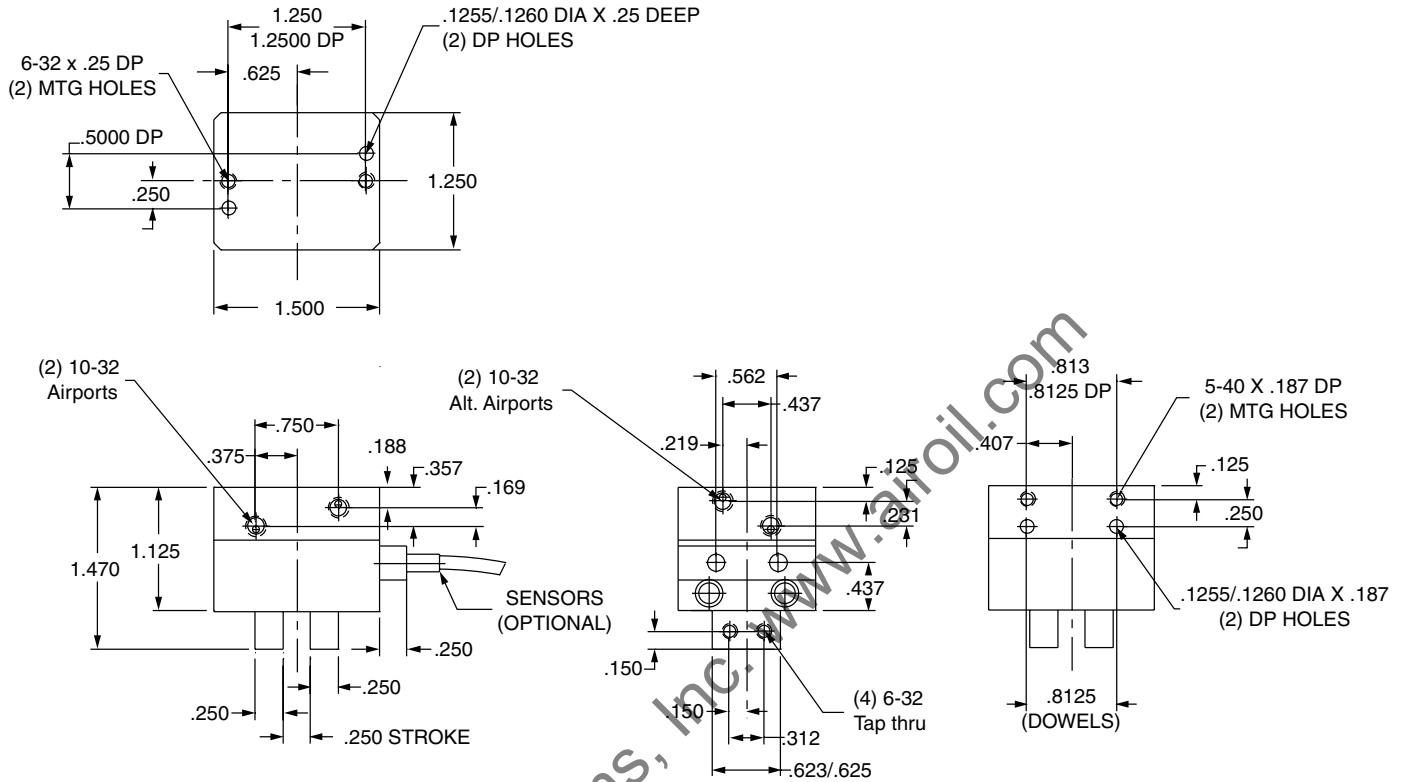
When ordering additional switches:

SWITCH DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
Prox Switch - PNP (Sourcing)	PX04PS	PX04PQ
Prox Switch - NPN (Sinking)	PX04NS	PX04NQ
Quick disconnect cable straight	–	PXCST
Quick disconnect cable 90 deg.	–	PXC90

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WGS-50



Gripper Specifications

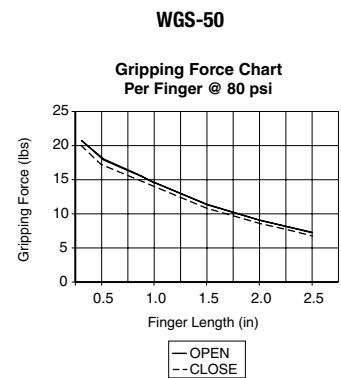
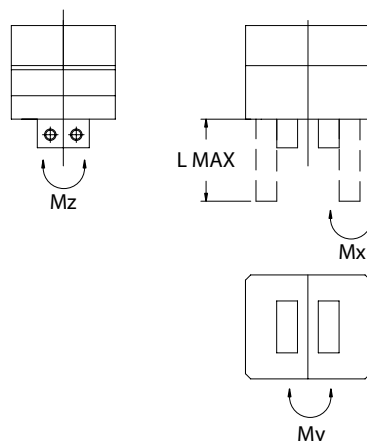
MODEL	FORCE OPEN @ 100 PSI	FORCE CLOSE @ 100 PSI	DISPLACEMENT	MAX. PSI	REPEATABILITY	WEIGHT
WGS-50	45 lbs.	40 lbs.	.10 cu. inches	150 PSI	±.002	4 oz.

Recommended Maximum Load Rating

MODEL	M _x	M _y	M _z
WGS-50	123 in.-lbs.	123 in.-lbs.	123 in.-lbs.

Grip Force vs. Finger Length

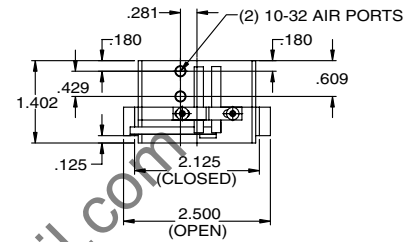
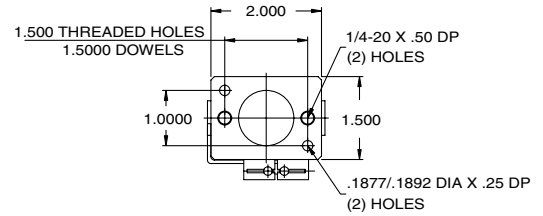
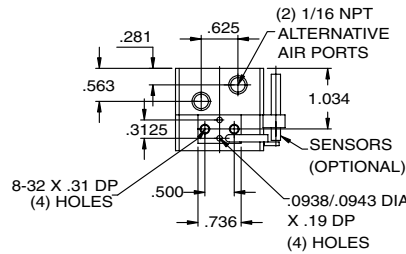
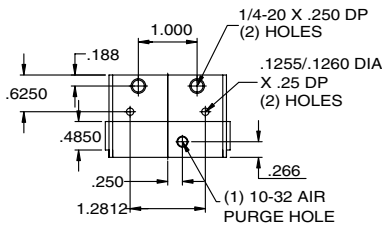
"L" MAX	FORCE CLOSE @ 100 PSI
.05	42 lbs.
1.0	34 lbs.
1.5	30 lbs.
2.0	20 lbs.
2.5	16 lbs.



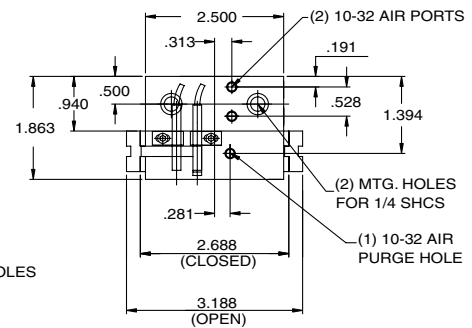
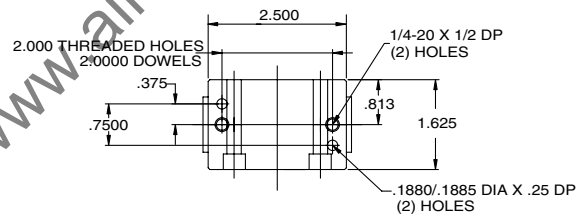
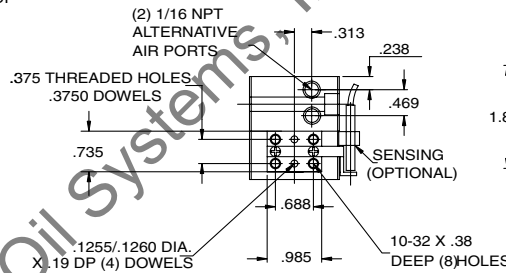
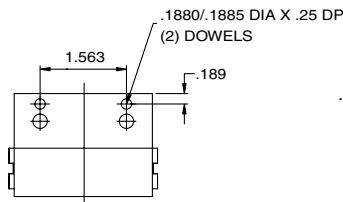


WG Series Parallel Gripper Double Guided Wedge

WGL-50



WGS-90



Gripper Specifications

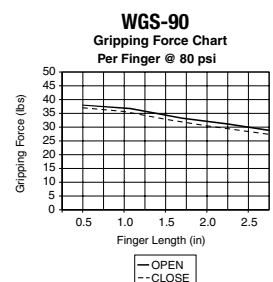
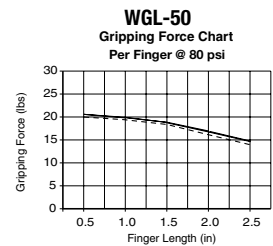
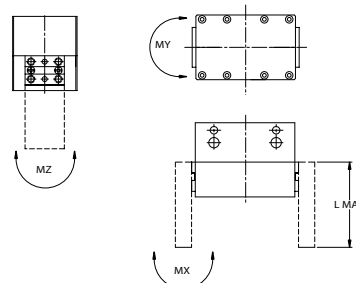
MODEL	STROKE	FORCE CLOSE	DISPLACEMENT	MAX. PSI	REPEATABILITY	WEIGHT
@ 100 PSI						
WGL-50	.375	40 lbs.	.20 cu. inches	150 PSI	±.002	7 oz.
WGS-90	.500	70 lbs.	.30 cu. inches	150 PSI	±.002	11 oz.

Recommended Maximum Load Rating

MODEL	M _x	M _y	M _z	L _{max}
WGL-50	70 in.-lbs.	70 in.-lbs.	70 in.-lbs.	2.5 inches
WGS-90	160 in.-lbs.	160 in.-lbs.	160 in.-lbs.	2.5 inches

Grip Force vs. Finger Length

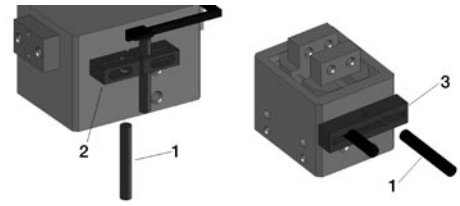
"L" MAX	WGL-50	WGS-90
0.05	50 lbs.	92.5 lbs.
1.0	47 lbs.	90 lbs.
1.5	42 lbs.	80 lbs.
2.0	40 lbs.	75 lbs.
2.5	35 lbs.	70 lbs.





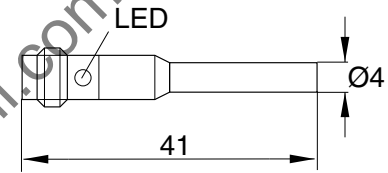
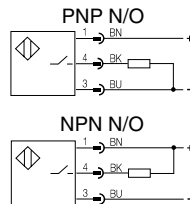
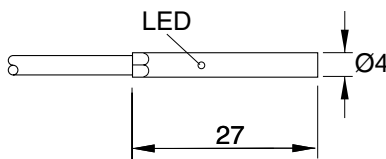
WG Series Switch Information

SWITCH OR BRACKET DESCRIPTION	STANDARD PART NO.	QUICK DISCONNECT PART NO.
1 Prox Switch PNP	PX04PS	PX04PQ
1 Prox Switch NPN	PX04NS	PX04NQ
2 Switch Bracket	CT-500	CT-500
3 Switch Bracket	WGS50SB	WGS50SB



Prox Switch (NPN NO) Flying Lead - PX04NS
(PNP NO) Flying Lead - PX04PS

Prox Switch (NPN NO), 8 mm connector - PX04NQ
(PNP NO), 8 mm connector - PX04PQ



Sensing Data

Repeat accuracy R		≤5%
Ambient temperature range t_d	(°C)	-25...+70°C
Operating frequency f	(Hz)	1800
Utilization categories	(DC)	13
Function indication		YES

Electrical Data

Rated operational voltage U_e	(V)	24 DC
Supply voltage U_B	(V)	10...30 DC
Voltage drop U_d at I_e Stat./dyn.	(V)	≤3.0
Rated insulation voltage U_i	(V)	75 VDC
Load current capacity	(mA)	100
Current consumption	(mA)	≤10 / ≤3
Off-State Current I_r	(uA)	≤80
Protected against polarity reversal		YES
Short circuit protected		YES
Load Capacitance	(uF)	≤1.00

Mechanical Data

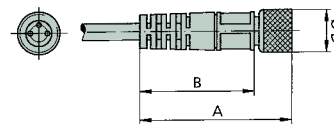
Degree of protection per IEC 529	IP 67
Housing material	stainless steel
Material of sensing face	POM
Connection	cable
No. of wires x gauge	3 x 26 AWG

Female Connectors for Reed Switches and Hall Effect Sensors

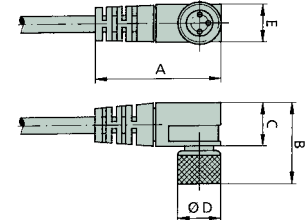
Dimensions (mm)

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

Straight Type



Elbow Type



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