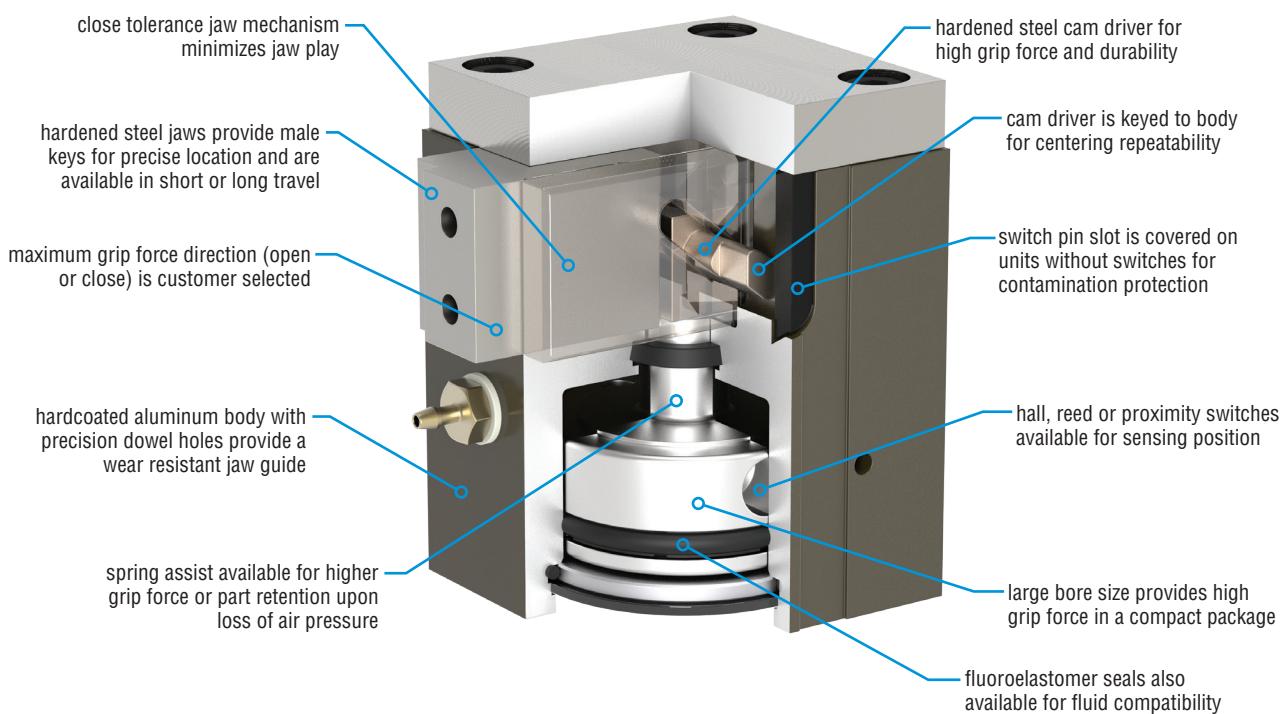


PARALLEL PNEUMATIC MINIATURE GRIPPER

GRD

Major Benefits

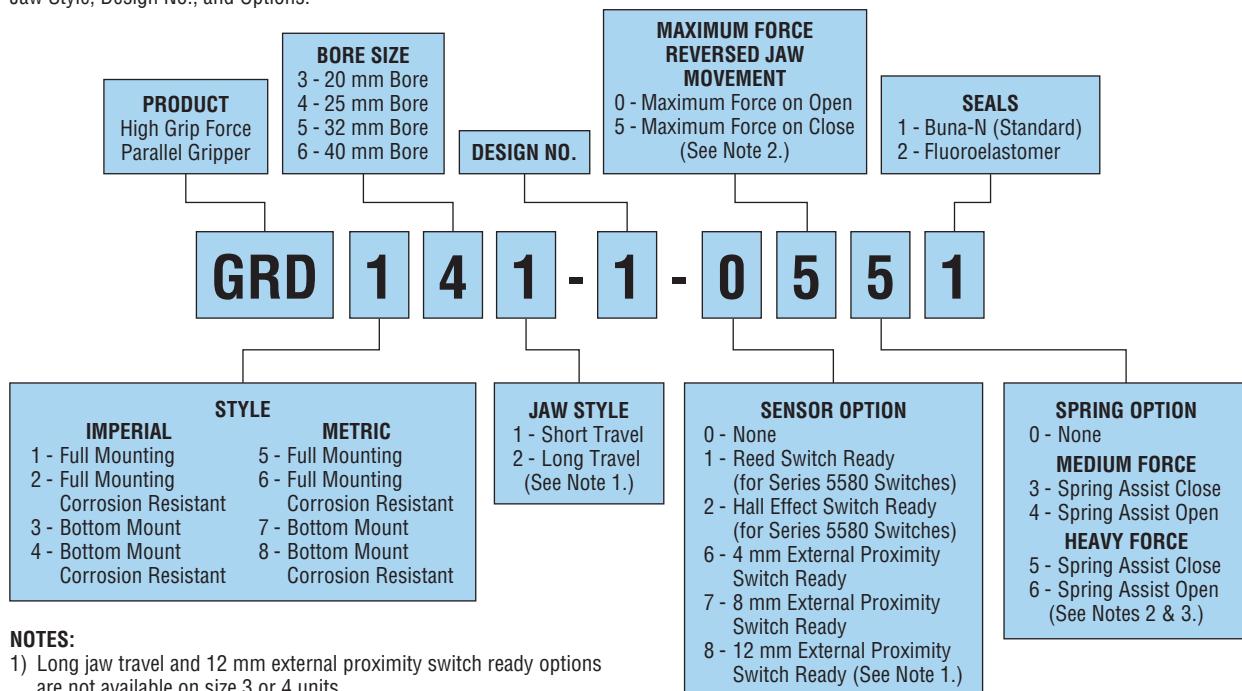
- High grip force to weight ratio
- Compact size
- Two body styles with a total of four sizes available in both imperial and metric versions
- Spring assist on open or close available in two different forces
- 10 million cycles minimum rated life with standard seals (includes spring assist units)



ORDERING DATA: Series GRD Grippers

TO ORDER SPECIFY:

Product Type, Series, Type, Style, Size, Jaw Style, Design No., and Options.



NOTES:

- 1) Long jaw travel and 12 mm external proximity switch ready options are not available on size 3 or 4 units.
- 2) Spring assist available in same direction as maximum force movement only (-x04x, -x06x, -x53x, -x55x). See option pages.
- 3) Spring assist options (-xx3x, -xx4x, -xx5x & -xx6x) are available with full mounting style units only. See page 43 for dimensional changes (GRD1xx, GRD2xx, GRD5xx & GRD6xx).
- 4) All switches and kits must be ordered separately.

! Options may affect unit length. See dimensional pages and option information details.

4 mm ROUND INDUCTIVE PROXIMITY SWITCHES

PART NO.	DESCRIPTION
18430-001-02	NPN (Sink) 2 meter cable
18430-002-02	PNP (Source) 2 meter cable

8 mm THREADED PROXIMITY SWITCHES

PART NO.	DESCRIPTION
51422-005-02	NPN (Sink) 2 meter cable
51422-006-02	PNP (Source) 2 meter cable

PART NO.	DESCRIPTION
61494	Switch Mounting Kit

Each mounting kit contains 1 proximity switch bracket and 1 mounting screw.

5580 SWITCH REPLACEMENT CHART

SWITCH KIT NUMBER	REPLACEMENT KIT INCLUDES	JC1 SWITCH DESCRIPTION
55802-1-02	JC1RDU-5 switch with adaptor	PNP or NPN DC Reed, 5 meter cable
55822-1	JC1RDU-K switch with adaptor	PNP or NPN DC Reed, Quick Connect
55803-1-02	JC1HDN-5 switch with adaptor	NPN (Sink), Radial Sensing, 5 meter cable
55823-1	JC1HDN-K switch with adaptor	NPN (Sink), Radial Sensing, Quick Connect
55804-1-02	JC1HDP-5 switch with adaptor	PNP (Source), Radial Sensing, 5 meter cable
55824-1	JC1HDP-K switch with adaptor	PNP (Source), Radial Sensing, Quick Connect

For additional switch information, go to phdinc.com.

CORDSETS

PART NO.	DESCRIPTION
63549-02	M8, 3 pin, Straight Female Connector, 2 meter cable
63549-05	M8, 3 pin, Straight Female Connector, 5 meter cable

Cordsets are ordered separately.

CAD & Sizing Assistance

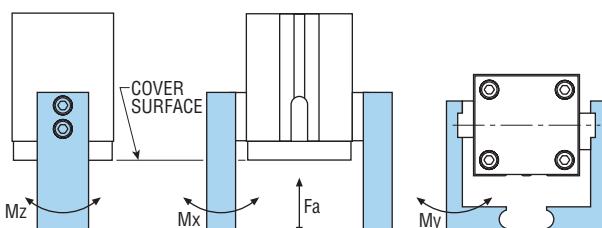
Use PHD's free online Product Sizing and CAD Configurator at phdinc.com/myphd

ENGINEERING DATA: Series GRD Grippers

SPECIFICATIONS				SERIES GRD									
OPERATING PRESSURE				30 psi min to 100 psi max [2 bar min to 7 bar max] air									
STANDARD UNIT				60 psi min to 100 psi max [4 bar min to 7 bar max] air									
MEDIUM SPRING ASSIST UNIT				72 psi min to 100 psi max [5 bar min to 7 bar max] air									
HEAVY SPRING ASSIST UNIT				-20°F to +180°F [-28°C to +82°C]									
OPERATING TEMPERATURE				10 million cycles minimum with standard seals (including spring assist units)									
RATED LIFE				Within ± 0.002 in [± 0.05 mm] of original position									
GRIP REPEATABILITY				See tables below									
CYCLE TIME				Factory lubricated for rated life									
LUBRICATION				Field repairable									
MAINTENANCE													

MODEL NO.	MINIMUM TOTAL JAW TRAVEL		TOTAL GRIP FORCE AT 87 psi [6 bar]		GRIPPER WEIGHT		CLOSE OR OPEN TIME 87 psi [6 bar]	MINIMUM OPERATING PRESSURE	DISPLACEMENT	GRIP FORCE FACTOR G_F					
	in	mm	lb	N	lb	kg				sec	psi	bar	in ³	cm ³	
	in	mm	lb	N	lb	kg				sec	psi	bar	in ³	cm ³	
GRDx31	0.147	3.75	33	147	0.25	0.11	0.02	30	2	0.07	1	0.38	24.5	0.33	21.3
GRDx41	0.294	7.5	40	178	0.38	0.17	0.02	30	2	0.12	2	0.46	29.7	0.42	27.1
GRDx51	0.275	7.0	87	387	0.66	0.30	0.04	30	2	0.25	4	1.00	64.5	0.90	58.1
GRDx52	0.462	11.75	54	240	0.72	0.33	0.04	30	2	0.25	4	0.62	40.0	0.55	35.5
GRDx61	0.383	9.75	136	604	1.41	0.64	0.06	30	2	0.54	9	1.56	100.6	1.42	91.6
GRDx62	0.659	16.75	91	406	1.56	0.71	0.06	30	2	0.54	9	1.05	67.7	0.95	61.3

MODEL NO.	HEAVY SPRING								MEDIUM SPRING							
	SF SPRING GRIP FORCE		GRIPPER WEIGHT		CLOSE OR OPEN TIME 87 psi [6 bar] IN sec				SF SPRING GRIP FORCE		GRIPPER WEIGHT		CLOSE OR OPEN TIME 87 psi [6 bar] IN sec			
	lb	N	lb	kg	AGAINST SPRING	WITH SPRING	SPRING ONLY	lb	N	lb	kg	AGAINST SPRING	WITH SPRING	SPRING ONLY	lb	N
GRDx31	15	67	0.34	0.16	0.03	0.02	0.03	12	55	0.33	0.15	0.03	0.02	0.04		
GRDx41	20	87	0.54	0.25	0.03	0.02	0.03	16	71	0.53	0.24	0.03	0.02	0.04		
GRDx51	42	187	0.97	0.44	0.06	0.03	0.05	35	155	0.94	0.43	0.05	0.04	0.07		
GRDx52	26	117	1.03	0.47	0.06	0.03	0.05	22	96	1.00	0.45	0.05	0.04	0.07		
GRDx61	66	294	2.03	0.92	0.10	0.05	0.08	55	242	1.98	0.90	0.08	0.06	0.10		
GRDx62	44	196	2.19	0.99	0.10	0.05	0.08	37	163	2.14	0.97	0.08	0.06	0.10		



MAX. ALLOWABLE FORCES & MOMENTS ON GRIPPER JAWS

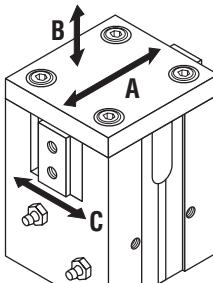
MODEL NO.	Fa		Mx		My		Mz	
	lb	N	in-lb	Nm	in-lb	Nm	in-lb	Nm
GRDx31	109	485	64	7	68	8	52	6
GRDx41	107	476	86	10	68	8	52	6
GRDx5x	213	947	230	26	168	19	138	16
GRDx6x	320	1423	437	49	281	32	336	38

Fa: Total for both jaws

Mx: Per jaw, with moments from cover surface

My: Per jaw, with moments from center of gripper

Mz: Per jaw, with moments from cover surface, tooling keyed to jaw



BACKLASH

Jaw backlash in the (A) direction will not exceed 0.005 in [0.127 mm] per jaw.

Total clearance between the parallel jaws and the gripper body or cover will not exceed the following figures:

(B) 0.0025 in [0.064 mm]

(C) 0.003 in [0.076 mm]

Application & Sizing Assistance

Use PHD's free online Product Sizing and Application at www.phdinc.com/apps/sizing