

GRM0

Pneumatic Workholding Clamps

- Designed for high force in an extremely compact and lightweight package
- Generates up to 135 lb [600 N] total clamp force
- Locks in closed position

LEADING
DESIGN,
OPTIMIZED
FOR WEIGHT
& SIZE



GRMO

Major Benefits

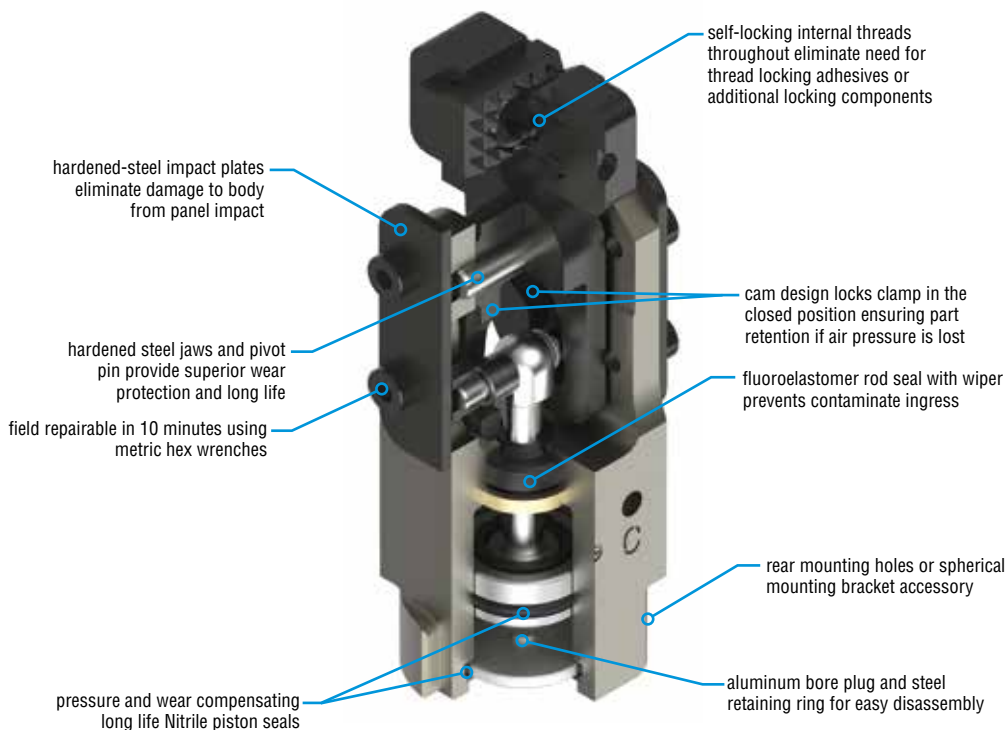
- Compact envelope size, lightweight, and strong. Weighing under 0.54 lb [0.24 kg], the clamp generates up to 135 lb [600 N] of total clamp force.
- Simple design, long life, and fast field maintenance.
- The clamp jaws lock in the closed position, ensuring part retention if air pressure is lost due to line rupture or power loss.
- Ideal for applications where size and weight are a concern.
- Perfect for robotic crossbar transfer press applications.
- A superior alternative to vacuum cups or magnetic-type grippers due to its ruggedness and part retention in the event of air pressure loss.
- This design includes the -B11 Side Mount Body option as standard to accept standard side mounting brackets for additional mounting flexibility.



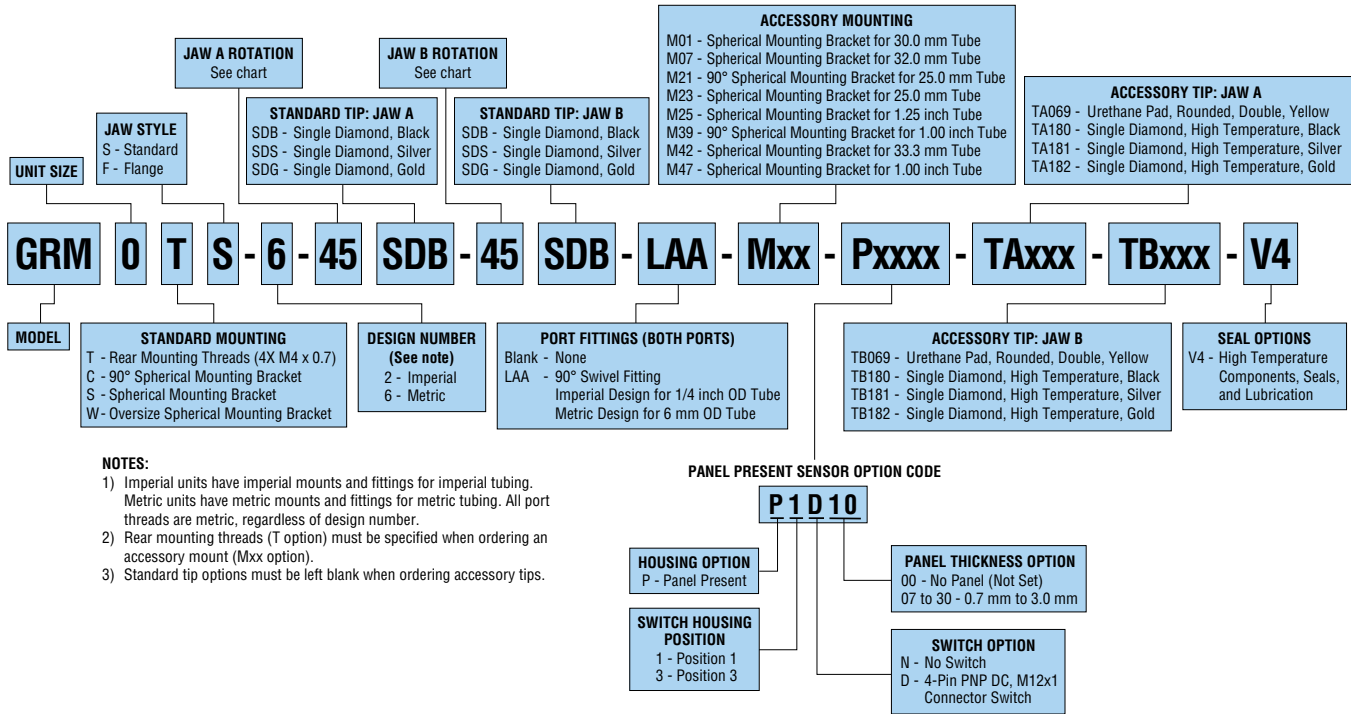
Flange Jaw Style 'F'



Standard Jaw Style 'S'



ORDERING & ENGINEERING DATA: Series GRMO Clamps



JAW ROTATIONS

GRMOxS				GRMOxF		
JAW STYLE OPTION S	JAW A			JAW STYLE OPTION F	JAW A	
	0°	45°	68°		0°	60°
JAW B	0°			0°		
	45°			60°		
	68°					

= Available Combinations

For other configurations, consult your local distributor or PHD, Inc.

NOTE: The 0° jaw rotates open slightly during the clamp cycle. The 0° jaw returns to 0° position as the opposing jaw reaches the fully open or fully closed positions.

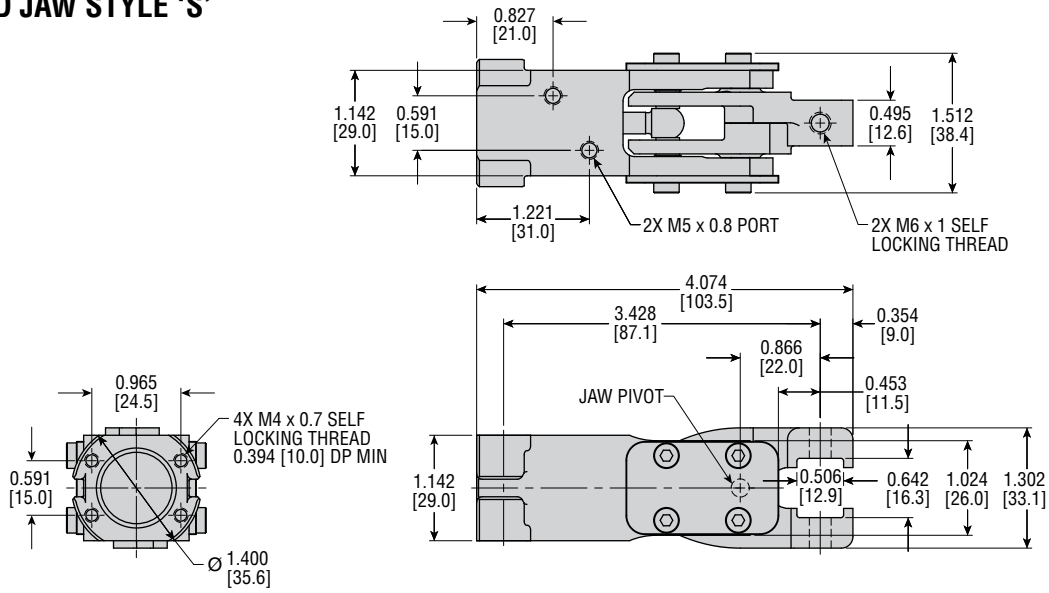
MODEL	UNIT WEIGHT		TOTAL GRIP FORCE at 87 psi [6 bar]		CYCLE TIME at 87 psi [6 bar]	PRESSURE LIMITS				TEMPERATURE LIMITS			
	lb	kg	lb	N		MIN.		MAX.		MIN.		MAX.	
					psi	bar	psi	bar	°F	°C	°F	°C	
GRMO	0.54	0.24	135	600	0.15	30	2	100	7	-20	-30	180	82

CAD & Sizing Assistance

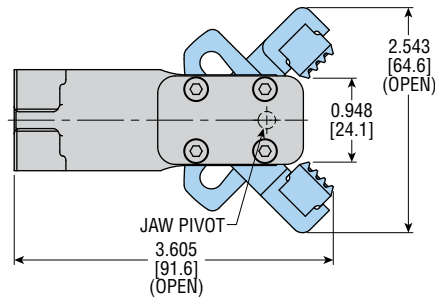
Use PHD's free online Product Sizing and CAD Configurator at phdinc.com/myphd

DIMENSIONS: Size GRM0 Clamps- Jaw Style S

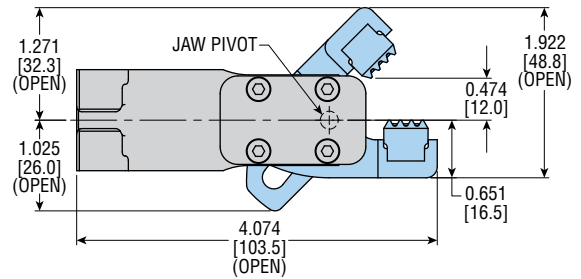
STANDARD JAW STYLE 'S'



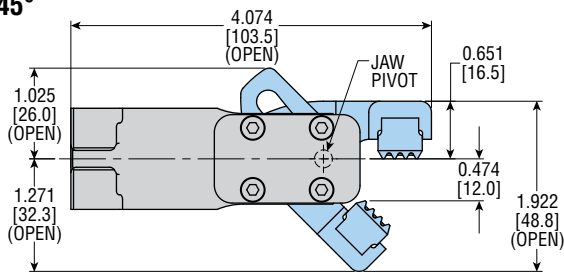
45° x 45°



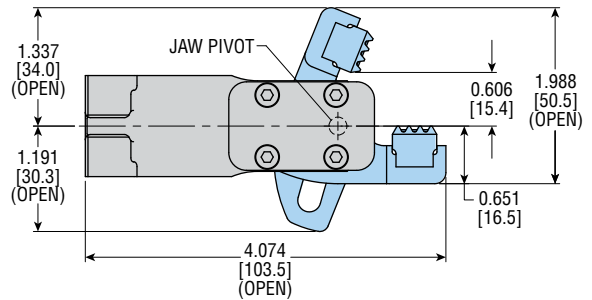
45° x 00°



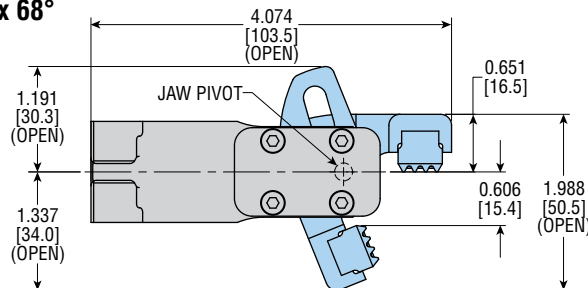
00° x 45°



68° x 00°



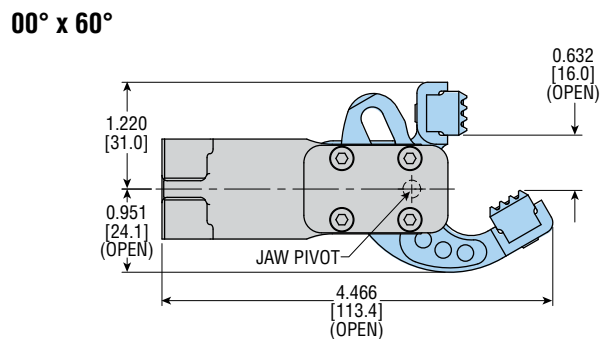
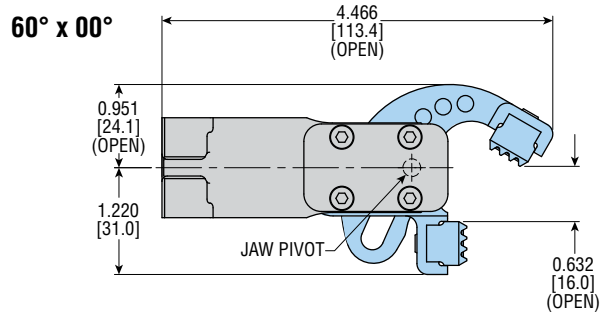
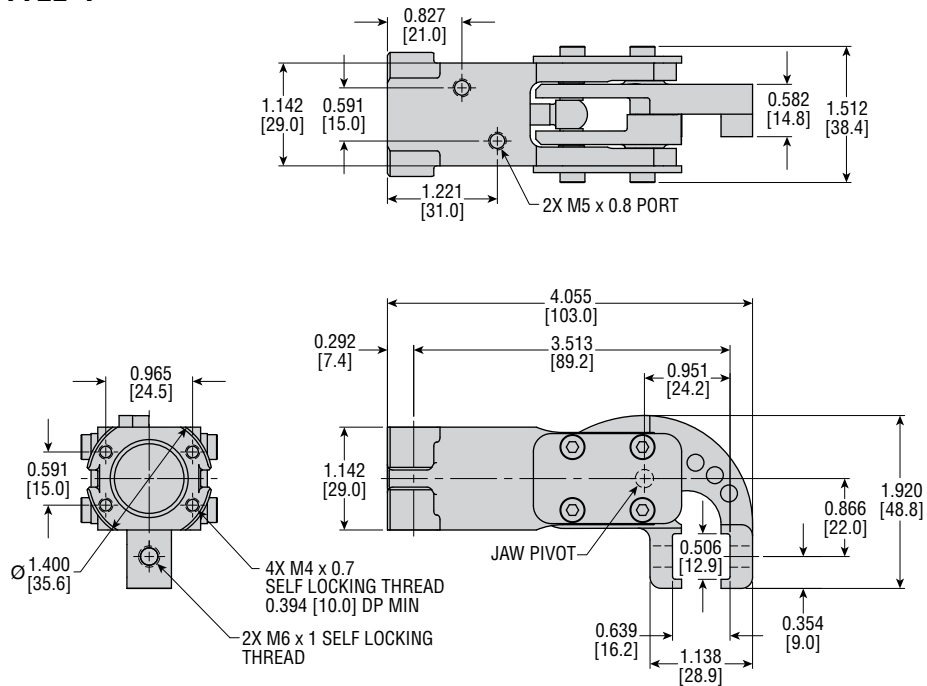
00° x 68°



All dimensions are reference only unless specifically tolerated.

DIMENSIONS: Size GRMO Clamps - Jaw Style F

FLANGE JAW STYLE 'F'



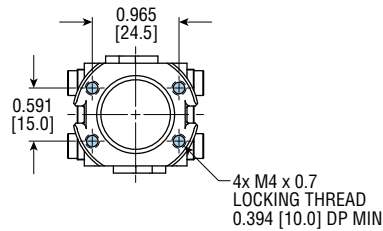
All dimensions are reference only unless specifically tolerated.

ORDERING DATA:

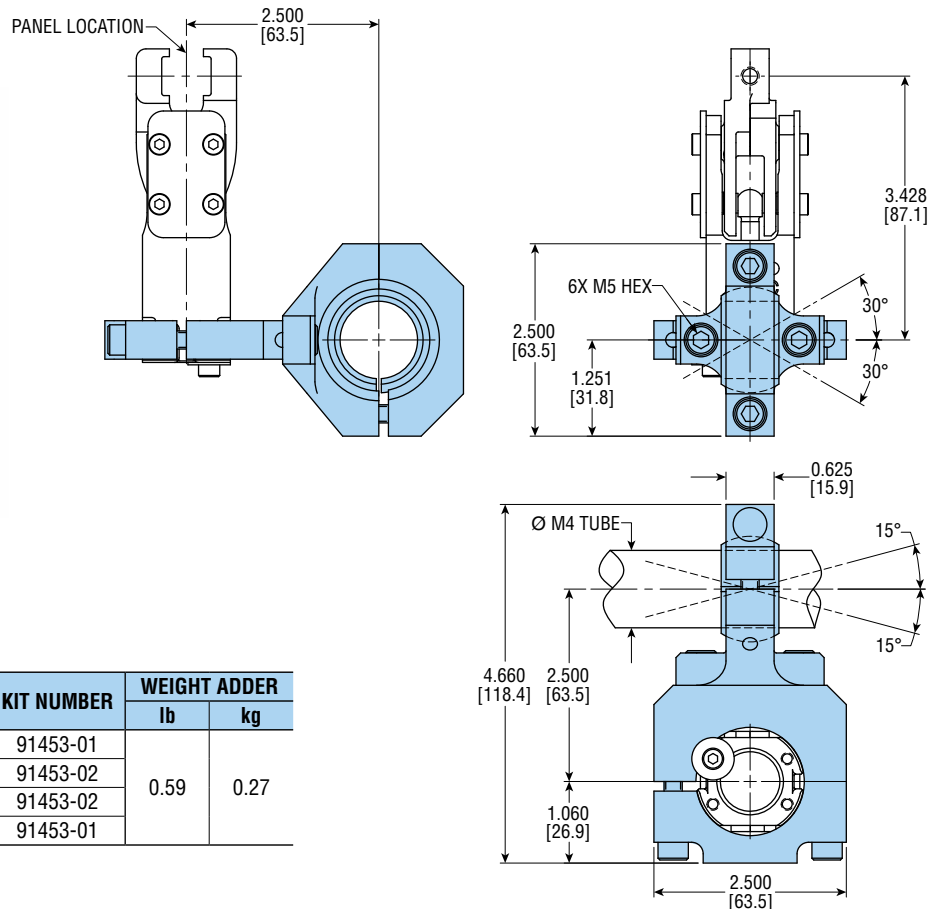


NOTE: Rear mounting threads (T option) must be specified when ordering an accessory mount (Mxx option).

GRMO T REAR MOUNTING THREADS (4X M4 x 0.7)



GRMO C x or GRMOTx- M21 M39 90° SPHERICAL MOUNTING BRACKET

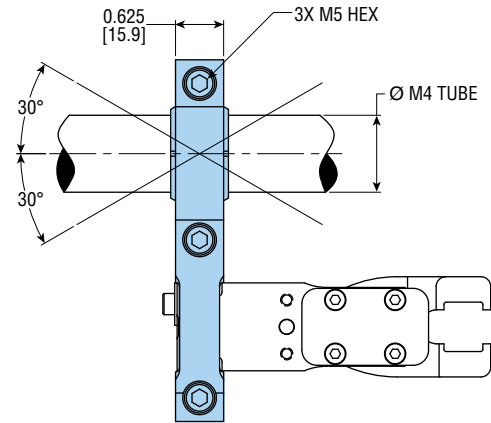
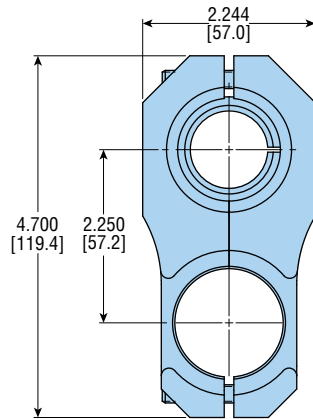


MODEL NUMBER OR ACCESSORY CODE	Ø M4 MOUNTING TUBE SIZE	KIT NUMBER	WEIGHT ADDER	
			lb	kg
GRMOCx-2	1.0 in	91453-01	0.59	0.27
GRMOCx-6	25.0 mm	91453-02		
GRMOTx-2-M21	25.0 mm	91453-02		
GRMOTx-6-M39	1.0 in	91453-01		

All dimensions are reference only unless specifically tolerated.

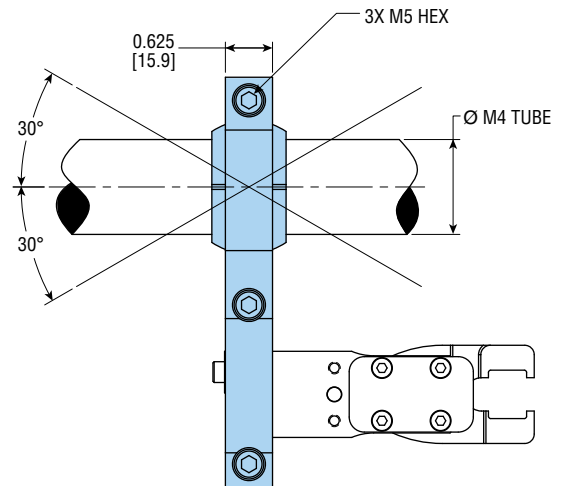
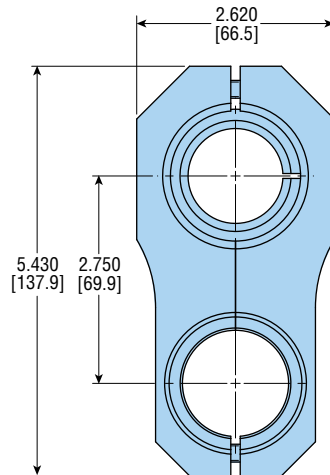
MOUNTING: Series GRM0 Clamps

GRM0 **S** x or GRM0Tx- **M23** **M47** SPHERICAL MOUNTING BRACKET



MODEL NUMBER OR ACCESSORY CODE	Ø M4 MOUNTING TUBE SIZE	KIT NUMBER	WEIGHT ADDER	
			lb	kg
GRM0Sx-2	1.0 in	91454-01	0.47	0.21
GRM0Sx-6	25.0 mm	91454-02		
GRM0Tx-2-M23	25.0 mm	91454-02		
GRM0Tx-6-M47	1.0 in	91454-01		

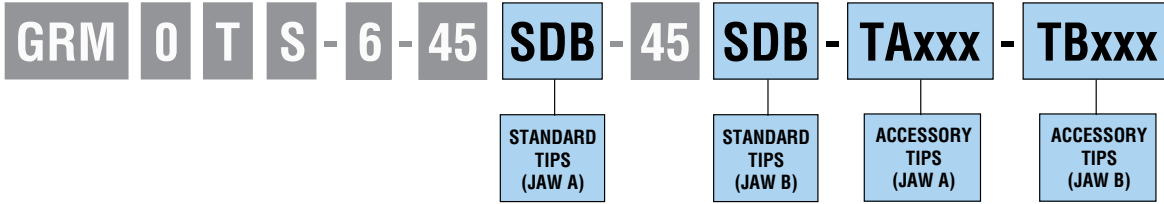
GRM0 **W** x or GRM0Tx- **M01** **M07** **M25** **M42** OVERSIZE SPHERICAL MOUNTING BRACKET



MODEL NUMBER OR ACCESSORY CODE	Ø M4 MOUNTING TUBE SIZE	KIT NUMBER	WEIGHT ADDER	
			lb	kg
GRM0Wx-2	1.25 in	91455-01	0.76	0.34
GRM0Wx-6	33.3 mm	91455-02		
GRM0Tx-x-M01	30.0 mm	91455-03		
GRM0Tx-x-M07	32.0 mm	91455-04		
GRM0Tx-6-M25	1.25 in	91455-01		
GRM0Tx-2-M42	33.3 mm	91455-02		

All dimensions are reference only unless specifically tolerated.

ORDERING DATA:



NOTE: Standard tip options must be left blank when ordering accessory tips.



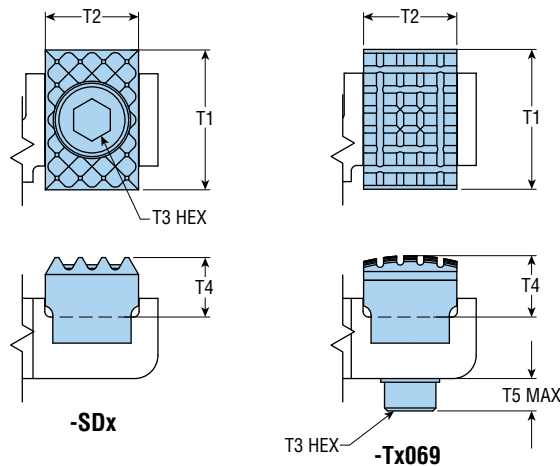
	TIP DESCRIPTION	MODEL NO. OR ACCESSORY CODE	TIP COLOR	KIT NO.	WEIGHT	
					lb	g
STANDARD TIP	Single Diamond Point	SDB	Black	91448-01	0.033	15
		SDS	Silver	91448-02		
		SDG	Gold	91448-03		
ACCESSORY TIP	Single Diamond Point (High Temp)	-Tx180	Black	91448-04	0.031	14
		-Tx181	Silver	91448-05		
		-Tx182	Gold	91448-06		
	Double Rounded Urethane Pad	-Tx069	Yellow	91448-07		

		MATERIAL THICKNESS (mm)				
JAW A	JAW B	0.0 - 0.6	0.7 - 1.2	1.3 - 1.8	1.9 - 2.4	2.5 - 3.0
SDB	SDB					
SDB	SDS					
SDS	SDS					
SDS	SDG					
SDG	SDG					
TA069	TB069					
TA180	TB180					
TA180	TA181					
TA181	TB181					
TA181	TA182					
TA182	TB182					

NOTES:

- 1) Jaw A tips and Jaw B tips can be reversed.
- 2) Tip options are not recommended for material thickness below 0.25 mm.

= Available Material Thickness



OPTION CODE	T1		T2		T3		T4		T5	
	in	mm	in	mm	in	mm	in	mm	in	mm
-SDB and -Tx180	0.750	19.1	0.500	12.7	0.197	5.0	0.319	8.10	—	—
-SDS and -Tx181	0.750	19.1	0.500	12.7	0.197	5.0	0.294	7.47	—	—
-SDG and -Tx182	0.750	19.1	0.500	12.7	0.197	5.0	0.274	6.96	—	—
-Tx069	0.750	19.1	0.500	12.7	0.118	3.0	0.329	8.4	0.181	4.6

All dimensions are reference only unless specifically tolerated.

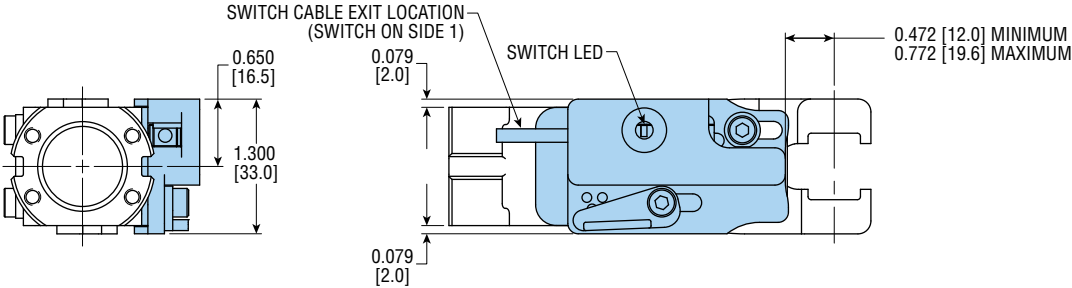
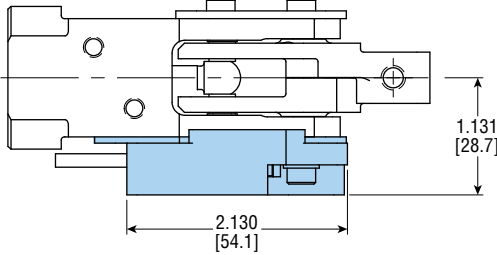
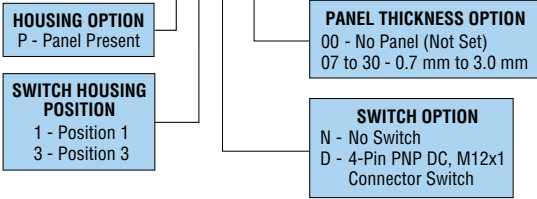
Pxxxxx PANEL PRESENT DETECTION

- Option provides switch housing and switch to detect presence of part.
- Position of internal target relates directly to jaw position and thickness of material gripped.
- Ideal choice for backup or redundant signaling detection.
- Option functions within a wide range of material thicknesses from 0.027 to 0.118 in [0.7 to 3.0 mm].
- Housing adjustment may be preset at factory for panel thickness in 0.004 in [0.1 mm] increments.
- P1x00 and P3x00 options do not require factory setup. For compatibility with other units, consult PHD.



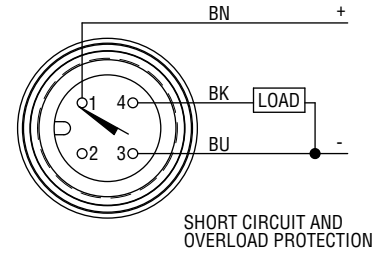
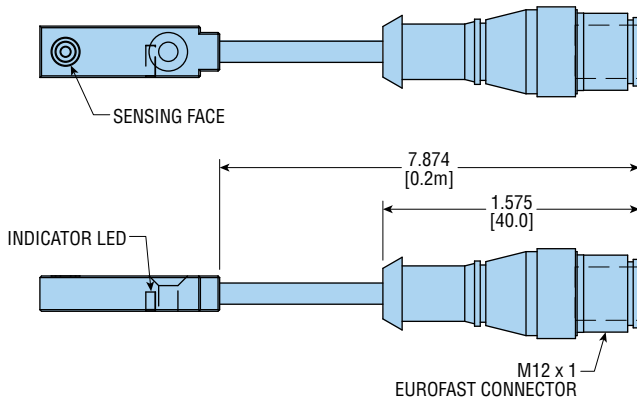
Example Ordering Data:

GRM0TS-6-45SDB-45SDB-LAA-P1D10



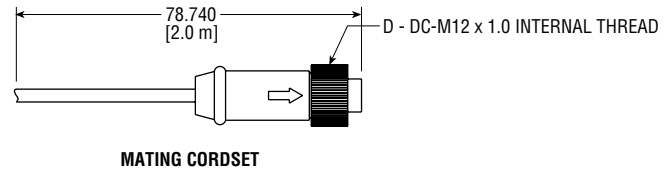
All dimensions are reference only unless specifically tolerated.

SWITCH OPTION D: 81686-001 (PNP)



WIRING DIAGRAM

ACCESSORY CODE	KIT NUMBER	JAW REBUILD KIT NUMBER	WEIGHT ADDER	
			lb	kg
D	91452-01	91447-02	0.09	0.04
N	91452-02			



SWITCH OPTION	SWITCH TYPE	PHD SWITCH NUMBER	VENDOR	VENDOR PART NUMBER	CORDSET PHD PART NUMBER	CORDSET VENDOR PART NUMBER
D	4-pin DC - N.O. - PNP	81686-001	Turck	BI 2-Q5.5-AP6X-0.2M-RS 4T	65413-00-02	RK 4T-2



PANEL PRESENT DETECTION FIELD SET-UP PROCEDURE:

- Using air pressure, close clamp jaws with panel between tips.
- Loosen both screws and remove lever from locating hole.
- Push housing towards jaws to the extent of travel.
- Carefully slide housing toward cylinder until switch turns on.
- Snug flat washer screw. Housing should still slide back and forth.
- Rotate lever into hole that matches present housing location and snug screw.
- Slightly move housing forward and backward. If switch flickers off and on, rotate lever into next hole and repeat process until switch stays on.
- Tighten both screws to 27 lb-in [3.1 Nm]. Switch is now set.

TO TEST THE SETUP:

- Using air pressure, close clamp jaws with panel between tips. The switch should stay on.
- Close clamp jaws with no panel between tips. The switch should turn off.

NOTE: With no panel present, the switch will flicker on as the target passes under the switch and turn off as the jaws reach full closed.

All dimensions are reference only unless specifically toleranced.

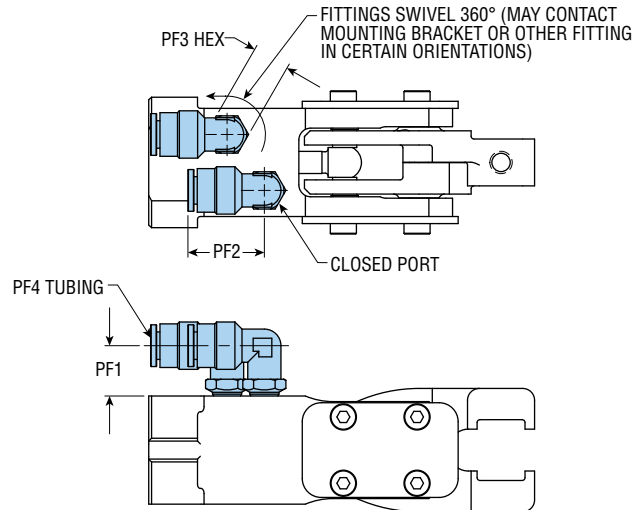
LAA

90° SWIVEL ELBOW, METAL PORT FITTINGS

FITTING PART NUMBERS IF ORDERED SEPARATELY

PORT FITTING OPTION	PORTS	
	IMPERIAL	METRIC
LAA	62178-064	62195-073

LETTER DIM	PORT FITTING OPTION	
	in	mm
PF1	0.531	13.0
PF2	0.807	20.0
PF3	0.394	10.0
PF4	1/4	6.0



V4

HIGH TEMPERATURE SEAL OPTION

Option includes high temperature seals and lubrication rated to 392°F [200°C]. Please note switches are not recommended for temperatures over 158°F [70°C].

Seal Kit Number if ordered separately: 91449-02







All dimensions are reference only unless specifically toleranced.

EXPLODED ASSEMBLY PARTS: Series GRMO Clamps

KEY	PART DESCRIPTION	PART NUMBER
		GRMO
1	Body Assembly	87052-007-12
2A	Piston	87056-001
2B	Shock Pad	54600-02
3	Bore Plug	61465
4	Retaining Ring	57618-022
5	Impact Plate	87060-001
6	Piston Rod/Jaw Driver	87057-001
7	Roller Bushing	87059-001
8	Slider Bushing	87058-001
9	Dowel Pin (4 x 28)	17831-081
10	Dowel Pin (5 x 28)	17831-049
11A	Jaw (S) 0°	87055-006-000
	Jaw (S) 45°	87055-006-450
	Jaw (S) 68°	87055-006-680
	Jaw (F) 0°	87055-003-000
	Jaw (F) 60°	87055-007-600
11B	Jaw (S) 0°	87055-006-000
	Jaw (S) 45°	87055-006-450
	Jaw (S) 68°	87055-006-680
	Jaw (F) 0°	87055-003-000
	Jaw (F) 60°	87055-007-600
14	LHCS (M4 x 6)	14308-400
15	SHCS (M3 x 10)	59104-075
17	Piston Seal	74042-005
18	O-Ring Seal	3642-018-1
121	Flat Washer	70365-001
122	SHCS (M4 x 10)	59104-018

KIT DESCRIPTION	KIT NUMBER
	GRMO
Seal Kit	91449-01
Jaw Rebuild Kit ⁽¹⁾	91447-01
Fastener Kit	91450
Impact Plate Kit	91451

NOTE:

- 1) Jaw rebuild kits for Pxxxx option can be found in the respective catalog sections.
- 2) Items shown in  are included in fastener kit.
- 3) Items shown in  are included in seal kit.
- 4) Items shown in  are included in jaw rebuild kit.
- 5) Items shown in  are included in impact plate kit.
Impact kit includes: 2 impact plates, 8 SHCS

