

Gripper Heads & Accessories

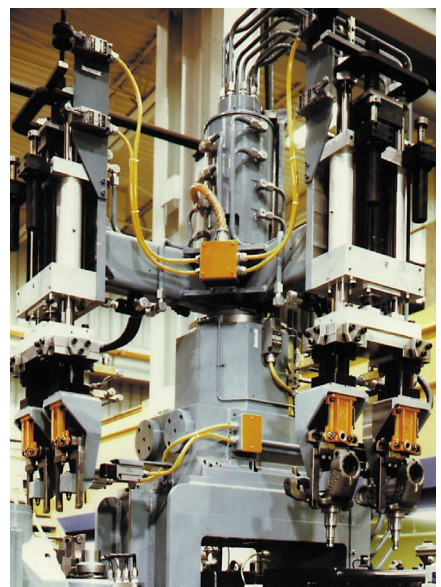


Norgren Gripper Heads *for Automation*

- Three series of sizes
- Over 50 gripper head combinations
- 2- or 4- point gripping
- Mechanical or vacuum gripping
- Jaws operate in unison with capability of one jaw being fixed in closed position
- Large angle jaw opening
- Jaw position proximity sensing available (open and closed)
- T-slot rod ends for quick head change



Flexcart 4.1 with Gripper Heads securing part.



Gripper Heads working with Super Shok Shock Absorbers.

Automation Gripper Heads – Series Styles

Jaw Styles	Mini Series		Standard Series		Heavy Duty Series	
	Two Contacts	Four Contacts	Two Contacts	Four Contacts	Two Contacts	Four Contacts
Regular Jaw	MGH1	MGH2		GH2		
Lower Chisel Jaw	MGH3	MGH4				
Vertical Gripping Jaw	MPGH6	MPGH5				
Lower Retracting Jaw	MPGH7	MPGH8				
Parallel Motion Jaw	MGH9		GH9		HDGH9	
Jaws without Gripping Fingers			GHA0			
Vacuum Head Parallel Motion			VH2			

Automation Gripper Heads – Modular Options

Gripper Series		Mini Series		Standard Series		Heavy Duty Series	
Sensors		SSM		SS			
Quick Change Adaptors		QCMM		QCSM			
Rotate Units**	90° 180°	AGHRMGH		AGHR		HAGHR	
	Variable			*RAU4		*HDRAU4	
Cylinders		LPAC200	PG1M	LPAC250	PG2S		PG3H
Cylinder Proximity Sensors			CPS14		CPS12		CPS16

*Rotary Actuator has a special air cylinder built in.

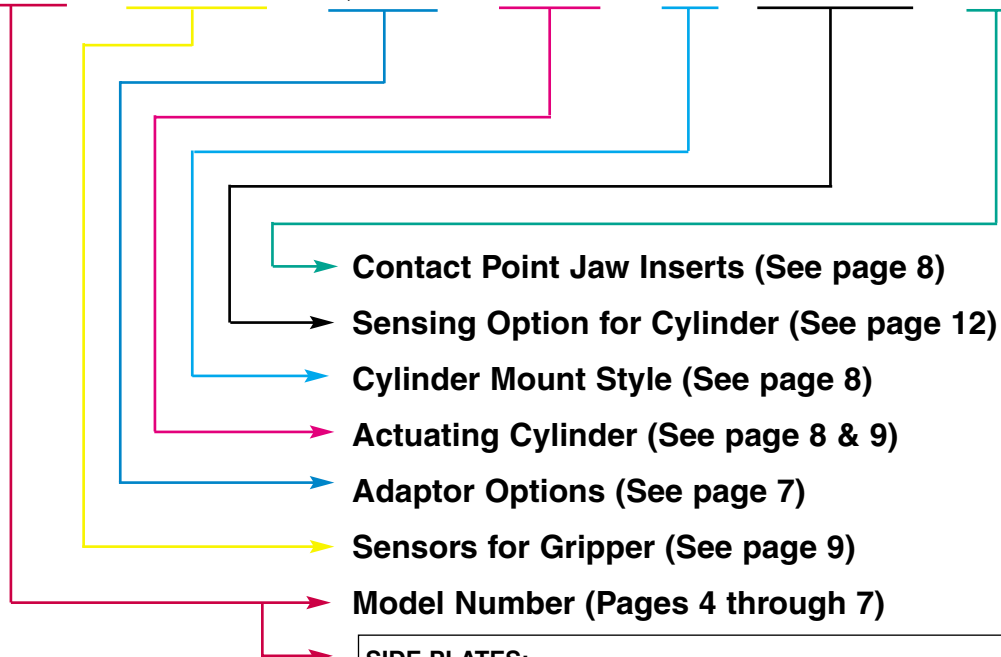
**Rotate Units discussed in Linex Actuators, Lifters & Rotates Catalog.

Automation Gripper Heads – Grip Forces

Series	Jaw Styles	Grip Forces at 80 psi
Mini (MGH) Standard (GH) Heavy Duty (HDGH)	1-8	250 lbs. 400 lbs. 700 lbs.
Mini (MGH) Standard (GH) Heavy Duty (HDGH)	9	65 lbs. 95 lbs. 165 lbs.

Typical Ordering Example for Gripper with Cylinder and Options:

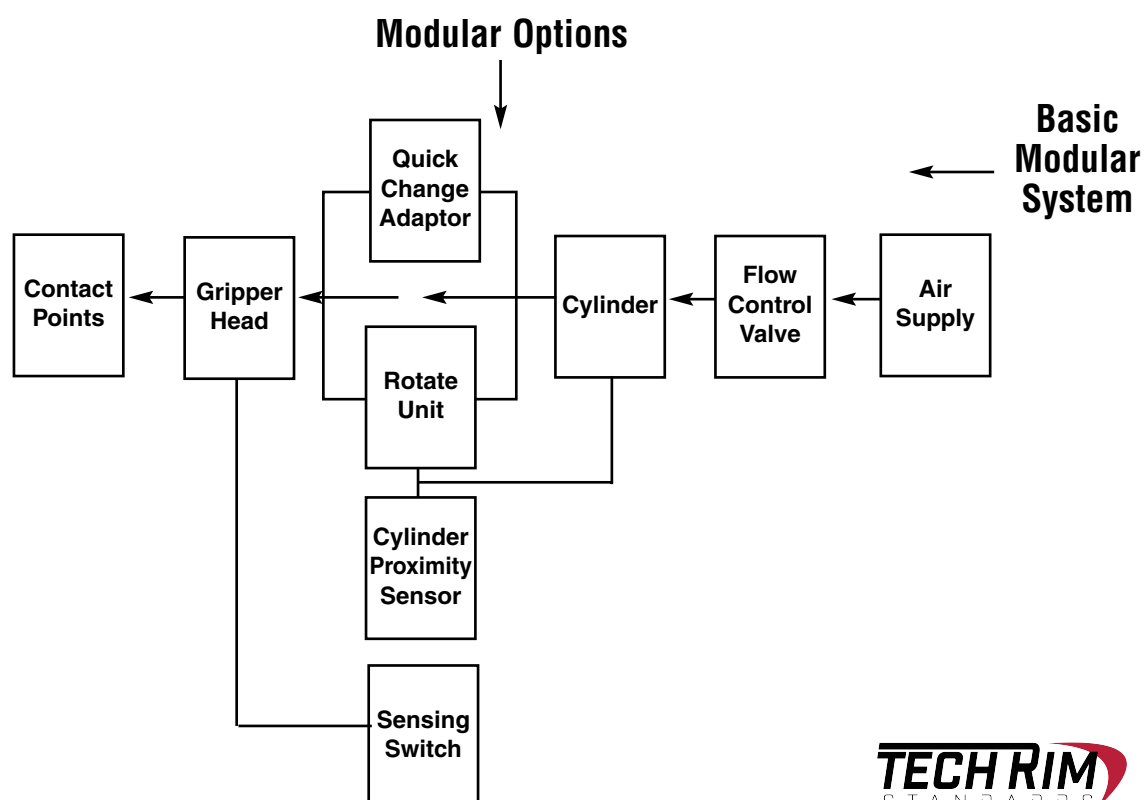
MGH1 – SSM-3-P – QCMM – PG1M – U2 – CP-S-C-1 – VC1



SIDE PLATES:		
Model	Aluminum	Steel
Mini (MGH)	S	–
Standard (GH) No sensing switch	O	S
Standard (GH) With sensing switch	S	–
Heavy Duty (HDGH)	S	–

S=Standard O=Optional – Add the prefix "A" to model call-out for this option.

The Modular Gripper System

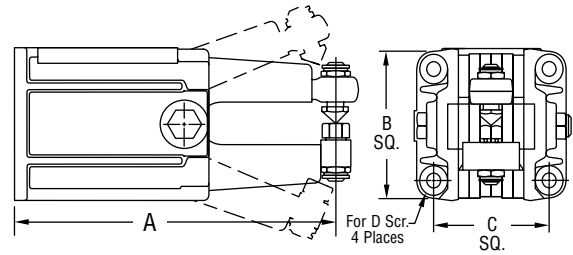
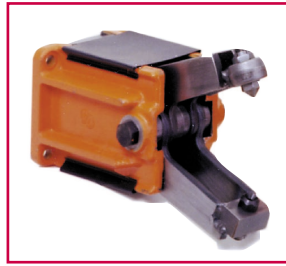


Regular Jaw • Lower Chisel Jaw – *Mini & Standard*

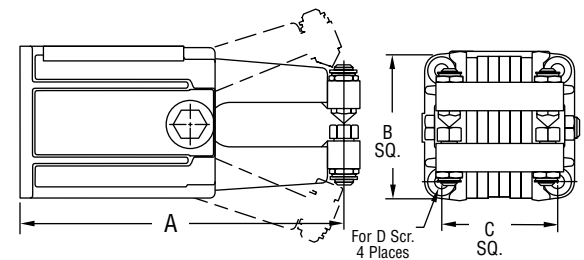
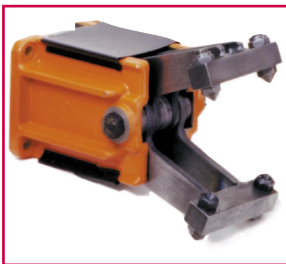
Mini Gripper Head: MGH Styles 1 thru 4
Standard Gripper Head: GH Style 2

- Upper and lower jaws operate in unison
- T-Slot rod end allows quick head change
- Mounting pattern allows positioning in 90° increments
- Design features forged body and links with hardened steel pivots, gripper points and concave contact for severe industrial applications
- 43° maximum jaw opening

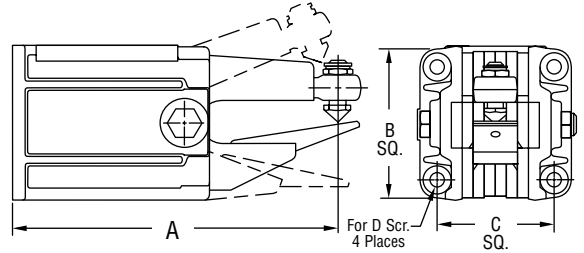
MGH1 (Mini) • Two Contacts • Regular Jaw



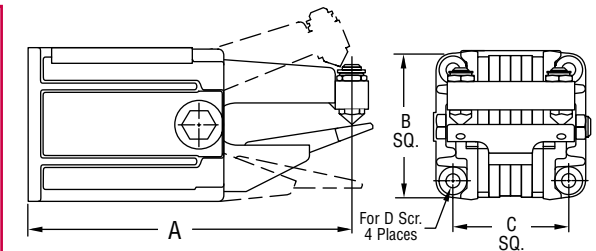
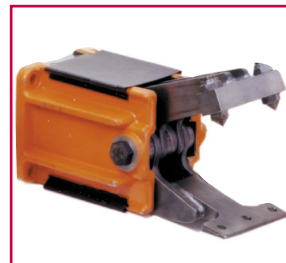
MGH2 (Mini); GH2 (Standard) • Four Contacts • Regular Jaw



MGH3 (Mini) • Two Contacts • Lower Chisel Jaw



MGH4 (Mini) • Four Contacts • Lower Chisel Jaw

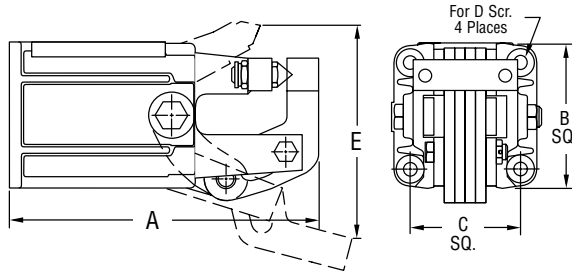
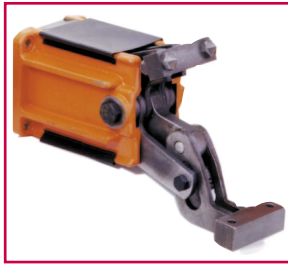


Model	Dimensions				Weight
	A	B	C	D	
Mini	5-1/16	2-1/2	1-27/32	5/16	2 lbs.
Standard	7-7/16	3-3/8	2-5/8	5/16	8 lbs.

Dimensions are in inches

Vertical Gripping Jaw • Lower Retracting Jaw – *Mini*

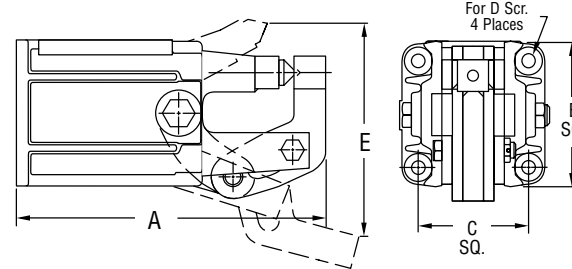
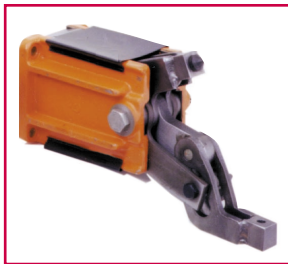
MPGH5 (Mini) • Four Contacts • Vertical Gripping Jaw



Mini Gripper Head: MGH Styles 5 thru 6

- Jaw is cam operated to increase the lower jaw opening, giving ample clearances on vertical flanged panels
- T-Slot rod end allows quick head change
- Mounting pattern allows positioning in 90° increments
- Design features forged body and links with hardened steel pivots, gripper points and concave contact for severe industrial applications
- Upper jaw may be fixed in the closed position. To order add suffix "F" (Fixed) to the model number.

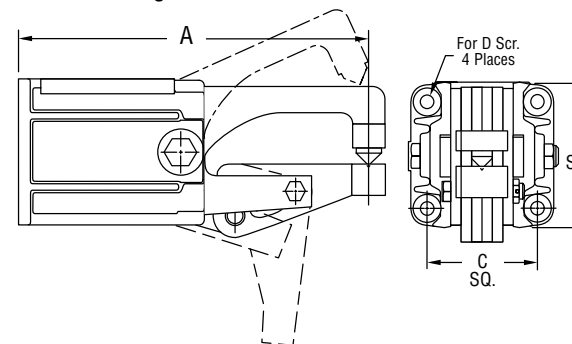
MPGH6 (Mini) • Two Contacts • Vertical Gripping Jaw



Model	Dimensions					Weight
	A	B	C	D	E	
Mini	5-1/16	2-1/2	1-27/32	5/16	3-1/16	2 lbs.

Dimensions are in inches

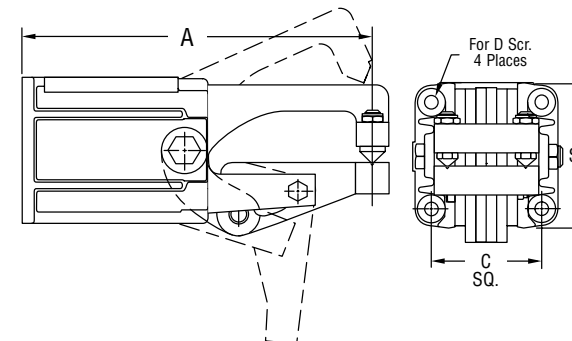
MPGH7 (Mini) • Two Contacts • Lower Retracting Jaw



Mini Gripper Head: MGH Styles 7 thru 8

- Lower jaw is cam operated, greatly increasing the jaw opening to eliminate interference on contoured or long flanged parts
- T-Slot rod end allows quick head change
- Mounting pattern allows positioning in 90° increments
- Design features forged body and links with hardened steel pivots, gripper points and concave contact for severe industrial applications
- Upper jaw may be fixed in the closed position. To order add suffix "F" (Fixed) to the model number.

MPGH8 (Mini) • Four Contacts • Lower Retracting Jaw



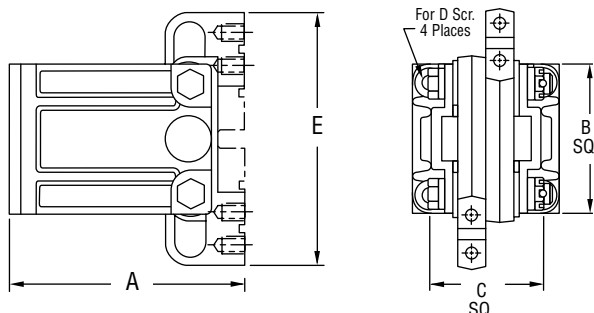
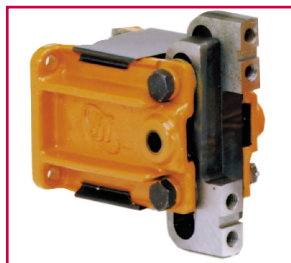
Model	Dimensions				Weight
	A	B	C	D	
Mini	5-9/16	2-1/2	1-27/32	5/16	2 lbs.

Dimensions are in inches

Parallel Motion Jaw • O.D. Gripper Head

— Mini, Standard & Heavy Duty

MGH9 (Mini); GH9 (Standard); HDGH9 (Heavy Duty) • O.D. Gripper Head • Parallel Motion Jaw



Mini Gripper Head: MGH Style 9
Standard Gripper Head: GH Style 9
Heavy Duty Gripper Head: HDGH Style 9

- Jaws move in a synchronous parallel motion. Head features keyed and tapped machined surfaces, allowing customer mounting of special gripping fingers
- The gripping force is constant throughout the finger travel
- T-Slot rod end allows quick head change
- Mounting pattern allows positioning in 90° increments

O.D. Jaw Travel

Mini: 1-1/2" Combined Finger Travel
 Standard: 2" Combined Finger Travel
 Heavy Duty: 3" Combined Finger Travel

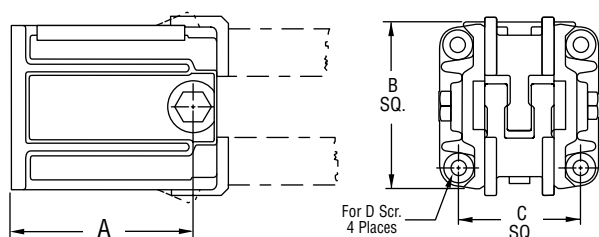
Model	Dimensions					Weight
	A	B	C	D	E	
Mini	3-25/32	2-1/2	1-27/32	5/16	4-5/16	2 lbs.
Standard	5-7/16	3-3/8	2-5/8	5/16	5-7/8	8 lbs.
Heavy Duty	8-3/16	4-7/8	3-5/8	1/2	8-7/8	18 lbs.

Dimensions are in inches

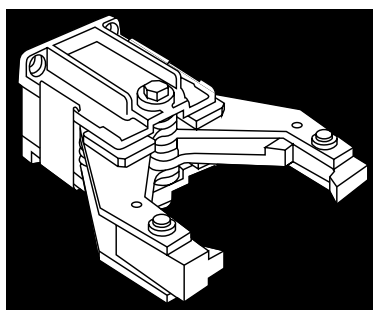
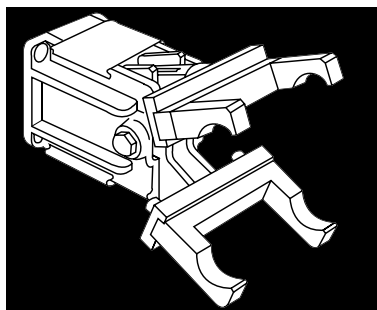
U.S. Patent No. 4,518,187

Jaws Without Gripping Fingers — Standard

GHA0 (Standard) • Jaws Without Gripping Fingers



Two examples of the many GHA0 customized uses...



Standard Gripper Head: GHA0

- Standard action and body are provided, allowing fingers to be welded for custom applications
- T-Slot rod end allows quick head change
- Construction features forged body and links with all pivots hardened for industrial applications
- 43° maximum finger opening
- Produces over 400 lbs. of finger pressure at 80 psi with 2-1/2" finger extension

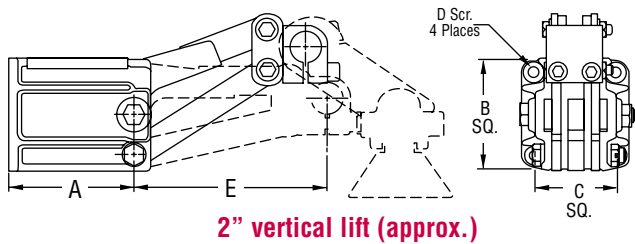
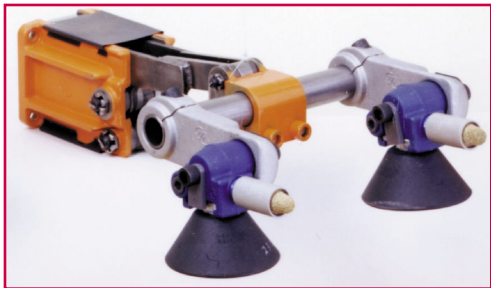
U.S. Patent No. 4,449,745

Model	Dimensions				Weight
	A	B	C	D	
GHA0	3-15/16	3-3/8	2-5/8	5/16	7 lbs.

Dimensions are in inches

Vacuum Head Parallel Motion – Standard

VH2 (Standard) • Vacuum Head Parallel Motion



Standard Gripper Head: VH2

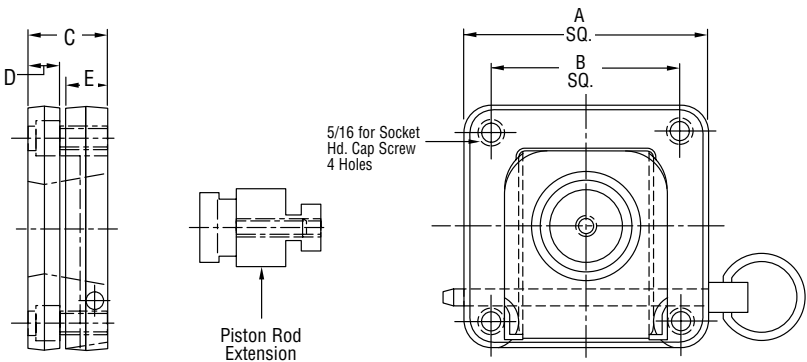
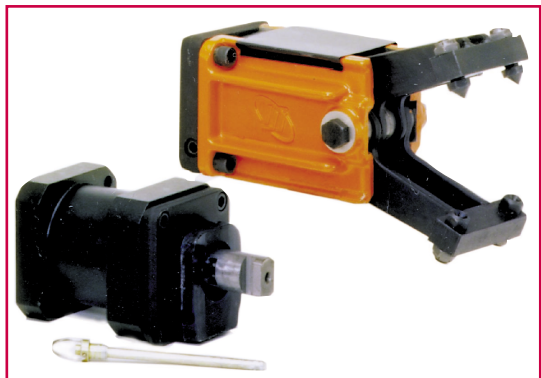
- VH2 allows approximately 2 inches of vertical lift
- Available VV265 Vac-Lok® Venturi Assembly allows for easy cup adjustment or quick changeover
- Available spreader bar allows mounting of multiple cups and adjustable horizontal positioning

Model	Dimensions					Weight
	A	B	C	D	E	
VH2	3-15/16	3-3/8	2-5/8	5/16	6	9 lbs.

Dimensions are in inches

Quick-Change Adaptor – Mini & Standard

QCMM (Mini); QCSM (Standard); • Modular Option • Quick Change Adaptor

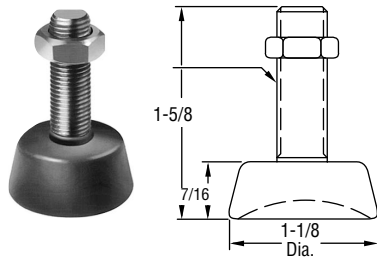


- Increases system flexibility
- Located between Gripper Head and cylinder
- Change gripper heads in seconds, increasing productivity
- Locks in place with spring-loaded detent pin

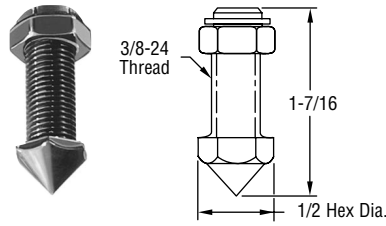
Model	Dimensions					Weight
	A	B	C	D	E	
QCMM	2-1/2	1-27/32	1-1/8	7/16	5/8	3/4 lbs.
QCSM	3-3/8	2-5/8	1-1/8	7/16	5/8	1-1/4 lbs.

Dimensions are in inches

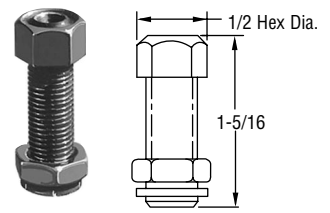
Contact Points



VC1 and VCU1 Gripping Cup Jaw Inserts



PT1 Convex Jaw Inserts



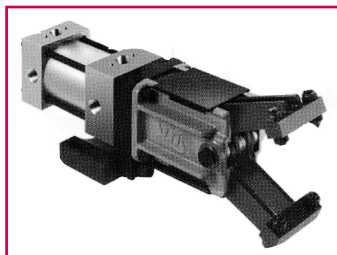
PT2 Concave Jaw Inserts

- Neoprene (VC1) or Urethane (VCU1) ends on contact points
- Provides soft contact between Gripper Head and material being gripped
- Prevents damage
- Secured in position by self-locking nuts
- Rounded Urethane end also available (PTR)
- Manufactured from hardened steel
- Adjustable to accommodate variable material thicknesses
- Secured in position by self-locking nuts
- Convex or concave shaped ends

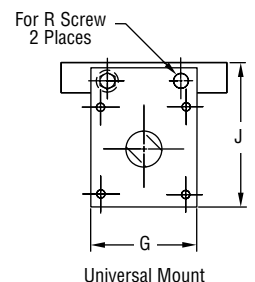
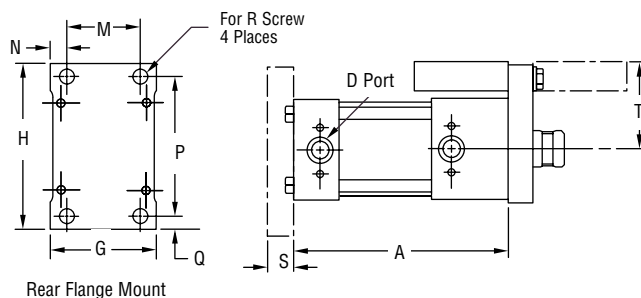
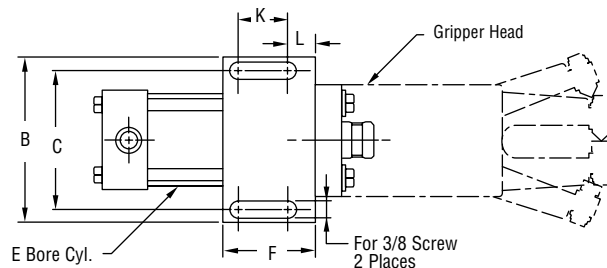
Posi-Grip Actuating Cylinders – Mini, Standard & Heavy Duty with 4 standard mountings

PG1M (Mini); PG2S (Standard); PG3H (Heavy Duty) • Modular Options • Posi-Grip Cylinders

- The combination of gripper heads, actuating cylinders, and a variety of mounting styles makes the Posi-Grip assembly a versatile gripper system
- Every Posi-Grip Cylinder offers permanent lubrication and inductive proximity switch sensing
- T-Slot rod end accepts quick-change adaptor
- Choice of four standard mounting methods (see below)
- Piston stroke proximity sensing ports



Note: Norgren recommends that flow controls be used in conjunction with pneumatic cylinders.



To order cylinder separately:

PG2S – R – GH2

Gripper Head Unit
 R = Rear Flange Mount
 U1 = Universal Mount
 U2 = Universal Mount
 U3 = Universal Mount
 Model Number

Universal Mount			Rear Flange Mount
U1	U2	U3	R

DIMENSIONS

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	Weight
PG1M	5-7/8	4-1/2	3-3/4	3/8 NPT	2	2-3/4	3	5	3-7/8	1-3/4	1/2	2	1/2	4-1/4	3/8	3/8	1/2	2-5/8	8 lbs.
PG2S	6-1/2	5	4-1/4	3/8 NPT	2-1/2	2-13/16	3-1/4	5	4-1/8	1-5/8	3/4	2-1/4	1/2	4-1/4	3/8	3/8	3/4	2-5/8	13 lbs.
PG3H	7-1/4	6-1/4	5-1/4	1/2 NPT*	3-1/4	3-5/8	4-1/2	7	5-3/4	2-3/8	5/8	3-1/2	1/2	6	1/2	3/8	3/4	3-9/16	17 lbs.

*PG3H has 1/2" NPT Air Ports and a 3/8" NPT Sensing Port

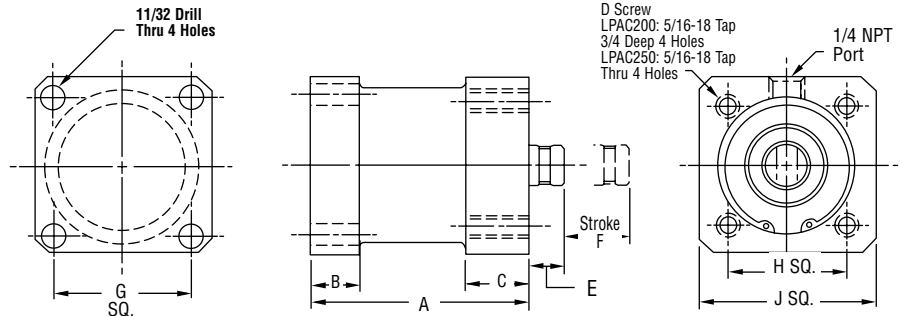
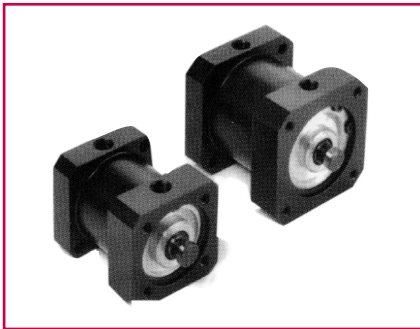
Dimensions are in inches

TECHRIM
STANDARDS



Low-Profile Pneumatic Cylinders – Mini & Standard

LPAC200 (Mini); LPAC250 (Standard) • Modular Options • Low-Profile Pneumatic Cylinders



- Low-profile pneumatic cylinder, available in two sizes, allows for quick change of multiple gripper heads and vacuum heads
- Ideal for applications with space or weight restrictions
- May be used with a variety of Norgren Mini and Standard gripper and vacuum heads
- One-piece, high-tensile, lightweight aluminum body
- T-Slot rod end accepts quick-change adaptors

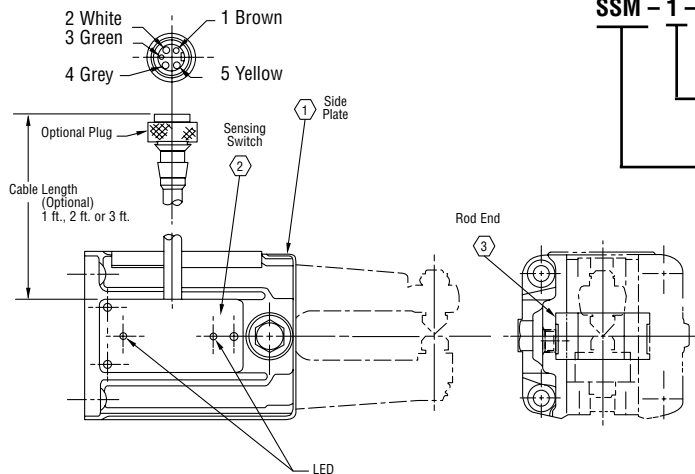
Note: Norgren recommends that flow controls always be used in conjunction with pneumatic cylinders.

Model	Dimensions									Weight
	A	B	C	D	E	F	G	H	J	
LPAC200	3-3/8	3/4	1	5/16	1/2	1	2-1/8	1-27/32	2-3/4	2-1/2 lbs.
LPAC250	3-3/4	3/4	1	5/16	9/16	1-3/8	2-5/8	2-5/8	3-1/2	4 lbs.

Dimensions are in inches

Sensors – Mini & Standard

SSM (Mini); SS (Standard) • Modular Options • Sensors



To order sensing switch option, add to Gripper Head ordering information:

SSM – 1 – P
 Optional 5-pin plug
 Length of cable:
 1, 2 or 3 ft.
 Sensing Switch for
 Mini size Gripper Heads
 SS – For Standard size
 Gripper Heads

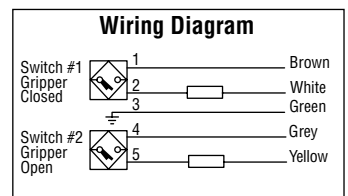
- Unique, two-position proximity sensing
- Visual indicator lights show finger position open and closed
- Compact flush mounting
- Reliable solid state construction
- Shielded, weld field immune
- 90-130 VAC

Note: MGH1 thru MGH9, GH2 and GH9, GHA0 and VH2 style heads utilize switch #1 closed and #2 open.

To order switch assembly to retrofit previously purchased Gripper Head:

RSS – GH1 – 1 – P
 Optional 5-pin plug
 Length of cable: 1, 2 or 3 ft.
 Gripper Head and Jaw Style sensing kit will be used on
 RSS – Retrofit Sensing Switch for Standard size Gripper Head includes switch, side plate and rod end

RSSM – Retrofit Sensing Switch for Mini size Gripper Head includes switch, side plate and rod end



Pneumatic Flow Controls – Technical Data



Right-Angle Flow Controls with 360° Rotation

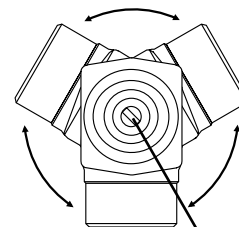
Models RA-12 and RA-23

- Precise flow control in one direction; full flow in opposite direction
- Outer sleeve rotates 360° for easy installation
- Recessed flow adjustment prevents accidental changes in flow rates
- Designed to thread directly into cylinder ports
- Available in three sizes; 1/4", 3/8" and 1/2" NPT
- Corrosion- and dirt-resistant
- Operating pressure from 0–150 psi

FLOW SPECIFICATIONS—All Models

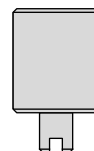
CONTROLLED FLOW		FREE FLOW
psi	Max. SCFM	SCFM
40	0–23	37–60
60	0–31	50–81
80	0–40	63–103
100	0–45	77–122

Flow control's outer sleeve rotates 360° in either direction



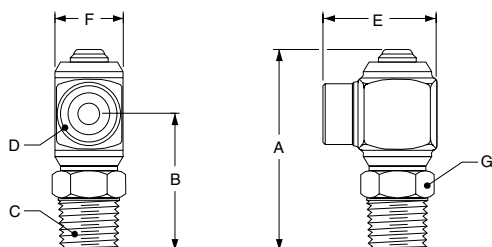
Top View

Recessed Adjustment Needle (see inset below)



Changing the flow on G-Series flow controls requires using the RA-2 adjustment tool. This tool is available through Norgren or your local distributor.

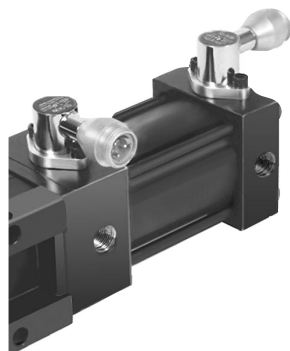
To order flow controls, see information below.



	A	B	C	D	E	F	G	
RA12F2M-E (or G)	64.5	41.4			39.1	23.8		mm
	2.54	1.63	1/4 NPT	1/4 NPT	1.54	.94	7/8	in
RA12F3M-E (or G)	65.5	42.4			39.9	23.8		mm
	5.58	1.67	3/8 NPT	1/4 NPT	1.57	.94	7/8	in
RA23F4M-E (or G)	70.1	47.5			39.8	23.8		mm
	2.76	1.87	1/2 NPT	3/8 NPT	1.57	.94	7/8	in
RA23F3M-E (or G)	65.5	42.4			39.9	23.8		mm
	2.58	1.67	3/8 NPT	3/8 NPT	1.57	.94	7/8	in
RA23P3M-E (or G)	65.5	42.4			39.9	23.8		mm
	2.58	1.67	3/8 NPT	3/8 Push In	1.57	.94	7/8	in

Proximity Sensor for Posi-Grip Cylinders – Mini, Standard & Heavy Duty

CPS14 (Mini); CPS12 (Standard); CPS16 (Heavy Duty) • Modular Options • Cylinder Proximity Sensor for Posi-Grip Cylinders



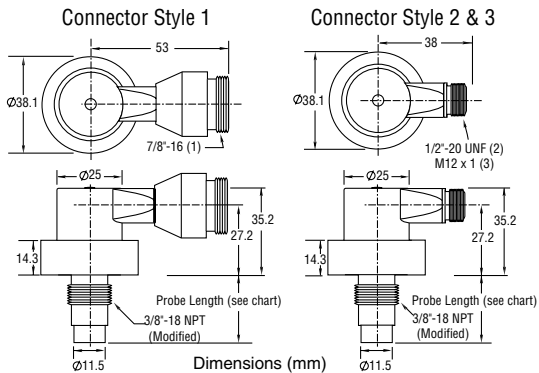
Cylinder proximity switch has a unique mounting which allows for 360° rotation, optimizing application flexibility. It is weld field immune, short circuit protected, overload protected, and radio frequency immune from 10MHz through 800MHz. The operating voltage has been expanded to 20V-250V AC/DC.

- Reliable: Integrated circuit design improves reliability (5-year warranty on CPS Switches)
- Durable: Manufactured of die cast aluminum with extruded aluminum components
- Versatile: Two connector styles available: micro connector or mini connector. Also, two mounting styles: traditional flange mount or unique canister mount which threads directly into the cylinder port. **Note:** Flange mount is for pneumatic or hydraulic applications; canister mount is for pneumatic only.
- Visual indicator light

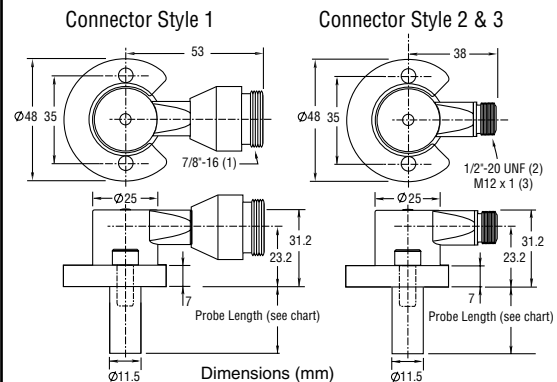
Note: In the event of a short circuit, the sensor will not be damaged. However, when the problem that caused the short circuit is corrected, the sensor must be disconnected from the power supply and then reconnected before the sensor will function properly.

Proximity Switch – Dimensions

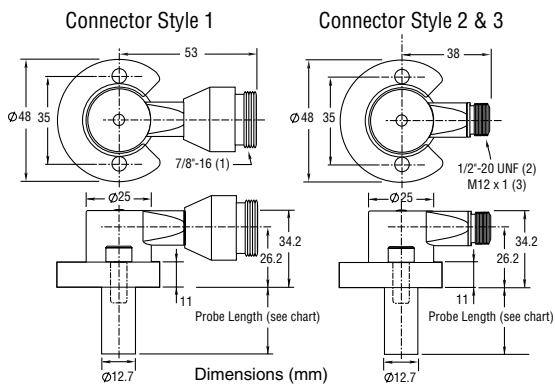
C=Canister Mounted Type • 250psi Rating



F=Flange Mounted Type • 250psi Rating



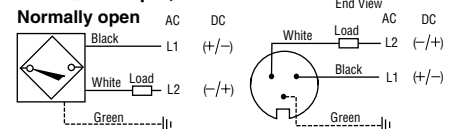
H=Flange Mounted Type • 3000psi Rating



Mini Connectors

No.1

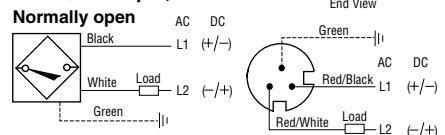
2-wire AC/DC output, self-contained



Micro Connectors

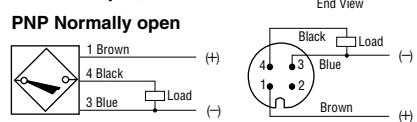
No.2

2-wire AC/DC output, self-contained



No.3

3-wire DC output, self-contained



Probe Length	Corresponding Norgren Cylinder Bore Size
S=1.025	1.5", 2.0", 2.5", 3.25"
T=1.250	4.0"
U=2.062	5.0", 6.0"
V=2.875	8.0"

Dimensions are in inches.

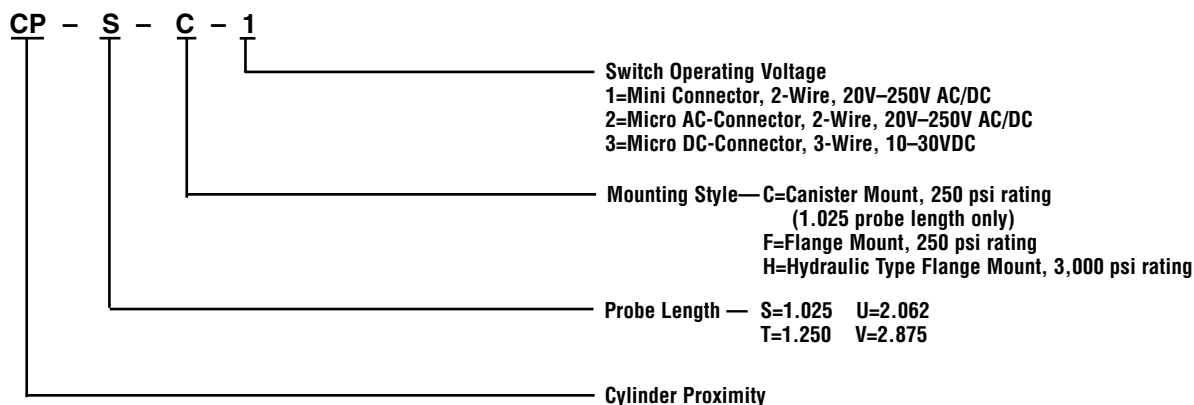


Proximity Switch – Technical Data

ELECTRICAL OUTPUT 2-Wire AC/DC		ELECTRICAL OUTPUT 3-Wire DC	
SENSING RANGE		2.0mm or 3.0mm (to standard target)	
REDUCTION FACTOR			
Stainless Steel	.85	.70	
Aluminum	.40	.32	
STANDARD TARGET		10 x 10 x 1mm Ferrous	
REPEATABILITY		≤0.01mm (70°F) • ≤±0.3mm (-14°F to +158°F)	
HYSTERESIS		≥0.5mm (-14°F to +158°F) Target moves transversely to sensor	About 3%
VOLTAGE RANGE		20V-250V AC/DC	10-30VDC
LEAKAGE CURRENT		≤1.7mA	—
VOLTAGE DROP (Across sensor)		≤7V	≤2.0VDC
SWITCHING FREQUENCY		≤20Hz	≤20Hz
RESPONSE TIME			
While Target Moves Into Range	≤20mS	≤20mS	
During Power-up	≤80mS	≤80mS	
MAKE		≤3A	—
LOAD CURRENT		≤300mA	≤200mA
SHORT CIRCUIT PROTECTED		YES	YES
OVERLOAD PROTECTED		YES	YES
SHORT CIRCUIT—OFF CURRENT		>300mA	>200mA
INDICATOR LIGHTS:			
Power ON	LED (green)	LED (green)	
Output ON	LED (red or yellow)	LED (yellow)	
Short or Overload Condition	Both LEDs (flashing with a frequency of 2 Hz)	—	
AMBIENT TEMPERATURE		-14°F to +158°F	
SHOCK RESISTANCE		≤30G T ≤11MS	
VIBRATION STRESS		f≤55Hz @ ≤11mS	
IMMUNITY TO:			
Welding	AC — resistance welding 300mT (45000A RMS) DC — welding 25000A		
Radio Transmitted Fields	from 10MHZ-800MHZ • 10V/m field strength		
Electrical Noise	-ICS-230	—	
HOUSING MATERIAL		Aluminum	
PROTECTION (IEC)		IP65	
CPS-C (≤250psi)	BHM Connection	CP-S-C-1	*NA
	Micro Connection	CP-S-C-2	CP-S-C-3
CPS-F (≤250psi)	BHM Connection	CP-S-F-1	*NA
	Micro Connection	CP-S-F-2	CP-S-F-3
CPS-H (≤3000psi)	BHM Connection	CP-S-H-1	*NA
	Micro Connection	*CP-S-H-2	CP-S-H-3

*Special Order – Consult Norgren for Delivery.

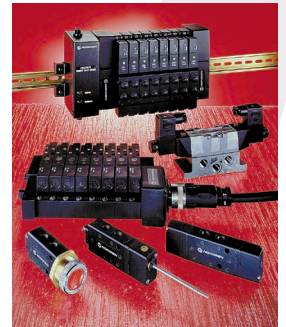
PROXIMITY SWITCH ORDERING INFORMATION



Norgren is a leading world manufacturer and supplier of pneumatic solutions, offering a comprehensive range of pneumatic control and automation components via a global sales and service network which covers 70 countries worldwide. The company is a principal member of the diverse and internationally successful £1 billion IMI Group



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Air Line



GH0198

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TECHRIM
STANDARDS 