

LOGANSPOORT & SP ROTATING

CYLINDERS



TW Workholding

Workholding - Worldwide



Rotating Cylinders



TW Workholding

designs and manufactures two of the most recognized brands of rotating cylinders in industry today. SP and Logansport Rotating Cylinders have been utilized in manufacturing environments for over fifty years and are well known for their proven performance. Whether you need to replace, repair or specify new, we have the product and people to support your application.

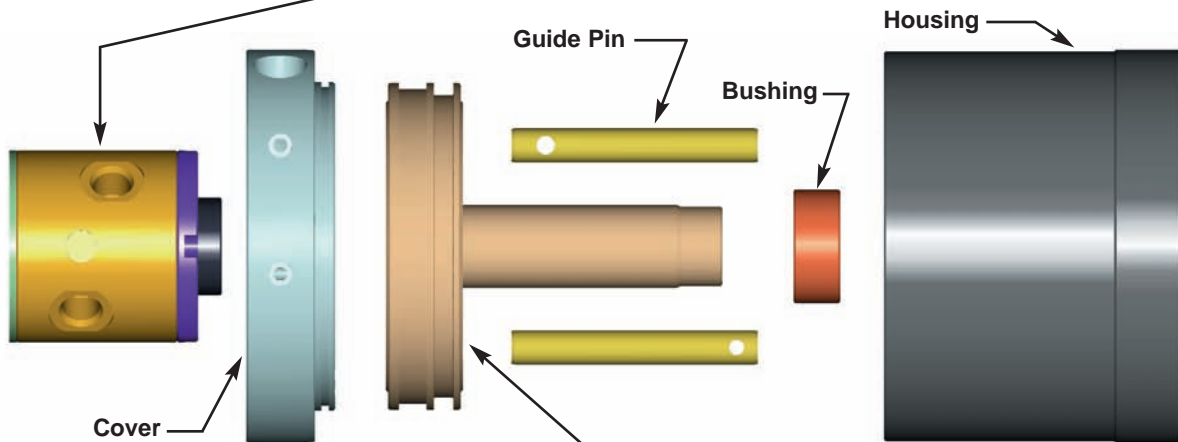
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Rotating cylinders have basic components which dictate the function and design of the cylinder.

Inlet Assembly - The inlet assembly, sometimes called the distributor, can be designed in two ways. It can have a fixed position in relation to the piston housing; or it can float with the stroke of the cylinder ("reciprocating inlet").

Trapping - This safety feature allows the cylinder to remain pressurized, and the chuck to maintain clamping pressure, in the event of a power loss.

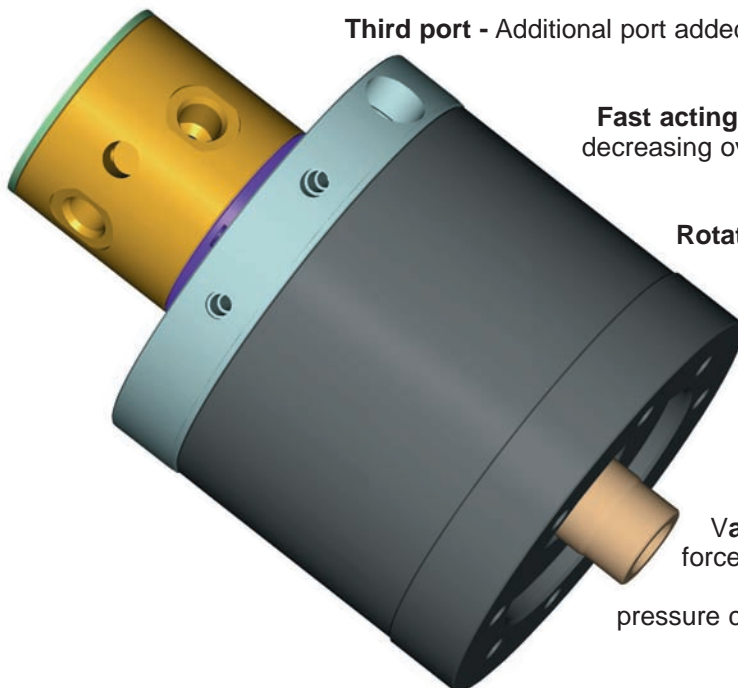


Viton seals - The seals keep compressed air or hydraulic fluid captured within the cylinder. The seals are designed to allow movement and support between internal components.

Piston - Cylinders can be designed with a single piston, two pistons connected in one housing ("tandem"), an open center piston ("thru hole cylinder"), or with two different size pistons, in separate housings, which can be energized independently ("duplex").

OPTIONS

SP & Logansport cylinders are available with the following options:



Third port - Additional port added to the inlet assembly to allow for coolant or air access through the piston rod.

Fast acting - Allows for increased volume flow through the cylinder decreasing overall stroke cycle time. Cycles of less than one second are possible on two inches of stroke.

Rotating hollow tube trip rod - Allows for air, coolant, or oil through the cylinder with the addition of a rotary union. Trip dog attaches to the rod for use with proximity stroke sensing systems.

Metric designs - Mounting threads and male pilot specified in metric to allow for quick and easy replacement of original equipment cylinders on imported machine tools.

Variable pressure feature - This feature allows clamping forces to be reduced from high to low (Hi-Lo) during the cutting cycle. A pilot port in the inlet triggers "on the fly" pressure changes transferred to the part through chuck jaw relaxation. The reduction in part distortion allows for better roundness control.



LOGANSPORT HYDRAULIC CYLINDERS



Ideal for horizontal, vertical, or inverted applications. Eliminates many parts associated with closed center rotary inlets.

Features include:

- Simple Inlet Design
- Constant Hydraulic Flow
- 1000 PSI Pressure Standard
- Up to 7,000 RPM Capability
- Standard Built in Trapping
- Optional Trip Rod and Thru Port

SPECIFICATIONS AND RATINGS

Bore Sizes: 3", 4-1/2", 6", 8"

Stroke:
 3" Bore..... 1.00"
 4-1/2" Bore..... 1.50"
 6" - 8"..... 2.00"
 Other stroke lengths available upon request.

Maximum RPM:
 3" Bore.....6,000 RPM
 4.5" Bore.....6,000 RPM
 6" Bore.....4,500 RPM
 8" Bore.....3,500 RPM

Maximum Operating Pressure: 3" - 8" Bore.....1,000 PSI

Standard trapping feature will keep a cylinder in it's extended or retracted state for a period of time in the event of a hydraulic power failure.

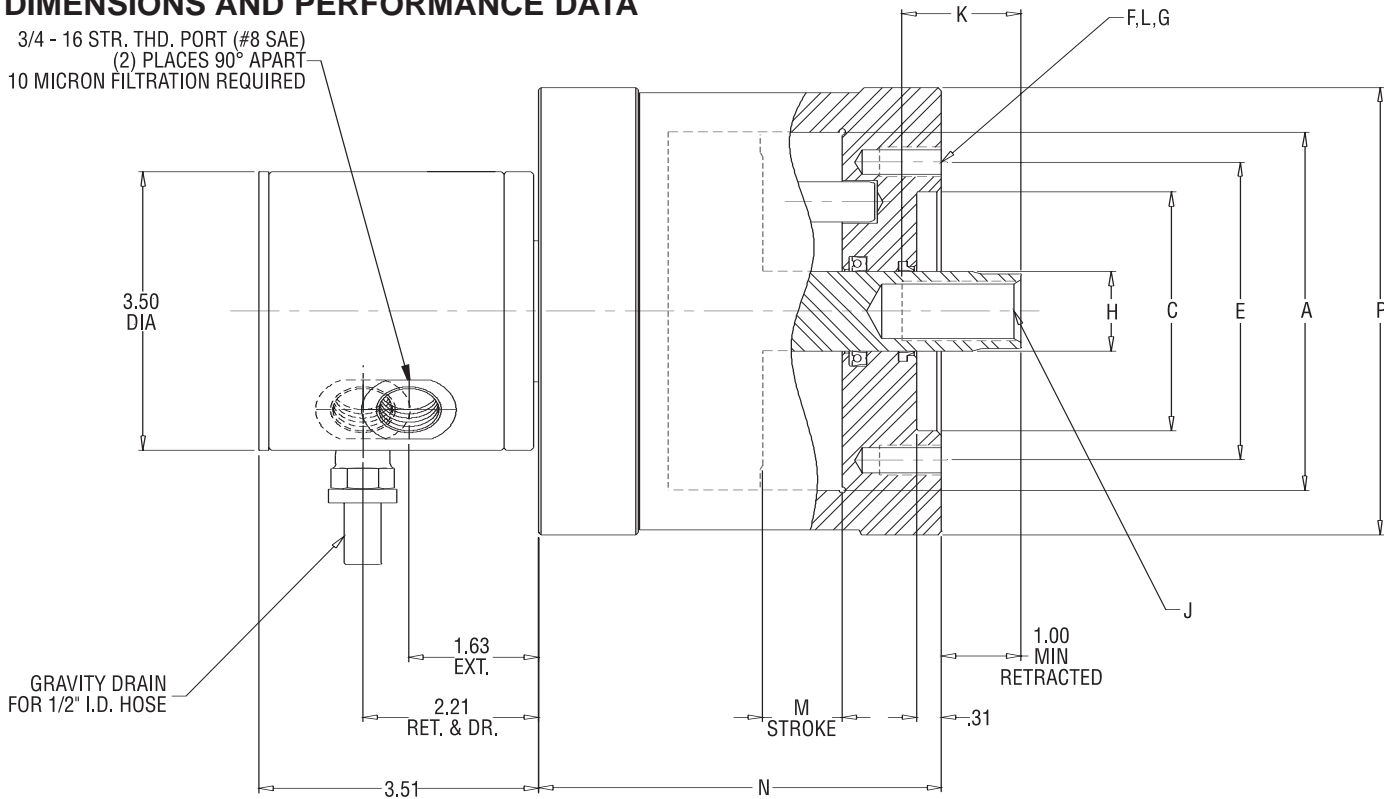
DRAWBAR FORCES HYDRAULIC PRESSURE PSIG

Model	Bore Size	100	250	500	750	1000
HRC030	3.00	565	1,500	3,000	4,505	6,010
HRC045	4.50	1,280	3,420	7,000	10,500	14,100
HRC060	6.00	2,270	6,060	12,400	18,700	25,000
HRC080	8.00	4,180	11,100	22,700	34,400	46,000

Note: Values shown are minimum. Allowances have already been made for losses due to piston rod area, guide pin areas, and friction.

DIMENSIONS AND PERFORMANCE DATA

3/4 - 16 STR. THD. PORT (#8 SAE)
 (2) PLACES 90° APART
 10 MICRON FILTRATION REQUIRED



Model	A Bore	C +.001 - .000	E B.C.	F Thread	G No.	H	J Thread	K Depth	L Depth	M Stroke	N	P
HRC030	3.00	3.000	3.75	.500-13	4	1.00	.75-16	1.63	.88	1.00	5.41	4.50
HRC045	4.50	3.000	3.75	.500-13	4	1.25	.75-16	1.63	.88	1.50	6.12	5.63
HRC060	6.00	4.500	5.50	.500-13	4	1.50	1.00-14	2.00	1.00	2.00	6.75	7.19
HRC080	8.00	4.500	5.50	.500-13	8	1.75	1.25-12	2.25	1.00	2.00	7.00	9.25

Specifications subject to change without notice.



LOGANSPORT PNEUMATIC CYLINDERS



Ideal for horizontal or vertical applications. Eliminates many parts associated with closed center rotary inlets.

Features include:

- Simple Inlet Design
- Constant Air Flow
- Up to 7,000 RPM Capability
- Standard Built in Trapping
- Optional Trip Rod and Thru Port

SPECIFICATIONS AND RATINGS

Bore Sizes: 4-1/2", 6", 8", 10", 12"

Stroke: 4-1.2"..... 1.00"
6" - 12"..... 1.50"
Other stroke lengths available upon request.

Maximum RPM: 4-1/2' Bore.....6,000 RPM
6" Bore.....4,500 RPM
8" Bore.....3,500 RPM
10" Bore.....3,500 RPM
12" Bore.....2,500 RPM

Maximum Operating Pressure: 4-1/2" - 12" Bore.....150 PSI

Standard trapping feature will keep a cylinder in it's extended or retracted state for a period of time in the event of an air power failure.

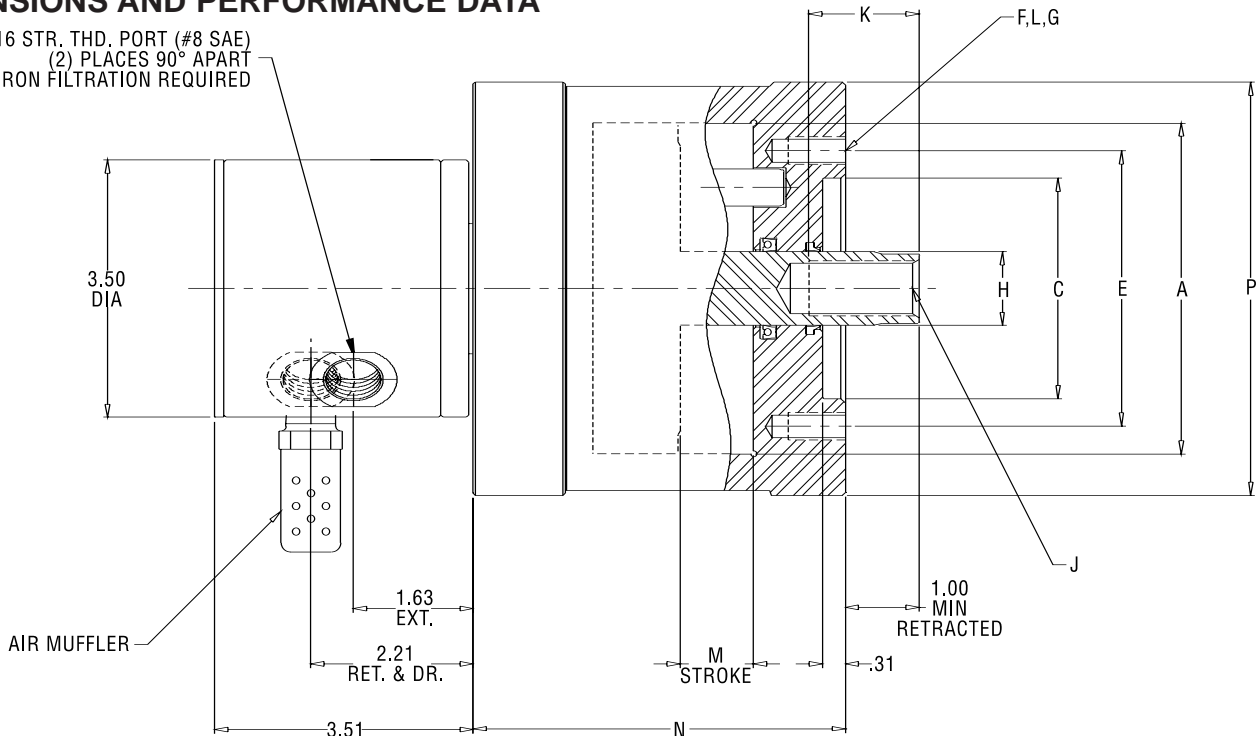
DRAWBAR FORCES AIR PRESSURE PSIG

Model	Bore Size	50	60	70	80	90	100
ARC045	4.50	745	890	1,040	1,190	1,340	1,490
ARC060	6.00	1,040	1,300	1,560	1,820	2,080	2,340
ARC080	8.00	1,920	2,400	2,880	3,360	3,840	4,320
ARC100	10.00	3,000	3,750	4,500	5,250	6,000	6,750
ARC120	12.00	4,400	5,500	6,600	7,700	8,800	9,900

Note: Values shown are minimum. Allowances have already been made for losses due to piston rod area, guide pin areas, and friction.

DIMENSIONS AND PERFORMANCE DATA

3/4 - 16 STR. THD. PORT (#8 SAE)
(2) PLACES 90° APART
10 MICRON FILTRATION REQUIRED



Model	A Bore	C +.001 - .000	E B.C.	F Thread	G No.	H	J Thread	K Depth	L Depth	M Stroke	N	P
ARC045	4.50	3.000	3.75	.375-16	4	1.00	.75-16	1.63	.88	1.00	5.06	5.63
ARC060	6.00	4.500	5.50	.500-13	4	1.25	.75-16	1.63	1.00	1.50	5.50	7.19
ARC080	8.00	4.500	5.50	.500-13	4	1.25	.75-16	1.63	1.00	1.50	5.58	9.12
ARC100	10.00	6.000	7.00	.625-11	6	1.50	1.000-14	1.63	1.13	1.50	6.13	11.38
ARC120	12.00	6.000	7.00*	.625-11	6	1.50	1.000-14	1.63	1.13	1.50	6.25	13.62

Specifications subject to change without notice. *12" Bore - 6 additional holes on a 9.50 B.C.



THRU-HOLE HYDRAULIC CYLINDERS



Designed for use on imported and domestic turning centers. This shorter and lighter design provides for higher operating pressure with a smaller unit.

Features include:

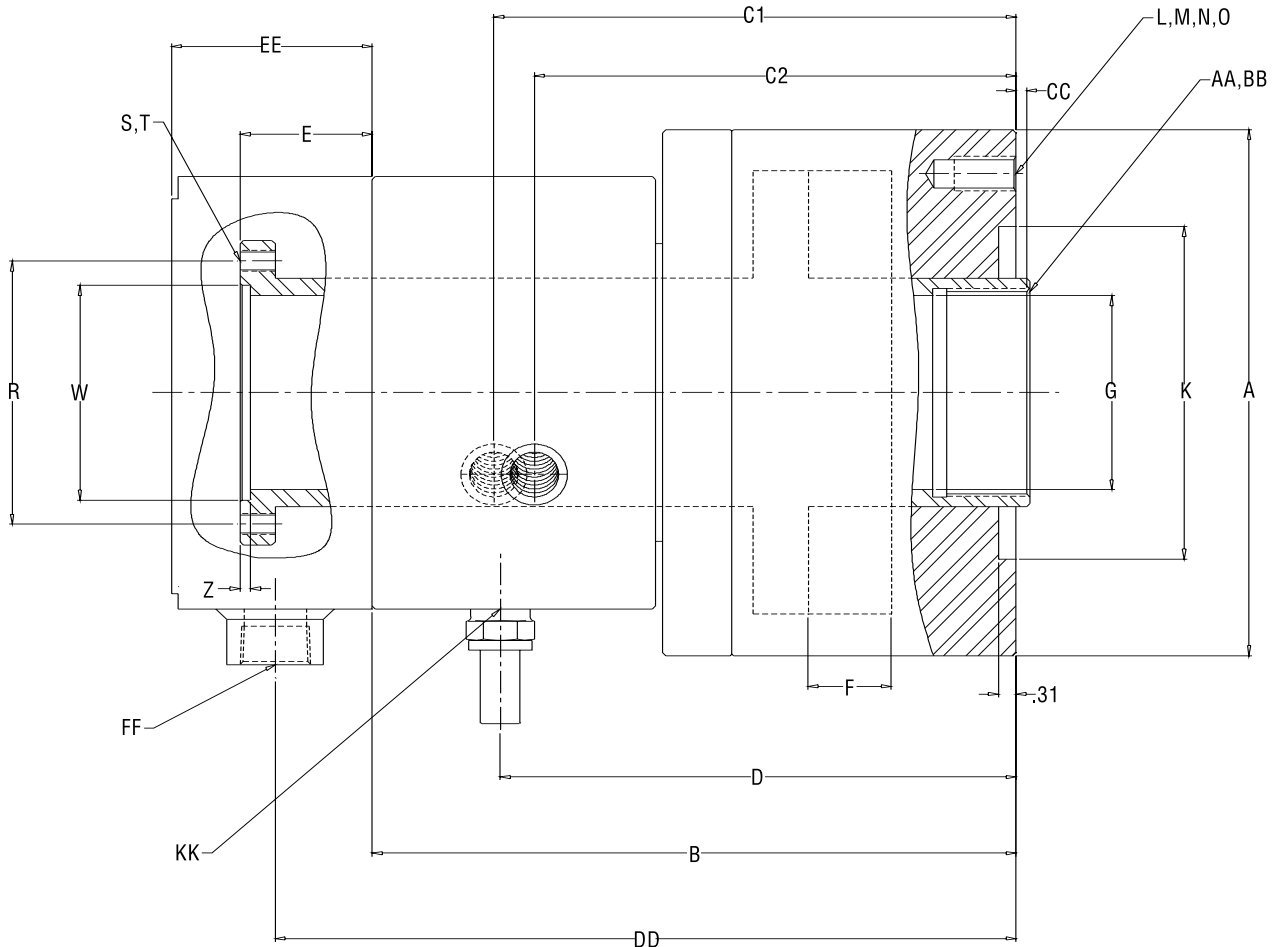
- Internal Check Valves
- Dynamic Balancing
- Coolant Collectors
- Rear Flange-Mtd Drawtubes
- Drain Ports
- Coolant Seals
- Optional Position Sensing

DRAWBAR FORCES						
HYDRAULIC PRESSURE PSIG						
Model	Bore Size	100	250	500	750	1000
THC080	9.5	3,600	9,000	18,000	*	NA
THC100	11.68	4,170	10,425	20,850	31,275	NA
THC110	12.38	4,270	10,624	21,250	**	NA
THC150	17.00	8,750	22,000	43,800	NA	NA

Note: * Maximum pressure = 650 psi, hence pull = 23,400 lbs maximum
 **Maximum pressure = 600 psi, hence pull = 28,980 lbs maximum
 Specifications subject to change without notice.

	THC080	THC100	THC110	THC150
A	9.50	11.68	12.38	17.00
B	11.62	12.97	13.37	13.30
C1 Ret. Port	8.69	8.87	8.87	8.87
C2 Ext. Port	9.42	9.62	9.62	9.62
D	9.31	7.85	7.80	7.78
E Retracted	2.38	2.66	3.00	2.01
F Stroke	1.50	1.50	1.50	1.00
G	3.50	5.25	6.38	9.00
K +/- .0005	6.00	7.50	8.375	11.50
L Bolt Circle	7.00	8.50	9.50	13.62
M Thread	5/8-11	5/8-11	5/8-11	5/8-11
N No. of holes	8	8	8	10
O Depth	1.12	1.50	1.50	1.38
R Bolt Circle	4.750	6.937	7.750	10.500
S	3/8-16	1/2-13	1/2-13	1/2-13
T No. of holes	8	6	6	8
W +/- .0005	3.876	6.125	7.000	9.250
Z	.18	.31	.31	.31
AA	3 3/4-12	NA	6 5/8-12	9 5/8-12
BB	1.75	NA	2.68	1.75
CC Retracted	.25	-2.59	-2.59	-2.56
DD	13.37	14.28	14.70	14.62
EE	3.88	5.43	5.43	5.43
FF	1-11 1/2NPT	1 7/8-12	1 7/8-12	1 7/8-12
KK Drain port	3/4-14NPT	1 7/8-12	1 7/8-12	2 1/2-12
Max RPM	4,000	3,000	2,500	1,600
Piston area Ret.	36.0 in ²	41.77 in ²	47.2 in ²	97.3 in ²

DIMENSIONS AND PERFORMANCE DATA





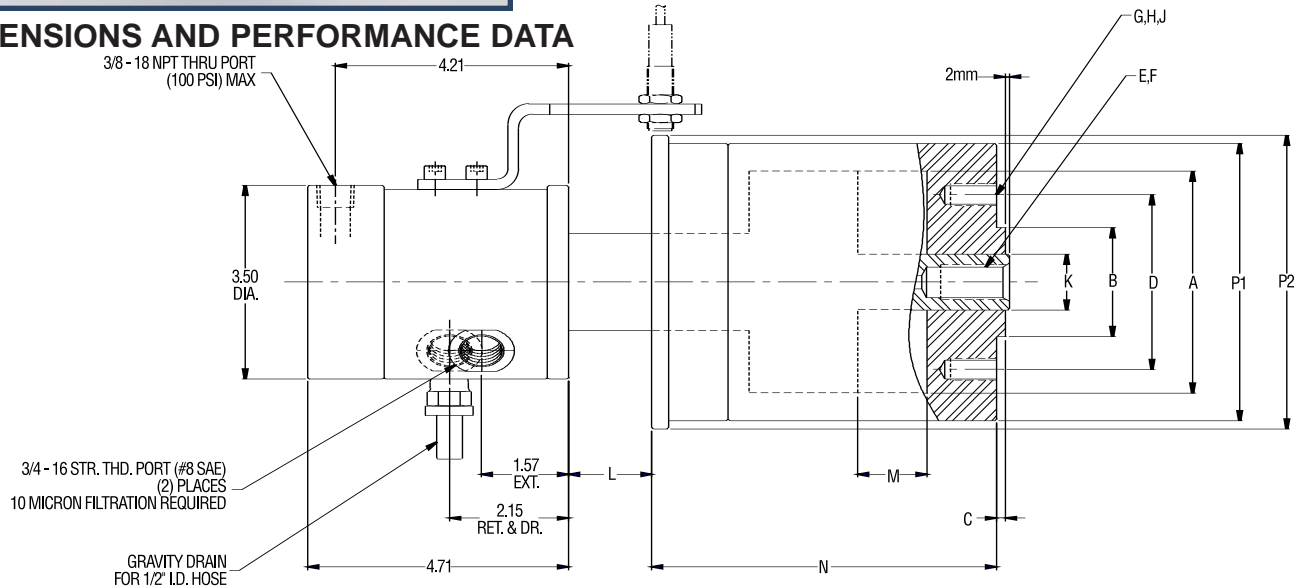
RECIPROCATING CYLINDERS



ITW's reciprocating cylinder is designed for applications when stroke and cylinder mounting clearances are restricted. The compact inlet/switch bracket assembly moves with the stroke of the piston. This feature eliminates the need for extra space taken up by traditional solid center cylinders with trip rods and rotating unions. Other features include:

- Third port for air or coolant through the piston rod
- Male pilot mount
- Safety trapping
- Direct metric replacement for SMW Autoblok. Capable of replacing Rohm original equipment cylinders.

DIMENSIONS AND PERFORMANCE DATA



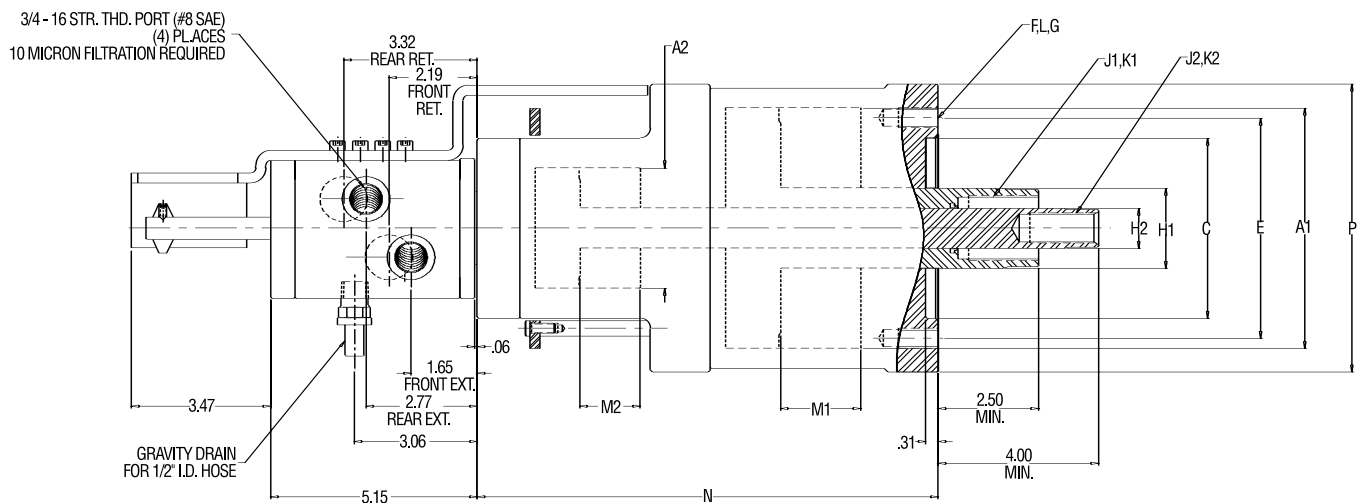
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P1	P2
	Bore			B.C.	Thread	Depth	No.	Thread	Depth			Stroke			
REC040	4.00	50mm	4mm	80mm	M16	30mm	3	M10	20mm	1.00	1.50	1.26	6.22	5.00	5.30
REC050	5.00	80mm	5mm	105mm	M24	35mm	4	M12	25mm	1.50	1.75	1.57	6.80	6.38	6.75

Specifications subject to change without notice.



DUPLEX CYLINDERS

DIMENSIONS AND PERFORMANCE DATA



Model	A1	A2	C	E	F	G	H1	H2	J1	J2	K1	K2	L	M1	M2	N	P
	Bore	Bore +.001/- .000	B.C.	Thread	No.	No.	Thread	Thread	Thread	Thread	Depth	Depth	Depth	Stroke	Stroke		
DPC060	6.00	3.00	4.50	5.50	1/2-13	4	2.00	1.00	1 5/8-12	3/4-16	1.75	1.75	1.00	2.00	1.50	11.50	7.19

Specifications subject to change without notice.



SP HYDRAULIC CYLINDERS



Ideal for horizontal, vertical, or inverted applications. Eliminates many parts associated with closed center rotary inlets.

Features include:

- Simple Inlet Design
- Constant Hydraulic Flow
- 1000 PSI Pressure Standard
- Up to 7,000 RPM Capability
- Standard Built in Trapping
- Optional Trip Rod and Thru Port

SPECIFICATIONS AND RATINGS

Bore Sizes: 3", 4-1/2", 6", 8"

Stroke:
 3" Bore..... 1.00"
 4-1/2" Bore..... 1.50"
 6" - 8"..... 2.00"
 Other stroke lengths available upon request.

Maximum RPM:
 3" Bore.....6,000 RPM
 4.5" Bore.....6,000 RPM
 6" Bore.....4,500 RPM
 8" Bore.....3,500 RPM

Maximum Operating Pressure: 3" - 8" Bore.....1,000 PSI

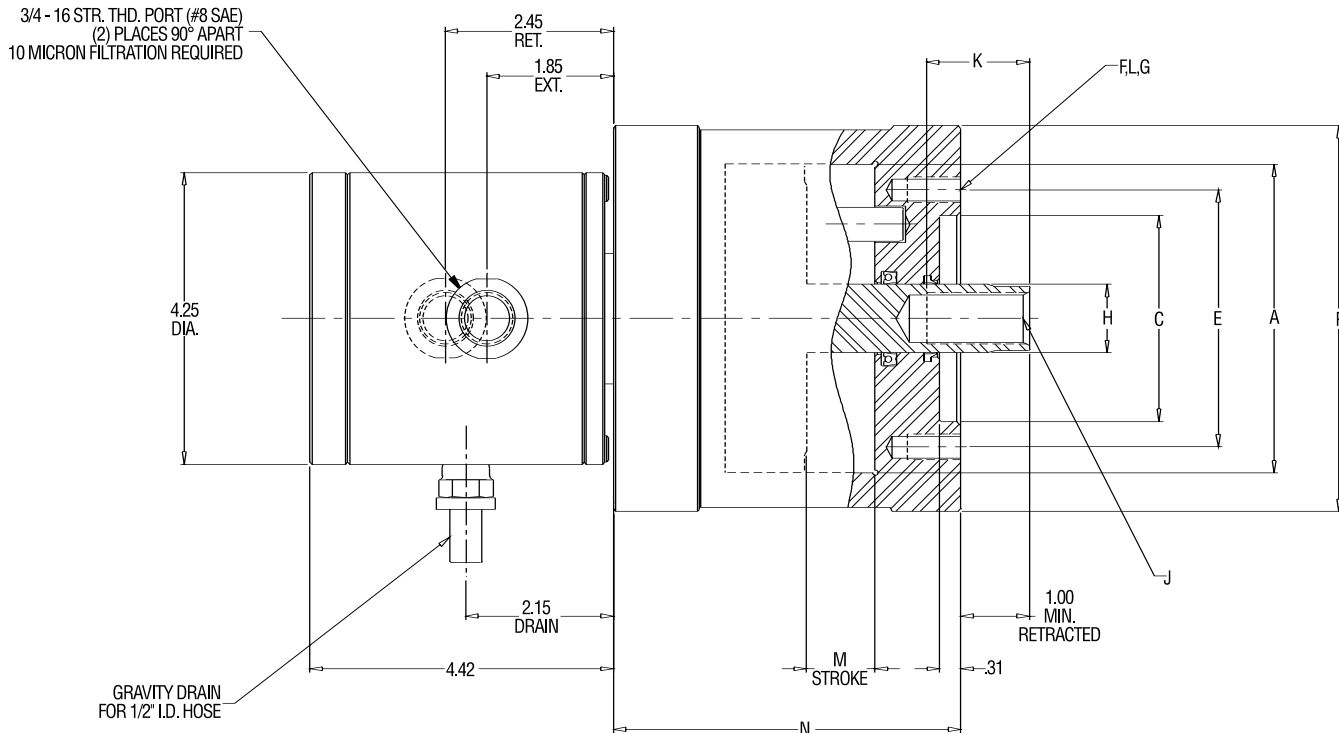
Standard trapping feature will keep a cylinder in it's extended or retracted state for a period of time in the event of a hydraulic power failure.

DRAWBAR FORCES HYDRAULIC PRESSURE PSIG

Model	Bore Size	100	250	500	750	1000
URPC030	3.00	610	1,530	3,070	4,620	6,160
URPC045	4.50	1,280	3,420	7,000	10,500	14,100
URPC060	6.00	2,270	6,060	12,400	18,700	25,000
URPC080	8.00	4,180	11,100	22,700	34,400	46,000

Note: Values shown are minimum. Allowances have already been made for losses due to piston rod area, guide pin areas, and friction.

DIMENSIONS AND PERFORMANCE DATA



Model	A Bore	C +.001 - .000	E B.C.	F Thread	G No.	H	J Thread	K Depth	L Depth	M Stroke	N	P
URPC030	3.00	3.000	3.75	.500-13	4	1.00	.750-16	1.75	.88	1.00	5.98	4.50
URPC045	4.50	3.000	3.75	.500-13	4	1.25	.875-16	1.75	1.00	1.50	6.63	5.63
URPC060	6.00	4.500	5.50	.500-13	8	1.75	1.250-14	2.00	1.00	2.00	7.50	7.00
URPC080	8.00	4.500	5.50	.625-11	8	2.00	1.500-12	2.25	1.00	2.00	8.00	9.25

Specifications subject to change without notice.



SP PNEUMATIC CYLINDERS



Ideal for horizontal or vertical applications. Eliminates many parts associated with closed center rotary inlets.

Features include:

- Simple Inlet Design
- Constant Air Flow
- Up to 7,000 RPM Capability
- Standard Built in Trapping
- Optional Trip Rod and Thru Port

SPECIFICATIONS AND RATINGS

Bore Sizes: 4-1/2", 6", 8", 10", 12"

Stroke: 4-1/2"..... 1.00"
 6"..... 1.50"
 8" - 12"..... 2.00"
 Other stroke lengths available upon request.

Maximum RPM: 4-1/2" Bore.....6,000 RPM
 6" Bore.....4,500 RPM
 8" Bore.....3,500 RPM
 10" Bore.....3,500 RPM
 12" Bore.....2,500 RPM

Maximum Operating Pressure: 4-1/2" - 12" Bore.....150 PSI

Standard trapping feature will keep a cylinder in it's extended or retracted state for a period of time in the event of an air power failure.

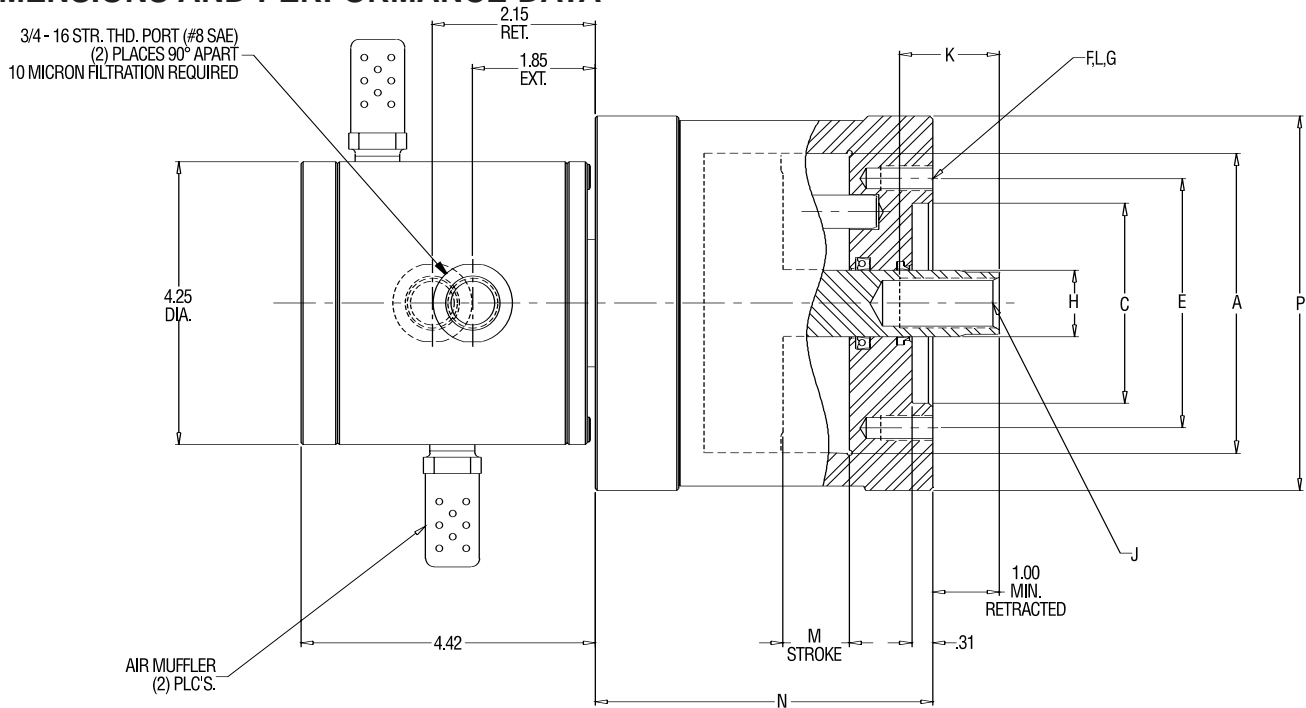
DRAWBAR FORCES

AIR PRESSURE PSIG

Model	Bore Size	50	60	70	80	90	100
UR2M045	4.50	745	890	1,040	1,190	1,340	1,490
UR2M060	6.00	1,040	1,300	1,560	1,820	2,080	2,340
UR2M080	8.00	1,920	2,400	2,880	3,360	3,840	4,320
UR2M100	10.00	3,000	3,750	4,500	5,250	6,000	6,750
UR2M120	12.00	4,400	5,500	6,600	7,700	8,800	9,900

Note: Values shown are minimum. Allowances have already been made for losses due to piston rod area, guide pin areas, and friction.

DIMENSIONS AND PERFORMANCE DATA



Model	A Bore	C +.001 - .000	E B.C.	F Thread	G No.	H	J Thread	K Depth	L Depth	M Stroke	N	P
UR2M045	4.50	3.000	3.75	.375-16	4	1.00	.75-16	1.63	.88	1.00	6.63	5.63
UR2M060	6.00	4.500	5.50	.500-13	4	1.25	.75-16	1.63	1.00	1.50	6.75	7.19
UR2M080	8.00	4.500	5.50	.500-13	4	1.25	.75-16	1.63	1.00	2.00	7.25	9.25
UR2M100	10.00	6.000	7.00	.625-11	6	1.50	1.000-14	1.63	1.13	2.00	7.50	11.38
UR2M120	12.00	6.000	7.00*	.625-11	6	1.50	1.000-14	1.63	1.13	2.00	7.50	13.62

Specifications subject to change without notice. *12" Bore - 6 additional holes on a 9.50 B.C.



SPECIAL APPLICATIONS

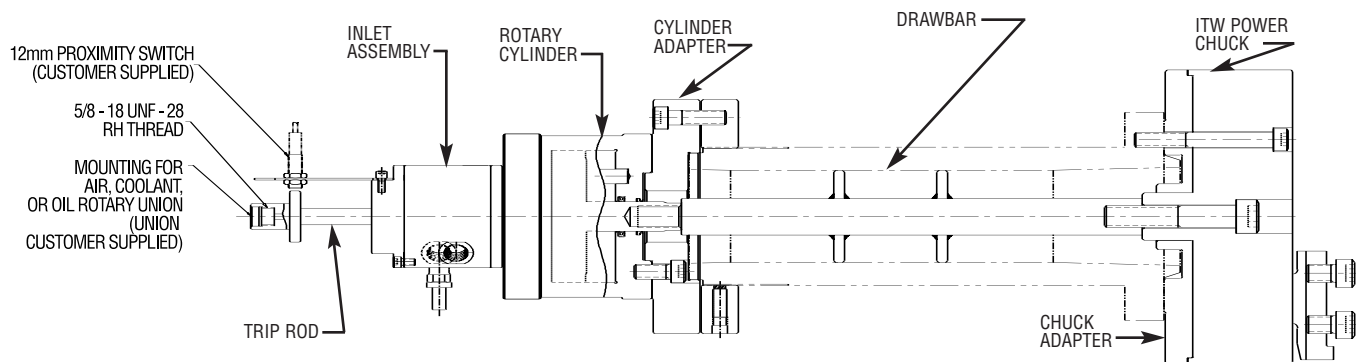
ITW Workholding designs and builds rotating cylinders for many special applications. By incorporating non-standard features into the **SP Manufacturing** and **Logansport Rotating Cylinder** brand models, our engineers will custom design specific performance characteristics that few manufacturers can match. Below are examples of special cylinders supplied to various industries:



Rotating cylinders were designed with special porting and cylinder sizes aimed at providing faster actuation during part clamp and unclamp. Special single and duplex cylinders were specified for auto and truck aluminum wheel machining plants located throughout the U.S. and Mexico. The need to reduce cycle times, in an industry at maximum machine capacity, drove this design.

This new cylinder design is a direct replacement for Rohm cylinders on foreign machine tools with laser stroke sensing. The reciprocating inlet design will accommodate the OEM sensor with a special mounting block. This cylinder is available in 3.25" and 5" piston bore sizes, aggressively priced, and ready for shipment to the machine tool market today.

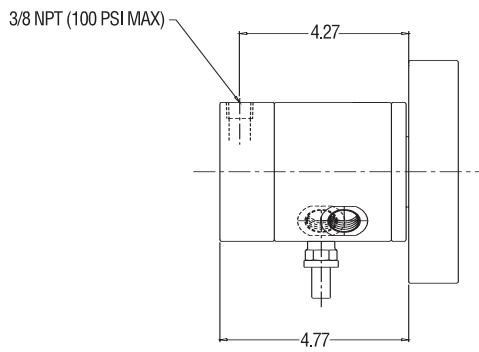
ACCESSORIES



ITW Workholding supplies the complete chuck and actuation package to fit your CNC lathe or turning center. Our engineers will design and specify the power chuck, drawbar, and adapters needed to integrate with your machine spindle and processing requirements.

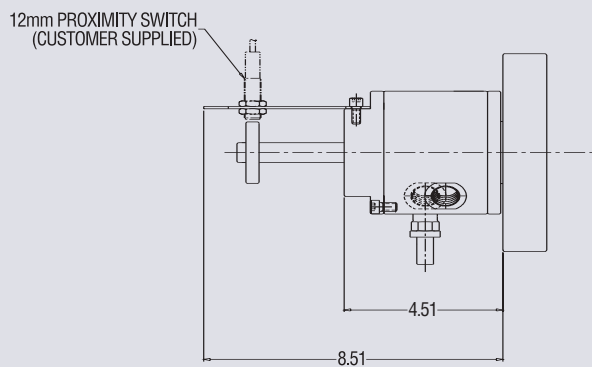


THIRD PORT FOR AIR OR COOLANT THRU



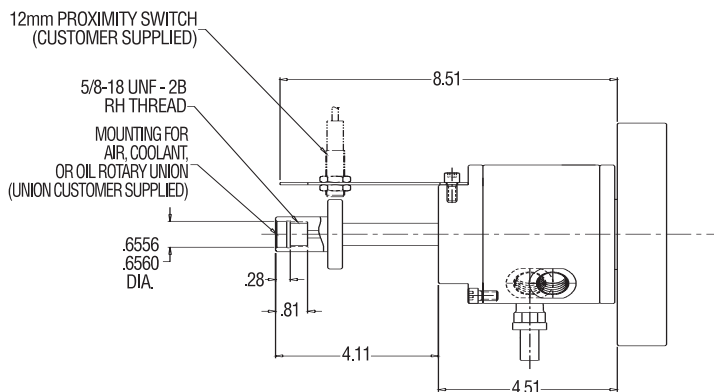
- Thru-hole for air, coolant, or oil passage

SOLID TRIP ROD



- Sense cylinder position
- Adjustable proximity switch holders

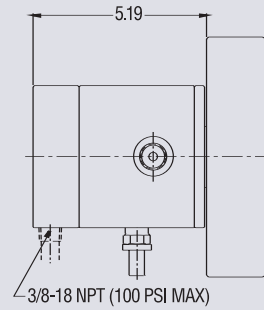
THRU HOLE TRIP ROD FOR AIR OR COOLANT THRU



- Sense cylinder position
- Adjustable proximity switch holders

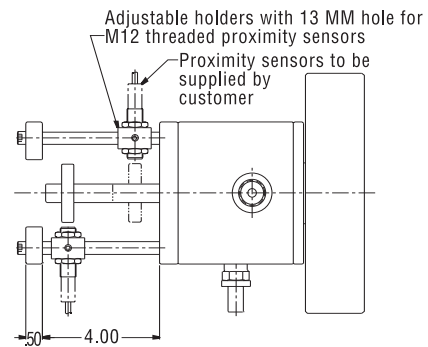


THIRD PORT FOR AIR OR COOLANT THRU



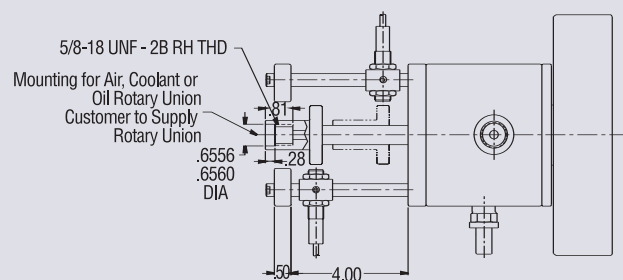
- Thru-hole for air, coolant, or oil passage

SOLID TRIP ROD



- Sense cylinder position
- Adjustable proximity switch holders

THRU HOLE TRIP ROD FOR AIR OR COOLANT THRU



- Sense cylinder position
- Adjustable proximity switch holders



LOGANSPORT REFERENCE GUIDE

Previous Model	Current Model	Type	Description
801/802	HRC	HYDRAULIC	SOLID CENTER
3045/3046	ARC	PNEUMATIC	SOLID CENTER
851/852	THC	HYDRAULIC	THRU-HOLE
NEW MODEL	REC	HYDRAULIC	RECIPROCATING INLET
NEW MODEL	DPC	HYDRAULIC	DUAL PISTON

Logansport models 3045 & 801 are available on a limited basis. *Drawtube may need modifications.

HRC (Hydraulic Rotating Cylinder)

Item Number	Piston	Stroke	Options
HRC030	3.0"	1.0"	
HRC045	4.5"	1.5"	
HRC060	6.0"	2.0"	
HRC080	8.0"	2.0"	
HRC030T	3.0"	1.0"	●
HRC045T	4.5"	1.5"	●
HRC060T	6.0"	2.0"	●
HRC080T	8.0"	2.0"	●
HRC030TP	3.0"	1.0"	■
HRC045TP	4.5"	1.5"	■
HRC060TP	6.0"	2.0"	■
HRC080TP	8.0"	2.0"	■
HRC030TS	3.0"	1.0"	▲
HRC045TS	4.5"	1.5"	▲
HRC060TS	6.0"	2.0"	▲
HRC080TS	8.0"	2.0"	▲
HRC030TH	3.0"	1.0"	◆
HRC045TH	4.5"	1.5"	◆
HRC060TH	6.0"	2.0"	◆
HRC080TH	8.0"	2.0"	◆
HRC030THVP	3.0"	1.0"	★
HRC045THVP	4.5"	1.5"	★
HRC060THVP	6.0"	2.0"	★
HRC080THVP	8.0"	2.0"	★

ARC (Air Rotating Cylinder)

Item Number	Piston	Stroke	Options
ARC045	4.5"	1.0"	
ARC060	6.0"	1.5"	
ARC080	8.0"	1.5"	
ARC100	10.0"	1.5"	
ARC120	12.0"	1.5"	
ARC045T	4.5"	1.0"	●
ARC060T	6.0"	1.5"	●
ARC080T	8.0"	1.5"	●
ARC100T	10.0"	1.5"	●
ARC120T	12.0"	1.5"	●
ARC045TP	4.5"	1.0"	■
ARC060TP	6.0"	1.5"	■
ARC080TP	8.0"	1.5"	■
ARC100TP	10.0"	1.5"	■
ARC120TP	12.0"	1.5"	■
ARC045TS	4.5"	1.0"	▲
ARC060TS	6.0"	1.5"	▲
ARC080TS	8.0"	1.5"	▲
ARC100TS	10.0"	1.5"	▲
ARC120TS	12.0"	1.5"	▲
ARC045TH	4.5"	1.0"	◆
ARC060TH	6.0"	1.5"	◆
ARC080TH	8.0"	1.5"	◆
ARC100TH	10.0"	1.5"	◆
ARC120TH	12.0"	1.5"	◆

HRC (Hydraulic Rotating Cylinder)

Item Number	Hole Thru	Stroke
THC080	3.5"	1.5"
THC100	5.25"	1.5"
THC110	6.375"	1.5"
THC150	9.0"	1.0"

REC (Reciprocating Inlet Cylinder)

Item Number	Piston	Stroke
REC040	4.0"	1.26"
REC050	5.0"	1.57"

DPC (Dual Piston Cylinder "Duplex")

Item Number	Large Piston x Stroke	Small Piston x Stroke
DPC060	6.0" x 2.0"	3.0" x 1.5"

Key

- Trapping
- Trapping, 3rd Port Inlet Assembly
- ▲ Trapping, Solid (plugged) tailrod, Switch bracket
- ◆ Trapping, Hollow tailrod, Switch bracket
- ★ Trapping, Hollow tailrod, Switch bracket, Variable Pressure control

SP REFERENCE GUIDE



Previous Model	Current Model	Type	Description
R2C/RPC	URPC	HYDRAULIC	SOLID CENTER
RM/R2M	UR2M	PNEUMATIC	SOLID CENTER

SP Cylinders not limited to standard model types.

URPC (Hydraulic Rotating Cylinder)

Item Number	Piston	Stroke	Options
URPC030	3.0"	1.0"	
URPC045	4.5"	1.5"	
URPC060	6.0"	2.0"	
URPC080	8.0"	2.0"	
URPC030T	3.0"	1.0"	●
URPC045T	4.5"	1.5"	●
URPC060T	6.0"	2.0"	●
URPC080T	8.0"	2.0"	●
URPC030TP	3.0"	1.0"	■
URPC045TP	4.5"	1.5"	■
URPC060TP	6.0"	2.0"	■
URPC080TP	8.0"	2.0"	■
URPC030TS	3.0"	1.0"	▲
URPC045TS	4.5"	1.5"	▲
URPC060TS	6.0"	2.0"	▲
URPC080TS	8.0"	2.0"	▲
URPC030TH	3.0"	1.0"	◆
URPC045TH	4.5"	1.5"	◆
URPC060TH	6.0"	2.0"	◆
URPC080TH	8.0"	2.0"	◆
URPC030THVP	3.0"	1.0"	★
URPC045THVP	4.5"	1.5"	★
URPC060THVP	6.0"	2.0"	★
URPC080THVP	8.0"	2.0"	★

UR2M (Air Rotating Cylinder)

Item Number	Piston	Stroke	Options
UR2M045	4.5"	1.0"	
UR2M060	6.0"	1.5"	
UR2M080	8.0"	2"	
UR2M100	10.0"	2"	
UR2M120	12.0"	2"	
UR2M045T	4.5"	1.0"	●
UR2M060T	6.0"	1.5"	●
UR2M080T	8.0"	2"	●
UR2M100T	10.0"	2"	●
UR2M120T	12.0"	2"	●
UR2M045TP	4.5"	1.0"	■
UR2M060TP	6.0"	1.5"	■
UR2M080TP	8.0"	2"	■
UR2M100TP	10.0"	2"	■
UR2M120TP	12.0"	2"	■
UR2M045TS	4.5"	1.0"	▲
UR2M060TS	6.0"	1.5"	▲
UR2M080TS	8.0"	2"	▲
UR2M100TS	10.0"	2"	▲
UR2M120TS	12.0"	2"	▲
UR2M045TH	4.5"	1.0"	◆
UR2M060TH	6.0"	1.5"	◆
UR2M080TH	8.0"	2"	◆
UR2M100TH	10.0"	2"	◆
UR2M120TH	12.0"	2"	◆

Quick Reference Size Chart

Hydraulic			Pneumatic			
Size (in)	Stroke (in)	Max Drawbar Force (lbs.)	Size (in)	Stroke (in)		Max Drawbar Force (lbs.)
				Logan	SP	
3.0	1.0	6,100	4.5	1.0	1.0	1,490
4.5	1.5	14,100	6.0	1.5	1.5	2,340
6.0	2.0	25,000	8.0	1.5	2.0	4,320
8.0	2.0	46,000	10.0	1.5	2.0	6,750
			12.0	1.5	2.0	9,900

*See specific information on pages 2, 3, 6 and 7

Pressure Conversions

Bars to Psi: $\text{Psi} = (14.5) * (\# \text{ Bars})$

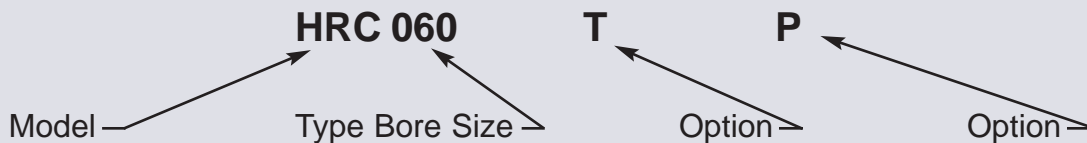
Kg/cm² to Psi: $\text{Psi} = (14.22) * (\# \text{ Kg/cm}^2)$

STANDARD CYLINDER ASSEMBLIES

Refer to the Brands & Models section on page 10 & 11 when specifying standard rotating cylinders for order. Use the following simple steps when placing an order with our customer service staff:

- Specify quantity.
- Specify item number, (see example below).
- Price and delivery date per our customer service staff. Phone (248) 541-7500 for assistance.
- Fax, mail, or e-mail order to receive confirmation. Fax (248) 541-1733.

Item numbers are identified in the following manner



HRC060TP: “HRC” = hydraulic rotating cylinder, “060” = bore size (6”), “T” = Trapping, “P” = Third port

SPECIAL CYLINDER ASSEMBLIES

New item number designations are handled on an individual basis. Reorders are routinely placed by referencing the serial or part number stamped on the outside of the cylinder housing.

REPLACEMENT PARTS

ITW inventories seal kits and “wear” parts. Reference the serial number when placing an order for spare parts and seal kits.

WARRANTY AND SERVICE

ITW Workholding warrants both SP and Logansport cylinder assemblies for a period of one (1) year from date of shipment against defects in workmanship and material. Should service be required in the Customer’s plant after this period, our charges are based at our standard per diem rate plus expenses. This warranty does not cover abuse, normal wear, or flex breakage. There is no other warranty of any kind expressed or implied, with regard to such cylinder products, whether as to merchantability, fitness for a particular purpose, or any other matter.

CYLINDER REBUILD AND REPAIR

Our service department can rebuild and warrant used cylinders to like new condition for less than the cost of new. Ask our customer service staff for more information about our “in house” assessment and repair program.



Item # HRC045TH



Item # ARC060TP



ITW Manufacturing Facility — Traverse City, Michigan

In 1995 ITW Workholding was formed by combining N.A. Woodworth, SP Manufacturing and Sheffer Collet Company. With the addition of Logansport Cylinder in 1998, ITW Workholding has become the leading manufacturer of specialized and standard chucks, collets, rotating cylinders and workholding accessories.

This merging of respective talent, skills, and expertise provides the resources to create truly unique solutions for the entire spectrum of workholding applications.

Today, with our total commitment towards quality, customer service and technical innovation, ITW Workholding delivers the most comprehensive line-up of workholding product to the world market making us truly Workholding-Worldwide.

ITW Workholding Group

WORKHOLDING WORLDWIDE



WORKHOLDING WORLDWIDE LOCATIONS

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