

# Premair Round Compact

## Premair Series Round Compact, Interchangeable Cylinders

### Superior Interchangeable Industrial Air Cylinders

Big Value in a Compact Package— Stainless steel tie bolts and aluminum spacers lock precision machined heads tightly around a heavy walled, aluminum alloy cylinder barrel. The barrel's extremely smooth, self-lubricating interior surface insures highly reliable performance and extended seal life.



### Features

- 6 bore sizes 1-1/8" thru 4" Strokes to 4" standard bore
- Available in 4 styles:
  - Double acting, single end rod (Model SCC)
  - Double acting, double end rod (Model SCD)
  - Single acting, spring retract rod (Model SCS)
  - Reverse acting, spring extend rod (Model SCR)
- Superior Piston Rod Bushing:
  - Captive in cylinder head
  - Self lubricating
  - Higher load bearing capacity
  - Lower coefficient of friction
- Aluminum Alloy Barrel
  - Extremely smooth interior
  - Lighter weight
- Hard chrome plated stain-less steel piston rod
- Captive Rod Seal in precision machined groove
  - Internally lubricated (Buna-N O'Ring)
- Buna-N O'Ring tube seals
- Magnalube®G lubrication
- Aluminum alloy spacers (clear anodized) enclose stainless steel tie bolts
- Aluminum alloy heads (clear anodized)
- Internally lubricated Carboxylated Nitrile O'Ring or optional U-Cup seals
- Thick cover prevents impact damage
- High strength threaded fastener and adhesive mates piston to rod

### Ratings

Body	Aluminum Alloy
Heads	Clear anodized aluminum alloy
Tie Bolts	Stainless steel
Rod	Chrome plated stainless steel
Piston	Aluminum alloy
Rod end	Female thread with wrench flats
Ports	Position #1
Seals	Internally lubricated Nitrile
Lubrication	Magnalube®-G
Rod bushing	High density iron
Stroke tolerance	± 1/64"
Media	Air
Max. pressure rating,	250 psi
Min. recommended operating pressure	15 psi
Temp. rating cylinder	-25° to +225°F (-32° to +121°C)
Temp. rating electronic sensors	-5° to +175°F (-20° to +80°C)

### Cylinder Sizing Guide

Bore Dia.	1-1/8"	1-1/2"	2"	2-1/2"	3"	4"
Rod Dia.	0.50"	0.63"	0.75"	0.75"	0.88"	1.00"
Rod Area	0.19"	0.31"	0.44"	0.44"	0.60"	0.79"
Push Area Single Rod	0.88"	1.76"	3.14"	4.91"	7.07"	12.57"
Push Area Double Rod	0.69"	1.45"	2.66"	4.47"	6.47"	11.78"
Pull Area	0.69"	1.45"	2.66"	4.47"	6.47"	11.78"

### Spring Forces

Bore (in.)	Max. Force	Spring Rate (lbs/in.) for stroke range			
		0.12" - 1"	1.001" - 2"	2.001" - 3"	3.001" - 4"
1-1/8 (11)	11.50	6.00	2.50	1.76	1.25
1-1/2 (15)	13.00	5.50	2.25	1.60	1.13
2 (20)	13.00	5.50	2.25	1.60	1.13
2-1/2 (25)	25.00	6.50	2.75	1.93	1.38
3 (30)	25.00	6.50	2.75	1.93	1.38
4 (40)	25.00	6.50	2.75	1.93	1.38

**Ordering** Include dashes. Dashes are significant.

Position	1	2	3		4	5	6	7	8		9
Example:	SC	X	XX	-	X	X	X	X	X	-	XXX

Position 1 Series	Position 2 Type	Position 3 Bore Size	Position 4 Mounting Options	Position 5 Bumper/Seal Option
SC - Select, Compact	C - Double Acting, Single Rod End D - Double Acting, Double Rod End S - Double Acting R - Reverse Acting	11 - 1- 1/8" 15 - 1-1/2" 20 - 2" 25 - 2-1/2" 30 - 3" 40 - 4"	C - Pivot Mount D - Pivot Mount 90 From Standard E - Trunnion Mount, Both Ends (See Note #5) M - Trunnion Mount, Front (See Note #5) P - Trunnion Mount, Rear (See Note #5) G - Threaded Mounting Holes, Both Ends F - Threaded Mounting Holes, Front H - Threaded Mounting Holes, Rear J - Screw Clearance Holes, Both Ends K - Screw Clearance Holes, Front L - Screw Clearance Holes, Rear N - Nose Mount For SCC, SCR & SCS Only (See Note #6) X - Standard Counterbored Mounting holesBumper/	B - Bumpers, Both Ends (SCC & SCD Models Only) F - Bumpers, Front Only (SCR Models Only) R - Bumpers, Rear Only (SCR Models Only) L - Low Friction Seals M - Low Friction & Low Temperature Seals N - Low Friction & Viton Seals Q - Low Temperature Operation (-40 F to 200 F) V - Viton Seals For Media Compatibility W - Rod Wiper, Buna-N Only X - No Additional Options Required

Position 6 Thread Rod Options	Position 7 Magnet/Sensor Options	Position 8 Head/Port Options
D - Coarse Female Thread, Dimension "E" E - Male Rod End With Coarse Threads H - Hollow Rod, (SCD) Models Only M - Male Rod End, Fine, Thread N - Non-Threaded Rod W - 1/4" Extra Rod Extension Y - 1/2" Extra Rod Extension Z - 1" Extra Rod Extension X - No Additional Options Required	E - Magnetic Piston Only (See Note #7) X - No Additional Options Required	H - Heavy Duty Rear Head J - Fail Safe Operation (SCS Models Only) (See Note #5) P - Front Port Position #2 R - Front Port Position #3 S - Front Port Position #4 X - No Additional Options Required

Position 9 Stroke Length		
Tens	Ones	Fraction Inches
0	0 - 9	0 = None
0		1 = 1/8"
		2 = 1/4"
		3 = 3/8"
		4 = 1/2"
		5 = 5/8"
		6 = 3/4"
		7 = 7/8"

NOTES:  
6) Includes heavy duty rear head (H) and rod wiper (W)  
7) 3/8" stroke minimum. Not available with Viton seals or low temperature seals

# Premair Round Compact

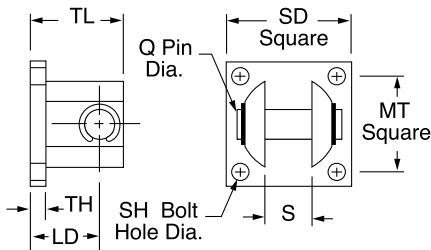
## Accessories

Selection Guide	
Accessory	Standard Series
Clevis Bracket	✓
Trunnion Bracket	✓
Rod Pivot	✓

### Clevis Bracket

Anodized aluminum alloy  
Chrome plated steel pin included

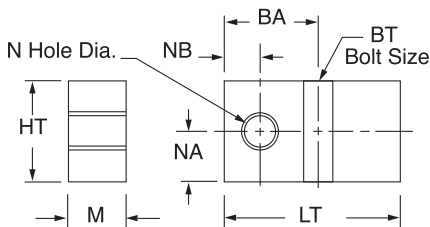
The bracket is intended for mounting with either a rod pivot or pivot mount; it is not intended to mount directly with the rear cylinder head.



Dimensions (inches)									
Kit No.	Bore	LD	MT	Q	S	SH	SD	TH	TL
<b>SCABC-1</b>	1-1/8 (11)	0.56	0.75	1.87	0.39	#6	1.00	0.16	0.78
	1-1/2 (15)								
<b>SCABC-2</b>	2 (20)	0.94	1.38	0.375	0.75	#10	1.75	0.22	1.34
	2-1/2 (25)								
<b>SCABC-3</b>	3 (30)	1.25	2.00	0.625	1.00	0.25	2.50	0.25	1.81
	4 (40)								

### Trunnion Bracket (pair)

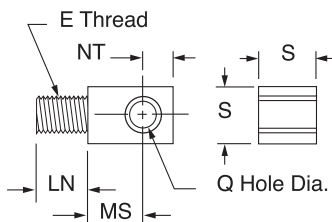
Anodized aluminum alloy complete with bronze pivot bushings.



Dimensions (inches)									
Kit No.	Bore	BA	BT	HT	LT	M	ND	NA	NB
<b>SCABT-2</b>	1-1/8 (11)								
	1-1/2 (15)	0.81	1/4	0.88	1.50	0.50	0.251	0.38	0.31
	2 (20)								
<b>SCABT-3</b>	2-1/2 (25)	0.94	5/16	1.00	1.63	0.63	0.313	0.45	0.38
	3 (30)								
<b>SCABT-4</b>	4 (40)	1.06	3/8	1.25	1.88	0.75	0.376	0.55	0.44

### Rod Pivot

Steel with bronze pivot bushing and nut

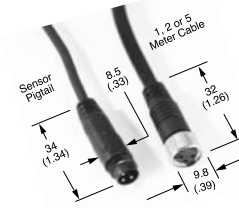
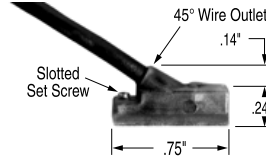


Dimensions (inches)							
Kit No.	Bore	E	LN	MS	NT	Q	S
<b>SCARP-2</b>	1-1/8 (11)	5/16 - 24 UNF	0.63	0.47	0.25	0.187	0.38
<b>SCARP-3</b>	1-1/2 (15)	3/8 - 24 UNF	0.63	0.72	0.44	0.375	0.75
<b>SCARP-4</b>	2 (20)	1/2 - 20 UNF	0.75	0.72	0.44	0.375	0.75
	2-1/2 (25)						
<b>SCARP-5</b>	3 (30)	5/8 - 18 UNF	0.88	1.00	0.63	0.625	1.00
<b>SCARP-6</b>	4 (40)	3/4 - 16 UNF	0.88	1.00	0.63	0.625	1.00

# Premair Round Compacts

## Magnetic Position Sensing

- Encased in a plastic housing, dovetail style electronic sensors are corrosion resistant. 45° wire outlet allows close mounting.
- Two methods of mounting are available:
  1. Tie bolt spacer mounted clamps
  2. Adhesive mounted dovetail extrusions
- Order sensors separately from the table below Sensor



### ▀ Cable Sensor Specifications & Ordering

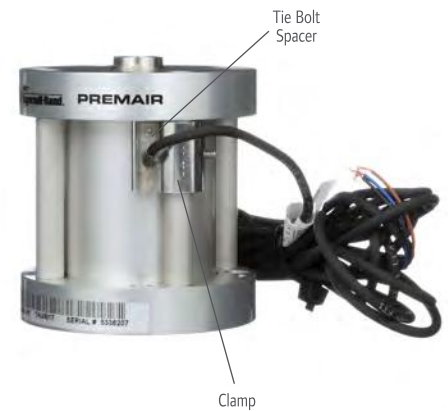
Ordering Guide Dovetail Style Magnetic Sensor with LED					Female Cordsets for Quick Disconnect	
Sensor Type	Prewired 9 ft. Part No.	Quick Disconnect Part No.*	Wire Leads	Electrical Characteristics	Length	Part No.
Electronic	<b>SCAMS-1</b>	<b>SCAMS-3</b>	3	Sourcing PNP 6-24 VDC, 0.20 Amp Max current, 0.5 Voltage Drop	1 Meter 2 Meters 5 Meters	- <b>SCAFC-2</b> <b>SCAFC-5</b>
Electronic	<b>SCAMS-2</b>	<b>SCAMS-4</b>	3	Sinking NPN 6-24 VDC, 0.20 Amp Max current, 0.5 Voltage Drop		

Note\*: Quick disconnect styles are supplied with 6 inch pigtail with male connector. Order female cordsets separately.

### ▀ Spacer Mounted Clamps for Position Sensors

Clamp Selection Guide				
Part No.	SCAMC-3	SCAMC-4	SCAMC-5	SCAMC-6
To Fit Bore	1-1/8"	1-1/2" & 2"	2-1/2" & 3"	4"

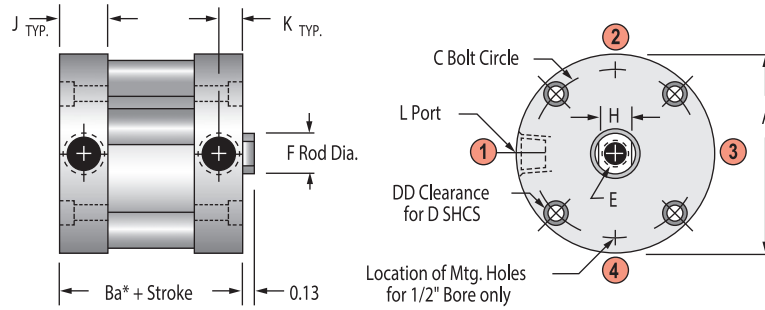
Order clamps and sensors separately



# Premair Round Compact

## Model SCC

Double Acting, Single Rod

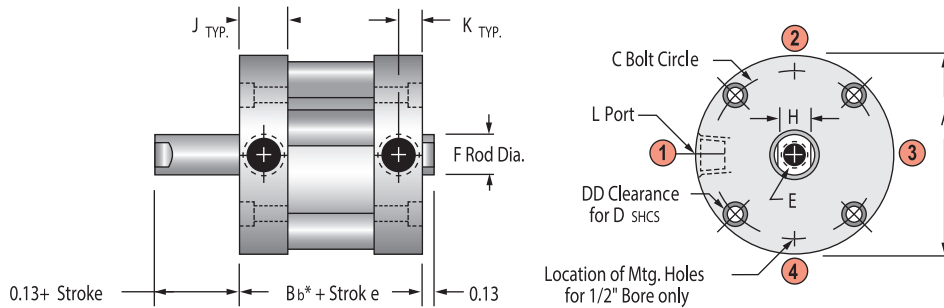


\*Note: Some options effect cylinder length

Standard Strokes – All Models: • 1/8 • 1/4 • 3/8 • 1/2 • 5/8 • 3/4 • 7/8 • 1 • 1-1/4 • 1-1/2 • 1-3/4 • 2 • 2-1/2 • 3 • 3-1/2 • 4

## Model SCD

Double Acting, Single Rod

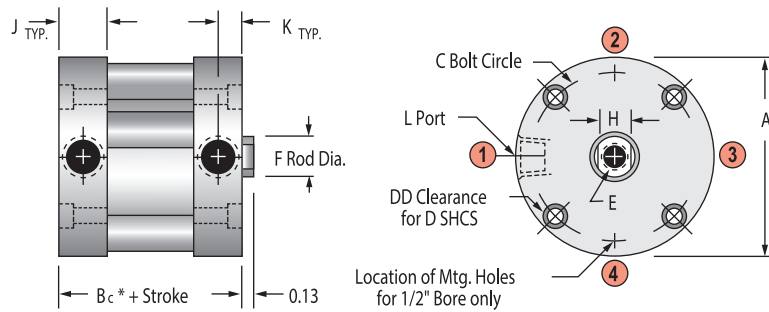


\*Note: Some options effect cylinder length

Dimensions (inches)													
Bore	A	Ba*	Bb*	Bc* for Stroke Range				Bd* for Stroke Range				C	DD
				0-1	1.001-2	2.001-3	3.001-4	0-1	1.001-2	2.001-3	3.001-4		
1-1/8 (11)	2.00	0.88	0.94	0.88	1.50	2.13	2.75	1.38	2.00	2.63	3.25	1.69	4
1-1/2 (15)	2.62	0.88	1.00	0.88	1.50	2.13	2.75	1.38	2.00	2.63	3.25	2.19	4
2 (20)	3.12	0.94	1.06	0.94	1.56	2.19	2.81	1.44	2.06	2.69	NA	2.69	4
2-1/2 (25)	3.75	1.19	1.31	1.19	2.06	2.94	3.81	1.94	2.81	2.81	NA	3.25	4
3 (30)	4.25	1.25	1.38	1.25	2.12	3.00	3.88	2.00	2.88	2.88	NA	3.78	4
4 (40)	5.50	1.56	1.69	1.56	2.44	3.31	4.19	2.31	3.19	3.19	NA	4.94	4

# Model SCS

Single Acting, Spring Retract

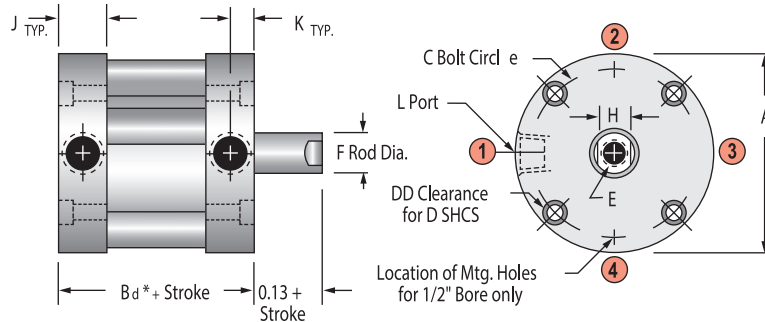


\*Note: Some options effect cylinder length

Standard Strokes – All Models: · 1/8 · 1/4 · 3/8 · 1/2 · 5/8 · 3/4 · 7/8 · 1 · 1-1/4 · 1-1/2 · 1-3/4 · 2

# Model SCR

Reverse Acting, Spring Extended



\*Note: Some options effect cylinder length

Approximate Cylinder Weights (ounces) SCC, SCS, SCD, SCR

Bore	SCC, SCS		SCD			SCR		Nose Mount Option
	Base	Adder per 1/8 of Stroke	Base	Adder per 1/8 of Stroke	Adder per 1/8 of Stroke for -H Option	Base	Adder per 1/8 of Stroke	Adder to Base Weight
1-1/8 (11)	4.9	0.3	5.8	0.4	0.3	5.3	0.3	1.1
1-1/2 (15)	9.6	0.4	11.2	0.6	0.5	10.5	0.4	1.8
2 (20)	13.0	0.5	15.2	0.7	0.6	14.0	0.5	2.7
2-1/2 (25)	22.4	0.6	28.0	0.8	0.7	25.0	0.6	3.1
3 (30)	28.9	0.8	38.0	1.1	0.9	32.5	0.8	3.5
4 (40)	55.7	1.0	71.8	1.3	1.1	61.8	1.0	5.9

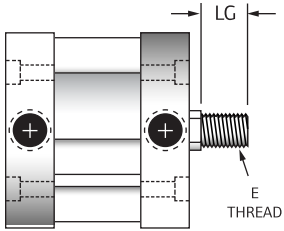
Dimensions (inches)

Bore	D	E Standard	E Depth for Stroke Range		F	H	J	K	L
			1/8 - 1/2	5/8 +					
1-1/8 (11)	#6	5/16-24 UNF	0.37 - 0.63	0.70	0.50	0.44	0.50	0.25	1/8 NPT
1-1/2 (15)	#10	3/8-24 UNF	0.37 - 0.70	0.70	0.63	0.50	0.50	0.25	1/8 NPT
2 (20)	#10	1/2-20 UNF	0.30 - 0.63	0.70	0.75	0.63	0.53	0.25	1/8 NPT
2-1/2 (25)	1/4	1/2-20 UNF	0.42 - 0.70	0.70	0.75	0.63	0.66	0.33	1/4 NPT
3 (30)	1/4	5/8-18 UNF	0.45 - 0.73	0.73	0.88	0.75	0.69	0.33	1/4 NPT
4 (40)	5/16	3/4-16 UNF	0.40 - 0.70	0.80	1.00	0.88	0.84	0.42	3/8 NPT

# Premair Round Compact

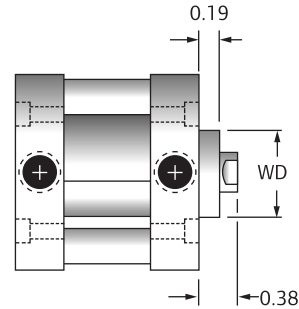
## Model Options

### Male Rod Ends



Thread Sizes		
Bore	E Thread	LG
1-1/8 (11)	5/16-24 UNF	0.50
1-1/2 (15)	3/8-24 UNF	0.50
2 (20)	1/2-20 UNF	0.63
2-1/2 (25)	1/2-20 UNF	0.63
3 (30)	5/8-18 UNF	0.75
4 (40)	3/4-16 UNF	0.75

### Rod Wiper (Buna-N only)

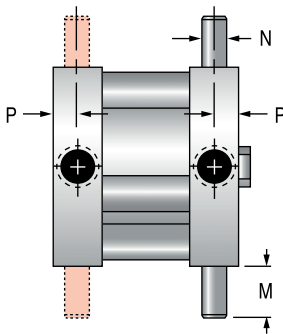


Boss Dia	
Bore	WD
1-1/8 (11)	0.88
1-1/2 (15)	1.00
2 (20)	1.13
2-1/2 (25)	1.13
3 (30)	1.25
4 (40)	1.38

## Mounting Options

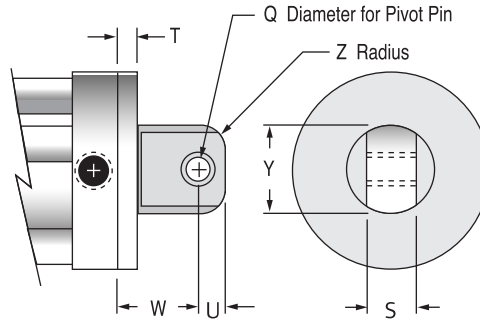
### Trunnion Mount

Available rear, front or both.



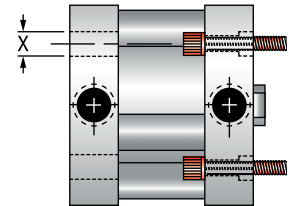
### Pivot Mount

Complete with bronze pivot bushing.  
Not available as an accessory.



### Screw Clearance Holes

Available either or both ends.



Dimensions (inches)											
Bore	M	N	P	Q	S	T	U	W	X	Y	Z
1-1/8 (11)	0.50	0.250	0.25	0.19	0.38	0.25	0.25	0.81	0.25	0.75	0.19
1-1/2 (15)	0.50	0.250	0.25	0.38	0.75	0.25	0.44	1.19	0.34	1.38	0.38
2 (20)	0.50	0.250	0.25	0.38	0.75	0.31	0.44	1.25	0.34	1.38	0.38
2-1/2 (25)	0.63	0.312	0.33	0.38	0.75	0.38	0.44	1.31	0.41	1.38	0.38
3 (30)	0.63	0.312	0.33	0.63	1.00	0.38	0.56	1.69	0.41	1.88	0.38
4 (40)	0.75	0.375	0.42	0.63	1.00	0.44	0.56	1.75	0.50	1.88	0.38

# Premair Round Compact

## Deviations from Standard Dimensions

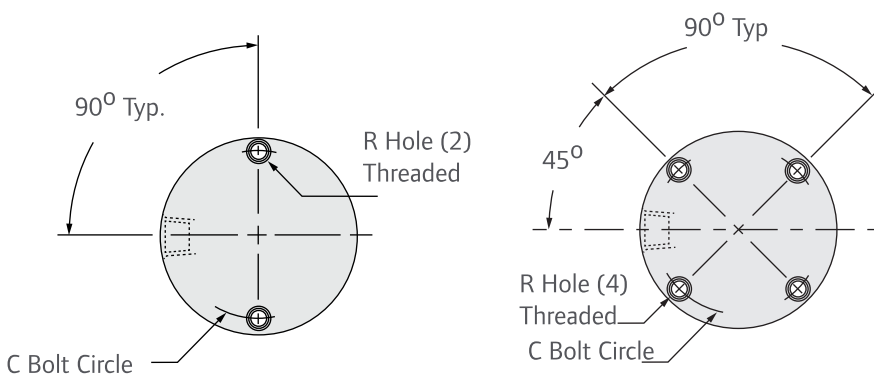
Bore	Length Adder (inches)				
	Low Friction Seals	Heavy Duty Rear Head ‡	Magnetic Position Sensing† (E or M)		
			SCC,SCD	SCS	SCR
1-1/8 (11)	0.38	0.19	0.88	0.88	0.88
1-1/2 (15)	0.38	0.19	0.88	0.88	0.88
2 (20)	0.38	0.19	0.88	0.88	0.88
2-1/2 (25)	0.38	0.25	0.88	0.88	0.88
3 (30)	0.50	0.25	0.88	0.88	0.88
4 (40)	0.50	0.38	0.88	0.88	0.88

‡ Heavy duty rear head is recommended for applications where the cylinder is mounted on the front face or trunnion-mounted, and impact loading (20 or more cycles/minute) occurs between the piston and rear head. It increases the overall length of the cylinder as shown.  
 † A minimum stroke of 3/8" is required to sense end-of-stroke positions. For low friction seals used in conjunction with magnetic position sensing, use "E" or "M" sensor options only.

## Hollow Rod Option

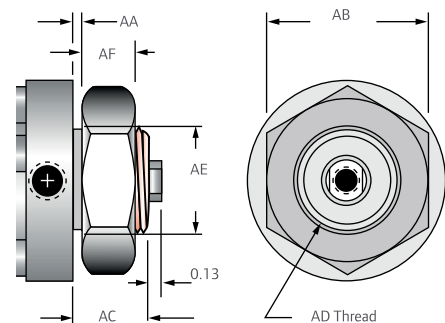
Bore	Hole Diameter	
	Female Rod Thread	Male Rod Thread
1-1/8 (11)	0.22	0.16
1-1/2 (15)	0.28	0.19
2 (20)	0.38	0.25
2-1/2 (25)	0.38	0.25
3 (30)	0.44	0.31
4 (40)	0.50	0.38

## Threaded Mounting Holes



## Nose Mount

Available on SCC, SCS, SCR.  
 Included heavy duty rear head. See length adder above.



## Dimensions (inches)

Bore	AA	AB	AC	AD	AE	AF	C	R
1-1/8 (11)	.13	1.50 Hex	.75	1-14 UNF-2A	1.00	.55	1.69	# 6 - 32 UNC
1-1/2 (15)	.13	1.88 Hex	.75	1-1/4 - 12 UNF-2A	1.25	.52	2.19	# 10 - 24 UNC
2 (20)	.19	1.88 Hex	.88	1-3/8 - 12 UNF-2A	1.38	.52	2.69	# 10 - 24 UNC
2-1/2 (25)	.25	1.88 Hex	1.00	1-3/8 - 12 UNF-2A	1.38	.52	3.25	1/4 - 20 UNC
3 (30)	.25	1.88 Hex	1.00	1-3/8 - 12 UNF-2A	1.38	.52	3.78	1/4 - 20 UNC
4 (40)	.19	2.62 Hex	1.12	1-3/4 - 12 UN-2A	1.75	.88	4.94	5/16 - 18 UNC

## Maximum Torque for Nose Mount Option

Bore	Foot-Pounds
1-1/8 (11)	100
1-1/2 (15)	120
2 (20)	130
2-1/2 (25)	130
3 (30)	130
4 (40)	150