



Aluminum 76 Series:

Hard Coated Aluminum Body Air Cylinders



Aluminum Non-Repairable Cylinders
3/4" through 2-1/2" Bore

Aluminum 76 Series

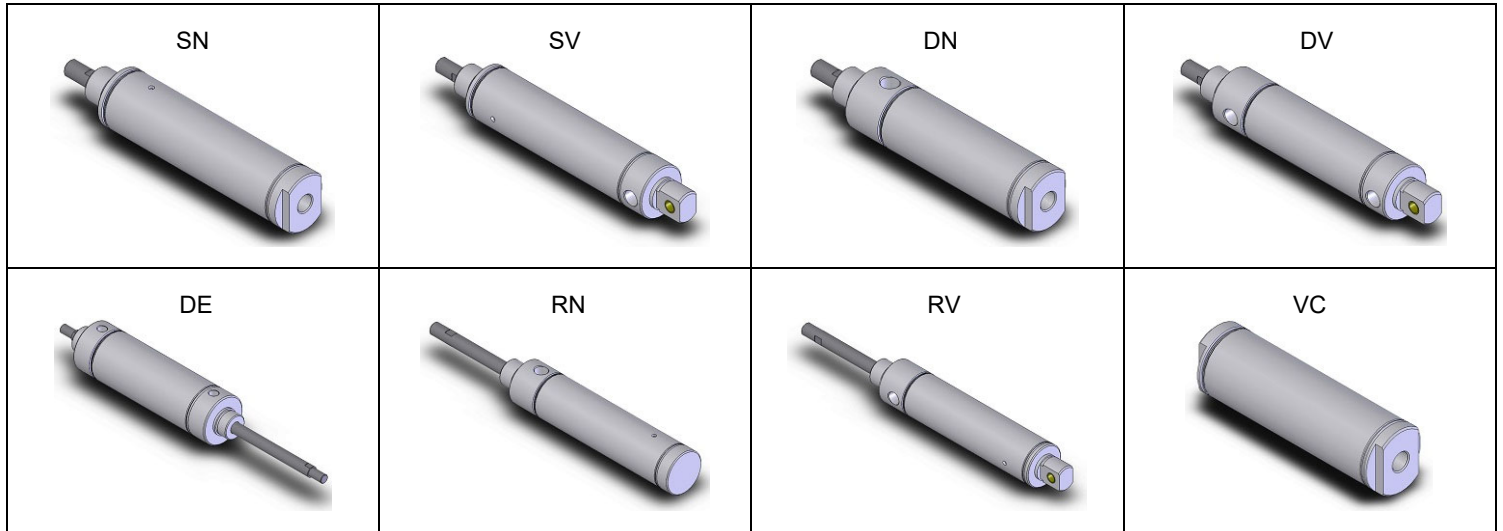


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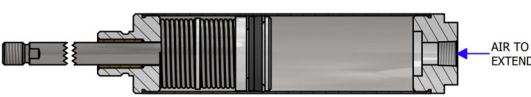
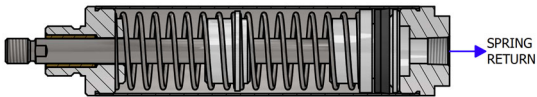

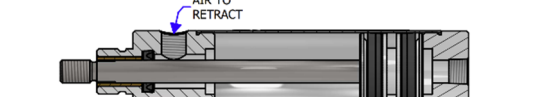
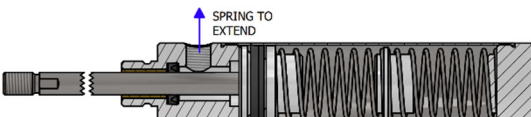

MOUNTING STYLES:



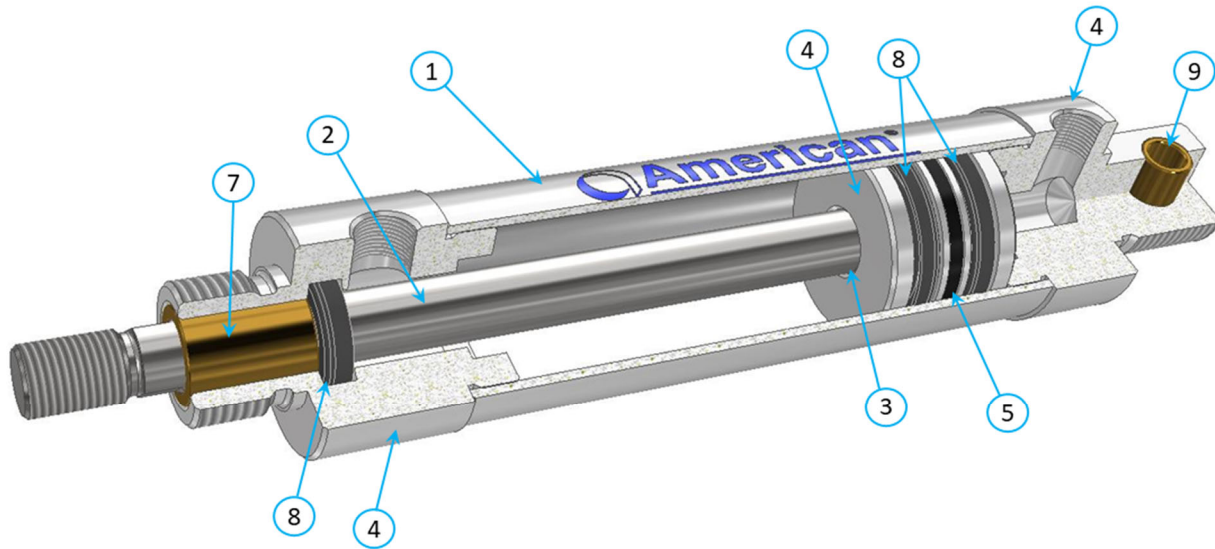
STANDARD MODEL SELECTION:

Model	Description	Available Bore Sizes				
		3/4"	1-1/8"	1-1/2"	2"	2-1/2"
SN	Single Acting Nose Mount	X	X	X	X	
SV	Single Acting Universal Mount	X	X	X	X	
DN	Double Acting Nose Mount	X	X	X	X	X
DV	Double Acting Universal Mount	X	X	X	X	X
DE	Double Acting Double Rod End					X
VC	Volume Chamber	X	X	X	X	X
RN	Reverse Acting Nose Mount	X	X	X	X	
RV	Reverse Acting Universal Mount	X	X	X	X	

CYLINDER OPERATION:

<p>Single Acting</p>	 <p>The piston rod is extended by air pressure.</p>	 <p>An internal spring retracts the piston rod when the blind end of the cylinder is exhausted.</p>
<p>Double Acting</p>	 <p>The piston rod is extended by directing air pressure to the blind end of the cylinder.</p>	 <p>The piston rod retracts when air pressure is directed to the rod end of the cylinder.</p>
<p>Reverse Acting</p>	 <p>Internal springs hold the piston rod in the extended position.</p>	 <p>The piston rod retracts when air pressure is applied.</p>

STANDARD FEATURES & BENEFITS:



RATED 250 PSI AIR

$\frac{3}{4}$ Inch Through 2- $\frac{1}{2}$ Inch Bore

1) Cylinder Body: Hard coated I.D. aluminum tubing has extreme hardness, excellent wear and seizure resistance, low coefficient of friction and high corrosion resistance. The aluminum body is twice as thick when compared to non-repairable stainless steel bodied cylinders.

2) Piston Rod: Ground & Polished 303 Stainless Steel rod is standard on the Aluminum 76 Series. All rods have wrench flats and stress relief grooves.

3) Piston Rod Assembly: Piston rods are threaded, anaerobically sealed, and machined staked into piston for triple protection.

4) End Caps & Piston: Machined from high strength aluminum alloy.

5) Magnet for Sensing Switch Actuation: Optional internal magnet specially designed for use with American Cylinder Reed or Hall Effect switches.

6) Springs: Single acting & Reverse acting cylinder springs are made from music wire.

7) Rod Bushing: The oil impregnated sintered bronze bushing increases the life of the cylinder rod and provides a non-abrasive bearing surface.

8) U-Cup Rod & Piston Seals: U-Cup seals provide low breakaway friction and maximize cylinders life expectancy.

9) Pivot Bushing: Sintered bronze pivot bushings are standard on all Universal mount models.

10) Rod Seal: Precision machined rod seal groove provides a smooth sealing surface while positively retaining the seal without requiring additional components and relying on press fit containment.

Product enhancements resulting from our quality improvement program may necessitate changes in specifications without notice. For special requirements, consult the factory or your nearest local American Cylinder Distributor.

TECHNICAL DATA:

OPERATING PRESSURE: 250 PSI Air

OPERATING TEMPERATURE: Buna-N seals are supplied as standard in all American Cylinder models and are recommended for operating temperatures in the -20°F (-25°C) to 200°F (95°C) range. Fluoroelastomer (FKM) seals are recommended for high temperature cylinder applications having operating temperatures in the -20°F (-25°C) to 400°F (204°C) range.

LUBRICATION: American cylinders are pre-lubricated at the factory prior to shipment to provide millions of trouble-free cycles. Most applications do not require additional lubrication. However, cylinder life can be maximized through periodic direct lubrication or continuous airline mist lubrication. A light weight hydraulic oil is recommended for cylinders having standard Buna-N seals. Magnalube-G is recommended for cylinders with high temperature Fluoroelastomer seals. Consult your American Cylinder distributor or the factory for special lubrication requirements.

PRETESTED: The quality of each cylinder is assured by testing each unit for leakage prior to shipment.

CYLINDER WEIGHTS (lbs.)

SPRING ACTION:

Mount	(SN) NOSE MOUNT				(SV) UNIVERSAL MOUNT				(RN) NOSE MOUNT				(RV) UNIVERSAL MOUNT			
Bore	3/4"	1-1/8"	1-1/2"	2"	3/4"	1-1/8"	1-1/2"	2"	3/4"	1-1/8"	1-1/2"	2"	3/4"	1-1/8"	1-1/2"	2"
Base Weight	0.11	0.25	0.54	1.08	0.16	0.32	0.71	1.33	0.17	0.38	0.75	1.46	0.22	0.38	0.81	1.73
Per Inch of Stroke	0.08	0.15	0.26	0.40	0.08	0.15	0.26	0.40	0.07	0.13	0.22	0.34	0.07	0.13	0.22	0.34

DOUBLE ACTING:

Mount	(DN) NOSE MOUNT					(DV) UNIVERSAL MOUNT					(DE) DOUBLE END MOUNT
Bore	3/4"	1-1/8"	1-1/2"	2"	2-1/2"	3/4"	1-1/8"	1-1/2"	2"	2-1/2"	2-1/2"
Base Weight	0.18	0.40	0.87	1.68	1.98	0.23	0.46	1.04	1.93	2.27	2.32
Per Inch of Stroke	0.04	0.05	0.10	0.15	0.17	0.04	0.05	0.10	0.15	0.17	0.17

VOLUME CHAMBER:

Mount	(VC) VOLUME CHAMBER				
Bore	3/4"	1-1/8"	1-1/2"	2"	2-1/2"
Base Weight	0.06	0.16	0.30	0.70	1.44
Per Inch of Stroke	0.02	0.04	0.07	0.07	0.12

STANDARD STROKE LENGTHS

Single Acting – Models SN & SV		Spring Forces (lbs.)		Length Adders Based on Options		Power Factor
Bore	Standard Stroke Lengths (in.)	Rod Ret.	Rod Ext.	(-32)	(-38)	
3/4"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	2.0	4.0	0.12	0.37	0.44
1-1/8"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	5.0	10.0	0.00	0.31	0.99
1-1/2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	10.0	20.0	0.00	0.37	1.77
2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	15.0	30.0	0.00	0.37	3.14

Double Acting – Models DN, DV, DE & VC*		Length Adders Based on Options				Power Factor	
Bore	Standard Stroke Lengths (in.)	(-4)	(-32)	(-4) & (-32)	(-38)	Push	Pull
3/4"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4, 4.50, 5, 6, 8, 10, 12	--	0.28	--	0.37	0.44	0.37
1-1/8"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4, 4.50, 5, 6, 8, 10, 12	0.00	0.00	0.25	0.31	0.99	0.88
1-1/2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4, 4.50, 5, 6, 8, 10, 12, +14, +16, +18	0.00	0.00	0.00	0.37	1.77	1.57
2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4, 4.50, 5, 6, 8, 10, 12, +14, +16, +18, +20, +22	0.00	0.00	0.00	0.37	3.14	2.83
2-1/2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4, 4.50, 5, 6, 8, 10, 12, +14, +16, +18, +20, +22, +24	0.00	0.00	0.00	0.37	4.91	4.60
Notes:	*When ordered with (-38) option, double length adder in chart +Only available for DV models						

Reverse Acting – Models RN & RV		Spring Forces (lbs.)		Length Adders Based on Options		Power Factor
Bore	Standard Stroke Lengths (in.)	Rod Ret.	Rod Ext.	(-32)	(-38)	
3/4"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	4.0	2.0	0.12	--	0.37
1-1/8"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	10.0	5.0	0.00	--	0.88
1-1/2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	20.0	10.0	0.00	--	1.57
2"	0.50, 1, 1.50, 2, 2.50, 3, 3.50, 4	30.0	15.0	0.00	--	2.83

Determining Output Forces (lbs.):

Push/Pull Force (lbs.) = Line Pressure (PSI) x Power Factor

TECHNICAL DATA (cont.):

NON-STANDARD STROKE LENGTHS

American Cylinder will produce cylinders with non-standard & fractional stroke lengths. Non-standard & fractional stroke lengths potentially carry more lead time. Strokes are truncated in call outs Ex: 1.125" stroke = 1.12. Fractional stroke cylinder lengths can be determined as illustrated by the following examples:

Single Acting Cylinders

Calculate the length of the next longer whole inch increment of stroke. Subtract the difference between desired stroke & the next longer whole inch increment of stroke.

Example: 1125SV-1.75

Step 1: Calculate length for next longer whole inch increment of stroke

"1125SV" base length (Dim. A)	= 3.31"
Plus: (Dim. B) x Stroke increment	
1.75 x 2.00	= 3.50"
Length of 2" Stroke	= 6.81"

Step 2: Subtract desired stroke from stroke increment above

Whole inch stroke used in Step 1	= 2.00"
Less: 1.75" desired stroke	= 1.75"
Stroke Difference	= 0.25"

Step 3: Subtract stroke difference for length calculated in **Step 1**

Length of 1125SV-2.00 (Step 1)	= 6.81"
Less: Stroke Difference (Step 2)	= 0.25"
Length of 1125SV-1.75	= 6.56"

Double Acting Cylinders & Volume Chambers

Add desired stroke length to base length of cylinder

Example: 1125DN-2.75

"1125DN" base length (Dim. A)	= 3.37"
Plus: Desired Stroke Length	= 2.75"
Length of 1125DN-2.75	= 6.12"

Notes: Standard stroke lengths are listed for all examples on page 4.

Reverse Acting Cylinders

Calculate the length of the next longer whole inch increment of stroke. Subtract twice the difference between desired stroke & the next longer whole inch increment of stroke.

Example: 1125RV-1.25

Step 1: Calculate length for next longer whole inch increment of stroke

"1125RV" base length (Dim. A)	= 3.81"
Plus: (Dim. B) x Stroke increment	
2.75 x 2.00	= 5.50"
Length of 2" Stroke	= 9.31"

Step 2: Calculate twice the difference between the desired stroke length and the whole inch stroke increment used in **Step 1**

Whole inch stroke used in Step 1	= 2.00"
Less: 1.25" desired stroke	= 1.25"
Stroke Difference	= 0.75"
Multiply by 2	= 1.50"

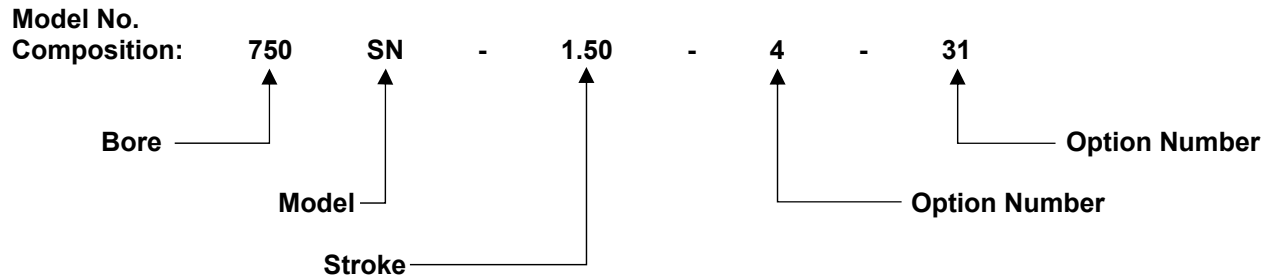
Step 3: Subtract value calculated in **Step 2** from value obtained in **Step 1**

Length of 1125RV-2.00 (Step 1)	= 9.31"
Less: Stroke factor (Step 2)	= 1.50"
Length of 1125RV-1.25	= 7.81"

HOW TO ORDER:

Example: 3/4" Bore, Single Acting Nose Mount Cylinder, 1-1/2" Stroke, Magnetic Field Piston, and Fluoroelastomer Seals

Model No.: 750SN-1.50-4-31



Bore	No.	Model Description	Model	Standard Options	No.
3/4"	750	Single Acting Nose Mount	SN	Unmilled Threaded Rear Mounting Stud	-3
1-1/8"	1125	Single Acting Universal Mount	SV	Magnetic Field Piston	-4 ^b
1-1/2"	1500	Double Acting Nose Mount	DN	Quad-X Wiper Seal	-5 ^c
2"	2000	Double Acting Universal Mount	DV	Magnalube Lubrication	-6
2-1/2"	2500	Double Acting Double End Mount	DE ^a	Omit American Cylinder Part Number & Logo	-7
		Volume Chamber	VC	Omit Rod Threads & Wrench Flats	-9 ^d
		Reverse Acting Nose Mount	RN	Fluoroelastomer (Viton) Seals	-31
		Reverse Acting Universal Mount	RV	Bumpers	-32 ^e
				Ports Rotated 90 CCW from Rod End	-33
				Side Port Rear Head	-38 ^f
				Quad-X Seal in Front Piston Groove	-51 ^g
				"UNC" Coarse Rod Threads	-91 ^h

Notes:

- a: Only available on 2-1/2" Bore Cylinder.
- b: See page 4 for Magnetic length adder.
- c: In addition to standard U-Cup rod seal.
- d: Standard overall extension.
- e: See page 4 for Bumper length adder.
- f: Only available on Nose Mount & Volume Chamber models (excludes Reverse Acting models); See page 4 for Side Port length adder.
- g: Not available on Single or Reverse Acting models
- h: Standard thread length, overall extension, & wrench flats; See table below for thread dimensions.

(-91) "UNC" Coarse Rod Threads "P" Dimension.

3/4" Bore	1-1/8" Bore	1-1/2" Bore	2" Bore	2-1/2" Bore
5/16-18UNC	3/8-16UNC	1/2-13UNC	5/8-11UNC	1/2-13UNC

AMERICAN MFC (-4) MAGNETIC PISTON AIR CYLINDERS

American's MFC optioned air cylinders are designed to operate American's Reed or Solid-State Switches. The (-4) MFC option is available in 1-1/8", 1-1/2", 2", & 2-1/2" Double Acting Bore Sizes.

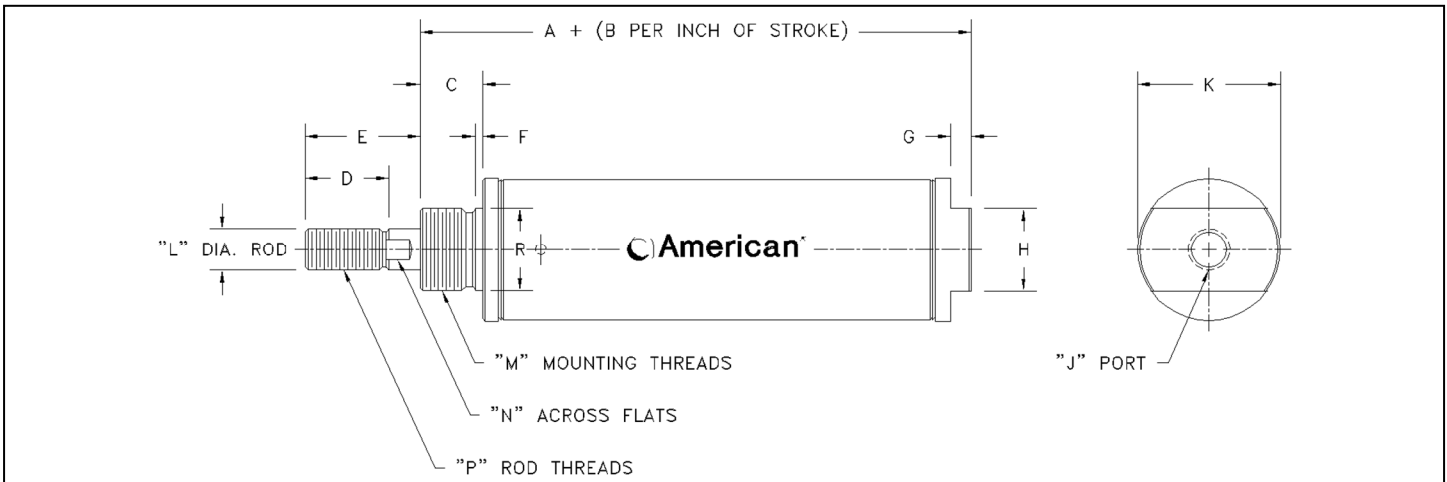
The (-4) option specification adds a magnet to the reciprocating piston rod assembly. This design provides a magnetic field to trigger the actuation of an American Reed or Solid-State Switches when passing the switch's detection zone.

See page 4 for any length adders when specifying the (-4) MFC option.

Greater flexibility is offered by American Cylinder's original mounting band design, which provides a low profile while allowing infinite adjustability, 360° along the complete useful length of the cylinder stroke.

Refer to pages 13 & 14 for additional optional sensing switch information.

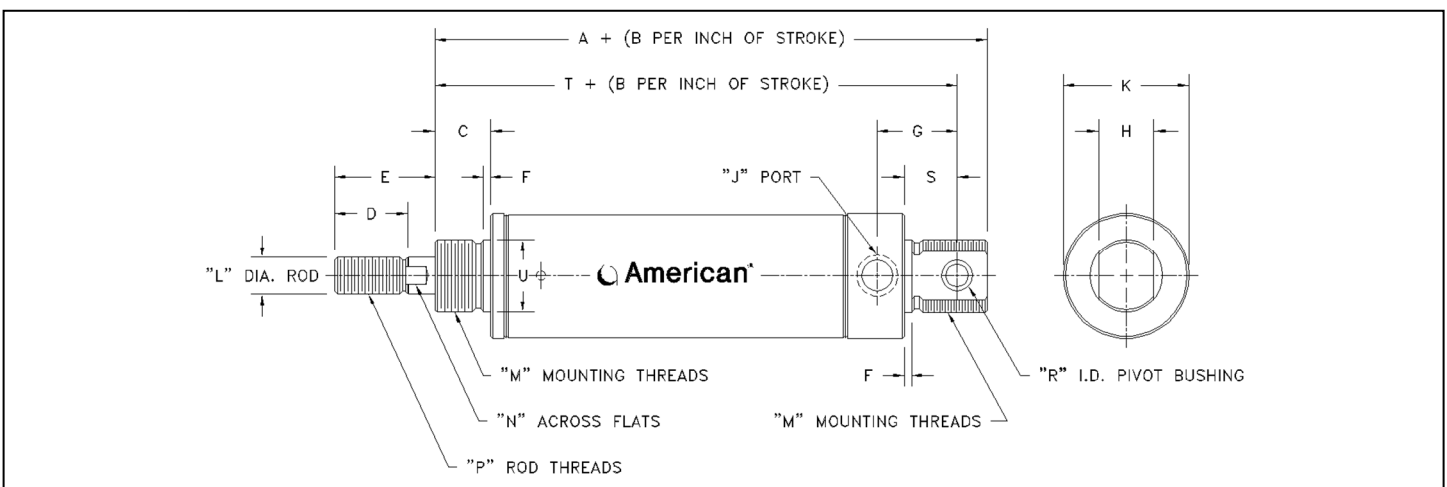
SINGLE ACTING: NOSE MOUNT



DIMENSIONS FOR SINGLE ACTING NOSE MOUNTS																MOUNTING ACCESSORIES		
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R*	Foot Bkt.	Flange	Mtg. Nut
3/4"	1.75	1.62	0.50	0.50	0.75	0.06	0.18	0.62	1/8 NPT	0.90	0.31	5/8-18	0.25	5/16-24	0.62	M21	M22	M25
1-1/8"	2.18	1.75	0.62	0.50	0.75	0.09	0.18	0.87	1/8 NPT	1.28	0.37	3/4-16	0.31	3/8-24	0.75	M41	M42	M45
1-1/2"	2.56	1.81	0.75	0.75	1.00	0.09	0.25	1.00	1/4 NPT	1.71	0.50	1-14	0.43	1/2-20	1.00	M61	M62	M65
2"	3.00	1.81	0.87	0.87	1.25	0.10	0.25	1.25	1/4 NPT	2.23	0.62	1-1/4-12	0.56	5/8-18	1.25	M81	M82	M85

Notes: *Pilot Diameter
See pages 11 & 12 for Mounting Accessories Specifications

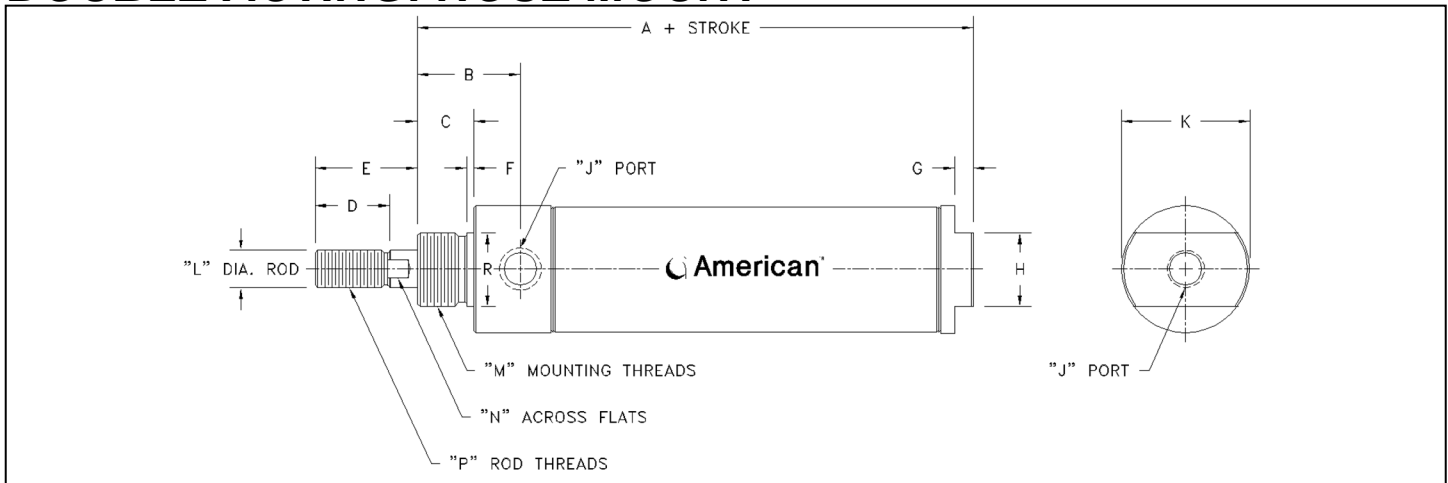
SINGLE ACTING: UNIVERSAL MOUNT



DIMENSIONS FOR SINGLE ACTING UNIVERSAL MOUNTS																	MOUNTING ACCESSORIES				
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U*	Foot Bkt.	Pivot Bkt.	Rod Clevis
3/4"	2.87	1.62	0.50	0.50	0.75	0.06	0.78	0.37	1/8 NPT	1.00	0.31	5/8-18	0.25	5/16-24	0.25	0.46	2.59	0.62	M21	M23	M24
1-1/8"	3.31	1.75	0.62	0.50	0.75	0.09	0.81	0.50	1/8 NPT	1.28	0.37	3/4-16	0.31	3/8-24	0.25	0.50	3.00	0.75	M41	M43	M44
1-1/2"	4.06	1.81	0.75	0.75	1.00	0.09	1.09	0.75	1/4 NPT	1.71	0.50	1-14	0.43	1/2-20	0.31	0.71	3.65	1.00	M61	M63	M64
2"	4.50	1.81	0.87	0.87	1.25	0.10	1.09	0.75	1/4 NPT	2.23	0.62	1-1/4-12	0.56	5/8-18	0.31	0.71	4.09	1.25	M81	M83	M84

Notes: *Pilot Diameter
See pages 11 & 12 for Mounting Accessories Specifications

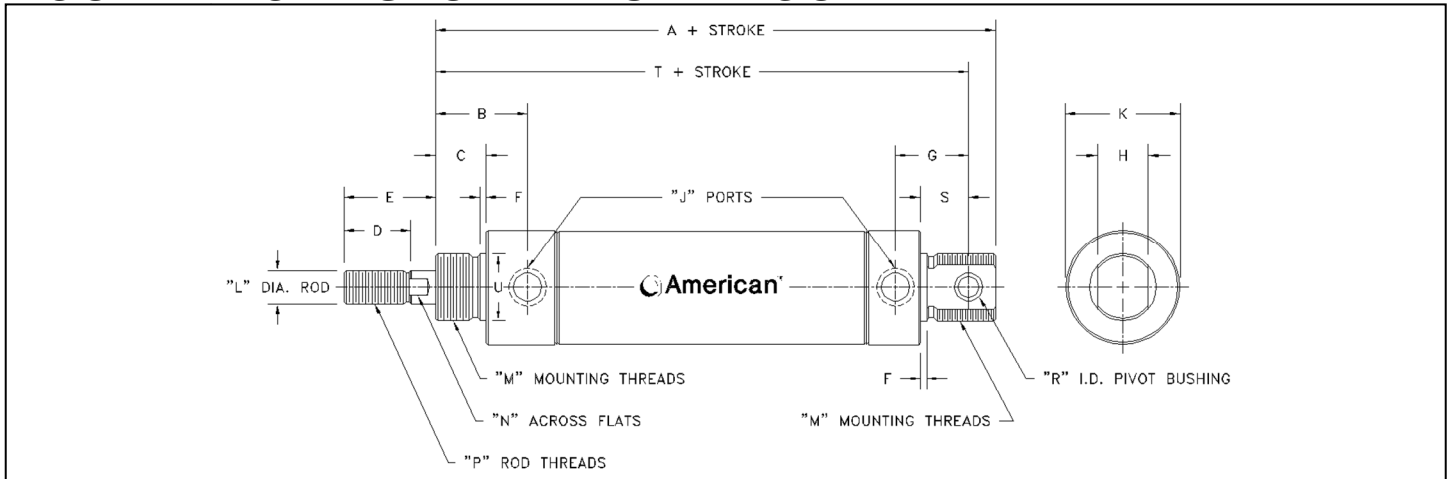
DOUBLE ACTING: NOSE MOUNT



DIMENSIONS FOR DOUBLE ACTING NOSE MOUNTS																MOUNTING ACCESSORIES		
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R*	Foot Bkt.	Flange	Mtg. Nut
3/4"	2.81	1.00	0.50	0.50	0.75	0.06	0.18	0.62	1/8 NPT	1.00	0.31	5/8-18	0.25	5/16-24	0.62	M21	M22	M25
1-1/8"	3.37	1.18	0.62	0.50	0.75	0.09	0.18	0.87	1/8 NPT	1.28	0.37	3/4-16	0.31	3/8-24	0.75	M41	M42	M45
1-1/2"	4.12	1.37	0.75	0.75	1.00	0.09	0.25	1.00	1/4 NPT	1.71	0.50	1-14	0.43	1/2-20	1.00	M61	M62	M65
2"	4.62	1.62	0.87	0.87	1.25	0.10	0.25	1.25	1/4 NPT	2.23	0.62	1-1/4-12	0.56	5/8-18	1.25	M81	M82	M85
2-1/2"	4.31	1.50	0.81	0.87	1.25	0.12	0.25	1.50	1/4 NPT	2.73	0.62	1-3/8-12	0.56	1/2-20	1.50	M91	--	M95

Notes: *Pilot Diameter
See pages 11 & 12 for Mounting Accessories Specifications

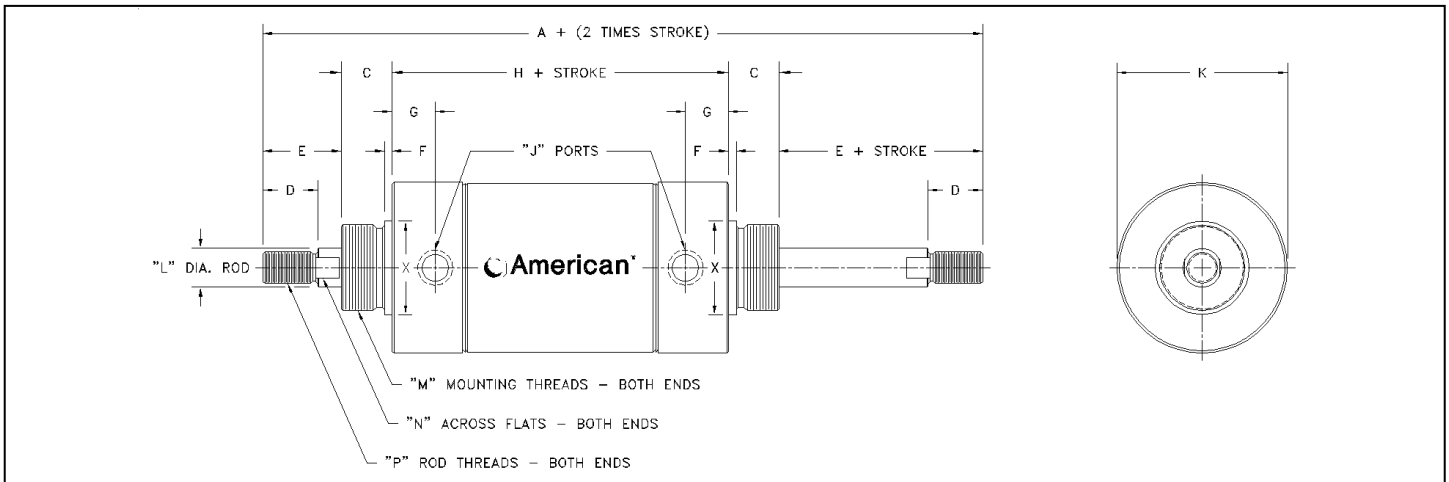
DOUBLE ACTING: UNIVERSAL MOUNT



DIMENSIONS FOR DOUBLE ACTING UNIVERSAL MOUNTS																	MOUNTING ACCESSORIES				
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U*	Foot Bkt.	Pivot Bkt.	Rod Clevis
3/4"	3.93	1.00	0.50	0.50	0.75	0.06	0.78	0.37	1/8 NPT	1.00	0.31	5/8-18	0.25	5/16-24	0.25	0.46	3.65	0.62	M21	M23	M24
1-1/8"	4.50	1.18	0.62	0.50	0.75	0.09	0.81	0.50	1/8 NPT	1.28	0.37	3/4-16	0.31	3/8-24	0.25	0.50	4.18	0.75	M41	M43	M44
1-1/2"	5.62	1.37	0.75	0.75	1.00	0.09	1.09	0.75	1/4 NPT	1.71	0.50	1-14	0.43	1/2-20	0.31	0.71	5.21	1.00	M61	M63	M64
2"	6.12	1.62	0.87	0.87	1.25	0.10	1.09	0.75	1/4 NPT	2.23	0.62	1-1/4-12	0.56	5/8-18	0.31	0.71	5.71	1.25	M81	M83	M84
2-1/2"	5.68	1.50	0.81	0.87	1.25	0.12	0.93	0.75	1/4 NPT	2.73	0.62	1-3/8-12	0.56	1/2-20	0.37	0.56	5.25	1.50	M91	M93	M94

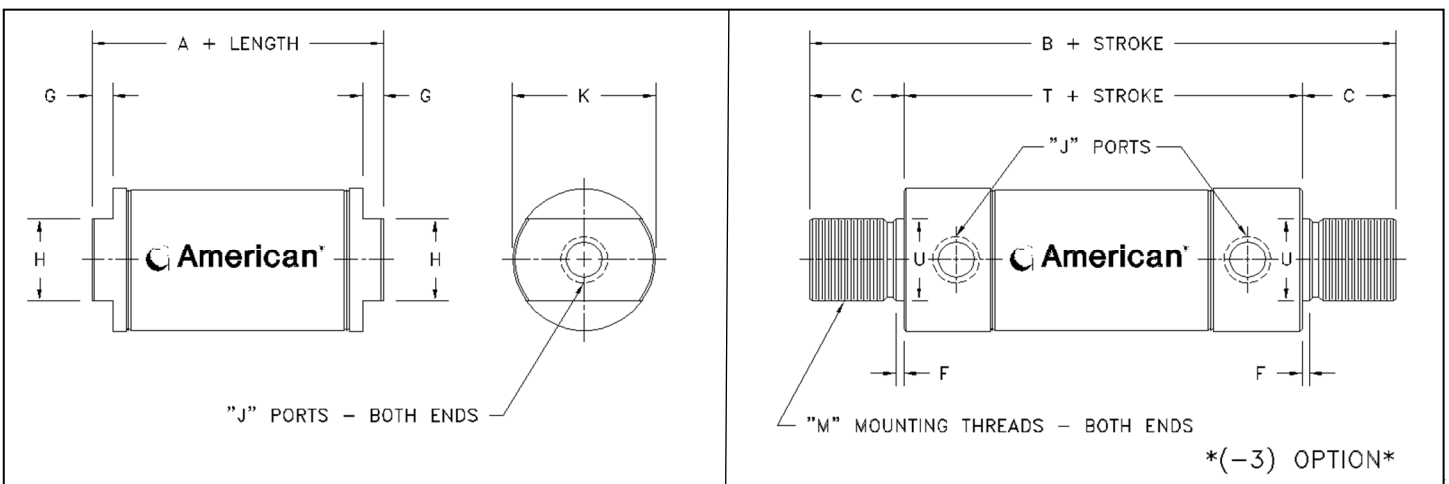
Notes: *Pilot Diameter
See pages 11 & 12 for Mounting Accessories Specifications

DOUBLE ACTING: DOUBLE END MOUNT



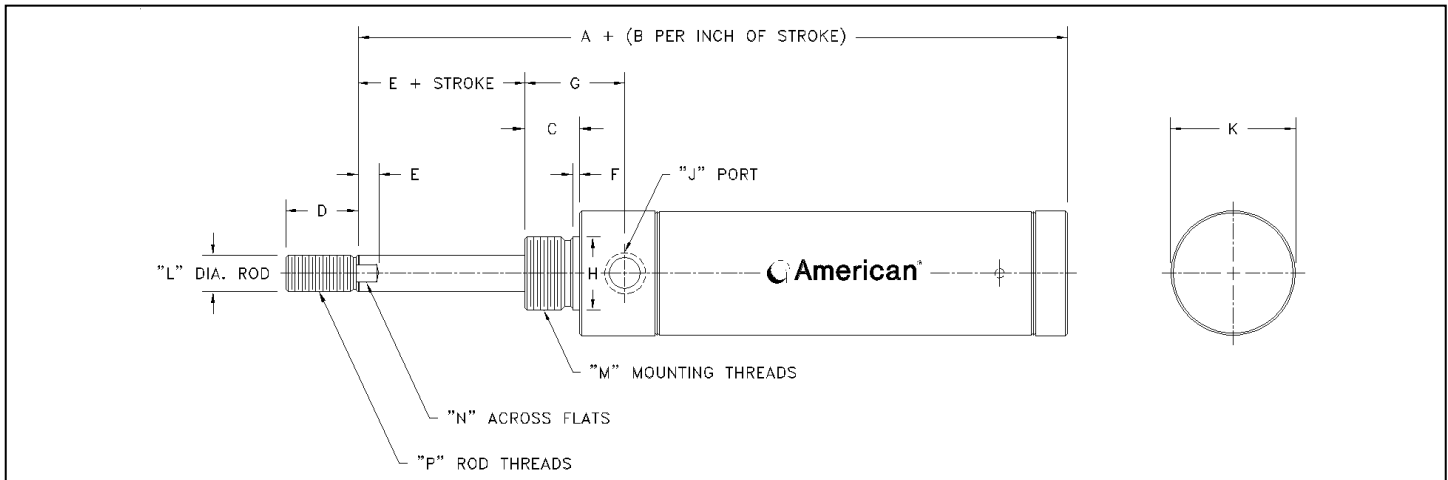
DIMENSIONS FOR DOUBLE ACTING DOUBLE END MOUNT															MOUNTING ACCESSORIES		
Bore	A	C	D	E	F	G	H	J	K	L	M	N	P	X*	Foot Bkt.	Rod Clevis	Mtg. Nut
2-1/2"	8.31	0.81	0.87	1.25	0.12	0.68	4.18	1/4 NPT	2.73	0.62	1-3/8-12	0.56	1/2-20	1.50	M91	M94	M95
Notes:	*Pilot Diameter See pages 11 & 12 for Mounting Accessories Specifications																

VOLUME CHAMBER:



DIMENSIONS FOR VOLUME CHAMBERS												VOLUME (in ³)
Bore	A	B	C	F	G	H	J	K	M	T	U*	
3/4"	1.68	3.93	0.75	0.06	0.18	0.62	1/8 NPT	1.00	5/8-18	2.43	0.62	0.31 + 0.44 per inch
1-1/8"	2.18	4.43	0.81	0.09	0.18	0.87	1/8 NPT	1.28	3/4-16	2.81	0.75	0.97 + 0.99 per inch
1-1/2"	2.75	5.75	1.12	0.09	0.25	1.00	1/4 NPT	1.71	1-14	3.50	1.00	2.36 + 1.77 per inch
2"	3.00	6.00	1.12	0.10	0.25	1.25	1/4 NPT	2.23	1-1/4-12	3.75	1.25	2.54 + 3.14 per inch
2-1/2"	2.81	5.56	1.00	0.12	0.25	1.50	1/4 NPT	2.73	1-3/8-12	3.56	1.50	6.60 + 4.91 per inch
Notes:	*Pilot Diameter											

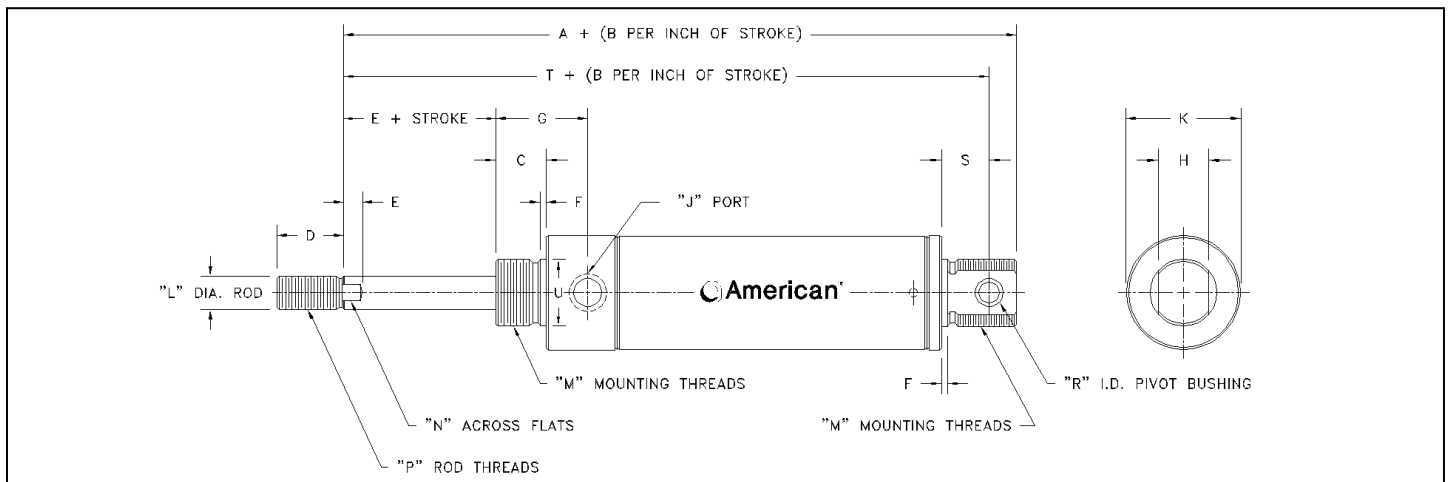
REVERSE ACTING: NOSE MOUNT



DIMENSIONS FOR REVERSE ACTING NOSE MOUNTS															MOUNTING ACCESSORIES		
Bore	A	B	C	D	E	F	G	H*	J	K	L	M	N	P	Foot Bkt.	Flange	Mtg. Nut
3/4"	2.75	2.62	0.50	0.50	0.25	0.06	1.00	0.62	1/8 NPT	0.90	0.31	5/8-18	0.25	5/16-24	M21	M22	M25
1-1/8"	3.18	2.75	0.62	0.50	0.25	0.09	1.18	0.75	1/8 NPT	1.28	0.37	3/4-16	0.31	3/8-24	M41	M42	M45
1-1/2"	3.68	2.81	0.75	0.75	0.25	0.09	1.37	1.00	1/4 NPT	1.71	0.50	1-14	0.43	1/2-20	M61	M62	M65
2"	4.31	2.81	0.87	0.87	0.37	0.10	1.62	1.25	1/4 NPT	2.23	0.62	1-1/4-12	0.56	5/8-18	M81	M82	M85

Notes: *Pilot Diameter
See pages 11 & 12 for Mounting Accessories Specifications

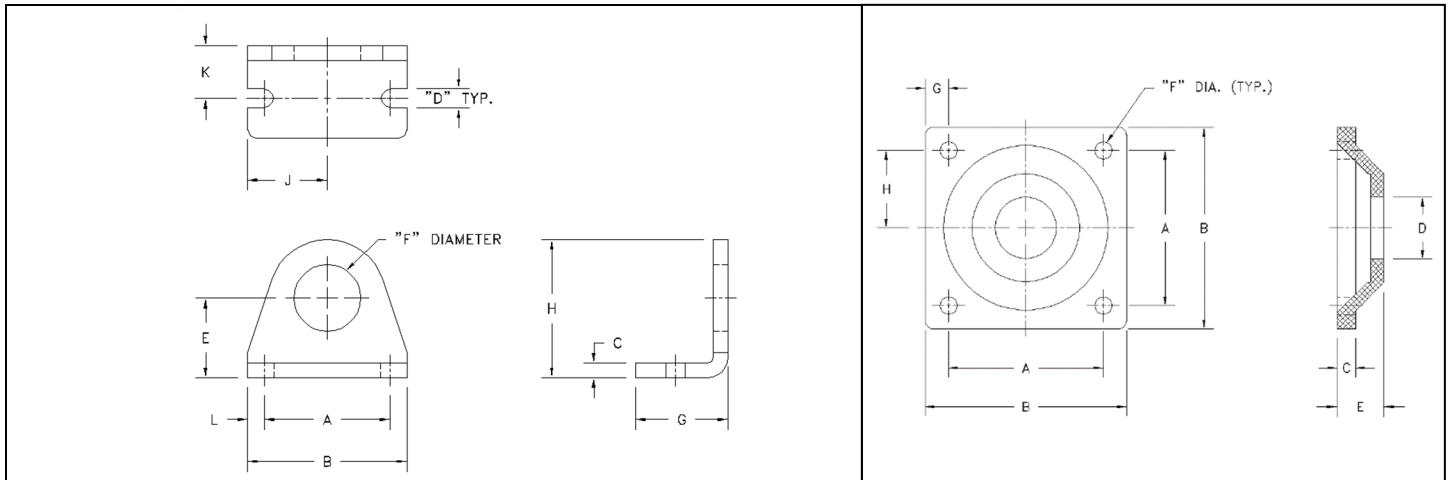
REVERSE ACTING: UNIVERSAL MOUNT



DIMENSIONS FOR REVERS ACTING UNIVERSAL MOUNTS																		MOUNTING ACCESSORIES			
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U*	Foot Bkt.	Pivot Bkt.	Rod Clevis
3/4"	3.37	2.62	0.50	0.50	0.25	0.06	1.00	0.37	1/8 NPT	1.00	0.31	5/8-18	0.25	5/16-24	0.25	0.46	3.09	0.62	M21	M23	M24
1-1/8"	3.81	2.75	0.62	0.50	0.25	0.09	1.18	0.50	1/8 NPT	1.28	0.37	3/4-16	0.31	3/8-24	0.25	0.50	3.50	0.75	M41	M43	M44
1-1/2"	4.56	2.81	0.75	0.75	0.25	0.09	1.37	0.75	1/4 NPT	1.71	0.50	1-14	0.43	1/2-20	0.31	0.71	4.15	1.00	M61	M63	M64
2"	5.25	2.81	0.87	0.87	0.37	0.10	1.62	0.75	1/4 NPT	2.23	0.62	1-1/4-12	0.56	5/8-18	0.31	0.71	4.84	1.25	M81	M83	M84

Notes: *Pilot Diameter
See pages 11 & 12 for Mounting Accessories Specifications

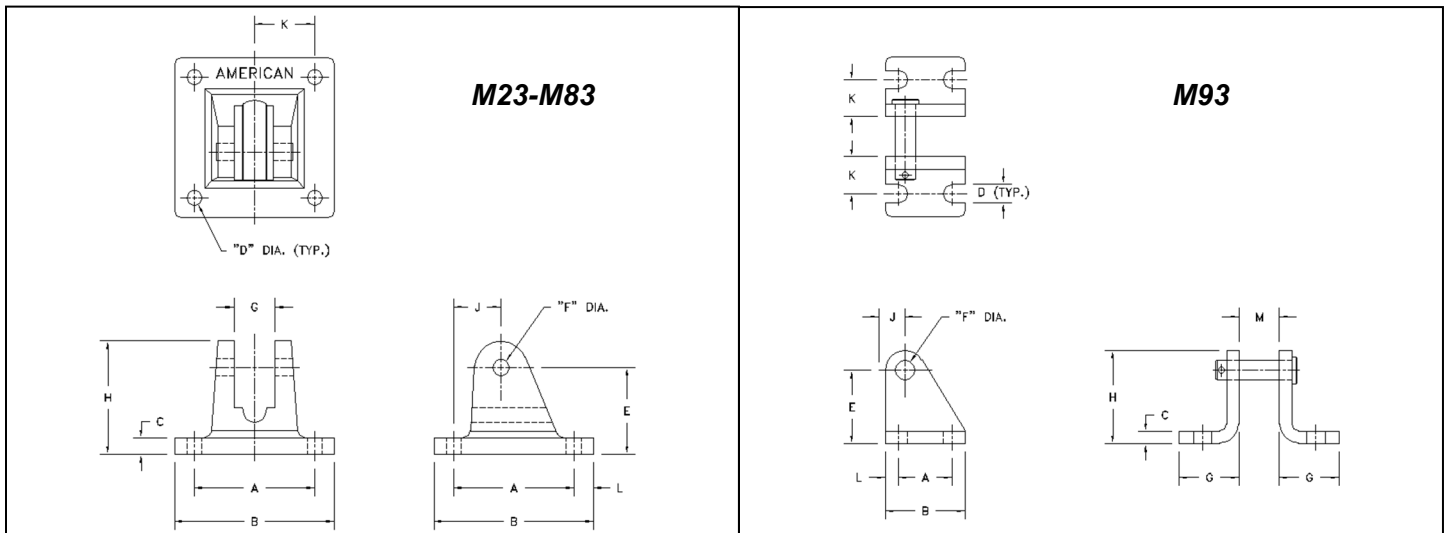
MOUNTING ACCESSORIES: FOOT BRACKET & FLANGE



Bore	DIMENSIONS FOR FOOT BRACKETS											DIMENSIONS FOR FLANGE BRACKETS									
	P/N	A	B	C	D	E	F	G	H	J	K	L	P/N	A	B	C	D	E	F	G	H
3/4"	M21	1.50	1.87	0.12	0.28	0.81	0.62	1.00	1.37	0.93	0.56	0.18	M22	1.62	2.12	0.21	0.62	0.50	0.28	0.25	0.81
1-1/8"	M41	1.50	1.87	0.12	0.28	0.87	0.75	1.06	1.50	0.93	0.59	0.18	M42	2.00	2.50	0.25	0.75	0.62	0.28	0.25	1.00
1-1/2"	M61	1.87	2.37	0.19	0.28	1.18	1.00	1.37	2.06	1.18	0.78	0.25	M62	2.50	3.25	0.31	1.00	0.75	0.28	0.37	1.25
2"	M81	2.37	3.00	0.25	0.34	1.50	1.25	1.68	2.56	1.50	0.96	0.31	M82	2.87	3.62	0.31	1.25	0.87	0.28	0.37	1.43
2-1/2"	M91	2.87	3.75	0.25	0.34	1.75	1.50	1.62	3.06	1.87	1.00	0.43	N/A	--	--	--	--	--	--	--	--

Notes One mounting nut is provided with each foot or flange bracket ordered.

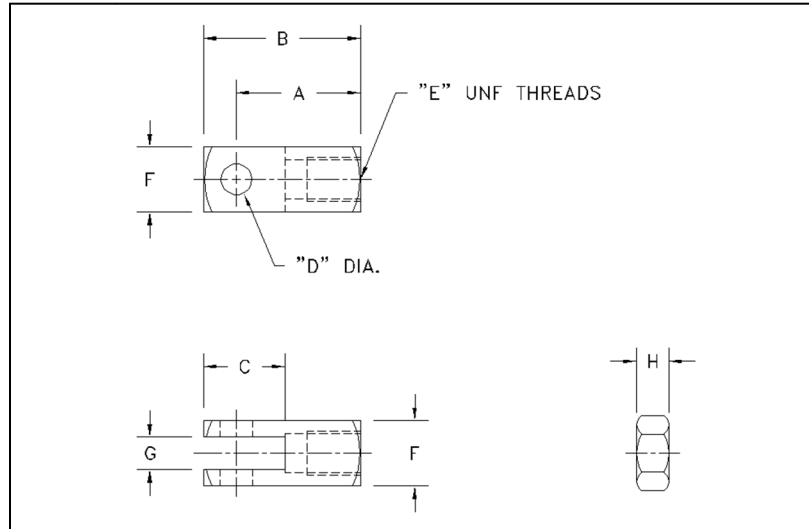
MOUNTING ACCESSORIES: PIVOT BRACKET



DIMENSIONS FOR PIVOT BRACKETS													
Bore	P/N	A	B	C	D	E	F	G	H	J	K	L	M
3/4"	M23	1.75	2.25	0.25	0.28	1.09	0.25	0.37	1.43	0.68	0.87	0.25	--
1-1/8"	M43	1.75	2.25	0.25	0.28	1.09	0.25	0.50	1.43	0.68	0.87	0.25	--
1-1/2"	M63	2.25	3.00	0.31	0.28	1.62	0.31	0.75	2.12	0.87	1.12	0.37	--
2"	M83	2.25	3.00	0.31	0.28	1.62	0.31	0.75	2.12	0.87	1.12	0.37	--
2-1/2"	M93	1.00	1.50	0.24	0.34	1.37	0.37	1.12	1.75	0.37	0.68	0.25	0.75

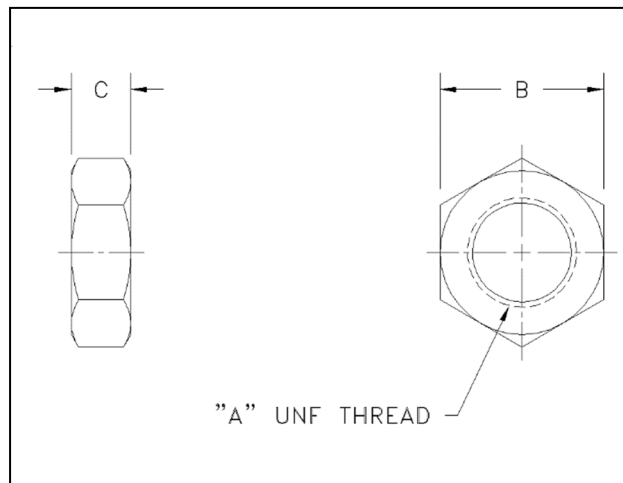
Notes Pivot Pin & Cotter Pin included with each Pivot Bracket ordered.

MOUNTING ACCESSORIES: ROD CLEVIS



DIMENSIONS FOR ROD CLEVIS'									
Bore	P/N	A	B	C	D	E	F	G	H
3/4"	M24	0.93	1.18	0.68	0.25	5/16-24	0.50	0.25	0.18
1-1/8"	M44	1.12	1.37	0.68	0.25	3/8-24	0.56	0.25	0.21
1-1/2"	M64	1.43	1.81	0.93	0.37	1/2-20	0.75	0.37	0.31
2"	M84	1.87	2.31	1.31	0.43	5/8-18	0.87	0.43	0.37
2-1/2"	M84	1.31	1.68	0.93	0.37	1/2-20	0.75	0.37	0.31
Notes: Rod Jam Nut, Clevis Pin, & Cotter Pin included with each Rod Clevis ordered.									

MOUNTING ACCESSORIES: MOUNTING NUT



DIMENSIONS FOR MOUNTING NUTS				
Bore	P/N	A	B	C
3/4"	M25	5/8-18	0.93	0.37
1-1/8"	M45	3/4-16	1.12	0.42
1-1/2"	M65	1-14	1.50	0.54
2"	M85	1-1/4-12	1.87	0.54
2-1/2"	M95	1-3/8-12	1.87	0.50

(-4) MFC OPTION SENSING SWITCHES:

All cylinders ordered with the (-4) MFC option can be used in conjunction with Reed or Solid-State switches for position sensing. Clamping bands are included with each switch ordered and are pre-sized for easy installation. Switches must be ordered separate from cylinders, as an accessory item. All switches are pretested at the manufacturer with **NO** warranty. The use of an ohmmeter is recommended whenever field testing is required. Do **NOT** use an incandescent light bulb or any other testing device which may subject switch to inrush loads beyond their rating. Do not exceed 2.5 in.-lbs. tightening torque on lock nuts. LED switches (REED or Solid-State) require a minimum current flow of 10mA for LED illumination.

Reed Switches (AC or DC)

American's Reed switches can be used on either AC or DC applications. Reed switches are available with or without an LED indicator. In order to avoid premature contact deterioration, always operate within specifications listed below. Switch life can be maximized by implementing protection circuits as indicated in wiring diagram below.

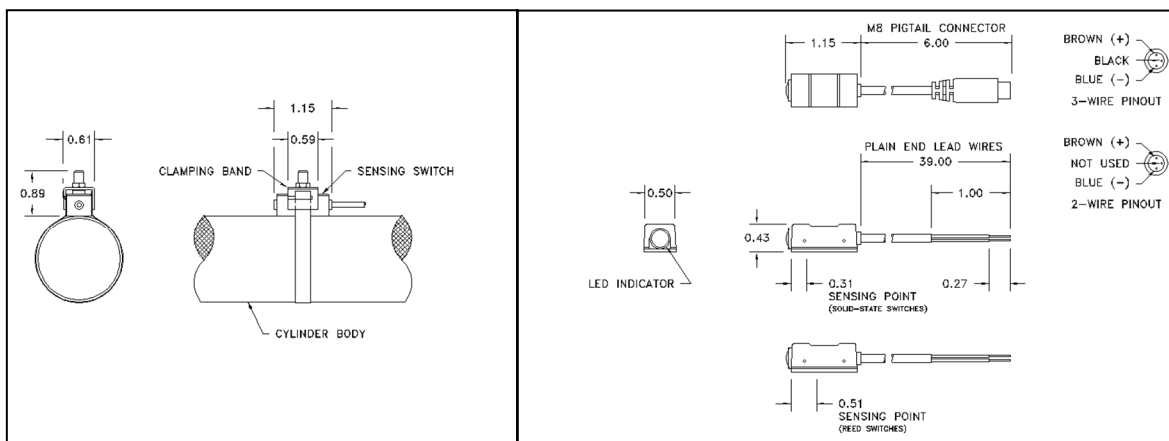
Solid-State Switches (DC only)

American's Solid-State switches are designed for DC applications only. With no mechanical parts to wear out or arc, the solid-state circuitry provides a compact, reliable positioning switch for extended service life when used within the specified parameters below.

Specs.	Type	Non-LED Reed Switch	LED Reed Switch	Solid-State Switches	
				NPN Current Sinking	PNP Current Sourcing
Wiring Method		2-Wire Type		3-Wire Type	
Switching Logic		Single Pole Single Throw, Normally Open		Normally Open	
Operating Voltage		5 to 120V (AC or DC)	5 to 240V (AC or DC)	5 to 30V DC	
Switching Current		300mA Max	100mA Max	200mA Max	
Contact Rating		36W Max	10W Max	6W Max	
Current Consumption		-		15mA @ 24V Max	
Voltage Drop		0.1V Max	3.5V Max	1.5V Max	
Indicator		None	Red LED	Green LED	
Operating Frequency		200Hz Max		1000Hz Max	
Temperature Range		14°F to 158°F			
Shock Rating		30G		50G	
Vibration Rating		9G			
Enclosure Classification		IEC Standard IP67			
Protection Circuit		None		Short-Circuit, Power Source Reverse Polarity, & Surge Suppression	
Wiring Diagram		<p>AC OPERATION 5-120VAC 5-240VAC DC OPERATION 5-120VDC 5-240VDC</p> <p>LOAD MUST NOT EXCEED CONTACT RATING R = RESISTOR (UNDER 1K OHM) C = CAPACITOR (0.01 MICROFARAD)</p>		<p>5-30 VDC 5-30 VDC</p>	

(-4) MFC OPTION SENSING SWITCHES: (cont.)

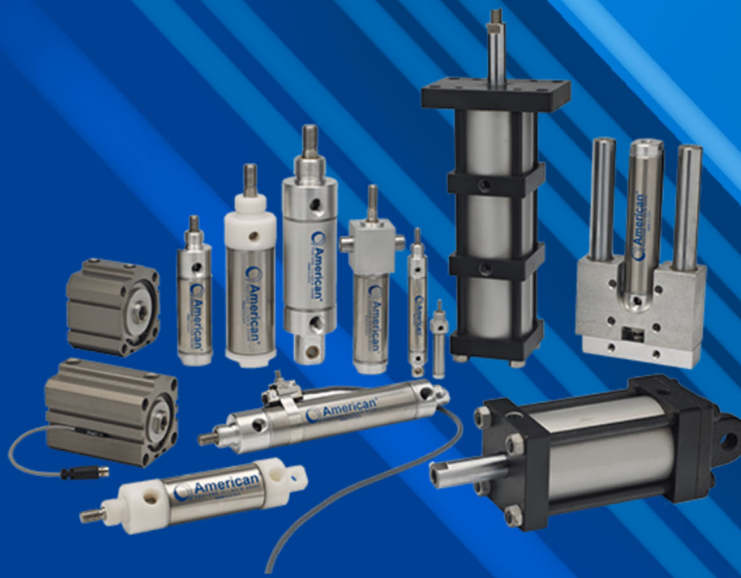
Dimensional Data:



Switch Part Numbers:

Reed Switches						
Options	Standard Lead Wires - With Band		Pigtail Connection Type - With Band			Band Only
	Non-LED	LED	LED w/ 6" Pigtail	LED w/ Pigtail & 2M (78") Cable	LED w/ Pigtail & 5M (196") Cable	
Bore						
1-1/8"	M46	M46L	M46L-PT	M46L-PT-78	M46L-PT-196	490-008-0
1-1/2"	M66	M66L	M66L-PT	M66L-PT-78	M66L-PT-196	690-014-0
2"	M86	M86L	M86L-PT	M86L-PT-78	M86L-PT-196	890-011-0
2-1/2"	M96	M96L	M96L-PT	M96L-PT-78	M96L-PT-196	990-004-0
Switch/Cable (no band)	MS-6	MSL-6	MSL6-PT	MSL6-PT-78	MSL6-PT-196	
Cables Only for Pigtail Switches						
					2M (78") Cable	PT-78
					5M (196") Cable	PT-196

Solid State Switches									
Options	Standard Lead Wires - With Band		Pigtail Connection Type - With Band						Band Only
	Sinking (NPN)	Sourcing (PNP)	LED w/ 6" Pigtail		LED w/ Pigtail & 2M (78") Cable		LED w/ Pigtail & 5M (196") Cable		
			Sinking (NPN)	Sourcing (PNP)	Sinking (NPN)	Sourcing (PNP)	Sinking (NPN)	Sourcing (PNP)	
Bore									
1-1/8"	M46H	M46HP	M46H-PT	M46HP-PT	M46H-PT-78	M46HP-PT-78	M46H-PT-196	M46HP-PT-196	490-008-0
1-1/2"	M66H	M66HP	M66H-PT	M66HP-PT	M66H-PT-78	M66HP-PT-78	M66H-PT-196	M66HP-PT-196	690-014-0
2"	M86H	M86HP	M86H-PT	M86HP-PT	M86H-PT-78	M86HP-PT-78	M86H-PT-196	M86HP-PT-196	890-011-0
2-1/2"	M96H	M96HP	M96H-PT	M96HP-PT	M96H-PT-78	M96HP-PT-78	M96H-PT-196	M96HP-PT-196	990-004-0
Switch/Cable (no band)	MSHL-6	MSHP-6	MSH6-PT	MSHP6-PT	MSH6-PT-78	MSHP6-PT-78	MSH6-PT-196	MSHP6-PT-196	
Cables Only for Pigtail Switches									
							2M (78") Cable	PT-78	
							5M (196") Cable	PT-196	



WARRANTY

American Cylinder Co., Inc. warrants its products to be free from defects in material and workmanship under normal wear and service for a period of 3 years from date of shipment of the order. American Cylinder Company shall have no liability under this warranty if: 1) The product is used other than in accordance with specifications. 2) The product is subjected to abuse, negligence, accident, misapplication, or unintended use. 3) The product is manufactured to buyer's specifications.

Manufacturer's liability shall be limited to allowance of credit or replacement of defective product. American Cylinder Company shall not be liable or responsible for injuries or damages to persons or property arising out of the use or operation of American Cylinder products.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, LIABILITY FOR LOST PROFIT OR FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR COMMERCIAL LOSSES, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES.

THESE CONDITIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Special Design Air Cylinders

For those design projects where a standard cylinder product cannot provide a solution, American Cylinder engineers can work along with you to design a custom pneumatic cylinder to satisfy the needs and challenges of your application.

After finalizing your design, prototypes can be economically manufactured by our ISO 9001 Certified Special Cylinder Department for your test and evaluation.

A significant portion of our business involves special modifications and as a special design air cylinder manufacturer, American Cylinder Co., continues to provide unique solutions to a wide variety of industries.

Examples of the most requested modifications include:

- Custom Rod Thread Lengths
- Coarse Threads
- Non-Standard Rod Extensions
- Special Seal Types, Compounds and Lubrication
- Customer Logos and Part Numbers
- Special Spring Forces and Materials
- Additional and Oversize Ports
- Special Head and Piston Materials
- Specific Dimensions for Interchangeability
- Value Added Sub-Assembly Services

American Cylinder is dedicated to filling your Special Cylinder requirements and welcomes your challenge to show you our problem solving capabilities.

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