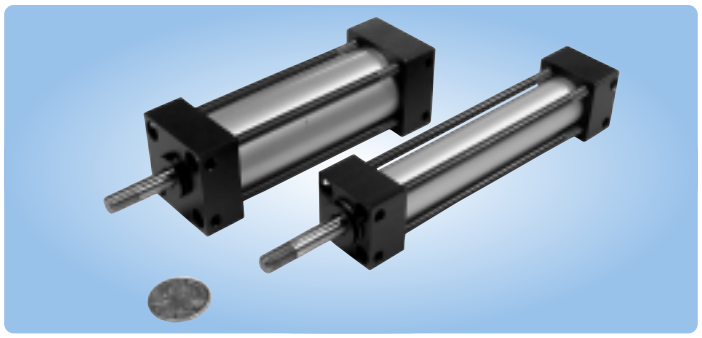
Small Bore Tie Rod



Cylinder Materials

Heads:	Machined from solid aluminum; black anodized
Tubes:	Aluminum hard anodized to 60 Rc (16 RMS finish)
Piston:	Solid high alloy aluminum
Rod:	Hard chrome plated ground and polished steel
Bearing:	Long wearing oil impregnated porous bronze
Piston and Rod Seals:	Wear compensating Buna N vee rings
Rod Wiper:	PTFE
Tie Rods:	High tensile steel torqued to allow for flexure

Double-Rod Cylinders

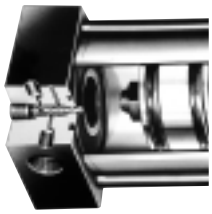
Cylinders having a common piston rod that protrudes from both ends are available in all bore sizes. In addition to providing a dual power source, double rod cylinders serve to minimize rod deflection and to facilitate the control and adjustment or rod travel.

Specify Cushions for Shock Absorption

Model DM-112 is available with adjustable cushions that decelerate the piston rod over the last $^{11}/_{16}$" of stroke. They allow the user to set the degree of cushioning needed for each specific application.

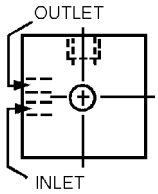
Note: Cushions are not recommended for hydraulic use.

Pneumatic End-of-Stroke Sensors (Inter-Pilots®)



A miniature 3-way valve built into the cylinder head is actuated by the cylinder piston as it reaches the end of its stroke. Once contacted, the 3-way Inter-Pilot® valve emits an air signal. In this manner, sequencing is achieved without external limit switches and electric wiring.

Inter-Pilots® may be built (10-32 Ports) into either or both cylinder heads. They are not for hydraulic use. Cylinder operating pressure must not exceed pressure used to feed the Inter-Pilot®. Inter-Pilots® are not available on DM-075.



Operating Parameters

Bore Diam.	Thrust*	Thrust Mult.**	Rod Diam.(In.)	Max. Oper. Pressure Air	Oil‡
$^{3}/_{4}$"	44	.44	$^{5}/_{16}$	250	1000
$1^{1}/_{8}$"	100	1.00	$^{5}/_{16}$	250	1000

*Pushing force of cylinder at 100 PSI inlet pressure. Pulling force will be about 10% less due to the displacement of the piston rod. Note: Actual realizable thrust could be somewhat lower due to side loading and internal friction. It is best to oversize your cylinder by about 25% to assure smooth operation.

** To determine thrust at other inlet pressures, multiply factor by the desired pressure.

‡ DM cylinders are not rated or approved for use in hydraulic circuit where an impulse or pressure spike may occur.

Operating Specifications	
Temp. Range:	-40 to +250°F (to +400°F on request)
Lubrication:	Not necessary, but will extend cylinder life when operated with dry air.
Filtration:	Not essential, but a standard 40 micron filter placed upstream will prolong seal life.

Pneumatic Stroke Completion Sensors (SCS)

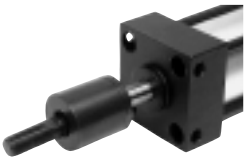
Port mounted SCS valves emit an air signal when the cylinder rod has stopped even if the piston has not contacted the end cap. SCS valves are ideal for use in situations where the full cylinder stroke is not used. See pg. 57.

Accessories

	Bore Diameter	$^{3}/_{4}$"	$1^{1}/_{8}$"
	Flex Rod Couplers	DMA-312	DMA-312
	Forged Rod Clevis	DMC-5	DMC-5
	Pivot Bracket	NA	DMP-7
	Clevis Bracket (with Pin)	NA	DMR-7

Self Aligning Rod Couplers

Rod couplers simplify cylinder alignment problems by compensating



for 2° angular error and $^{1}/_{16}$" lateral misalignment on both extension and retraction strokes. Greater reliability is achieved by reducing cylinder and component wear. Order model # DMA-312 for these small bore cylinders. For other models, see page 45 for dimensions.

Part #	Rod Thread	Cylinder Type
DMA-312	$^{5}/_{16}$-24	C-112, DM-075, DM-112
DMA-375	$^{3}/_{8}$-24	No Standard
DMA-437	$^{7}/_{16}$-20	DM-150, DM2-150, HD1-150, DM-200, DM2-200, HD1-200, DM-250, DM2-250, HD1-250
DMA-500	$^{1}/_{2}$-20	C-150
DMA-625	$^{5}/_{18}$-18	C-250
DMA-750	$^{3}/_{4}$-16	DM-325, DM2-325, HD1-325, DM-400, DM2-400, HD1-400
DMA-875	$^{7}/_{8}$-14	No Standard
DMA-1000	1-14	C-300, DM-600, HD1-600
DMA-1250	$1^{1}/_{4}$-12	No Standard

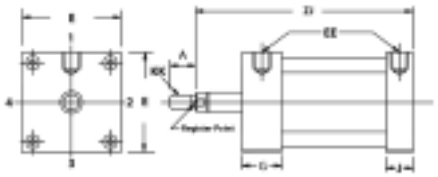
Small Bore Tie Rod Dimensions and Ordering Information

Bore	3/4	1 1/8
A	1/2	1/2
CB	-	5/8
CD	25/64	25/64
CR	2 1/4	2 1/4
CW	-	1/2
DD	13/64	13/64
E	1 1/4	1 5/8
EB	1 7/16	1 7/16
EE(NPTF)	1/8	1/8
EF	11/32	11/32
EJ	13/64	13/64
F	-	1/8
FB	7/32	7/32
G	3/4	3/4
J	3/4	3/4
KK	5/16-24	5/16-24
FL	1 1/8	5/8 Clevis 1 1/4 Pivot
M	-	3/8
MM	5/16	5/16
NT	13/64-Thru	13/64-Thru
R	13/16	1 1/8
RT	10-32	10-32
ST	9/32	9/32
SV	5/16	5/16
TF	2 13/32	2 25/32
TN	13/16	1 1/8
UF	2 29/32	3 9/32
W	1/2	1/2
XT	11/16	11/16
H	7/8	7/8
HA	1 1/4	1 1/4
HB	1/4	1/4
HC	5/8	5/8
HD	5/16	5/16
HE	3/4	3/4
SN*	1 3/4	1 3/4
XD*	3 3/4	3 7/8 Pivot 3 1/4 Clevis
ZJ*	2 5/8	2 5/8
ZM**	3 1/8	3 1/8

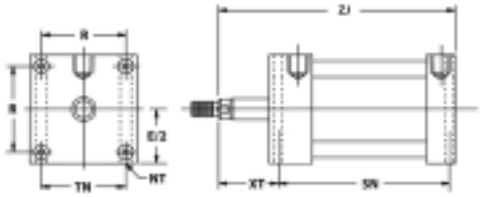
* Add Stroke Length to Dimension

** Add 2 x Stroke Length to Dimension

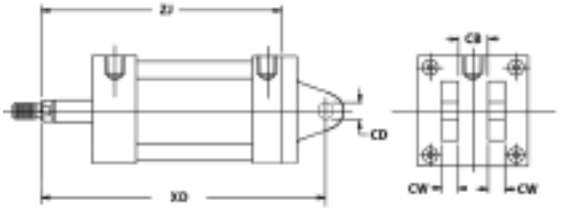
Basic Cylinder



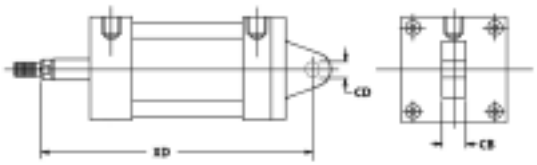
Bottom Flush Model FB



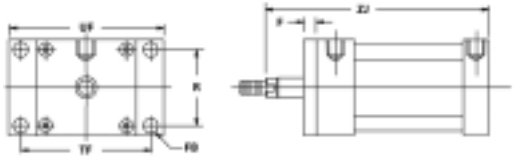
Clevis Model PB



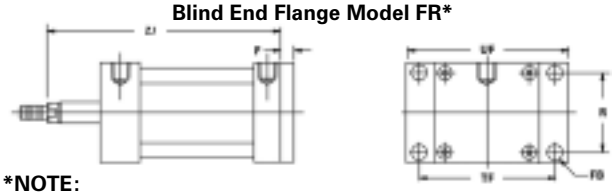
Pivot Model PE



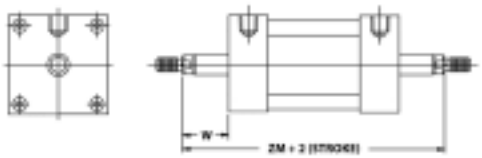
Rod End Flange Model FF*



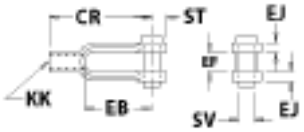
Blind End Flange Model FR*



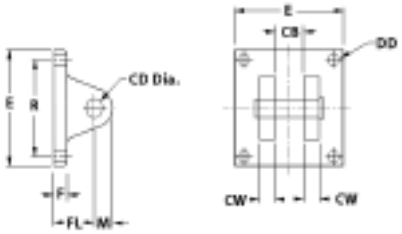
Double Rod Model DR



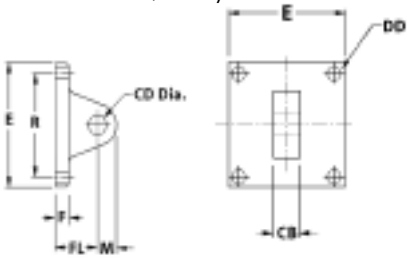
DMC Forged Rod Clevis w/Pin



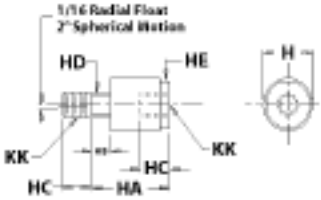
DMR Clevis Bracket w/Pin
1⅛" Only



DMP Pivot Bracket
1⅛" Only



Self Aligning Rod Couplers



***NOTE:**

(1) 1 1/8" bore cylinders use two angle brackets for flange mounting. (no flange plate)

(2) On 1 1/8" bore models with ram end cushions and/or Inter-Pilots®, 9/16" must be added to **G, ZB, SN, and XD** dimensions. For blind end cushions and/or Inter-Pilots®, 5/8" must be added to **J, ZJ, SN, and XD** dimensions.

(3) 3/4" and 1 1/8" bore cylinders use spacers for fractional strokes. For dimensioning, use the next even inch stroke. For true fractional stroke cylinders, specify **CL** (cut to length).

(4) 3/4" and 1 1/8" bore models have (4) 10-32 threaded holes for rear flush mounting.

How To Order

DM-112 x 10 - FB - DR

Base Model
DM-075 (3/4" Bore)
DM-112 (1 -1/8" Bore)

Stroke
State Fractional Strokes as decimals (i.e. 10.5)
Note: These cylinders use spacers for fractional stroke. For dimensioning, use the next even stroke. For true fractional stroke cylinders specify CT (i.e. , 10.5 CT)

Mounting

NOTE: DM-075 only available with FB Mount.

In addition to Models shown above the DM-112 is available in a Nose Mount (NS). Consult the factory for dimensional information.

FF Option
Front Flange - Plate extends beyond the front head. * On 1⅛" bore cylinder, two flange bars replace the flange plate.

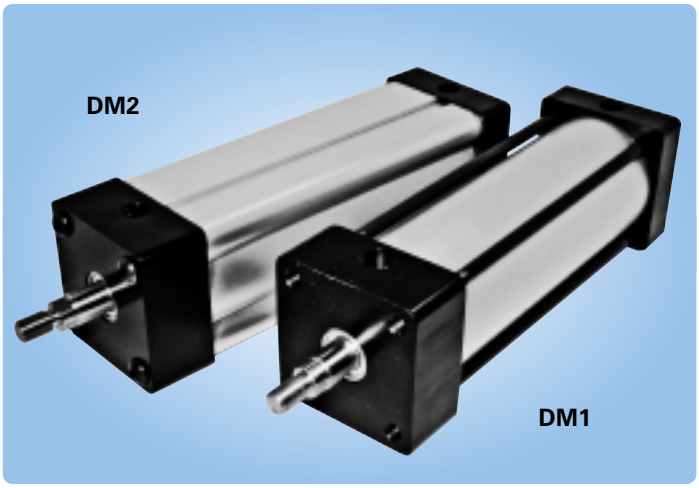
Options

DR		Double Rod
VI	HOT	Viton Seals
HY		Hydraulic Use

Options below are only available on DM-112

CF		Front Cushions
CR		Rear Cushions
CB		Cushions Both Ends
IPF		Interpilots - Front Head
IPR		Interpilots - Rear Head
IPB		Interpilots - Both Heads

Dyna-Mation Series: DM1 & DM2



Built to Last (Materials)

- Cylinder heads are machined from solid aluminum bar stock and black anodized
- Tubes (DM1) and Tube Extrusions (DM2) are aluminum hard anodized to 60 Rc (16 RMS finish)
- Pistons are solid high alloy aluminum
- Pistons have a PTFE wear band
- Dynamic seals are high quality wear-compensating Buna N block V rings
- Rods are hard chrome plated ground and polished steel
- Rod Wipers are PTFE
- Tie Rods (DM1) are high tensile steel torqued to allow for flexure

Dyna-Mation -vs- HD Models

Dyna-Mation cylinders are designed to generate high performance in most applications. However, when operating conditions are severe, heavy duty models (HD Series, see pages 38-47) are recommended. The HD Series boasts the added benefits of a large hard-coated outboard rod bearing. The following profiles illustrate the differences of the rod end head in all three types of cylinders:

DM2
Extruded Body Design with Internal Rod Bearing

DM1
Internal Bronze Rod Bearing Tie Rod Design

HD1
Heavy Duty Hard-Coated Rod Bearing

Two Designs To Meet Application Demands

Mead Dyna-Mation cylinders are available two design series, the DM1 and the DM2. The DM1 series incorporates tie-rod construction while the DM2 series cylinders are constructed with an extruded body design, making these cylinders better suited for wash down applications and clean environments.

Specify Cushions for Shock Absorption

Adjustable cushions that decelerate the piston rod over the last $^{11}/_{16}$" of stroke may be ordered in either or both ends of Dyna-Mation cylinders. They allow the user to set the degree of cushioning needed for each specific application.

A built-in check valve assures a fast getaway in the opposite direction. The tough cushion seal combines with the ultra-smooth control-stem to provide years of reliable service.

Operating Parameters

Bore Diam.	Thrust*	Thrust Mult.**	Rod Diam.(In.)	Max. Oper. Pressure Air	Oil‡
$1^1/_2$"	177	1.77	$^5/_8$	250	1000
2"	314	3.14	$^5/_8$	250	1000
$2^1/_2$"	491	4.91	$^5/_8$	250	1000
$3^1/_4$"	830	8.30	1	250	700
4"	1257	12.57	1	250	650
6"	2827	28.27	$1^3/_8$	250	435

*Pushing force of cylinder at 100 PSI inlet pressure. Pulling force will be about 10% less due to the displacement of the piston rod. Note: Actual realizable thrust could be somewhat lower due to side loading and internal friction. It is best to oversize your cylinder by about 25% to assure smooth operation.

** To determine thrust at other inlet pressures, multiply factor by the desired pressure.

‡ DM cylinders are not rated or approved for use in hydraulic circuit where an impulse or pressure spike may occur.

NOTE: 6" bore only available in DM1 Series.

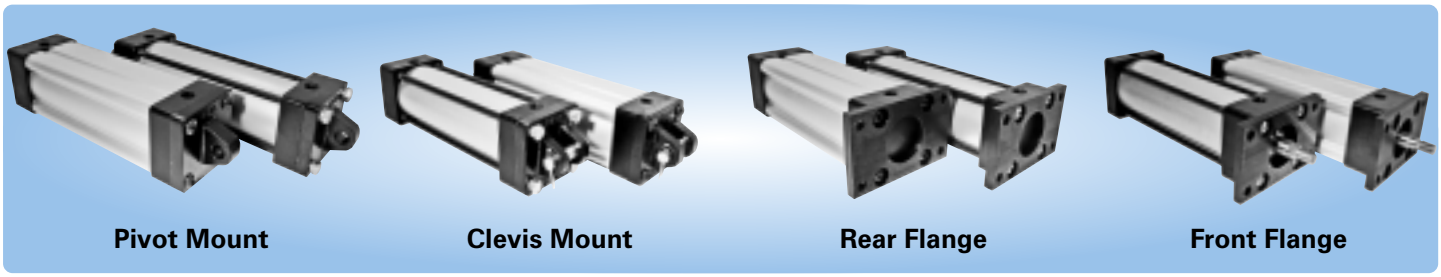
Operating Specifications	
Temp. Range:	-40 to +250°F (to +400°F on request)
Lubrication:	Not necessary, but will extend cylinder life when operated with dry air.
Filtration:	A standard 40 micron filter placed upstream will prolong seal life.

Double-Rod Cylinders

Cylinders having a common piston rod that protrudes from both ends are available in all bore sizes. In addition to providing a dual power source, double rod cylinders serve to minimize rod deflection and to facilitate the control and adjustment of rod travel. See page 35 for ordering instructions.

Right Angle Flow Controls

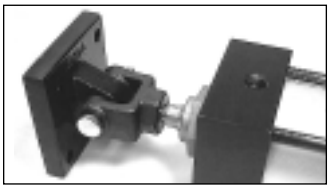
Control the speed of your cylinders with Mead Flow Control Valves. Right-angle flow controls can be found on page 63. For precise metering of air, see Mead Dyla-Trol Valves on page 66.



Accessories

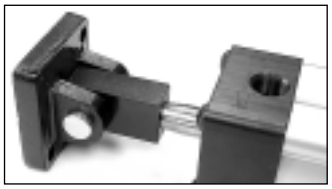
Rod clevises, rod eyes, pivot brackets, clevis brackets, and pivot pins are available in each bore size to accomplish all four of the combinations illustrated below.

Rod Clevis and Pivot Bracket

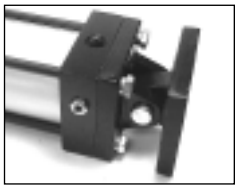


Clevis Bracket and PE Cylinder

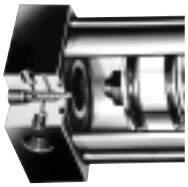
Rod Eye and Clevis Bracket



Pivot Bracket and PB Cylinder



Pneumatic End-of-Stroke Sensors (Inter-Pilots®)

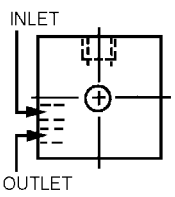


A miniature 3-way valve built into the cylinder head is actuated by the cylinder piston as it reaches the end of its stroke. Once contacted, the 3-way Inter-Pilot® valve emits an air signal. In this manner, sequencing is achieved without external limit switches and electric wiring.

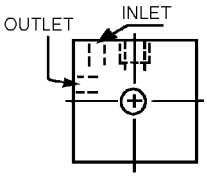
Inter-Pilots® may be built into either or both cylinder heads. They are not for hydraulic use. Cylinder operating pressure must not exceed pressure used to feed the Inter-Pilot®.

Inter-Pilot® Port Locations

For 1 ½" Bore Cylinders



For 2"-4" Bore Cylinders



Note: Inter-Pilot® ports are 10-32.

Rod Position Sensors

Hall Effect and Reed Switches allow the cylinder user to sense rod position anywhere within the stroke. Switches are available for both models. For the DM1 series the switch attaches to any of the four tie-rods. For the DM2 series, a dovetail slot runs along the cylinder tube to facilitate fast and accurate position setting.

Hall Effect

Hall effect technology provides contactless switching. With contactless switching there are no moving parts; therefore, reliability and life expectancy are greatly increased. Hall Effect switches come with built-in indicator lights (3 wire), reverse polarity and surge protection standard. Order either sinking or sourcing depending on logic systems requirements. They have an IP67 protection rating.

Technical Information			
Operating Voltage:	5-28 DC	**Working Temp:**	23 to 194°F
Operating Time:	On 2 ms	**Repeatability:**	.001 ms
	Off .1 ms	**Max. Switching Current :**	.5A

Current Sinking: Load connected between output and positive supply.
Current Sourcing: Load is connected between output and common.

Reed

Mead Reed Switches are epoxy encapsulated and economically priced for reliable low cost position sensing. Reed switches come with wire leads. LED (2 wire, 3m length) included.

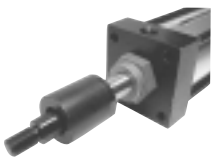
Note: Not for use with hydraulic cylinders.

Technical Information			
Operating Voltage:	240 AC Max.	**Working Temp:**	67 to 200°F
Switch Current:	.5 Amps Max.	**Operating Time:**	On .5 ms
	10 Watts Max.		Off .5 ms

Pneumatic Stroke Completion Sensors (SCS)

Port mounted SCS valves emit an air signal when the cylinder rod has stopped even if the piston has not contacted the end cap. SCS valves are ideal for use in situations where the full cylinder stroke is not used. SCS valves are available in 1/8", 1/4", 1/2" pipe sizes. See pg. 57.

Self Aligning Rod Couplers

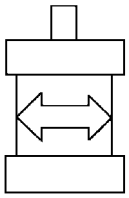


Rod couplers simplify cylinder alignment problems by compensating for 2° angular error and 1/16" lateral misalignment on both extension and retraction strokes. Greater reliability is achieved by reducing cylinder and component wear. All components are heat treated for wear and corrosion resistance.

* see page 30 for complete listing of Mead's self aligning rod couplers.

Ordering Dyna-Mation DM1 & DM2

STEP 1:

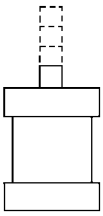


SELECT A BORE SIZE

Bore	1 1/2"	2"	2 1/2"	3 1/4"	4"	6"
Force*	177	314	491	830	1257	2827
Models Available	**DM1-150** **DM2-150**	**DM1-200** **DM2-200**	**DM1-250** **DM2-250**	**DM1-325** **DM2-325**	**DM1-400** **DM2-400**	**DM-600** **NA**

* Maximum force output at 100 PSI inlet pressure (in lbs.)

STEP 2:



CHOOSE STROKE LENGTH

PISTON ROD DIAMETERS:

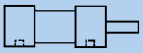
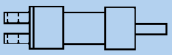
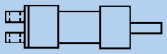
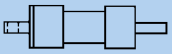
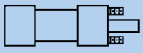
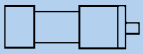
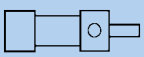
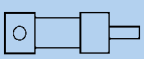
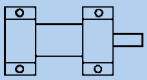
Bore	1 1/2"	2"	2 1/2"	3 1/4"	4"	6"
Rod Diam.	5/8"	5/8"	5/8"	1"	1"	1 3/8"

Non Standard Piston Rods: Special rod threads or extensions are available. Please enclose a sketch of what you require.

Note: Stroke costs vary with differing bore sizes. Extra charges may be incurred for fractional strokes and strokes over 12".

STEP 3:

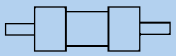
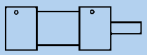
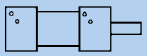
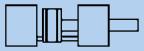
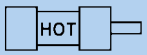
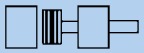
SELECT A MOUNTING STYLE

		Mead Code	Bore Diameter 1 1/2"	2"	2 1/2"	3 1/4"	4"	6"	NFPA Code	Description
Flush Bottom		**FB**	•	•	•	•	•	•	MS-4	Four tapped holes on bottom of cylinder.
Long Clevis		**PB**	•	•	•	•	•	•	MP-2	Two ears extend from rear head; (clevis is detachable)
Short Clevis		**PF**	•	•	•	•	•	NA	MP-1	Two ears extend from rear head (clevis is detachable).
Pivot		**PE**	•	•	•	•	•	•	MP-4	A single ear extends from rear head; (pivot is detachable)
Tie Rods Ext. Front		**TIF**	•	•	•	•	•	•	MX-3	All four tie-rods extend forward from cylinder face. Consult factory for rear extended tie-rods (or both ends).
Front Flange NFPA Std.		**FH**	•	•	•	•	•	•	MF-1	Flange plate extends beyond the front head.
Rear Flange		**FR**	•	•	•	•	•	•	MF-2	Flange plate extends beyond the rear head.
Trunnion Front		**TF**	•	•	•	•	•	•	MT-1	Two pivot bars extend from two sides of front head. Not available with front Inter-Pilots® or front cushions.
Trunnion Rear		**TR**	•	•	•	•	•	•	MT-2	Two pivot bars extend from two sides of rear head. Not available with rear Inter-Pilots® or rear cushions.
Foot		**FT**	•	•	•	•	•	•	Non Std.	A plate with two holes is mounted to the bottom of each head.

Ordering Dyna-Mation DM1 & DM2

STEP 4:

SELECT CYLINDER OPTIONS

		Mead Code	Bore Diameter 1 1/2"	2"	2 1/2"	3 1/4"	4"	6"	Description
Double Rod		**DR**	•	•	•	•	•	•	Rod extends through both heads: (adds to cylinder rigidity)
Cushions (Not available with Trunnion Mount)		**Front CF Rear CR Both CB**	•	•	•	•	•	•	Dampen the impact and sound that occur at stroke completion; cushions are adjustable.
Inter-Pilots (Not available with Trunnion Mount)		**Front IPF Rear IPR Both IPB**	•	•	•	•	•	•	Inter-Pilots emit an air signal at the end of each stroke; Integral with cylinder head; Note: Not available on hydraulic cylinders.
Non-Rotating Rod (6" Max.Stroke)		**NR**	NA	NA	NA	•	•	•	Internal bar prevents piston and rod rotation.
Non-Lube Seals		**NL**	•	•	•	•	•	•	Self-Lubricating seals are used in place of standard Buna N seals; Note: Not available on hydraulic cylinders.
High Temp. Seals (Viton)		**VI**	•	•	•	•	•	•	Viton| seals are suitable for high temperature environments (400°F Max.)
Magnetic Pistons		**MP**	•	•	•	•	•	•	Enables Reed & Hall Effect switches to sense piston location. Note: Reed switch/Hall Effect not available on all hydraulic cylinders. (Contact Mead)

STEP 5:

When ordering Dyna-mation cylinders, list the:

1. *Model Number*
2. *Stroke*
3. *Mounting Style*
4. *Options (If Needed)*

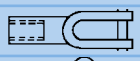
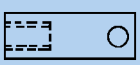
BUILD A MODEL NUMBER

Model Number	Stroke	Mounting Style	Options

DM2-200 x 10 - PB - CF

- 2" Bore
- 10" Stroke
- Clevis Mount (PB)
- Cushioned Front (CF)

Accessories

	Bore Diameter	1 1/2"	2"	2 1/2"	3 1/4"	4"	6"
	Flex Rod Couplers	DMA-437	DMA-437	DMA-437	DMA-750	DMA-750	DMA-1000
	Forged Rod Clevis	DMC-1	DMC-1	DMC-1	NA	NA	NA
	Rod Clevis (NFPA Std.)	DMC-2	DMC-2	DMC-2	DMC-4	DMC-4	DMC-6
	Machined Rod Eye (NFPA Std.)	DME-1	DME-1	DME-1	DME-2	DME-2	DME-3
	Pivot Bracket	DMP-1	DMP-2	DMP-3	DMP-4	DMP-5	DMP-8
	Clevis Bracket (with Pin)	DMR-1	DMR-2	DMR-3	DMR-4	DMR-5	DMR-8

NOTE: DMP and DMR Pivot and Clevis backets do not include any mounting hardware. See page 41 for mount kits.

Hall Effect Switches

Sourcing

For DM1 series: CS-6200P

For DM2 series: CS-7003P

Sinking

For DM1 series: CS-6200N

For DM2 series: CS-7003N

Lead length 3 meters. Cylinders must have a magnetic piston (MP). For technical information, see page 33.

Reed Switches

For DM1 series: CS-6200R

For DM2 series: CS-7003R

Plain Wire Leads

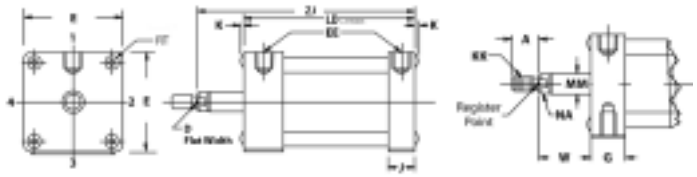
Cylinders must have a magnetic piston (MP). For technical information, see page 33.

Special Cylinders

We invite inquiries regarding non-standard cylinders. Please call 773-685-6800 or your local Mead representative.

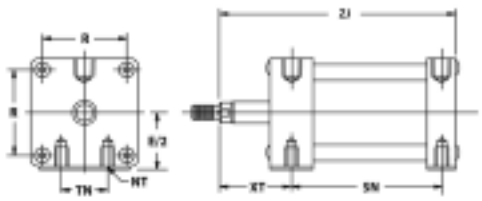
DM1 & DM2 Dimensions

Basic Cylinder

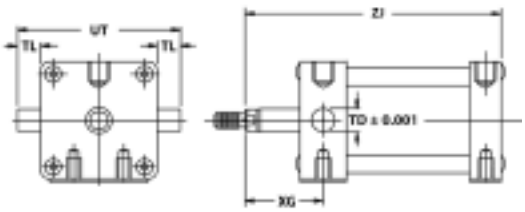


NOTE: DM1 Cylinders are constructed with sleeve nuts; use RT, K does not exist. DM2 use K; RT does not exist.

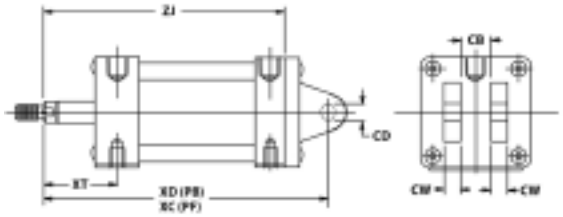
Bottom Flush Model FB



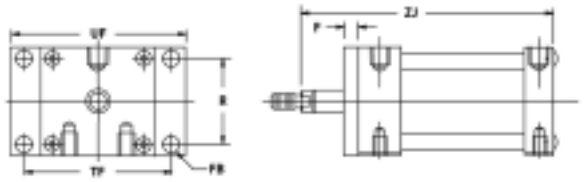
Rod End Trunnion Model TF



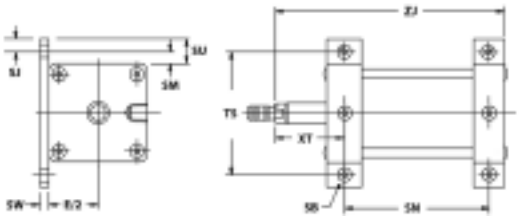
Clevis Model PB and PF



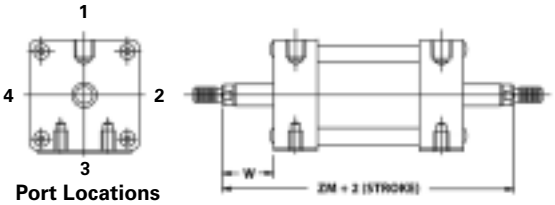
Rod End Flange Model FH*



Foot Mount Plate Model FT

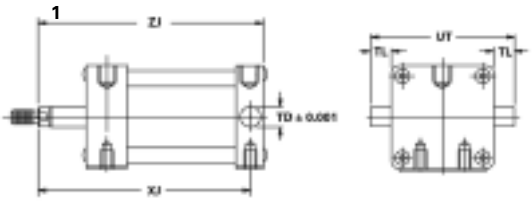


Double Rod Model DR

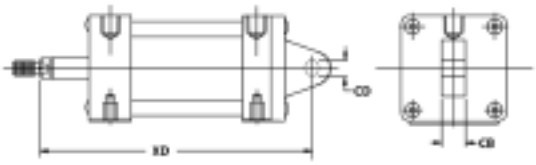


Port Locations

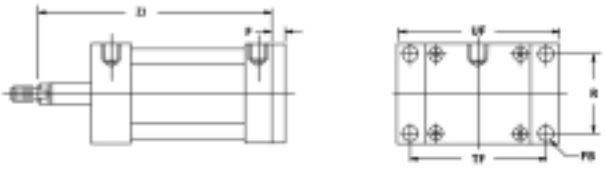
Blind End Trunnion Model TR



Pivot Model PE



Blind End Flange Model FR*



Note: For dimensions of nose mount and tie rod extended models, consult factory.

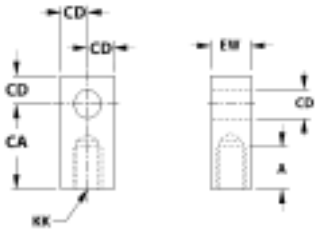
DM1 & DM2 Dimensions

Bore	1 1/2	2	2 1/2	3 1/4	4	6
A	3/4	3/4	3/4	1 1/8	1 1/8	1 5/8
CA	1 1/2	1 1/2	1 1/2	2 1/16	2 1/16	1
CB	3/4	3/4	3/4	1 1/4	1 1/4	1 1/2
CD	1/2	1/2	1/2	3/4	3/4	1
CE	1 1/2	1 1/2	1 1/2	2 3/8	2 3/8	3 1/8
CW	1/2	1/2	1/2	5/8	5/8	3/4
D	1/2	1/2	1/2	7/8	7/8	1 1/8
DD	17/64	23/64	23/64	7/16	7/16	1/2-20
E	2	2 1/2	3	3 3/4	4 1/2	6 1/2
EE(NPTF)***	1/4	1/4	1/4	1/2	1/2	3/4
F	3/8	3/8	3/8	5/8	5/8	3/4
FB	5/16	3/8	3/8	7/16	7/16	9/16
FL	1 1/8	1 1/8	1 1/8	1 7/8	1 7/8	2 1/4 Clevis
G	1 7/16	1 7/16	1 7/16	1 11/16	1 11/16	2
J	15/16	15/16	15/16	1 3/16	1 3/16	1 1/2
K	1/8	5/32	5/32	3/16	3/16	3/16
KK	7/16-20	7/16-20	7/16-20	3/4-16	3/4-16	1-14
LD	4 1/8	4 1/8	4 1/4	4 3/4	4 3/4	5 1/2
M	1/2	1/2	1/2	3/4	3/4	2 1/4 Clevis
MM	5/8	5/8	5/8	1	1	1 3/8
NA	19/32	19/32	19/32	31/32	31/32	1 5/16
NT	1/4-20	5/16-18	3/8-16	1/2-13	1/2-13	3/4-10
R	1 7/16	1 27/32	2 3/16	2 3/4	3 21/64	4 7/8
RT	1/4-28	5/16-24	5/16-24	3/8-24	3/8-24	1/2-20
SB	17/64	21/64	25/64	33/64	33/64	33/64
SJ	3/8	3/8	3/8	1/2	1/2	11/16
SM	3/8	3/8	3/8	1/2	1/2	11/64
SU	3/4	3/4	3/4	1	1	11/64
SW	3/16	3/16	1/4	1/4	1/4	7/64
TD	1	1	1	1	1	1 3/8
TF	2 3/4	3 3/8	3 7/8	4 11/16	5 7/16	7 5/8
TK	3/8	1/2	9/16	3/4	3/4	1 1/8
TL	1	1	1	1	1	1 5/8
TN	5/8	7/8	1 1/4	1 1/2	2 1/16	3 1/4
TS	2 3/4	3 1/4	3 3/4	4 3/4	5 1/2	7 7/8
UF	3 3/8	4 1/8	4 5/8	5 1/2	6 1/4	8 5/8
UT	4	4 1/2	5	5 3/4	6 1/2	9 1/4
W	1	1	1	1 3/8	1 3/8	1 5/8
XT	1 15/16	1 15/16	1 15/16	2 7/16	2 7/16	2 13/16
XG	1 3/4	1 3/4	1 3/4	2 1/4	2 1/4	2 13/16
H	1 1/4	1 1/4	1 1/4	1 3/4	1 3/4	2 1/2
HA	2	2	2	2 5/16	2 5/16	2 15/16
HB	1/2	1/2	1/2	1/2	1/2	1/2
HC	3/4	3/4	3/4	1 1/8	1 1/8	1 5/8
HD	5/8	5/8	5/8	31/32	31/32	1 3/8
HE	1	1	1	1 1/2	1 1/2	2 1/4
HF	10,000	10,000	10,000	34,000	34,000	64,000
Note: * Add Stoke Length to Dimensions Below ** Add Twice Stroke to ZM Dimension						
SN*	2 1/4	2 1/4	2 3/8	2 5/8	2 5/8	3 1/8
XC*	5 3/8	5 3/8	5 1/2	6 7/8	6 7/8	7 7/8
XD*	5 3/4	5 3/4	5 7/8	7 1/2	7 1/2	7 1/2
XJ*	4 1/8	4 1/8	4 1/4	5	5	5 7/8
ZJ*	4 5/8	4 5/8	4 3/4	5 5/8	5 5/8	6 5/8
ZM**	6 1/8	6 1/8	6 1/4	7 1/2	7 1/2	8 3/4

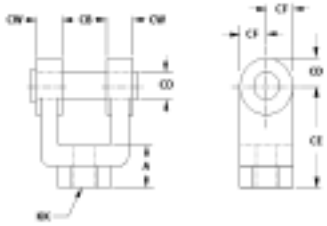
Note: For Inter-Pilot® port locations, see page 33.

*** For the 1-1/2", 2" and 2-1/2" Bores: 3/8" Ports Available Consult Factory.

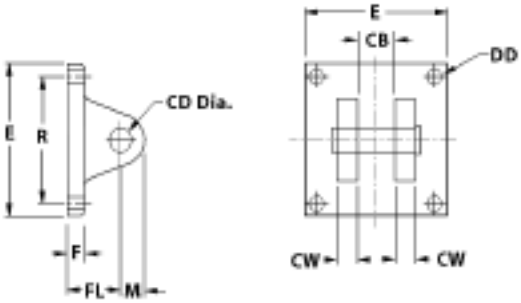
DME Interchangeable Rod Eye



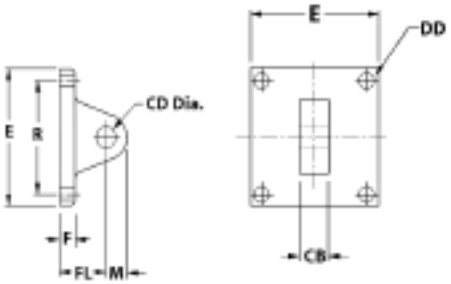
DMC Interchangeable Rod Clevis with Pin



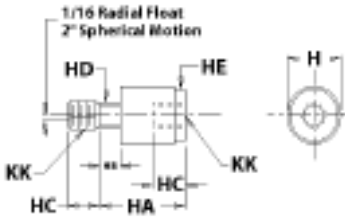
DMR Clevis Bracket w/Pin



DMP Pivot Bracket



Self Aligning Rod Couplers



DMC-1 Forged Rod Clevis w/Pin

1½" through 2½" bores