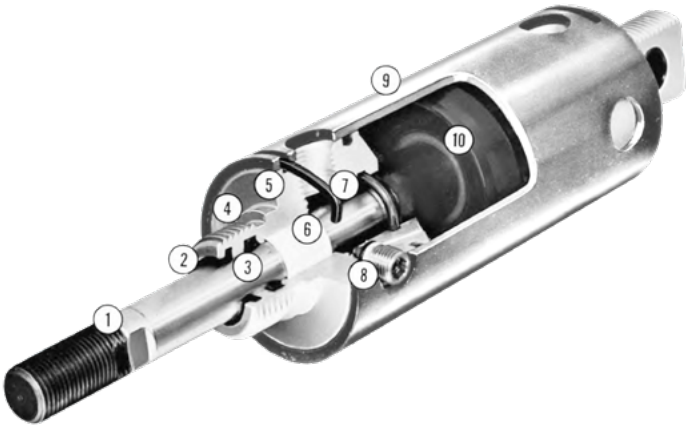
ROUND BODY CYLINDER CONSTRUCTION

FLAIRLINE

1. Chrome-plated, high-strength, steel **Piston Rods** are corrosion resistant, rugged and durable. Wrench flats behind full rod diameter threads permit easy clevis mounting.
2. High-quality elastomer **Rod Wiper** protects rod seal by preventing contaminants from entering cylinder during retract stroke. Resilient synthetic rubber will not scratch rod.
3. Pressure-energized, U-cup type **Rod Seal** is wear compensating, low friction provides positive sealing.
4. Extra-large **Mounting Threads** and **Machined Grooves** make on-the-job mounting installation fast and secure.
5. Lightweight aluminum **Head** and **Caps** for long corrosion-resistant life.
6. Extra-long, low-friction nylon **Rod Bearing** 'gives' rather than wears under normal side loading. When necessary, service is easy; only the bearing is replaced, not the head. Permanent bronze rod bearing is featured on D and DM type cylinders for the extra side load capability.
7. Heads and caps are held to barrel by means of a **Circumflex Key**. The large square steel locking device requires no special installation tools. Service to head or cap can be done without disassembling the entire cylinder.
8. **Adjustable Cushions** available on 2" bore and larger. Under 2" bore cylinders have fixed cushions.
9. Precision-drawn, lightweight aluminum **Barrels** are hard-anodized inside and out for corrosion and abrasion resistance. Fine I.D. micro-finish provides long life and positive sealing.
10. Several **Piston** styles are offered for various application requirements.



Durability

Flairline's repairable lightweight economical cylinders will out last and out perform competitive non-repairable cylinders.

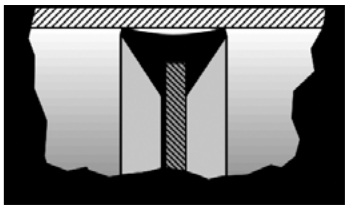
All Flairline cylinders are permanently lubricated for life.

PISTON TYPES

FLAIRLINE

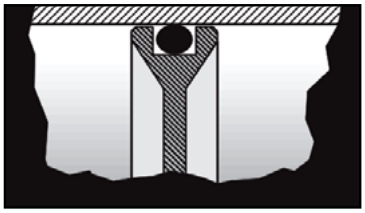
Series **F, O/OLF, H, D, M & DM**

F TYPE



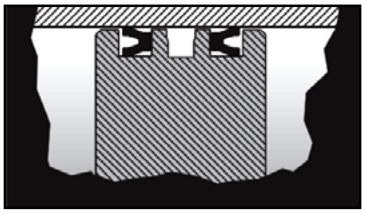
- Pressure energized, wear compensating double lip type. 'Uni-piston' seal (Buna N). Rubber bonded to a plated disc to ensure positive sealing.

O/OLF TYPE



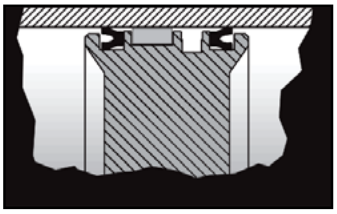
- Dynamic O-ring piston seal (Buna N standard; Viton available only on Series O.)
- Proven to be reliable.
- OLF is a low friction model.

H TYPE



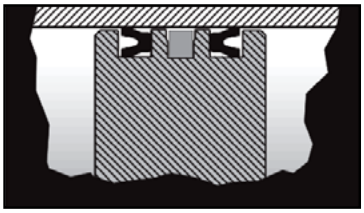
- Pressure energized, wear compensating U-cup piston seals (Buna N standard; Viton available.)

D TYPE



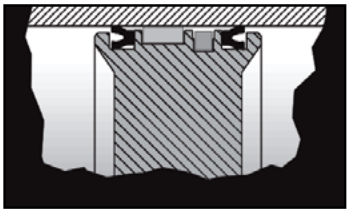
- Pressure energized, wear compensating U-cup piston seals (Buna N standard; Viton available.)
- An acetal wear ring (bearing) prevents metal contact when side laoding contact.

M TYPE



- Pressure energized, wear compensating U-cup piston seals (Buna N standard; Viton available.)
- Piston includes magnet.

DM TYPE



- Pressure energized, wear compensating U-cup piston seals (Buna N standard; Viton available.)
- Piston includes magnet.
- An acetal wear ring (bearing) prevents metal to metal contact when side loading.

Standard Bore Sizes: 1⅛", 1½", 2", 2½", 3¾", 4". **Stroke Sizes:** Any stroke up to 130".
Cushions Available: Either/both ends. **Pneumatic Only:** 150 psi maximum.

MAINTENANCE

Disassembly, Head End

Remove any fittings from the cylinder ports; wrap the **Barrel** in heavy cloth to prevent damage. Place the cap end of the cylinder **Barrel** in a vise.

As you rotate the **Head** counter-clockwise, use a screwdriver to lift the end of the **Circumflex Key** clear of the slot **(FIGURE 1).**

Continue rotation of the **Head**, and the **Circumflex Key** will feed out of the slot **(FIGURE 2).**

Gripping the rod, pull forward. The **Head**, **Rod**, and **Piston** will all come out of the **Barrel (FIGURE 4).**

Screw the **Head** off the **Rod Threads** for ease of clearing **Rod Packing**.

Cap End

Slide the **Head** end back into the barrel to support the **Barrel** and follow the same procedure as above to remove the **Circumflex Key** from the cap end **(FIGURE 3).** If the cylinder has been used in wet or moist external conditions for a long period, the **Circumflex Key** may be corroded. If this is the case, apply penetrating oil into the lock slots prior to disassembly.

FIGURE 1

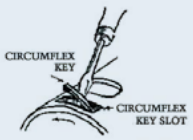


FIGURE 2

FIGURE 3

FIGURE 4

Assembly

Replace the **Piston** (if necessary), **Rod Packings** and **Wiper** and all static seals. Clean the I.D. of the tube thoroughly. Lubricate the **Rod Packings** and the O.D. of the **Piston** prior to assembly. To reassemble the cylinder, follow the above procedure, except the heads will be turned clockwise after the **Circumflex Key** is engaged in the tang hole in the circumflex groove of the head. Turn clockwise until the **Circumflex Key** is completely into the groove and the cylinder head is aligned with the port hole in the **Barrel**. To get the head end over the **Rod Threads** without damaging the packing and wiper, wrap **Rod Threads** with tape.

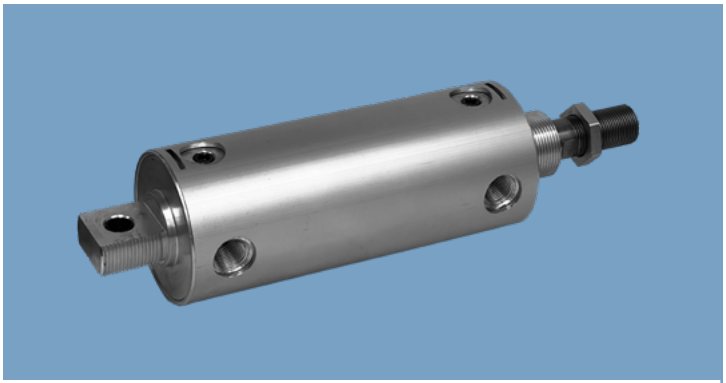
FLAIRLINE WARRANTY

Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

THE ORIGINAL LINE

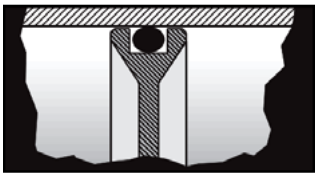
FLAIRLINE

Series **F**, **O/OLF**, **H** & **D**

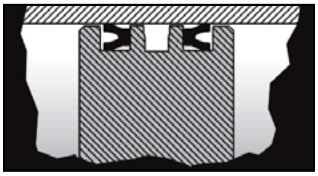


AVAILABLE IN FOUR PISTON TYPES

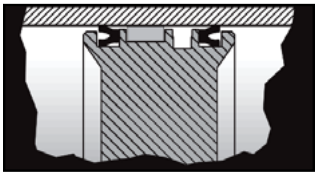
F TYPE



O/OLF TYPE



H TYPE



D TYPE

Features

- Standard Bore Sizes: 1 1/8, 1 1/2, 2, 2 1/2, 3 1/4, 4
- Stroke Sizes: Any stroke up to 130”
- Cushions available: either/both ends

Information

The Original Line is a family of double-acting cylinders, which can be used in nearly all types of applications where lightweight, economical, and durable actuators are required.

- Operating systems can be pneumatic or low pressure hydraulic
- OLF low friction series is ideal for applications where low minimum breakaway force is required
- D series is optimal for handling side load conditions
- Precision machined components and durable seals permit continuous operation in any environment

Specifications

- **Maximum Pressure:**
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- **Operating Temperature:**
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)

FLAIRLINE WARRANTY

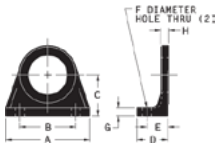
Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

THE ORIGINAL LINE

FLAIRLINE

Series F, O/OLF, H & D

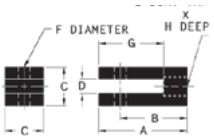
Mounting Accessories



FOOT BRACKET

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-32-225	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
1 1/2	1-32-3	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
2, 2 1/2	1-32-4	3 1/4	2 1/4	1 13/16	1 1/32	11/16	11/32	1/4	1/4
3 1/4, 4	1-32-65	5 1/2	4	2 3/4	1 23/32	1 3/32	15/32	1/2	1/2

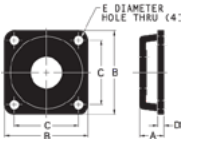
Mounting Nut included.



ROD CLEVIS

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-35-225	2 5/16	1 3/4	1	3/8	1/2-20	5/16	1 11/16	11/16
1 1/2, 2, 2 1/2	1-35-3	2 3/8	1 3/4	1	17/32	5/8-18	7/16	1 11/16	11/16
3 1/4, 4	1-35-65	3 3/8	2 5/8	1 1/2	21/32	1-14	1/2	1 9/16	1 1/4

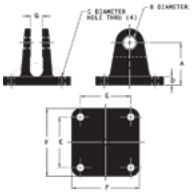
Connecting Pin included.



FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1 1/8	1-33-225	15/16	2 1/2	2	1/4	9/32
1 1/2, 2, 2 1/2	1-33-4	15/16	3 1/4	2 1/2	1/4	11/32
3 1/4, 4	1-33-65	1 19/32	5 1/4	4	1/2	15/32

Mounting Nut included.



SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1 1/8, 1 1/2	1-34-3	1 1/4	5/16	9/32	5/16	1 3/4	2 1/4	17/32
2, 2 1/2	1-34-4	1 7/8	7/16	11/32	3/8	2 1/4	3	17/32
3 1/4, 4	1-34-65	2 7/8	1/2	15/32	1/2	3	4	25/32

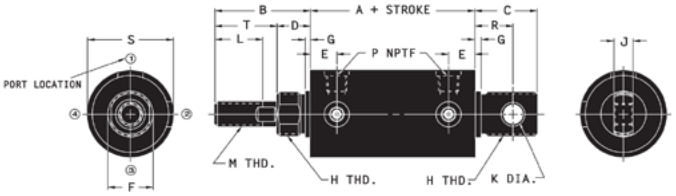
Connecting Pin included.

MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1 1/8	1-38-16	11/32	1 3/8
1 1/2, 2, 2 1/2	1-38-20	19/32	1 5/8
3 1/4, 4	1-38-28	11/16	2 1/4

Rod nut included on all F, O, H, D, M & DM type cylinders.

Dimensions



Notes: AH + STROKE (Series H/D).
For Series H/D add 1.0" to A dimension.

Dimension Reference	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
A	2 25/32	3 5/16	3 5/16	3 5/16	4 11/16	4 11/16
B	2 1/8	2 1/2	2 1/2	2 1/2	3 19/32	3 19/32
C	1 1/16	1 1/4	1 5/8	1 5/8	1 11/16	1 11/16
D	5/8	7/8	7/8	7/8	1 7/32	1 7/32
E	19/32	11/16	11/16	11/16	31/32	31/32
F	1 1/16	1 3/16	1 3/16	1 3/16	1 11/16	1 11/16
G	1/8	5/32	5/32	5/32	5/32	5/32
H	1-14	1 1/8-12	1 1/8-12	1 1/8-12	1 5/8-12	1 5/8-12
J	1/2	1/2	1/2	1/2	3/4	3/4
K	5/16	5/16	7/16	7/16	1/2	1/2
L	1 1/8	1 1/4	1 1/4	1 1/4	1 7/8	1 7/8
M*	1/2-20	5/8-18	5/8-18	5/8-18	1-14	1-14
P-NPTF	1/8	1/4	1/4	1/4	1/2	1/2
R	11/16	7/8	1	1	1	1
S	1 3/8	1 3/4	2 1/4	2 3/4	3 1/2	4 1/4
T	1 1/2	1 5/8	1 5/8	1 5/8	2 3/8	2 3/8

THE ORIGINAL LINE

FLAIRLINE

Series F, O/OLF, H & D

Ordering Information

F 2 X 6 T = 5 1/2 H NT

PISTON	BORE SIZE	STROKE LENGTH
F O OLF H D	1 ⅛ 1 ½ 2 2 ½ 3 ¼ 4	Any length in inch increments or fraction thereof up to and including 130”

SPECIAL OPTIONS	
CUSHIONS	
HEAD ONLY	H
CAP ONLY	C
BOTH	HC
METAL ROD SCRAPER	MRS
EXTRA INLET PORT(S)	Indicate location(s) (PP2, PP3, PP4) in cap or head end
TANG AT 90° FROM STANDARD	TANG 90°
NO TANG	NT
STAINLESS STEEL CIRCUMFLEX KEYS	SS KEYS
STOP TUBES	CONSULT FACTORY
CUSTOM T DIMENSION (ROD EXTENSION)	T = Dimension
SPECIAL L DIMENSION (THREAD LENGTH)	L = Dimension
SPECIAL M DIMENSION (THREAD SIZE)	M = Size or Plain Rod End
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	M = Size and depth
STAINLESS STEEL RODS	SS ROD

Replacement Parts

PK KIT F 2

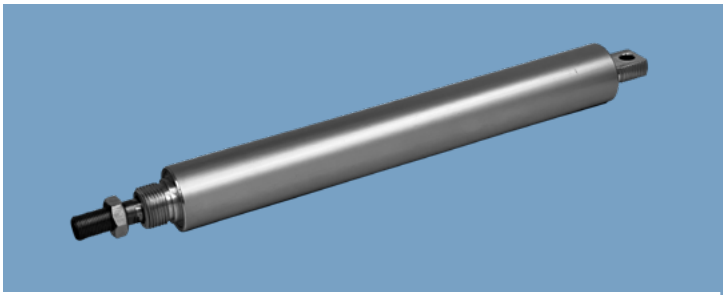
PISTON	BORE SIZE
F O OLF H D	1 ⅛ 1 ½ 2 2 ½ 3 ¼ 4

PROUD TO BE
MADE IN AMERICA

SINGLE-ACTING CYLINDERS

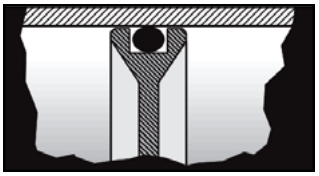
FLAIRLINE

Series **FSR**, **OSR**, **HSR** & **DSR**

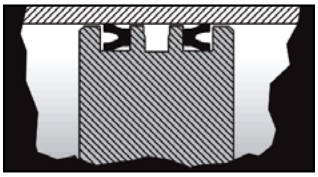


AVAILABLE IN FOUR PISTON TYPES

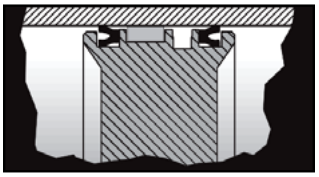
F TYPE For **FSR**



O TYPE For **OSR**



H TYPE For **HSR**



D TYPE For **DSR**

Features

- Standard Bore Sizes: 2, 2 1/2, 3 1/4, 4
- Stroke Sizes: 1" to 6" (1" increments)
  (Consult factory for larger stroke requirements)
- Cushions available: head end when normally extended, cap end when normally retracted

Information

The Flairline single-acting cylinder offers the same quality, performance and features as the double-acting model.

- Actuated by pressurizing only one port, a spring provides the required force to return the piston rod to its normal position
- Single actuation conserves energy and can minimize control valve expense

Specifications

- **Maximum Pressure:**
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- **Operating Temperature:**
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)

FLAIRLINE WARRANTY

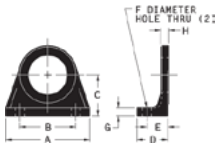
Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

SINGLE-ACTING CYLINDERS

FLAIRLINE

Series **FSR, OSR, HSR & DSR**

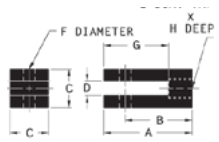
Mounting Accessories



FOOT BRACKET

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1⅛	1-32-225	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
1½	1-32-3	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
2, 2½	1-32-4	3 1/4	2 1/4	1 13/16	1 1/32	11/16	11/32	1/4	1/4
3¼, 4	1-32-65	5 1/2	4	2 3/4	1 23/32	1 3/32	15/32	1/2	1/2

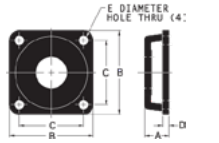
Mounting Nut included.



ROD CLEVIS

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1⅛	1-35-225	2 5/16	1 3/4	1	3/8	1/2-20	5/16	1 11/16	11/16
1½, 2, 2½	1-35-3	2 3/8	1 3/4	1	17/32	5/8-18	7/16	1 11/16	11/16
3¼, 4	1-35-65	3 3/8	2 5/8	1 1/2	21/32	1-14	1/2	1 9/16	1 1/4

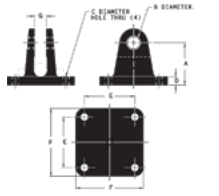
Connecting Pin included.



FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1⅛	1-33-225	15/16	2 1/2	2	1/4	9/32
1½, 2, 2½	1-33-4	15/16	3 1/4	2 1/2	1/4	11/32
3¼, 4	1-33-65	1 19/32	5 1/4	4	1/2	15/32

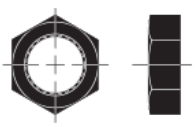
Mounting Nut included.



SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1⅛, 1½	1-34-3	1 1/4	5/16	9/32	5/16	1 3/4	2 1/4	17/32
2, 2½	1-34-4	1 7/8	7/16	11/32	3/8	2 1/4	3	17/32
3¼, 4	1-34-65	2 7/8	1/2	15/32	1/2	3	4	25/32

Connecting Pin included.

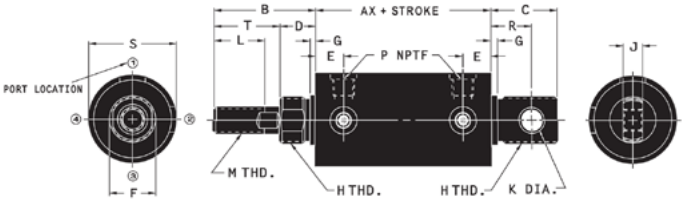


MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1⅛	1-38-16	11/32	1 3/8
1½, 2, 2½	1-38-20	19/32	1 5/8
3¼, 4	1-38-28	11/16	2 1/4

Rod nut included on all F, O, H, D, M & DM type cylinders.

Dimensions



Note: Series HSR and DSR adds 1" to all AX dimensions.

Dimension Reference	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
AX	2 25/32	3 5/16	3 5/16	3 5/16	4 11/16	4 11/16
B	2 1/8	2 1/2	2 1/2	2 1/2	3 19/32	3 19/32
C	1 1/16	1 1/4	1 5/8	1 5/8	1 11/16	1 11/16
D	5/8	7/8	7/8	7/8	1 7/32	1 7/32
E	19/32	11/16	11/16	11/16	31/32	31/32
F	1 1/16	1 3/16	1 3/16	1 3/16	1 11/16	1 11/16
G	1/8	5/32	5/32	5/32	5/32	5/32
H	1-14	1 1/8-12	1 1/8-12	1 1/8-12	1 5/8-12	1 5/8-12
J	1/2	1/2	1/2	1/2	3/4	3/4
K	5/16	5/16	7/16	7/16	1/2	1/2
L	1 1/8	1 1/4	1 1/4	1 1/4	1 7/8	1 7/8
M*	1/2-20	5/8-18	5/8-18	5/8-18	1-14	1-14
P-NPTF	1/8	1/4	1/4	1/4	1/2	1/2
R	11/16	7/8	1	1	1	1
S	1 3/8	1 3/4	2 1/4	2 3/4	3 1/2	4 1/4
T	1 1/2	1 5/8	1 5/8	1 5/8	2 3/8	2 3/8
AX Dimension Chart Including Stroke Lengths						
1" or Less	6 25/32	7 5/16	7 5/16	7 5/16	8 11/16	8 11/16
Over 1" to 1 1/2"	7 25/32	8 5/16	8 5/16	8 5/16	9 11/16	9 11/16
Over 1 1/2" to 2 1/2"	8 25/32	9 5/16	9 5/16	9 5/16	10 11/16	10 11/16
Over 2 1/2" to 3"	9 25/32	10 5/16	10 5/16	10 5/16	11 11/16	11 11/16
Over 3" to 3 1/2"	10 25/32	11 5/16	11 5/16	11 5/16	12 11/16	12 11/16
Over 3 1/2" to 4"	11 25/32	12 5/16	12 5/16	12 5/16	13 11/16	13 11/16
Over 4 1/2" to 5 1/2"	11 25/32	14 5/16	14 5/16	14 5/16	15 11/16	15 11/16
Over 5 1/2" to 6"	11 25/32	16 5/16	16 5/16	16 5/16	17 11/16	17 11/16

SINGLE-ACTING CYLINDERS

FLAIRLINE

Series **FSR**, **OSR**, **HSR** & **DSR**

Ordering Information

FSR - R 2 X 6 T = 5 1/2 H NT

PISTON

FSR
OSR
HSR
DSR

BORE SIZE

2
2 ½
3 ¼
4

SPRING RETURN

NORMALLY EXTENDED	E
NORMALLY RETRACTED	R

STROKE LENGTH

STROKE SIZES:
1" TO 6"

SPECIAL OPTIONS

CUSHIONS	
HEAD (ONLY WHEN NORMALLY EXTENDED)	H
CAP (ONLY WHEN NORMALLY RETRACTED)	C
METAL ROD SCRAPER	MRS
EXTRA INLET PORT(S)	Indicate location(s) (PP2, PP3, PP4) in cap or head end
TANG AT 90° FROM STANDARD	TANG 90°
NO TANG	NT
STAINLESS STEEL CIRCUMFLEX KEYS	SS KEYS
STOP TUBES	CONSULT FACTORY
VITON PACKING	VITON
CUSTOM T DIMENSION (ROD EXTENSION)	T = Dimension
SPECIAL L DIMENSION (THREAD LENGTH)	L = Dimension
SPECIAL M DIMENSION (THREAD SIZE)	M = Size or Plain Rod End
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	M = Size and depth
STAINLESS STEEL RODS	SS ROD

Replacement Parts

PK KIT FSR 2

PISTON

FSR
OSR
HSR
DSR

BORE SIZE

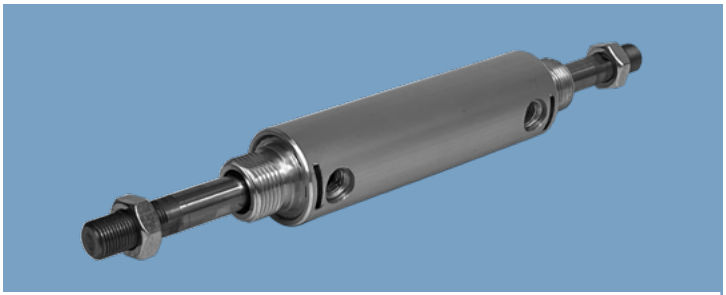
2
2 ½
3 ¼
4

PROUD TO BE
MADE IN AMERICA

DOUBLE-ACTING DOUBLE-ENDED CYLINDERS

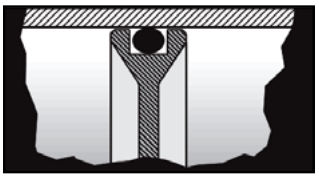
FLAIRLINE

Series **FDE**, **ODE**, **HDE** & **DDE**

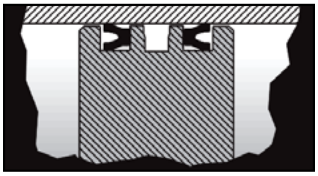


AVAILABLE IN FOUR PISTON TYPES

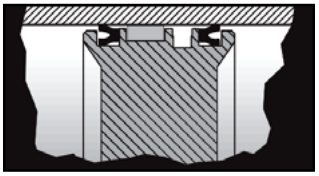
F TYPE For **FDE**



O TYPE For **ODE**



H TYPE For **HDE**



D TYPE For **DDE**

Features

- Standard Bore Sizes: 1 1/8, 1 1/2, 2, 2 1/2, 3 1/4 & 4 (FDE only available up to 2 1/2 bore size)
- Stroke Sizes: Any stroke up to 130”
- Cushions available: either/both ends

Information

The double-acting double-ended cylinders can be used in nearly all types of applications where lightweight, economical, and durable actuators are required.

- Double-ended cylinders allow equal force and speed in either direction
- A large selection of rod mounting attachments permit work at both ends
- Customizable attachments are available

Specifications

- **Maximum Pressure:**
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- **Operating Temperature:**
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)

FLAIRLINE WARRANTY

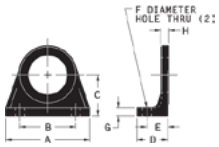
Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

DOUBLE-ACTING DOUBLE-ENDED CYLINDERS

FLAIRLINE

Series **FDE, ODE, HDE & DDE**

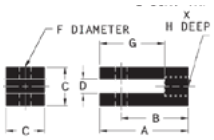
Mounting Accessories



FOOT BRACKET

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-32-225	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
1 1/2	1-32-3	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
2, 2 1/2	1-32-4	3 1/4	2 1/4	1 13/16	1 1/32	11/16	11/32	1/4	1/4
3 1/4, 4	1-32-65	5 1/2	4	2 3/4	1 23/32	1 3/32	15/32	1/2	1/2

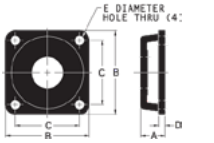
Mounting Nut included.



ROD CLEVIS

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-35-225	2 5/16	1 3/4	1	3/8	1/2-20	5/16	1 11/16	11/16
1 1/2, 2, 2 1/2	1-35-3	2 3/8	1 3/4	1	17/32	5/8-18	7/16	1 11/16	11/16
3 1/4, 4	1-35-65	3 3/8	2 5/8	1 1/2	21/32	1-14	1/2	1 9/16	1 1/4

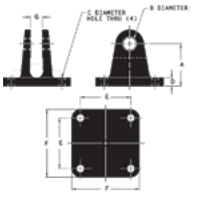
Connecting Pin included.



FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1 1/8	1-33-225	15/16	2 1/2	2	1/4	9/32
1 1/2, 2, 2 1/2	1-33-4	15/16	3 1/4	2 1/2	1/4	11/32
3 1/4, 4	1-33-65	1 19/32	5 1/4	4	1/2	15/32

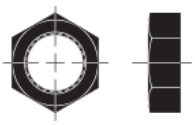
Mounting Nut included.



SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1 1/8, 1 1/2	1-34-3	1 1/4	5/16	9/32	5/16	1 3/4	2 1/4	17/32
2, 2 1/2	1-34-4	1 7/8	7/16	11/32	3/8	2 1/4	3	17/32
3 1/4, 4	1-34-65	2 7/8	1/2	15/32	1/2	3	4	25/32

Connecting Pin included.

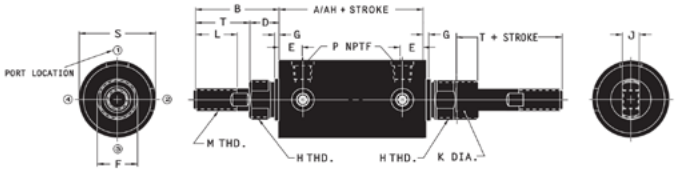


MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1 1/8	1-38-16	11/32	1 3/8
1 1/2, 2, 2 1/2	1-38-20	19/32	1 5/8
3 1/4, 4	1-38-28	11/16	2 1/4

Rod nut included on all F, O, H, D, M & DM type cylinders.

Dimensions



Note: For HDE/DDE use AH Dimension in place of A dimension.

Dimension Reference	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
A	2 25/32	3 5/16	3 5/16	3 5/16	4 11/16	4 11/16
B	2 1/8	2 1/2	2 1/2	2 1/2	3 19/32	3 19/32
D	5/8	7/8	7/8	7/8	1 7/32	1 7/32
E	19/32	11/16	11/16	11/16	31/32	31/32
F	1 1/16	1 3/16	1 3/16	1 3/16	1 11/16	1 11/16
G	1/8	5/32	5/32	5/32	5/32	5/32
H	1-14	1 1/8-12	1 1/8-12	1 1/8-12	1 5/8-12	1 5/8-12
J	1/2	1/2	1/2	1/2	3/4	3/4
K	5/16	5/16	7/16	7/16	1/2	1/2
L	1 1/8	1 1/4	1 1/4	1 1/4	1 7/8	1 7/8
M*	1/2-20	5/8-18	5/8-18	5/8-18	1-14	1-14
P-NPTF	1/8	1/4	1/4	1/4	1/2	1/2
S	1 3/8	1 3/4	2 1/4	2 3/4	3 1/2	4 1/4
T	1 1/2	1 5/8	1 5/8	1 5/8	2 3/8	2 3/8
AH	3 25/32	4 5/16	4 5/16	4 5/16	5 11/16	5 11/16

DOUBLE-ACTING DOUBLE-ENDED CYLINDERS

FLAIRLINE

Series **FDE**, **ODE**, **HDE** & **DDE**

Ordering Information

FDE 2 X 6 T = 5 1/2 H NT

PISTON
FDE
ODE
HDE
DDE

STROKE LENGTH
Any length in inch increments or fraction thereof up to and including 130"

BORE SIZE			
FDE	ODE	HDE	DDE
1 1/8	1 1/8	1 1/8	1 1/8
1 1/2	1 1/2	1 1/2	1 1/2
2	2	2	2
2 1/2	2 1/2	2 1/2	2 1/2
	3 1/4	3 1/4	3 1/4
	4	4	4

SPECIAL OPTIONS	
CUSHIONS	
HEAD (ONE END ONLY)	**H**
BOTH	**HH**
METAL ROD SCRAPER	**MRS**
EXTRA INLET PORT(S)	**Indicate location(s) (PP2, PP3, PP4) in cap or head end**
TANG AT 90° FROM STANDARD	**TANG 90°**
NO TANG	**NT**
STAINLESS STEEL CIRCUMFLEX KEYS	**SS KEYS**
STOP TUBES	**CONSULT FACTORY**
VITON PACKING	**VITON**
CUSTOM T DIMENSION (ROD EXTENSION)	**T = Dimension**
SPECIAL L DIMENSION (THREAD LENGTH)	**L = Dimension**
SPECIAL M DIMENSION (THREAD SIZE)	**M = Size or Plain Rod End**
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	**M = Size and depth**
STAINLESS STEEL RODS	**SS ROD**

Replacement Parts

PK KIT FDE 2

PISTON
FDE
ODE
HDE
DDE

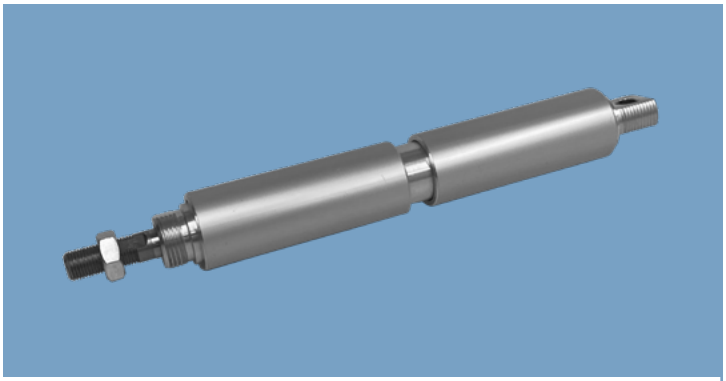
BORE SIZE
1 1/8
1 1/2
2
2 1/2
3 1/4
4

PROUD TO BE
MADE IN AMERICA

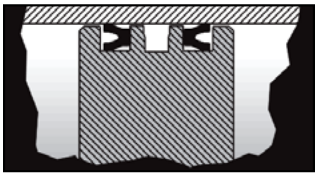
TANDEM CYLINDERS

FLAIRLINE

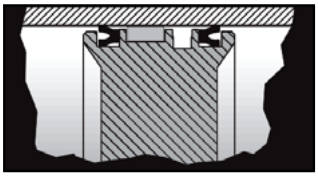
Series **FT** & **DT**



AVAILABLE IN TWO PISTON TYPES



H TYPE For **FT**



D TYPE For **DT**

Features

- Standard Bore Sizes: 1 1/2, 2, 2 1/2, 3 1/4, 4
- Stroke Sizes: Any stroke up to 130”
- Cushions available: either/both ends (not standard on center head)
- Used to multiply force without increasing pressure or bore size

Information

Tandem models consist of two double acting cylinders mounted in line with the pistons connected to a common piston rod. Perfect when a large amount of force is required in a small-diameter cylinder.

- Double-ended models available

Specifications

- **Maximum Pressure:**
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- **Operating Temperature:**
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)

FLAIRLINE WARRANTY

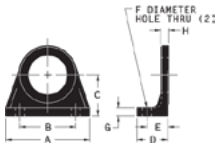
Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

TANDEM CYLINDERS

FLAIRLINE

Series **FT** & **DT**

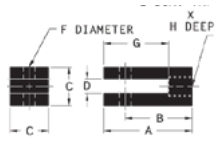
Mounting Accessories



FOOT BRACKET

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1⅛	1-32-225	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
1½	1-32-3	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
2, 2½	1-32-4	3 1/4	2 1/4	1 13/16	1 1/32	11/16	11/32	1/4	1/4
3¼, 4	1-32-65	5 1/2	4	2 3/4	1 23/32	1 3/32	15/32	1/2	1/2

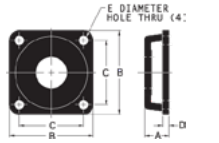
Mounting Nut included.



ROD CLEVIS

Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1⅛	1-35-225	2 5/16	1 3/4	1	3/8	½-20	5/16	1 11/16	11/16
1½, 2, 2½	1-35-3	2 3/8	1 3/4	1	17/32	5/8-18	7/16	1 11/16	11/16
3¼, 4	1-35-65	3 3/8	2 5/8	1 1/2	21/32	1-14	1/2	1 9/16	1 1/4

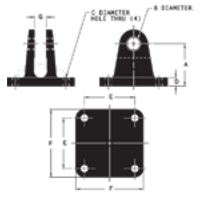
Connecting Pin included.



FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1⅛	1-33-225	15/16	2½	2	1/4	9/32
1½, 2, 2½	1-33-4	15/16	3¼	2½	1/4	11/32
3¼, 4	1-33-65	1 19/32	5¼	4	½	15/32

Mounting Nut included.



SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1⅛,1½	1-34-3	1¼	5/16	9/32	5/16	1¾	2¼	17/32
2, 2½	1-34-4	1 7/8	7/16	11/32	3/8	2¼	3	17/32
3¼, 4	1-34-65	2 7/8	½	15/32	½	3	4	25/32

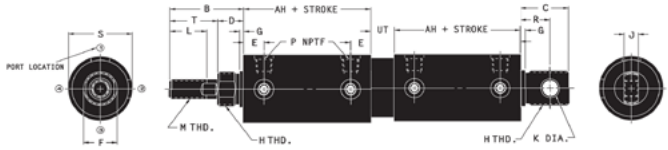
Connecting Pin included.

MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1⅛	1-38-16	11/32	1 3/8
1½, 2, 2½	1-38-20	19/32	1 5/8
3¼, 4	1-38-28	11/16	2¼

Rod nut included on all F, O, H, D, M & DM type cylinders.

Dimensions



Dimension Reference	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
B	2 1/8	2 1/2	2 1/2	2 1/2	3 19/32	3 19/32
C	1 1/16	1 1/4	1 5/8	1 5/8	1 11/16	1 11/16
D	5/8	7/8	7/8	7/8	1 7/32	1 7/32
E	19/32	11/16	11/16	11/16	31/32	31/32
F	1 1/16	1 3/16	1 3/16	1 3/16	1 11/16	1 11/16
G	1/8	5/32	5/32	5/32	5/32	5/32
H	1-14	1 1/8-12	1 1/8-12	1 1/8-12	1 5/8-12	1 5/8-12
J	1/2	1/2	1/2	1/2	3/4	3/4
K	5/16	5/16	7/16	7/16	1/2	1/2
L	1 1/8	1 1/4	1 1/4	1 1/4	1 7/8	1 7/8
M*	1/2-20	5/8-18	5/8-18	5/8-18	1-14	1-14
P-NPTF	1/8	1/4	1/4	1/4	1/2	1/2
R	11/16	7/8	1	1	1	1
S	1 3/8	1 3/4	2 1/4	2 3/4	3 1/2	4 1/4
T	1 1/2	1 5/8	1 5/8	1 5/8	2 3/8	2 3/8
AH	3 25/32	4 5/16	4 5/16	4 5/16	5 11/16	5 11/16
UT	—	3/4	3/4	3/4	1 1/8	1 1/8

TANDEM CYLINDERS

FLAIRLINE

Series **FT** & **DT**

Ordering Information

FT 2 X 6 T = 5 1/2 H NT

PISTON	BORE SIZE	STROKE LENGTH
FT DT	1 ½ 2 2 ½ 3 ¼ 4	Any length in inch increments or fraction thereof up to and including 130”

SPECIAL OPTIONS	
CUSHIONS (ROD END ONLY)	
HEAD	**H**
CAP	**C**
BOTH	**HC**
METAL ROD SCRAPER	**MRS**
EXTRA INLET PORT(S)	**Indicate location(s) (PP2, PP3, PP4) in cap or head end**
TANG AT 90° FROM STANDARD	**TANG 90°**
NO TANG	**NT**
STAINLESS STEEL CIRCUMFLEX KEYS	**SS KEYS**
STOP TUBES	**CONSULT FACTORY**
VITON PACKING	**VITON**
CUSTOM T DIMENSION (ROD EXTENSION)	**T = Dimension**
SPECIAL L DIMENSION (THREAD LENGTH)	**L = Dimension**
SPECIAL M DIMENSION (THREAD SIZE)	**M = Size or Plain Rod End**
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	**M = Size and depth**
STAINLESS STEEL RODS	**SS ROD**

Replacement Parts

PK KIT FT 2

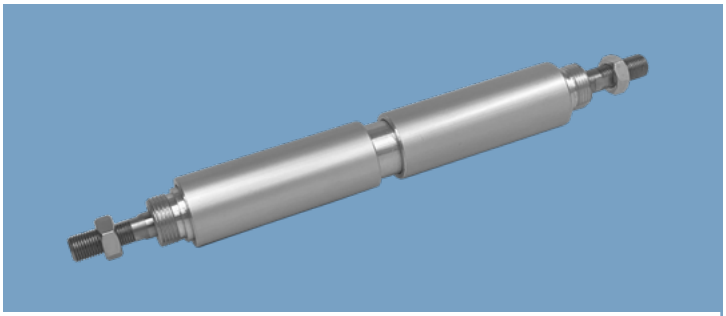
PISTON	BORE SIZE
FT DT	1 ½ 2 2 ½ 3 ¼ 4

PROUD TO BE
MADE IN AMERICA

CAP-TO-CAP CYLINDERS

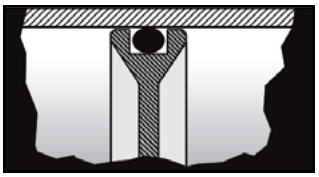
FLAIRLINE

Series **FCC, OCC, HCC & DCC**

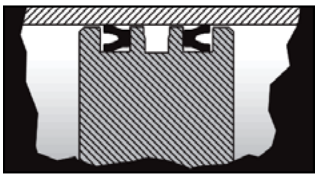


AVAILABLE IN FOUR PISTON TYPES

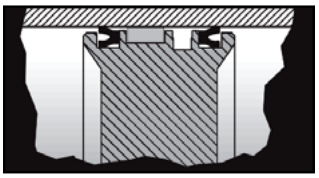
F TYPE For **FCC**



O TYPE For **OCC**



H TYPE For **HCC**



D TYPE For **DCC**

Features

- Standard Bore Sizes:
  1 1/8, 1 1/2, 2, 2 1/2, 3 1/4, 4
- Stroke Sizes: Any combined stroke up to 130”
- Cushions available: either/both ends

Information

Cap-to-cap models incorporate two F, O, H, or D type cylinders joined at the cap end by a common center section. This is a very flexible product to accurately achieve three positions with the same stroke, or four positions with a different stroke, depending on application.

Specifications

- **Maximum Pressure:**
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- **Operating Temperature:**
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)

FLAIRLINE WARRANTY

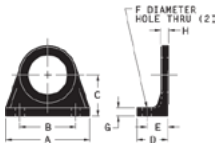
Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

CAP-TO-CAP CYLINDERS

FLAIRLINE

Series **FCC, OCC, HCC & DCC**

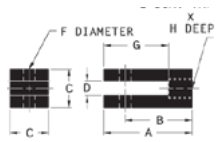
Mounting Accessories



Mounting Nut included.

FOOT BRACKET

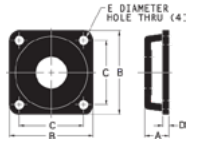
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-32-225	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
1 1/2	1-32-3	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
2, 2 1/2	1-32-4	3 1/4	2 1/4	1 13/16	1 1/32	11/16	11/32	1/4	1/4
3 1/4, 4	1-32-65	5 1/2	4	2 3/4	1 23/32	1 3/32	15/32	1/2	1/2



Connecting Pin included.

ROD CLEVIS

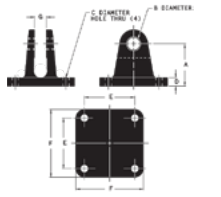
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-35-225	2 5/16	1 3/4	1	3/8	1/2-20	5/16	1 11/16	11/16
1 1/2, 2, 2 1/2	1-35-3	2 3/8	1 3/4	1	17/32	5/8-18	7/16	1 11/16	11/16
3 1/4, 4	1-35-65	3 3/8	2 5/8	1 1/2	21/32	1-14	1/2	1 9/16	1 1/4



Mounting Nut included.

FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1 1/8	1-33-225	15/16	2 1/2	2	1/4	9/32
1 1/2, 2, 2 1/2	1-33-4	15/16	3 1/4	2 1/2	1/4	11/32
3 1/4, 4	1-33-65	1 19/32	5 1/4	4	1/2	15/32



Connecting Pin included.

SWIVEL BRACKET

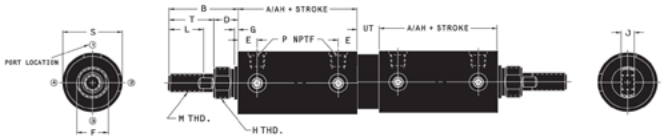
Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1 1/8, 1 1/2	1-34-3	1 1/4	5/16	9/32	5/16	1 3/4	2 1/4	17/32
2, 2 1/2	1-34-4	1 7/8	7/16	11/32	3/8	2 1/4	3	17/32
3 1/4, 4	1-34-65	2 7/8	1/2	15/32	1/2	3	4	25/32

Rod nut included on all F, O, H, D, M & DM type cylinders.

MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1 1/8	1-38-16	11/32	1 3/8
1 1/2, 2, 2 1/2	1-38-20	19/32	1 5/8
3 1/4, 4	1-38-28	11/16	2 1/4

Dimensions



Notes: Series FCC and OCC correspond to A dimensions. For HCC/DCC use AH Dimension in place of A dimension.

Dimension Reference	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
A	2 25/32	3 5/16	2 1/2	3 5/16	3 5/16	4 11/36
B	2 1/8	2 1/2	2 1/2	2 1/2	3 19/32	3 19/32
C	1 1/16	1 1/4	1 5/8	1 5/8	1 11/16	1 11/16
D	5/8	7/8	7/8	7/8	1 7/32	1 7/32
E	19/32	11/16	11/16	11/16	31/32	31/32
F	1 1/16	1 3/16	1 3/16	1 3/16	1 11/16	1 11/16
G	1/8	5/32	5/32	5/32	5/32	5/32
H	1-14	1 1/8-12	1 1/8-12	1 1/8-12	1 5/8-12	1 5/8-12
J	1/2	1/2	1/2	1/2	3/4	3/4
K	5/16	5/16	7/16	7/16	1/2	1/2
L	1 1/8	1 1/4	1 1/4	1 1/4	1 7/8	1 7/8
M*	1/2-20	5/8-18	5/8-18	5/8-18	1-14	1-14
P-NPTF	1/8	1/4	1/4	1/4	1/2	1/2
R	11/16	7/8	1	1	1	1
S	1 3/8	1 3/4	2 1/4	2 3/4	3 1/2	4 1/4
T	1 1/2	1 5/8	1 5/8	1 5/8	2 3/8	2 3/8
AH	3 25/32	4 5/16	4 5/16	4 5/16	5 11/16	5 11/16
UC	1/2	1/2	1/2	1/2	15/16	15/16

CAP-TO-CAP CYLINDERS

FLAIRLINE

Series **FCC, OCC, HCC & DCC**

Ordering Information

FCC 2 X 6 T = 5 1/2 H NT

PISTON	BORE SIZE	STROKE LENGTH
FCC OCC HCC DCC	1 1/8 1 1/2 2 2 1/2 3 1/4 4	Any length in inch increments or fraction thereof up to and including 130"

SPECIAL OPTIONS	
CUSHIONS	
HEAD ONLY	**H**
CAP ONLY	**C**
BOTH	**HC**
METAL ROD SCRAPER	**MRS**
EXTRA INLET PORT(S)	**Indicate location(s) (PP2, PP3, PP4) in cap or head end**
TANG AT 90° FROM STANDARD	**TANG 90°**
STAINLESS STEEL CIRCUMFLEX KEYS	**SS KEYS**
STOP TUBES	**CONSULT FACTORY**
VITON PACKING	**VITON**
CUSTOM T DIMENSION (ROD EXTENSION)	**T = Dimension**
SPECIAL L DIMENSION (THREAD LENGTH)	**L = Dimension**
SPECIAL M DIMENSION (THREAD SIZE)	**M = Size or Plain Rod End**
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	**M = Size and depth**
STAINLESS STEEL RODS	**SS ROD**

Replacement Parts

PK KIT FCC 2

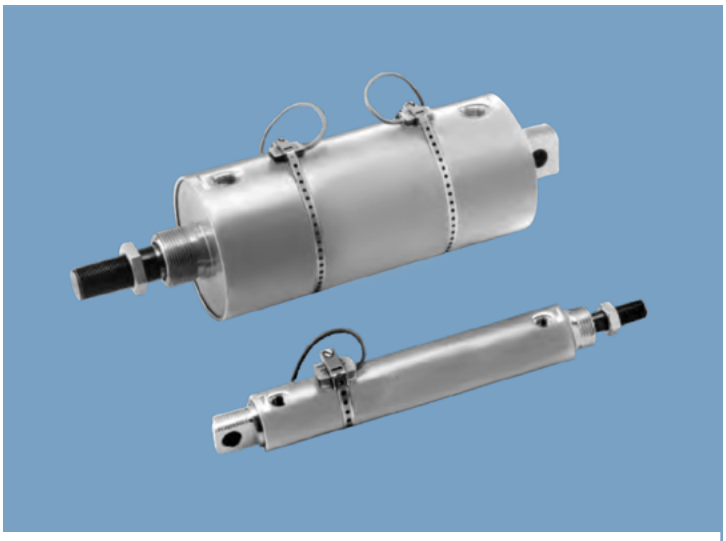
PISTON	BORE SIZE
FCC OCC HCC DCC	1 1/8 1 1/2 2 2 1/2 3 1/4 4

PROUD TO BE
MADE IN AMERICA

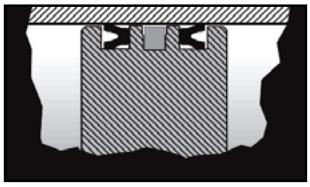
MAGNETIC PISTON CYLINDERS

FLAIRLINE

Series **M**, **DM**, **MSR** & **DMSR**, **MDE** & **DMDE**, **MT** & **DMT**, **MCC** & **DMCC**

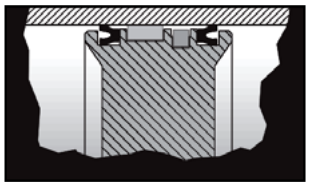


AVAILABLE IN TWO PISTON TYPES



M TYPE

For **M**, **MSR**, **MDE**, **MT** & **MCC**



DM TYPE

For **DM**, **DMSR**, **DMDE**, **DMT** & **DMCC**

Information

Flairline's magnetic piston cylinders allow for automated stroke sequencing with the same quality features common to other Flairline cylinder products.

- Standard Construction: hard anodized aluminum barrels, aluminum heads and end caps, chrome-plated rods, nylon rod bearings (bronze rod bearings on DM series Cylinders)
- A complete line of universal mounting accessories
- Magnetic switch options include Reed and Hall effect types
- Stainless steel mounting bands allow for switch mounting customization

FLAIRLINE WARRANTY

Flairline warrants each product against defects in material and workmanship for a period of one year from the date of manufacturing providing its use was in accordance with Flairline recommendations. If the product fails to perform as warranted, Flairline will, at its option, repair or replace the product free of charge. The company will not be liable for incidental or consequential damages. We make no other warranty, expressed or implied, including warranties of merchantability or fitness for a particular purpose.

MAGNETIC PISTON CYLINDERS

FLAIRLINE

Series **M**, **DM**, **MSR** & **DMSR**, **MDE** & **DMDE**, **MT** & **DMT**, **MCC** & **DMCC**

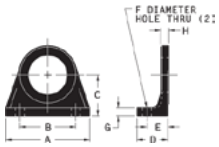
Features

- Standard Bore Sizes: 1 1/8, 1 1/2, 2, 2 1/2, 3 1/4, 4
- MSR/DMSR - Spring Returned
  MDE/DMDE - Double Ended
  MT/DMT - Tandem
- Stroke Sizes: Any stroke up to 130”
- Cushions available: either/both ends

Specifications

- Maximum Pressure:
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- Operating Temperature:
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)
- Pistons complete with a factory installed magnet

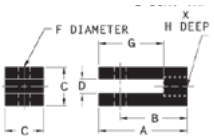
Mounting Accessories



Mounting Nut included.

FOOT BRACKET

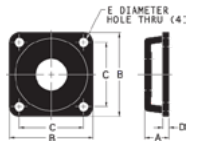
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-32-225	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
1 1/2	1-32-3	2 5/8	1 3/4	1 9/32	1	11/16	9/32	1/4	1/4
2, 2 1/2	1-32-4	3 1/4	2 1/4	1 13/16	1 1/32	11/16	11/32	1/4	1/4
3 1/4, 4	1-32-65	5 1/2	4	2 3/4	1 23/32	1 3/32	15/32	1/2	1/2



Connecting Pin included.

ROD CLEVIS

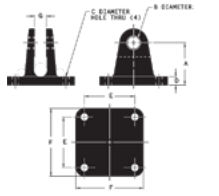
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	1-35-225	2 5/16	1 3/4	1	3/8	1/2-20	5/16	1 11/16	11/16
1 1/2, 2, 2 1/2	1-35-3	2 3/8	1 3/4	1	17/32	5/8-18	7/16	1 11/16	11/16
3 1/4, 4	1-35-65	3 3/8	2 5/8	1 1/2	21/32	1-14	1/2	1 9/16	1 1/4



Mounting Nut included.

FLANGE BRACKET

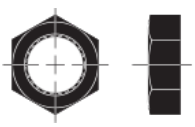
Bore Size	No.	Dimensions				
		A	B	C	D	E
1 1/8	1-33-225	15/16	2 1/2	2	1/4	9/32
1 1/2, 2, 2 1/2	1-33-4	15/16	3 1/4	2 1/2	1/4	11/32
3 1/4, 4	1-33-65	1 19/32	5 1/4	4	1/2	15/32



Connecting Pin included.

SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1 1/8, 1 1/2	1-34-3	1 1/4	5/16	9/32	5/16	1 3/4	2 1/4	17/32
2, 2 1/2	1-34-4	1 7/8	7/16	11/32	3/8	2 1/4	3	17/32
3 1/4, 4	1-34-65	2 7/8	1/2	15/32	1/2	3	4	25/32



Rod nut included on all F, O, H, D, M & DM type cylinders.

MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1 1/8	1-38-16	11/32	1 3/8
1 1/2, 2, 2 1/2	1-38-20	19/32	1 5/8
3 1/4, 4	1-38-28	11/16	2 1/4

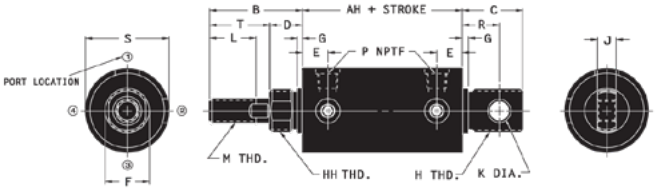
MAGNETIC PISTON CYLINDERS

FLAIRLINE

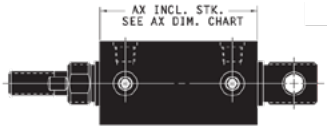
Series **M, DM, MSR & DMSR, MDE & DMDE, MT & DMT, MCC & DMCC**

Dimensions

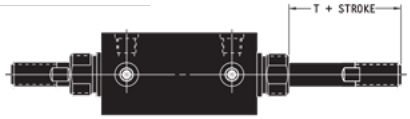
SERIES M/DM



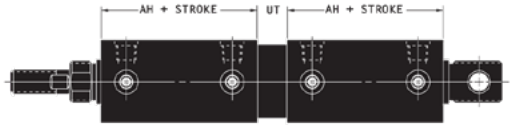
SERIES MSR/DMSR



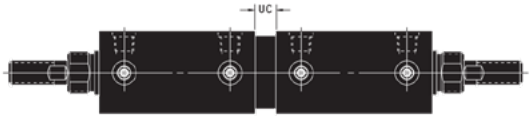
SERIES MDE/DMDE



SERIES MT/DMT



SERIES MCC/DMCC



Dimension Reference	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
A	2 25/32	3 5/16	3 5/16	3 5/16	4 11/16	4 11/16
B	2 1/8	2 1/2	2 1/2	2 1/2	3 19/32	3 19/32
C	1 1/16	1 1/4	1 5/8	1 5/8	1 11/16	1 11/16
D	5/8	7/8	7/8	7/8	1 7/32	1 7/32
E	19/32	11/16	11/16	11/16	31/32	31/32
F	1 1/16	1 3/16	1 3/16	1 3/16	1 11/16	1 11/16
G	1/8	5/32	5/32	5/32	5/32	5/32
H	1-14	1 1/8-12	1 1/8-12	1 1/8-12	1 5/8-12	1 5/8-12
J	1/2	1/2	1/2	1/2	3/4	3/4
K	5/16	5/16	7/16	7/16	1/2	1/2
L	1 1/8	1 1/4	1 1/4	1 1/4	1 7/8	1 7/8
M*	1/2-20	5/8-18	5/8-18	5/8-18	1-14	1-14
P-NPTF	1/8	1/4	1/4	1/4	1/2	1/2
R	11/16	7/8	1	1	1	1
S	1 3/8	1 3/4	2 1/4	2 3/4	3 1/2	4 1/4
T	1 1/2	1 5/8	1 5/8	1 5/8	2 3/8	2 3/8
AH	3 25/32	4 5/16	4 5/16	4 5/16	5 11/16	5 11/16
UC	1/2	1/2	1/2	1/2	15/16	15/16
UT	—	3/4	3/4	3/4	1 1/8	1 1/8

AX Dimension Chart Including Stroke Lengths

ME Stroke Lengths	Cylinder Bore					
	1 1/8"	1 1/2"	2"	2 1/2"	3 1/4"	4"
1" or Less	6 25/32	7 5/16	7 5/16	7 5/16	8 11/16	8 11/16
Over 1" to 1 1/2"	7 25/32	8 5/16	8 5/16	8 5/16	9 11/16	9 11/16
Over 1 1/2" to 2 1/2"	8 25/32	9 5/16	9 5/16	9 5/16	10 11/16	10 11/16
Over 2 1/2" to 3"	9 25/32	10 5/16	10 5/16	10 5/16	11 11/16	11 11/16
Over 3" to 3 1/2"	10 25/32	11 5/16	11 5/16	11 5/16	12 11/16	12 11/16
Over 3 1/2" to 4"	11 25/32	12 5/16	12 5/16	12 5/16	13 11/16	13 11/16
Over 4 1/2" to 5 1/2"	11 25/32	14 5/16	14 5/16	14 5/16	15 11/16	15 11/16
Over 5 1/2" to 6"	11 25/32	16 5/16	16 5/16	16 5/16	17 11/16	17 11/16

MAGNETIC PISTON CYLINDERS

FLAIRLINE

Series **M, DM, MSR & DMSR, MDE & DMDE, MT & DMT, MCC & DMCC**

Ordering Information

M 2-CR 2 X 6 T = 5 1/2 H NT

PISTON

- M
- DM
- MDE
- DMDE
- MT
- DMT
- MCC
- DMCC

BORE SIZE

- 1 1/8
- 1 1/2
- 2
- 2 1/2
- 3 1/4
- 4

STROKE LENGTH

Any length in inch increments or fraction thereof **up to and including 130"**

SWITCHES

REED SWITCH	**Indicate Quantity - CR**
HALL EFFECT SWITCH (SOURCING)	**Indicate Quantity - HP**
HALL EFFECT SWITCH (SINKING)	**Indicate Quantity - HN**

Note: Reference switch options on the last page of the section.

Note: MSR/DMSR ordering information on the next page.

SPECIAL OPTIONS

CUSHIONS	
MT/MCC & DMT/DMCC (ROD END ONLY)	
HEAD	**H**
CAP	**C**
BOTH	**HC**
METAL ROD SCRAPER	**MRS**
EXTRA INLET PORT(S)	**Indicate location(s) (PP2, PP3, PP4) in cap or head end**
TANG AT 90° FROM STANDARD	**TANG 90°**
NO TANG	**NT**
STAINLESS STEEL CIRCUMFLEX KEYS	**SS KEYS**
STOP TUBES	**CONSULT FACTORY**
VITON PACKING	**VITON**
CUSTOM T DIMENSION (ROD EXTENSION)	**T = Dimension**
SPECIAL L DIMENSION (THREAD LENGTH)	**L = Dimension**
SPECIAL M DIMENSION (THREAD SIZE)	**M = Size or Plain Rod End**
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	**M = Size and depth**

Replacement Parts

PK KIT M 2

PISTON

- M
- DM
- MDE
- DMDE
- MT
- DMT
- MCC
- DMCC

BORE SIZE

- 1 1/8
- 1 1/2
- 2
- 2 1/2
- 3 1/4
- 4

MAGNETIC PISTON CYLINDERS

FLAIRLINE

Series **M, DM, MSR & DMSR, MDE & DMDE, MT & DMT, MCC & DMCC**

Ordering Information

MSR-E 2-CR 2 X 6 T = 5 1/2

PISTON

MSR
DMSR

SPRING RETURN

NORMALLY EXTENDED	-E
NORMALLY RETRACTED	-R

SWITCHES

REED SWITCH	Indicate Quantity - CR
HALL EFFECT SWITCH (SOURCING)	Indicate Quantity - HP
HALL EFFECT SWITCH (SINKING)	Indicate Quantity - HN

NOTE: Reference switch options on the last page of the section.

BORE SIZE

1 1/8
1 1/2
2
2 1/2
3 1/4
4

STROKE LENGTH

Any length in inch increments or fraction thereof **up to and including 130"**

SPECIAL OPTIONS

CUSHIONS	
HEAD (ONLY WHEN NORMALLY EXTENDED)	H
CAP (ONLY WHEN NORMALLY RETRACTED)	C
METAL ROD SCRAPER	MRS
EXTRA INLET PORT(S)	Indicate location(s) (PP2, PP3, PP4) in cap or head end
TANG AT 90° FROM STANDARD	TANG 90°
NO TANG	NT
STAINLESS STEEL CIRCUMFLEX KEYS	SS KEYS
STOP TUBES	CONSULT FACTORY
VITON PACKING	VITON
CUSTOM T DIMENSION (ROD EXTENSION)	T = Dimension
SPECIAL L DIMENSION (THREAD LENGTH)	L = Dimension
SPECIAL M DIMENSION (THREAD SIZE)	M = Size or Plain Rod End
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	M = Size and depth
STAINLESS STEEL RODS	SS ROD

Replacement Parts

PK KIT MSR 2

PISTON

MSR
DMSR

BORE SIZE

1 1/8
1 1/2
2
2 1/2
3 1/4
4

PROUD TO BE
MADE IN AMERICA

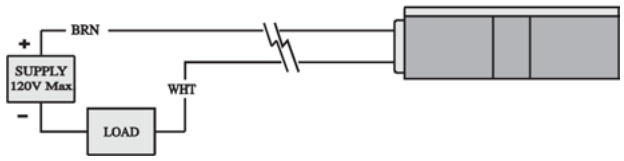
MAGNETIC PISTON CYLINDERS

FLAIRLINE

Series **M**, **DM**, **MSR** & **DMSR**, **MDE** & **DMDE**, **MT** & **DMT**, **MCC** & **DMCC**

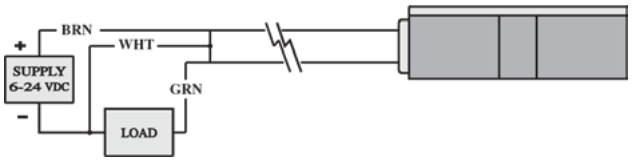
Switch Options

Reed Switch - Part No. 43-CR



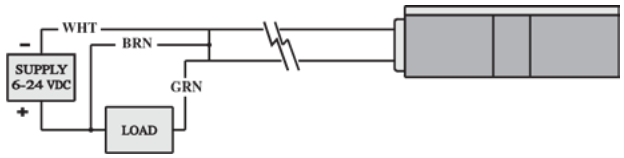
Warning: Do not exceed 24 VDC.
Permanent damage to sensor may occur.

Hall Effect Switch - Sourcing - Part No. 43-HP



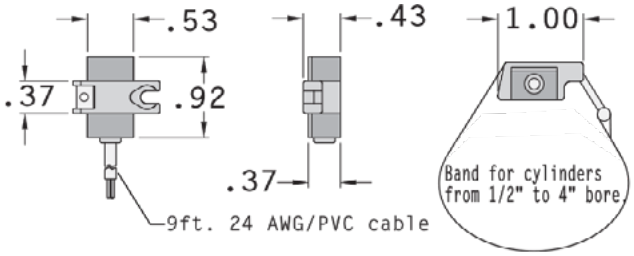
Warning: Do not exceed 24 VDC.
Permanent damage to sensor may occur.

Hall Effect Switch - Sinking - Part No. 43-HN



Warning: Do not exceed 24 VDC.
Permanent damage to sensor may occur.

Mounting Band - Included with Switches



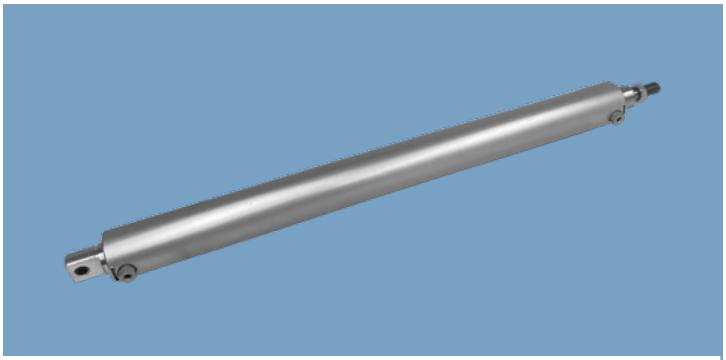
Sensor Types and Technical Data

Part No.	Description	Function	Switching Voltage	Switching Current	Switching Power	Switching Speed	Max Volt. Drop	Sensitivity
43CR	Reed Switch MOV, LED	SPST Normally Open	5-120 VDC/VAC 50/60 Hz	0.5 Amp Max. 0.005 Amp Min.	12 Watts Max	0.5ms Operate	3.5 Volts	85 Gauses
43HP	Half Effect Sourcing	Normally Open PNP Output	6-24 VDC	0.5 Amp Max	12 Watts Max	1.5ms Operate 0.5ms Operate	0.5 Volts	85 Gauses
43HN	Half Effect LED Sinking	Normally Open NPN Output	6-24 VDC	0.5 Amp Max	12 Watts Max	1.5ms Operate 0.5ms Operate	0.5 Volts	85 Gauses

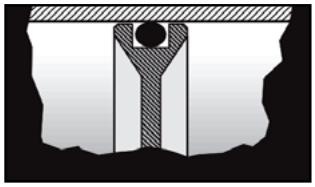
COMPETITIVE INTERCHANGE CYLINDERS

FLAIRLINE

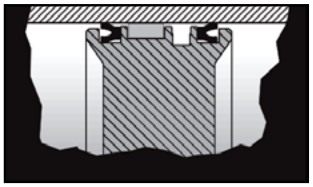
Series **I** & **IDE**, **DI** & **DIDE**, **DIM** & **DIMDE**, **SI** & **SIDE**, **DSI** & **DSIDE**, **DSIM** & **DSIMDE**
CSI, **CDSI**, **CDSI** & **CDSIM**, **CDSIDE** & **CDSIMDE**



AVAILABLE IN TWO PISTON TYPES



O TYPE
For **I**, **S I**& **CSI**



D TYPE
For **DI**, **DSI**, **IDE**, **CDSI** & **CDSIDE**

Specifications

- Maximum Pressure:
  Pneumatic: 150 psi
  Hydraulic: Consult Factory
- Operating Temperature:
  0-200°F (Buna Seals)
  -18-93°C (Buna Seals)
  0-275°F (Viton Seals)
  -18-135°C (Viton Seals)

Information

Flairline's interchange series includes pneumatic and hydraulic cylinders that are dimensionally interchangeable with several competitive cylinders. The Interchange series can be installed into many existing applications without any rework or engineering revisions.

- Double-acting and double-acting double-ended models are available

Features

- Standard Bore Sizes: 1 1/8, 1 1/2, 2, 2 1/2, 3
  CSI Series also available with 4" bore
- Stroke Sizes: Any stroke up to 130"
- Cushions are available for all Interchange cylinders
- External dimensions may be identical with several competitors
- Available for use in pneumatic or hydraulic applications
- Suitable for wherever lightweight, economical and durable actuators are required
- DIM, DSIM & CDSIM avalible with magnetic switches.

FULL DIMENSIONS FOR DOUBLE ACTING AND DOUBLE ENDED CYLINDERS ARE LISTED ON THE NEXT PAGE.

FLAIRLINE WARRANTY

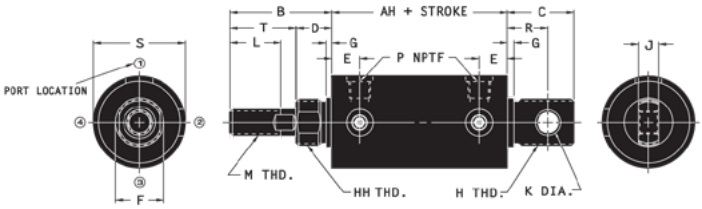
COMPETITIVE INTERCHANGE CYLINDERS

FLAIRLINE

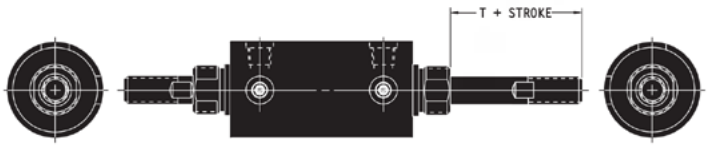
Series I & IDE, DI & DIDE, DIM & DIMDE, SI & SIDE, DSI & DSIDE, DSIM & DSIMDE
CSI, CDSI, CDSI & CDSIM, CDSIDE & CDSIMDE

Dimensions

DOUBLE ACTING CYLINDERS



DOUBLE ENDED CYLINDERS



"G" through "T" Same data for all series listed

G	H	HH	J	K	L	M*	P	R	S	T
1/8	3/4-16	3/4 - 16	3/8	1/4	7/8	3/8 - 16	1/8	11/16	1 3/8	1
7/32	1 1/16-18	1 1/16 - 18	1/2	5/16	1 1/4	1/2 - 13	1/4	7/8	1 3/4	1 7/16
7/32	1 1/16-18	1 1/16 - 18	1/2	5/16	1 1/4	5/8 - 11	1/4	7/8	2 1/4	1 7/16
11/32	1 3/8-12	1 3/8 - 12	5/8	7/16	1 1/2	3/4 - 10	3/8	1 3/8	2 3/4	1 11/16
11/32	1 3/8-12	1 3/8 - 12	5/8	7/16	1 1/2	3/4 - 10	3/8	1 3/8	3 1/4	1 11/16

Series I & IDE

Bore	A	B	C	D	E	F
1 1/8	2 1/32	1 3/4	31/32	3/4	27/64	3/4
1 1/2	2 5/8	2 7/16	1 1/4	1	33/64	1 1/16
2	2 5/8	2 7/16	1 1/4	1	33/64	1 1/16
2 1/2	2 7/8	2 15/16	2	1 1/4	9/16	1 7/16
3	2 7/8	2 15/16	2	1 1/4	9/16	1 7/16

Series DI, DIM, DIDE & DIMDE

Bore Size	A	B	C	D	E	F
1 1/8	3 1/32	1 3/4	31/32	3/4	27/64	3/4
1 1/2	3 5/8	2 7/16	1 1/4	1	33/64	1 1/16
2	3 5/8	2 7/16	1 1/4	1	33/64	1 1/16
2 1/2	3 7/8	2 15/16	2	1 1/4	9/16	1 7/16
3	3 7/8	2 15/16	2	1 1/4	9/16	1 7/16

Series SI & SIDE

Bore Size	A	B	C	D	E	F
1 1/8	2 1/16	1 5/8	1	5/8	27/64	3/4
1 1/2	2 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2	2 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2 1/2	2 7/8	2 11/16	2	1	9/16	1 3/8
3	2 7/8	2 11/16	2	1	9/16	1 3/8

Series DSI, DSIM, DSIDE & DSIMDE

Bore Size	A	B	C	D	E	F
1 1/8	3 1/16	1 5/8	1	5/8	27/64	3/4
1 1/2	3 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2	3 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2 1/2	3 7/8	2 11/16	2	1	9/16	1 3/8
3	3 7/8	2 11/16	2	1	9/16	1 3/8

Series CSI & CDSI

Bore Size	A	B	C	D	E	F
1 1/8	2 1/16	1 5/8	1	5/8	27/64	3/4
1 1/2	2 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2	2 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2 1/2	2 7/8	2 11/16	2	1	9/16	1 3/8
3	2 7/8	2 11/16	2	1	9/16	1 3/8
4	5		2 3/16	1 1/8	9/16	1 3/4

Series CDSI, CDSIM, CDSIDE & CDSIMDE

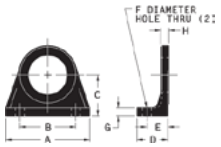
Bore Size	A	B	C	D	E	F
1 1/8	3 1/16	1 5/8	1	5/8	27/64	3/4
1 1/2	3 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2	3 5/8	2 5/16	1 1/4	7/8	33/64	1 1/16
2 1/2	3 7/8	2 11/16	2	1	9/16	1 3/8
3	3 7/8	2 11/16	2	1	9/16	1 3/8
4	5		2 3/16	1 1/8	9/16	1 3/4

COMPETITIVE INTERCHANGE CYLINDERS

FLAIRLINE

Series I & IDE, DI & DIDE, DIM & DIMDE, SI & SIDE, DSI & DSIDE, DSIM & DSIMDE
CSI, CDSI, CDSI & CDSIM, CDSIDE & CDSIMDE

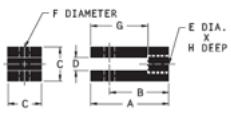
Mounting Accessories



Mounting Nut included.

FOOT BRACKET

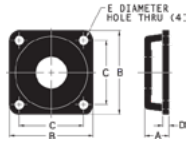
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	2-32-225	1 5/8	1	1 9/32	1	5/8	17/64	1/4	1/4
1 1/2, 2 CAP END	2-32-4	3	1 11/16	1 1/2	1 17/32	57/64	9/32	5/16	5/16
1 1/2, 2 HEAD END	2-32-4A	3	1 11/16	1 1/2	1 17/32	57/64	9/32	5/16	5/16
2 1/2, 3	2-32-6	4	2 1/4	2	2 3/32	1 7/32	13/32	3/8	3/8



Connecting Pin included.

ROD CLEVIS

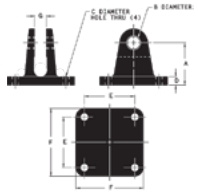
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	2-35-225	1 3/4	1 13/32	3/4	5/16	3/8-16	1/4	1	3/4
1 1/2	2-35-3	2 1/4	1 3/4	1	3/8	1/2-13	5/16	1 3/16	1 1/16
2	2-35-4	2 1/4	1 3/4	1	3/8	5/8-11	5/16	1 3/16	1 1/16
2 1/2, 3	2-35-6	2 11/16	2 1/16	1 1/8	1/2	3/4-10	7/16	1 3/4	1 3/16



Mounting Nut included.

FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1 1/8	2-33-225	11/16	2 1/2	2	1/4	9/32
1 1/2, 2 CAP END	2-33-4	19/32	3 1/4	2 1/2	5/16	9/32
1 1/2, 2 HEAD END	2-33-4A	19/32	3 1/4	2 1/2	5/16	9/32
2 1/2, 3	2-33-6	23/32	4 1/2	3 3/8	3/8	13/32



Connecting Pin included.

SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1 1/8	2-34-225	1 7/32	1/4	9/32	5/16	1 3/4	2 1/4	3/8
1 1/2, 2	2-34-4	1 3/4	5/16	9/32	5/16	2 1/4	3	1/2
2 1/2, 3	2-34-6	2 3/8	7/16	3/32	3/8	3	4	5/8

Rod nut included on all F, O, H, D, M & DM type cylinders.

MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1 1/8	2-38-12	3/8	1 1/16
1 1/2, 2 CAP (H Dimension)	2-38-18	15/16	1 7/16
1 1/2, 2 HEAD (H Dimension)	1-38-16	11/32	1 3/8
2 1/2, 3	2-38-24	25/32	2 1/16

Ordering Information

I 2 X 6 T = 5 1/2 H NT

PISTON
- I
- IDE
- DI
- DIDE
- SI
- SIDE
- DSI
- CSI
- CDSI
- CDSIDE

BORE SIZE
- 1 1/8
- 1 1/2
- 2
- 2 1/2
- 3 1/4
- 4

STROKE LENGTH
Any length in inch increments or fraction thereof **up to and including 130"**

SPECIAL OPTIONS

CUSHIONS: HEAD, CAP, BOTH	**H, C, HC**
CUSHIONS: (DOUBLE-ENDED CYLINDERS) ONE END, BOTH	**H, HH**
METAL ROD SCRAPER (not available for 1-18" bore)	**MRS**
EXTRA INLET PORT(S)	**Indicate location(s) (PP2, PP3, PP4) in cap or head end**
TANG AT 90° FROM STANDARD	**TANG 90°**
NO TANG	**NT**
STAINLESS STEEL CIRCUMFLEX KEYS	**SS KEYS**
STOP TUBES	**CONSULT FACTORY**
VITON PACKING	**VITON**
CUSTOM T DIMENSION (ROD EXTENSION)	**T = Dimension**
SPECIAL L DIMENSION (THREAD LENGTH)	**L = Dimension**
SPECIAL M DIMENSION (THREAD SIZE)	**M = Size or Plain Rod End**
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	**M = Size and depth**
STAINLESS STEEL RODS	**SS ROD**

Note: Magnetic Interchange cylinder's ordering information on the next page.

Replacement Parts

PK KIT I 2

PISTON
- I
- IDE
- DI
- DIDE
- SI
- SIDE
- DSI
- CSI
- CDSI
- CDSIDE

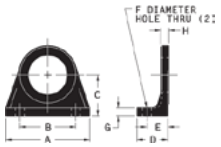
BORE SIZE
- 1 1/8
- 1 1/2
- 2
- 2 1/2
- 3 1/4
- 4

COMPETITIVE INTERCHANGE CYLINDERS

FLAIRLINE

Series I & IDE, DI & DIDE, DIM & DIMDE, SI & SIDE, DSI & DSIDE, DSIM & DSIMDE
CSI, CDSI, CDSI & CDSIM, CDSIDE & CDSIMDE

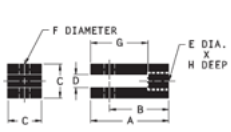
Mounting Accessories



Mounting Nut included.

FOOT BRACKET

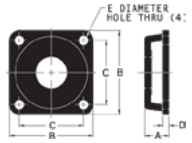
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	2-32-225	1 5/8	1	1 9/32	1	5/8	17/64	1/4	1/4
1 1/2, 2 CAP END	2-32-4	3	1 11/16	1 1/2	1 17/32	57/64	9/32	5/16	5/16
1 1/2, 2 HEAD END	2-32-4A	3	1 11/16	1 1/2	1 17/32	57/64	9/32	5/16	5/16
2 1/2, 3	2-32-6	4	2 1/4	2	2 3/32	1 7/32	13/32	3/8	3/8



Connecting Pin included.

ROD CLEVIS

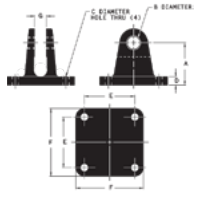
Bore Size	No.	Dimensions							
		A	B	C	D	E	F	G	H
1 1/8	2-35-225	1 3/4	1 13/32	3/4	5/16	3/8-16	1/4	1	3/4
1 1/2	2-35-3	2 1/4	1 3/4	1	3/8	1/2-13	5/16	1 3/16	1 1/16
2	2-35-4	2 1/4	1 3/4	1	3/8	5/8-11	5/16	1 3/16	1 1/16
2 1/2, 3	2-35-6	2 11/16	2 1/16	1 1/8	1/2	3/4-10	7/16	1 3/4	1 3/16



Mounting Nut included.

FLANGE BRACKET

Bore Size	No.	Dimensions				
		A	B	C	D	E
1 1/8	2-33-225	11/16	2 1/2	2	1/4	9/32
1 1/2, 2 CAP END	2-33-4	19/32	3 1/4	2 1/2	5/16	9/32
1 1/2, 2 HEAD END	2-33-4A	19/32	3 1/4	2 1/2	5/16	9/32
2 1/2, 3	2-33-6	23/32	4 1/2	3 3/8	3/8	13/32



Connecting Pin included.

SWIVEL BRACKET

Bore Size	No.	Dimensions						
		A	B	C	D	E	F	G
1 1/8	2-34-225	1 7/32	1/4	9/32	5/16	1 3/4	2 1/4	3/8
1 1/2, 2	2-34-4	1 3/4	5/16	9/32	5/16	2 1/4	3	1/2
2 1/2, 3	2-34-6	2 3/8	7/16	3/32	3/8	3	4	5/8

Rod nut included on all F, O, H, D, M & DM type cylinders.

MOUNTING NUT

Bore Size	No.	Dimensions	
		Height	Across Flats
1 1/8	2-38-12	3/8	1 1/16
1 1/2, 2 CAP (H Dimension)	2-38-18	15/16	1 7/16
1 1/2, 2 HEAD (H Dimension)	1-38-16	11/32	1 3/8
2 1/2, 3	2-38-24	25/32	2 1/16

Ordering Information

DIM 2-CR 2 X 6 T = 5 1/2 H NT

PISTON	BORE SIZE	STROKE LENGTH
DIM DIMDE DSIM DSIMDE CDSIM CDSIMDE	1 1/8 1 1/2 2 2 1/2 3 1/4 4	Any length in inch increments or fraction thereof **up to and including 130"**

SWITCHES

REED SWITCH	**Indicate Quantity - CR**
HALL EFFECT SWITCH (SOURCING)	**Indicate Quantity - HP**
HALL EFFECT SWITCH (SINKING)	**Indicate Quantity - HN**

NOTE: Reference switch options on the following page.

SPECIAL OPTIONS

CUSHIONS: HEAD, CAP, BOTH	**H, C, HC**
CUSHIONS: (DOUBLE-ENDED CYLINDERS) ONE END, BOTH	**H, HH**
METAL ROD SCRAPER (not available for 1-18" bore)	**MRS**
EXTRA INLET PORT(S)	**Indicate location(s) (PP2, PP3, PP4) in cap or head end**
TANG AT 90° FROM STANDARD	**TANG 90°**
NO TANG	**NT**
STAINLESS STEEL CIRCUMFLEX KEYS	**SS KEYS**
STOP TUBES	**CONSULT FACTORY**
VITON PACKING	**VITON**
CUSTOM T DIMENSION (ROD EXTENSION)	**T = Dimension**
SPECIAL L DIMENSION (THREAD LENGTH)	**L = Dimension**
SPECIAL M DIMENSION (THREAD SIZE)	**M = Size or Plain Rod End**
SPECIAL M DIMENSION (TAPPED HOLE IN ROD END)	**M = Size and depth**
STAINLESS STEEL RODS	**SS ROD**

Replacement Parts

PK KIT DIM 2

PISTON	BORE SIZE
DIM DIMDE DSIM DSIMDE CDSIM CDSIMDE	1 1/8 1 1/2 2 2 1/2 3 1/4 4

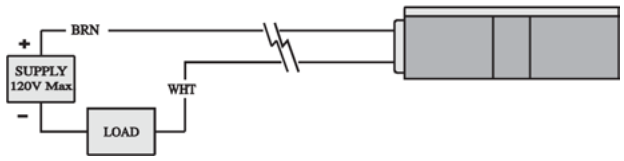
COMPETITIVE INTERCHANGE CYLINDERS

FLAIRLINE

Series I & IDE, DI & DIDE, DIM & DIMDE, SI & SIDE, DSI & DSIDE, DSIM & DSIMDE
CSI, CDSI, CDSI & CDSIM, CDSIDE & CDSIMDE

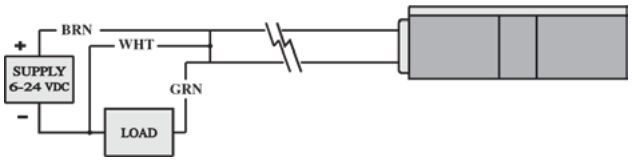
Switch Options

Reed Switch - Part No. 43-CR



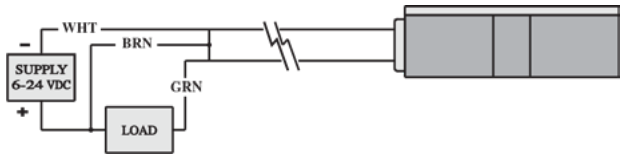
Warning: Do not exceed 24 VDC.
Permanent damage to sensor may occur.

Hall Effect Switch - Sourcing - Part No. 43-HP



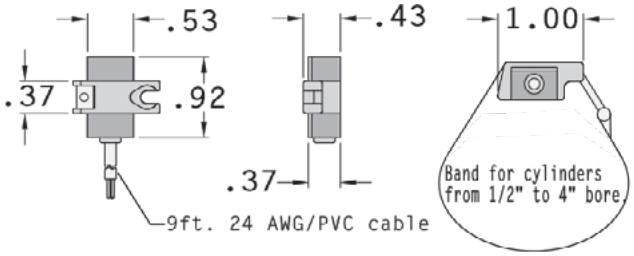
Warning: Do not exceed 24 VDC.
Permanent damage to sensor may occur.

Hall Effect Switch - Sinking - Part No. 43-HN



Warning: Do not exceed 24 VDC.
Permanent damage to sensor may occur.

Mounting Band - Included with Switches



Sensor Types and Technical Data

Part No.	Description	Function	Switching Voltage	Switching Current	Switching Power	Switching Speed	Max Volt. Drop	Sensitivity
43CR	Reed Switch MOV, LED	SPST Normally Open	5-120 VDC/VAC 50/60 Hz	0.5 Amp Max. 0.005 Amp Min.	12 Watts Max	0.5ms Operate	3.5 Volts	85 Gauses
43HP	Half Effect Sourcing	Normally Open PNP Output	6-24 VDC	0.5 Amp Max	12 Watts Max	1.5ms Operate 0.5ms Operate	0.5 Volts	85 Gauses
43HN	Half Effect LED Sinking	Normally Open NPN Output	6-24 VDC	0.5 Amp Max	12 Watts Max	1.5ms Operate 0.5ms Operate	0.5 Volts	85 Gauses