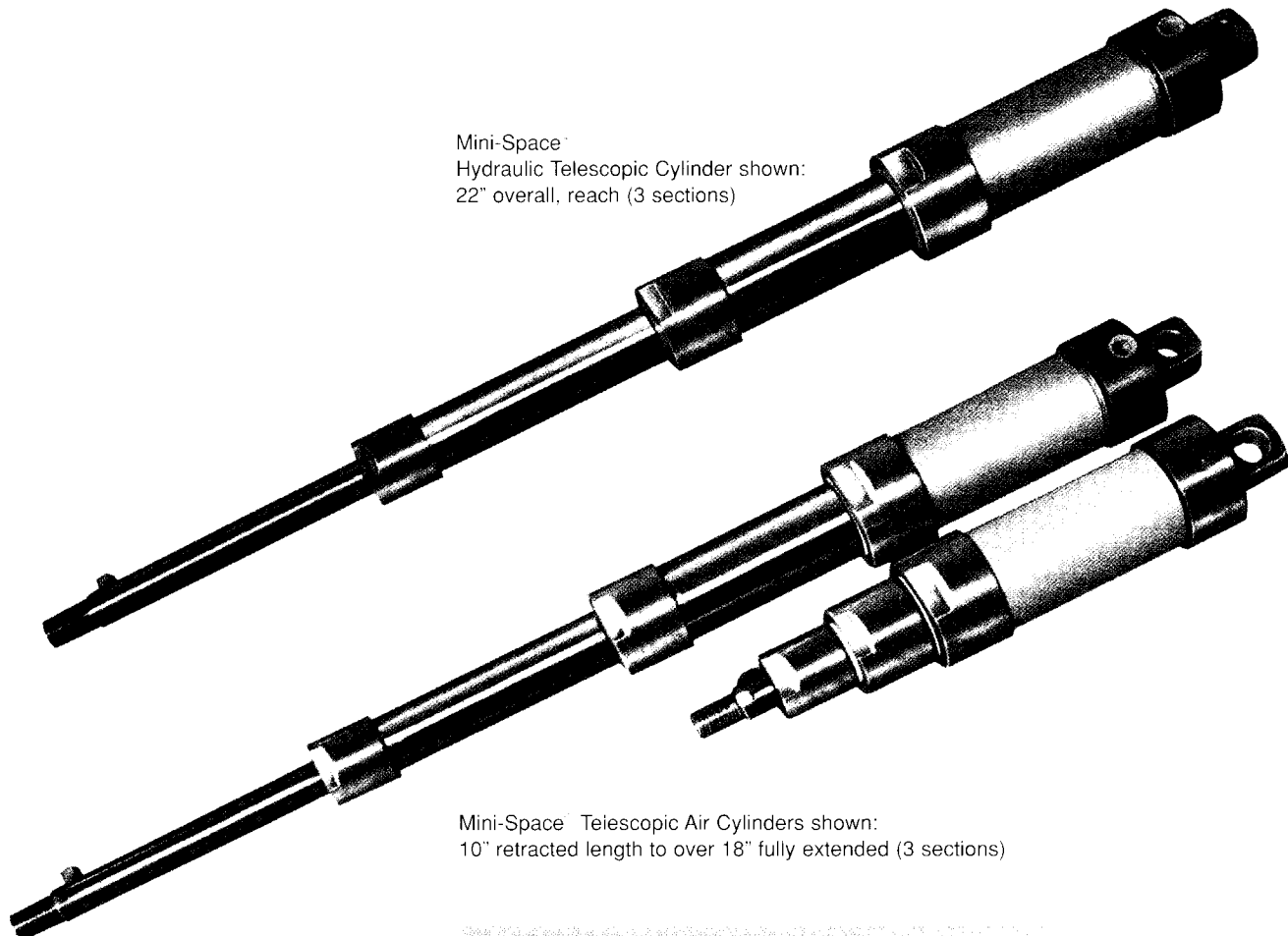




# MINI-SPACE<sup>®</sup> TELESCOPIC CYLINDERS

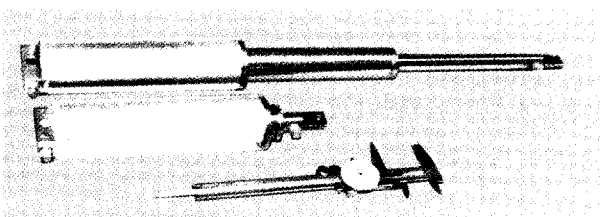
Quality Manufacturers of  
Air and Hydraulic Products

DOUBLE AND SINGLE ACTING AIR AND HYDRAULIC TYPES  
AIR SERVICE 150 PSI HYDRAULIC 1500 PSI  
MADE IN TWO, THREE AND FOUR STAGE MODELS AND SPECIALS



Mini-Space<sup>®</sup>  
Hydraulic Telescopic Cylinder shown:  
22" overall, reach (3 sections)

Mini-Space<sup>®</sup> Telescopic Air Cylinders shown:  
10" retracted length to over 18" fully extended (3 sections)



Illustrated are two 2-section, special double acting Mini-Space  
Telescopic Hydraulic Cylinders—fully closed 8-7/8".  
Fully extended 19-3/8". 2" OD over cylinder. 1550 lbs. working pressure.

**We have an excellent  
rebuild and service department  
for our air and hydraulic products.**

*"Standards" or specials gladly made*

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**AHP AIR & HYDRAULIC POWER, INC.**

Box 159, 555 Goffle Road, Wyckoff, N.J. 07481-0159 (201) 447-1589 FAX 201-447-0302

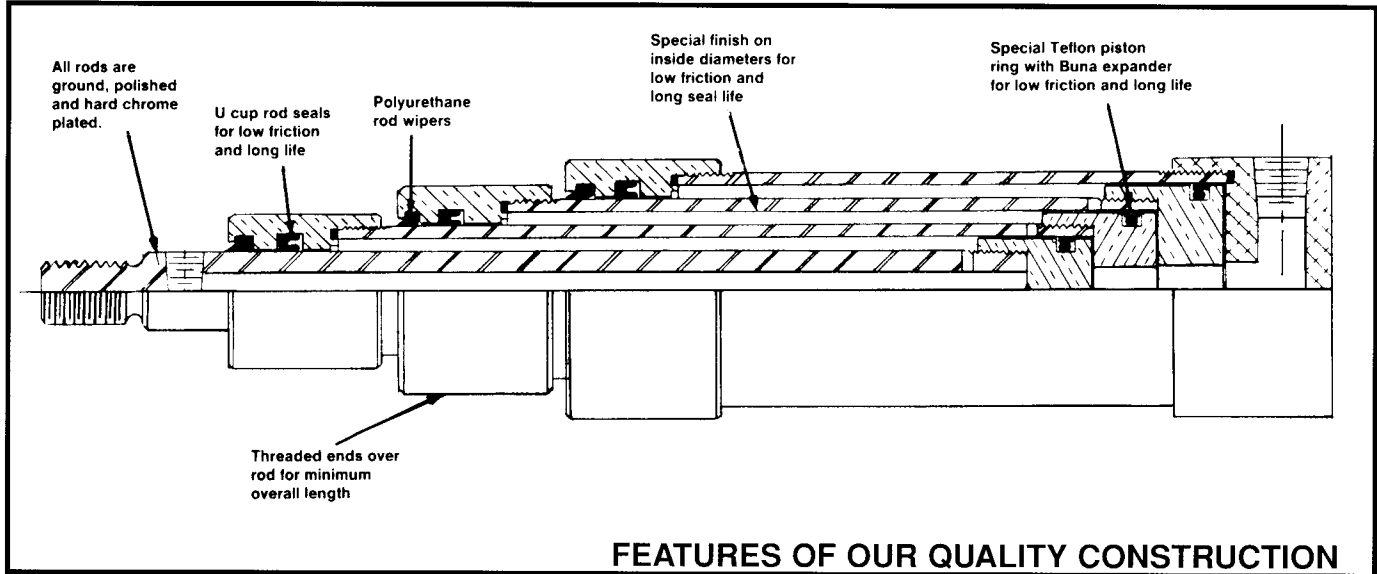




# A.H.P. Mini-Space® Telescopic Air or Hydraulic Cylinders

## SINGLE & DOUBLE ACTING, MINI-SPACE® TELESCOPIC AIR OR HYDRAULIC CYLINDERS, SPACE-SAVER TYPE

DOUBLE ACTING Telescopes utilize compression ring piston seals for long life, and heavy duty use.



Each cylinder is carefully engineered and constructed from the finest selected quality materials. Each cylinder meets Air & Hydraulic Power, Inc. strict quality control standards with regard to workmanship and materials. Air & Hydraulic Power Cylinders are designed for easy installation and minimal maintenance. When maintenance does become necessary the simple design of Air & Hydraulic Power Cylinders allows ease of service. The compact design allows minimum over-all installation dimensions.

These newly designed Mini-Space® Telescopic Air or Hydraulic Cylinders take advantage of our years of experience in the hydraulic field.

Our double acting hydraulic telescopic cylinders are normally designed for 1500 P.S.I. operation. Air for 150 P.S.I. Pressure capabilities normally increase as stage diameters decrease. Return

flow on a telescopic cylinder is much greater than the outward extension, requiring return lines that are sized accordingly. Pumping delivery must also be adequate.

Our cylinders are designed to suit your exact application. Contact our Engineering department today.

**CYLINDER APPLICATION:** The proper application of a telescopic hydraulic cylinder requires consideration of the operating pressure, the fluid medium, the style of mounting, stroke length, type of piston rod connection to the load, thrust loading on the rod, mounting attitude, speed of the stroke and how load in motion will be stopped. Our engineering department will be glad to help you design a telescopic hydraulic cylinder to suit your application. Write on your letterhead, stating in complete details your requirements. A sketch would be most helpful. \*

\*Stop tubes are recommended on strokes over 24" in horizontal operation

### HOW TO ORDER:

**"STANDARD" CYLINDERS (Out of Catalog)—Specify: Model Number, Quantity, Required Stroke, if trunnion mount. "Q" dimension and if any options are required. State Air or Hydraulic.**

**"SPECIAL" CYLINDERS—Specify (if known): Quantity, Bore, Stroke, Rod Diameter, Working Pressure Required, Mounting Rod, Base, Port Sizes and other helpful information.**

**If you don't know most of the above "special" information, please contact our Engineering Dept., and let us help you.**

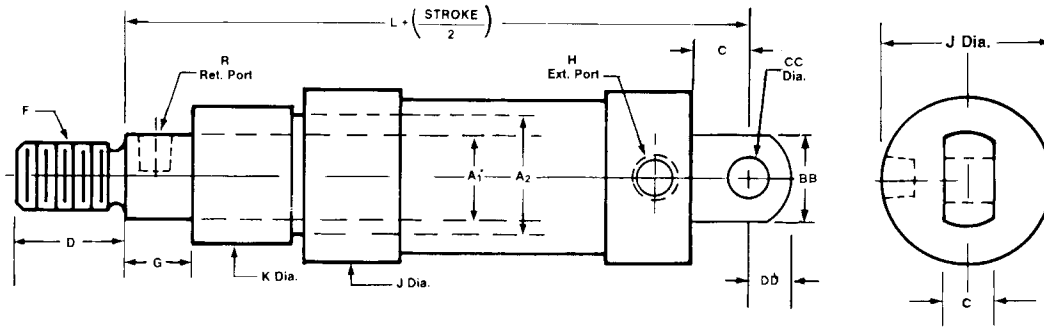
AIR & HYDRAULIC POWER, INC. guarantees its manufactured products to be free from defective material and/or workmanship for a period of 130 days from date of shipment from our factory. Liability under this guarantee is limited to allowance for credit or replacement of defective parts. AIR & HYDRAULIC POWER, INC. make no other guarantee either expressed or implied. We strive to maintain the highest standards of quality by employing the most modern, efficient equipment available. 40 years of manufacturing experience.

## AHP AIR & HYDRAULIC POWER, INC.

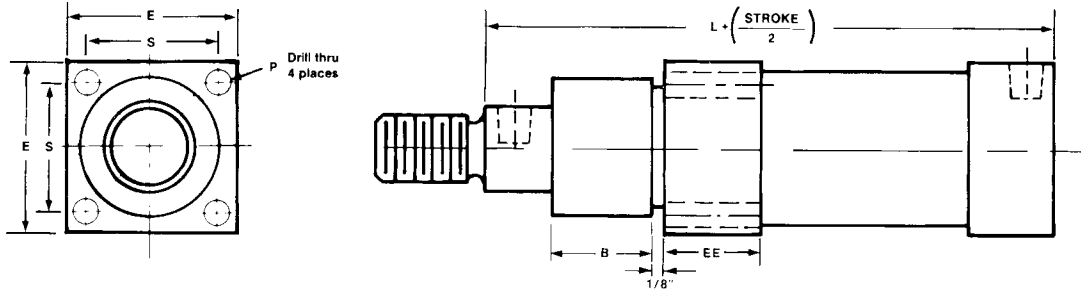
Manufacturers of •Air Cylinders •Hydraulic Cylinders •Mini-Space Pancake Style Air & Hydraulic Short Stroke Cylinders •Air & Hydraulic Tooling Clamps •Air Valves •Mill Type Hydraulic Cylinders •Hydraulic Valves •Accumulators •Filters, Regulators, Lubricators •Positioners, Controls, etc. •Swivels •Shock Absorbers •Accessories •Specials

## 2 Stage, Double & Single Acting Air or Hydraulic Mini-Space® Telescopic Cylinders

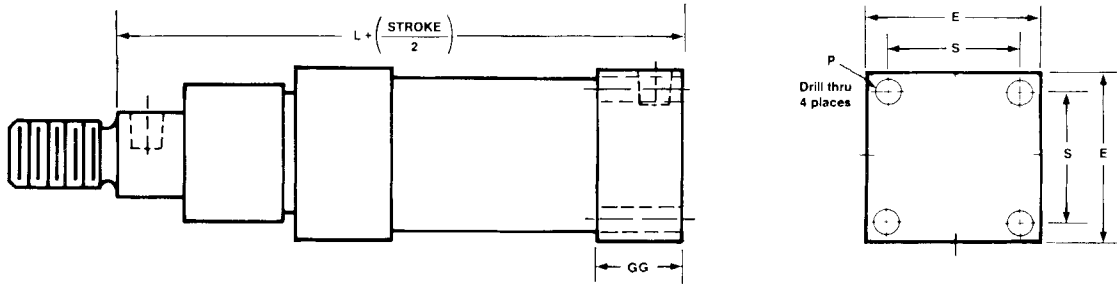
### 2 MSP—Pivot Mount



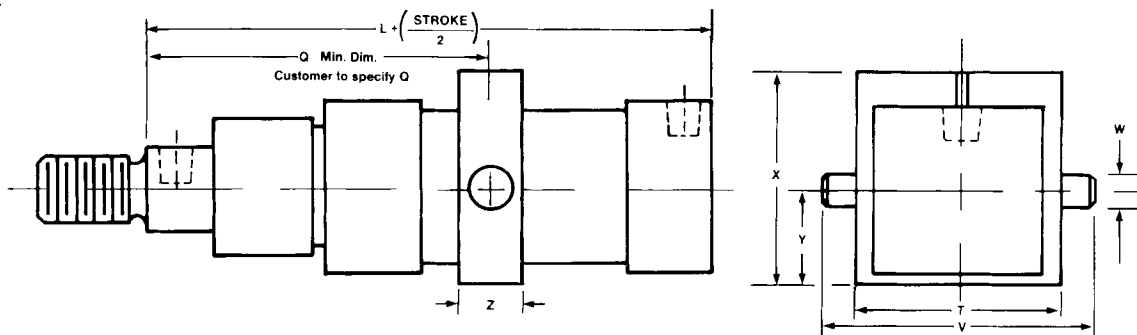
### 2 MSR—Front Flange Mount



### 2 MSB—Base Flange Mount



### 2 MST—Trunnion Mount



DIMENSIONS OF 2 STAGE MINI-SPACE® TELESCOPIC AIR OR HYDRAULIC CYLINDERS

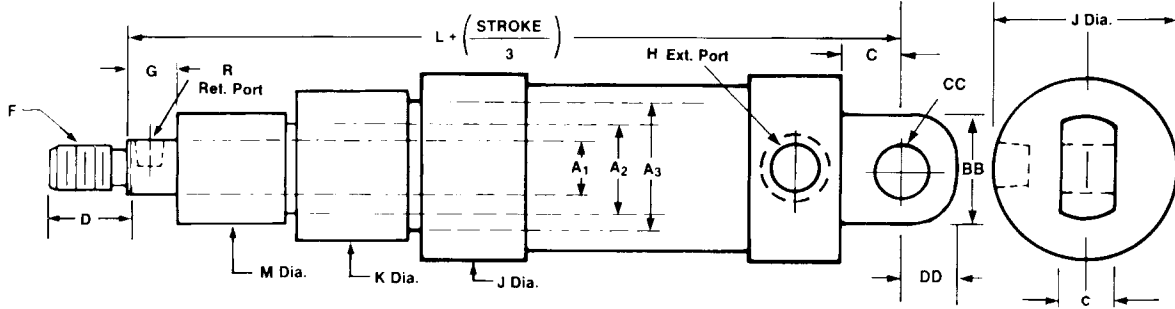
| Model     | Rod Diameter |       | L       | D  | F      | G   | B     | C   | E     | NPT<br>H | J     | K     | P     | Q     | R   | S       | T     | V     | W   | X     | Y     | Z     | BB | CC    | DD  | EE    | GG      |         |
|-----------|--------------|-------|---------|----|--------|-----|-------|-----|-------|----------|-------|-------|-------|-------|-----|---------|-------|-------|-----|-------|-------|-------|----|-------|-----|-------|---------|---------|
|           | A1           | A2    |         |    |        |     |       |     |       |          |       |       |       |       |     |         |       |       |     |       |       |       |    |       |     |       |         |         |
| 2MSP 717  | 3/4          | 1-1/4 | 5-9/18  | 1" | 5/8-18 | 3/4 | 1-1/2 | 3/4 | -     | 1/4      | 2     | 1-1/2 | -     | -     | 1/8 | -       | -     | -     | -   | -     | -     | -     | -  | 1-3/8 | 5/8 | 5/8   | 1-1/2   | -       |
| 2MSR 717  | 3/4          | 1-1/4 | 4-7/8   | 1" | 5/8-18 | 3/4 | -     | 2   | -     | 1/4      | -     | 1-1/2 | 17/64 | -     | 1/8 | 1-1/2   | -     | -     | -   | -     | -     | -     | -  | -     | -   | -     | 1-1/2   | 1-11/32 |
| 2MSB 717  | 3/4          | 1-1/4 | 4-7/8   | 1" | 5/8-18 | 3/4 | 1-1/2 | -   | 2     | 1/4      | 2     | 1-1/2 | 17/64 | -     | 1/8 | 1-1/2   | -     | -     | -   | -     | -     | -     | -  | -     | -   | -     | 1-1/2   | 1-11/32 |
| 2MST 717  | 3/4          | 1-1/4 | 4-7/8   | 1" | 5/8-18 | 3/4 | 1-1/2 | -   | 2     | 1/4      | 2     | 1-1/2 | -     | 4-3/8 | 1/8 | -       | 2-1/4 | 3-1/4 | 1/2 | 2-1/4 | 1     | 3/4   | -  | -     | -   | 1-1/2 | 1-11/32 |         |
| 2MSP 1222 | 1-1/4        | 1-3/4 | 5-11/16 | 1" | 1-14   | 3/4 | 1-1/2 | 3/4 | -     | 1/4      | 2-1/2 | 2     | -     | 1/8   | -   | -       | -     | -     | -   | -     | -     | -     | -  | 1-3/8 | 5/8 | 5/8   | 1-1/2   | -       |
| 2MSR 1222 | 1-1/4        | 1-3/4 | 5       | 1" | 1-14   | 3/4 | 1-1/2 | -   | 2-1/2 | 1/4      | -     | 2     | 21/64 | -     | 1/8 | 1-15/16 | -     | -     | -   | -     | -     | -     | -  | -     | -   | -     | 1-1/2   | 1-11/32 |
| 2MSB 1222 | 1-1/4        | 1-3/4 | 5       | 1" | 1-14   | 3/4 | 1-1/2 | -   | 2-1/2 | 1/4      | 2-1/2 | 2     | 21/64 | -     | 1/8 | 1-15/16 | -     | -     | -   | -     | -     | -     | -  | -     | -   | -     | 1-1/2   | 1-11/32 |
| 2MST 1222 | 1-1/4        | 1-3/4 | 5       | 1" | 1-14   | 3/4 | 1-1/2 | -   | 2-1/2 | 1/4      | 2-1/2 | 2     | -     | 4-1/2 | 1/8 | -       | 3     | 4     | 1/2 | 3-1/8 | 1-3/8 | 1     | -  | -     | -   | 1-1/2 | 1-11/32 |         |
| 2MSP 1727 | 1-3/4        | 2-1/4 | 6-1/16  | 1" | 1-14   | 3/4 | 1-1/2 | 1"  | -     | 1/4      | 3     | 2-1/2 | -     | 1/8   | -   | -       | -     | -     | -   | -     | -     | -     | -  | 2     | 7/8 | 7/8   | 1-3/4   | -       |
| 2MSR 1727 | 1-3/4        | 2-1/4 | 5-1/16  | 1" | 1-14   | 3/4 | 1-1/2 | -   | 3     | 1/4      | -     | 2-1/2 | 11/32 | -     | 1/8 | 2-3/8   | -     | -     | -   | -     | -     | -     | -  | -     | -   | 1-3/4 | 1-3/8   |         |
| 2MSB 1727 | 1-3/4        | 2-1/4 | 5-1/16  | 1" | 1-14   | 3/4 | 1-1/2 | -   | 3     | 1/4      | 3     | 2-1/2 | 11/32 | -     | 1/8 | 2-3/8   | -     | -     | -   | -     | -     | -     | -  | -     | -   | 1-3/4 | 1-3/8   |         |
| 2MST 1727 | 1-3/4        | 2-1/4 | 5-1/16  | 1" | 1-14   | 3/4 | 1-1/2 | -   | 3     | 1/4      | 3     | 2-1/2 | -     | 5-1/8 | 1/8 | -       | 3-1/2 | 5-1/2 | 1   | 3-1/2 | 1-3/4 | 1-1/2 | -  | -     | -   | 1-3/4 | 1-3/8   |         |

2" MINIMUM STROKE

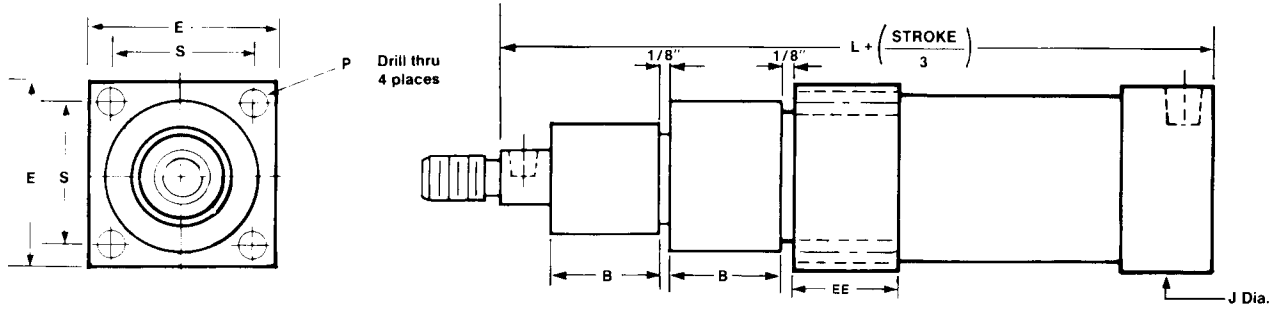
SPECIALS GLADLY MADE TO YOUR ORDER

### 3 Stage, Double and Single Acting, Air or Hydraulic, Mini-Space® Telescopic Cylinders.

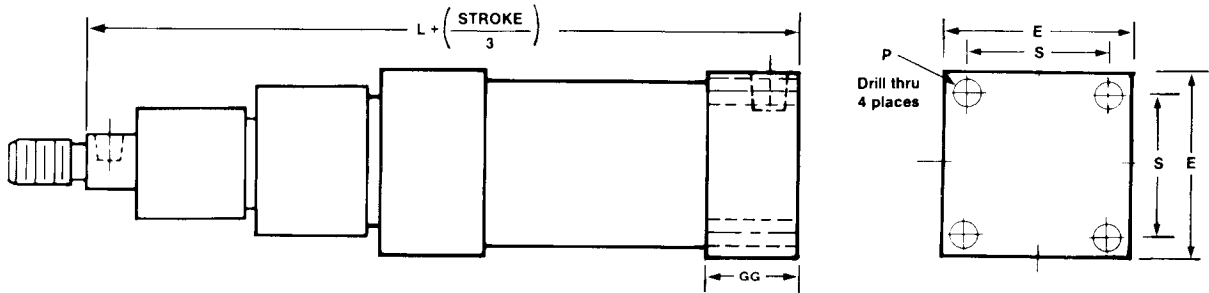
#### 3 MSP—Pivot Mount



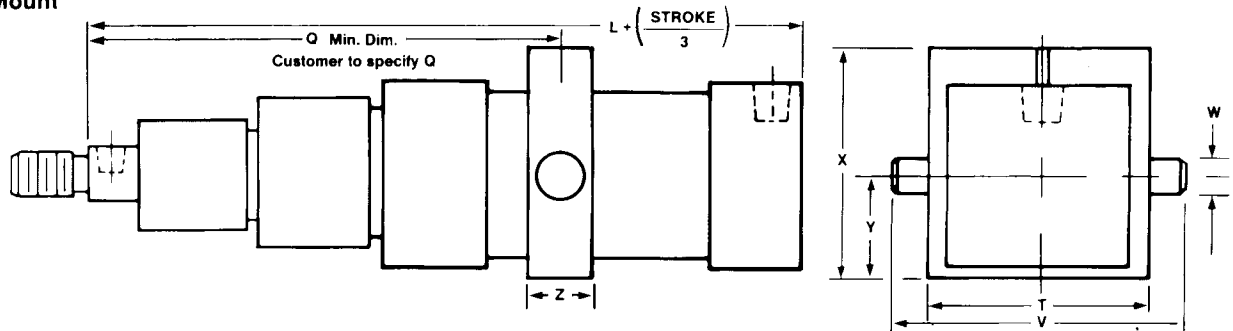
#### 3 MSR—Front Flange Mount



#### 3 MSB—Base Flange Mount



#### 3 MST—Trunnion Mount



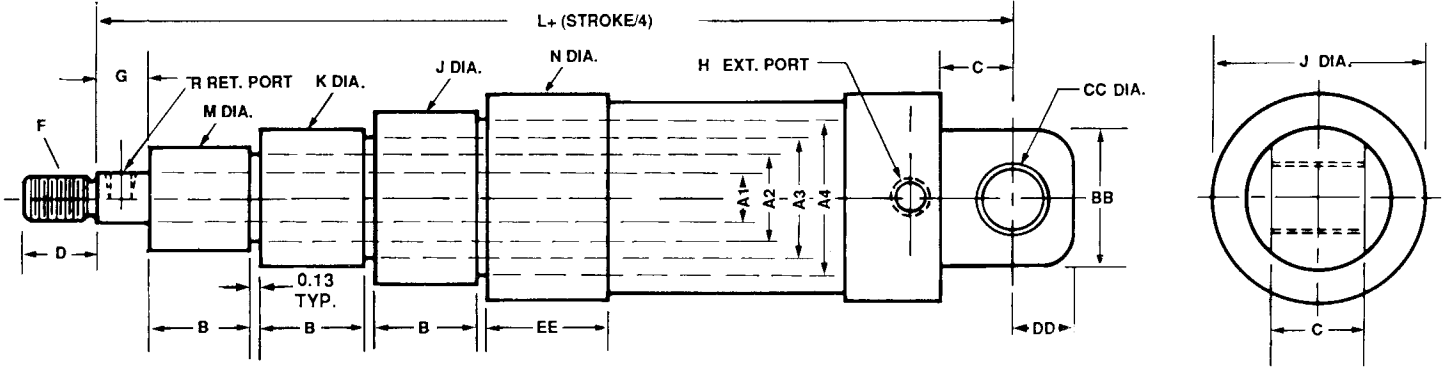
DIMENSIONS OF 3 STAGE MINI-SPACE® TELESCOPIC AIR OR HYDRAULIC CYLINDERS

| Model     | Rod Diameter |       |       | L      | D  | F      | G   | B     | C   | E     | H   | J       | K     | M     | P     | Q     | R   | S       | T     | V     | W   | X     | Y     | Z     | BB | CC | DD  | EE  | GG    |   |
|-----------|--------------|-------|-------|--------|----|--------|-----|-------|-----|-------|-----|---------|-------|-------|-------|-------|-----|---------|-------|-------|-----|-------|-------|-------|----|----|-----|-----|-------|---|
|           | A1           | A2    | A3    |        |    |        |     |       |     |       |     |         |       |       |       |       |     |         |       |       |     |       |       |       |    |    |     |     |       |   |
| 3MSP 722  | 3/4          | 1-1/4 | 1-3/4 | 6-3/4  | 1" | 5/8-18 | 3/4 | 1-1/2 | 3/4 | -     | 1/4 | 2-1/2   | 2     | 1-1/2 | -     | -     | 1/8 | -       | -     | -     | -   | -     | -     | -     | -  | -  | -   | -   | -     | - |
| 3MSR 722  | 3/4          | 1-1/4 | 1-3/4 | 6-1/16 | 1" | 5/8-18 | 3/4 | 1-1/2 | -   | 2-1/2 | 1/4 | -       | 2     | 1-1/2 | 21/64 | -     | 1/8 | 1-15/16 | -     | -     | -   | -     | -     | -     | -  | -  | -   | -   | -     | - |
| 3MSB 722  | 3/4          | 1-1/4 | 1-3/4 | 6-1/16 | 1" | 5/8-18 | 3/4 | 1-1/2 | -   | 2-1/2 | 1/4 | 1-15/16 | 2     | 1-1/2 | 21-64 | -     | 1/8 | 1-15/16 | -     | -     | -   | -     | -     | -     | -  | -  | -   | -   | -     | - |
| 3MST 722  | 3/4          | 1-1/4 | 1-3/4 | 6-1/16 | 1" | 5/8-18 | 3/4 | 1-1/2 | -   | 2-1/2 | 1/4 | 2-1/2   | 2     | 1-1/2 | -     | 6-1/8 | 1/8 | -       | 3     | 4     | 1/2 | 3-1/8 | 1-3/8 | 1"    | -  | -  | -   | -   | -     | - |
| 3MSP 1227 | 1-1/4        | 1-3/4 | 2-1/4 | 7-3/16 | 1" | 1-14   | 3/4 | 1-1/2 | 1"  | -     | 1/4 | 3       | 2-1/2 | 2     | -     | -     | 1/8 | -       | -     | -     | -   | -     | -     | -     | -  | 2  | 7/8 | 7/8 | 1-3/4 | - |
| 3MSR 1227 | 1-1/4        | 1-3/4 | 2-1/4 | 6-3/16 | 1" | 1-14   | 3/4 | 1-1/2 | -   | 3     | 1/4 | -       | 2-1/2 | 2     | 11/32 | -     | 1/8 | 2-3/8   | -     | -     | -   | -     | -     | -     | -  | -  | -   | -   | -     | - |
| 3MSB 1227 | 1-1/4        | 1-3/4 | 2-1/4 | 6-3/16 | 1" | 1-14   | 3/4 | 1-1/2 | -   | 3     | 1/4 | 3       | 2-1/2 | 2     | 11/32 | -     | 1/8 | 2-3/8   | -     | -     | -   | -     | -     | -     | -  | -  | -   | -   | -     | - |
| 3MST 1227 | 1-1/4        | 1-3/4 | 2-1/4 | 6-3/16 | 1" | 1-14   | 3/4 | 1-1/2 | -   | 3     | 1/4 | 3       | 2-1/2 | 2     | -     | 6-3/4 | 1/8 | -       | 3-1/2 | 5-1/2 | 1"  | 3-1/2 | 1-3/4 | 1-1/2 | -  | -  | -   | -   | -     |   |

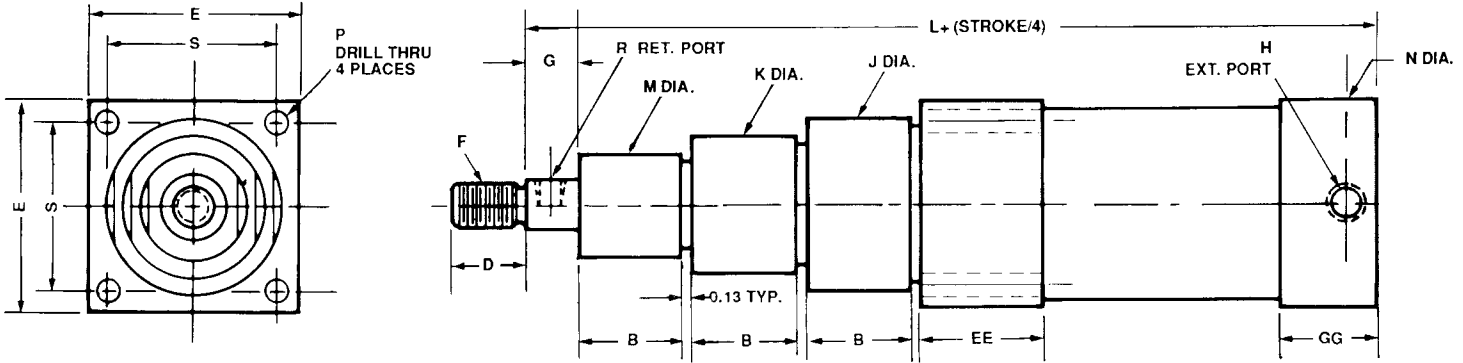
2" MINIMUM STROKE

**4 Stage, Double and Single Acting, Air or Hydraulic, Mini-Space® Telescopic Cylinders**

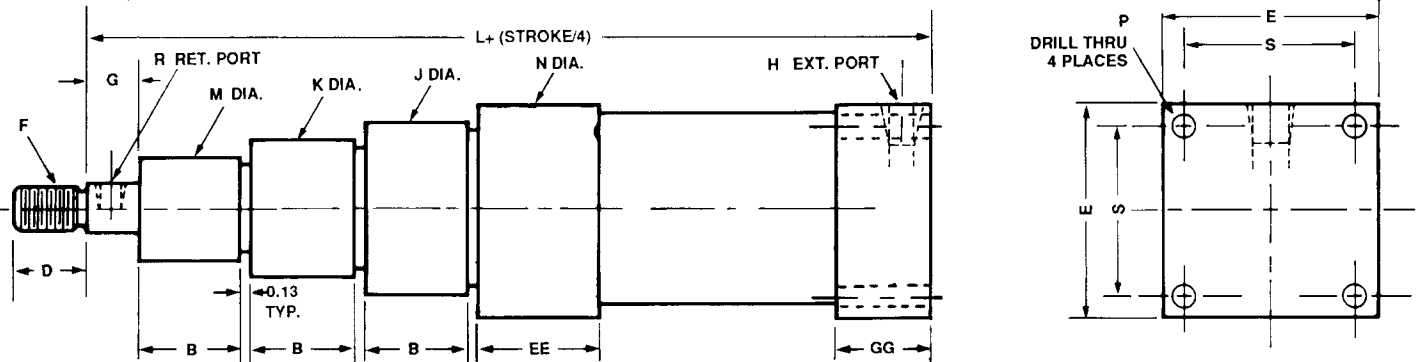
**4 MSP — Pivot Mount**



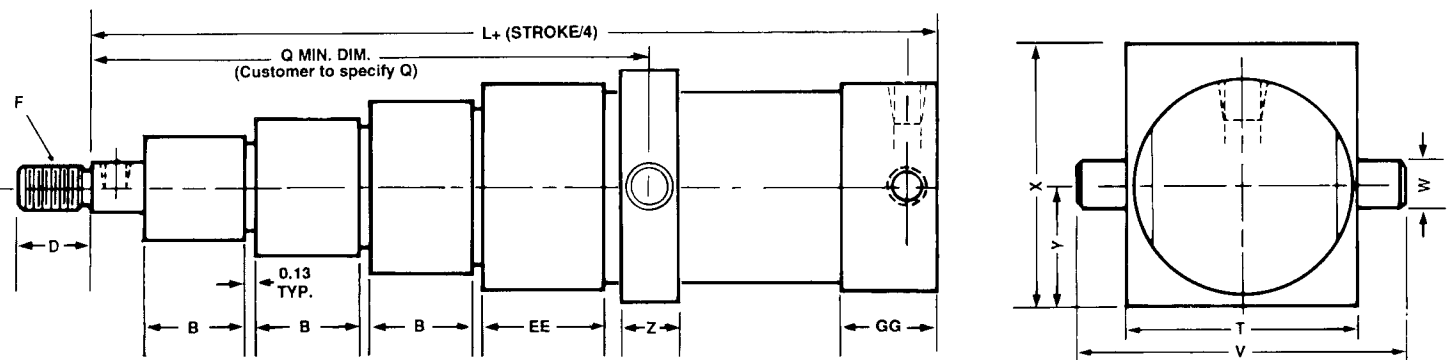
**4 MSR — Front Flange Mount**



**4 MSB — Base Flange Mount**



**4 MST — Trunnion Mount**



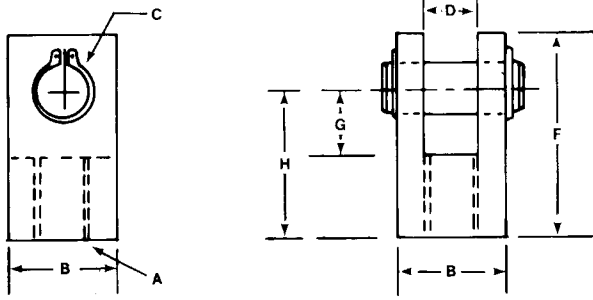
| Model    | Rod Diameter |       |       |       | L     | D  | F      | G   | B     | C  | E  | NPT |       |    |       | P  | Q     | NPT   |     | S     | T     | V     | W  | X     | Y     | Z     | BB | CC | DD | EE    | GG    |
|----------|--------------|-------|-------|-------|-------|----|--------|-----|-------|----|----|-----|-------|----|-------|----|-------|-------|-----|-------|-------|-------|----|-------|-------|-------|----|----|----|-------|-------|
|          | A1           | A2    | A3    | A4    |       |    |        |     |       |    |    | H   | J     | K  | M     |    |       | N     | R   |       |       |       |    |       |       |       |    |    |    |       |       |
| 4MSP 727 | 3/4          | 1-1/4 | 1-3/4 | 2-1/4 | 8-1/4 | 1" | 5/8-18 | 3/4 | 1-1/2 | 1" | -  | 1/4 | 2-1/2 | 2" | 1-1/2 | 3" | -     | 1/8   | -   | -     | -     | -     | -  | -     | -     | -     | -  | -  | -  | -     | -     |
| 4MSR 727 | 3/4          | 1-1/4 | 1-3/4 | 2-1/4 | 7-1/4 | 1" | 5/8-18 | 3/4 | 1-1/2 | 1" | 3" | 1/4 | 2-1/2 | 2" | 1-1/2 | 3" | 11/32 | -     | 1/8 | 2-3/8 | -     | -     | -  | -     | -     | -     | -  | -  | -  | 1-3/4 | 1-3/8 |
| 4MSB 727 | 3/4          | 1-1/4 | 1-3/4 | 2-1/4 | 7-1/4 | 1" | 5/8-18 | 3/4 | 1-1/2 | 1" | 3" | 1/4 | 2-1/2 | 2" | 1-1/2 | 3" | 11/32 | -     | 1/8 | 2-3/8 | -     | -     | -  | -     | -     | -     | -  | -  | -  | 1-3/4 | 1-3/8 |
| 4MST 727 | 3/4          | 1-1/4 | 1-3/4 | 2-1/4 | 7-1/4 | 1" | 5/8-18 | 3/4 | 1-1/2 | 1" | -  | 1/4 | 2-1/2 | 2" | 1-1/2 | 3" | -     | 8-3/8 | 1/8 | -     | 3-1/2 | 5-1/2 | 1" | 3-1/2 | 1-3/4 | 1-1/2 | -  | -  | -  | 1-3/4 | 1-3/8 |

6-5/8" MINIMUM STROKE

**INNOVATIVE DESIGNS — LET OUR ENGINEERING DEPARTMENT HELP YOU.**

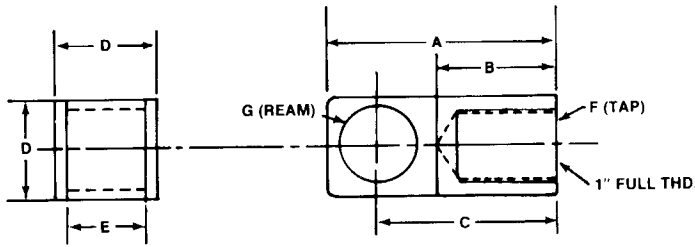
## Mounting Accessories

### Rod Clevis and Pin



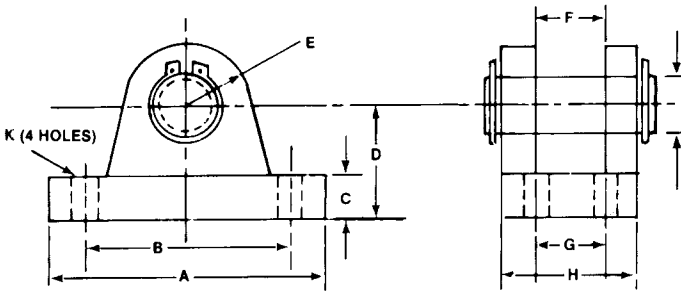
| PART NO. | A        | B     | C   | D   | F     | G     | H     |
|----------|----------|-------|-----|-----|-------|-------|-------|
| C-625    | 5/8-18   | 1     | 1/2 | 1/2 | 1-7/8 | 5/8   | 1-3/8 |
| C-750    | 3/4-16   | 1-1/4 | 5/8 | 5/8 | 2-1/4 | 7/8   | 1-5/8 |
| C-1000   | 1-14     | 1-1/2 | 3/4 | 3/4 | 2-3/4 | 1     | 2     |
| C-1250   | 1-1/4-12 | 1-3/4 | 1   | 1   | 3-1/2 | 1-1/2 | 2-2/2 |

### Rod Eye



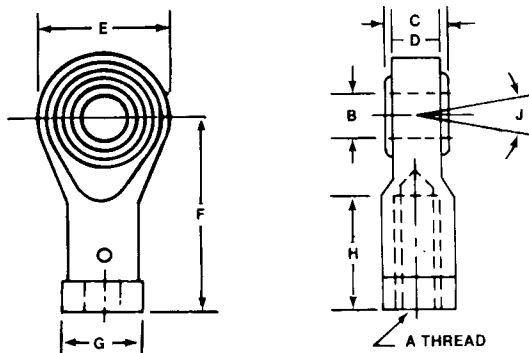
| PART NO. | A       | B     | C       | D     | E     | F      | G   |
|----------|---------|-------|---------|-------|-------|--------|-----|
| M-505    | 2-3/16  | 1     | 1-11/16 | 7/8   | 3/4   | 5/8-18 | 5/8 |
| M-625    | 2-1/2   | 1     | 1-7/8   | 1/1/8 | 1     | 5/8-18 | 7/8 |
| M-750    | 2-1/2   | 1     | 1-7/8   | 1-1/8 | 1     | 3/4-16 | 7/8 |
| M-1000   | 3-13/16 | 1-5/8 | 2-13/16 | 1-1/2 | 1-1/2 | 1-14   | 1   |

### Mounting Bracket and Pin



| PART NO. | A     | B     | C    | D     | E     | F      | G     | H     | J   | K*    |
|----------|-------|-------|------|-------|-------|--------|-------|-------|-----|-------|
| F-625    | 3     | 2-1/4 | 7/16 | 1-1/4 | 5/8   | 49/64  | 3/4   | 1-1/2 | 5/8 | 17/64 |
| F-875    | 3-3/4 | 2-7/8 | 9/16 | 1-7/8 | 13/16 | 1-1/64 | 1-1/4 | 2-1/8 | 7/8 | 25/64 |

### Spherical Rod Eye



| PART NO. | A      | B   | C   | D     | E     | F     | G     | H     | J       |
|----------|--------|-----|-----|-------|-------|-------|-------|-------|---------|
| S-625    | 5/8-18 | 5/8 | 3/4 | 9/16  | 1-1/2 | 2-1/2 | 1     | 1-1/2 | 16°     |
| S-750    | 3/4-16 | 3/4 | 7/8 | 11/16 | 1-3/4 | 2-7/8 | 1-1/8 | 1-3/4 | 13-1/2° |

### FORCE CHART

ALWAYS CHECK CYLINDER PRESSURE RATING BEFORE APPLYING ANY PRESSURE

| ROD   |      | BORE  |      | 80 PSI |      | 100 PSI |      | 500 PSI |      | 1000 PSI |      | 1500 PSI |      |
|-------|------|-------|------|--------|------|---------|------|---------|------|----------|------|----------|------|
| SIZE  | AREA | SIZE  | AREA | PUSH   | PULL | PUSH    | PULL | PUSH    | PULL | PUSH     | PULL | PUSH     | PULL |
| 3/4   | 0.44 | 1"    | 0.78 | 62     | 27   | 78      | 34   | 390     | 170  | 780      | 340  | 1170     | 510  |
| 1-1/4 | 1.23 | 1-1/2 | 1.77 | 141    | 43   | 177     | 54   | 885     | 270  | 1770     | 540  | 2655     | 810  |
| 1-3/4 | 2.40 | 2"    | 3.14 | 251    | 59   | 314     | 74   | 1570    | 370  | 3140     | 740  | 4710     | 1110 |
| 2-1/4 | 3.98 | 2-1/2 | 4.90 | 392    | 73   | 490     | 92   | 2450    | 460  | 4900     | 920  | 7350     | 1380 |

All information in this brochure is subject to change without prior notice.



## AIR & HYDRAULIC POWER, INC.

Box 159, 555 Goffle Road, Wyckoff, NJ 07481-0159

Phone (201) 447-1589 FAX (201) 447-0302

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