



**Rockford Air Devices Inc.**

**Power and Force Division**

**No Noisy Hydraulic  
Systems**

**No High Pressure  
Hydraulic Lines**

**Variable  
High Pressure  
Strokes Available**



**Great For Portable  
Work Stations**

**Operates On  
80 PSI Air**

**Variable  
Low Pressure  
Strokes Available**

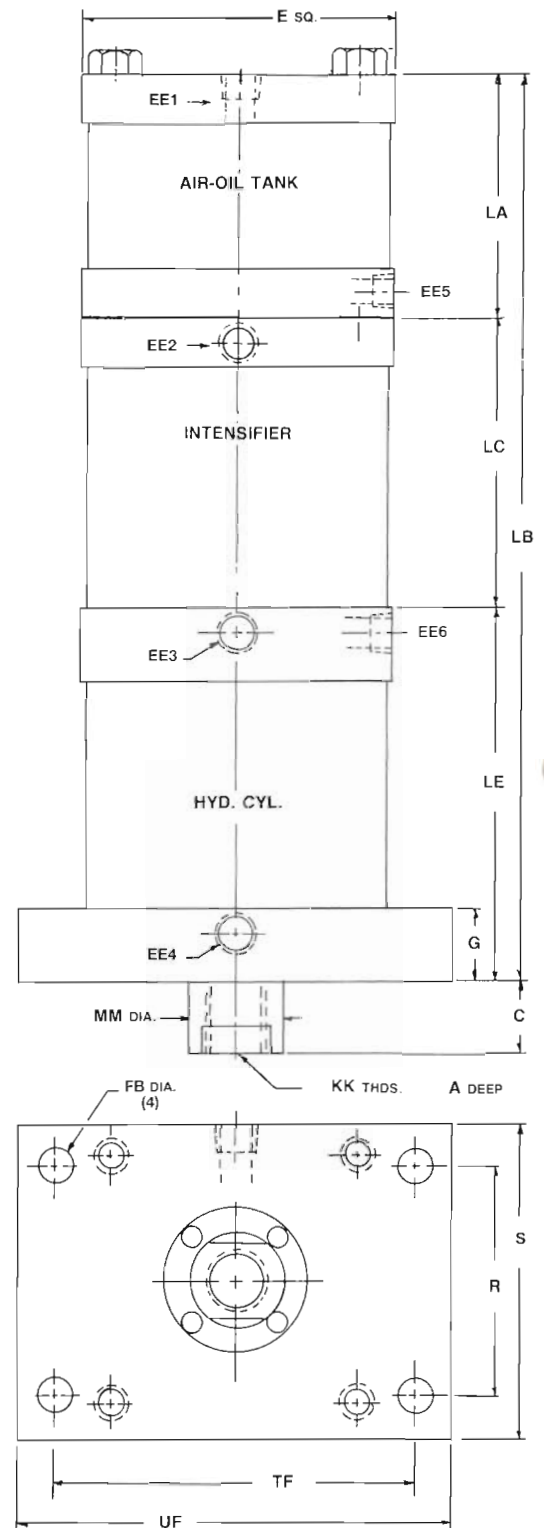
# **BOOSTER CYLINDER**

**6 - 37 TONS OF FORCE WITH 80 PSI AIR**

# DIMENSIONS FOR BOOSTER CYLINDER

## 6 TONS TO 15 TONS

	#1A	#2A	#3A	#4A	#5A	#6A
<b>FORCE AT 80 PSI</b>	12,575	14,593	16,747	19,053	24,120	29,778
<b>RETURN FORCE AT 80 PSI</b>	412	518	632	754	1021	1319
<b>A</b>	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
<b>C</b>	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
<b>E</b>	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
<b>EE1</b>	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
<b>EE2</b>	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
<b>EE3</b>	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
<b>EE4</b>	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
<b>EE5</b>	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT
<b>EE6</b>	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT
<b>* FB</b>	11/16	11/16	11/16	11/16	11/16	13/16
<b>G</b>	2	2	2	2	2	2
<b>KK</b>	1 1/4 - 12	1 1/4 - 12	1 1/4 - 12	1 1/4 - 12	1 1/4 - 12	1 1/4 - 12
<b>LA</b>	8 1/2	8 1/2	9	9	9 1/2	9 1/2
<b>LB</b>	25 7/8	25 7/8	26 3/8	26 3/8	26 7/8	26 7/8
<b>LC</b>	8 1/8	8 1/8	8 1/8	8 1/8	8 1/8	8 1/8
<b>LE</b>	9 1/4	9 1/4	9 1/4	9 1/4	9 1/4	9 1/4
<b>MM</b>	2	2	2	2	2	2
<b>R</b>	4 7/8	4 7/8	4 7/8	4 7/8	4 7/8	4 7/8
<b>S</b>	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
<b>TF</b>	7 5/8	7 5/8	7 5/8	7 5/8	7 5/8	7 5/8
<b>UF</b>	9	9	9	9	9	9



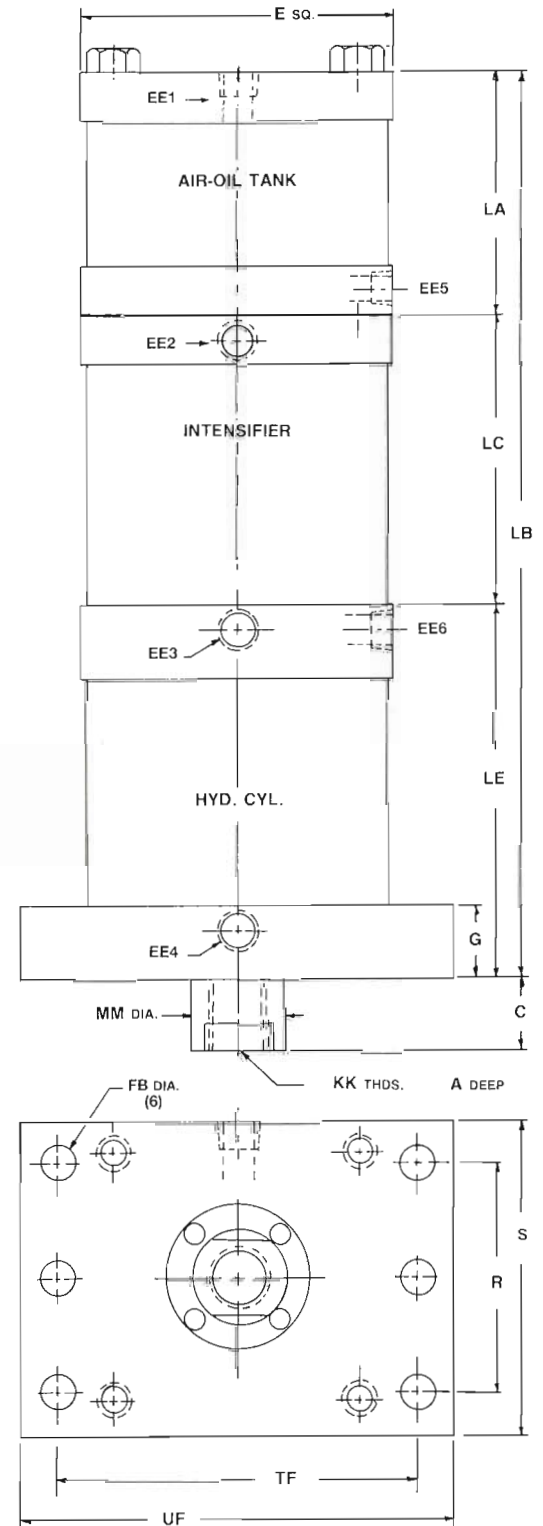
\* Use heat treated socket head cap screws.

Units with forces larger than 15 tons are on page 3.

# DIMENSIONS FOR BOOSTER CYLINDER

## 18 TONS TO 37 TONS

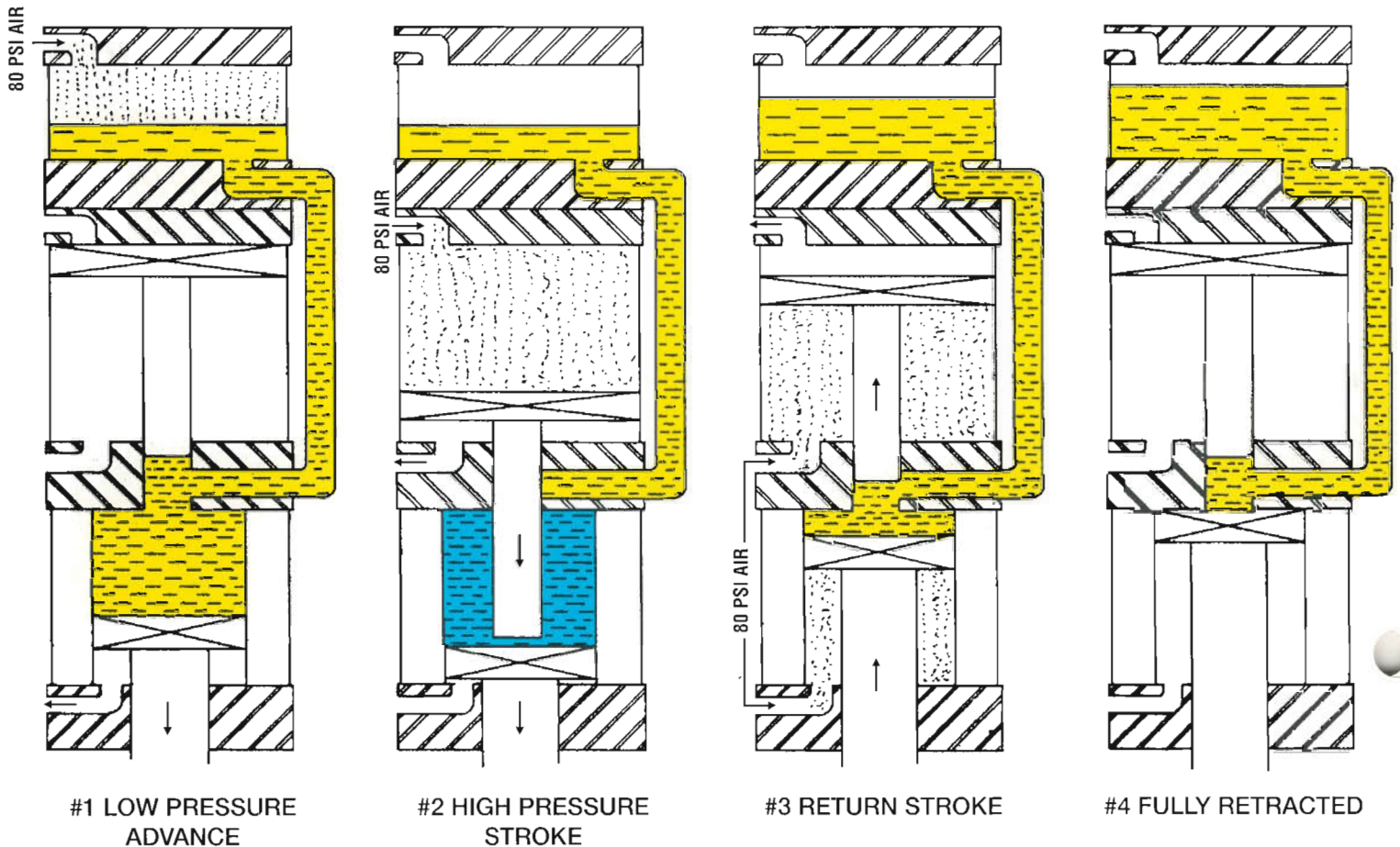
	#7A	#8A	#9A	#10A	#11A	#12A
PUSH FORCE AT 80 PSI	36,185	42,470	49,254	56,549	64,461	74,008
RETURN FORCE AT 80 PSI	1,786	2,179	2,603	3,059	2,512	2,968
A	2 1/2	2 1/2	2 1/2	2 1/2	3	3
C	2 1/2	2 1/2	2 1/2	2 1/2	3	3
E	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2
EE1	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
EE2	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
EE3	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
EE4	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT	3/8 NPT
EE5	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT	3/4 NPT
EE6	3/4 NPT	3/4 NPT	3/4 NPT </td <td>3/4 NPT</td> <td>3/4 NPT</td> <td>3/4 NPT</td>	3/4 NPT	3/4 NPT	3/4 NPT
* FB	25/32	25/32	29/32	29/32	1 1/32	1 1/32
Gi	2 1/2	3	3	3	3 1/2	3 1/2
KK	1 3/4 - 12	1 3/4 - 12	1 3/4 - 12	1 3/4 - 12	2 - 12	2 - 12
LA	10 1/2	10 1/2	11 1/2	12	11 1/2	12
LB	30 5/8	31 5/8	33 1/8	33 5/8	33 5/8	35 1/8
LC	9 1/8	9 5/8	10 1/8	10 1/8	10 1/8	11 1/8
LE	11	11 1/2	11 1/2	11 1/2	12	12
MM	2 3/4	2 3/4	2 3/4	2 3/4	3	3
R	7	7	7	7	7	7
S	9	9	9	9	9	9
TF	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4
UF	12	12	12	12	12	12



\* Use heat treated socket head cap screws.

# OPERATING PROCEDURE FOR BOOSTER CYLINDERS

6 TO 37 TONS OF FORCE



## STEP 1

Air is introduced into air-oil tank causing oil to extend hydraulic cylinder.  
This is the low pressure advance.

## STEP 2

Air is applied to intensifier section to drive ram into oil chamber of hydraulic cylinder, thus intensifying the oil pressure and giving the high pressure stroke.

## STEP 3

Air is applied to bottom of intensifier and bottom of hydraulic cylinder to return both to fully retracted position.

## STEP 4

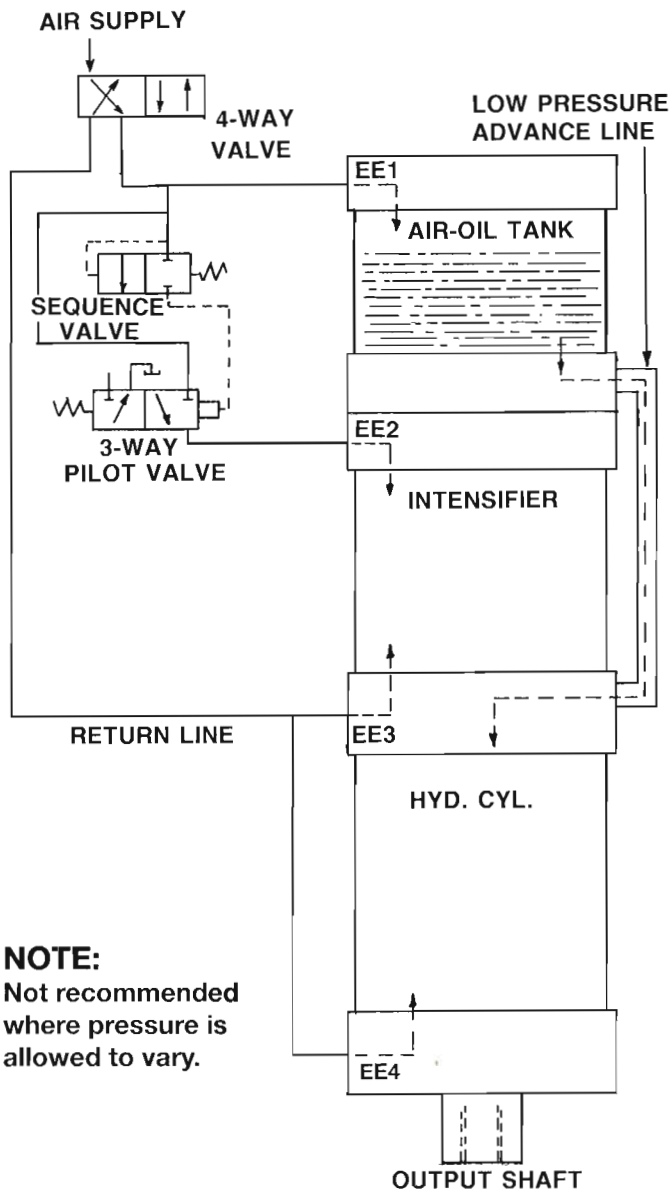
Ready for next cycle.

### NOTE:

Cycle times vary from 2 to 4 seconds, depending on length of low pressure strokes and high pressure stroke, plus size of valve, and tubing used to activate units.

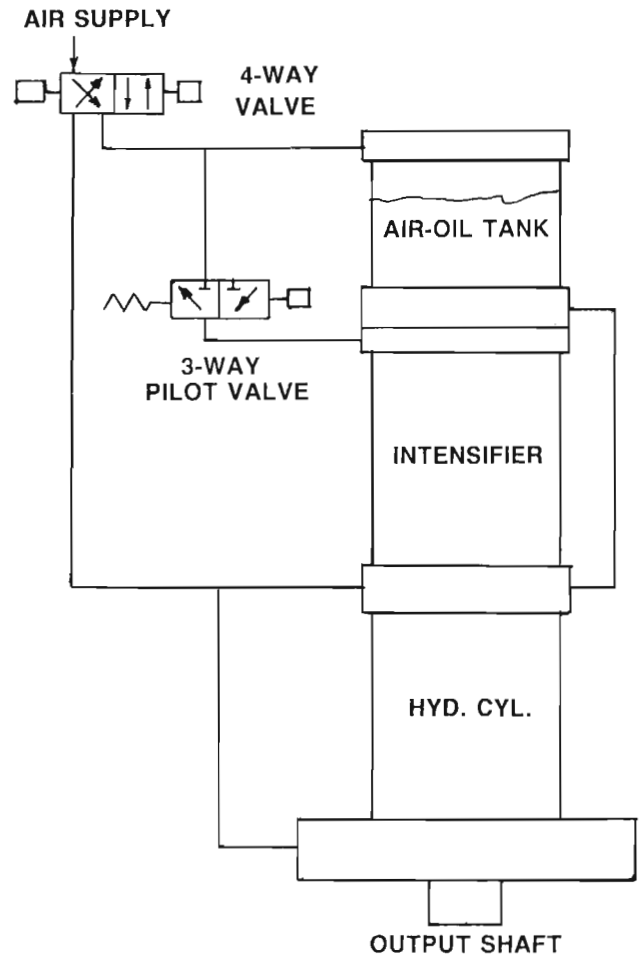
# SUGGESTED CIRCUITS TO OPERATE BOOSTER CYLINDER

AIR OPERATED SEQUENCE VALVES  
SENSING RESISTANCE DURING  
LOW PRESSURE ADVANCE  
PLUS LIMIT SWITCH TO CYCLE UNIT



SOLENOID VALVE  
IN CONJUNCTION WITH SEQUENCE AND  
3-WAY PILOT OPERATED VALVE

LIMIT SWITCHES  
OR PROXIMITY SWITCHES OPERATING  
SOLENOID VALVES  
TO CYCLE UNIT



SOLENOID VALVES  
ACTIVATED BY LIMIT SWITCHES  
WHEN SENSING POSITIVE POSITIONS  
OF OUTPUT SHAFT.

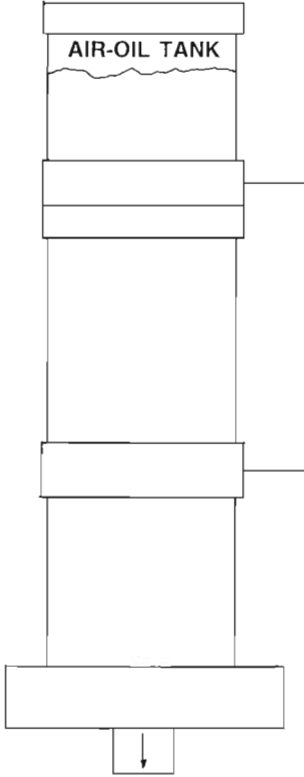
## — NOTE —

Two hand no tie down system should always be incorporated as a safety feature.

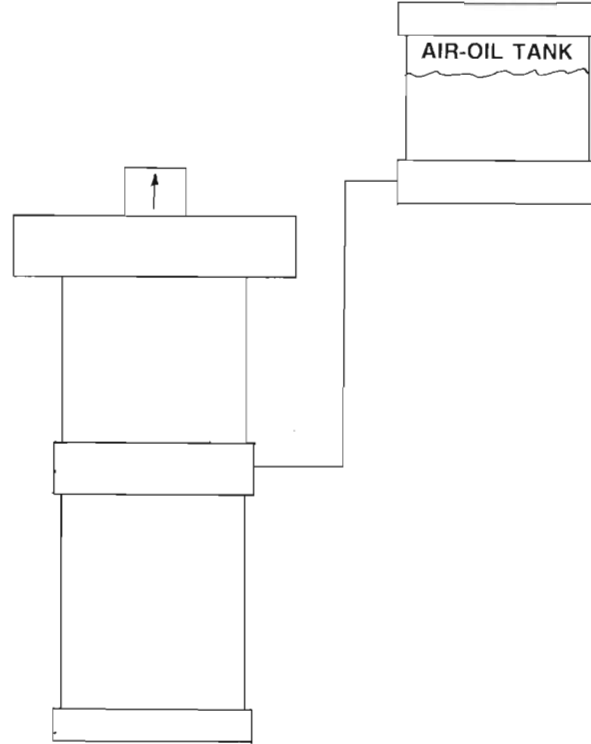
CUSTOMER TO FURNISH VALVES AND PIPING.

# VERTICAL APPLICATIONS

**NORMAL (PREFERRED)**  
Rod Pushing Down



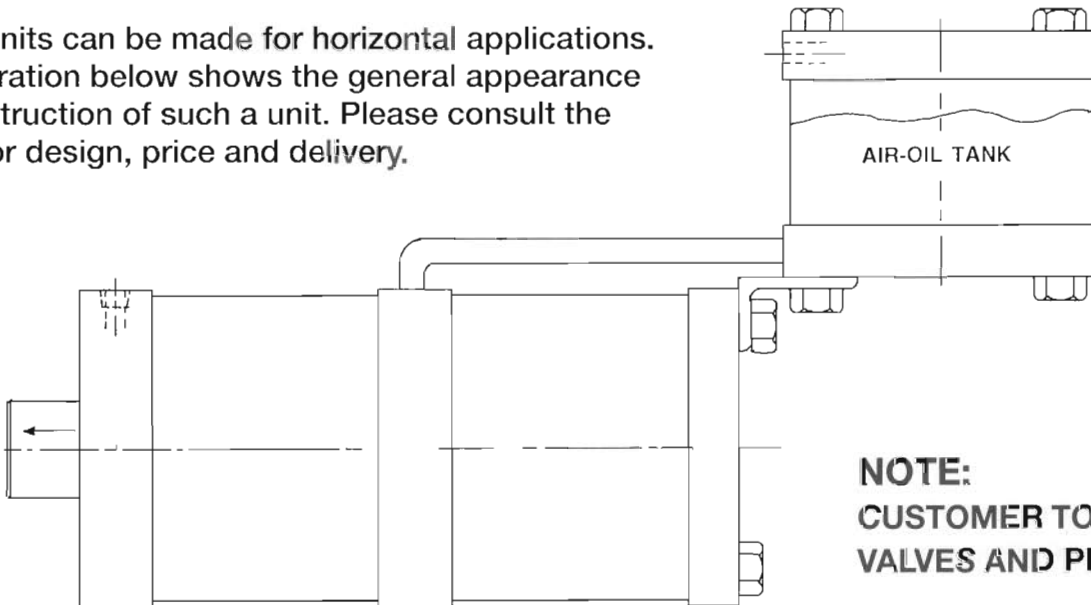
**UPSIDE DOWN**  
Rod Pushing Up



Units can be mounted in an upside down mode (*pushing up*) as long as air-oil tank is mounted above the unit as illustrated above.

# HORIZONTAL APPLICATIONS

Special units can be made for horizontal applications. The illustration below shows the general appearance and construction of such a unit. Please consult the factory for design, price and delivery.



**NOTE:**  
CUSTOMER TO FURNISH  
VALVES AND PIPING.

# SPECIFICATIONS

## STANDARD UNITS

Number	Push Force at 80 PSI*	Low Pressure Adv. Strokes	High Pressure Stroke ‡	Total Stroke	Diameter of Hyd. Cylinder	Retract. Force at 80 PSI*	
1A	12,575	3	.700	3.700	3 1/4	412	DELIVERY IN 7 TO 10 DAYS
2A	14,593	3	.600	3.600	3 1/2	518	
3A	16,747	3	.500	3.500	3 3/4	632	
4A	19,053	3	.450	3.450	4	754	
5A	24,120	3	.350	3.350	4 1/2	1,021	
6A	29,778	3	.250	3.250	5	1,319	
7A	36,185	4	.500	4.500	6	1,726	DELIVERY IN 14 TO 20 DAYS
8A	42,470	4	.500	4.500	6 1/2	2,179	
9A	49,254	4	.437	4.437	7	2,603	
10A	56,549	4	.375	4.375	7 1/2	3,059	
11A	64,461	4	.375	4.375	7	2,512	
12A	74,008	4	.375	4.375	7 1/2	2,968	

‡ All of low pressure stroke must be used to obtain all of high pressure stroke.

\* 100 PSI Maximum Air Pressure

## NON-STANDARD UNITS

- Units with different low pressure advance strokes and high pressure strokes also available.
- Low pressure advance stroke can easily be increased to as much as 12 inches. Height of air-oil tank and hydraulic cylinder would increase as low pressure advance stroke increases.
- High pressure stroke can be increased by 100%, but design must be discussed with factory.

## GENERAL INFORMATION

Typically, high forces cannot be obtained by air cylinders operating at 80-100 PSI shop air. Instead, you would require a hydraulic cylinder driven by a hydraulic system. The cost of this type of fluid power equipment can be much more than the price of our booster cylinder.

## SELECTING BOOSTER CYLINDERS

Determine the following requirements:

1. Force.
2. High Pressure Stroke.
3. Low Pressure Stroke.
4. Retract or Lift Force.
5. Cycle Times.

## PRECAUTIONS

Rockford Air Devices products are manufactured exclusively for use in industrial applications by trained personnel who possess the experience necessary to provide adequate safeguards to prevent injury or damage in the event there is a failure of any component in the system.

## WARRANTY

Rockford Air Devices, Inc. warrants to customers who purchase products for resale that such products are free from defects in material and workmanship. The company will repair or replace, at its option, any product found to be defective after inspection. Rockford Air Devices, Inc. shall not be liable for any incidental or consequential damages, including downtime, for breach of any express or implied warranty, and shall not be liable or responsible for injuries or damage to persons or property arising out of the use or operation of Rockford Air Devices, Inc. products.



# Rockford Air Devices Inc.

Power and Force Division

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# AIR - OIL TANKS

## LIGHTWEIGHT AIR - OIL TANK

150 PSI AIR

Aluminum end caps, translucent fiberglass tube allows easy viewing of oil height from any position.

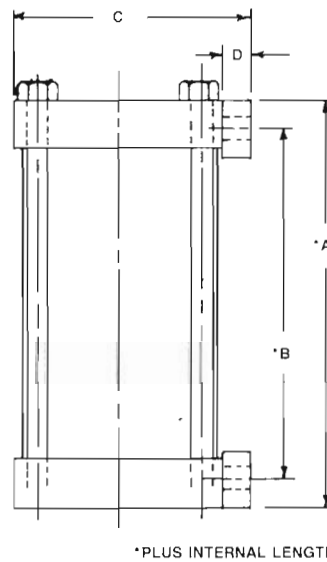
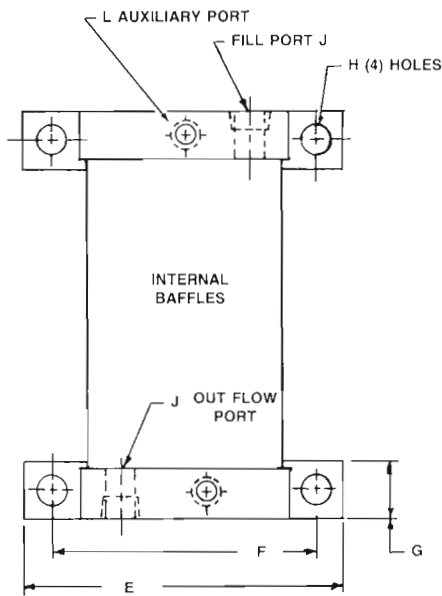
### ORDERING INFORMATION

AIR-OIL TANK

DIA.

LENGTH IN INCHES

AOT — 3 1/4" x 6"



DIMENSIONS OF AIR-OIL TANKS

PART NO.	DIA.	A	B	C	D	E	F	G	H	J	L
AOT	2½	1¼	9/16	3⅝	5/16	4½	3¾	3/4	3/8	1/4	1/8
AOT	3¼	1¼	3/4	4¼	1/2	5¼	4¾	1	1/2	3/8	1/4
AOT	4	1¼	3/4	6	1/2	6½	5½	1	1/2	3/8	1/4
AOT	5	2	1	6	1/2	7½	6½	1	1/2	1/2	3/8
AOT	6	2	1	7	1/2	8½	7½	1	1/2	3/4	3/8
AOT	8	2	1	9	1/2	10½	9½	1	1/2	3/4	3/8

MAXIMUM USEABLE VOLUME

DIA.	AREA	INTERNAL LENGTH OF TANK							
		6	8	10	12	14	16	18	20
2½	4.9	15	24	33	42	51	60	69	78
3¼	8.30	26	41	56	71	86	101	116	131
4	12.56	38	62	84	108	130	153	174	198
5	19.64	57	92	128	163	199	234	269	305
6	28.27	84	131	184	237	285	340	388	436
8	50.26	146	236	327	417	507	597	687	778

NOTE: OTHER INTERNAL LENGTHS ARE AVAILABLE. PLEASE CONTACT FACTORY.