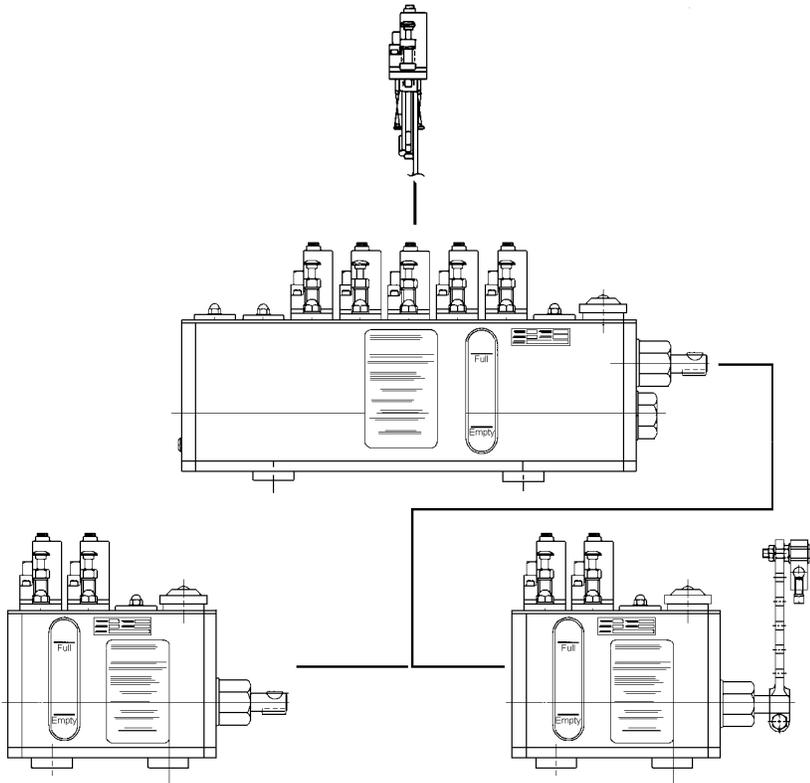




*Manzel*<sup>®</sup>  
**Pumping  
Packages**

## MODEL 55 BOX LUBRICATOR = true modularity

Wide choice of standard modular components helps you meet application requirements more exactly without the added costs of a custom system.



### PUMPS:

Three piston sizes are available in Model 88 pumps. The pumps provide pressures up to 7,500 psi for mineral or synthetic oils. Model 88 is interchangeable with pumps in competitive lubricators. For details see page 4.

### RESERVOIRS:

Four reservoir capacities are available to hold from 3 to 12 pints and accommodate from 1 to 10 pumps. Blank cover assemblies are available for unused pump stations. For details see page 3.

### DRIVE OPTIONS:

Ten drive options are available from direct drive to a reduction ratio of 300:1. Options provide left- or right-hand end of reservoir mounting, rotary drives and end ratchet drives. For details see page 6.

## DESCRIPTION

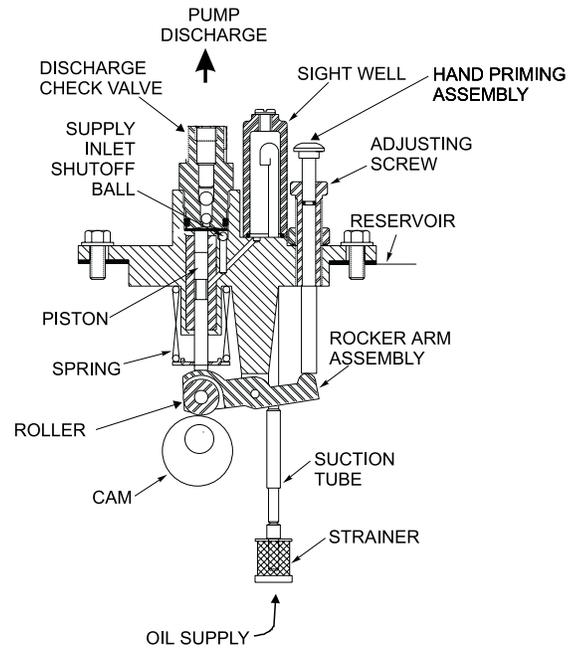
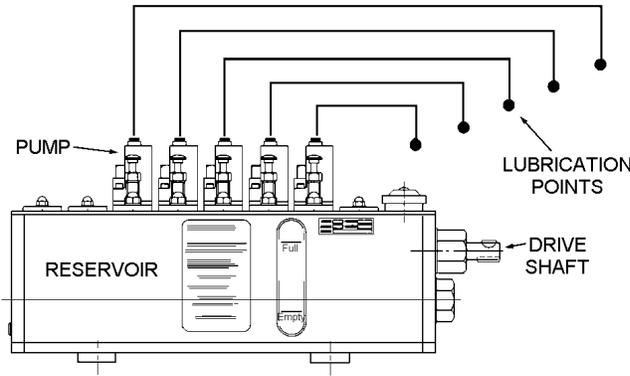
A basic pump-to-point system is shown in the illustration which depicts five pumps mounted on a common reservoir from which each pump is dispensing oil to a single lubrication point. These pumps are operated by individual cams on the drive shaft.

## MANZEL MODEL 55 BOX LUBRICATORS FEATURES/BENEFITS

- Manzel Model 55 Box Lubricators provide a proven, cost-effective way to assemble customized oil systems that meet specific requirements by using standard modular components.

- Manzel Model 55 Box Lubricators increase opportunities to standardize lube system components and reduce lube maintenance and service costs.
- Manzel Model 55 Box Lubricators save you system design dollars and lead time.
- Manzel Model 55 Box Lubricators are dependable and backed by the industry's most comprehensive international distributor network—with application expertise, parts stocks and factory — trained service nearby, wherever you are located.

### PUMP-TO-POINT SYSTEM



### INTERCHANGEABILITY CONVERSION AND RETROFITS

Manzel Model 55 Box Lubricators have been designed to be easily interchangeable with other manufacturer's lubricators. For details contact your local Lubriquip® representative or call on us for system design and application assistance. At the factory and in the field through our network of distributors, we have unmatched experience in the design and effective application of lubrication systems. We also have in-depth know-how in the application of these systems in your specific industry.

### APPLICATIONS AND INDUSTRIES

All working parts of the Manzel 55 Box Lubricators are totally enclosed away from dirt, water and impurities. And, each moving part is self-lubricated at all times by the fluid in the reservoir. This and the wide range of options, high discharge pressure and rugged construction plus the many other features and benefits make Manzel Model 55 Box Lubricators ideally suited for these applications and industries:

APPLICATION	INDUSTRY	USE
Compressors	Petrochemical Refineries, Gas Transmission, Injection and Storage Cold Storage General Manufacturing Air Systems	Lubricate cylinder walls and piston shaft packings.
Edgers, Planers Band Saws	Lumber	Lubricate slides and ways. Blade coolant (see note).
<b>NOTE:</b> Using lubricant as a coolant permits burning saw dust without drying.		
Mixers	Rubber	Used in the blending process and to lubricate dust stop seals.
Can Lid Presses	Food Processing	Lubricate high-speed bearings.
Band Saws	Lumber	Saw guides.

## RESERVOIRS DESCRIPTION

Four reservoir sizes are available for the Model 88 Pump. Each is ruggedly built to reduce deflection and provide longer life.

Camshaft intermediate support bearings are bottom mounted to an inside channel to provide maximum rigidity without adding length.

Each reservoir is equipped to handle the maximum number of pumps. Unused pump stations are covered with a gasketed, blank cover assembly that can easily be removed to convert to an active pump station.

## FEATURES/BENEFITS

- Rugged construction for durability
- Complete assembly-includes level sight gauge, fill cup and drain plug
- Versatile-permits mounting drive motor on right end
- Precise camshaft alignment insures proper lubrication by all pumps
- Can be used in outdoor and ammonia (sour gas) locations

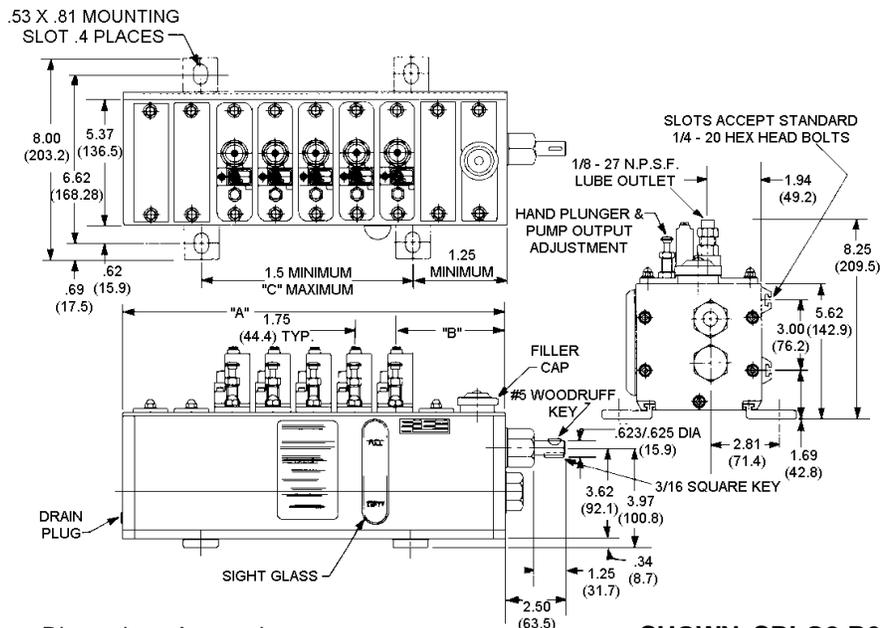
## MOUNTING

Mounting slots run the length of the lubricator on the back and bottom. The slots accept the mounting lugs provided or standard 1/4 — 20 hex head bolts for stud mounting. The slots allow you to adjust the lugs/studs at any position between the minimum and maximum shown. The bottom slots are used for mounting to horizontal surfaces. The back slots are for mounting to vertical surfaces.

## DIMENSIONS

CODE	PUMP	CAP'Y	"A"	"B"	"C"
BLO3	2	3 PINT (1.4)	8.25 (209.5)	4.62 (117.5)	5.75 (146.0)
BL04	5	4 PINT (1.9)	13.50 (342.9)	4.69 (119.0)	11.00 (279.4)
BL08	7	8 PINT (3.8)	17.00 (431.8)	4.69 (119.0)	14.50 (368.3)
BL12	10	12 PINT (5.7)	22.00 (558.8)	4.44 (112.7)	19.5 (495.3)

**Note:** When the 200:1 & 300:1 drive is specified. The maximum number of pumps available decreases by one for all sizes listed. Capacity in parentheses is Liters.



**NOTE:** Millimeter Dimensions Appear in Parenthesis Below Decimal Figures.

**SHOWN: SBLO8-B05-1 R**



## DESCRIPTION

Manzel Model 55 Box Lubricators feature heavy-duty precision metering pumps capable of accurately pumping small flows of either mineral or synthetic oil to machinery injection points. The single-piston pump is mechanically driven from a common camshaft in the reservoir and is adjustable from 1 to 27 drops per stroke. The drive options provide many more variations to suit the application. Model 88 Pumps are interchangeable with competitive models. The pump's maximum pressure is variable up to 7,500 psi depending on the piston size. All working parts are totally enclosed away from dirt, water, and impurities and self-lubricated at all times by the fluid in the reservoir.

Model 88 Pumps are rugged, heavy duty units. The pump cylinder housing is a precision machined casting fitted with an alloy steel piston.

The pump is actuated by a hardened steel roller following a cam for low torque and longer life. The visual sight is one-piece injection molded material that is impervious to ultra-violet rays, and mineral and synthetic oils.

Three piston sizes are available to produce outputs up to 27 drops per stroke.

## FEATURES/BENEFITS

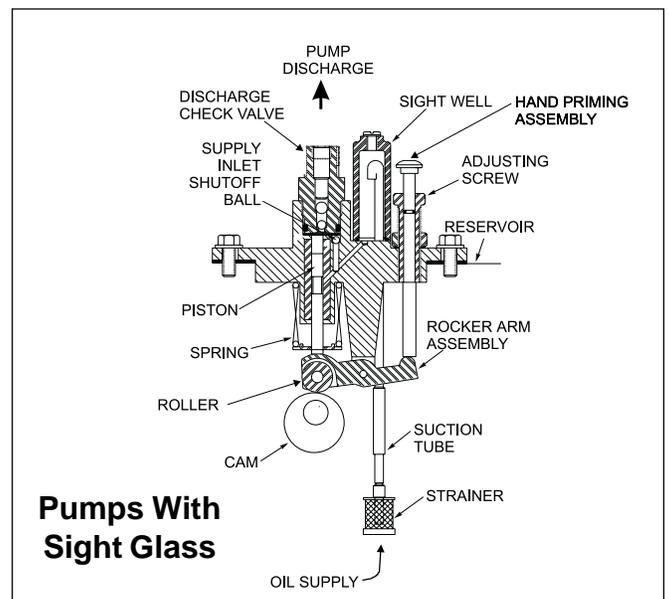
- Rugged construction for high performance and durability
- Easy serviceability-pumps can be added or replaced quickly
- Pump output is easily adjustable

## OPERATION

### Pumps With Vacuum Feed (Sight Glass Type)

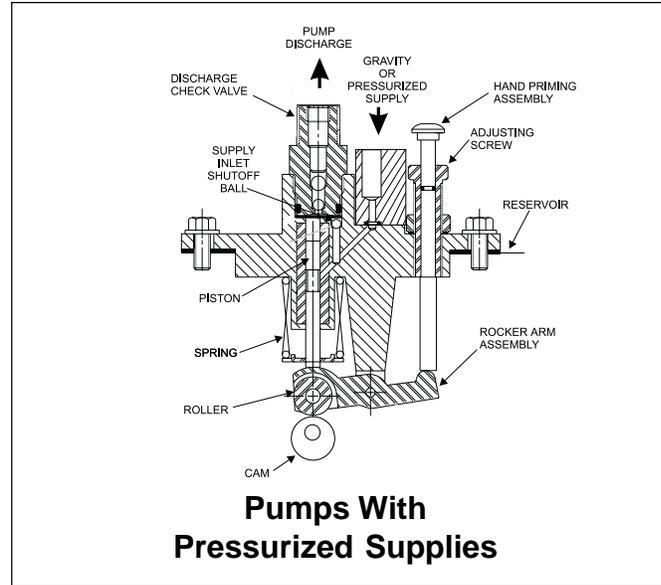
Rotation of the lubricator cam actuates the pump rocker arm assembly to operate the pump piston. On the piston downstroke, spring force is exerted on the piston causing it to follow the cam. As it moves down, a pressure reduction is created in the area between the piston and the discharge check valve. The supply inlet shutoff ball is concurrently unseated and lubricant is drawn into the piston cylinder from the sight well. This action creates a pressure reduction (vacuum) in the air-tight sight well, causing lubricant from the reservoir to be drawn into the well until pressure is equalized. On the piston upstroke, the oil in the piston cylinder reseats the inlet shutoff ball and is forced out through the discharge check valve to the machine injection point.

The number of drops seen falling in the sight well equals the amount of oil discharged by the pump. Pump volume can be adjusted by means of an external screw. This changes the length of the piston stroke which changes the pump discharge volume.



### Pumps With Gravity Feed and Pressurized Supplies

Rotation of the lubricator cam actuates the pump rocker arm assembly to operate the pump piston. On the piston downstroke, spring force is exerted on the piston causing it to follow the cam. As it moves down, a pressure reduction is created in the area between the piston and the discharge check valve. The gravity feed or pressurized supply unseats the supply inlet shutoff ball and fills the piston bore with lubricant. On the piston upstroke, the oil in the piston cylinder reseats the inlet shutoff ball and is forced out through the discharge check valve to the machine injection point. Pump volume can be adjusted by means of an external screw. This changes the length of the piston stroke which changes the pump discharge volume.



### ADJUSTMENT

Pump discharge (output flow can be adjusted within the min./max. ranges as shown in the illustration). The adjustment is linear. Therefore, positioning the screw midway will produce one-half of the pump capacity. To adjust the flow, proceed as follows:

1. Loosen adjusting screw locknut.
2. Turn the adjusting screw to the desired position and, with the pump operating, count the drops falling in the sight well for a one-minute interval and then compute the drops per stroke as follows:

$$\frac{\text{Number of drops}}{\text{Motor speed}} = \text{drops per stroke}$$

\*Gear reduction (if any)

\*If there is no gear reduction the number is one.

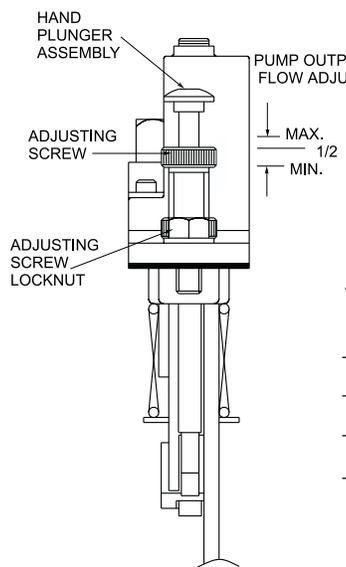
#### Example:

With a 1/4" piston pump, at a 50:1 gear reduction, assume that 345 drops were counted in a one-minute interval. Compute the pump discharge as follows:

$$\frac{345}{\frac{1725}{50}} = 10 \text{ drops per stroke}$$

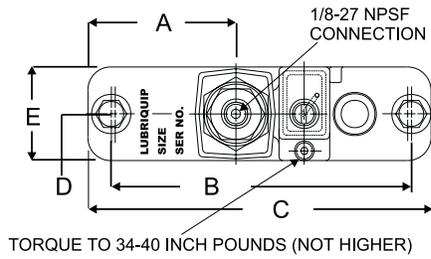
If the drops were counted for a 10-second interval (1/6 of a minute), the pump discharge could be computed as follows:

$$\frac{57 \times 6}{\frac{1725}{50}} = 9.913 \text{ or } 10 \text{ drops per stroke}$$



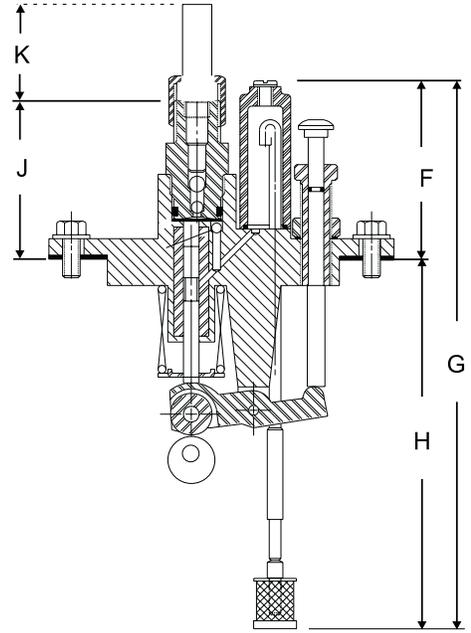
PUMP MODEL	DROPS PER STROKE	
	MAXIMUM	MINIMUM
B, F, J	6	1
C, G, K	12	2
E, H, L	27	4

**PUMP DIMENSIONS**



TORQUE TO 34-40 INCH POUNDS (NOT HIGHER)

DIMENSION	INCHES	MILLIMETERS
A	2.31	58.7
B <sup>1</sup>	4.625	117.5
B <sup>2</sup>	4.406	111.9
C	5.375	136.5
D	0.75	19.1
E	1.50	38.1
F	3.00	76.2
G <sup>1</sup>	8.53	216.7
G <sup>2</sup>	7.75	196.8
H <sup>1</sup>	5.53	140.5
H <sup>2</sup>	4.75	120.6
J	2.625	66.7
K	1.00	25.4



**ORDERING INFORMATION**

Use the following part numbers if you are ordering only a pump. Blank cover assemblies may be ordered by specifying part number 471-690-053.

**PUMP REPAIR KITS**

- Pump repair kits are the same for both vacuum feed and gravity feed with sight glass pumps in all pump sizes. Repair kits may be ordered by part number 560-001-860 and contain only parts necessary to replace the pump sight glass.
- Body/sleeve and piston subassembly is not sold separately.

PUMP PISTON SIZE	VACUUM FEED PUMP		GRAVITY FEED PUMP AND PRESSURIZED PUMP <sup>5</sup>		GRAVITY FEED PUMP WITH SIGHT GLASS <sup>5</sup>	
	Model No.	Part No.	Model No.	Part No.	Model No.	Part No.
3/16-Inch	55B	376-000-490	55F	376-000-121	55J	376-000-530
1/4-Inch	55C	376-000-500	55G	376-000-131	55K	376-000-540
3/8-Inch	55E	376-000-520	55H	376-000-151	55 L	376-000-560

SPECIFICATIONS

PUMP SPECIFICATIONS												
PUMP MODEL <sup>4</sup>	PISTON DIAMETER (INCHES)	MAXIMUM PRESSURE <sup>3</sup> (PSI)	DROPS PER STROKE <sup>1&amp;2</sup>		CUBIC INCHES PER STROKE		CUBIC CENTIMETERS PER STROKE		STROKES PER MINUTE		STROKE LENGTH	
			MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.		
			IN MANZEL LUBRICATOR (55 and 76)	88B,F,J 88C,G,K 88E,H,L	3/16 1/4 3/8	7500 PSI 6000 PSI 2500 PSI	6 12 27	1 2 4	0.013 0.024 0.055	0.002 0.004 0.008		0.213 0.393 0.901

1. Based on 500 SUS oil at 70°F ambient. Heavier oil will produce fewer but larger drops.
2. When approaching maximum outputs, some oils will stream rather than form drops in sight glass.
3. For operating pressures over 50% of the rated maximum, consult the factory.
4. Allowable viscosity range independent of temperature: 80-5000 SUS.
5. Maximum allowable inlet pressure: Pressurized pump, 100 PSI; Pressurized pump with sight glass, 10 PSI.

**NOTE:** Any static positive pressure applied to the pump inlet has the potential to cause leakage flow through a pump at rest or adjusted for zero stroke unless offset by a check valve of comparable pressure rating located at the pump outlet. The "discharge check valve" pictured has no spring and is rated at zero PSI. The "outlet check valve" pictured in phantom in view at bottom of next page is rated at 35 PSI.

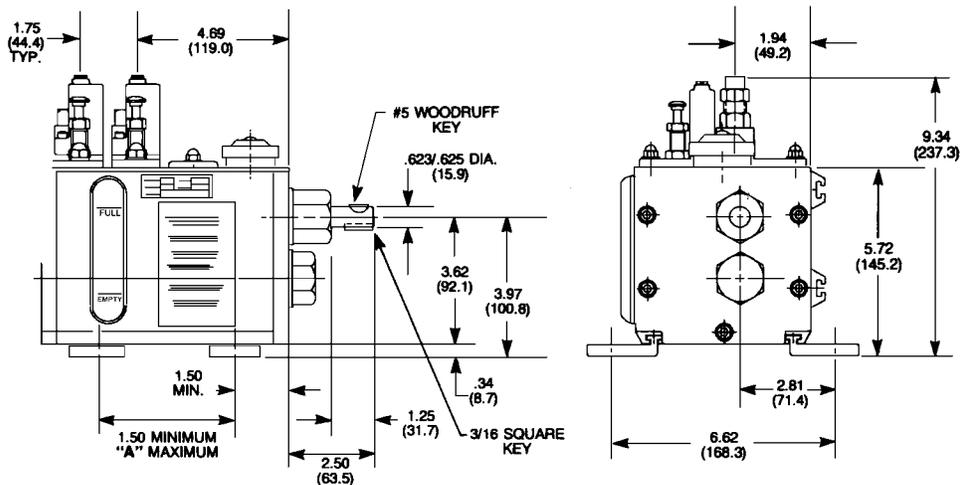
DRIVE OPTIONS DESCRIPTION

Ten drive options are available. These configurations are listed in conjunction with pertinent technical data and a detailed dimensional drawing. All options are available as left- or right-hand (all shown right-hand).

DRIVE OPTION 1, 7, 9

- 1—118:1 (Formerly 112.5:1).
- 7—3:1 (3:1—2.6:1 Actual)
- 9—18:1 (18:1—17.51 Actual)

RESERVOIR	"A" DIMENSION
3 PT	5.75
4 PT	11.00
8 PT	14.00
12 PT	19.50

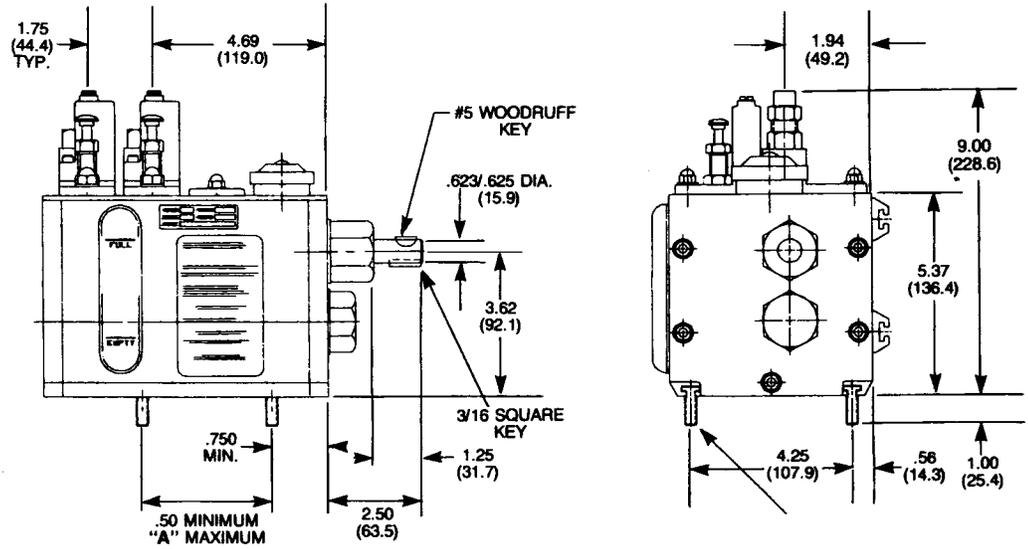


DRIVE OPTIONS Con't

DRIVE OPTION 2

118:1 (Formerly 120:1).  
1/4—20 Stud Mounted.

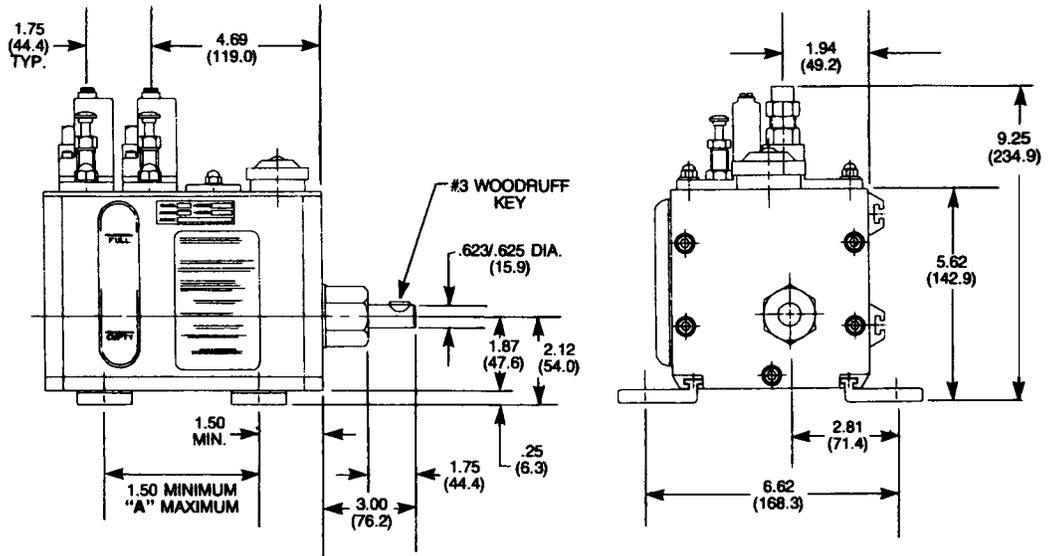
RESERVOIR	"A" DIMENSION
3 PT	6.75
4 PT	12.00
8 PT	15.50
12 PT	20.50



DRIVE OPTION \*3, 8

3—45:1 (Formerly 37.5:1).  
8—7:1 (7:1—6.7:1 Actual)

RESERVOIR	"A" DIMENSION
3 PT	5.75
4 PT	11.00
8 PT	14.50
12 PT	19.50



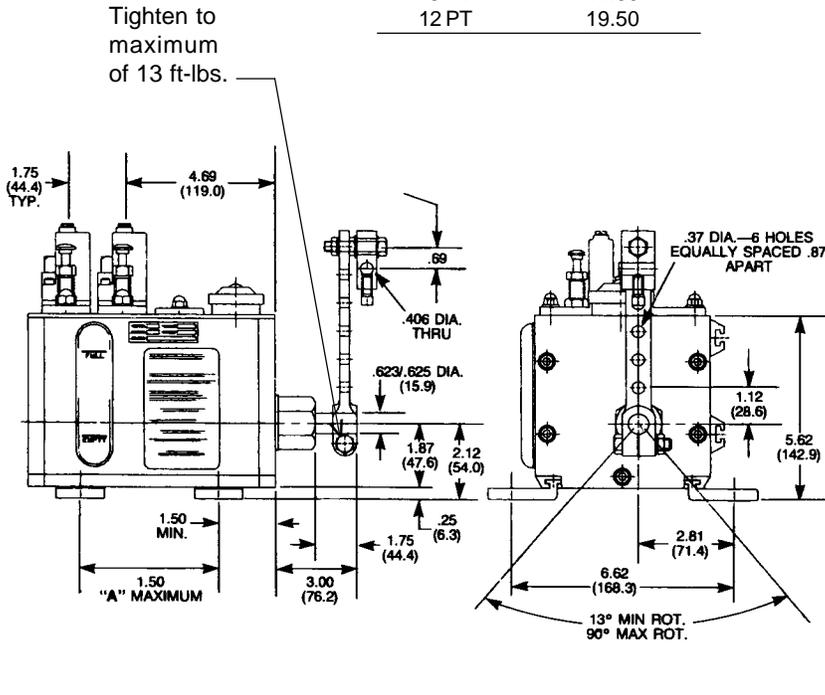
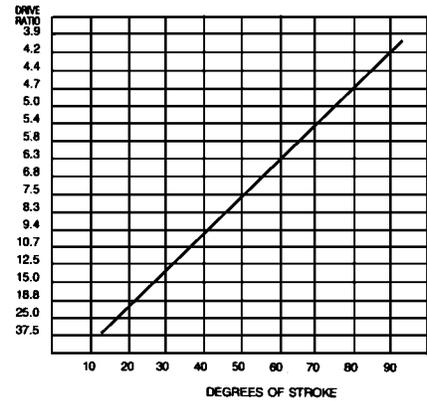
## DRIVE OPTION 4

End ratchet drive. Drive arm is included with drive assembly. For replacement drive arm order part number 039072.

RESERVOIR	"A" DIMENSION
3 PT	5.75
4 PT	11.00
8 PT	14.50
12 PT	19.50

NUMBER OF TEETH PICKED UP ON A 75 TOOTH RATCHET WHEEL → 19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2

DRIVE RATIO PER DEGREES OF STROKE

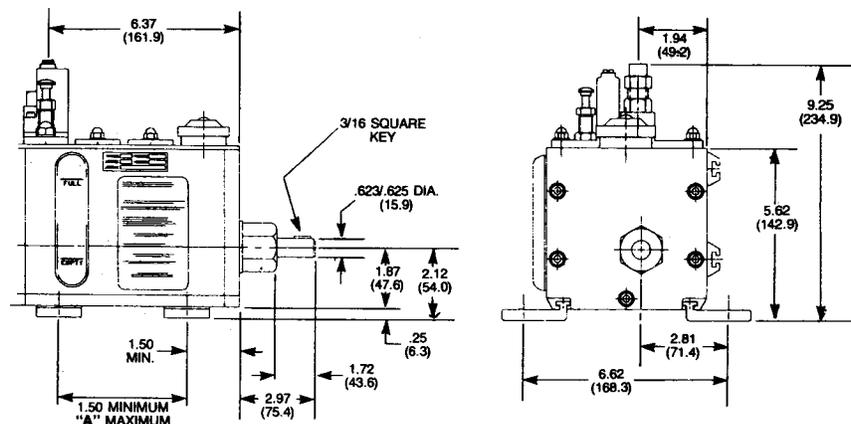


## DRIVE OPTION \*5 & \*10

5—300:1 (Formerly 400:1).  
10—200:1

RESERVOIR	"A" DIMENSION
3 PT	5.75
4 PT	11.00
8 PT	14.50
12 PT	19.50

**Note:** When the 300:1 or 200:1 drive is specified, the maximum number of pumps available decreases by one for all sizes listed.

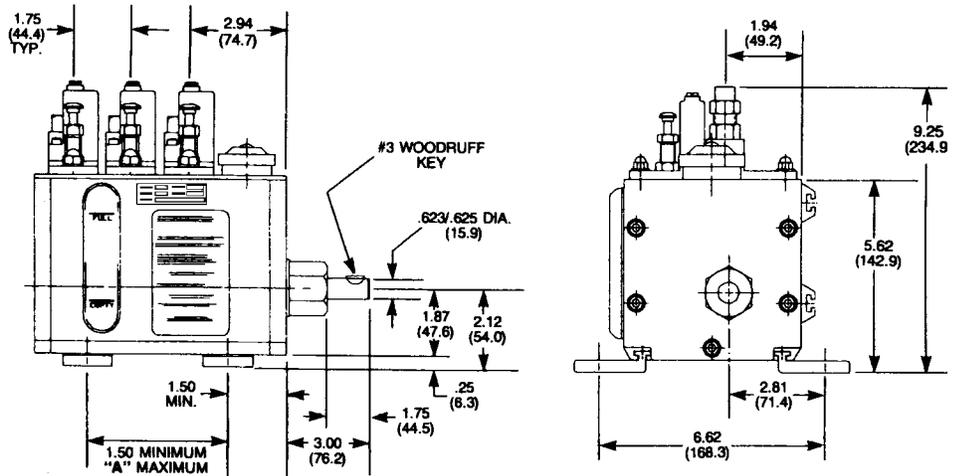


### DRIVE OPTION 6

Direct Rotary.  
Direct drive ratio 1:1.

When 1:1 1 drive is specified, the maximum number of pumps available increases by one for all sizes listed.

RESERVOIR	"A" DIMENSION
3 PT	5.75
4 PT	11.00
8 PT	14.50
12 PT	19.50

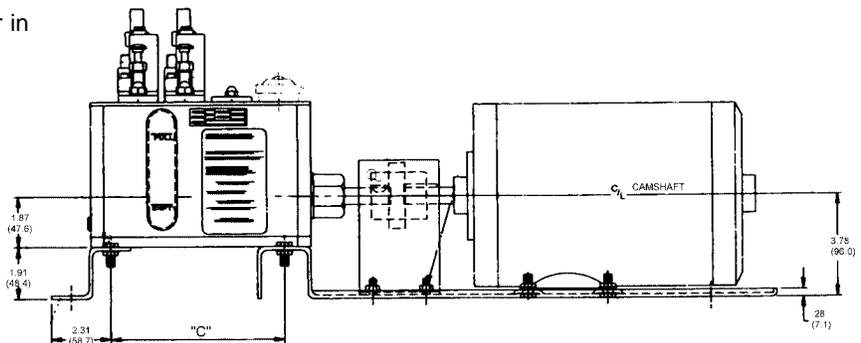


### MOTOR MOUNTING KIT

461-300-968  
(Available for Drive Options 3, 5 & 10.)

RESERVOIR CAPACITY	RESERVOIR LENGTH	"A"	"B"	"C"
3 PINT (1.42 LTR)	8.25 (209.6)	26.81 (681.0)	23.12 (587.8)	6.50 (165.1)
4 PINT (1.89 LTR)	13.50 (342.9)	32.06 (814.4)	28.37 (720.7)	11.75 (298.4)
8 PINT (3.79 LTR)	17.00 (431.8)	35.56 (903.3)	31.87 (809.6)	15.25 (387.4)
12 PINT (5.68 LTR)	22.00 (558.8)	40.56 (1030.3)	36.87 (936.6)	20.25 (514.6)

**NOTE:** Millimeter Dimensions Appear in Parenthesis Below Decimal Figures.



**NOTE:** Reservoir and motor shown for reference only.

**ORDERING INFORMATION**

**BLXX-XXX-XX-XX**

**RESERVOIR CAPACITY:** \_\_\_\_\_

- 03 - 3 PIN (2 PUMPS MAXIMUM)
- 04 - 4 PINT (5 PUMPS MAXIMUM)
- 08 - 8 PINT (7 PUMPS MAXIMUM)
- 12 - PINT (10 PUMPS MAXIMUM)

**PUMP SIZE (MODEL 88 PUMPS):** \_\_\_\_\_

- B - 3/16 DIA. PUMPS
- C - 1/4 DIA. PUMPS
- E - 3/8 DIA. PUMPS
- F - 3/16 DIA. PRESSURIZED SUPPLY
- G - 1/4 DIA. DIA PRESSURIZED SUPPLY
- H - 3/8 DIA. PRESSURIZED SUPPLY
- J - 3/16 DIA. PRESSURIZED W/SIGHT GLASS
- K - 1/4 DIA. PRESSURIZED W/SIGHT GLASS
- L - 3/8 DIA. PRESSUSRIZED W/SIGHT GLASS

**PUMP QUANTITY:** \_\_\_\_\_

- 00 - 0 PUMPS
- 00 - 1 PUMPS
- 00 - 2 PUMPS
- 00 - 3 PUMPS
- 00 - 4 PUMPS
- 00 - 5 PUMPS
- 00 - 6 PUMPS
- 00 - 7 PUMPS
- 00 - 8 PUMPS
- 00 - 9 PUMPS
- 00 - 10 PUMPS

**DRIVE ASSEMBLY:** \_\_\_\_\_

- 1 - 118:1 (FORMERLY 112.5:1 - LUG MOUNTED W/FLEET)
- 2 - 118:1 (FORMERLY 120:1 - STUD MOUNTED, BOLTS ON BOTTOM)
- \* 3 - 45:1 (FORMERLY 37.5:1)
- 4 - RATCHET
- \* 5 - 300:1 END ROTARY (FORMERLY 400:1) (SEE NOTE 2)
- 6 - DIRECT ROTARY (SEE NOTE 3)
- 7 - 3:1 END ROTARY
- 8 - 7:1 END ROTARY
- 9 - 18:1 END ROTARY
- \*10 - 200:1 END ROTARY

**DRIVE LOCATION:** \_\_\_\_\_

- R - RIGHT HAND
- L - LEFT HAND

**LOW LEVEL:** \_\_\_\_\_

- LO - NO LOW LEVEL
- L1 - LOW LEVEL, 10 WATTTS, 120 VAC, SPST, REED SWITCH, NC (REQUIRES ONE PUMP STATION FOR MONITORING (SEE NOTE 5)

\* Motor Mounting Kit 461-300-968 (Available for drive options 3,5, & 10.)

**NOTES:**

1. When total quantity of pumps requested is less than the maximum available A blank cover (P/N 471-690-053) will be installed in the remaining stations.
2. When 1:1 drive is specified, the maximum number of pumps available increases by one for all sizes listed.
3. When the 200:1 & 300:1 drive is specified, the maximum number of pumps available decreases by one for all sizes listed.
4. This lubricator was designed to also accept Model 55 pumps. However, with Model 55 Pumps it is a special order item.
5. When low level option is specified, deduct one available pump station.



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