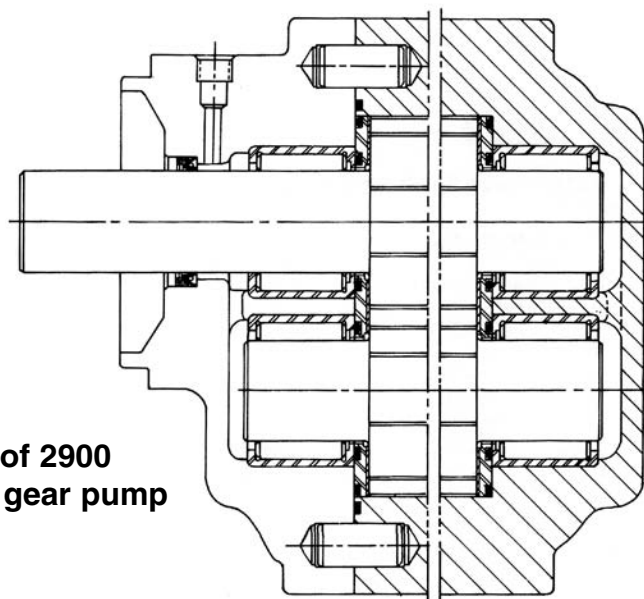


## Single and Multiple Gear Pumps Features

### 2900 High Performance Gear Pump

- Rated to 3000 PSI and 2500 RPM the 2900 size pumps utilize a very rigid, doweled, two piece construction. This simple method of construction is combined with integral gears and shafts and HYDRECO's long used four-bolt design which places all four high strength assembly bolts within the area of greatest internal pressure. This combination maintains perfect alignment and thus eliminates any decrease in efficiency due to "center section shift" at high pressures. The four-bolt design further reduces internal distortion and results in less wear of working parts.
- Roller bearing 2900 size units have a pressure balanced wear plate, on each side of the gears. By balancing pressure forces on the front and back of these plates, a precise balance is obtained between minimum clearances for high volumetric efficiencies and minimum contact with rotating parts for low mechanical losses. This combination of effort produces pumps of exceptionally high overall efficiency.
- Rotation may be changed in the field with no new or additional parts.
- Specially designed, long life roller bearings are continuously pressure lubricated even when the pump is under no load.
- Rugged high density cast iron construction further maintains high volumetric efficiency even at high operating temperatures.
- More horsepower per dollar of original cost.
- Large horsepower capacity in a small package.
- May be used as a uni-directional motor.
- Mounting flanges are of the versatile HYDRECO combination SAE two or four bolt design.
- Multiple units are of a modular design. This allows assembly of modules from stock to meet any multiple pump requirement.
- Modular design allows field replacement of any one section.
- Units are repairable due to roller bearing design.
- Roller bearing construction is relatively insensitive to moderate amounts of contamination.
- Modifications such as telltale seal drain, other port sizes, and other shaft configurations are available. Contact Hydreco.



**Cross section of 2900  
Roller bearing gear pump**

# Single and Multiple Gear Pump Model Number System

## Model Number System and Shafts

**29**  
Model

**00**  
GPM / 1000 RPM

**A**  
Design

**1**  
Shaft

**B**  
Adapter

**1**  
Cover

**R**  
Rotation

### Model

29

### GPM/1000 RPM

36-8.33 cu in/Rev

42-9.76 cu in/Rev

50-11.59 cu in/Rev.

56-13.0 cu in/Rev

62-14.43 cu in/Rev

### Design

A-Standard (roller bearing)

E-Telltale Drain (roller bearing)

### Shafts

1. SAE "C" Spline

2. SAE 'C' Keyed shaft

3. "D" Splined

6. Rear pump

7. Center pump

### Adaptors

B. Center & Rear

C. SAE "C" 2-4 bolt

D. SAE 'D' 4 bolt

### Covers

**2936 & 2942 Single & Rear pumps**

1. Side ported 2" inlet/ 1<sup>1</sup>/<sub>4</sub>" outlet S.F.

**2950, 2956 & 2962 Single & Rear Pump**

1. Side ported 2<sup>1</sup>/<sub>2</sub>" inlet/1<sup>1</sup>/<sub>2</sub>" outlet S.F.

**2936 & 2942 Front & Center Pumps**

2. Side ported 3" inlet/1<sup>1</sup>/<sub>4</sub>" outlet S.F.

### 2950 Front & Center Pumps

2. Side Ported-3" inlet/1<sup>1</sup>/<sub>2</sub>" outlet S.F.

### 2956 & 2962 Front & Center Pumps

2. Side Ported - 3<sup>1</sup>/<sub>2</sub>" inlet/1<sup>1</sup>/<sub>2</sub>" outlet S.F.

### Rotation

(view pump from shaft end)

R-clockwise

L-Counter clockwise

## Shafts

Rotation is determined by viewing from shaft end.

## 2900 Max. Recommended Drive Shaft Torque Transmission Capacity

The drive shaft can withstand the required torque provided the product of pressure (PSIG) times displacement (cubic inches/rev.) does not exceed the constant indicated. Sections must be added together; sum should not exceed P x D value listed below.

### No.1 SAE "C" splined shaft

1<sup>1</sup>/<sub>2</sub>" Dia.-SAE 14 Tooth

Involute Spline

Flat root-Side of tooth fit

Dia. Pitch-12/24

Press. Angle-30°

No. of teeth-14

Shaft Dia.-1 .248 - 1.247 (31.699) - (31.673)

input torque limitation  
P x D = 27,500

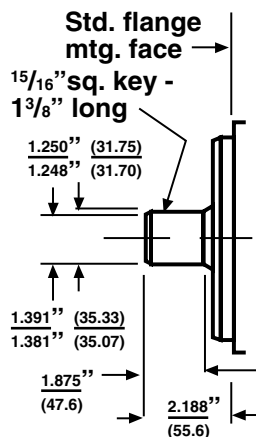
1<sup>5</sup>/<sub>16</sub>" (33.3)  
2<sup>3</sup>/<sub>16</sub>" (55.6)

Std. flange mtg. face

### 2. SAE 'C' Keyed Shaft

input torque limitations

P x D = 42,000



### No.3 SAE "D" splined shaft

1<sup>1</sup>/<sub>2</sub>" Dia. - SAE 13 Tooth

Involute Spline

Flat root-Side of tooth fit

Dia. Pitch-8/16

Press. Angle-30°

No. of teeth-13

Shaft Dia.-1 .748-1.747 (44.399) - (44.373)

input torque limitation  
P x D = 81,300

2 (50.8)  
2<sup>15</sup>/<sub>16</sub>" (74.6)

Std. flange mtg. face

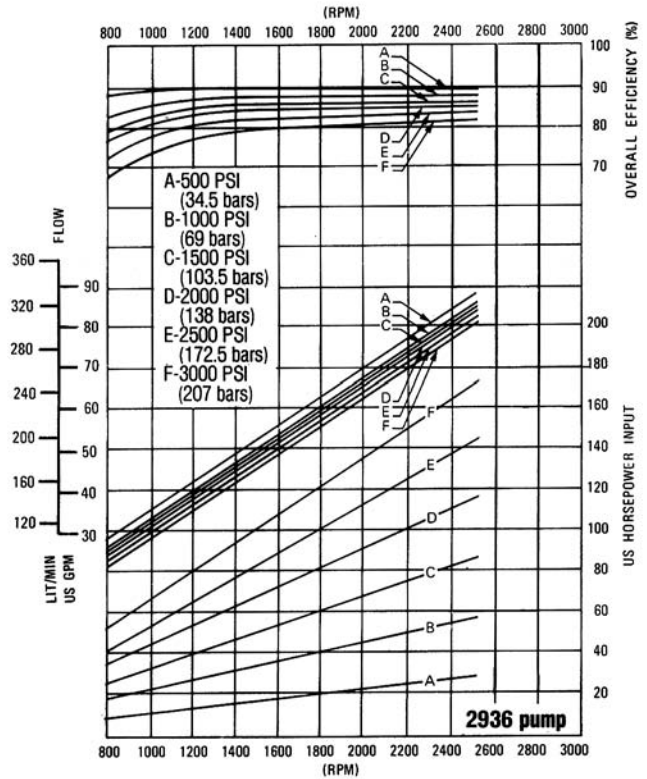
### No. 6 Spline shaft for rear pump

### No. 7 Splined shaft for center pump

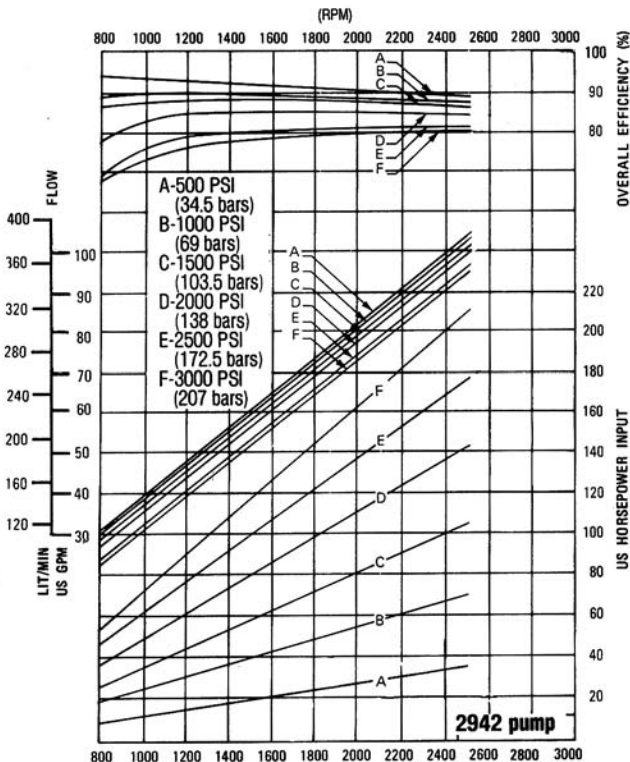
## Single Gear Pump Performance Data

- Shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120°F and viscosity 150 SSU at 1 00°F. Requests for more specific data should be directed to our Technical Service Department through our Sales Representatives.
  - Consult your for Hydreco Sales Represent-ative for operation of pumps at (1) pressures and speeds above those shown on charts, (2) temperatures above 180° F, (3) speeds under 400 rpm when under load.
  - Inlet Conditions: Max. 5" HG. at rated speed.
  - Refer to individual model listings to determine which sizes are available as single, front, center or rear modules.
- Pressure rating may be higher depending on duty cycle. Contact factory.**

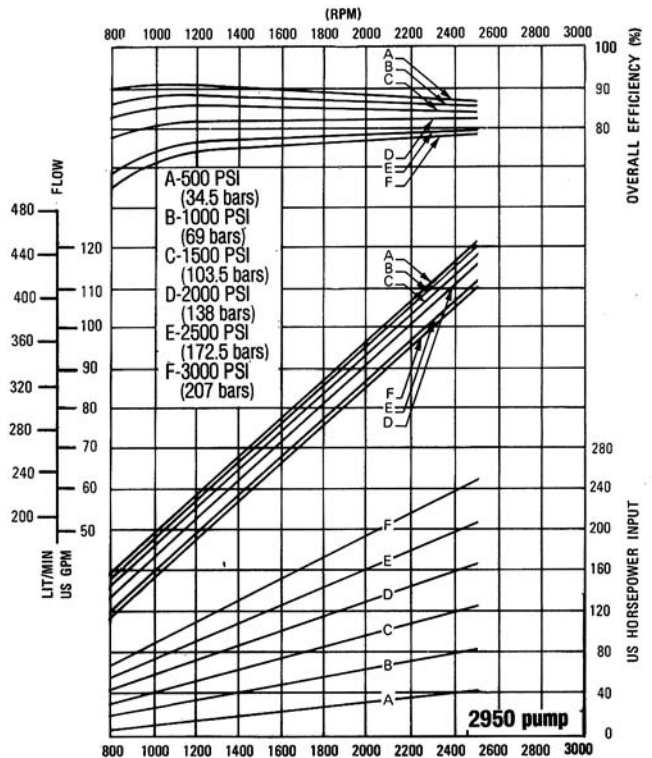
### 2936 Pump



### 2942 Pump

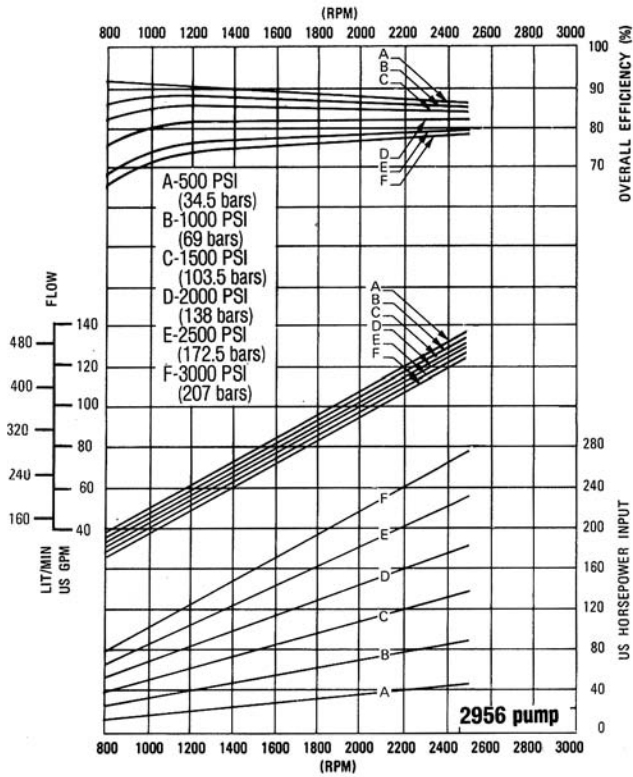


### 2950 Pump

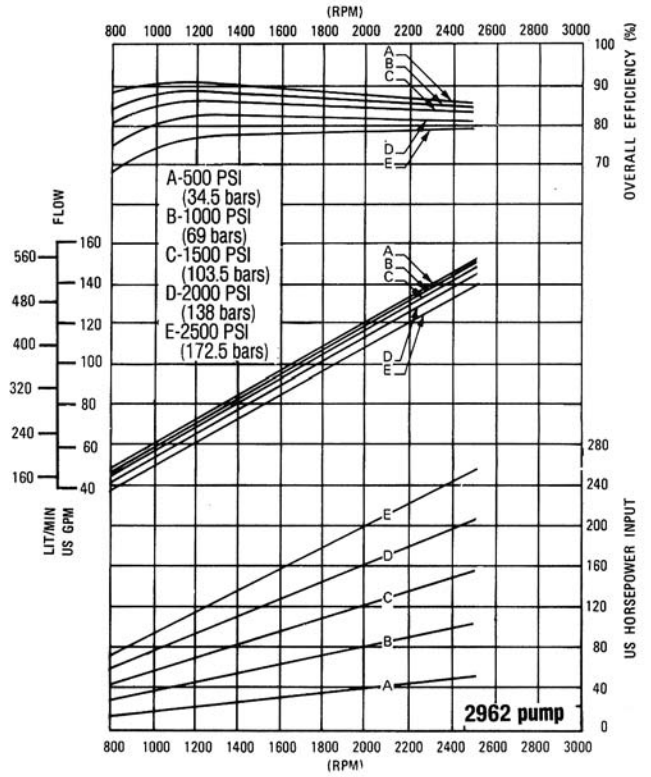


# Single Gear Pump Performance Data

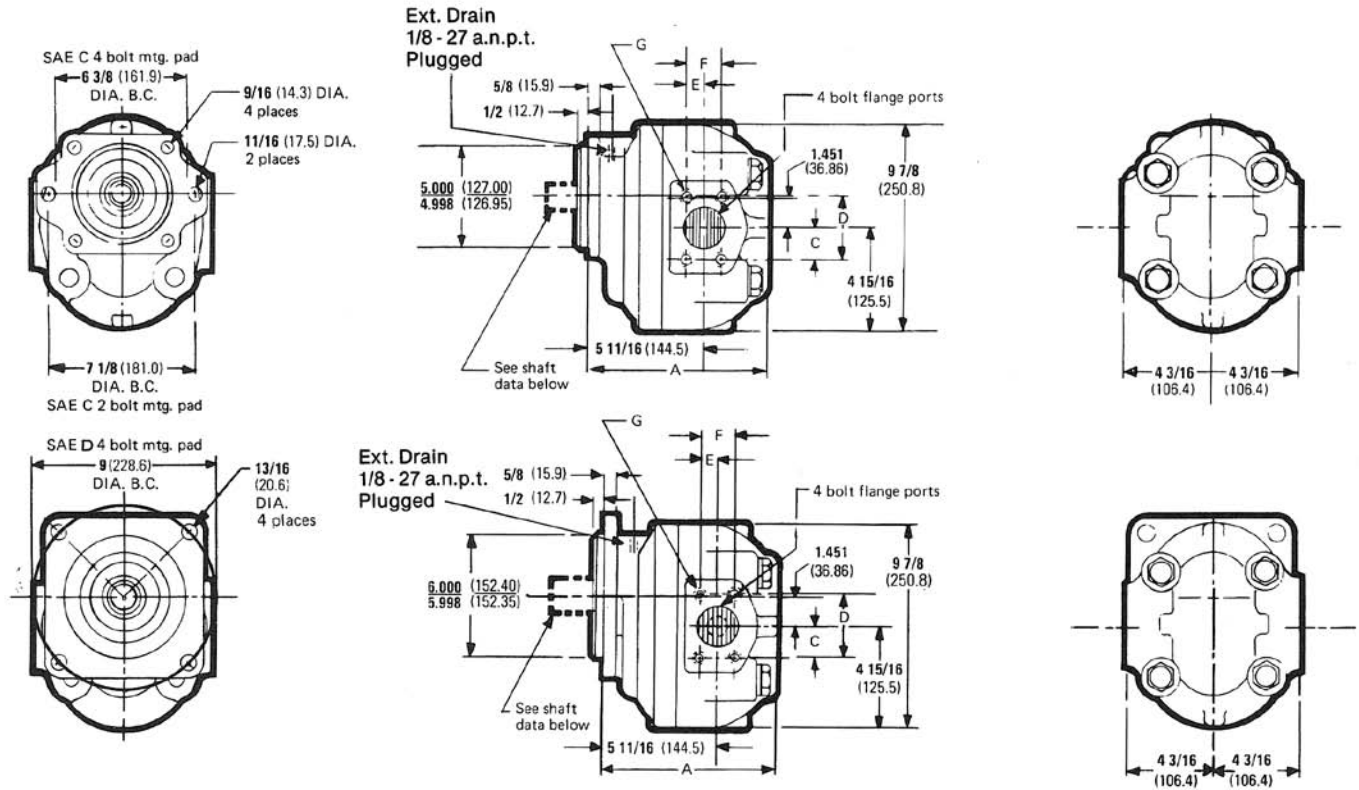
## 2956 Pump



## 2962 Pump



## Single Gear Pump Installation Dimensions



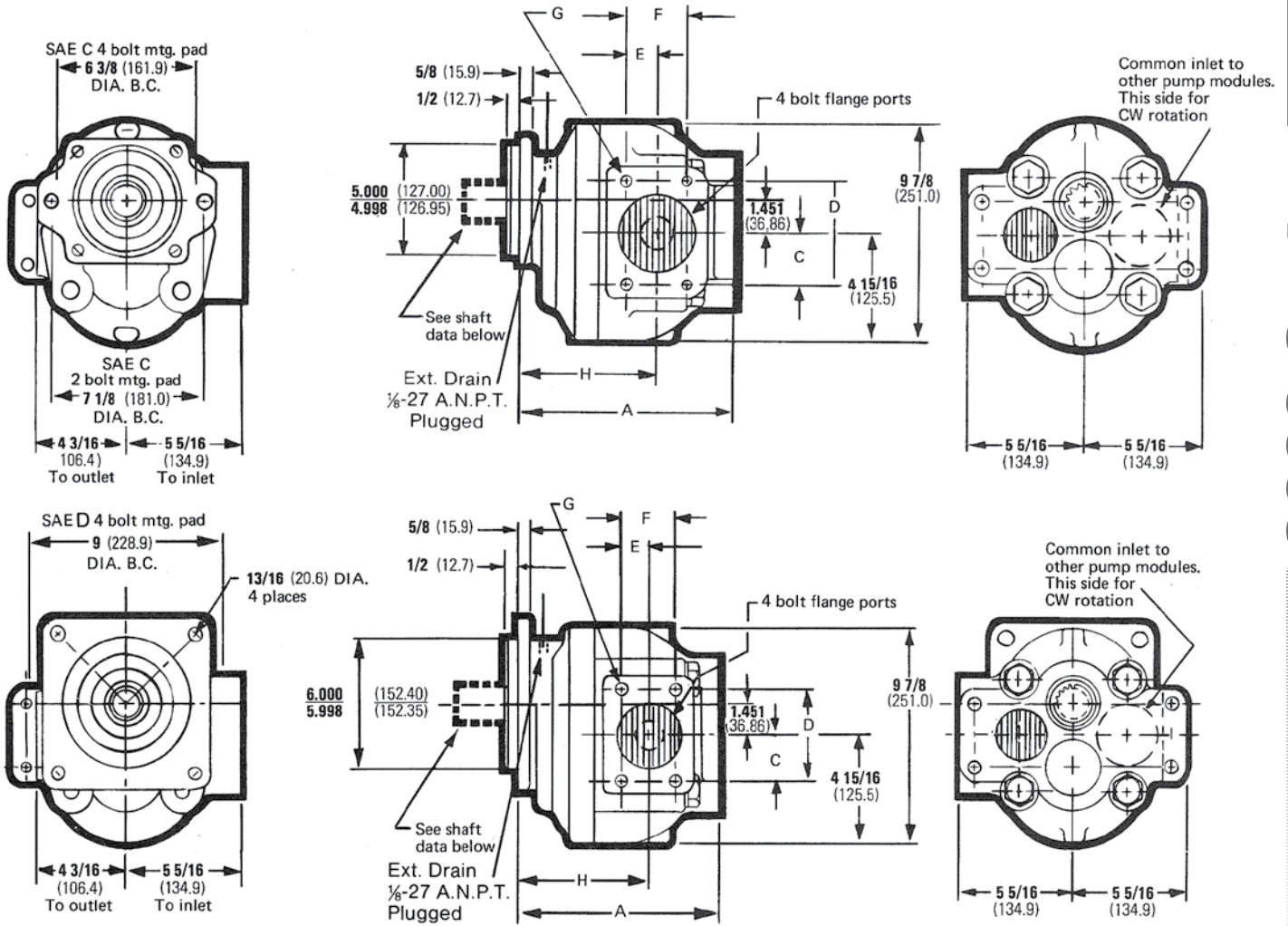
All 2900 Series Single Pumps are Available in R or L Rotation (see model no. page)

Model No. & Displacement	Max. Operating PSI (bars)	Max. Operating R.P.M.	Shaft Type	Dim "A"
2936A1C1 8.33 cir	3000 (207.0)	2500	SAE "C" splined	8.71"
2936A3D1 8.33 cir	3000 (207.0)	2500	SAE "D" splined	
2942A1C1 9.76 cir	2900* (200.1)	2500	SAE "C" splined	
2942A3D1 9.76 cir	3000 (207.0)	2500	SAE "D" splined	
2950A1C1 11.59 cir	2500* (172.5)	2500	SAE "C" splined	8.81"
2950A3D1 11.59 cir	3000 (207.0)	2500	SAE "D" splined	
2956A1C1 13.0 cir	2200* (151.8)	2500	SAE "C" splined	
2956A3D1 13.0 cir	3000 (207.0)	2500	SAE "D" splined	
2962A1C1 14.43 cir	2000* (138.0)	2500	SAE "C" splined	
2962A3D1 14.43 cir	2500* (172.5)	2500	SAE "D" splined	

Mounting flanges conform to SAE J744C except 2 bolt and 4 bolt mounts are combined.  
 Approx. weight of 2900 series single pump is 104 lbs. or (47.40 kg)

\*Due to input shaft torque limitations.

# Front Gear Pump Installation Dimensions



All 2900 Series Front Pumps are Available in R or L Rotation (see model no. page)

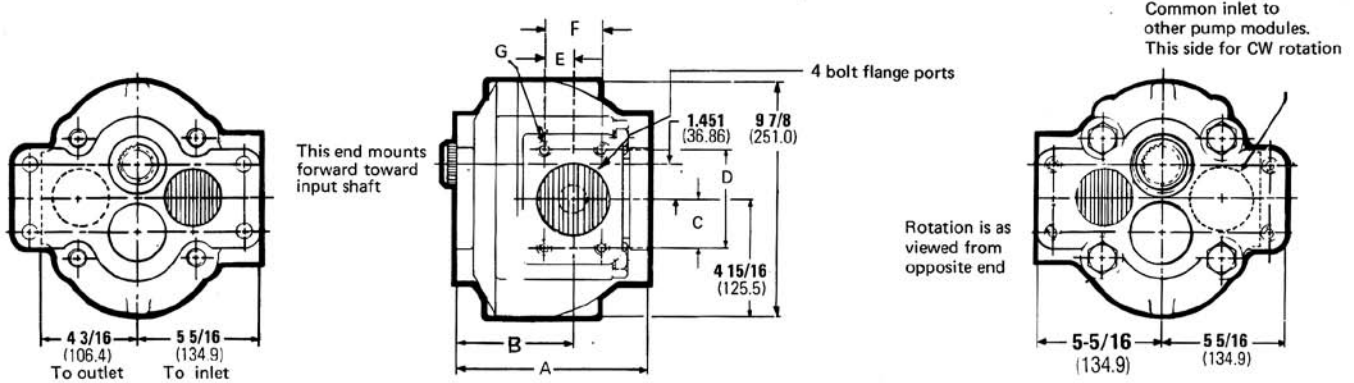
Model No. & Displacement	Max. Operating PSI (bars)	Max. Operating R.P.M.	Shaft Type	Dim "A"	Dim "H"
2936A3C2 2936A3D2 8.33 cir.	3000 (207.0)	2500	SAE "D" splined	9 1/4"	6 - 1/32"
2942A3C2 2942A3D2 9.76 cir.	3000 (207.0)	2500	SAE "D" splined	9 1/4"	6 - 1/32"
2950A3C2 2950A3D2 11.59 cir.	3000 (207.0)	2500	SAE "D" splined	9 1/4"	6 - 1/32"
2956A3C2 2956A3D2 13.0 cir.	3000 (207.0)	2500	SAE "D" splined	9 - 13/16"	6 - 5/16"
2962A3D2 14.43 cir.	2500 (172.5)	2500	SAE "D" splined	9 - 13/16"	6 - 5/16"

Note for C, D, E, F, G  
See page 66

Approx. weight of 2900 series front pump is 104 lbs. or (47.40 kg)  
Mounting flanges conform to SAE J7440 except two bolt and four bolt mounts are combined.

# Center and Rear Gear Pump Installation Dimensions

## Center Pump



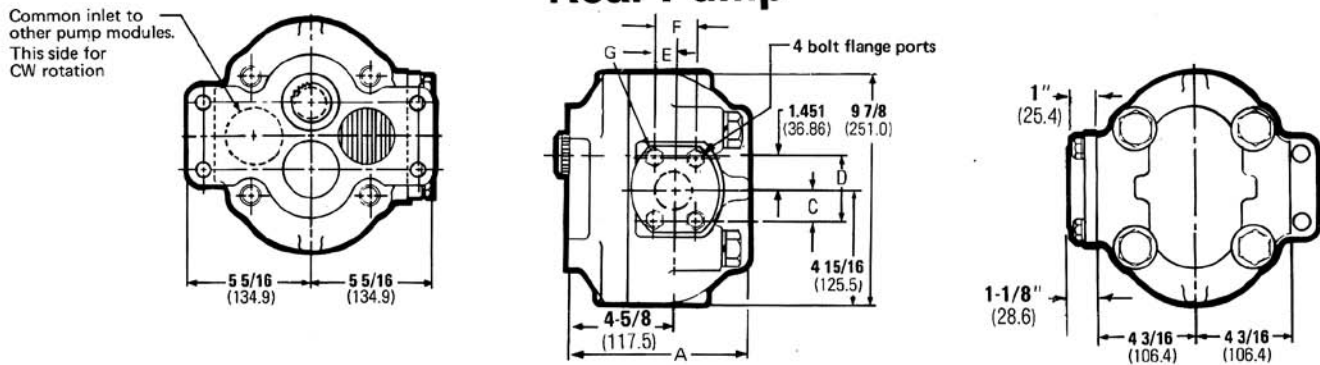
All 2900 Series Center Pumps are Available in R or L Rotation (see model no. page)

Model No. & Displacement	Max. Operating PSI (bars)	Shaft Type	Dim "A"	Dim "H"
2936A7B2 8.33 cir	3000 (207.0)	None	8 3/16" (208.0)	4-31/32" (126.2)
2942A7B2 9.76 cir	3000 (207.0)	None	8-3/16" (208.0)	
2960A782 11.59 cir	3000 (207.0)	None	8-3/16" (208.0)	4-31/32" (126.2)
2956A7B2 13.0 cir	3000 (207.0)	None	8 3/4" (222.3)	5 1/4" (133.4)

Approx. weight of 2900 series center pumps is 101 lbs. or (45.81 kg.)  
Max. operating speed is 2500 RPM for the above models.

Approx weight of 2900 series center pumps is 101 lbs. or (45.81 kg.)  
Max operating speed is 2500 RPM for the above models.

## Rear Pump



All 2900 Series Rear Pumps are Available in R or L Rotation (see model no. page)

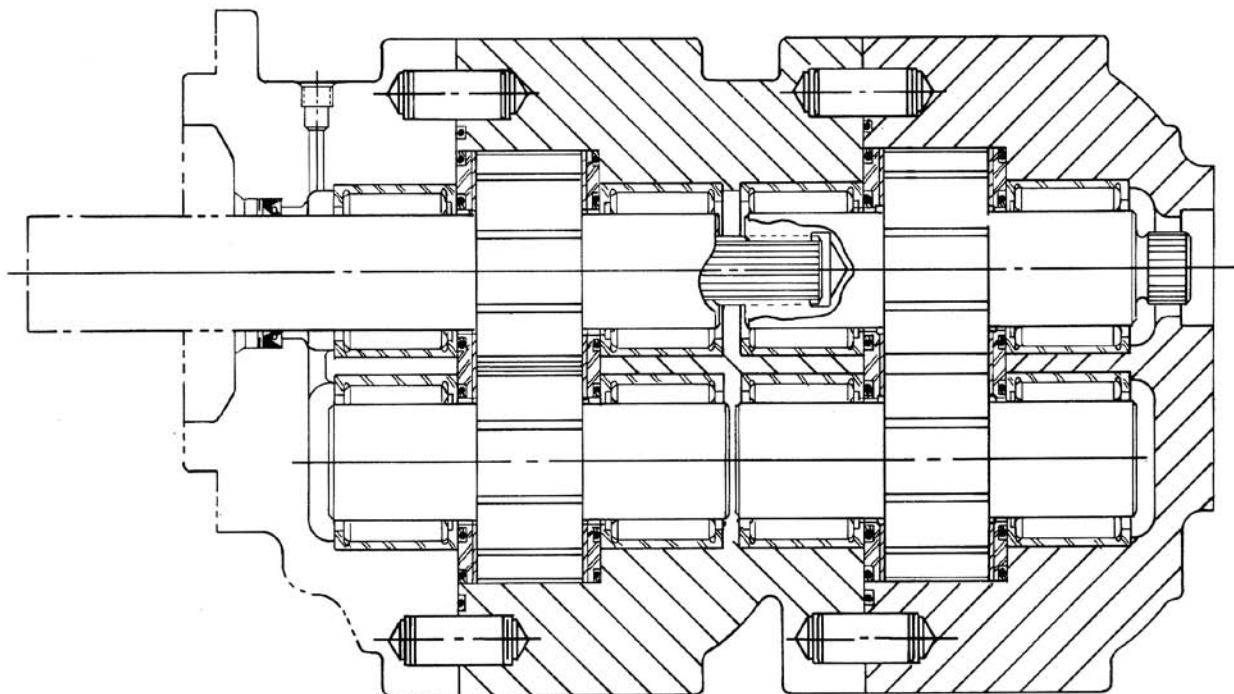
Model No. & Displacement	Max. Operating PSI (bars)	Max. Operating Speed	Shaft Type	Dim
2936A6B1 8.33 cir	3000 (207.0)	2500 RPM	None	7 3/4" (196.9)
2942A6B1 9.76 cir	3000 (207.0)	2500RPM	None	7 3/4" (196.9)
2950A6B1 11.59 cir	3000 (207.0)	2500RPM	None	7 3/4" (196.9)
2956A6B1 13.0 cir	3000 (207.0)	2500 RPM	None	7 3/4" (196.9)
2962A6B1 14.43 cir	2500(3) (172.5)	2500 RPM	None	7 3/4" (196.9)

Approx. weight on 2900 series rear pumps is 100 lbs. or (45.36 kg)

## Dual Short Stack Gear Pump Features

- Hydreco's 2900 series dual short stack gear pumps are rated at pressures up to 3000 PSI and speeds up to 3000 RPM. As dual motors the 2900 series speed capability is further increased to 3350 RPM with the same high pressure capability of 3000 PSI.
- The dual short stack 2900 series pump/motor utilizes rigid, doweled, two piece construction with high density cast iron and precision pressure balanced seal plates. In addition to high volumetric efficiency and exceptionally high overall efficiency this design has been "close coupled" to reduce its installation envelope size.
- These pumps deliver economical fluid power through simplified hydraulic plumbing arrangements. This is achieved by supplying multiple hydraulic circuits with flow from one single pump drive. By specifying number 5, 7, 9, 11, or 12 cover, you will be able to mount a separate pump on the rear of the 2900 short stack dual.
- Porting may be ordered with common inlet & common outlet, common inlet and separate outlets or separate inlets and separate outlets for ease of plumbing.
- Long life, precision roller bearings are continuously pressure lubricated even when the pump is under no load. Roller bearing construction is relatively insensitive to moderate amounts of contamination.
- Rugged high density cast iron construction assures high volumetric efficiency during and after periods of operation at high temperatures.
- Relief valves are recommended between motors running in series.
- Professional applications and engineering assistance available upon request. Consult your Hydreco sales representative.

Cross section of 2900 series dual roller bearing gear pump





# Dual Short Stack Gear Pump Model Number System

## Model Number System and Shafts

<u>29</u>	<u>56</u>	<u>50</u>	<u>A</u>	<u>2</u>	<u>C</u>	<u>A</u>	<u>4</u>	<u>R</u>
Pump Model	Front Pump Size (GPM at 1000 RPM)	Rear Pump Size (GPM at 1000 RPM)	Design	Shaft	Adapter	Front Housing	Rear Cover Housing	Rotations

### Model

29- 2900 Series

### Front & Rear Pump Sizes (GPM/1000 RPM)

- 36- 8.33 cir
- 42- 9.76 cir
- 50- 11.59 cir
- 56- 13.0 cir

### Design

- A- Standard (Roller Bearing)
- E- Telltale Drain (Roller Bearing)

### Shafts

- 2- SAE 'C' Keyed Shaft - 1-1/4" Dia.
- 3- SAE 'D' Splined - 1-3/4" Dia.
- 4- SAE 'C' Splined - 1-1/4" Dia.
- 10- SAE 'C-C' Keyed Shaft 1 1/2" Dia.

### Adapters

- C- SAE 'C' 2-4 Bolts
- D- SAE 'D' 4 Bolt

### Front Housing for 2936 & 2942

- A- 3" S.F. Common Inlet, 2" S.F. Common Outlet
- B- 3" S.F. Common Inlet, 1-1/2" S.F. Common Outlet
- C- 2-1/2" S.F. Separate Inlet, 1-1/2" S.F. Separate Outlet
- D- 2" S.F. Separate Inlet, 1-1/4" S.F. Separate Outlet
- E- 2-1/2" S.F. Common Inlet, 1-1/2" S.F. Separate Outlet

### Front Housing for 2950 & 2956

- A- 3", S.F. Common Inlet, 2" S.F. Common Outlet
- B- 3" S.F. Common Inlet, 1-1/2" S.F. Common Outlet
- C- 3" S.F. Separate Inlet, 1-1/2" S.F. Separate Outlet
- D- 2-1/2" S.F. Separate Inlet, 1-1/2" S.F. Separate Outlet
- E- 3" S.F. Common Inlet, 1-1/2" S.F. Separate Outlet

### Rear Pump Cover Housing for 2936 & 2942

- 4- Ports Blocked (use only w/front housings A, B, or E)
- 5- Inlet Blocked. 1-1/2" S.F. Outlet (machined for pump on rear, use only with front housing E)
- 6- Inlet Blocked. 1-1/2" S.F. Outlet (use only with front housing E)
- 7- Ports Blocked. (machined for pump on rear, use only with front housings A, B, or E)
- 8- Inlet Blocked, 1-1/4" S.F. Outlet (use only with front housing E)
- 9- Inlet Blocked, 1-1/4" S.F. Outlet (machined for pump on rear, use only with front housing E)
- 10- 2" S.F. Inlet. 1-1/4" S.F. Outlet (use only with front housings C or D)
- 11- 2" S.F. Inlet. 1-1/4" Outlet (machined for pump on rear, use only with front housings C or D)

12- 2-1/2" S.F. Inlet. 1-1/2" S.F. Outlet (use only with front housings C or D)

13- 2-1/2" S.F. Inlet, 1-1/2" S.F. Outlet (machined for pump on rear, use only with front housings C or D)

### Rear Pump Cover Housing for 2950 & 2956

- 4- Ports Blocked (use only with front housings A, B, or E)
- 5- Inlet Blocked. 1-1/2" S.F. Outlet (machined for pump on rear, use only with front housing E)
- 6- Inlet Blocked, 1-1/2" S.F. Outlet (use only with front housing E)
- 7- Ports Blocked (machined for pump on rear, use only with front housings A, B, or E)
- 8- Inlet Blocked, 1-1/4" S.F. Outlet (use only with front housing E)
- 9- Inlet Blocked, 1-1/4" S.F. Outlet (machined for pump on rear, use only with front housing E)
- 10- 2" S.F. Inlet. 1-1/4" S.F. Outlet (use only with front housings C or D)
- 11- 2" S.F. Inlet 1-1/4" S.F. Outlet (machined for pump on rear, use only with front housings C or D)
- 12- 2-1/2" S.F. Inlet, 1-1/2" S.F. Outlet (use only with front housings C or D)
- 13- 2-1/2" S.F. Inlet. 1-1/2" S.F. Outlet (machined for pump on rear, use only with front housings C or D)

### Rotation (viewed from shaft end)

- R- Clockwise
- L- Counterclockwise

NOTE: See Pages 56 & 57 for Flow Charts.

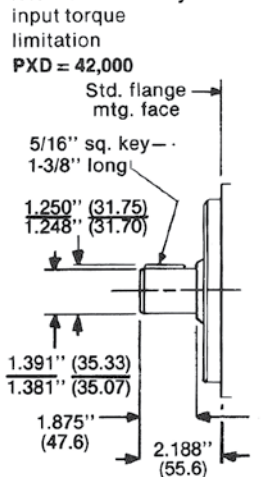
### Shafts

Rotation is determined by viewing from shaft end.

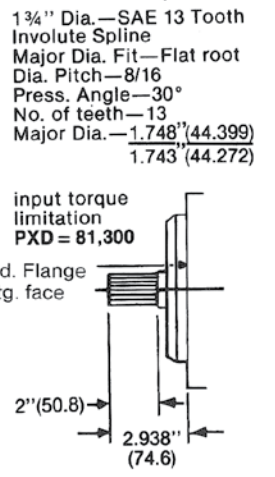
### 2900 Max. Recommended Drive Shaft Torque Transmission Capacity

The drive shaft can withstand the input torque if the product of pressure (PRIG) times displacement (cubic inches/rev.) does not exceed the P x D constant indicated. Pump sections must be added together and not exceed P x D constant listed below.

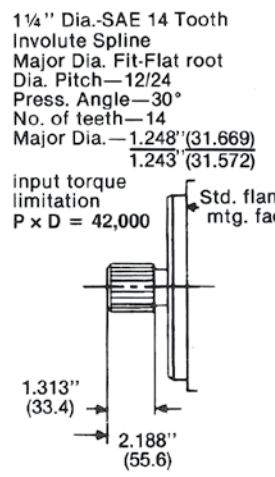
#### No. 2 SAE "C" Keyed Shaft



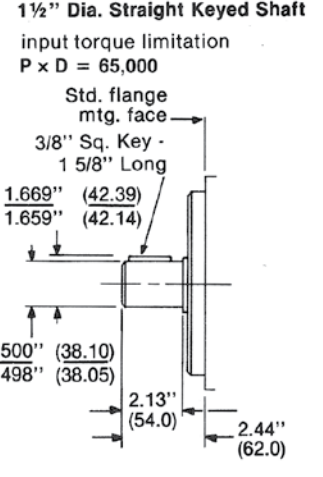
#### No. 3 SAE "D" splined shaft



#### No. 4 SAE "C" splined shaft

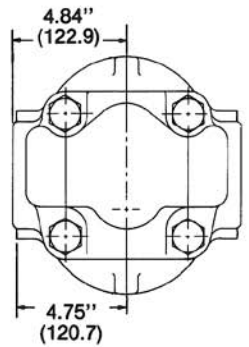
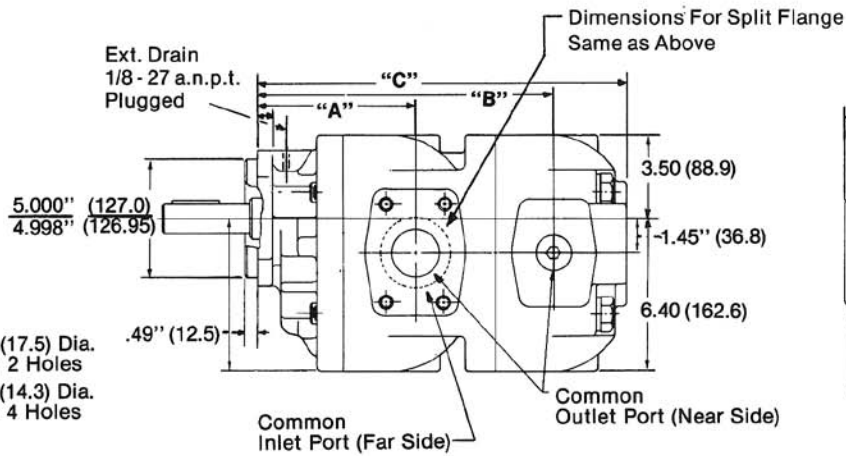
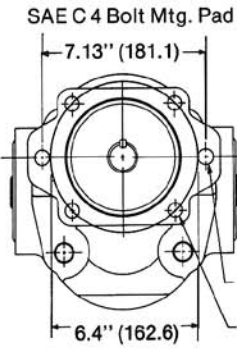
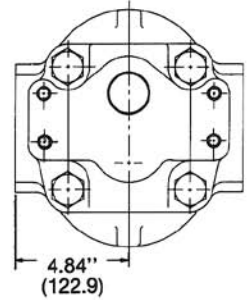
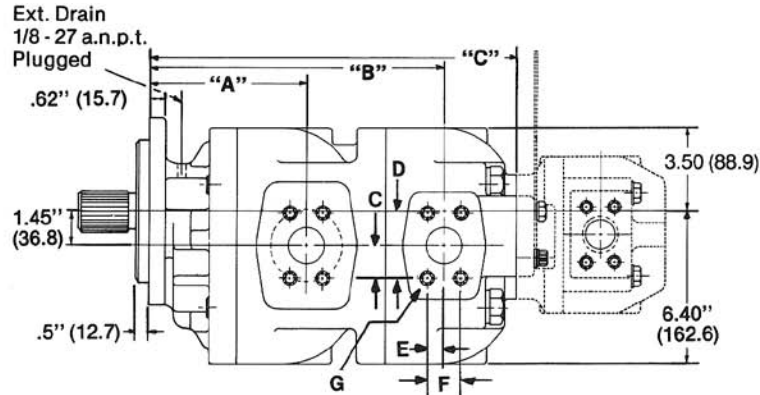
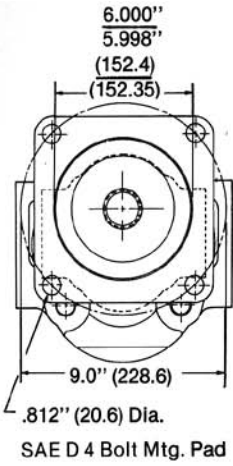


#### No. 10 SAE C-C 1 1/2" Dia. Straight Keyed Shaft



NOTE: P x D Value May Limit Max. Pressure - Consult Factory.

# Dual Short Stack Gear Pump Installation Dimensions



Approximate Weight of 2900 Short Stack is 180 Lbs. (81.65 Kg.)

Model	"A"	"B"	"C"
295656	6.63" (168.4)	12.45" (316.2)	15.61" (396.5)
295650	6.63" (168.4)	12.25" (311.2)	15.41" (391.4)
295642	6.63" (168.4)	11.99" (305.5)	15.15" (384.8)
295636	6.63" (168.4)	11.79" (299.5)	14.95" (379.7)
295050	6.42" (163.1)	12.05" (306.1)	15.21" (386.3)
295042	6.42" (163.1)	11.79" (299.5)	14.95" (379.7)
295036	6.42" (163.1)	11.59" (294.4)	14.75" (374.6)
294242	6.16" (156.5)	11.53" (292.9)	14.69" (373.1)
294236	6.16" (156.5)	11.33" (287.8)	14.49" (368.0)
293636	6.97" (177.0)	11.13" (282.7)	14.29" (363.0)