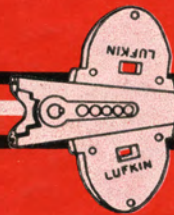


# LUFKIN OIL FIELD EQUIPMENT



**CATALOG 56**

*Featuring the*

# LUFKIN *Universal* PUMPING UNIT

**PUMPING UNIT INDEX ON PAGE 3035**

**LUFKIN FOUNDRY & MACHINE COMPANY • LUFKIN, TEXAS**



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# LUFKIN EQUIPMENT OF ADVANCED DESIGN

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1. Oil Field Pumping Units:
  - A. Air Balanced Pumping Units—Pages 3062-3065
  - B. Beam Balanced Pumping Units—Pages 3058-3060
  - C. Crank Balanced Pumping Units—Pages 3035-3058
  - D. Hydraulic Pumping Units—Pages 3066-3067
2. Gas Engines for Pumping Service—Pages 3068-3071
3. Truck-Trailers—Pages 3072-3073
4. Geared Speed Reducers and Increases—Pages 3074-3075

**LUFKIN**

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



FIGURE 1

*Lufkin C-160D-54-17 Twin Crank Pumping Unit with sub base to clear sweep of cranks, standard multi-cylinder gas engine base with cross rails designed to accommodate Lufkin Type HC-333 Horizontal Gas Engine.*

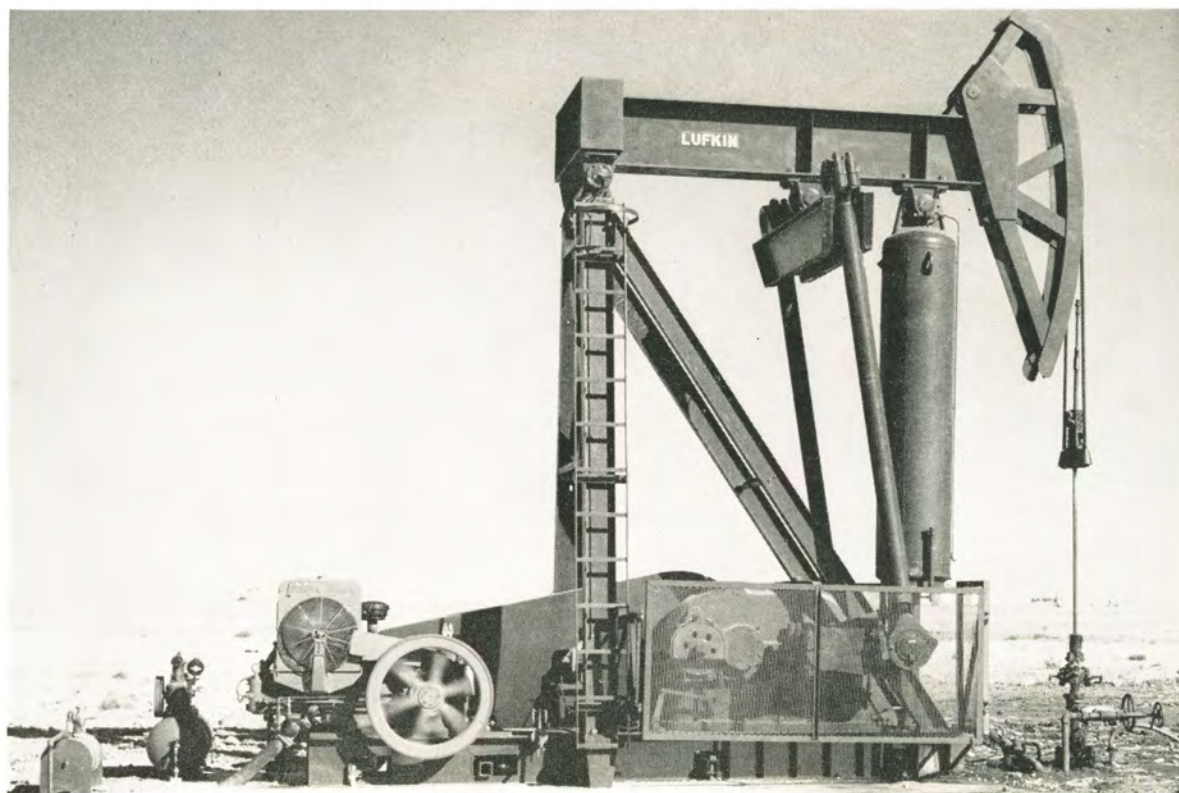


FIGURE 2

*Lufkin A-456DB-120-36 Air Balanced Pumping Unit driven by Lufkin H-795 Engine.*

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## STANDARD CRANK BALANCED PUMPING UNIT ASSEMBLIES

See Page 3059 for Beam Balanced Assemblies and Page 3062 for Air Balanced Assemblies

API Sizing	Pumping Unit Assembly †	Old Lufkin Designation	Polished Rod Load Capacity, Lbs.	Walking Beam Centers		Standard Counterbalance At Max. Stroke, Lbs.	Maximum Counterbalance With Aux. Weights	Crank No.	Counterweight No.	Maximum Stroke, Inches	Page No.
				Well End	Unit End						
640	C-640DB-144-30	TC-OLC BR-640DB	30,000	16'-9"	10'-11 1/4"	17,975	22,485	94100R	00R	144	3042 3043
	C-640DB-120-30	TC-OLCR-640DB	30,000	16'-0"	10'-11 1/4"	22,030	27,445	82100R	00R	120	
	With 82100R Cranks										
	C-640DB-120-30 C-640DB-108-30	TC-OLBR-640DB TC-OLR-640DB	30,000 30,000	16'-0" 14'-0 3/4"	10'-11 1/4" 10'-11 1/4"	18,660 15,300	23,470 19,240	8292R 8478R	00R 0R	120 108.4	
*456	C-456DB-144-30	TC-OLC BR-456DB	30,000	16'-9"	10'-11 1/4"	17,975	22,485	94100R	00R	144	3044 3045
	C-456DB-120-30	TC-OLCR-456DB	30,000	16'-0"	10'-11 1/4"	22,030	27,445	82100R	00R	120	
	With 82100R Cranks										
	C-456DB-120-30 C-456DB-108-30	TC-OLBR-456DB TC-OLR-456DB	30,000 30,000	16'-0" 14'-0 3/4"	10'-11 1/4" 10'-11 1/4"	18,660 15,300	23,470 19,240	8292R 8478R	00R 0R	120 108.4	
*320	C-320D-120-25	TC-1LBR-41D	25,000	14'-3 1/2"	10'-0"	14,075	17,940	8482R	0R	120	3046 3047
	C-320D-84-30	TC-OALR-41D	30,000	12'-6"	12'-6"	21,645	27,170	8482R	0R	84	
	C-320D-84-27	TC-1BR-41D	27,000	11'-4 1/4"	10'-0"	13,590	16,630	7475R	1R	84	
	C-320D-74-27	TC-1R-41D	27,000	10'-0"	10'-0"	15,855	19,305	7475R	1R	74	
	C-320D-74-25	TC-1AR-41D	25,000	12'-6"	12'-6"	15,885	19,335	7475R	1R	74	
*228	C-228D-74-27	TC-1R-35B	27,000	10'-0"	10'-0"	15,710	19,165	7475R	1R	74	3048 3049
	C-228D-74-23	TC-2LTR-35B	23,000	8'-0"	8'-0"	11,735	14,780	7469R	2R	74	
	C-228D-74-20	TC-2BTR-35B	20,000	9'-3"	8'-0"	9,715	12,345	6463R	2R	74	
	C-228D-64-23	TC-2TR-35B	23,000	8'-0"	8'-0"	11,530	14,570	6463R	2R	64	
	C-228D-64-20	TC-2ATR-35B	20,000	10'-0"	10'-0"	11,550	14,590	6463R	2R	64	
*160	C-160D-74-20	TC-2BTR-22G	20,000	9'-3"	8'-0"	8,750	11,145	6460R	2R	74	3050 3051
	C-160D-64-23	TC-2TR-22G	23,000	8'-0"	8'-0"	10,440	13,210	6460R	2R	64	
	C-160D-64-15	TC-33BTR-22G	15,000	8'-3"	5'-3 1/4"	6,710	8,955	4152R	3CR	64	
	C-160D-54-18	TC-33ATR-22G	18,000	8'-0"	8'-0"	8,600	11,250	5452R	3CR	54	
	C-160D-54-17	TC-33TR-22G	17,000	7'-0"	5'-3 1/4"	8,140	10,760	4152R	3CR	54.4	
*114	C-114DA-64-15	TC-44ALTR-15B	15,000	8'-0"	8'-0"	10,155	12,925	6460R	2R	64	3052 3053
	C-114DA-54-17	TC-44DTR-15B	17,000	6'-0"	6'-0"	8,600	11,250	5452R	3CR	54	
	C-114DA-54-16A		16,000	7'-0"	7'-0"	8,600	11,250	5452R	3CR	54	
	C-114DA-54-15	TC-44ATR-15B	15,000	8'-0"	8'-0"	7,910	10,570	5452R	3CR	54	
	C-114DA-54-14	TC-44CTR-15B	14,000	6'-0"	6'-0"	8,065	10,725	5452R	3CR	54	
	C-114DA-54-13.5	TC-44STR-15B	13,500	6'-4 3/8"	5'-7 3/8"	5,570	7,200	4846R	5AR	54.2	
	C-114DA-48-14	TC-44TR-15B	14,000	6'-0"	6'-0"	6,375	8,220	4846R	5AR	48	
	C-114DA-42-10.5	T5D-15B	10,500	5'-0"	5'-0"	5,645	7,575	4246CR	5CR	42	
80	C-80DB-48-14	TC-44TR-80DB	14,000	6'-0"	6'-0"	6,375	8,220	4846R	5AR	48	3052 3053
	C-80DB-42-10.5	T5D-80DB	10,500	5'-0"	5'-0"	5,645	7,575	4246CR	5CR	42	
*57	C-57D-48-10	T5DB-7C	10,000	5'-8 1/2"	5'-0"	4,910	6,595	4246CR	5CR	48	3056 3057
	C-57D-42-10.5	T5D-7C	10,500	5'-0"	5'-0"	5,645	7,575	4246CR	5CR	42	
40	C-40D-40-7.4	T6EB-9B	7,400	4'-8 1/2"	4'-0"	3,985	5,030	3441	6	40	3056 3057
	C-40D-34-8	T6E-9B	8,000	4'-0"	4'-0"	4,785	6,015	3441	6	34	
25	C-25D-28-6	T7AB-3B	6,000	4'-1"	3'-6"	2,725	3,585	2433	7	28	3056 3057
	C-25D-24-6	T7A-3B	6,000	3'-6"	3'-6"	3,250	4,255	2433	7	24	

† See top of next page for explanation of designations.  
\* These units also furnished with single reduction gear reducers.

**EXPLANATION OF PUMPING UNIT DESIGNATIONS**

The designations of Lufkin Pumping Units have been revised in order that they might be significant as to size and capacity.

The first letter in the new designation system indicates type of counterbalance:

- A means Air Counterbalance
- B means Beam Counterbalance
- C means Trout Crank Counterbalance

The second group of figures is the API size of the gear reducer and indicates the peak torque rating in thousands of inch pounds. The reducer size is followed by "D" or "S" to indicate whether it has double or single reduction gears. When some detail of a reducer has been revised in design so as to be not interchangeable with the previous design, a revision letter is added at the end of the reducer designation. For

instance, the 640D reducer was at one time revised by a design change to become 640DA. It has more recently been revised again by a major change in housing design to become 640DB.

The third group of figures indicates maximum polished rod stroke in inches.

The last group of figures indicates polished rod load rating in thousands of pounds. When a change is made in the design of some part of the structure, revision letters A, B, C, etc., will be added at the end of the load rating designation.

For instance, C-640DB-144-30 means a crank counterbalanced unit assembly using a double reduction reducer having 640,000 inch pounds peak torque rating, with 144" maximum stroke and 30,000 pounds polished rod load rating.

**LUBRICATION INSTRUCTIONS****LUFKIN PUMPING UNITS**

It is very important to the successful and satisfactory operation of a pumping unit that careful attention be given to proper lubrication.

The Gear Box and all bearings are shipped dry and must be lubricated before starting.

**GEAR BOX:** For temperatures between 10° F. and 100° F. use an SAE 90 Straight Mineral Oil having a pour point of 0° F. or lower. (This is a straight mineral gear oil and is not a motor oil or extreme pressure lubricant. It has a viscosity comparable to SAE 40 or SAE 50 motor oil.)

In the event the SAE 90 Straight Mineral Oil is not accessible a good quality SAE 40 or SAE 50 Motor Oil may be used as a substitute; however, care must be taken to use an oil having a pour point at least 10° F. below the minimum outside temperature.

Maintain the oil level above the bottom pet cock or low mark on gage but do not fill the gear box above the top pet cock or high mark on gage.

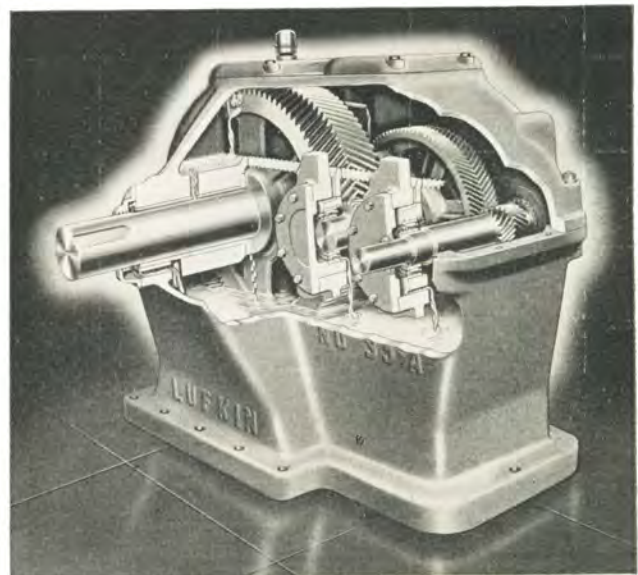
**PITMAN BEARING; CENTER BEARING; HANGER and EQUALIZER BEARINGS:** Use an SAE 140 Extreme Pressure Lubricant having a pour point of 5° F. or lower. Do not use grease.

Care must always be taken to use a lubricant having a pour point at least 10° F. lower than the outside temperature.

The several points requiring lubrication should be checked at regular intervals to insure that proper oil

levels are maintained. For 24 hour service change oil semi-annually; for intermittent service change annually.

The above instructions are for average operating conditions. For unusual conditions of exceptionally heavy well loads and extremely cold weather lubrication should be watched more closely and one of our field men should be consulted for individual recommendations.



**FIGURE 3**  
*Splash lubrication system insures ample lubricant at gear mesh and all bearings.*

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**THE IMPROVED  
TROUT COUNTERBALANCED CRANK**

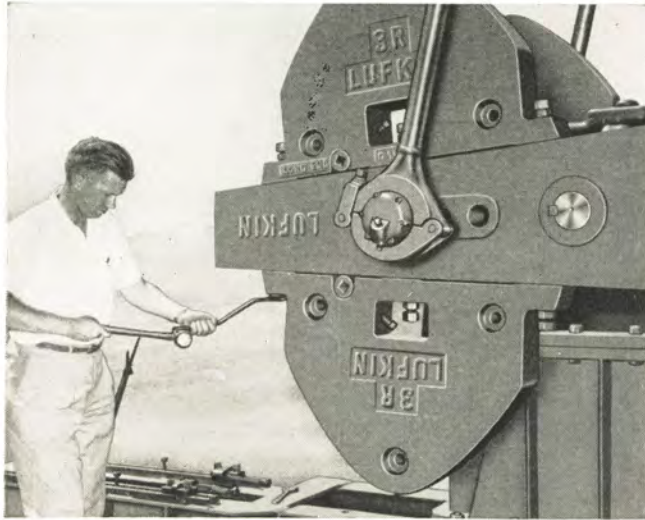


FIGURE 4

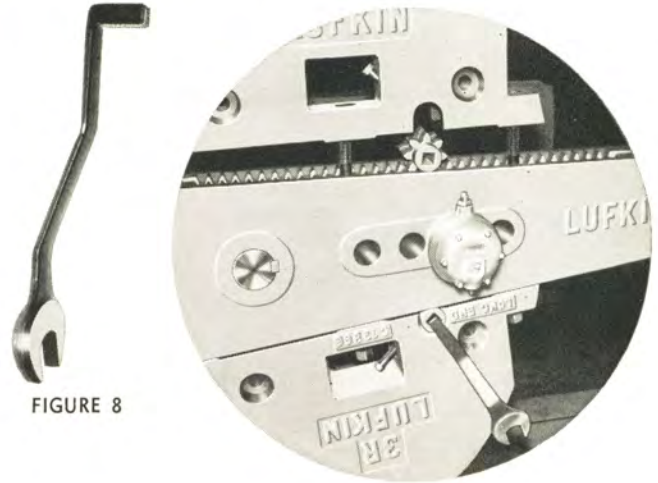


FIGURE 7

FIGURE 8

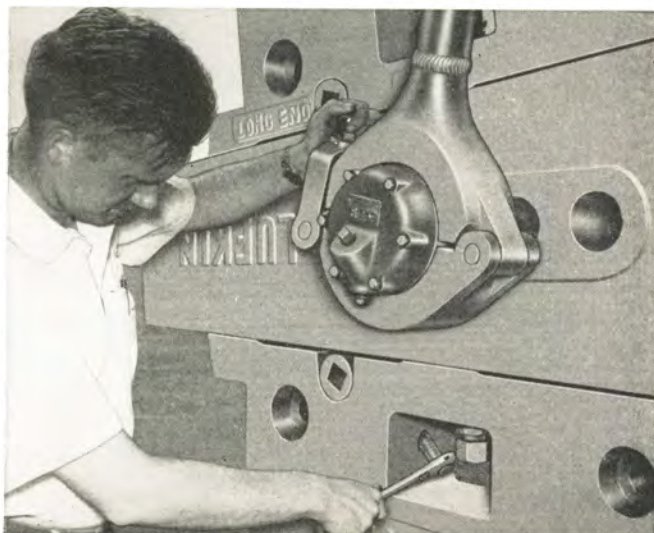


FIGURE 5

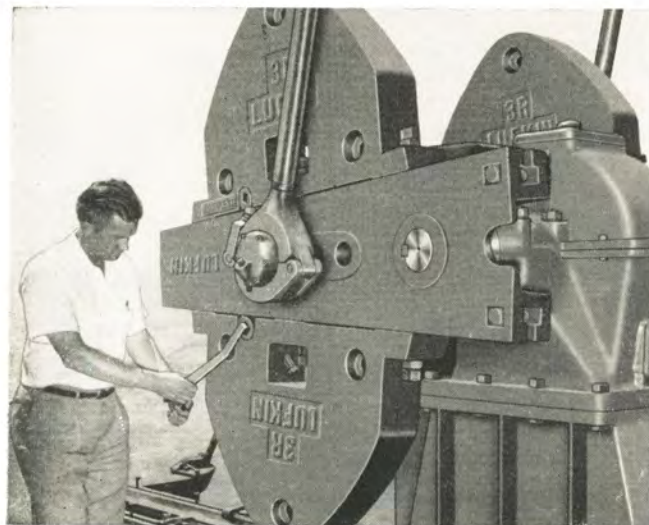


FIGURE 6

The Trout Counterbalanced Crank, using sliding weights to change the counterbalance effect, is an Original Lufkin Feature. Moving the counterweights has been made even safer and easier by the addition of a rack and pinion.

**One Man Alone**, using the special combination wrench and crank shown in Figure 8, can make the adjustment in a matter of minutes. All four weights can be adjusted without changing the position of the cranks.

To move the counterweights:

1. Move cranks to horizontal position and set brake.
2. Loosen nuts holding counterweight (Fig. 4) using wrench as furnished and sledge hammer.
3. Loosen set screw (Fig. 5) with ordinary crescent wrench.
4. Insert square into socket in end of pinion (Fig. 6) and rotate, moving counterweight to desired position.
5. Tighten nuts on counterweight bolts, using wrench and sledge.
6. Tighten set screw (Fig. 5).

Rack and pinion type cranks are now regularly furnished on the C-57 assemblies and larger. The C-40D and C-25D units are furnished with the regular sliding weight type Trout Cranks.

With the Trout Counterbalanced Crank there is no hazard to the operator or equipment as it is impossible for Trout counterweights to slide off the crank even when bolts are loosened, so long as nuts are not completely removed from bolts.

This same Safe, Simple and Easy Trout Counterbalance has been in use over a period of many years and has been installed on over FIFTY THOUSAND LUFKIN PUMPING UNITS.



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

## LUFKIN UNIVERSAL CENTER-LINE PITMAN EQUALIZER

Typical for C-114 and All Larger Assemblies

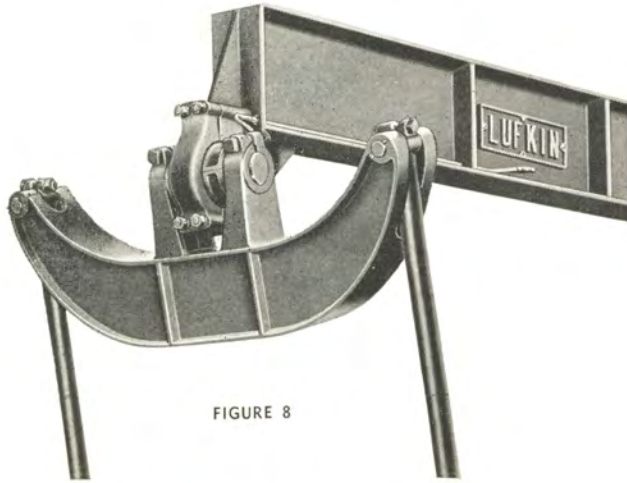


FIGURE 8

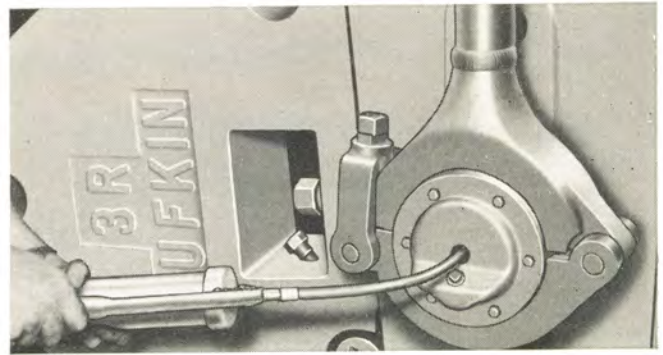
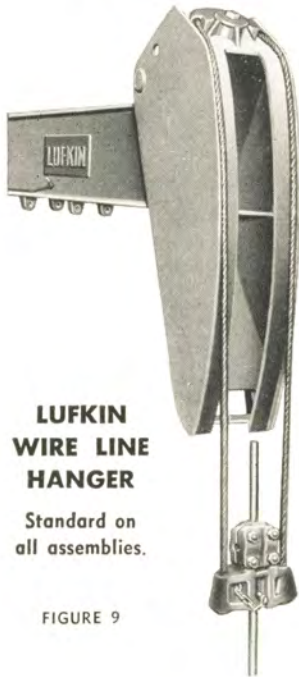


FIGURE 11

All Lufkin Crank Pins are now furnished with grease fittings and drilled holes to facilitate removal of pins by grease pressure using grease gun on fitting under cover.



### LUFKIN WIRE LINE HANGER

Standard on all assemblies.

FIGURE 9

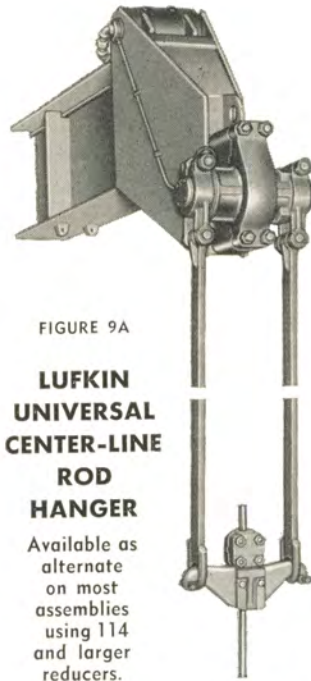


FIGURE 9A

### LUFKIN UNIVERSAL CENTER-LINE ROD HANGER

Available as alternate on most assemblies using 114 and larger reducers.

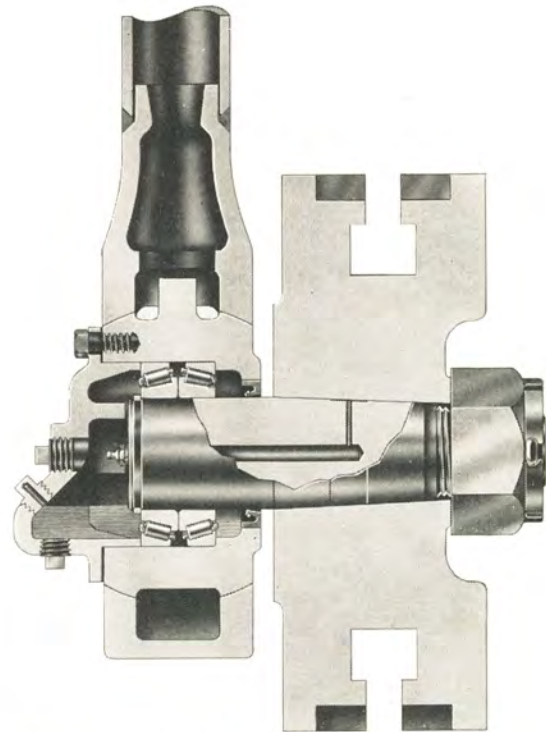


FIGURE 12

### TIMKEN BEARING PITMAN BOX ASSEMBLY

Standard on C-114 and larger assemblies

### OIL TIGHT—BRONZE BUSHED CENTER BEARING

Used on C-114 and larger

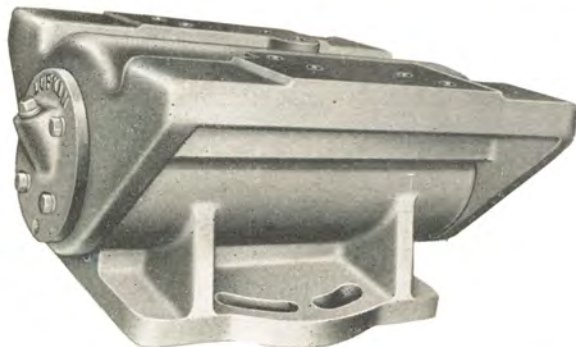


FIGURE 10

Series "AD" Center Bearings are full Bronzoid bushed, with patent oil seals and are designed to allow beam to headache to about 40° either front or back. This is a superior bearing in every respect, being dust proof, oil tight with renewable Bronzoid bushing and ample bearing surface.

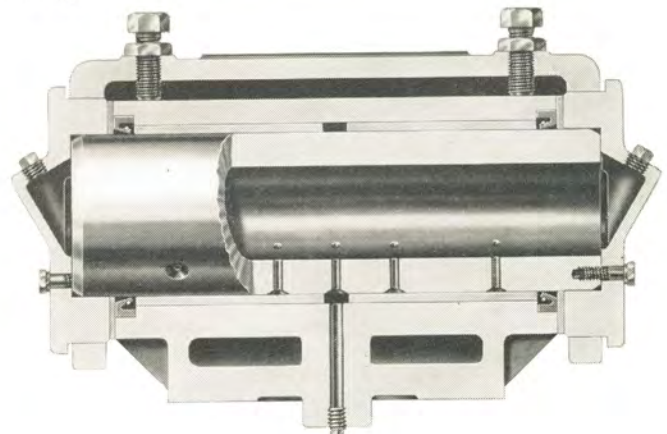


FIGURE 13



**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**THE LUFKIN UNIVERSAL CENTER-LINE WALKING BEAM**

The Lufkin Beam Construction is a patented feature that accounts for much of the success of Lufkin Units even when employed on loads exceeding the ratings of the component parts of the assembly. In addition to strength, this construction gives increased polished rod stroke and decreased lifting costs, as compared to types of construction formerly used.

All pumping units employ an arrangement of beam loading based on variations of the method used by the original standard rig, illustrated in Figure 15. Since the beam is a rolled structural member, not

machined, all beams have a slight twist. When loaded as shown in Figure 15, with the load applied on TOP of the beam, it twists the beam still further since the line of the load and the line of the reaction do not coincide. The resultant horizontal force, as in Figure 14, acts about the lever arm X to twist the beam. This constant twisting under load causes this beam to fail under a fraction of the load that could be safely applied to the same beam using Lufkin Universal Centerline Beam Construction.

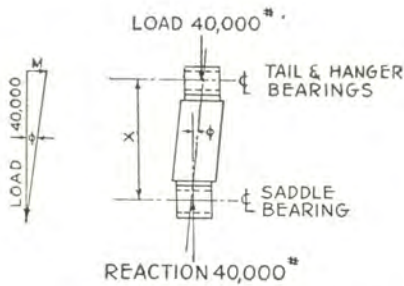


FIGURE 14

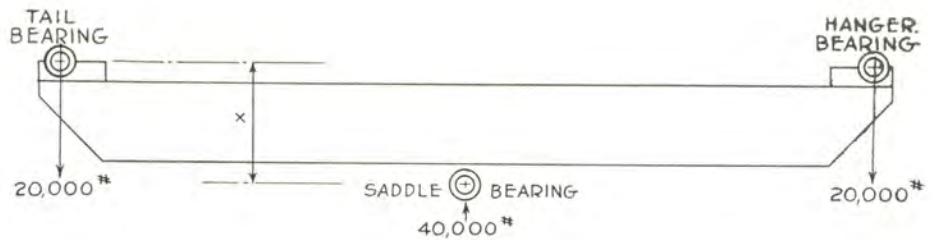


FIGURE 15

The load of 40,000 lbs. at center of beam does not coincide with line of reaction due to twist in beam (exaggerated here). The difference between the two lines is angle  $\phi$ . The twisting load  $M$  is  $40,000 \times \tan. \phi$ . The twisting moment on the beam is  $40,000 \times \tan. \phi \times$  lever arm  $X$ , in inch-pounds.

With Lufkin Universal Center-Line construction, no twisting moment exists since the load is applied in line with the reaction; hence lever arm  $X$  is zero and, therefore, twisting moment is zero.

**THE LUFKIN UNIVERSAL CENTER-LINE UNITS**

**WORKING "POINTS" THAT INSURE FULL STROKE ON POLISH RODS AND HIGHEST COUNTERBALANCE EFFICIENCY**

The universal center line design, patented by LUFKIN, has many advantages over the other types of construction and no disadvantages that we know of.

Field tests have been made on pumping wells, comparing this design with that of the tail bearing mounted on top of the beam both with the gear box set directly under the tail bearing, and also with it set in back of it. The results show considerably more production due to better pump plunger action, and less power consumed per barrel of fluid pumped. Peak loads were less per barrel of fluid pumped with the LUFKIN design than with the others tested.

Placing the tail bearing under the beam eliminates vibration in the walking beam which is caused by the leverage which is necessarily imposed by the bearing when placed on top of the beam. No beam is made perfectly and beams break more easily due to twisting action when the load is applied to the top of the beam. Actual experience shows that in some cases LUFKIN walking beams are successfully carrying over double the A.P.I. rating and have been doing so for years.

The universal spherical bearing on the front and back of the walking beam is considerably more expensive to manufacture, as is the arch type equalizer. We are convinced, however, that this additional quality is justified in that it accounts for trouble free, long life operation.

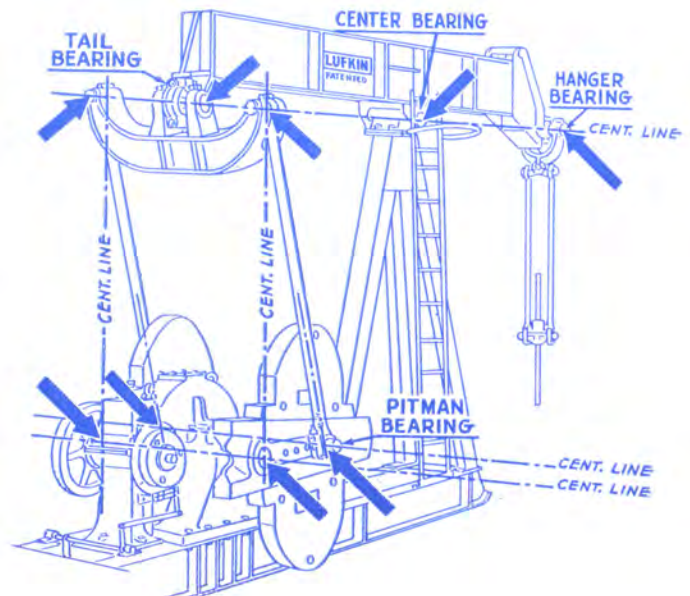


FIGURE 16

**LUFKIN**

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**PORTALBE TYPE TESTING UNITS MADE IN ALL SIZES**

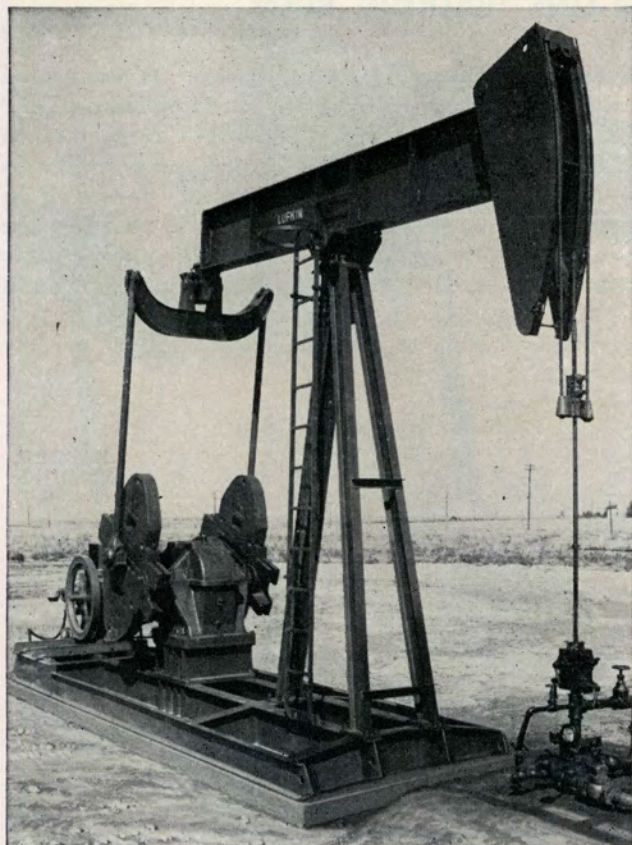


FIGURE 17

*A typical Portable Pumping Unit Assembly. Mounted on sub-base to permit cranks to clear the floor. This type of assembly is available for every size of Lufkin Unit. It requires practically no foundation and may be skidded from one location to another without down-time for dismantling. Most sizes are furnished with volume tank built in the base.*

*This type of unit is standard in every respect except for the base which has an additional beam on the outside of the cranks.*

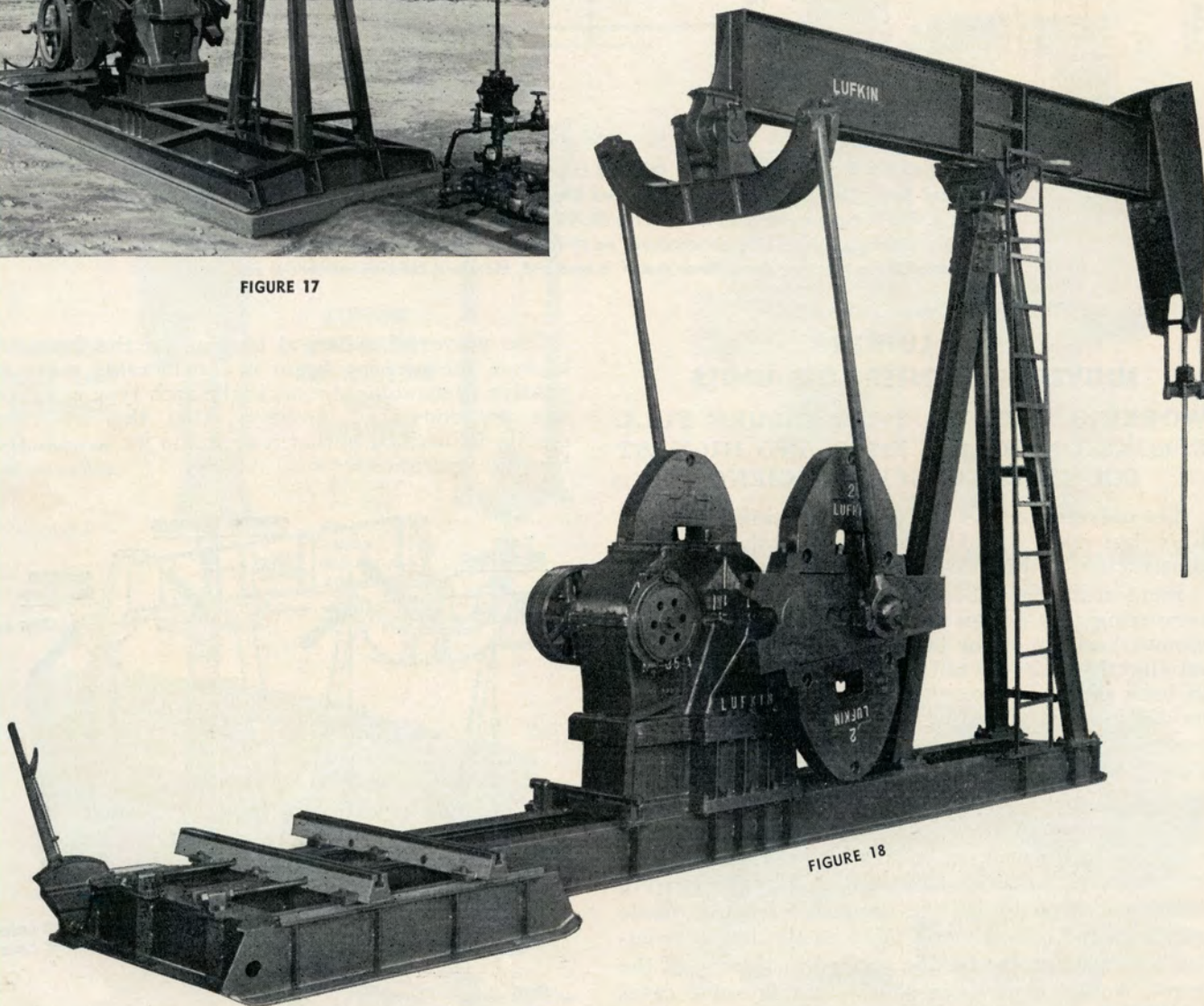


FIGURE 18

*Lufkin C-228D-64-20 Universal Pumping Unit Assembly with sub-base to clear crank sweep. Note Universal mounting for prime mover. Engine Rails are of sturdy cast iron construction with long T-slot at top, and are mounted on T-slots welded to top flange of base. Two long adjusting screws are provided for sliding engine. Note simple, positive and trouble-free brake control rigging.*

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**SINGLE REDUCTION GEAR UNITS**

Single reduction gear units are preferred with slow speed and medium speed engines (up to 600 r.p.m.) where over-all ratio can be accommodated. They are built in six sizes.

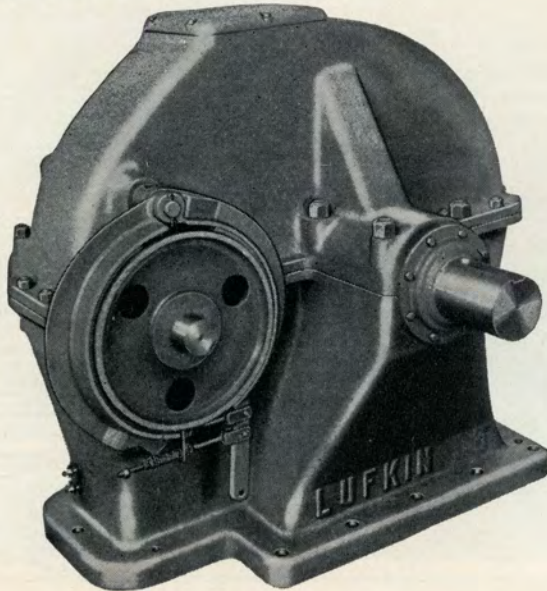


FIGURE 19

**DOUBLE REDUCTION GEAR UNITS**

Double reduction gear units are used with electric motors and multi-cylinder gas engines. They are made in thirteen sizes.

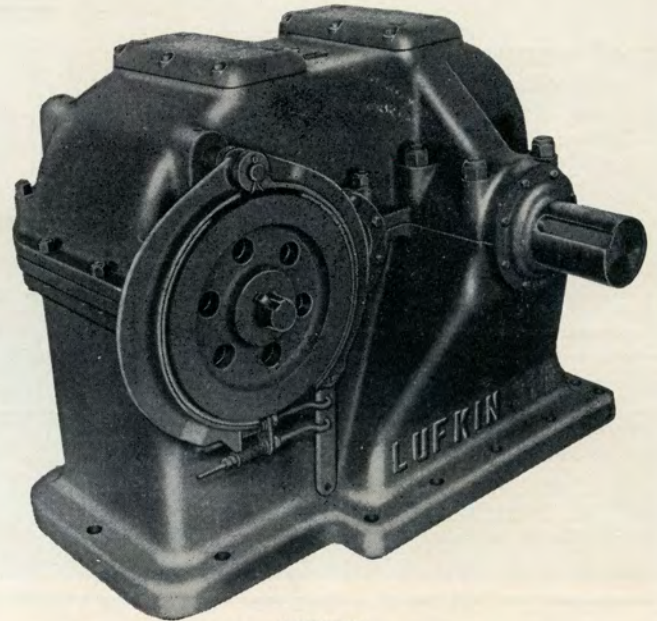


FIGURE 21

LUFKIN ENGINEERS HAVE A RICH BACKGROUND of practical experience in unit operation, and behind their designs is a plant using modern production methods and up-to-date tools where absolute duplicate precision work is maintained.

Our entire product is made in jigs or by template, even to posts and walking beams, to secure correct alignment and absolute duplication of parts.

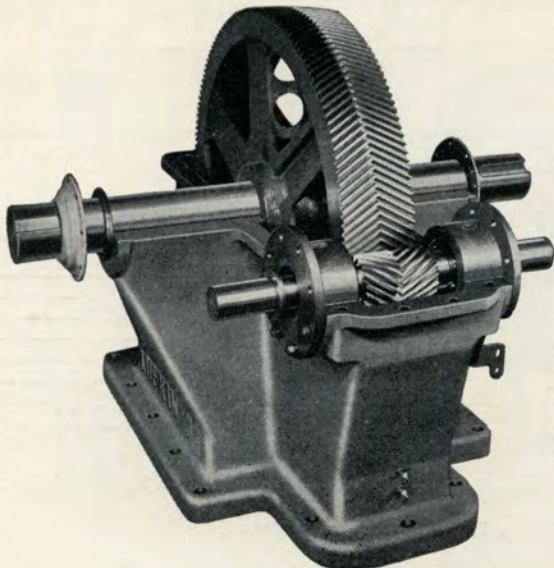


FIGURE 20

*Single Reduction Gear Unit, cover removed.*

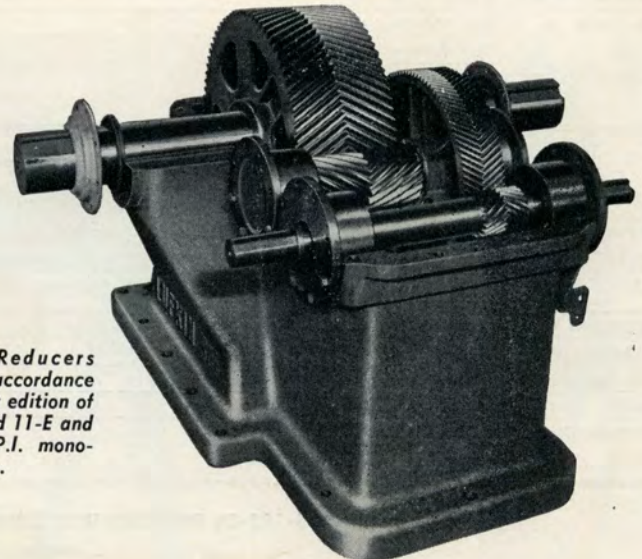


FIGURE 22

*Double Reduction Gear Unit, cover removed.*

*Lufkin Gear Reducers are rated in accordance with the latest edition of A.P.I. Standard 11-E and carry the A.P.I. monogram.*

1. Housing especially built for oil well service, of rugged construction with large factors of safety.
2. Lufkin-Sykes Herringbone Gears, precision cut on our machines, are used exclusively in Lufkin units.
3. Gear Cases are jig bored to same accuracy as gears.
4. All shafts forged from alloy steel, heat treated and precision ground.
5. Oversize Bronzoid Bearings on crankshafts. Easily renewable but seldom requiring replacement.

6. Crankshaft held rigid by Bronzoid hub plates. All pinions float on Straight Roller Bearings.
7. No Oil Leaks. Pinion shaft bearings equipped with patented oil seals; main crankshaft with collar oil slinger and drain cover.
8. No Oil Pumps. Lufkin gears operate in oil bath with gear wipers to flood bearings.
9. Clam Shell Brake. No grabbing. Improved ratchet lever and stand, locomotive type.

**LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**GENERAL SPECIFICATIONS**

**Lufkin 640,000 In. Lbs. Peak Torque Pumping Units  
640 API Size**

**GEAR DATA**

**GEAR REDUCER: Double Reduction**  
Designation: 640DB.  
Gears: Main Gear 41.6" Diam., 12 3/4" Face.  
Rating: 640,000 In. Lbs. Peak Torque.  
Ratio of Gears: 28.6.

Crank Shaft Diam.: 7".  
Sheave: 34" P.D.—7D Std., 56" P.D. Max., 3-7/16" Bore.  
Distance Centerline Unit to Centerline Drive: 21 1/2".  
Gear Box Oil Capacity: 70 Gallons.

**STRUCTURAL DATA**

**C-640DB-144-30 PUMPING UNIT ASSEMBLY—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLCBB-640DB

<b>WALKING BEAM:</b> 33" x 15 3/4" x 200 lbs., 16'-9" & 10'-11 1/4" working centers.	<b>CENTER BEARING.....</b>	No. 1AD, Bronze Bushed 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with 1" Double Wire Lines 30'-2 1/8" and 31'-4 1/4" Long on Load Equalizer	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings in Line, 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5 1/16" x 13 1/2" Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" High.	<b>WEIGHT.....</b>	57,630 lbs.	
<b>CRANKS:</b> No. 94100R, 100" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46 3/4" Wide at Gear Box.	<b>No. 94100R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	52.1".....	51,655	64,130
	70.4".....	37,935	47,170
	88.8".....	29,845	37,165
	107.2".....	24,530	30,590
	125.6".....	20,770	25,945
	144".....	17,975	22,485

**C-640DB-120-30, With 82100R CRANKS, PUMPING UNIT ASSEMBLY—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLCR-640DB

<b>WALKING BEAM:</b> 33" x 15 3/4" x 200 lbs., 16'-0" and 10'-11 1/4" working centers	<b>CENTER BEARING....</b>	No. 1AD, Bronze Bushed, 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with Double 1" Wire Lines, 26'-4 1/4" and 25'-2 1/8" Long, on Load Equalizer	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5 1/16" x 13 1/2", Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" high.	<b>WEIGHT.....</b>	57,380 lbs.	
<b>CRANKS:</b> No. 82100R, 100" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46 3/4" Wide at Gear Box.	<b>No. 82100R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	50.0".....	54,175	67,175
	67.6".....	39,830	49,445
	85.3".....	31,370	38,990
	103.0".....	25,820	32,130
	120.0".....	22,030	27,445

**\*C-640DB-120-30 PUMPING UNIT ASSEMBLY—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLBR-640DB

<b>WALKING BEAM:</b> 33" x 15 3/4" x 200 lbs., 16'-0" and 10'-11 1/4" working centers	<b>CENTER BEARING....</b>	No. 1AD, Bronze Bushed, 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with Double 1" Wire Lines, 26'-4 1/4" and 25'-2 1/8" Long, on Load Equalizer	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5 1/16" x 13 1/2", Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" high.	<b>WEIGHT.....</b>	56,780 lbs.	
<b>CRANKS:</b> No. 8292R, 92" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46 3/4" Wide at Gear Box.	<b>No. 8292R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	50.0".....	46,085	57,635
	67.6".....	33,845	42,385
	85.3".....	26,630	33,395
	103.0".....	21,890	27,495
	120.0".....	18,660	23,470

**\*C-640DB-108-30 PUMPING UNIT ASSEMBLY—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLR-640DB

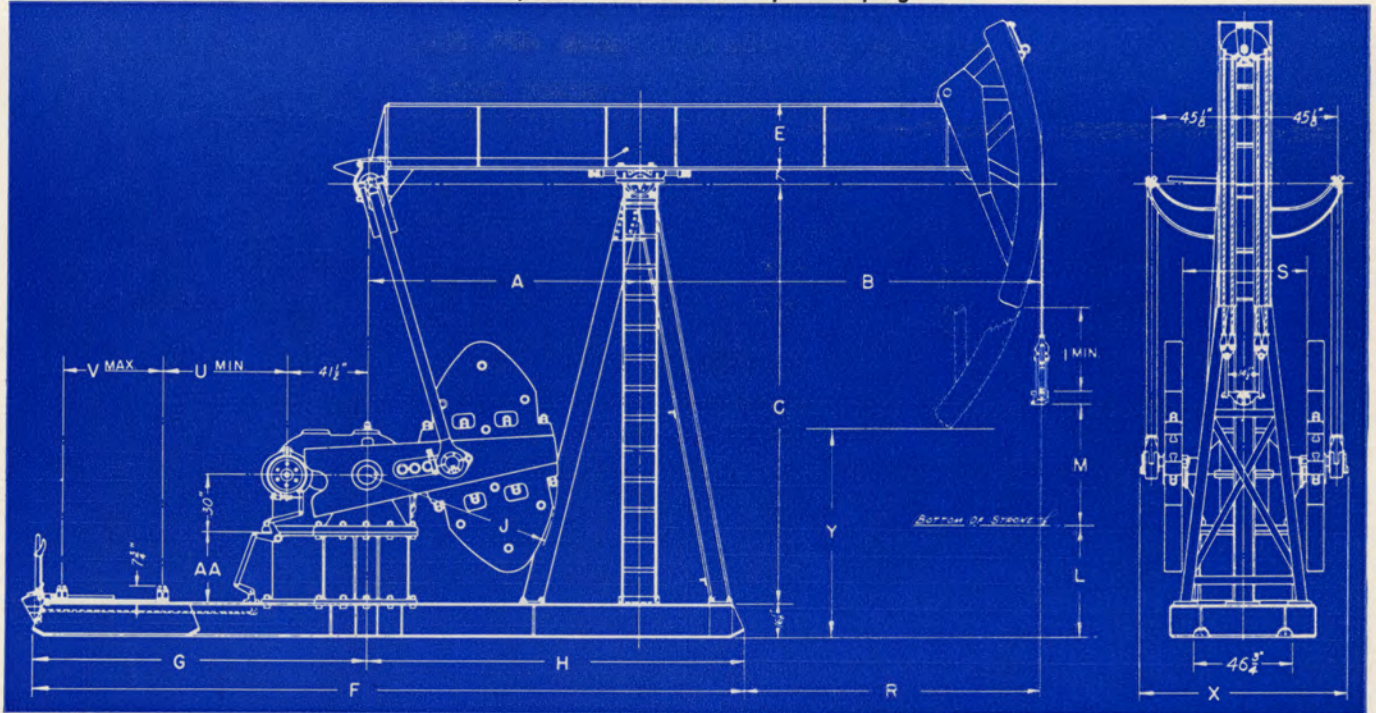
<b>WALKING BEAM:</b> 30" x 15" x 172 lbs., 14'-0 3/4" and 10'-11 1/4" working centers.	<b>CENTER BEARING.....</b>	No. 1AD, Bronze Bushed, 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with 1 1/4" Wire Line, 28'-0" Long	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5 1/16" x 13 1/2", Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" high.	<b>WEIGHT.....</b>	53,030 lbs.	
<b>CRANKS:</b> No. 8478R, 78" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46 3/4" Wide at Gear Box.	<b>No. 8478R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	46.4".....	34,795	44,005
	61.9".....	26,260	33,165
	77.4".....	21,140	26,665
	92.9".....	17,735	22,335
	108.4".....	15,300	19,240

\* This unit in stock at Los Angeles.

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**GENERAL DIMENSIONS**  
Lufkin 640,000 In. Lbs. Peak Torque Pumping Units



**FIGURE 23**

UNIT	A	B	C	E	F	G	H	I	J	L	M	R	S	U	V	X	Y	AA
C-640DB-144-30 . . . . .	10'-11 1/4"	16'-9"	17'-4"	33"	30'-5"	15'-4"	15'-1"	23 3/8"	100"	44"	72"	12'-7 1/4"	65 1/4"	6'-10"	46"	8'-2 5/8"	6'-9 3/8"	36"†
C-640DB-120-30 with 82100R Cranks . . . . .	10'-11 1/4"	16'-0"	17'-4"	33"	30'-5"	15'-4"	15'-1"	18 1/4"	100"	6'-1 1/2"	60"	11'-10 1/4"	65 1/4"	6'-10"	46"	8'-2 5/8"	8'-10 5/8"	36"†
C-640DB-120-30 . . . . .	10'-11 1/4"	16'-0"	17'-4"	33"	30'-5"	15'-4"	15'-1"	18 1/4"	92"	6'-1 1/2"	60"	11'-10 1/4"	65 1/4"	6'-10"	46"	8'-2 5/8"	8'-10 5/8"	36"‡
*C-640DB-108-30 . . . . .	10'-11 1/4"	14'-0 3/4"	17'-4"	29 7/8"	30'-5"	15'-4"	15'-1"	28 1/2"	78"	6'-4 5/8"	54.2"	9'-11"	67 1/4"	6'-10"	46"	8'-2 5/8"	10'-0 1/4"	36"

\* C-640DB-144-30 and C-640DB-120-30 have double wire lines as shown, C-640DB-108-30 has single wire line shown in Fig. 9.  
 † Requires foundation projecting 23" above grade line, to provide crank clearance.  
 ‡ Requires foundation projecting 15" above grade line, to provide crank clearance.  
 Full length, one piece, Base is standard; Jointed Bases available.



**FIGURE 24**



**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**GENERAL SPECIFICATIONS**

Lufkin 456,000 In. Lbs. Peak Torque Pumping Units

456 API Size

**GEAR DATA**

**GEAR REDUCER: Double Reduction**

Designation: 456DB.  
Gears: Main Gear 38" Diam., 11" Face.  
Rating: 456,000 In. Lbs. Peak Torque.  
Ratio of Gears: 29.04.  
Crank Shaft Diam.: 7".  
Sheave: 34" P.D.—10C or 7D Std., 51" P.D. Max., 3-7/16" Bore.  
Distance Centerline Unit to Centerline Drive: 21½".  
Gear Box Oil Capacity: 55 Gallons.

**GEAR REDUCER: Single Reduction**

Designation: 456S.  
Gears: Main Gear 60" Diam., 11" Face.  
Rating: 456,000 In. Lbs. Peak Torque.  
Ratio of Gears: 10.71.  
Crank Shaft Diam.: 7".  
Sheave: 48" P.D.—10D or 15C Std., 48" P.D. Max., 3-15/16" Bore.  
Distance Centerline Unit to Centerline Drive: 18".  
Gear Box Oil Capacity: 34 Gallons.

**STRUCTURAL DATA**

**C-456DB-144-30 and C-456S-144-30 PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLCBR-456DB and TC-OLCBR-456S

<b>WALKING BEAM:</b> 33" x 15¼" x 200 lbs., 16'-9" and 10'-11¼" working ctrs	<b>CENTER BEARING...</b>	No. 1AD, Bronze Bushed 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with 1" Double Wire Lines, 30'-2½" and 31'-4¼" Long on Load Equalizer.	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings in Line 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5½" x 13½" Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" High.	<b>WEIGHT.....</b>	C-456DB-144-30 55,980 lbs. C-456S-144-30 56,180 lbs.	
<b>CRANKS:</b> No. 94100R, 100" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46¼" Wide at Gear Box.	<b>No. 94100R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	52.1".....	51,655	64,130
	70.4".....	37,935	47,170
	88.8".....	29,845	37,165
	107.2".....	24,530	30,590
	125.6".....	20,770	25,945
	144".....	17,975	22,485

**C-456DB-120-30, With 82100R CRANKS, C-456S-120-30, With 82100R CRANKS, PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLCR-456DB and TC-OLCR-456S

<b>WALKING BEAM:</b> 33" x 15¼" x 200 lbs., 16'-0" and 10'-11¼" working ctrs.	<b>CENTER BEARING...</b>	No. 1AD, Bronze Bushed, 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with Double 1" Wire Lines, 26'-4¼" and 25'-2½" Long on Load Equalizer.	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings in Line 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5½" x 13½" Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" High.	<b>WEIGHT.....</b>	C-456DB-120-30 55,730 lbs. C-456S-120-30 56,200 lbs.	
<b>CRANKS:</b> No. 82100R, 100" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46¼" Wide at Gear Box.	<b>No. 82100R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	50.0".....	54,175	67,175
	67.6".....	39,830	49,445
	85.3".....	31,370	38,990
	103.0".....	25,820	32,130
	120.0".....	22,030	27,445

**\*C-456DB-120-30 and C-456S-120-30, PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLBR-456DB and TC-OLBR-456S

<b>WALKING BEAM:</b> 33" x 15¼" x 200 lbs., 16'-0" and 10'-11¼" working ctrs.	<b>CENTER BEARING...</b>	No. 1AD, Bronze Bushed, 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with Double 1" Wire Lines, 26'-4¼" and 25'-2½" Long on Load Equalizer	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5½" x 13½" Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" high.	<b>WEIGHT.....</b>	C-456DB-120-30 55,230 lbs. C-456S-120-30 55,600 lbs.	
<b>CRANKS:</b> No. 8292R 92" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46¼" Wide at Gear Box.	<b>No. 8292R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	50.0".....	46,085	57,635
	67.6".....	33,845	42,385
	85.3".....	26,630	33,395
	103.0".....	21,890	27,495
	120.0".....	18,660	23,470

**\*C-456DB-108-30 and C-456S-108-30 PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class**  
Formerly TC-OLR-456DB and TC-OLR-456S

<b>WALKING BEAM:</b> 30" x 15" x 172 lbs., 14'-0¾" and 10'-11¼" working ctrs.	<b>CENTER BEARING....</b>	No. 1AD, Bronze Bushed, 7" x 20"	
<b>HANGER:</b> Hinged Horsehead with 1¼" Wire Line, 28'-0" Long.	<b>CRANK PINS.....</b>	No. OT, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	5½" x 13½" Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 17'-4" high.	<b>WEIGHT.....</b>	C-456DB-108-30 51,480 lbs. C-456S-108-30 51,850 lbs.	
<b>CRANKS:</b> No. 8478R 78" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 16" Deep, 46¼" Wide at Gear Box.	<b>No. 8478R Crank</b>		
<b>SUB-BASE:</b> 36" High, Cast Iron.	<b>Stroke</b>	<b>No. 00R Wts.</b>	<b>Aux. Wts.</b>
	46.4".....	34,795	44,005
	61.9".....	26,260	33,165
	77.4".....	21,140	26,665
	92.9".....	17,735	22,335
	108.4".....	15,300	19,240

\* This unit in stock at Los Angeles.

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**GENERAL DIMENSIONS**  
Lufkin 456,000 In. Lbs. Peak Torque Pumping Units

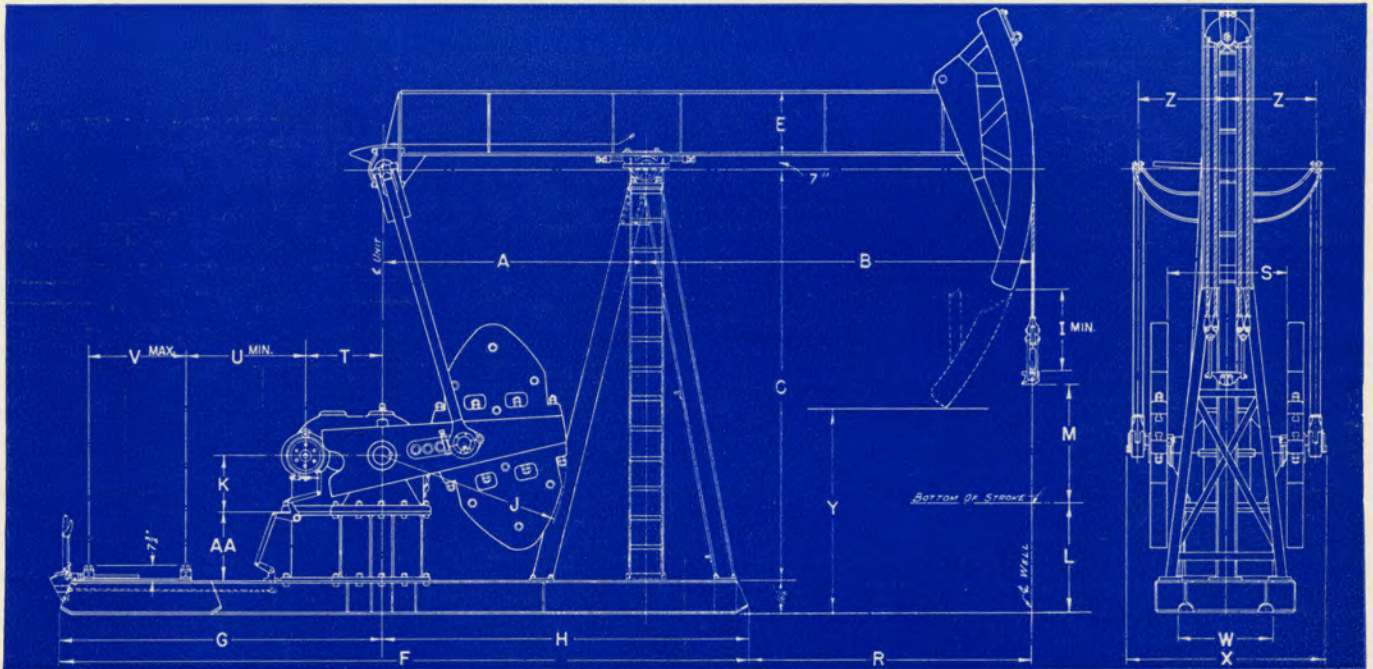


FIGURE 25

UNIT	A	B	C	E	F	G	H	I	J	K	L	M	R	S	T	U	V	W	X	Y	Z	AA
C-456DB-144-30....	10'-11 $\frac{1}{4}$ "	16'-9"	17'-4"	33"	30'-5"	15'-4"	15'-1"	23 $\frac{3}{8}$ "	100"	28"	44"	72"	12'-7 $\frac{1}{4}$ "	65 $\frac{1}{4}$ "	38 $\frac{3}{8}$ "	7'-1 $\frac{1}{8}$ "	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	6'-9 $\frac{3}{8}$ "	45 $\frac{1}{8}$ "	36" #
C-456S-144-30.....	10'-11 $\frac{1}{4}$ "	16'-9"	17'-4"	33"	30'-5"	15'-4"	15'-1"	23 $\frac{3}{8}$ "	100"	34"	44"	72"	12'-7 $\frac{1}{4}$ "	65 $\frac{1}{4}$ "	32.8"	90.7"	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	6'-9 $\frac{3}{8}$ "	45 $\frac{1}{8}$ "	36" †
C-456DB-120-30 with 82100R Cranks	10'-11 $\frac{1}{4}$ "	16'-0"	17'-4"	33"	30'-5"	15'-4"	15'-1"	18 $\frac{1}{4}$ "	100"	28"	6'-1 $\frac{1}{2}$ "	60"	11'-10 $\frac{1}{4}$ "	65 $\frac{1}{4}$ "	38 $\frac{3}{8}$ "	7'-1 $\frac{1}{8}$ "	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	8'-10 $\frac{3}{8}$ "	45 $\frac{1}{8}$ "	36" #
C-456S-120-30 with 82100R Cranks	10'-11 $\frac{1}{4}$ "	16'-0"	17'-4"	33"	30'-5"	15'-4"	15'-1"	18 $\frac{1}{4}$ "	100"	34"	6'-1 $\frac{1}{2}$ "	60"	11'-10 $\frac{1}{4}$ "	65 $\frac{1}{4}$ "	32.8"	90.7"	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	8'-10 $\frac{3}{8}$ "	45 $\frac{1}{8}$ "	36" †
C-456DB-120-30....	10'-11 $\frac{1}{4}$ "	16'-0"	17'-4"	33"	30'-5"	15'-4"	15'-1"	18 $\frac{1}{4}$ "	92"	28"	6'-1 $\frac{1}{2}$ "	60"	11'-10 $\frac{1}{4}$ "	65 $\frac{1}{4}$ "	38 $\frac{3}{8}$ "	7'-1 $\frac{1}{8}$ "	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	8'-10 $\frac{3}{8}$ "	45 $\frac{1}{8}$ "	36" ‡
C-456S-120-30.....	10'-11 $\frac{1}{4}$ "	16'-0"	17'-4"	33"	30'-5"	15'-4"	15'-1"	18 $\frac{1}{4}$ "	92"	34"	6'-1 $\frac{1}{2}$ "	60"	11'-10 $\frac{1}{4}$ "	65 $\frac{1}{4}$ "	32.8"	90.7"	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	8'-10 $\frac{3}{8}$ "	45 $\frac{1}{8}$ "	36" §
*C-456DB-108-30....	10'-11 $\frac{1}{4}$ "	14'-0 $\frac{3}{4}$ "	17'-4"	29 $\frac{7}{8}$ "	30'-5"	15'-4"	15'-1"	28 $\frac{1}{2}$ "	78"	28"	6'-4 $\frac{5}{8}$ "	54.2"	9'-11"	67 $\frac{1}{2}$ "	38 $\frac{3}{8}$ "	7'-1 $\frac{1}{8}$ "	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	10'-0 $\frac{1}{8}$ "	45 $\frac{1}{8}$ "	36"
‡C-456S-108-30.....	10'-11 $\frac{1}{4}$ "	14'-0 $\frac{3}{4}$ "	17'-4"	29 $\frac{7}{8}$ "	30'-5"	15'-4"	15'-1"	28 $\frac{1}{2}$ "	78"	34"	6'-4 $\frac{5}{8}$ "	54.2"	9'-11"	67 $\frac{1}{2}$ "	32.8"	90.7"	46"	46 $\frac{3}{4}$ "	8'-2 $\frac{5}{8}$ "	10'-0 $\frac{1}{8}$ "	45 $\frac{1}{8}$ "	36"

\*These units have single wire lines as shown in Fig. 9, all other units shown in this table have double wire line as shown above.

#Requires foundation projecting 24" above grade line to provide for crank sweep.

†Requires foundation projecting 18" above grade line to provide for crank sweep.

‡Requires foundation projecting 15" above grade line to provide for crank sweep.

§Requires foundation projecting 9" above grade line to provide for crank sweep.

Full length, one piece, base is standard; jointed bases available.

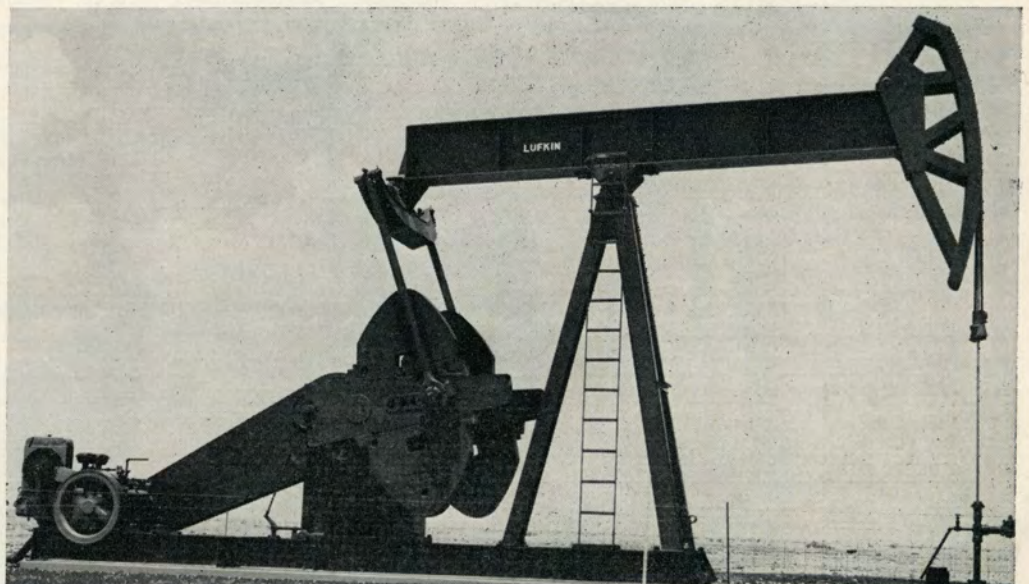


FIGURE 26



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

## GENERAL SPECIFICATIONS Lufkin 320,000 In. Lbs. Peak Torque Pumping Units 320 API Size GEAR DATA

**GEAR REDUCER: Double Reduction**  
Designation: 320D (Formerly 41D)  
Gears: Main Gear 33.6" Diam., 10" Face.  
Rating: 320,000 In. Lbs. Peak Torque.  
Ratio of Gears: 30.12.  
Crank Shaft Diam.: 6-7/16".  
Sheave: 25" P.D.—8C Std., 30" P.D. Alternate, 47 1/4" P.D. Max.,  
2-15/16" Bore.  
Distance Centerline Unit to Centerline Drive: 19 1/2"  
Gear Box Oil Capacity: 50 Gallons.

**GEAR REDUCER: Single Reduction**  
Designation: 320S (Formerly 54C)  
Gears: Main Gear 47" Diam., 10" Face.  
Rating: 320,000 In. Lbs. Peak Torque.  
Ratio of Gears: 9.4.  
Crank Shaft Diam.: 6-7/16".  
Sheave: 34" P.D.—12C or 7D Std., 34" P.D. Max., 3-7/16" Bore.  
Distance Centerline Unit to Centerline Drive: 16 3/4".  
Gear Box Oil Capacity: 25 Gallons.

### STRUCTURAL DATA

#### \*C-320D-120-25 and C-320S-120-25 PUMPING UNIT ASSEMBLIES—25,000 Lb. Polished Rod Load Class Formerly TC-ILBTR-41D and TC-ILBTR-54C

**WALKING BEAM:** 30" x 15" x 172 lbs., 14'-3 1/2" and 10'-0" working centers.  
**HANGER:** Hinged Horsehead with 1 1/4" Wire Line, 28'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 15'-9" high.  
**CRANKS:** No. 8482R, 82" Radius.  
**BASE:** 16" Deep, 43" Wide at Gear Box.  
**SUB-BASE:** 39" High, Cast Iron.

**CENTER BEARING..** No. 1AD, Bronze Bushed, 7" x 20"  
**CRANK PINS.....** No. 1T, Timken Bearings  
**TAIL BEARING.....** 4 1/2" x 12", Bronze Bushed  
**WEIGHT.....** C-320D-120-25 46,175 lbs. C-320S-120-25 46,075 lbs.  
**STATIC COUNTERBALANCE, LBS.**

Stroke	No. 8482R Crank	
	No. OR Cwts.	Aux. Wts.
51.5"	33,115	42,125
68.5"	24,835	31,610
85.5"	19,850	25,275
103.0"	16,435	20,940
120.0"	14,075	17,940

#### \*C-320D-84-30 and C-320S-84-30 PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class Formerly TC-OALTR-41D and TC-OALTR-54C

**WALKING BEAM:** 30" x 15" x 172 lbs., with 12'-6" and 12'-6" working centers.  
**HANGER:** Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 15'-9" high.  
**CRANKS:** No. 8482R, 82" Radius.  
**BASE:** 16" Deep, 43" Wide at Gear Box.  
**SUB-BASE:** 39" High, Cast Iron.

**CENTER BEARING..** No. 1AD, Bronze Bushed, 7" x 20"  
**CRANK PINS.....** No. 1T, Timken Bearings  
**TAIL BEARING.....** 4 1/2" x 12", Bronze Bushed  
**WEIGHT.....** C-320D-84-30 46,975 lbs. C-320S-84-30 46,675 lbs.  
**STATIC COUNTERBALANCE, LBS.**

Stroke	No. 8482R Crank		No. 8482R Crank	
	OR Cwts. (Std.)	Aux. Wts.	1R Cwts.	Aux. Wts.
36"	48,920	61,805	36,330	44,410
48"	36,985	46,650	27,545	33,610
60"	29,830	37,560	22,275	27,125
72"	25,055	31,500	18,760	22,805
84"	21,645	27,170	16,250	19,715

#### \*C-320D-84-27 and C-320S-84-27 PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class Formerly TC-IBTR-41D and TC-IBTR-54C

**WALKING BEAM:** 24 3/4" x 14 1/8" x 160 lbs., 11'-4 1/4" and 10'-0" working ctrs.  
**HANGER:** Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 15'-9" high.  
**CRANKS:** No. 7475R, 75" Radius.  
**BASE:** 16" Deep, 43" Wide at Gear Box.  
**SUB-BASE:** 32" High, Cast Iron.

**CENTER BEARING..** No. 1AD, Bronze Bushed, 7" x 20"  
**CRANK PINS.....** No. 1T, Timken Bearings  
**TAIL BEARING.....** 4 1/2" x 12", Bronze Bushed  
**WEIGHT.....** C-320D-84-27 39,000 lbs. C-320S-84-27 38,055 lbs.  
**STATIC COUNTERBALANCE, LBS.**

Stroke	No. 7475R Crank		No. 7475R Crank	
	1R Cwts. (Std.)	Aux. Wts.	1R Cwts. (Std.)	Aux. Wts.
38.5"	28,785	35,415	28,785	35,415
50.0"	22,330	27,440	22,330	27,440
61.0"	18,440	22,625	18,440	22,625
72.5"	15,630	19,155	15,630	19,155
84"	13,590	16,630	13,590	16,630

#### \*C-320D-74-27 and C-320S-74-27 PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class Formerly TC-ITR-41D and TC-ITR-54C

**WALKING BEAM:** 24" x 14" x 130 lbs., 10'-0" and 10'-0" working centers.  
**HANGER:** Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 15'-9" high.  
**CRANKS:** No. 7475R, 75" Radius.  
**BASE:** 16" Deep, 43" Wide at Gear Box.  
**SUB-BASE:** 32" High, Cast Iron.

**CENTER BEARING..** No. 1AD, Bronze Bushed, 7" x 20"  
**CRANK PINS.....** No. 1T, Timken Bearings  
**TAIL BEARINGS...** 4 1/2" x 12", Bronze Bushed  
**WEIGHT.....** C-320D-74-27 38,845 lbs. C-320S-74-27 37,895 lbs.  
**STATIC COUNTERBALANCE, LBS.**

Stroke	No. 7475R Crank		No. 7475R Crank	
	2R Cwts.	Aux. Wts.	1R Cwts. (Std.)	Aux. Wts.
34"	29,640	37,120	33,020	40,535
44"	23,190	28,970	25,805	31,610
54"	19,130	23,840	21,260	25,990
64"	16,340	20,315	18,135	22,125
74"	14,300	17,740	15,855	19,305

#### C-320D-74-25 and C-320S-74-25 PUMPING UNIT ASSEMBLIES—25,000 Lb. Polished Rod Load Class Formerly TC-IATR-41D and TC-IATR-54C

**WALKING BEAM:** 24 3/4" x 14 1/8" x 160 lbs., 12'-6" and 12'-6" working centers.  
**HANGER:** Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 15'-9" high.  
**CRANKS:** No. 7475R, 75" Radius.  
**BASE:** 16" Deep, 43" Wide at Gear Box.  
**SUB-BASE:** 32" High, Cast Iron.

**CENTER BEARING..** No. 1AD, Bronze Bushed, 7" x 20"  
**CRANK PINS.....** No. 1T, Timken Bearings  
**TAIL BEARING.....** 4 1/2" x 12", Bronze Bushed  
**WEIGHT.....** C-320D-74-25 40,445 lbs. C-320S-74-25 39,995 lbs.  
**STATIC COUNTERBALANCE, LBS.**

Stroke	No. 7475R Crank		No. 7475R Crank	
	2R Cwts.	Aux. Wts.	1R Cwts. (Std.)	Aux. Wts.
34"	29,665	37,145	33,050	40,560
44"	23,220	29,000	25,835	31,640
54"	19,160	23,870	21,290	26,020
64"	16,370	20,340	18,165	22,155
74"	14,330	17,765	15,885	19,335

\*This unit in stock at Los Angeles.



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



## GENERAL DIMENSIONS Lufkin 320,000 In. Lbs. Peak Torque Pumping Units

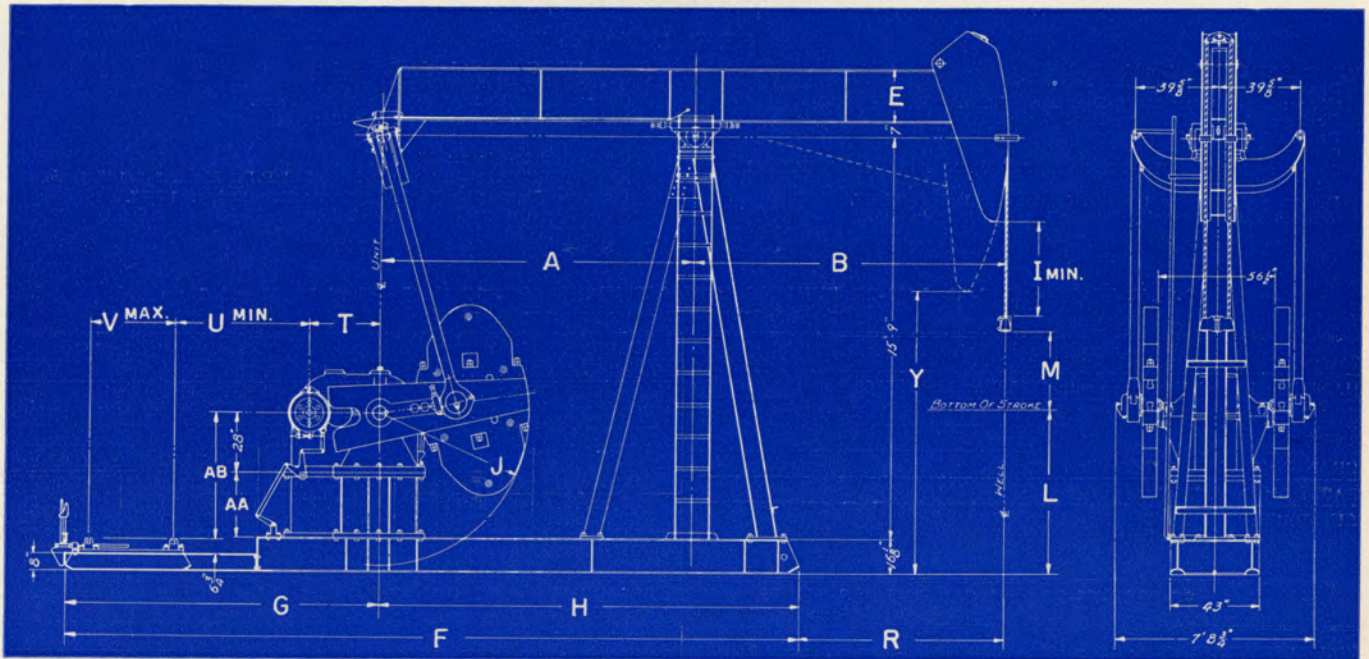


FIGURE 27

UNIT	A	B	E	F	G	H	I	J	L	M	R	T	U	V	Y	AA	AB
*C-320D-120-25	10'-0"	14'-3 1/2"	29 7/8"	27'-4 1/2"	13'-1 1/2"	14'-3"	17 1/4"	82"	58 1/2"	60"	10'-0 1/2"	34"	65"	45 3/4"	7'-7 1/4"	39"	60 1/4"
*C-320S-120-25	10'-0"	14'-3 1/2"	29 7/8"	27'-4 1/2"	13'-1 1/2"	14'-3"	17 1/4"	82"	58 1/2"	60"	10'-0 1/2"	26"	73"	45 3/4"	7'-7 1/4"	39"	60 1/4"
C-320D-84-30	12'-6"	12'-6"	29 7/8"	29'-4 3/4"	12'-6"	16'-10 3/4"	36 1/4"	82"	74 5/8"	42"	8'-1 1/4"	34"	63 1/2"	41"	10'-2 3/4"	39"	68 5/8"
C-320S-84-30	12'-6"	12'-6"	29 7/8"	29'-4 3/4"	12'-6"	16'-10 3/4"	36 1/4"	82"	74 5/8"	42"	8'-1 1/4"	26"	71 1/2"	41"	10'-2 3/4"	39"	68 5/8"
*C-320D-84-27	10'-0"	11'-4 1/4"	24 3/4"	25'-10"	11'-7"	14'-3"	36 3/8"	75"	73 7/8"	42"	7'-1 1/4"	34"	48 1/4"	41 1/2"	10'-3 1/2"	32"	53 1/4"
*C-320S-84-27	10'-0"	11'-4 1/4"	24 3/4"	25'-10"	11'-7"	14'-3"	36 3/8"	75"	73 7/8"	42"	7'-1 1/4"	26"	56 1/4"	41 1/2"	10'-3 1/2"	32"	53 1/4"
*C-320D-74-27	10'-0"	10'-0"	24 1/4"	25'-10"	11'-7"	14'-3"	46 1/2"	75"	75"	37"	5'-9"	34"	48 1/4"	41 1/2"	11'-1 1/8"	32"	53 1/4"
*C-320S-74-27	10'-0"	10'-0"	24 1/4"	25'-10"	11'-7"	14'-3"	46 1/2"	75"	75"	37"	5'-9"	26"	56 1/4"	41 1/2"	11'-1 1/8"	32"	53 1/4"
C-320D-74-25	12'-6"	12'-6"	24 3/4"	29'-4 3/4"	12'-6"	16'-10 3/4"	44 5/8"	75"	76 3/8"	37"	8'-1 1/4"	34"	63 1/2"	41"	10'-11 5/8"	32"	61 3/8"
C-320S-74-25	12'-6"	12'-6"	24 3/4"	29'-4 3/4"	12'-6"	16'-10 3/4"	44 5/8"	75"	76 3/8"	37"	8'-1 1/4"	26"	71 1/2"	41"	10'-11 5/8"	32"	61 3/8"

\*Full length, one piece, Base is standard; for others, Jointed Base illustrated is standard.



FIGURE 28

**LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**GENERAL SPECIFICATIONS**  
Lufkin 228,000 In. Lbs. Peak Torque Pumping Units  
228 API Size

**GEAR DATA**

**GEAR REDUCER: Double Reduction**  
Designation: 228D (Formerly 35B)  
Gears: Main Gear 30.3" Diam., 9" Face.  
Rating: 228,000 In. Lbs. Peak Torque.  
Ratio of Gears: 28.45.  
Crank Shaft Diam.: 6".  
Sheave: 24 1/4" P.D.—6C Std., 30" P.D. Alt., 41 1/4" P.D. Max., 2-7/16" Bore.  
Distance Centerline Unit to Centerline Drive: 16 1/2".  
Gear Box Oil Capacity: 50 Gallons.

**GEAR REDUCER: Single Reduction**  
Designation: 228S (Formerly 36B)  
Gears: Main Gear 45.4" Diam., 8" Face.  
Rating: 228,000 In. Lbs. Peak Torque.  
Ratio of Gears: 9.94.  
Crank Shaft Diam.: 6".  
Sheave: 34" P.D.—9C or 6D Std., 34" P.D. Max., 3-3/16" Bore.  
Distance Centerline Unit to Centerline Drive: 15 1/4".  
Gear Box Oil Capacity: 18 Gallons.

**STRUCTURAL DATA**

**C-228D-74-27 and C-228S-74-27 PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class**  
Formerly TC-ITR-35B and TC-ITR-36B

<b>WALKING BEAM:</b> 24" x 14" x 130 lbs., with 10'-0" and 10'-0" working ctrs.	<b>CENTER BEARING...</b> No. 2AD, Bronze Bushed, 6" x 17"
<b>HANGER:</b> Hinged Horsehead with 1 1/2" Wire Line, 25'-0" Long.	<b>CRANK PINS.....</b> No. 1T, Timken Bearings
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.	<b>TAIL BEARING.....</b> 4 1/2" x 12", Bronze Bushed
<b>SAMSON POST:</b> Tripod, 14'-7" high.	<b>WEIGHT.....</b> C-228D-74-27 33,680 lbs. C-228S-74-27 33,580 lbs.
<b>CRANKS:</b> No. 7475R, 75" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>
<b>BASE:</b> 16" Deep, 37" Wide at Gear Box.	
<b>SUB-BASE:</b> 33" High, Cast Iron, for No. 7475R Cranks. 27" High, Cast Iron, for No. 7469R Cranks.	

Stroke	No. 7469R Crank		7475R Crank (Std.)	
	No. 2R Cwts.	Aux. Wts.	No. 1R Cwts.	Aux. Wts.
34".....	25,145	31,770	32,880	40,390
44".....	19,685	24,805	25,660	31,465
54".....	16,245	20,420	21,115	25,845
64".....	13,885	17,405	17,995	21,985
74".....	12,160	15,205	15,710	19,165

**\*C-228D-74-23 and C-228S-74-23 PUMPING UNIT ASSEMBLIES—23,000 Lb. Polished Rod Load Class**  
Formerly TC-2LTR-35B and TC-2LTR-36B

<b>WALKING BEAM:</b> 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers.	<b>CENTER BEARING...</b> No. 2AD Bronze Bushed, 6" x 17"
<b>HANGER:</b> Hinged Horsehead with 1 1/2" Wire Line, 23'-0" Long.	<b>CRANK PINS.....</b> No. 2T, Timken Bearings
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe	<b>TAIL BEARING.....</b> 4 1/2" x 9 1/2" Bronze Bushed
<b>SAMSON POST:</b> Tripod, 14'-7" High.	<b>WEIGHT.....</b> C-228D-74-23 29,330 lbs. C-228S-74-23 29,230 lbs.
<b>CRANKS:</b> No. 7469R, 69" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>
<b>BASE:</b> 16" Deep, 37" Wide at Gear Box.	
<b>SUB-BASE:</b> 27" High, Cast Iron.	

Stroke	No. 7469R Crank		7475R Crank (Std.)	
	No. 2R Cwts.	Aux. Wts.	No. 1R Cwts.	Aux. Wts.
34".....	24,720	31,345	32,880	40,390
44".....	19,265	24,380	25,660	31,465
54".....	15,825	19,995	21,115	25,845
64".....	13,460	16,980	17,995	21,985
74".....	11,735	14,780	15,710	19,165

**\*C-228D-74-20 and C-228S-74-20 PUMPING UNIT ASSEMBLIES—20,000 Lb. Polished Rod Load Class**  
Formerly TC-2BTR-35B and TC-2BTR-36B

<b>WALKING BEAM:</b> 27" x 10" x 102 lbs., 9'-3" and 8'-0" working centers.	<b>CENTER BEARING....</b> No. 2AD, Bronze Bushed, 6" x 17"
<b>HANGER:</b> Hinged Horsehead with 1 1/2" Wire Line, 23'-0" Long.	<b>CRANK PINS.....</b> No. 2T Timken Bearings
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	<b>TAIL BEARING.....</b> 4 1/2" x 9 1/2" Bronze Bushed
<b>SAMSON POST:</b> Tripod, 14'-7" high.	<b>WEIGHT.....</b> C-228D-74-20 28,235 lbs. C-228S-74-20 28,210 lbs.
<b>CRANKS:</b> No. 6463R, 63" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>
<b>BASE:</b> 16" Deep, 37" Wide at Gear Box.	
<b>SUB-BASE:</b> 21" High, Cast Iron.	

Stroke	No. 6463R Crank		No. 6463R Crank	
	3CR Cwts.	Aux. Wts.	2R Cwts. (Std.)	Aux. Wts.
27.5".....	22,605	29,855	25,460	32,540
39.0".....	16,055	21,170	18,070	23,060
51.0".....	12,370	16,285	13,915	17,770
62.5".....	10,170	13,360	11,425	14,540
74.0".....	8,650	11,345	9,715	12,345

**\*C-228D-64-23 and C-228S-64-23 PUMPING UNIT ASSEMBLIES—23,000 Lb. Polished Rod Load Class**  
Formerly TC-2TR-35B and TC-2TR-36B

<b>WALKING BEAM:</b> 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers.	<b>CENTER BEARING....</b> No. 2AD, Bronze Bushed, 6" x 17"
<b>HANGER:</b> Hinged Horsehead with 1 1/2" Wire Line, 23'-0" Long.	<b>CRANK PINS.....</b> No. 2T Timken Bearings
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	<b>TAIL BEARING.....</b> 4 1/2" x 9 1/2" Bronze Bushed
<b>SAMSON POST:</b> Tripod, 14'-7" high.	<b>WEIGHT.....</b> C-228D-64-23 28,195 lbs. C-228S-64-23 28,175 lbs.
<b>CRANKS:</b> No. 6463R, 63" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>
<b>BASE:</b> 16" Deep, 37" Wide at Gear Box.	
<b>SUB-BASE:</b> 21" High, Cast Iron.	

Stroke	No. 6463R Crank		No. 6463R Crank	
	3CR Cwts.	Aux. Wts.	2R Cwts. (Std.)	Aux. Wts.
24".....	26,200	34,510	29,475	37,585
34".....	18,715	24,585	21,030	26,755
44".....	14,635	19,170	16,420	20,845
54".....	12,065	15,760	13,520	17,125
64".....	10,300	13,415	11,530	14,570

**C-228D-64-20 and C-228S-64-20 PUMPING UNIT ASSEMBLIES—20,000 Lb. Polished Rod Load Class**  
Formerly TC-2ATR-35B and TC-2ATR-36B

<b>WALKING BEAM:</b> 27" x 10" x 102 lbs., 10'-0" and 10'-0" working centers.	<b>CENTER BEARING .....</b> No. 2AD, Bronze Bushed, 6" x 17"
<b>HANGER:</b> Hinged Horsehead with 1 1/2" Wire Line, 23'-0" Long.	<b>CRANK PINS.....</b> No. 2T Timken Bearings
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	<b>TAIL BEARING.....</b> 4 1/2" x 9 1/2" Bronze Bushed
<b>SAMSON POST:</b> Tripod, 14'-7" high.	<b>WEIGHT.....</b> C-228D-64-20 28,910 lbs. C-228S-64-20 28,710 lbs.
<b>CRANKS:</b> No. 6463R, 63" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>
<b>BASE:</b> 16" Deep, 37" Wide at Gear Box.	
<b>SUB-BASE:</b> 21" High, Cast Iron.	

Stroke	No. 6463R Crank		6463R Crank (Std.)	
	3CR Cwts.	Aux. Wts.	2R Cwts.	Aux. Wts.
24".....	26,225	34,535	29,500	37,610
34".....	18,740	24,610	21,055	26,775
44".....	14,660	19,195	16,455	20,870
54".....	12,090	15,785	13,545	17,150
64".....	10,325	13,440	11,550	14,590

\* This Unit in Stock in Los Angeles.

# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



## GENERAL DIMENSIONS Lufkin 228,000 In. Lbs. Peak Torque Pumping Units

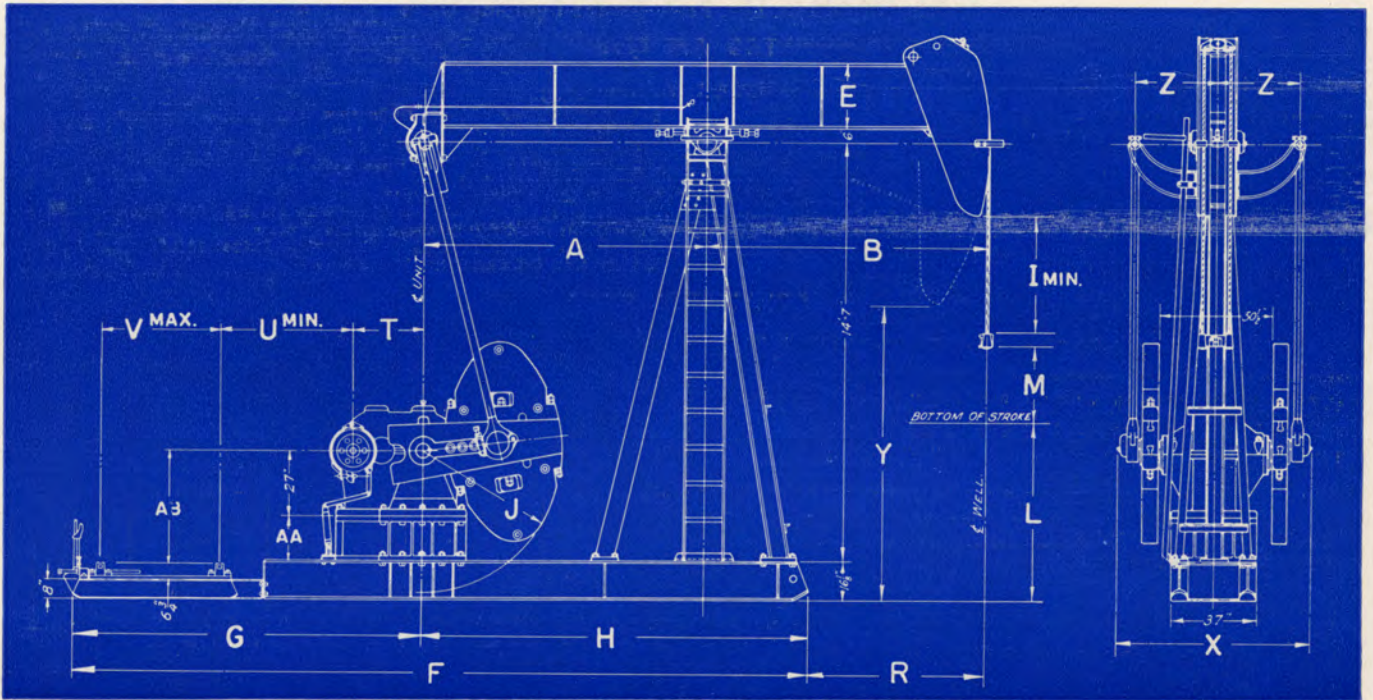


FIGURE 29

UNIT	A	B	E	F	G	H	I	J	L	M	R	T	U	V	X	Y	Z	AA	AB
C-228D-74-27	10'-0"	10'-0"	24 $\frac{1}{4}$ "	26'-2"	12'-5"	13'-9"	46"	75"	5'-0 $\frac{1}{2}$ "	37"	6'-3"	30"	56 $\frac{3}{4}$ "	50 $\frac{1}{2}$ "	7'-1 $\frac{1}{2}$ "	9'-10"	35 $\frac{7}{8}$ "	33"	61 $\frac{3}{8}$ "
C-228S-74-27	10'-0"	10'-0"	24 $\frac{1}{4}$ "	26'-2"	12'-5"	13'-9"	46"	75"	5'-0 $\frac{1}{2}$ "	37"	6'-3"	25"	61 $\frac{3}{4}$ "	50 $\frac{1}{2}$ "	7'-1 $\frac{1}{2}$ "	9'-10"	35 $\frac{7}{8}$ "	33"	61 $\frac{3}{8}$ "
*C-228D-74-23	8'-0"	8'-0"	24"	23'-7"	11'-10"	11'-9"	33 $\frac{3}{8}$ "	69"	6'-1 $\frac{1}{2}$ "	37"	4'-3"	30"	51 $\frac{1}{4}$ "	48"	6'-8 $\frac{3}{8}$ "	10'-2"	35 $\frac{7}{8}$ "	27"	47 $\frac{1}{4}$ "
*C-228S-74-23	8'-0"	8'-0"	24"	23'-7"	11'-10"	11'-9"	33 $\frac{3}{8}$ "	69"	6'-1 $\frac{1}{2}$ "	37"	4'-3"	25"	56 $\frac{3}{4}$ "	48"	6'-8 $\frac{3}{8}$ "	10'-2"	35 $\frac{7}{8}$ "	27"	47 $\frac{1}{4}$ "
*C-228D-74-20	8'-0"	9'-3"	27 $\frac{1}{8}$ "	23'-7"	11'-10"	11'-9"	40"	63"	5'-0 $\frac{3}{4}$ "	37"	5'-6"	30"	51 $\frac{1}{4}$ "	48"	6'-8 $\frac{3}{8}$ "	9'-10 $\frac{1}{2}$ "	35 $\frac{7}{8}$ "	21"	41 $\frac{1}{2}$ "
*C-228S-74-20	8'-0"	9'-3"	27 $\frac{1}{8}$ "	23'-7"	11'-10"	11'-9"	40"	63"	5'-0 $\frac{3}{4}$ "	37"	5'-6"	25"	56 $\frac{3}{4}$ "	48"	6'-8 $\frac{3}{8}$ "	9'-10 $\frac{1}{2}$ "	35 $\frac{7}{8}$ "	21"	41 $\frac{1}{2}$ "
*C-228D-64-23	8'-0"	8'-0"	24"	23'-7"	11'-10"	11'-9"	43 $\frac{1}{8}$ "	63"	6'-1 $\frac{1}{4}$ "	32"	4'-3"	30"	51 $\frac{1}{4}$ "	48"	6'-8 $\frac{3}{8}$ "	10'-10"	35 $\frac{7}{8}$ "	21"	41 $\frac{1}{2}$ "
*C-228S-64-23	8'-0"	8'-0"	24"	23'-7"	11'-10"	11'-9"	43 $\frac{1}{8}$ "	63"	6'-1 $\frac{1}{4}$ "	32"	4'-3"	25"	56 $\frac{3}{4}$ "	48"	6'-8 $\frac{3}{8}$ "	10'-10"	35 $\frac{7}{8}$ "	21"	41 $\frac{1}{2}$ "
C-228D-64-20	10'-0"	10'-0"	27 $\frac{1}{8}$ "	26'-2"	12'-5"	13'-9"	42 $\frac{1}{8}$ "	63"	6'-1 $\frac{1}{2}$ "	32"	6'-3"	30"	56 $\frac{3}{4}$ "	50 $\frac{1}{2}$ "	6'-8 $\frac{3}{8}$ "	10'-6"	35 $\frac{7}{8}$ "	21"	49 $\frac{3}{8}$ "
C-228S-64-20	10'-0"	10'-0"	27 $\frac{1}{8}$ "	26'-2"	12'-5"	13'-9"	42 $\frac{1}{8}$ "	63"	6'-1 $\frac{1}{2}$ "	32"	6'-3"	25"	61 $\frac{3}{4}$ "	50 $\frac{1}{2}$ "	6'-8 $\frac{3}{8}$ "	10'-6"	35 $\frac{7}{8}$ "	21"	49 $\frac{3}{8}$ "

\* Full length, one piece, Base is standard; for others, Jointed Base illustrated is standard.



FIGURE 30



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

## GENERAL SPECIFICATIONS

Lufkin 160,000 In. Lbs. Peak Torque Pumping Units

160 API Size

### GEAR DATA

**GEAR REDUCER: Double Reduction**

Designation: 160D (Formerly 22G).  
 Gears: Main Gear 24.5" Diam. 7 7/8" Face.  
 Rating: 160,000 In. Lbs. Peak Torque  
 Ratio of Gears: 28.67.  
 Crank Shaft Diam.: 5-7/16".  
 Sheave: 24 1/4" P.D.—5 C Std., 29 1/4" P.D. or 33 1/4" P.D. Alt.,  
 38" P.D. Max., 2-3/16" Bore.  
 Distance Centerline Unit to Centerline Drive: 14 3/8".  
 Gear Box Oil Capacity: 22 Gallons

**GEAR REDUCER: Single Reduction**

Designation: 160S (Formerly 18B).  
 Gears: Main Gear 42" Diam. 6" Face.  
 Rating: 160,000 In. Lbs. Peak Torque.  
 Ratio of Gears: 10.5.  
 Crank Shaft Diam.: 5-7/16".  
 Sheave: 31 1/4" P.D.—6C or 31 1/8" P.D. 4D Std., 28" P.D.  
 4D Alt., 31 1/4" P.D. Max., 2-15/16" Bore.  
 Distance Centerline Unit to Centerline Drive: 11 7/8".  
 Gear Box Oil Capacity: 18 Gallons.

### STRUCTURAL DATA

**\*C-160D-74-20 and C-160S-74-20 PUMPING UNIT ASSEMBLIES—20,000 Lb. Polished Rod Load Class**  
 Formerly TC-2BTR-22G and TC-2BTR-18B

**WALKING BEAM:** 27" x 10" x 102 lbs., 9'-3" and 8'-0" working centers.  
**HANGER:** Hinged Horsehead with 1 1/8" Wire Line 20'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" high.  
**CRANKS:** No. 6460R, 59 1/2" Radius.  
**BASE:** 10" Deep, 32" Wide at Gear Box.  
**SUB BASE:** 24" High Cast Iron.

<b>CENTER BEARING</b> . . . . .	No. 3AD Bronze Bushed, 6" x 14"			
<b>CRANK PINS</b> . . . . .	No. 2T, Timken Bearings			
<b>TAIL BEARINGS</b> . . . . .	4 1/16" x 9 1/4" Bronze Bushed			
<b>WEIGHT</b> . . . . .	22,690 Lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	<b>6460R Crank</b>		<b>6460R Crank (Std.)</b>	
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>2R Cwts.</b>	<b>Aux. Wts.</b>
27.5" . . . . .	20,210	26,720	23,040	29,485
39.0" . . . . .	14,340	18,930	16,335	20,880
51.0" . . . . .	11,035	14,545	12,560	16,035
62.5" . . . . .	9,060	11,925	10,305	13,140
74.0" . . . . .	7,700	10,115	8,750	11,145

**\*C-160D-64-23 and C-160S-64-23 PUMPING UNIT ASSEMBLIES—23,000 Lb. Polished Rod Load Class**  
 Formerly TC-2TR-22G and TC-2TR-18B

**WALKING BEAM:** 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers.  
**HANGER:** Hinged Horsehead with 1 1/8" Wire Line, 20'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" high.  
**CRANKS:** No. 6460R, 59 1/2" Radius.  
**BASE:** 10" Deep, 32" Wide at Gear Box.  
**SUB-BASE:** 24" High, Cast Iron.

<b>CENTER BEARING</b> . . . . .	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS</b> . . . . .	No. 2T Timken Bearings			
<b>TAIL BEARING</b> . . . . .	4 1/16" x 9 1/4", Bronze Bushed			
<b>WEIGHT</b> . . . . .	23,750 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	<b>No. 6460R Crank (Std.)</b>		<b>No. 6466R Crank</b>	
<b>Stroke</b>	<b>2R Cwts.</b>	<b>Aux. Wts.</b>	<b>2R Cwts.</b>	<b>Aux. Wts.</b>
24" . . . . .	26,725	34,110	22,765	28,875
34" . . . . .	19,065	24,275	17,745	22,465
44" . . . . .	14,885	18,910	14,580	18,430
54" . . . . .	12,250	15,535	12,410	15,650
64" . . . . .	10,440	13,210		

**C-160D-64-15 and C-160S-64-15 PUMPING UNIT ASSEMBLIES—15,000 Lb. Polished Rod Load Class**  
 Formerly TC-33BTR-22G and TC-33BTR-18B

**WALKING BEAM:** 21" x 9" x 82 lbs., 8'-3" and 5'-3 1/4" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line, 19'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" high.  
**CRANKS:** No. 4152R, 51 1/2" Radius.  
**BASE:** 10" Deep, 32" Wide at Gear Box.  
**SUB-BASE:** 16" High, Cast Iron.

<b>CENTER BEARING</b> . . . . .	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS</b> . . . . .	No. 2T Timken Bearings			
<b>TAIL BEARING</b> . . . . .	4 1/16" x 9 1/4", Bronze Bushed			
<b>WEIGHT</b> . . . . .	19,700 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	<b>No. 4152R Crank</b>			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
32.9" . . . . .	12,845	17,180		
48.5" . . . . .	8,805	11,745		
64.0" . . . . .	6,710	8,955		

**C-160D-54-18 and C-160S-54-18 PUMPING UNIT ASSEMBLIES—18,000 Lb. Polished Rod Load Class**  
 Formerly TC-33ATR-22G and TC-33ATR-18B

**WALKING BEAM:** 24" x 9" x 84 lbs., 8'-0" and 8'-0" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line, 19'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" high.  
**CRANKS:** No. 5452R, 51 1/2" Radius.  
**BASE:** 10" Deep, 32" Wide at Gear Box.  
**SUB-BASE:** 16" High, Cast Iron.

<b>CENTER BEARING</b> . . . . .	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS</b> . . . . .	No. 2T Timken Bearings			
<b>TAIL BEARING</b> . . . . .	4 1/16" x 9 1/4", Bronze Bushed			
<b>WEIGHT</b> . . . . .	20,900 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	<b>No. 5452R Crank</b>			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
24" . . . . .	18,090	24,000		
34" . . . . .	13,080	17,250		
44" . . . . .	10,345	13,570		
54" . . . . .	8,600	11,250		

**\*C-160D-54-17 and C-160S-54-17 PUMPING UNIT ASSEMBLIES—17,000 Lb. Polished Rod Load Class**  
 Formerly TC-33TR-22G and TC-33TR-18B

**WALKING BEAM:** 18" x 8 3/4" x 77 lbs., 7'-0" and 5'-3 1/4" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line, 19'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" high.  
**CRANKS:** No. 4152R, 51 1/2" Radius.  
**BASE:** 10" Deep, 32" Wide at Gear Box.  
**SUB-BASE:** 16" High, Cast Iron.

<b>CENTER BEARING</b> . . . . .	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS</b> . . . . .	No. 2T Timken Bearings			
<b>TAIL BEARING</b> . . . . .	4 1/16" x 9 1/4", Bronze Bushed			
<b>WEIGHT</b> . . . . .	19,600 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	<b>No. 4152R Crank</b>			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
27.9" . . . . .	15,400	20,510		
41.2" . . . . .	10,620	14,075		
54.4" . . . . .	8,140	10,760		

\*This unit in stock at Los Angeles.

# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



## GENERAL DIMENSIONS Lufkin 160,000 In. Lbs. Peak Torque Pumping Units

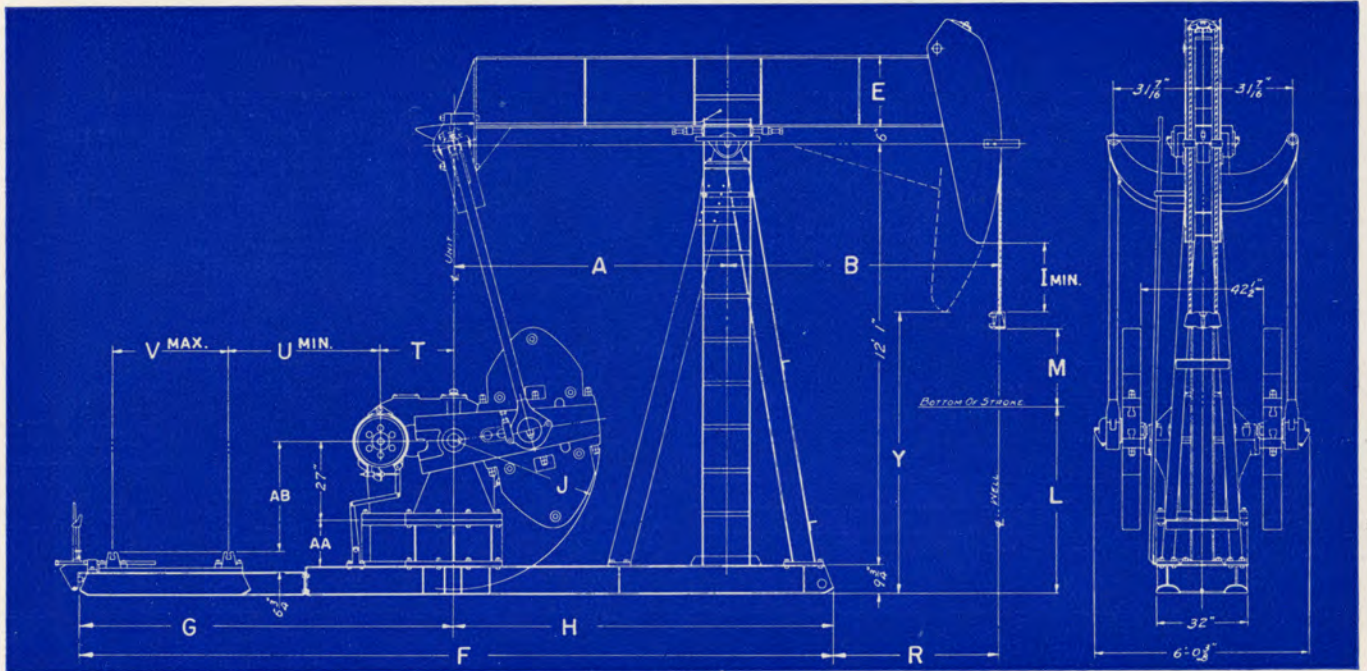


FIGURE 31

UNIT	A	B	E	F	G	H	I	J	L	M	R	T	U	V	Y	AA	AB
C-160D-74-20	8'-0"	9'-3"	27 $\frac{1}{8}$ "	22'-2"	11'-0"	11'-2"	22"	59 $\frac{1}{2}$ "	48 $\frac{3}{8}$ "	37"	73"	26"	53 $\frac{3}{4}$ "	40 $\frac{1}{2}$ "	6'-10 $\frac{1}{8}$ "	24"	46"
C-160S-74-20	8'-0"	9'-3"	27 $\frac{1}{8}$ "	22'-2"	11'-0"	11'-2"	22"	59 $\frac{1}{2}$ "	48 $\frac{3}{8}$ "	37"	73"	23"	56 $\frac{3}{4}$ "	40 $\frac{1}{2}$ "	6'-10 $\frac{1}{8}$ "	24"	46"
C-160D-64-23	8'-0"	8'-0"	24"	22'-2"	11'-0"	11'-2"	25 $\frac{3}{4}$ "	59 $\frac{1}{2}$ "	55 $\frac{3}{8}$ "	32"	58"	26"	53 $\frac{3}{4}$ "	40 $\frac{1}{2}$ "	7'-9 $\frac{1}{2}$ "	24"	46"
C-160S-64-23	8'-0"	8'-0"	24"	22'-2"	11'-0"	11'-2"	25 $\frac{3}{4}$ "	59 $\frac{1}{2}$ "	55 $\frac{3}{8}$ "	32"	58"	23"	56 $\frac{3}{4}$ "	40 $\frac{1}{2}$ "	7'-9 $\frac{1}{2}$ "	24"	46"
*C-160-D64-15	5'-3 $\frac{1}{4}$ "	8'-3"	20 $\frac{7}{8}$ "	18'-6"	9'-7 $\frac{1}{4}$ "	8'-10 $\frac{3}{4}$ "	30 $\frac{1}{8}$ "	51 $\frac{1}{2}$ "	52 $\frac{3}{8}$ "	32"	55 $\frac{1}{2}$ "	26"	36 $\frac{1}{8}$ "	41"	7'-7 $\frac{3}{4}$ "	16"	36 $\frac{1}{4}$ "
*C-160S-64-15	5'-3 $\frac{1}{4}$ "	8'-3"	20 $\frac{7}{8}$ "	18'-6"	9'-7 $\frac{1}{4}$ "	8'-10 $\frac{3}{4}$ "	30 $\frac{1}{8}$ "	51 $\frac{1}{2}$ "	52 $\frac{3}{8}$ "	32"	55 $\frac{1}{2}$ "	23"	39 $\frac{1}{8}$ "	41"	7'-7 $\frac{3}{4}$ "	16"	36 $\frac{1}{4}$ "
C-160D-54-18	8'-0"	8'-0"	24 $\frac{1}{8}$ "	22'-2"	11'-0"	11'-2"	36 $\frac{1}{8}$ "	51 $\frac{1}{2}$ "	57"	27"	58"	26"	53 $\frac{3}{4}$ "	40 $\frac{1}{2}$ "	8'-5 $\frac{1}{4}$ "	16"	38"
C-160S-54-18	8'-0"	8'-0"	24 $\frac{1}{8}$ "	22'-2"	11'-0"	11'-2"	36 $\frac{1}{8}$ "	51 $\frac{1}{2}$ "	57"	27"	58"	23"	56 $\frac{3}{4}$ "	40 $\frac{1}{2}$ "	8'-5 $\frac{1}{4}$ "	16"	38"
*C-160D-54-17	5'-3 $\frac{1}{4}$ "	7'-0"	18 $\frac{1}{8}$ "	18'-6"	9'-7 $\frac{1}{4}$ "	8'-10 $\frac{3}{4}$ "	34 $\frac{7}{8}$ "	51 $\frac{1}{2}$ "	58 $\frac{3}{4}$ "	27.2"	40 $\frac{1}{2}$ "	26"	36 $\frac{1}{8}$ "	41"	8'-7"	16"	36 $\frac{1}{4}$ "
*C-160S-54-17	5'-3 $\frac{1}{4}$ "	7'-0"	18 $\frac{1}{8}$ "	18'-6"	9'-7 $\frac{1}{4}$ "	8'-10 $\frac{3}{4}$ "	34 $\frac{7}{8}$ "	51 $\frac{1}{2}$ "	58 $\frac{3}{4}$ "	27.2"	40 $\frac{1}{2}$ "	23"	39 $\frac{1}{8}$ "	41"	8'-7"	16"	36 $\frac{1}{4}$ "

\* Full length, one piece, Base is standard; for others, Jointed Base illustrated is standard.

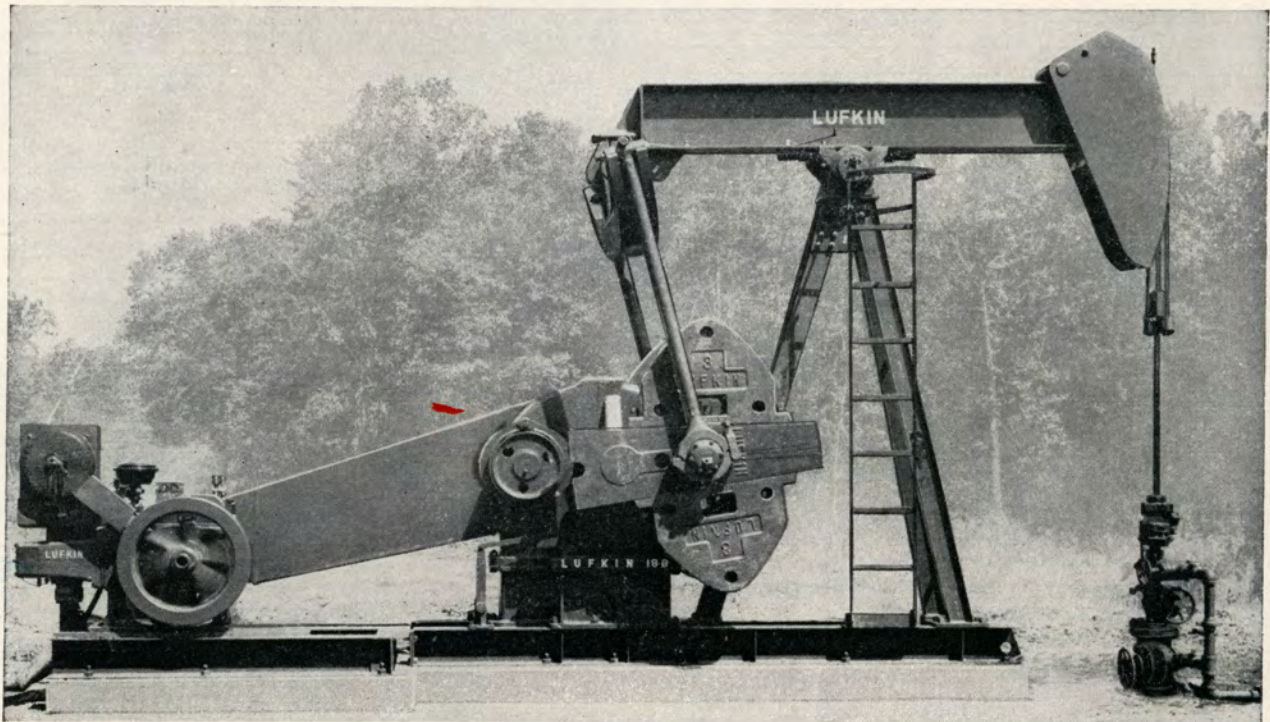


FIGURE 32

**LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**GENERAL SPECIFICATIONS**  
**Lufkin 114,000 and 80,000 In. Lbs. Peak Torque Pumping Units**  
**114 and 80 API Sizes**

**GEAR DATA**

**GEAR REDUCER: Double Reduction**

Designation: 114DA (Formerly 15B).  
 Gears: Main Gear 23.7" Diam., 6 1/4" Face.  
 Rating: 114,000 In. Lbs. Peak Torque  
 Ratio of Gears: 29.4  
 Crank Shaft Dia.: 4-7/16"  
 Sheave: 19 1/4" P.D.—4C Std., 33 3/4" P.D.,  
 Max., 1-15/16" Bore  
 Distance Centerline Unit  
 to Centerline Drive: 12 1/8"  
 Gear Box Oil Capacity: 17 Gallons

**GEAR REDUCER: Single Reduction**

Designation: 114S (Formerly 24B).  
 Gears: Main Gear 36.2" Diam., 5 1/2" Face  
 Rating: 114,000 In. Lbs. Peak Torque  
 Ratio of Gears: 9.67  
 Crank Shaft Dia.: 4-7/16"  
 Sheave: 27" P.D.—6C Std. and Max.,  
 2-11/16" Bore  
 Distance Centerline Unit  
 to Centerline Drive: 10 3/4"  
 Gear Box Oil Capacity: 5 1/2 Gallons

**GEAR REDUCER: Double Reduction**

Designation: 80DB  
 Gears: Main Gear 22.2" Diam., 5 1/2" Face  
 Rating: 80,000 In. Lbs. Peak Torque  
 Ratio of Gears: 29.15  
 Crank Shaft Dia.: 4-7/16"  
 Sheave: 19 1/4" P.D.—4C Std., 29 1/4" P.D.,  
 Max., 1-15/16" Bore  
 Distance Centerline Unit  
 to Centerline Drive: 12 1/8"  
 Gear Box Oil Capacity: 17 Gallons

**STRUCTURAL DATA**

**C-114DA-64-15 and C-114S-64-15 PUMPING UNIT ASSEMBLIES—15,000 Lb. Polished Rod Load Class**  
 Formerly TC-44ALTR-15B and TC-44ALTR-24B

**WALKING BEAM:** 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line 19'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line" 2 1/2" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" High.  
**CRANKS:** No. 6460R, 59 1/2" Radius.  
**BASE:** 8" Deep, 25" Wide at Gear Box.  
**SUB-BASE:** 21" High Cast Iron on 14" Deep Steel Beams.

<b>CENTER BEARING..</b>	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS.....</b>	No. 3TC, Timken Bearings			
<b>TAIL BEARING.....</b>	3 1/4" x 7 1/4", Bronze Bushed			
<b>WEIGHT.....</b>	21,270 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 6460R Crank		No. 6460R Crank (Std.)	
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>2R Cwts.</b>	<b>Aux. Wts.</b>
24".....	23,200	30,655	26,440	33,825
34".....	16,490	21,755	18,780	23,990
44".....	12,830	16,900	14,600	18,625
54".....	10,525	13,840	11,965	15,250
64".....	8,940	11,740	10,155	12,925

**\*C-114DA-54-17 and C-114S-54-17 PUMPING UNIT ASSEMBLIES—17,000 Lb. Polished Rod Load Class**  
 Formerly TC-44DTR-15B and TC-44DTR-24B

**WALKING BEAM:** 18" x 8 3/4" x 77 lbs., 6'-0" and 6'-0" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line, 16'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 10'-6 1/2" High.  
**CRANKS:** No. 5452R, 51 1/2" Radius.  
**BASE:** 8" Deep, 25" Wide at Gear Box.  
**SUB-BASE:** 27" High, Cast Iron.

<b>CENTER BEARING..</b>	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS.....</b>	No. 2T, Timken Bearings			
<b>TAIL BEARING.....</b>	4 1/4" x 9 1/4", Bronze Bushed			
<b>WEIGHT.....</b>	16,850 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 5452R Crank			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
24".....	18,090	24,000	18,090	24,000
34".....	13,080	17,250	13,080	17,250
44".....	10,345	13,570	10,345	13,570
54".....	8,600	11,250	8,600	11,250

**C-114DA-54-16A and C-114S-54-16A PUMPING UNIT ASSEMBLY—16,000 Lb. Polished Rod Load Class**

**WALKING BEAM:** 18" x 8 3/4" x 77 lbs., 7'-0" and 7'-0" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line 16'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 10'-4" High.  
**CRANKS:** No. 5452R, 51 1/2" Radius.  
**BASE:** 8" Deep, 25" Wide at Gear Box.  
**SUB-BASE:** 27" High, Cast Iron.

<b>CENTER BEARING..</b>	No. 4AD, Bronze Bushed, 5" x 10 1/2"			
<b>CRANK PINS.....</b>	No. 3TC, Timken Bearings			
<b>TAIL BEARING.....</b>	4 1/4" x 9 1/4", Bronze Bushed			
<b>WEIGHT.....</b>	17,850 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 5452R Crank			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
24".....	18,090	24,000	18,090	24,000
34".....	13,080	17,250	13,080	17,250
44".....	10,345	13,570	10,345	13,570
54".....	8,600	11,250	8,600	11,250

**\*C-114DA-54-15 and C-114S-54-15 PUMPING UNIT ASSEMBLIES—15,000 Lb. Polished Rod Load Class**  
 Formerly TC-44ATR-15B and TC-44ATR-24B

**WALKING BEAM:** 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line, 19'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe.  
**SAMSON POST:** Tripod, 12'-1" High.  
**CRANKS:** No. 5452R, 51 1/2" Radius.  
**BASE:** 8" Deep, 25" Wide at Gear Box.  
**SUB-BASE:** 27" High, Cast Iron.

<b>CENTER BEARING..</b>	No. 3AD, Bronze Bushed, 6" x 14"			
<b>CRANK PINS.....</b>	No. 3TC, Timken Bearings			
<b>TAIL BEARING.....</b>	3 1/4" x 7 1/4", Bronze Bushed			
<b>WEIGHT.....</b>	17,810 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 5452R Crank			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
24".....	17,420	23,295	17,420	23,295
34".....	12,410	16,555	12,410	16,555
44".....	9,675	12,880	9,675	12,880
54".....	7,910	10,570	7,910	10,570

**C-114DA-54-14 and C-114S-54-14 PUMPING UNIT ASSEMBLIES—14,000 Lb. Polished Rod Load Class**  
 Formerly TC-44CTR-15B and TC-44CTR-24B

**WALKING BEAM:** 16" x 8 1/2" x 64 lbs., 6'-0" and 6'-0" working centers.  
**HANGER:** Hinged Horsehead with 1" Wire Line, 16'-0" Long.  
**PITMAN:** Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe  
**SAMSON POST:** Tripod, 10'-4" High.  
**CRANKS:** No. 5452R, 51 1/2" Radius.  
**BASE:** 8" Deep, 25" Wide at Gear Box.  
**SUB-BASE:** 27" High, Cast Iron.

<b>CENTER BEARING..</b>	No. 4AD, Bronze Bushed, 5" x 10 1/2"			
<b>CRANK PINS.....</b>	No. 3TC, Timken Bearings			
<b>TAIL BEARING.....</b>	3 1/4" x 7 1/4", Bronze Bushed			
<b>WEIGHT.....</b>	16,350 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 5452R Crank			
<b>Stroke</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>	<b>3CR Cwts.</b>	<b>Aux. Wts.</b>
24".....	17,555	23,465	17,555	23,465
34".....	12,545	16,715	12,545	16,715
44".....	9,810	13,035	9,810	13,035
54".....	8,065	10,725	8,065	10,725

\* This Unit in Stock at Los Angeles.

# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



## GENERAL DIMENSIONS Lufkin 114,000 and 80,000 In. Lbs. Peak Torque Pumping Units

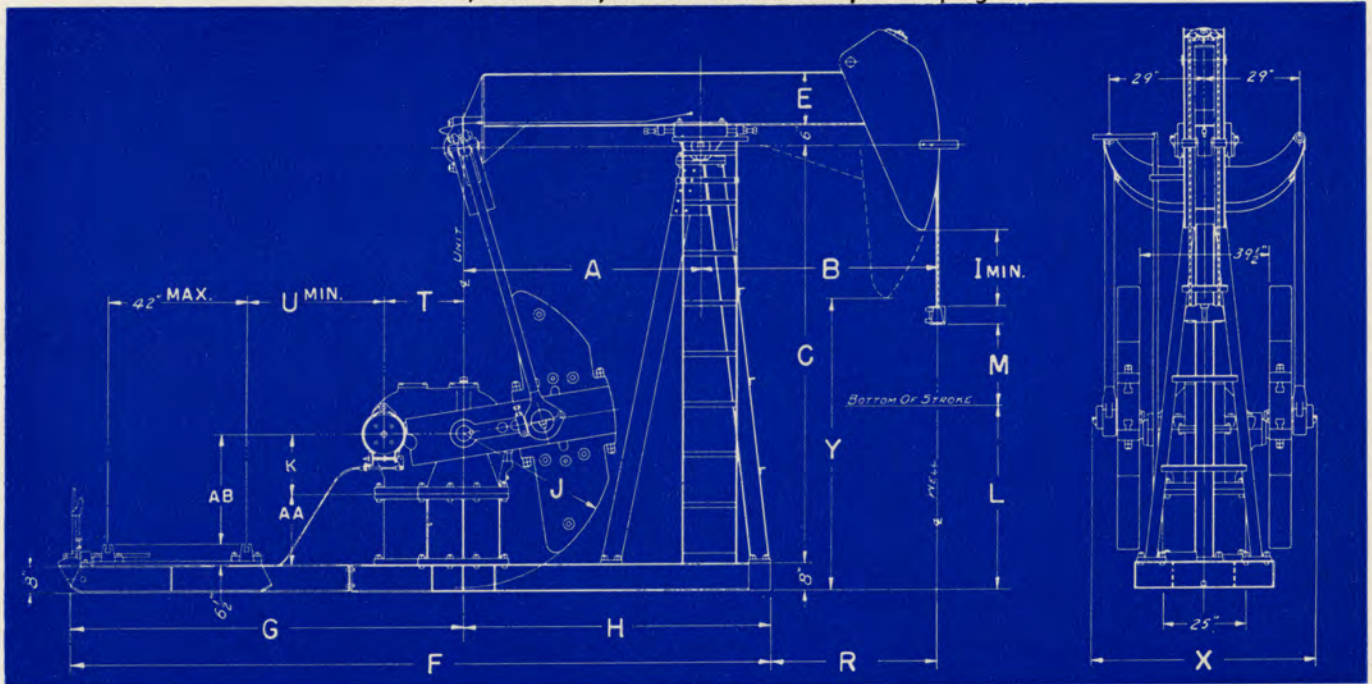


FIGURE 33

UNIT	A	B	C	E	F	G	H	I	J	K	L	M	R	T	U	X	Y	AA	AB
C-114DA-64-15	8'-0"	8'-0"	12'-1"	20 $\frac{7}{8}$ "	22'-5 $\frac{3}{8}$ "	11'-2 $\frac{1}{4}$ "	11'-3 $\frac{1}{2}$ "	30 $\frac{1}{2}$ "	59 $\frac{1}{2}$ "	18"	50 $\frac{1}{2}$ "	32"	56 $\frac{1}{2}$ "	24"	57"	66 $\frac{3}{4}$ "	7'-7 $\frac{3}{8}$ "	34 $\frac{1}{2}$ "	46 $\frac{3}{8}$ "
C-114S-64-15	8'-0"	8'-0"	12'-1"	20 $\frac{7}{8}$ "	22'-5 $\frac{3}{8}$ "	11'-2 $\frac{1}{4}$ "	11'-3 $\frac{1}{2}$ "	30 $\frac{1}{2}$ "	59 $\frac{1}{2}$ "	21"	50 $\frac{1}{2}$ "	32"	56 $\frac{1}{2}$ "	20"	61"	66 $\frac{3}{4}$ "	7'-7 $\frac{3}{8}$ "	34 $\frac{1}{2}$ "	49 $\frac{3}{8}$ "
C-114DA-54-17	6'-0"	6'-0"	10'-6 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	17 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	18"	56 $\frac{1}{4}$ "	27"	50 $\frac{3}{4}$ "	24"	41"	69 $\frac{3}{4}$ "	6'-8 $\frac{1}{2}$ "	27"	38 $\frac{1}{2}$ "
C-114S-54-17	6'-0"	6'-0"	10'-6 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	17 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	21"	56 $\frac{1}{4}$ "	27"	50 $\frac{3}{4}$ "	20"	45"	69 $\frac{3}{4}$ "	6'-8 $\frac{1}{2}$ "	27"	41 $\frac{1}{2}$ "
C-114DA-54-16A	7'-0"	7'-0"	10'-4"	18 $\frac{1}{2}$ "	19'-11 $\frac{1}{8}$ "	11'-2 $\frac{1}{4}$ "	8'-9 $\frac{1}{4}$ "	16 $\frac{3}{4}$ "	51 $\frac{1}{2}$ "	18"	54 $\frac{1}{4}$ "	27"	62 $\frac{3}{4}$ "	24"	57"	66 $\frac{3}{4}$ "	6'-8 $\frac{1}{2}$ "	27"	38 $\frac{1}{2}$ "
C-114S54-16A	7'-0"	7'-0"	10'-4"	18 $\frac{1}{2}$ "	19'-11 $\frac{1}{8}$ "	11'-2 $\frac{1}{4}$ "	8'-9 $\frac{1}{4}$ "	16 $\frac{3}{4}$ "	51 $\frac{1}{2}$ "	21"	54 $\frac{1}{4}$ "	27"	62 $\frac{3}{4}$ "	20"	61"	66 $\frac{3}{4}$ "	6'-8 $\frac{1}{2}$ "	27"	41 $\frac{1}{2}$ "
C-114DA-54-15	8'-0"	8'-0"	12'-1"	20 $\frac{7}{8}$ "	22'-5 $\frac{3}{8}$ "	11'-2 $\frac{1}{4}$ "	11'-3 $\frac{1}{2}$ "	36 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	18"	55 $\frac{1}{4}$ "	27"	56 $\frac{1}{2}$ "	24"	57"	66 $\frac{3}{4}$ "	8'-4"	27"	38 $\frac{1}{2}$ "
C-114S-54-15	8'-0"	8'-0"	12'-1"	20 $\frac{7}{8}$ "	22'-5 $\frac{3}{8}$ "	11'-2 $\frac{1}{4}$ "	11'-3 $\frac{1}{2}$ "	36 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	18"	55 $\frac{1}{4}$ "	27"	56 $\frac{1}{2}$ "	20"	61"	66 $\frac{3}{4}$ "	8'-4"	27"	41 $\frac{1}{2}$ "
C-114DA-54-14	6'-0"	6'-0"	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	19 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	18"	51 $\frac{1}{2}$ "	27"	50 $\frac{3}{4}$ "	24"	41"	66 $\frac{3}{4}$ "	6'-9 $\frac{3}{8}$ "	27"	38 $\frac{1}{2}$ "
C-114S-54-14	6'-0"	6'-0"	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	19 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	21"	51 $\frac{1}{2}$ "	27"	50 $\frac{3}{4}$ "	20"	45"	66 $\frac{3}{4}$ "	6'-9 $\frac{3}{8}$ "	27"	41 $\frac{1}{2}$ "
C-114DA-54-13.5	5'-7 $\frac{3}{8}$ "	6'-4 $\frac{3}{8}$ "	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	18 $\frac{7}{8}$ "	46"	18"	51 $\frac{1}{2}$ "	27"	55 $\frac{1}{2}$ "	24"	41"	66 $\frac{3}{4}$ "	6'-8 $\frac{1}{2}$ "	21"	32 $\frac{1}{2}$ "
C-114S-54-13.5	5'-7 $\frac{3}{8}$ "	6'-4 $\frac{3}{8}$ "	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	18 $\frac{7}{8}$ "	46"	21"	51 $\frac{1}{2}$ "	27"	55 $\frac{1}{2}$ "	20"	45"	66 $\frac{3}{4}$ "	6'-8 $\frac{1}{2}$ "	21"	35 $\frac{1}{2}$ "
C-114DA-48-14	6'-0"	6'-0"	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	22 $\frac{1}{8}$ "	46"	18"	54 $\frac{1}{2}$ "	24"	50 $\frac{3}{4}$ "	24"	41"	66 $\frac{3}{4}$ "	7'-2 $\frac{1}{8}$ "	21"	32 $\frac{1}{2}$ "
C-114S-48-14	6'-0"	6'-0"	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	22 $\frac{1}{8}$ "	46"	21"	54 $\frac{1}{2}$ "	24"	50 $\frac{3}{4}$ "	20"	45"	66 $\frac{3}{4}$ "	7'-2 $\frac{1}{8}$ "	21"	35 $\frac{1}{2}$ "
C-80DB-48-14	6'-0"	6'-0"	10'-4"	16"	17'-7 $\frac{1}{8}$ "	9'-10 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	22 $\frac{1}{8}$ "	46"	18"	54 $\frac{1}{2}$ "	24"	50 $\frac{3}{4}$ "	22"	43"	66 $\frac{3}{4}$ "	7'-2 $\frac{1}{8}$ "	21"	32 $\frac{1}{2}$ "

Jointed Base is standard on all Sizes.

### STRUCTURAL DATA

#### C-114DA-54-13.5 and C-114S-54-13.5 PUMPING UNIT ASSEMBLIES—13,500 Lb. Polished Rod Load Class Formerly TC-44STR-15B and TC-44STR-24B

<b>WALKING BEAM:</b> 16" x 8 $\frac{1}{2}$ " x 64 lbs., 6'-4 $\frac{3}{8}$ " and 5'-7 $\frac{3}{8}$ " working centers.	<b>CENTER BEARING....</b>	No. 4AS, Bronze Bushed, 5" x 10 $\frac{1}{2}$ "	
<b>HANGER:</b> Hinged Horsehead with 1" Wire Line, 16'-0" Long.	<b>CRANK PINS.....</b>	No. 3TC, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 2 $\frac{1}{2}$ " Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	3 $\frac{3}{16}$ " x 7 $\frac{1}{4}$ ", Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 10'-4" high.	<b>WEIGHT.....</b>	14,600 lbs.	
<b>CRANKS:</b> No. 4846R, 46" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 8" Deep, 25" Wide at Gear Box.	No. 4846R Crank		
<b>SUB-BASE:</b> 21" High, Cast Iron.	<b>Stroke</b>	<b>No. 5AR Wts.</b>	<b>Aux. Wts.</b>
	27.1".....	10,715	13,975
	36.1".....	8,150	10,595
	45.2".....	6,595	8,550
	54.2".....	5,570	7,200

#### \*C-114DA-48-14, C-114S-48-14 and \*C-80DB-48-14 PUMPING UNIT ASSEMBLIES—14,000 Lb. Polished Rod Load Classes Formerly TC-44TR-15B, TC-44TR-24B and TC-44TR-80DB

<b>WALKING BEAM:</b> 16" x 8 $\frac{1}{2}$ " x 64 lbs., 6'-0" and 6'-0" working centers.	<b>CENTER BEARING....</b>	No. 4AS, Bronze Bushed, 5" x 10 $\frac{1}{2}$ "	
<b>HANGER:</b> Hinged Horsehead with 1" Wire Line, 16'-0" Long.	<b>CRANK PINS.....</b>	No. 3TC, Timken Bearings	
<b>PITMAN:</b> Universal Equalizer with Bearings "in line", 2 $\frac{1}{2}$ " Extra Heavy Pipe.	<b>TAIL BEARING.....</b>	3 $\frac{3}{16}$ " x 7 $\frac{1}{4}$ ", Bronze Bushed	
<b>SAMSON POST:</b> Tripod, 10'-4" high.	<b>WEIGHT.....</b>	C-114DA-48-14 14,600 lbs. C-80DB-48-14 14,490 lbs.	
<b>CRANKS:</b> No. 4846R, 46" Radius.	<b>STATIC COUNTERBALANCE, LBS.</b>		
<b>BASE:</b> 8" Deep, 25" Wide at Gear Box.	No. 4846R Crank		
<b>SUB-BASE:</b> 21" High, Cast Iron.	<b>Stroke</b>	<b>No. 5AR Wts.</b>	<b>Aux. Wts.</b>
	24".....	12,190	15,870
	32".....	9,285	12,045
	40".....	7,540	9,750
	48".....	6,375	8,220

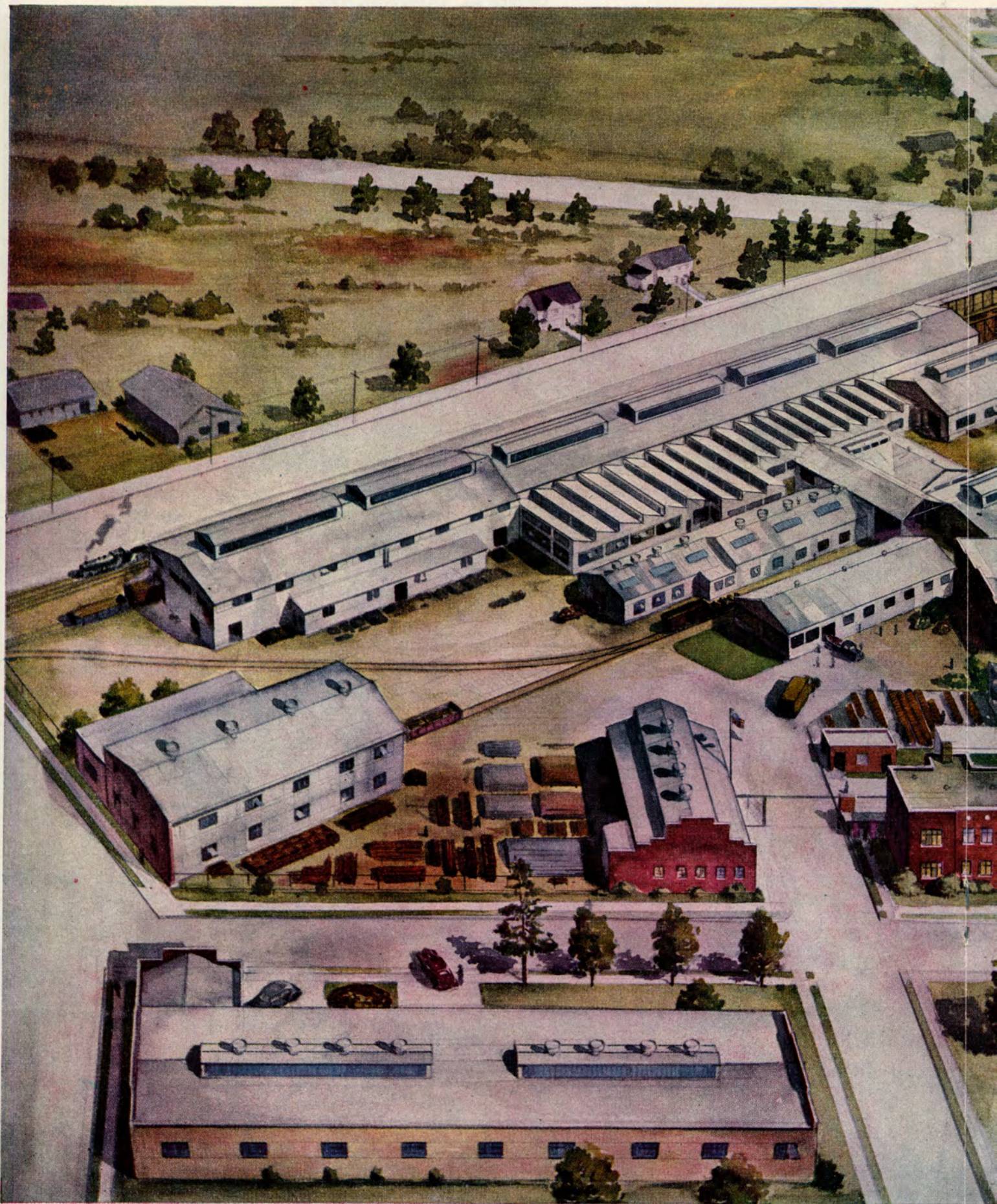
#### C-114DA-42-10.5, C-114S-42-10.5 and \*C-80DB-42-10.5 PUMPING UNIT ASSEMBLIES—10,500 Lb. Polished Rod Load Class Formerly T5D-15B, T5D-24B and T5D-80DB For General Dimensions see page 3057.

<b>WALKING BEAM:</b> 14" x 8" x 43 lbs., 5'-0" and 5'-0" working centers.	<b>STATIC COUNTERBALANCE, LBS.</b>			
<b>HANGER:</b> Hinged Horsehead with 7 $\frac{1}{8}$ " Wire Line, 12'-0" Long.	No. 4246CR Crank (Std.)			
<b>PITMAN:</b> Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.	<b>Stroke</b>	<b>5CR Cwts.</b>	<b>Aux. Wts.</b>	<b>No. 4246R Crank</b>
<b>SAMSON POST:</b> Tripod, 9'-9" High. <b>BASE:</b> 8" Deep, 25 $\frac{1}{2}$ " Wide.	22".....	10,410	14,085	5R Cwts. Aux. Wts.
<b>CRANKS:</b> No. 4246C, 42" Radius. <b>SUB-BASE:</b> 21" High, Cast Iron.	32".....	7,285	9,810	11,785 15,215
	42".....	5,645	7,575	8,230 10,590
				6,365 8,165
<b>CENTER BEARING:</b> Bronze Bushed, 4 $\frac{1}{8}$ " x 9". <b>CRANK PINS:</b> No. 5 Bronze Bushed, 3 $\frac{3}{4}$ " x 3 $\frac{1}{2}$ ". <b>TAIL BEARING:</b> 3 $\frac{3}{16}$ " x 6 $\frac{1}{2}$ ", Bronze Bushed.	<b>WEIGHT</b> C-114DA & C-114S-42-10.5 10,745 lbs., C-80DB-42-10.5 10,645 lbs.			

\* This unit in stock at Los Angeles.

**LUFKIN**

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**





# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

**LUFKIN**



## *Lufkin Foundry & Machine Company*

MANUFACTURERS OF

- PUMPING UNITS • GAS ENGINES • COMPRESSORS • REDUCTION GEARS
- SPEED INCREASERS • PAPER MILL MACHINERY • ALLOY CASTINGS
- COMMERCIAL TRUCK TRAILERS • TRAILER AND TRACTOR WINCHES

DISTRIBUTORS OF

MILL, INDUSTRIAL AND AUTOMOTIVE SUPPLIES, EQUIPMENT AND PARTS



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

## STRUCTURAL DATA

Lufkin 57,000, 40,000 and 25,000 In. Lbs. Peak Torque Pumping Units

For Gear Specifications See Page 3058

### C-57D-48-10 and C-57S-48-10 PUMPING UNIT ASSEMBLIES—10,000 Lbs. Polished Rod Load Class Formerly T5DB-7C and T5DB-16A

**WALKING BEAM:** 16" x 7" x 45 lbs., 5'-8½" and 5'-0" working centers.  
**HANGER:** Hinged Horsehead with ¾" Wire Line, 13'-0" Long.  
**PITMAN:** Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.  
**SAMSON POST:** Tripod, 9'-9" High.  
**CRANKS:** No. 4246CR, 46" Radius.  
**BASE:** 8" Deep, 25½" Wide at Gear Box.  
**SUB-BASE:** 21" High, Cast Iron.

<b>CENTER BEARING</b> ..	4½" x 9", Bronze Bushed.			
<b>CRANK PINS</b> .....	No. 5 Bronze Bushed, 3¼" x 3½"			
<b>TAIL BEARING</b> .....	3¾" x 6½" Bronze Bushed			
<b>WEIGHT</b> .....	10,775 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 4246CR Crank (Std.)		No. 4246R Crank	
<b>Stroke</b>	<b>5CR Cwts.</b>	<b>Aux. Wts.</b>	<b>5R Cwts.</b>	<b>Aux. Wts.</b>
25.1" .....	9,090	12,310	10,295	13,305
36.5" .....	6,355	8,570	7,180	9,250
48.0" .....	4,910	6,595	5,540	7,110

### \*C-57D-42-10.5 and C-57S-42-10.5 PUMPING UNIT ASSEMBLIES—10,500 Lbs. Polished Rod Load Class Formerly T5D-7C and T5D-16A

**WALKING BEAM:** 14" x 8" x 43 lbs., 5'-0" and 5'-0" working centers.  
**HANGER:** Hinged Horsehead with ¾" Wire Line, 12'-0" Long.  
**PITMAN:** Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.  
**SAMSON POST:** Tripod, 9'-9" High.  
**CRANKS:** No. 4246CR, 46" Radius.  
**BASE:** 8" Deep, 25½" Wide at Gear Box.  
**SUB-BASE:** 21" High, Cast Iron.

<b>CENTER BEARING</b> ..	4½" x 9", Bronze Bushed			
<b>CRANK PINS</b> .....	No. 5, Bronze Bushed, 3¼" x 3½"			
<b>TAIL BEARING</b> .....	3¾" x 6½" Bronze Bushed			
<b>WEIGHT</b> .....	10,725 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 4246CR Crank (Std.)		No. 4246R Crank	
<b>Stroke</b>	<b>5CR Cwts.</b>	<b>Aux. Wts.</b>	<b>5R Cwts.</b>	<b>Aux. Wts.</b>
22" .....	10,410	14,085	11,785	15,215
32" .....	7,285	9,810	8,230	10,590
42" .....	5,645	7,575	6,365	8,165

### C-40D-40-7.4 PUMPING UNIT ASSEMBLY—7,400 Lbs. Polished Rod Load Class Formerly T6EB-9B

**WALKING BEAM:** 14" x 6¾" x 30 lbs., 4'-8½" and 4'-0" working centers.  
**HANGER:** Hinged Horsehead with ¾" Wire Line, 11'-0" Long.  
**PITMAN:** Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.  
**SAMSON POST:** Tripod, 7'-10½" High.  
**CRANKS:** No. 3441, 41" Radius.  
**BASE:** 8" Deep, 20" Wide at Gear Box.  
**SUB-BASE:** 20" High, Cast Iron.

<b>CENTER BEARING</b> ..	2½" x 10½" Bronze Bushed			
<b>CRANK PINS</b> .....	No. 6, Bronze Bushed 3¼" x 3"			
<b>TAIL BEARING</b> .....	3¾" x 6½" Bronze Bushed			
<b>WEIGHT</b> .....	7,595 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 3441 Crank			
<b>Stroke</b>	<b>No. 6 Cwts.</b>	<b>Aux. Wts.</b>	<b>No. 6 Cwts.</b>	<b>Aux. Wts.</b>
21.2" .....			7,395	9,365
30.6" .....			5,165	6,530
40.0" .....			3,985	5,030

### \*C-40D-34-8 PUMPING UNIT ASSEMBLY—8,000 Lb. Polished Rod Load Class Formerly T6E-9B

**WALKING BEAM:** 14" x 6¾" x 30 lbs., 4'-0" and 4'-0" working centers.  
**HANGER:** Hinged Horsehead with ¾" Wire Line, 11'-0" Long.  
**PITMAN:** Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.  
**SAMSON POST:** Tripod, 7'-10½" High.  
**CRANKS:** No. 3441, 41" Radius.  
**BASE:** 8" Deep, 20" Wide at Gear Box.  
**SUB-BASE:** 20" High, Cast Iron.

<b>CENTER BEARING</b> ..	2½" x 10½" Bronze Bushed.			
<b>CRANK PINS</b> .....	No. 6, Bronze Bushed, 3¼" x 3"			
<b>TAIL BEARING</b> .....	3¾" x 6½" Bronze Bushed.			
<b>WEIGHT</b> .....	7,510 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 3441 Crank			
<b>Stroke</b>	<b>No. 6 Cwts.</b>	<b>Aux. Wts.</b>	<b>No. 6 Cwts.</b>	<b>Aux. Wts.</b>
18" .....			8,805	11,125
26" .....			6,175	7,785
34" .....			4,785	6,015

### \*C-25D-28-6 PUMPING UNIT ASSEMBLY—6,000 Lbs. Polished Rod Load Class Formerly T7AB-3B

**WALKING BEAM:** 14" x 6¾" x 30 lbs., 4'-1" and 3'-6" working centers.  
**HANGER:** Hinged Horsehead with ¾" Wire Line, 10'-0" Long.  
**PITMAN:** Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.  
**SAMSON POST:** Tripod, 7'-1½" High.  
**CRANKS:** No. 2433, 33" Radius.  
**BASE:** 6¼" Deep, 17" Wide at Gear Box.  
**SUB-BASE:** 14" High, Cast Iron.

<b>CENTER BEARING</b> ..	2½" x 10½" Bronze Bushed.			
<b>CRANK PINS</b> .....	No. 7, Bronze Bushed, 2¾" x 3"			
<b>TAIL BEARING</b> .....	2½" x 6½" Bronze Bushed.			
<b>WEIGHT</b> .....	5,395 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 2433 Crank			
<b>Stroke</b>	<b>No. 7 Cwts.</b>	<b>Aux. Wts.</b>	<b>No. 7 Cwts.</b>	<b>Aux. Wts.</b>
14" .....			5,380	7,105
21" .....			3,610	4,760
28" .....			2,725	3,585

### C-25D-24-6 PUMPING UNIT ASSEMBLY—6,000 Lbs. Polished Rod Load Class Formerly T7A-3B

**WALKING BEAM:** 10" x 5¾" x 25 lbs., 3'-6" and 3'-6" working centers.  
**HANGER:** Hinged Horsehead with ¾" Wire Line, 8'-4" Long.  
**PITMAN:** Universal Cross Pin Type Equalizer 3" I-Beam Side Members.  
**SAMSON POST:** Tripod, 6'-3½" High.  
**CRANKS:** No. 2433, 33" Radius.  
**BASE:** 6¼" Deep, 17" Wide at Gear Box.  
**SUB-BASE:** 14" High, Cast Iron.

<b>CENTER BEARING</b> ..	2½" x 10½", Bronze Bushed			
<b>CRANK PINS</b> .....	No. 7, Bronze Bushed 2¾" x 3"			
<b>TAIL BEARINGS</b> .....	2½" x 6½" Bronze Bushed			
<b>WEIGHT</b> .....	5,295 lbs.			
<b>STATIC COUNTERBALANCE, LBS.</b>				
	No. 2433 Crank			
<b>Stroke</b>	<b>No. 7 Cwts.</b>	<b>Aux. Wts.</b>	<b>No. 7 Cwts.</b>	<b>Aux. Wts.</b>
12" .....			6,350	8,360
18" .....			4,285	5,625
24" .....			3,250	4,255

\* This Unit in Stock at Los Angeles.

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**GENERAL DIMENSIONS**

Lufkin 57,000, 40,000 and 25,000 In. Lbs. Peak Torque Pumping Units

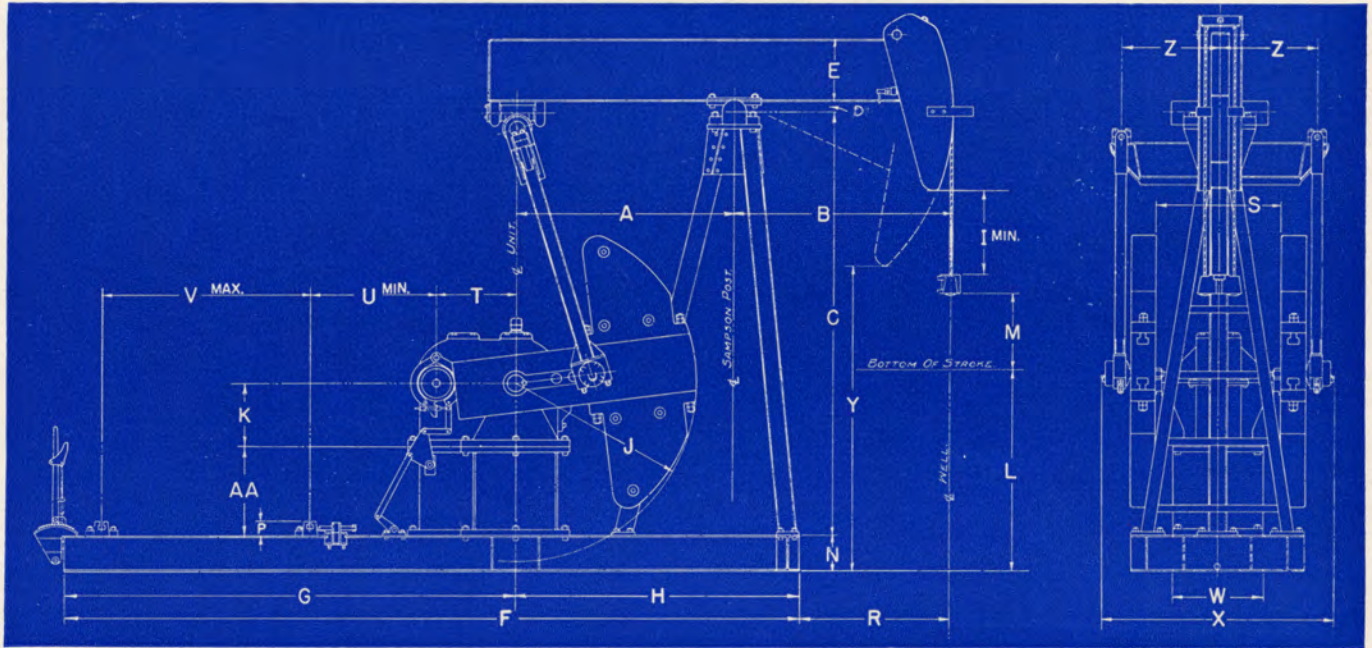


FIGURE 34

UNIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z	AA
*C-114-DA-42-10.5...	60"	60"	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	13 <sup>1</sup> / <sub>4</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	14 <sup>5</sup> / <sub>8</sub> "	46"	18"	6 <sup>1</sup> / <sub>2</sub> "	21' 8"	4 <sup>7</sup> / <sub>8</sub> "	36 <sup>3</sup> / <sub>4</sub> "	41 <sup>1</sup> / <sub>2</sub> "	24"	30 <sup>1</sup> / <sub>2</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	67 <sup>1</sup> / <sub>2</sub> "	7'-0 <sup>1</sup> / <sub>2</sub> "	29"	21"	
*C-114S-42-10.5...	60"	60"	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	13 <sup>1</sup> / <sub>4</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	14 <sup>5</sup> / <sub>8</sub> "	46"	21"	6 <sup>1</sup> / <sub>2</sub> "	21' 8"	4 <sup>7</sup> / <sub>8</sub> "	36 <sup>3</sup> / <sub>4</sub> "	41 <sup>1</sup> / <sub>2</sub> "	20"	34 <sup>1</sup> / <sub>2</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	67 <sup>1</sup> / <sub>2</sub> "	7'-0 <sup>1</sup> / <sub>2</sub> "	29"	21"	
*C-80DB-42-10.5...	60"	60"	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	13 <sup>1</sup> / <sub>4</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	14 <sup>5</sup> / <sub>8</sub> "	46"	18"	6 <sup>1</sup> / <sub>2</sub> "	21' 8"	4 <sup>7</sup> / <sub>8</sub> "	36 <sup>3</sup> / <sub>4</sub> "	41 <sup>1</sup> / <sub>2</sub> "	22"	32 <sup>1</sup> / <sub>2</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	67 <sup>1</sup> / <sub>2</sub> "	7'-0 <sup>1</sup> / <sub>2</sub> "	29"	21"	
C-57D-48-10.....	60"	68 <sup>1</sup> / <sub>2</sub> "	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	16 <sup>1</sup> / <sub>8</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	7"	46"	18"	6 <sup>1</sup> / <sub>2</sub> "	24' 8"	4 <sup>7</sup> / <sub>8</sub> "	45 <sup>1</sup> / <sub>4</sub> "	34 <sup>1</sup> / <sub>2</sub> "	20"	34 <sup>1</sup> / <sub>2</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	60 <sup>1</sup> / <sub>2</sub> "	6'-5 <sup>3</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	21"	
C-57S-48-10.....	60"	68 <sup>1</sup> / <sub>2</sub> "	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	16 <sup>1</sup> / <sub>8</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	7"	46"	18"	6 <sup>1</sup> / <sub>2</sub> "	24' 8"	4 <sup>7</sup> / <sub>8</sub> "	45 <sup>1</sup> / <sub>4</sub> "	34 <sup>1</sup> / <sub>2</sub> "	17 <sup>7</sup> / <sub>8</sub> "	36 <sup>5</sup> / <sub>8</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	60 <sup>1</sup> / <sub>2</sub> "	6'-5 <sup>3</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	21"	
C-57D-42-10.5.....	60"	60"	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	13 <sup>1</sup> / <sub>4</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	14 <sup>5</sup> / <sub>8</sub> "	46"	18"	6 <sup>1</sup> / <sub>2</sub> "	21' 8"	4 <sup>7</sup> / <sub>8</sub> "	36 <sup>3</sup> / <sub>4</sub> "	34 <sup>1</sup> / <sub>2</sub> "	20"	34 <sup>1</sup> / <sub>2</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	60 <sup>1</sup> / <sub>2</sub> "	7'-0 <sup>1</sup> / <sub>2</sub> "	25 <sup>1</sup> / <sub>2</sub> "	21"	
C-57S-42-10.5.....	60"	60"	9'-10 <sup>1</sup> / <sub>8</sub> "	35 <sup>3</sup> / <sub>8</sub> "	13 <sup>1</sup> / <sub>4</sub> "	15'-6"	8'-6 <sup>3</sup> / <sub>8</sub> "	6'-11 <sup>1</sup> / <sub>4</sub> "	14 <sup>5</sup> / <sub>8</sub> "	46"	18"	6 <sup>1</sup> / <sub>2</sub> "	21' 8"	4 <sup>7</sup> / <sub>8</sub> "	36 <sup>3</sup> / <sub>4</sub> "	34 <sup>1</sup> / <sub>2</sub> "	17 <sup>7</sup> / <sub>8</sub> "	36 <sup>5</sup> / <sub>8</sub> "	39 <sup>7</sup> / <sub>8</sub> "	25 <sup>1</sup> / <sub>2</sub> "	60 <sup>1</sup> / <sub>2</sub> "	7'-0 <sup>1</sup> / <sub>2</sub> "	25 <sup>1</sup> / <sub>2</sub> "	21"	
C-40D-40-7.4.....	48"	56 <sup>1</sup> / <sub>2</sub> "	7'-11 <sup>3</sup> / <sub>8</sub> "	2"	13 <sup>7</sup> / <sub>8</sub> "	13'-6"	8'-3"	5'-3"	8 <sup>5</sup> / <sub>8</sub> "	41"	14"	46"	20' 8"	3 <sup>3</sup> / <sub>8</sub> "	41 <sup>1</sup> / <sub>2</sub> "	27 <sup>3</sup> / <sub>8</sub> "	17 <sup>3</sup> / <sub>8</sub> "	37"	36 <sup>1</sup> / <sub>2</sub> "	20"	52 <sup>1</sup> / <sub>2</sub> "	63"	21 <sup>3</sup> / <sub>8</sub> "	20"	
C-40D-34-8.....	48"	48"	7'-11 <sup>3</sup> / <sub>8</sub> "	2"	13 <sup>7</sup> / <sub>8</sub> "	13'-6"	8'-3"	5'-3"	17 <sup>3</sup> / <sub>8</sub> "	41"	14"	42 <sup>1</sup> / <sub>2</sub> "	17' 8"	3 <sup>3</sup> / <sub>8</sub> "	33"	27 <sup>3</sup> / <sub>8</sub> "	17 <sup>3</sup> / <sub>8</sub> "	37"	36 <sup>1</sup> / <sub>2</sub> "	20"	52 <sup>1</sup> / <sub>2</sub> "	5'-9 <sup>3</sup> / <sub>8</sub> "	21 <sup>3</sup> / <sub>8</sub> "	20"	
C-25D-28-6.....	42"	49"	7'-11 <sup>3</sup> / <sub>8</sub> "	2"	13 <sup>7</sup> / <sub>8</sub> "	11'-0"	6'-4"	4'-8"	12 <sup>3</sup> / <sub>4</sub> "	33"	14"	43 <sup>1</sup> / <sub>2</sub> "	14' 6 <sup>1</sup> / <sub>4</sub> "	3 <sup>3</sup> / <sub>8</sub> "	35"	25 <sup>1</sup> / <sub>2</sub> "	13 <sup>3</sup> / <sub>8</sub> "	24 <sup>3</sup> / <sub>8</sub> "	28 <sup>1</sup> / <sub>2</sub> "	17"	47 <sup>1</sup> / <sub>2</sub> "	61 <sup>3</sup> / <sub>8</sub> "	19 <sup>5</sup> / <sub>8</sub> "	14"	
C-25D-24-6.....	42"	42"	6'-3 <sup>7</sup> / <sub>8</sub> "	2"	10 <sup>1</sup> / <sub>8</sub> "	11'-0"	6'-4"	4'-8"	10 <sup>3</sup> / <sub>8</sub> "	33"	14"	41 <sup>1</sup> / <sub>4</sub> "	12' 6 <sup>1</sup> / <sub>4</sub> "	3 <sup>3</sup> / <sub>8</sub> "	28"	25 <sup>1</sup> / <sub>2</sub> "	13 <sup>3</sup> / <sub>8</sub> "	29 <sup>3</sup> / <sub>8</sub> "	23 <sup>3</sup> / <sub>8</sub> "	17"	47 <sup>1</sup> / <sub>2</sub> "	4'-9 <sup>1</sup> / <sub>2</sub> "	19 <sup>5</sup> / <sub>8</sub> "	14"	

\* For Gear Specifications, See Page 3052.

Electric motor Bases are full length, one piece; separate out-rigger furnished when required for engines.

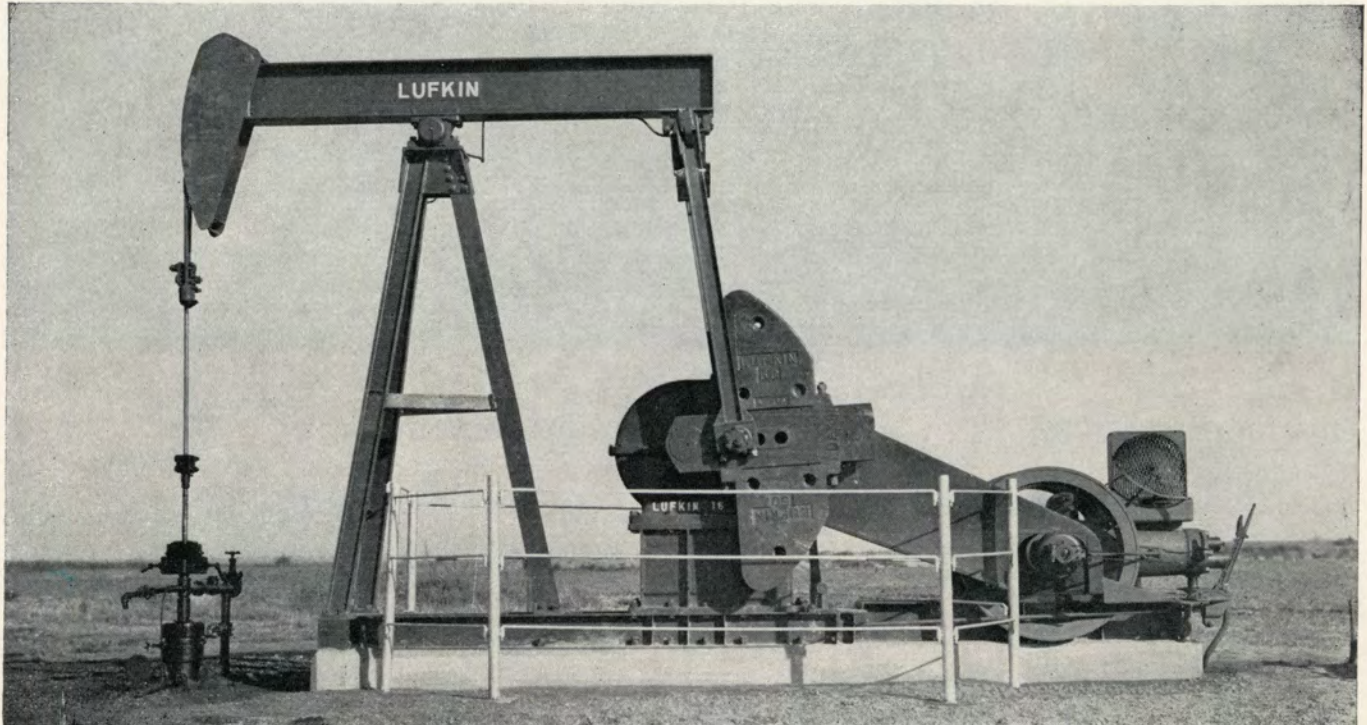


FIGURE 35

# LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

## GEAR REDUCER SPECIFICATIONS

57D, 57S, 40D, 25D, 16DA and 10D

### 57D GEAR REDUCER (Formerly 7C)

Double Reduction  
 Gears: Main Gear 19½" P.D. x 5" Face  
 Rating: 57,000 in. lbs. Peak Torque  
 Ratio of Gears: 29.32  
 Crank Shaft Dia. 4"  
 Sheave: 19¼" P.D.—3C Std., 24¼" P.D. Alt., 27¼"  
 P.D. Max., 1-11/16" Bore.  
 Distance, Centerline Unit to Centerline Drive: 11"  
 Gear Box Oil Capacity: 13 Gallons

### 57S GEAR REDUCER (Formerly 16A)

Single Reduction  
 Gears: Main Gear 32½" P.D. x 4" Face  
 Rating: 57,000 in. lbs. Peak Torque  
 Ratio of Gears: 10.0  
 Crank Shaft Dia. 4"  
 Sheave: 23½" P.D.—5C Std., 23½" P.D. Max.,  
 2-7/16" Bore  
 Distance, Centerline Unit to Centerline Drive: 9¾"  
 Gear Box Oil Capacity: 7.5 Gallons

### 40D GEAR REDUCER (Formerly 9B)

Double Reduction  
 Gears: Main Gear 16.8" P.D. x 4¾" Face  
 Rating: 40,000 in. lbs. Peak Torque  
 Ratio of Gears: 29.2  
 Crank Shaft Dia. 4"  
 Sheave: 21" P.D.—2C or 4B Std., 23" P.D. Max.,  
 1-11/16" Bore  
 Distance, Centerline Unit to Centerline Drive: 9¾"  
 Gear Box Oil Capacity: 7 Gallons

### 25D GEAR REDUCER (Formerly 3B)

Double Reduction  
 Gears: Main Gear: 13.5" P.D. x 4" Face  
 Rating: 25,000 in. lbs. Peak Torque  
 Ratio of Gears: 28.9  
 Crank Shaft Dia. 3"  
 Sheave: 17¾" P.D.—2B or 18" P.D. 3A Std., 18"  
 P.D. Max., 1¾" Bore  
 Distance, Centerline Unit to Centerline Drive: 8"  
 Gear Box Oil Capacity: 6 Gallons

The four reducers above are available on Type C Crank Balance Pumping Unit Assemblies (pages 3056 and 3057) and also Type B Beam Balance Units (pages 3059 and 3060).

The two reducers below are available on Type B Assemblies only (pages 3059 and 3060).

### 16DA GEAR REDUCER

Double Reduction  
 Gears: Main Gear 13¼" Dia., 3¾" Face  
 Rating: 16,000 in. lbs. Peak Torque  
 Ratio of Gears: 35.7  
 Crank Shaft Dia. 2½"  
 Sheave: 15" P.D.—3A or 2B or 1C  
 Distance, Centerline Unit to Centerline Drive: 7½"  
 Gear Box Oil Capacity: 5 Gallons

### 10D GEAR REDUCER

Double Reduction  
 Gears: Main Gear 11⅞" Dia., 2⅞" Face  
 Rating: 10,000 in. lbs. Peak Torque  
 Ratio of Gears: 36.02  
 Crank Shaft Dia. 2-3/16"  
 Sheave: 14" P.D.—3A or 2B  
 Distance, Centerline Unit to Centerline Drive: 6¾"  
 Gear Box Oil Capacity: 4 Gallons

# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



## LUFKIN TYPE B BEAM BALANCED PUMPING UNIT ASSEMBLIES

### STRUCTURAL SPECIFICATIONS AND DIMENSIONS

See preceding page for GEAR Specifications

UNIT	B-57D-42-10.5A	B-40D-34-8.7C	B-25D-28-7.5B	B-25DA-24-7.3	B-16DA-30-5A	B-16DA-22-5B	B-10D-20-4
Peak Polish Rod Load Rating, Lbs.....	10,450	8,700	7,500	7,340	5,000	5,000	4,000
Walking Beam Size.....	14"x8" @ 43 lb	14"x6¾" @ 30 lb	14"x6¾" @ 30 lb	10"x5¾" @ 25 lb	10"x5¾" @ 25 lb	10"x5¾" @ 25 lb	8"x5¼" @ 17 lb
Walking Beam Working Centers at Maximum Stroke.....	60" & 60"	48" & 48"	42" & 36"	36" & 36"	45" & 33"	33" & 33"	30" & 30"
Center Bearing, Bronzed Bushed.....	4¾"x9"	2½"x10½"	2½"x10½"	2½"x10½"	2½"x6½"	2½"x6½"	2½"x5½"
Tail Bearing, Bronzed Bushed.....	4¾"x4½"	3½"x3½"	3½"x3½"	3½"x3½"	3½"x3½"	3½"x3½"	2½"x2¾"
Crank Pin Bearing, Bronzed Bushed.....	2½"x2¾"	2½"x2¾"	2½"x2¾"	2½"x2¾"	2"x2½"	2"x2½"	2"x2½"
† Stroke Length.....	42"-34"-26"	34"-26"-18"	28"-18.7"	24"-16"	30"-25"	22"-18"	20"-16.6"
Counterbalance Effect from structural unbalance with no Beam Wts., Lbs.....	875	525	400	470	155	265	220
* 1" Thick Beam Weights Each, Lbs.....	140	125	125	100	100	100	90
Ratio of Beam Weights to Effective Counterbalance at Polish Rod.....	1.81	1.8	1.76	1.91	1.4	1.7	1.85
Maximum No. of 1" Thick Beam Weights.....	26	25	24	22	20	20	18
Maximum Counterbalance, Lbs.....	7,465	6,145	5,680	4,670	2,955	3,675	3,220
Polish Rod Hanger Wire Line.....	½"x12'-0"	¾"x11'-0"	¾"x9'-9"	¾"x8'-4"	¾"x8'-4"	¾"x8'-4"	¾"x6'-9"
Total Weight, Less Beam Weights, Lbs....	6,310	3,800	2,890	2,790	1,740	1,700	1,400

\* Note: 3" Thick Beam Weights Optional for all Beam Balanced Units.  
 † On B-16DA and B-10D, Stroke Length Changes are Obtained by Moving Tail Bearings on Beam.

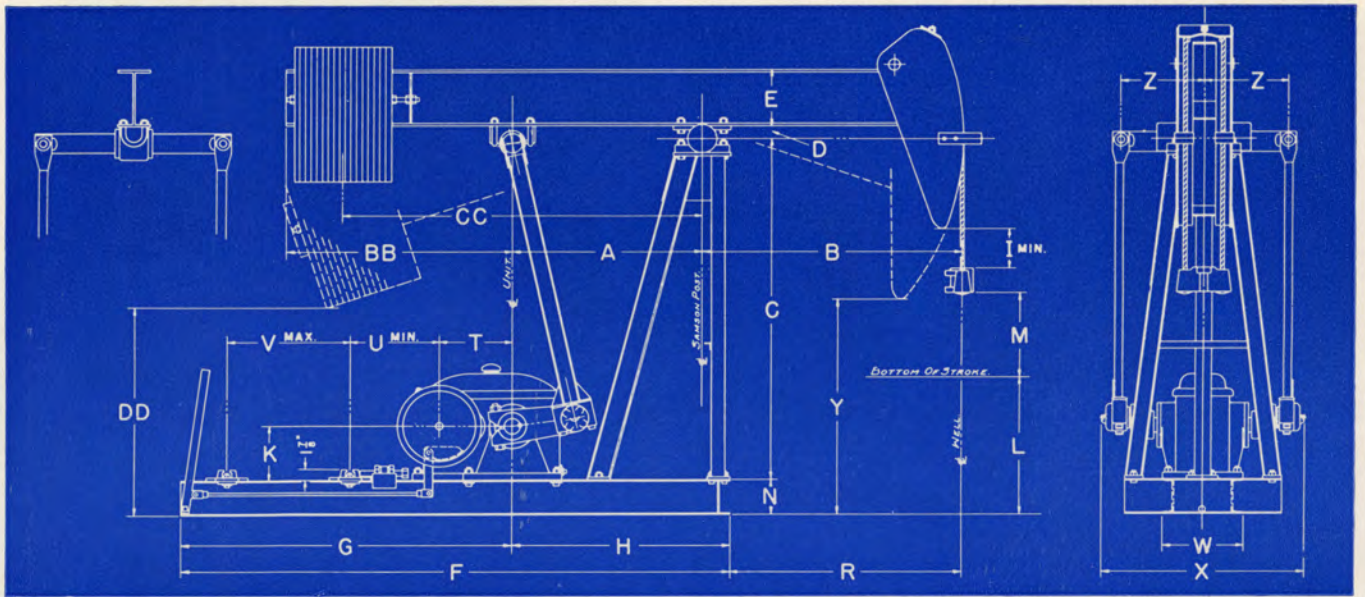


FIGURE 36

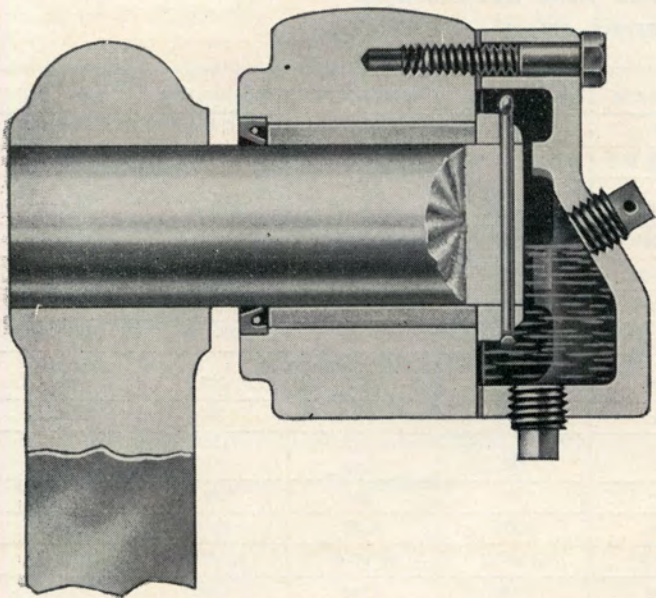
### GENERAL DIMENSIONS

UNIT	A	B	C	D	E	F	G	H	I	K	L	M	N	R	T	U	V	W	X	Y	Z	BB	CC	DD
†B-57D-42-10.5A	60"	60"	9'-10½"	3½"	13½"	15'-6"	8'-6¾"	6'-11¼"	14½"	18"	61½"	21"	8"	36¾"	20"	29½"	44"	24¾"	56¾"	7'-0½"	25½"	62½"	9'-0½"	6'-7¼"
†B-40D-34-8.7C	48"	48"	7'-11½"	2"	13½"	13'-6"	8'-3"	63"	18½"	14"	45½"	17"	8"	33"	17½"	24"	52½"	10¾"	50½"	70¾"	21¾"	51"	7'-2¼"	63½"
†B-25D-28-7.5B	36"	42"	7'-0¼"	2"	13½"	9'-10¼"	6'-4"	42¾"	12½"	14"	42½"	14"	6¼"	35¾"	13½"	28½"	28½"	16½"	46½"	60¾"	19½"	50"	6'-2"	55½"
B-25DA-24-7.3	36"	36"	7'-0¼"	2"	10½"	9'-10¼"	6'-4"	42¾"	11½"	14"	40½"	12"	6¼"	29¾"	13½"	28½"	28½"	16½"	46½"	64¼"	19½"	43½"	68½"	57½"
†B-16DA-30-5A	33"	45"	69½"	1½"	10½"	7'-11¼"	57½"	37¾"	6½"	9½"	33½"	15"	6¼"	40¼"	12¾"	16½"	22½"	13¾"	35¼"	46½"	14¼"	40"	63"	44½"
†B-16DA-22-5B	33"	33"	69½"	1½"	10½"	7'-11¼"	57½"	37¾"	13½"	9½"	34¼"	11"	6¼"	28¼"	12¾"	16½"	22½"	13¾"	35¼"	54½"	14¼"	33¼"	56¼"	46¾"
B-10D-20-4	30"	30"	54"	1¾"	8"	7'-7¼"	56"	35¼"	6½"	8½"	27½"	10"	6¼"	24¾"	11½"	15¼"	23½"	13"	33½"	40½"	13½"	35"	55½"	32½"

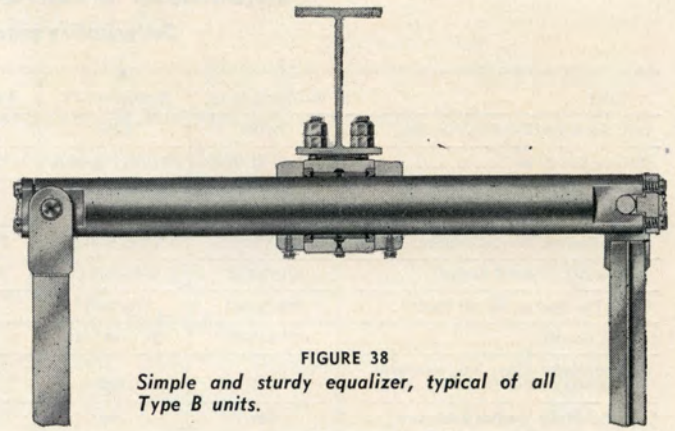
† This Unit in Stock at Los Angeles.

**LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

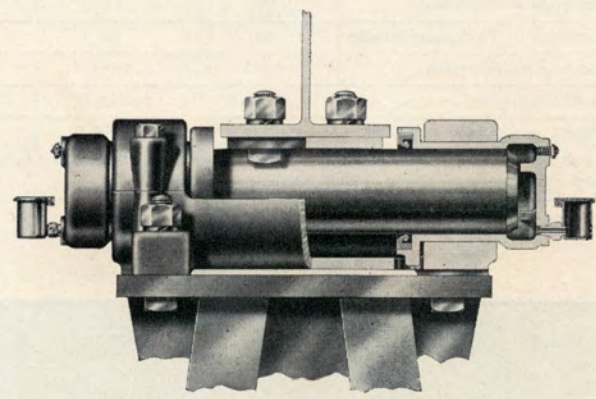
**LUFKIN TYPE B BEAM BALANCE PUMPING UNITS**



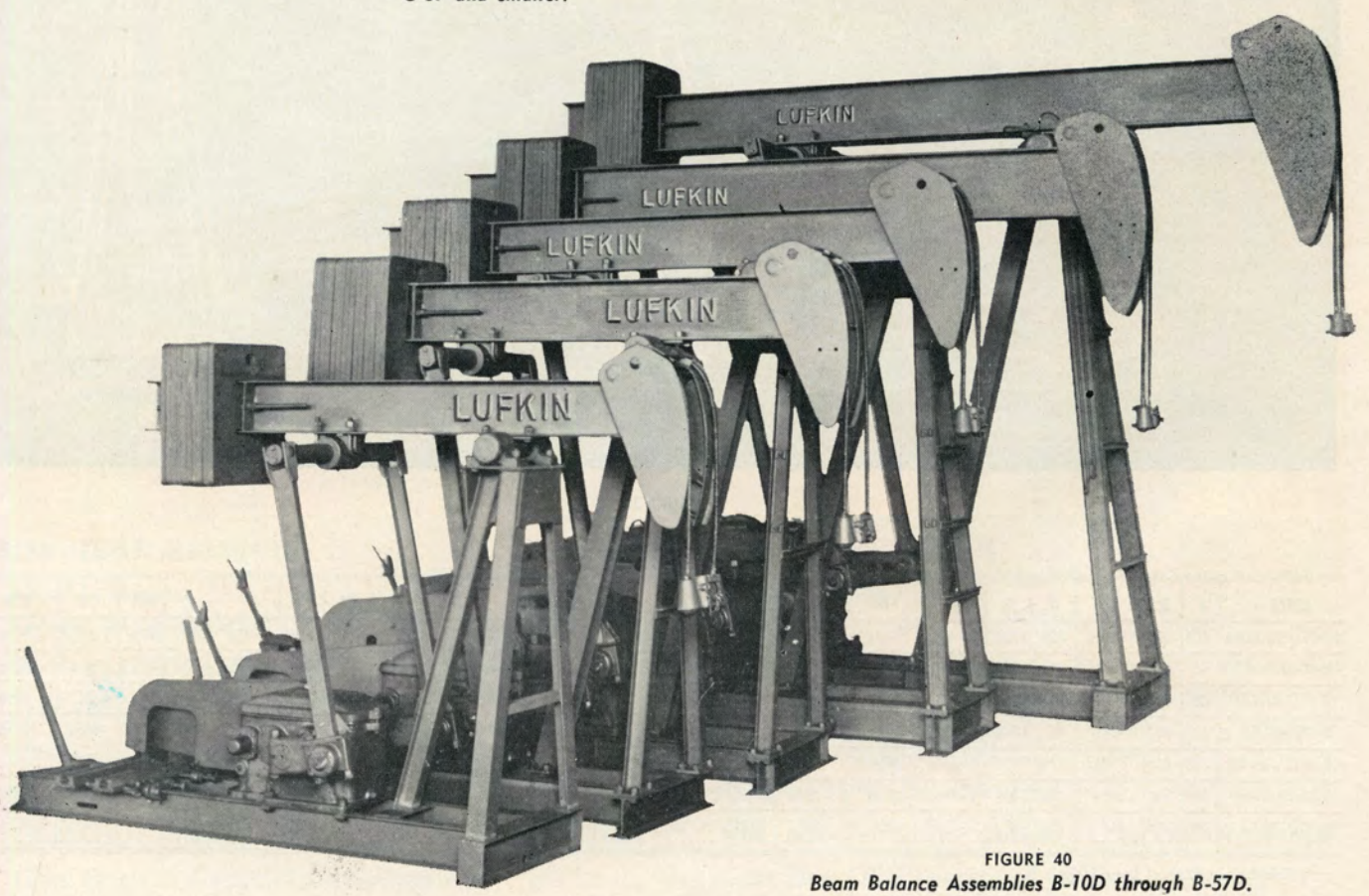
**FIGURE 39**  
*Type B Pitman Bearing. Oil bath, dust proof, bronze brushed.*



**FIGURE 38**  
*Simple and sturdy equalizer, typical of all Type B units.*



**FIGURE 37**  
*New One-Piece Center Bearing insures alignment of the two bushings standard on all Beam Balance Assemblies and Type C Units C-57 and smaller.*



**FIGURE 40**  
*Beam Balance Assemblies B-10D through B-57D.*

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

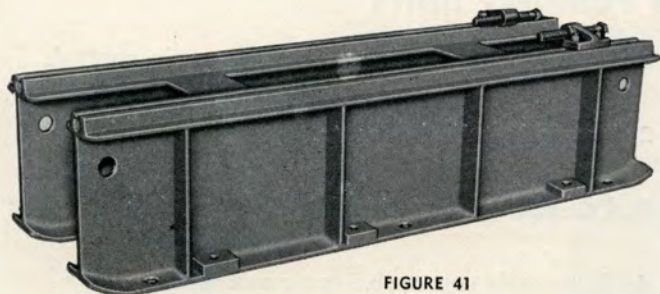


FIGURE 41

Structural sub-base for horizontal engines. Height to clear flywheel. Engine sits on T-slots fitted with adjusting screws. To be used when engine is mounted separately from stub-base pumping unit assembly.

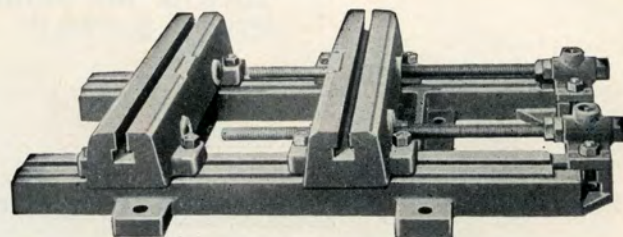


FIGURE 42

Universal rails are of heavy cast iron with machined tongue and groove fits, which with double adjusting screws assure perfect alignment. The substantial design of these rails assists in the elimination of vibration of all types of prime movers.

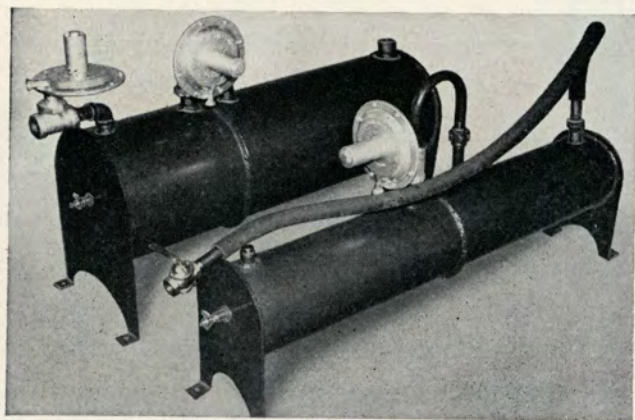


FIGURE 43

**VOLUME TANK AND REGULATOR FOR GAS ENGINES**

Double chamber volume tanks for gas engines are furnished in two sizes. Both are equipped with regulators. The smaller size is for multi-cylinder gas engines and is 8" diameter by 48" long with partition in center. It has hose connection to engine. The larger size is recommended for Lufkin engines and is 14" diameter by 42" long with a volume chamber of 2.5 cu. ft. A high pressure regulator can be furnished at inlet if necessary.

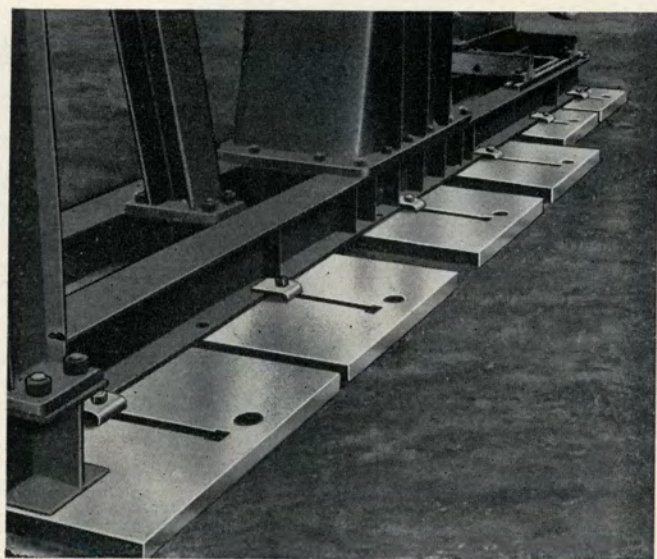


FIGURE 44

Annealed Ductile Iron Foundation Slabs—available for medium and smaller size units. With proper soil conditions, affords great saving over concrete and is 100% salvageable.

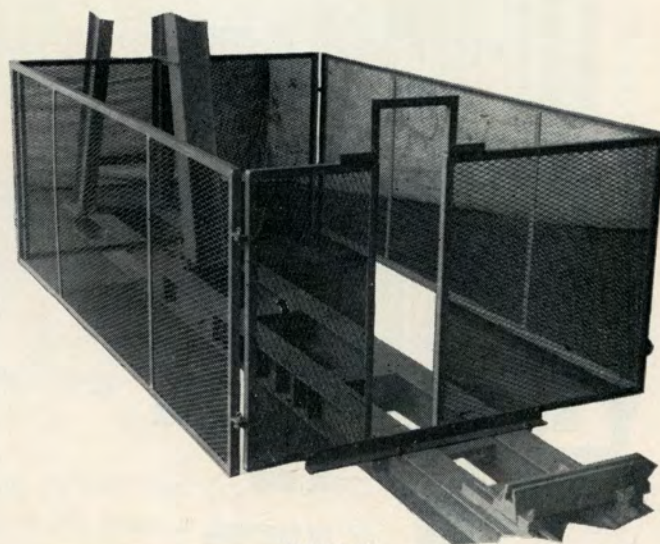


FIGURE 45

Type W (wire mesh) Crank Guards—a new standard design available in stock for all Lufkin Units. No holes required in Base or Post—clamps to top flanges of Base and to Post—and can be fitted to any unit already installed.

**LUFKIN Air Balanced PUMPING UNITS**

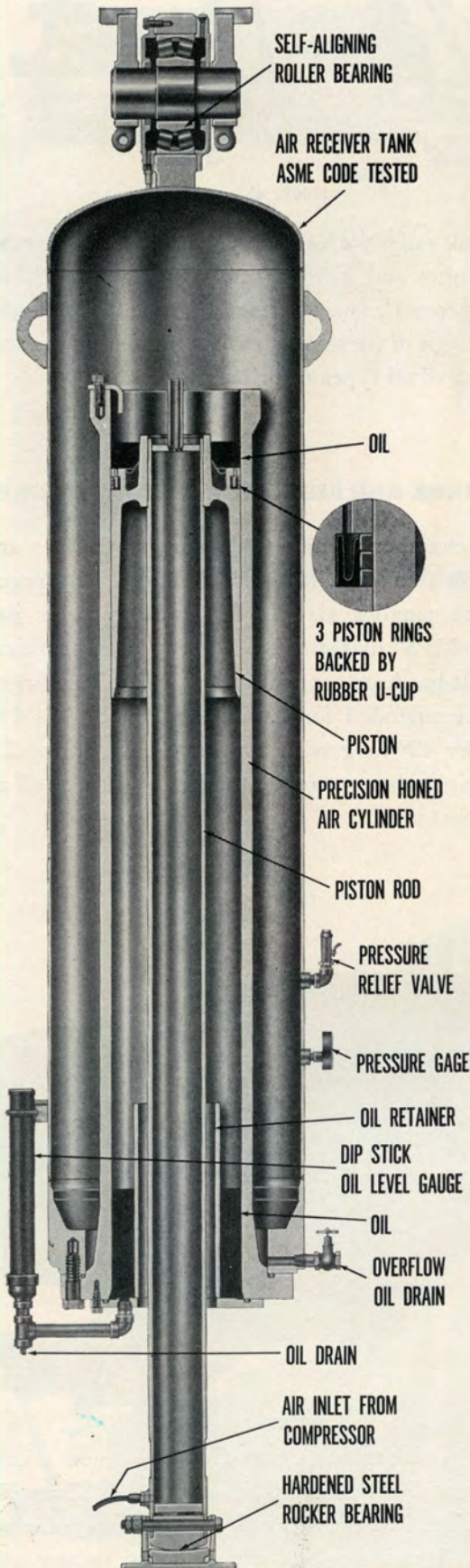


FIGURE 46

1. Perfect counterbalance with finger-tip control.
2. Lower installation costs.
3. Compact-portable-ideal for well testing.
4. Automatic counterbalancer available.

These are some of the outstanding advantages of the latest addition to the line of LUFKIN PUMPING UNITS. These units employ compressed air to counterbalance the well load, rather than beam weights or crank weights. The air system has been so simplified that the only continuously operating parts are the balance cylinder and piston. The reservoir capacity of the cylinder is enlarged by a steel receiver which moves with the cylinder as a unit.

On engine-driven units, when the system is in need of air, an automatic regulator engages an air operated clutch (driven by one belt from the unit sheave) and replaces any lost air. The operator sets regulator, initially, at a pressure sufficient to counterbalance well load, and this pressure is maintained automatically. Should the load change appreciably, a slight adjustment of this regulator will restore perfect counterbalance.

A safety shut-off switch is available, which will ground out engine, or shut off motor, if pressure should exceed a pre-set figure or fall below a minimum pre-set figure.

For units pumping with electricity, a separate motor-driven compressor assembly is standard equipment.

Since the Lufkin Air Balanced Units are approximately 35% shorter and 40% lighter than crank-type units, they are ideal for use as portable or test units, and for installation on piling or superstructures. Since changing counterbalance effect is a matter of opening a valve, the air balanced unit is ideal for use in testing wells.

All the ruggedness and simplicity of the conventional Lufkin Pumping Units are incorporated in the design of the Lufkin Air Balanced Pumping Unit.



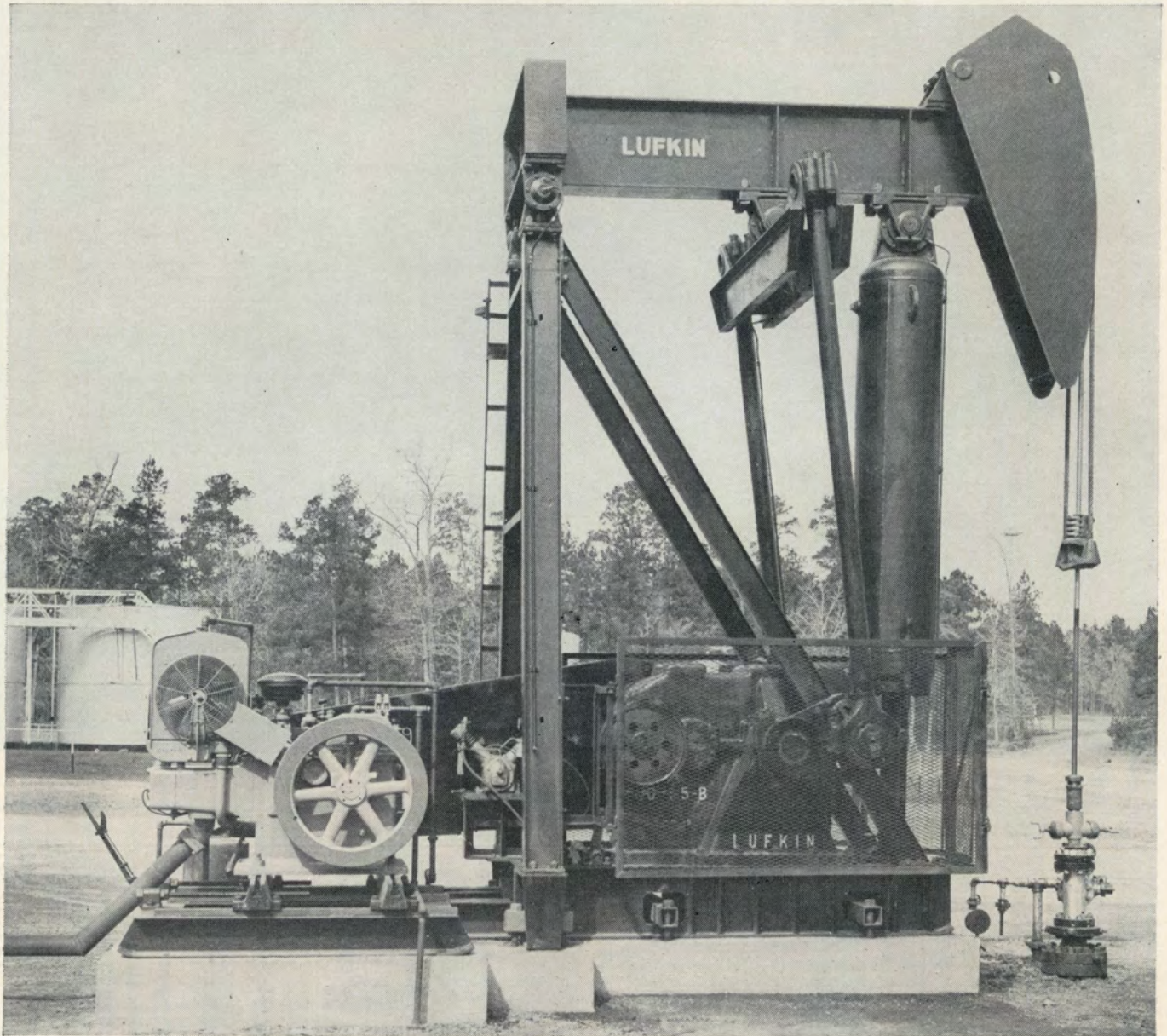
**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS****LUFKIN****LUFKIN AIR BALANCED PUMPING UNITS**

FIGURE 47

**GENERAL SPECIFICATIONS****Designation:**

First Number—Gear Box Size (A.P.I. Peak Torque Rating, Thousands of Inch Lbs.)

Second Number—Maximum Stroke (Inches)

Third Number—Structural Rating (Thousands of Lbs.)

(EXAMPLE: A-456DB-100-36 Designates an Air Balanced Unit with a Gear Box of 456,000 Inch Pounds A.P.I. Peak Torque Rating, Equipped with Cranks for a 100 Inch Stroke and a Structural Rating of 36,000 Lbs.)

**Gear Reducer Data:** See Crank Balanced Unit Specifications

**Crank Pin Bearings:** Tapered Roller

**Samson Post Bearings:** Spherical Roller

**Equalizer Bearing:** Spherical Roller

**Air Cylinder Bearing:** Spherical Roller

**Hanger:** Hinged Horsehead, Wire Line

**Air Counterbalance Pressure:** 450 P.S.I. (Max.)

**Upper Pitman Connection:** Rubber Cushioned



**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**GENERAL DIMENSIONS—Lufkin Air Balanced Pumping Units**

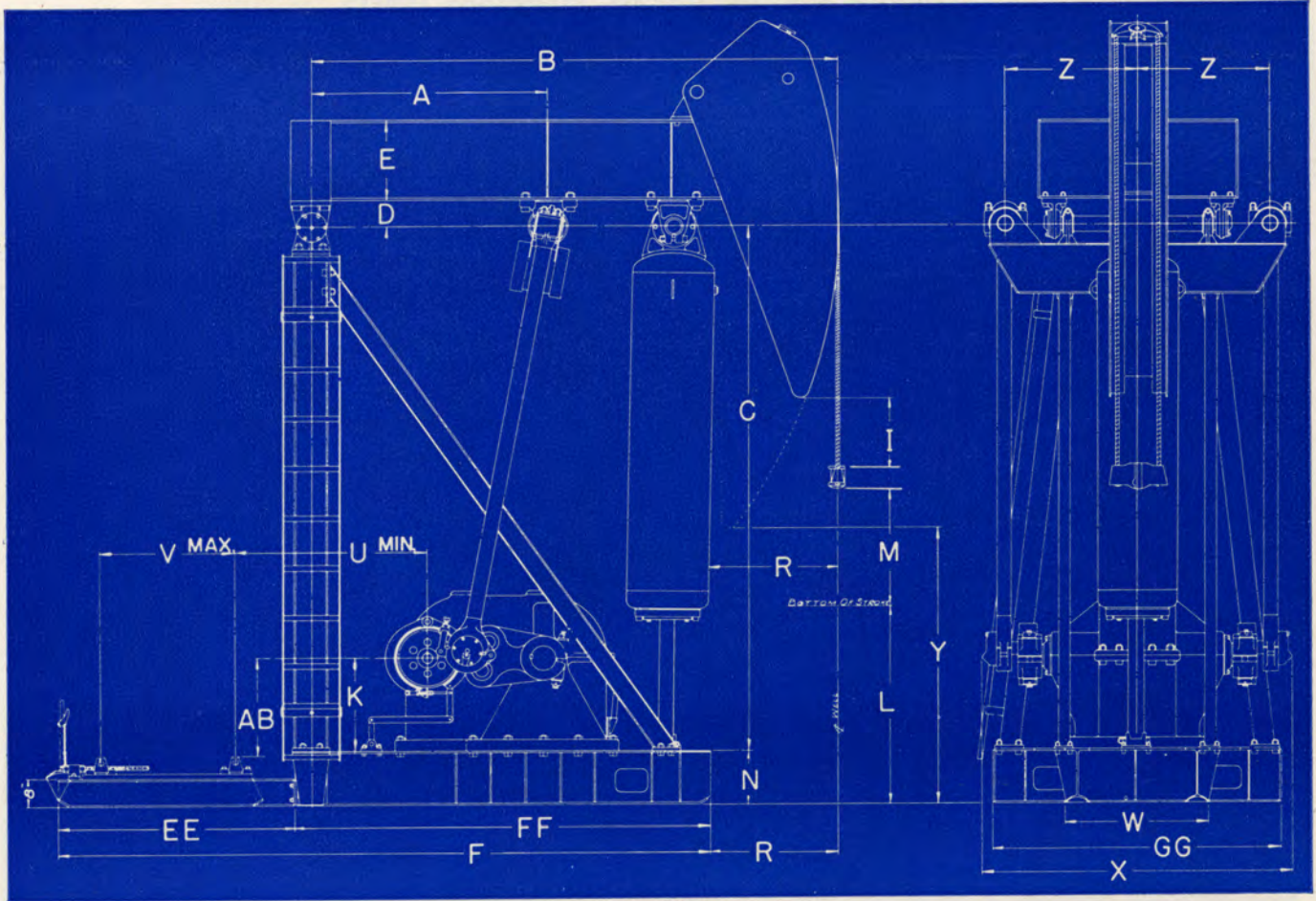


FIGURE 48

TABLE OF DIMENSIONS

UNIT	A	B	C	D	E	F	I	K	L	M	N	R	U	V	W	X	Y	Z	AB	EE	FF	GG
A-80DB-54-19...	48"	9'-7"	11'-0"	6 1/4"	16"	14'-5 3/4"	77 1/2"	18"	67 1/2"	27"	9 3/4"	36"	66"	42"	25 1/4"	66 3/4"	7'-0"	29"	13 1/4"	7'-0 1/4"	7'-5 1/2"	61 3/4"
A-114DA-54-19...	48"	9'-7"	11'-0"	6 1/4"	16"	14'-5 3/4"	77 1/2"	18"	67 1/2"	27"	9 3/4"	36"	64"	42"	25 1/4"	66 3/4"	7'-0"	29"	13 1/4"	7'-0 1/4"	7'-5 1/2"	61 3/4"
A-114DA-64-19...	48"	9'-7"	11'-0"	6 1/4"	16"	14'-5 3/4"	77 1/2"	18"	62 1/2"	32"	9 3/4"	36"	64"	42"	25 1/4"	66 3/4"	6'-7"	29"	13 1/4"	7'-0 1/4"	7'-5 1/2"	61 3/4"
A-160D-64-25...	50"	10'-0"	11'-9"	6 1/4"	18 1/2"	14'-6 1/4"	89"	27"	62 3/4"	32"	9 3/4"	36"	60"	40"	32"	69 3/4"	6'-11"	30 1/2"	22"	6'-7 3/4"	7'-10 1/2"	68 3/4"
A-160D-74-25...	50"	10'-0"	11'-9"	6 1/4"	18 1/2"	14'-6 1/4"	89"	27"	57 3/4"	37"	9 3/4"	36"	60"	40"	32"	69 3/4"	6'-7"	30 1/2"	22"	6'-9"	7'-10 1/2"	68 3/4"
A-228D-74-28...	56"	10'-11"	12'-5"	6 3/4"	20 1/2"	15'-0 1/4"	15 3/4"	27"	64 3/4"	37"	16 1/2"	36"	47"	50"	37 1/4"	6'-8 3/4"	7'-8"	35 1/2"	28 3/4"	6'-9"	8'-3 1/4"	6'-1 1/2"
A-228D-86-28...	56"	10'-11"	12'-5"	6 3/4"	20 1/2"	15'-0 1/4"	9 3/4"	27"	58 3/4"	43"	16 1/2"	36"	47"	50"	37 1/4"	6'-8 3/4"	6'-10"	35 1/2"	28 3/4"	6'-9"	8'-3 1/4"	6'-1 1/2"
A-320D-86-32...	70"	12'-11"	13'-4"	7 1/2"	24"	17'-8 1/4"	18 1/2"	28"	62 3/4"	43"	16 1/2"	39"	6'-6"	41"	43 1/4"	7'-3 3/8"	7'-7"	39"	29 3/4"	7'-8"	10'-0 1/4"	7'-1 1/2"
A-320D-100-32...	70"	12'-11"	13'-4"	7 1/2"	24"	17'-8 1/4"	9 3/4"	28"	55 1/2"	50"	16 1/2"	39"	6'-6"	41"	43 1/4"	7'-3 3/8"	6'-7"	39"	29 3/4"	7'-8"	10'-0 1/4"	7'-1 1/2"
A-456DB-100-36...	6'-5"	14'-7"	15'-7"	7 1/2"	24 3/4"	18'-1 1/2"	18 3/4"	28"	73 3/4"	50"	16 1/2"	47 1/2"	6'-2"	41"	46 3/4"	8'-4 1/2"	8'-10"	45"	29 3/4"	7'-2"	10'-11 1/2"	7'-6"
A-456DB-120-36...	6'-5"	14'-7"	15'-7"	7 1/2"	24 3/4"	18'-1 1/2"	13 3/4"	28"	57 3/4"	60"	16 1/2"	47 1/2"	6'-2"	41"	46 3/4"	8'-4 1/2"	7'-5"	45"	29 3/4"	7'-2"	10'-11 1/2"	7'-6"
A-640DB-120-36...	6'-5"	14'-7"	15'-7"	7 1/2"	24 3/4"	18'-1 1/2"	13 3/4"	28"	57 3/4"	60"	16 1/2"	47 1/2"	7'-1"	41"	46 3/4"	8'-4 1/2"	7'-5"	45"	29 3/4"	7'-2"	10'-11 1/2"	7'-6"
A-912D-120-36...	6'-5"	14'-7"	15'-7"	7 1/2"	24 3/4"	18'-1 1/2"	13 3/4"	30"	57 3/4"	60"	16 1/2"	47 1/2"	6'-2"	41"	50"	8'-4 1/2"	7'-5"	45"	31 3/4"	7'-2"	10'-11 1/2"	7'-6"
A-640DB-120-40...	7'-4"	16'-8"	17'-10"	9 3/4"	24 3/4"	19'-5 1/2"	21"	28"	78 1/4"	60"	16 1/2"	59"	6'-4"	41"	50"	8'-4 1/2"	9'-5"	45"	31 3/4"	7'-2"	12'-3 1/2"	7'-11 1/2"
A-912D-120-40...	7'-4"	16'-8"	17'-10"	9 3/4"	24 3/4"	19'-5 1/2"	19 1/2"	28"	55"	72"	16 1/2"	59"	7'-0"	41"	46 3/4"	8'-4 1/2"	9'-5"	45"	29 3/4"	7'-2"	12'-3 1/2"	7'-11 1/2"
A-640DB-144-40...	7'-4"	16'-8"	17'-10"	9 3/4"	24 3/4"	19'-5 1/2"	19 1/2"	30"	55"	72"	16 1/2"	59"	6'-4"	41"	50"	8'-4 1/2"	7'-10"	45"	31 3/4"	7'-2"	12'-3 1/2"	7'-11 1/2"
A-912D-144-40...	7'-4"	16'-8"	17'-10"	9 3/4"	24 3/4"	19'-5 1/2"	19 1/2"	30"	55"	72"	16 1/2"	59"	6'-4"	41"	50"	8'-4 1/2"	7'-10"	45"	31 3/4"	7'-2"	12'-3 1/2"	7'-11 1/2"
A-912D-192-42...	10'-1 1/2"	23'-0"	21'-0"	9 3/4"	33"	26'-6 3/8"	12 3/4"	30"	55"	96"	21"	48"	9'-2"	41"	50"	8'-6 3/8"	7'-8"	45"	36 1/4"	7'-2"	19'-4 3/8"	7'-11 1/2"

RATING CHART

UNIT	Peak Torque Rating, Inch Lbs.	Stroke, Inches	Polish Rod Load Class, Lbs.	Effective Counterbalance, Lbs.	Walking Beam, Size	Wire Line Hangers	*Standard Sheave Sizes, P.D., Inches	Gear Ratio	Weight, Lbs.
A-80DB-54-19	80,000	54-44	19,000	10,885	16x8 1/2 @ 64 lb	1"x16'-0"	19 1/4, 24, 29 1/2 (4C)	29.15	10,730
A-114DA-54-19	114,000	54-44	19,000	10,885	16x8 1/2 @ 64 lb	1"x16'-0"	19 1/4, 24, 29 1/2, 33 1/4 (4C)	29.4	11,000
A-114DA-64-19	114,000	64-54	19,000	10,885	16x8 1/2 @ 64 lb	1"x16'-0"	19 1/4, 24, 29 1/2, 33 1/4 (4C)	29.4	11,000
A-160D-64-25	160,000	64-54	25,000	17,085	18x8 3/4 @ 77 lb	1 1/2"x18'-6"	24 1/4, 29 1/4, 33 3/4, 38 (5C)	28.67	13,100
A-160D-74-25	160,000	74-64-54	25,000	17,085	18x8 3/4 @ 77 lb	1 1/2"x18'-6"	24 1/4, 29 1/4, 33 3/4, 38 (5C)	28.67	13,100
A-228D-74-28	228,000	74-64-54	28,000	17,170	21x9 @ 82 lb	1 1/2"x21'-0"	24 1/4, 30, 36, 41 1/4 (6C)	28.45	18,500
A-228D-86-28	228,000	86-74-64	28,000	17,170	21x9 @ 82 lb	1 1/2"x21'-0"	24 1/4, 30, 36, 41 1/4 (6C)	28.45	18,500
A-320D-86-32	320,000	86-74-64	32,000	21,255	24x12 @ 100 lb	1 3/4"x24'-0"	25, 30, 36, 42, 47 1/4 (8C)	30.12	24,500
A-320D-100-32	320,000	100-86-74	32,000	21,255	24x12 @ 100 lb	1 3/4"x24'-0"	25, 30, 36, 42, 47 1/4 (8C)	30.12	24,800
A-456DB-100-36	456,000	100-86-74	36,000	23,775	24x14 @ 130 lb	1 3/4"x25'-0"	28, 34, 40, 46, 51 (10C cr 7D)	29.04	28,500
A-456DB-120-36	456,000	120-100-86	36,000	23,775	24x14 @ 130 lb	1 3/4"x28'-0"	28, 34, 40, 46, 51 (10C or 7D)	29.04	29,500
A-640DB-120-36	640,000	120-100-86	36,000	23,775	24x14 @ 130 lb	1 3/4"x28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.6	31,500
A-912D-120-36	912,000	120-100-86	36,000	23,775	24x14 @ 130 lb	1 3/4"x28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.72	33,300
A-640DB-120-40	640,000	120-100-86	40,000	27,065	24x14 @ 160 lb	1 3/4"x28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.6	36,900
A-912D-120-40	912,000	120-100-86	40,000	27,065	24x14 @ 160 lb	1 3/4"x28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.72	38,700
A-640DB-144-40	640,000	144-120-100	40,000	27,065	24x14 @ 160 lb	1 3/4"x32'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.6	37,900
A-912D-144-40	912,000	144-120-100	40,000	27,065	24x14 @ 160 lb	1 3/4"x32'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.72	39,700
A-912D-192-42	912,000	192-168-144	42,000	31,600	33x15 3/4 @ 200 lb	1 3/4"x40'-6"	28, 34, 40, 46, 51 (10C or 7D)	28.72	49,000

\* Standard Sheave Sizes Shown are Floating Type Sheaves for Clutch Driven Compressor. Largest Size Shown is Maximum available. When Compressor is driven by Electric Motor, Reducer Sheave is regular solid type as shown in Crank Balance Unit Specifications.

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

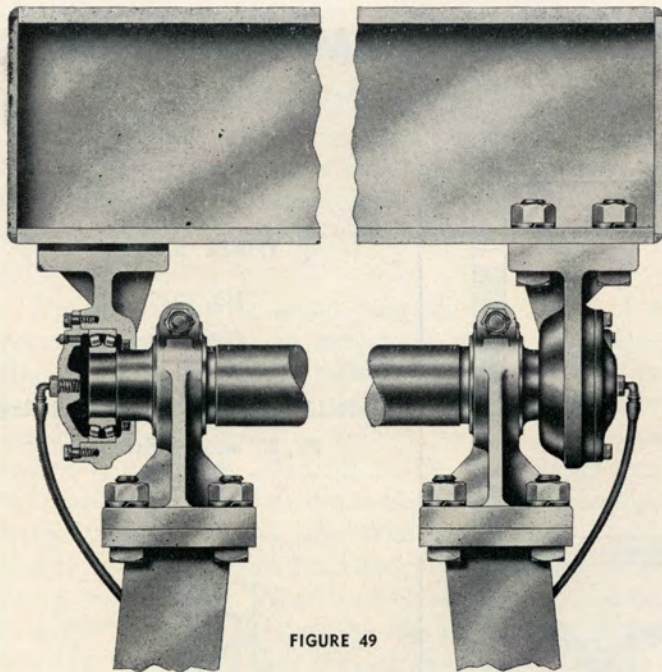


FIGURE 49

*Samson Post Bearing Assembly. Bearings lubricated from ground level.*

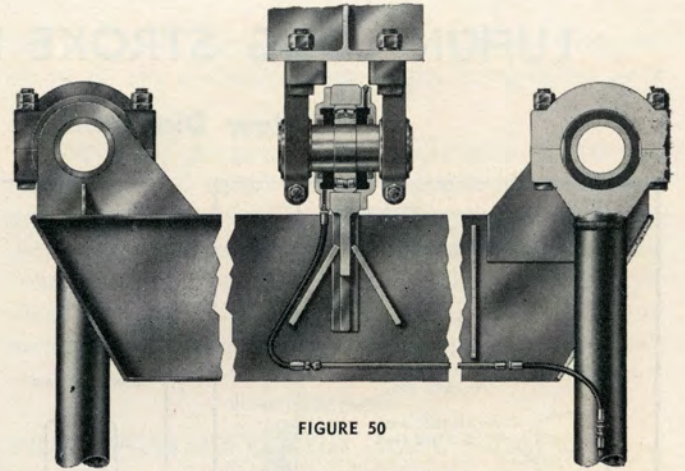
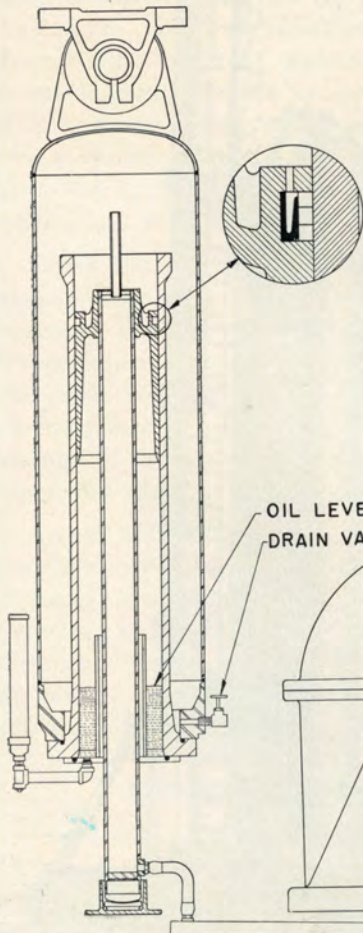


FIGURE 50

**PITMAN EQUALIZER**

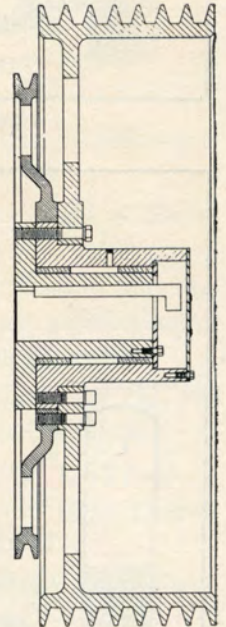
showing self-aligning roller bearing at center and rubber cushions at upper Pitman connections. Bearing is lubricated through flexible oil line at lower end of Pitman.



**CLUTCH**

for air compressor—engages by spring pressure at initial starting and also when air pressure drops too low for proper counterbalance—disengages automatically when air pressure builds up to predetermined setting.

FIGURE 51



**FLOATING SHEAVE ASSEMBLY**

for Gear Reducer which permits running air compressor at initial starting without operating gear reducer.

FIGURE 52

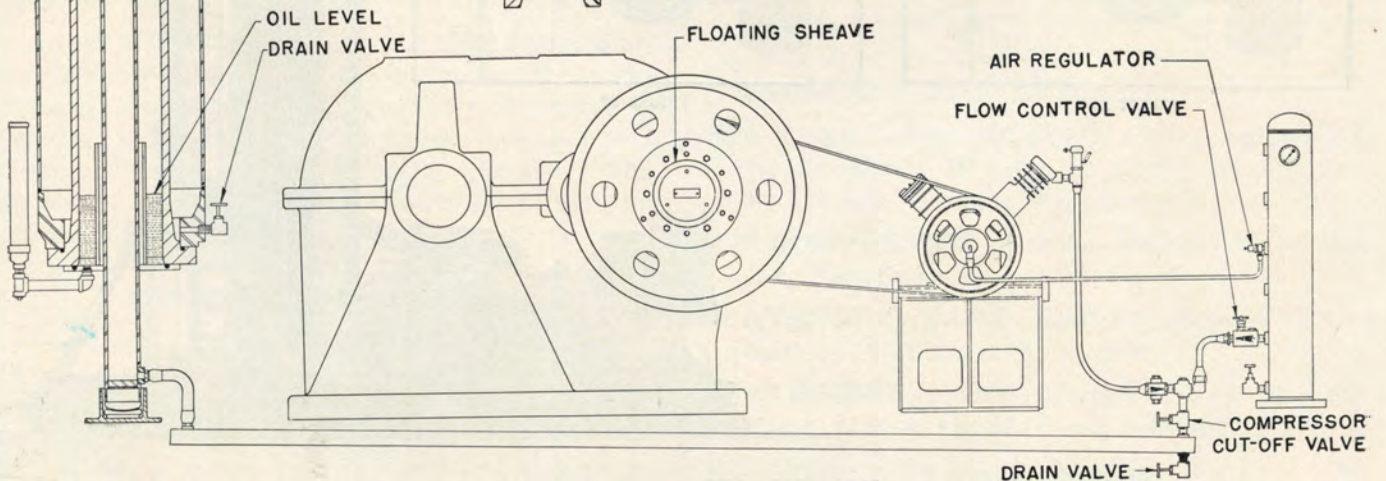


FIGURE 53

*Schematic Outline of Air System*

**LUFKIN**

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

# LUFKIN LONG STROKE HYDRAULIC PUMPING UNIT

## Flow Diagrams

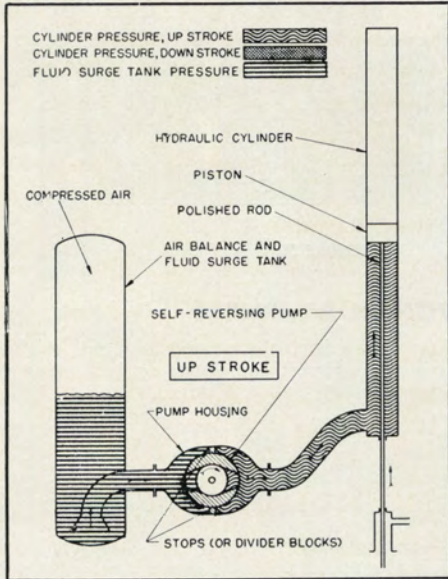


FIGURE 54

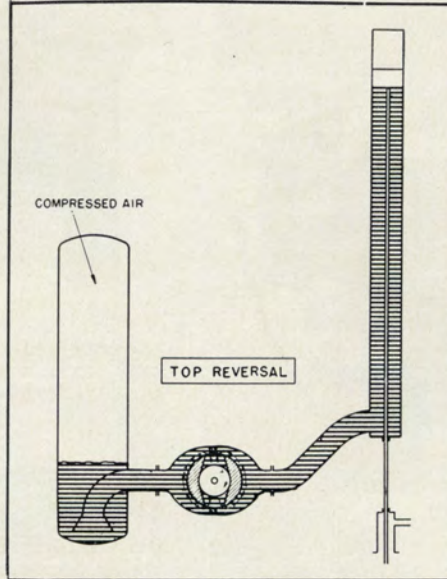


FIGURE 55

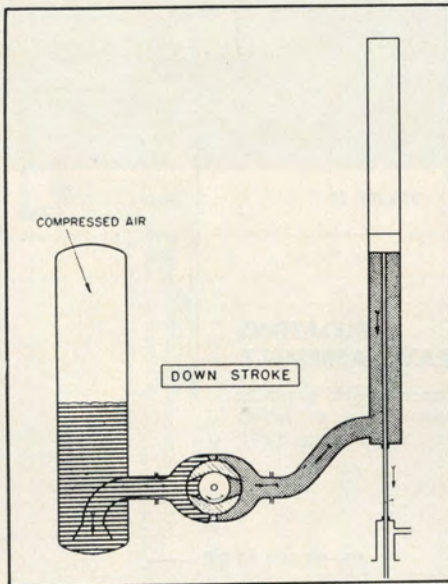


FIGURE 56

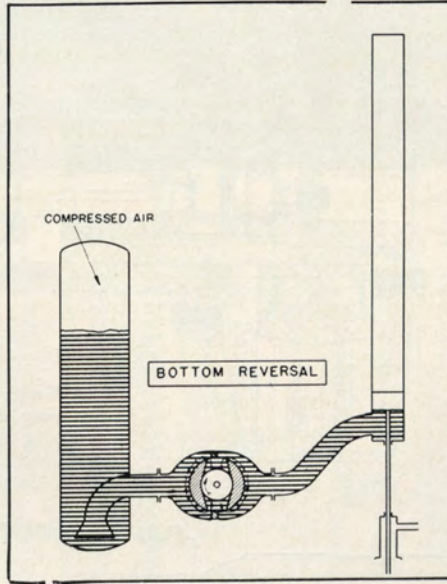


FIGURE 57

### THREE SIZES

No. 3520

No. 3525

No. 3530

35,000 Lb. Polished Rod Load Rating

20', 25' and 30' Strokes

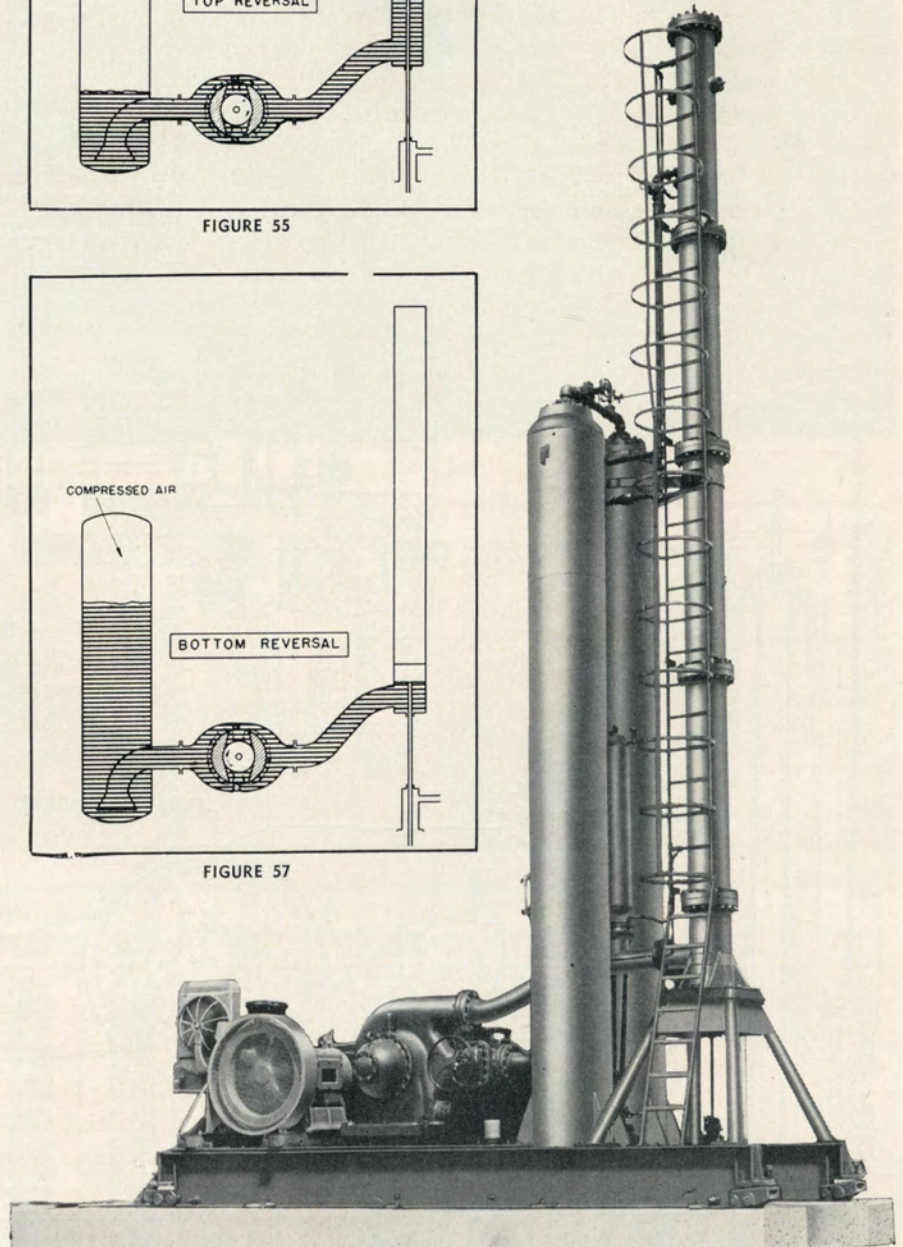


FIGURE 58

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS****LUFKIN****Explanation of Reversing Principle**

(See Figs. 54, 55, 56 and 57)

Lufkin's Hydraulic Pumping Units incorporate a new and unique method of polished rod reversing. A reversing valve is not used. Instead, flow to and from the hydraulic cylinder is controlled by a patented self-reversing pump.

The self-reversing pump consists essentially of a rotor housing and three screws, or rotors. The rotational speed of the rotor housing is geared down to a fraction of the speed of the rotors. (Speed of rotor housing ranges from 2 to 7 RPM, whereas speed of rotors range from 500-1200 RPM, both depending on desired pumping conditions.) The rotor housing, with its suction and discharge ports 180° apart, slowly rotates within the main pump housing. The pump housing has two "stops" or divider blocks, also 180° apart, located at the top and bottom of the housing between which the self-reversing pump rotates. (See Fig. 54.) These stops effectively seal off one side of the pump housing from the other. Thus, as the self-reversing pump rotates, its discharge port is on one side of the pump housing half the time and on the other side of the pump housing the other half of the time. This condition of course causes an intermittent change of direction of flow through the pump housing. On the up stroke of the polished rod, flow is from the collector tank (or surge tank) into the hydraulic cylinder. On the down stroke flow is from the hydraulic cylinder back into the surge tank. (See Figs. 54 and 56.)

When the suction and discharge ports of the rotor housing line up or "straddle" the stops on the pump housing, fluid is discharged into both sides of the pump housing, and likewise, at the suction port of the rotor housing, fluid is sucked in from both sides of the pump housing. When this condition occurs, a change in the direction of flow is effected, and a polished rod reversal takes place. (See Figs. 55 and 57.)

As the size of the ports on the rotor housing are considerably wider than the stops on the pump housing, the polished rod gradually decreases in velocity, stops, and then uniformly increases to a constant velocity in the opposite direction. This makes for smooth polished rod reversals at both the top and bottom of the stroke.

**AUTOMATIC COUNTERBALANCE**

The Lufkin hydraulic units employ an automatically controlled pneumatic counterbalance system which maintains perfect counterbalance air pressure under all operating conditions. Not only does this unique device compensate for air loss and pressure fluctuations due to changes in ambient temperatures but actually regulates the air pressure to suit vary-

ing well loads due to gas heads, fluid level fluctuations, or any condition that might bring about such change.

"Slip" past the pump due to difference in pressure on the up and down strokes brought about by any unbalanced condition is harnessed to operate a simple spool type valve which starts and stops the air compressor, or releases air from the receiver tank. Once the unit is in operation this completely automatic system requires no attention or adjustment.

**Specifications****PEAK POLISHED ROD LOAD**—35,000#**MAXIMUM COUNTERBALANCE**—26,200#**MAXIMUM LOAD RANGE**—28,000#**MAXIMUM OPERATING PRESSURE**—

Hydraulic Fluid—270 P.S.I.

Counterbalance Air—200 P.S.I.

**STROKE LENGTHS**—20, 25 and 30 Ft.**PUMPING SPEED RANGE**—2 to 7 - 20 Ft.

Strokes Per Minute

**HYDRAULIC CYLINDER**—13" Dia. Nickel Alloy Cast Iron**POLISHED ROD**—1½" Dia. Alloy Steel or Monel as Ordered**STROKE CHANGE**—Length of Stroke May be Changed in a Matter of Minutes by Replacing Two Small Spur Gears in Pump Housing**HYDRAULIC FLUID**—SAE 20 Hydraulic Oil, 490 Gal. Req'd. (Consult our Engineering Dept.)**HYDRAULIC REVERSING PUMP DATA**—**Type**—Triple Screw "IMO" With Gear Driven Reversing Mechanism**Material**—Pump Housing and Other Critical Parts Nickel-Moly Cast Iron**Capacity**—1,900 GPM at 1,000 RPM**Input Speed**—976 RPM for six 20 foot Strokes Per Minute**Sheave**—20" P.D.—7 "D" Standard**AIR TANKS**—Two 30" Dia. x 22 Ft. Long for 20' and 25' Strokes, 28' Long for 30' Stroke. ASME—200 Lb. Safe Working Pressure.**AIR COMPRESSOR**—Gardner-Denver "ADD" Duplex, Two Stage**SCAVENGING TANK**—Built into Base With Capacity for All Fluid in the System**SCAVENGING PUMP**—Gerotor No. 0-30 Gear Driven, Mounted Inside Pump Housing**WEIGHT**—38,540 Lbs. for No. 3520

39,800 Lbs. for No. 3525

41,700 Lbs. for No. 3530

**LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

**LUFKIN MODEL H-795 HORIZONTAL**

45 BHP—400 RPM TO 65 BHP—600 RPM CONTINUOUS SERVICE

The NEW Lufkin Model H-795 Horizontal Two Cylinder Two Cycle Gas Engine has been designed and proven for heavy duty oil field service. ONLY in the Lufkin Engine will you find two cylinder, two cycle design for smoother flow of power and less shock and wear to your equipment. Easily maintained, dependable, long life and low upkeep are assured by such typical Lufkin Features as:

**Thermosyphon Cooling** maintains even temperatures at all loads and speeds. Eliminates the use of water pumps.

**Positive Full Pressure Lubrication.** Oil is forced under pressure to all moving parts for better lubrication.

**Precision Connecting Rod Inserts.**

**Crosshead Shoes and Bushings.** Field renewable, Long wearing Bronze.

**Saddle Type Crosshead Pin** gives 50% greater bearing area and less wear.

**Rugged Two Cycle Crosshead Design.** Metallic Piston Rod packing seals combustion gases from crankcase preventing frequent oil changes.

**Starting System—Built in (Optional).** 12 Volt Electric Starter, Air-Gas Motor Starter, Regular Air Starter.

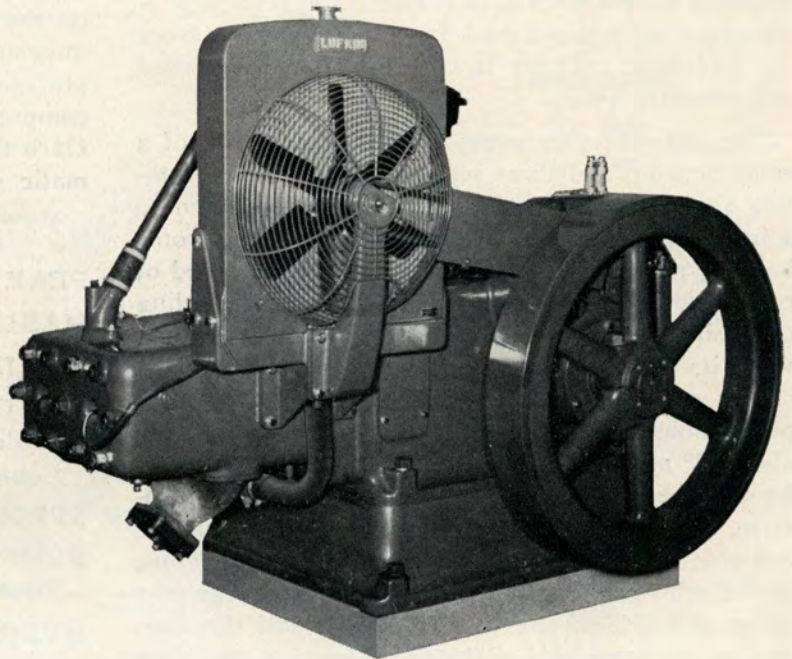


FIGURE 59

Front View—Lufkin H-795 Engine

**Safety Control** for low oil pressure and high water temperatures.

**Oil Cooled Pistons** for longer ring and cylinder life. Recommended for heavy loads. (Optional)

**Hydraulic Governor** for close regulation work such as generators. (Optional)

**Sub-Base** to raise engine base so engine Flywheel will clear when mounted on crossrails. (Optional)

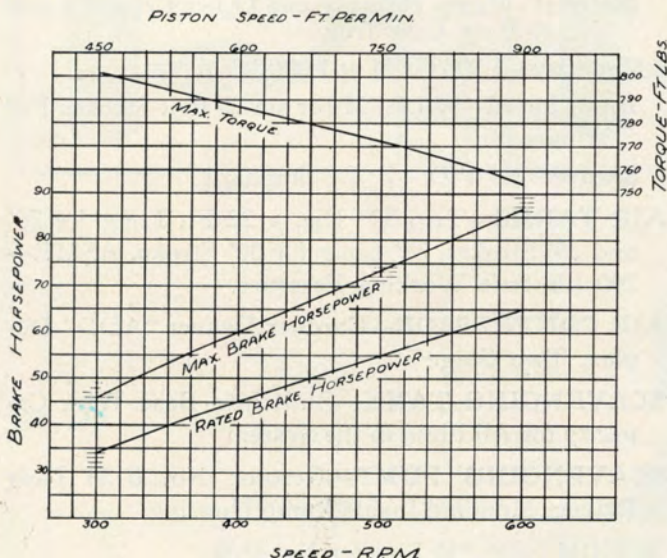


FIGURE 60

Performance Curve—Lufkin H-795 Engine

**SPECIFICATIONS**

Bore x Stroke	7½ x 9
Displacement, Cu. in.	795
Speed Range, RPM	300—600
Maximum Speed, RPM	600
Rated BHP—400 RPM	45
Rated BHP—600 RPM	65
Diameter Flywheel, in.	40
Flywheel WR <sup>2</sup> (Ft <sup>2</sup> lbs)	1580
Dia. Power take off shaft	3"
Size Exhaust pipe	4"
Size Gas Inlet	1"
Oil Capacity (Gallons)	5
Water Capacity (Gallons)	12
Foundation Bolts	(4) 1"
Weight	4250#

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**TWIN CYLINDER TWO CYCLE GAS ENGINE**

HEAVY DUTY, MEDIUM SPEED, CROSSHEAD TYPE DESIGN

The Lufkin Model H-795 Gas Engine is offered as a complete power unit suitable for all classes of service for the Oil Fields. Lufkin offers engineered skid mounted engine driven assemblies which are flexible to suit individual requirements. Suitable drives with or without engine clutch can be made direct, through "V" belts or with Lufkin speed increaser and reducers. A Few Typical Unit assemblies are:

**Generator Units** either single or in parallel for power for oil well pumping, plant service etc. Usually 40 KW 3-phase 60-cycle units are used.

**Gas Compressor Units** either single or two stage built in as a part of engine assembly. Compressor cylinders to meet your requirements.

**Hydraulic Pump Units.** Triplex pumps engine driven for hydraulic production or salt water disposal.

**Duplex Pump Units** for pipelines and water systems.

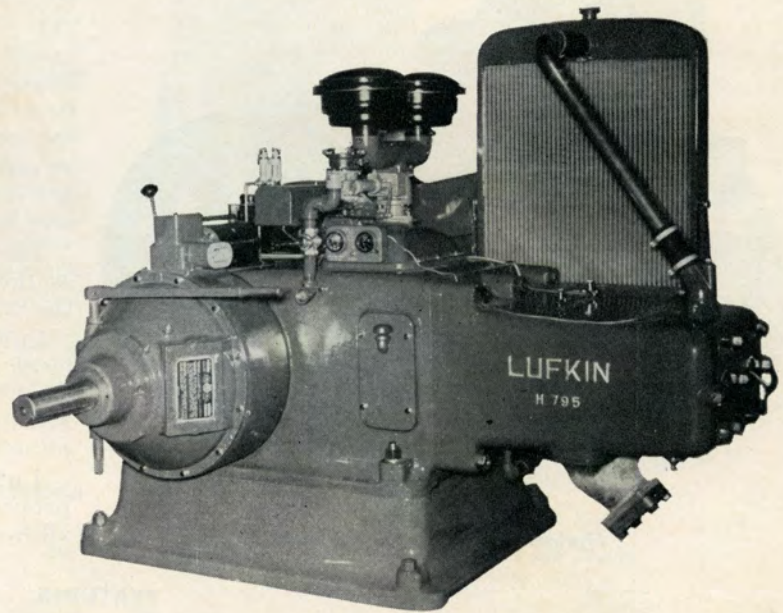


FIGURE 61  
Drive Side (Clutch) Lufkin H-795 Engine

**Centrifugal Water Pumps** for water towers.

**Refinery Hot and Lean Oil Pump Units.** Direct through speed increasers or with V belt drives.

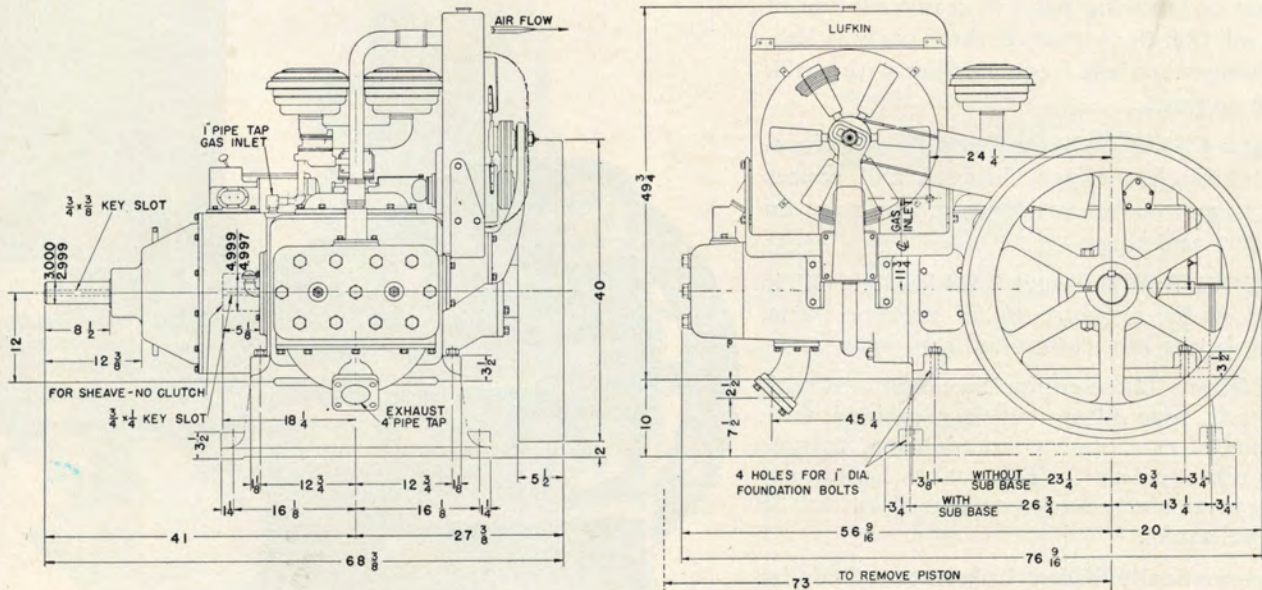


FIGURE 62  
Space Plan Lufkin H-795 Engine

**LUFKIN****LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS****LUFKIN MODEL HC-333 AND HT-333 HORIZONTAL**

20 HP-425 RPM—30 HP-650 RPM CONTINUOUS SERVICE

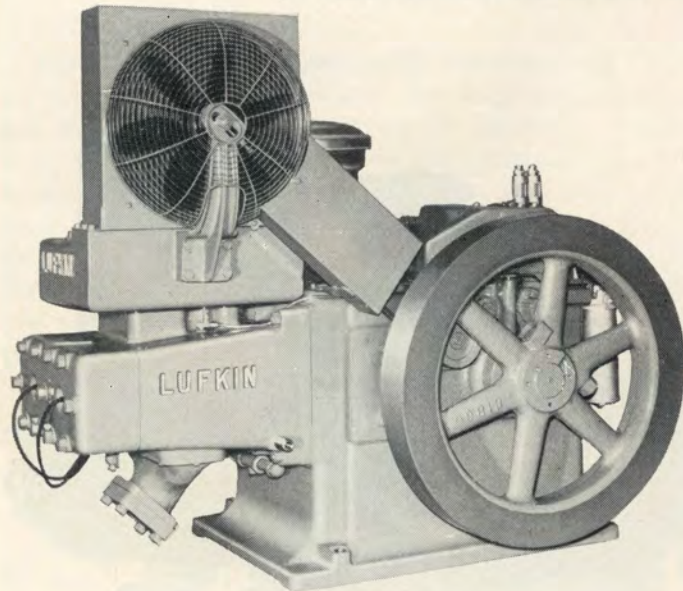


FIGURE 63

*Flywheel Side Lufkin HC-333 Engine*

Model HC-333 is Condenser cooled.  
Model HT-333 is Thermosyphon cooled.

The Model HC-333 Engine is condenser cooled. Water around the cylinders remains constant at 212° F. regardless of load and temperature. No water pump is used. Steam generated in the engine is condensed by the condenser and fan, then the water returns by gravity to the cylinders.

Lufkin twin cylinder, 2 cycle gas engines are built as medium speed, heavy duty, crosshead type natural gas engines, resulting in long life, dependable power, and low upkeep.

Two cylinders result in less shock on equipment, as there are two power impulses each revolution of the crankshaft. This gives a smoother flow of power.

Lufkin series 333 engines are built with a single large flywheel that does not extend below the base. This makes mounting of the engine easy for standard pumping unit bases. A broad base allows rigid mounting and less vibration.

Lufkin engines are built for natural gas, butane or propane operation. A dual fuel attachment (optional) allows either fuel to feed to engine automatically.

**FEATURES**

**Twin Cylinders** give two power impulses for each revolution of the crankshaft, assuring smoother performance and less shock to engine and equipment.

**Two Cycle Design** is rugged and simple. Pistons move over ports cast in cylinder walls. No valves to burn or stick. No excessive oil consumption when rings are worn.

**Crosshead Construction** with full metallic piston rod packing prevents crankcase contamination; moving parts in crankcase run in clean oil, therefore wear on these parts is less. Oil changes are less frequent than with trunk piston engines.

**Water Cooled Exhaust Ports.** Water circulates through the port bridges and causes them to run cooler, resulting in less wear on cylinders and rings.

**Positive Full Pressure Lubrication.** Oil is forced under pressure to all moving parts, giving better lubrication and less wear.

**Oil Filter.** These engines are equipped with a bypass type filter, which combined with absence of crankcase contamination, assures clean oil for all parts. This makes Lufkin engines particularly suited to use of automatic oil level tanks.

**Automatically Filled Lubricator.** Cylinder force feed lubricator is constantly filled from base through the oil filter, which assures only clean oil being fed cylinders.

**Built In Starting Systems** mount directly on engine. A starter built for the engine. Three types are offered:

1. 12-Volt Electric
2. Gas Motor, requiring 30# gas
3. High Pressure (150#) Air

**Safety Control** is standard equipment for low oil pressure and low water level.

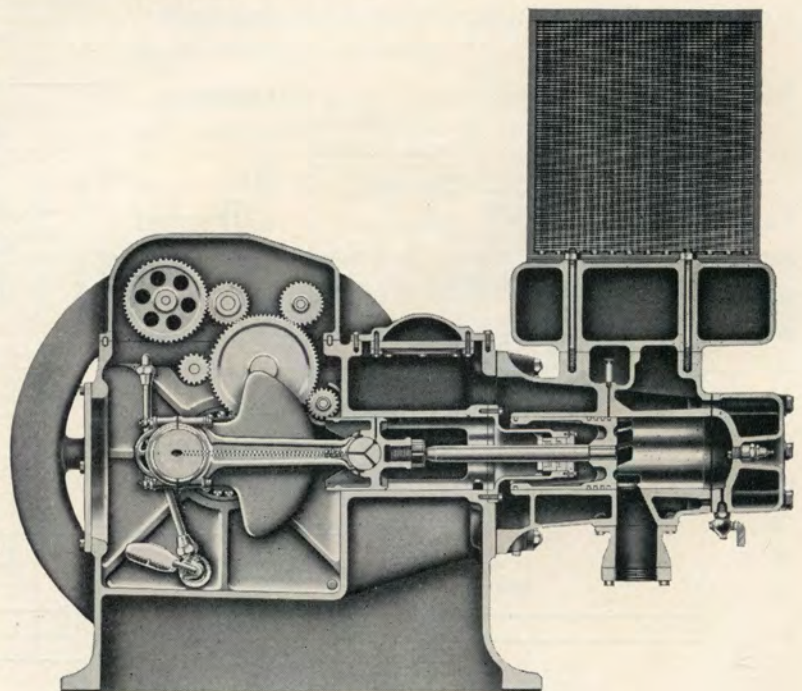


FIGURE 64

*Cross Section HC-333 Engine*



**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**



**TWIN CYLINDER, TWO CYCLE GAS ENGINE**  
 HEAVY DUTY, MEDIUM SPEED CROSSHEAD TYPE DESIGN

The Lufkin Model HT-333 engine is cooled by pressure thermosyphon method. A difference in water temperature at top and bottom of radiator results in a difference of specific gravity of the water which causes the water to circulate. Circulation is automatically adjusted to the temperature so that proper uniform temperatures are maintained in the engine regardless of load conditions.

Lufkin engines are furnished as a complete power unit. Standard equipment is full pressure lubrication, 2-feed force feed cylinder lubricator, oil filter, automatically filled lubricator from engine base, rotary magneto, magneto cover, Pierce centrifugal governor, Ensign natural gas mixer and regulator, oil bath air filter, cooling system, condenser or thermosyphon, optional, fan, fan and belt guards, safety control for low oil pressure and water, Twin Disc power take off.

Optional equipment (at extra cost) is 12-Volt electric starter, gas motor starter, High pressure (150#) air starting, dual fuel (gas-butane) system.

**Lufkin HC-333 and HT-333 Engine Specifications**

No. of Cylinders.....	2
Bore .....	5½"
Stroke .....	7"
Displacement—Cu. In. ....	333
Speed Range, R.P.M. ....	350-750
Normal Pumping Speed Range, R.P.M. ....	400-650
Rated B.H.P. Continuous 425 R.P.M. ....	20
Rated B.H.P. Continuous 650 R.P.M. ....	30
Rated B.M.E.P. Lbs. ....	55
Piston Speed Ft. Per Min. at 650 R.P.M. ....	758
Flywheel WR <sup>2</sup> (FT <sup>2</sup> Lbs.) .....	510
Diameter Flywheel .....	32"
Type Cooling System (Optional)	
HC-333 .....	Condenser
HT-333 .....	Thermosyphon
Ignition .....	Rotary Magneto
Lubrication .....	Full Pressure

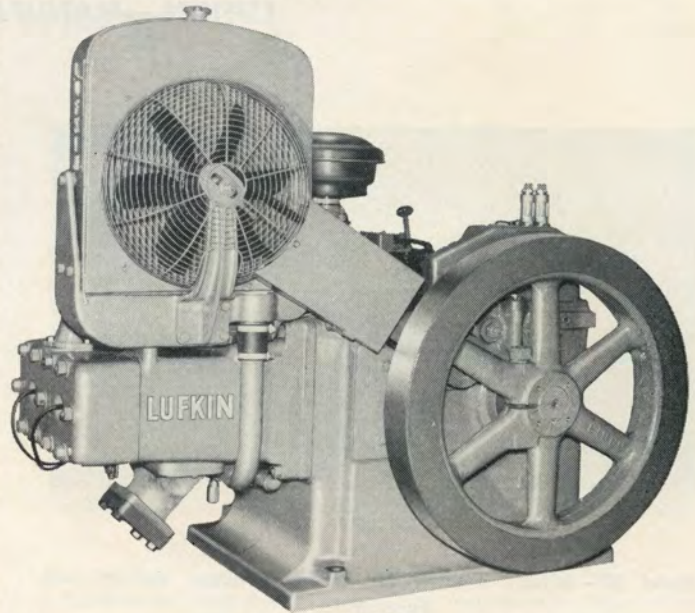


FIGURE 65  
 Flywheel Side Lufkin HT-333 Engine

Oil Filter .....	Bypass Type
	(Filtered Oil Fills Cylinder Lubricator)
Clutch .....	Twin Disc B-111
Size Clutch Shaft.....	2¼" Diam.—⅝" Keyway
Crankshaft Main Bearings.....	Taper-Roller
Connecting Rod Bearings.....	Precision Thin Wall
Air Filter.....	Oil Bath
Oil Capacity.....	20 Qts.
Water Capacity	
HC-333 .....	28 Qts.
HT-333 .....	32 Qts.
Diam. Gas Inlet.....	1"
Diam. Exhaust Pipe.....	4"
Foundation Bolts .....	(4) ⅞"
Weight (Shipping) .....	2900 Lbs.

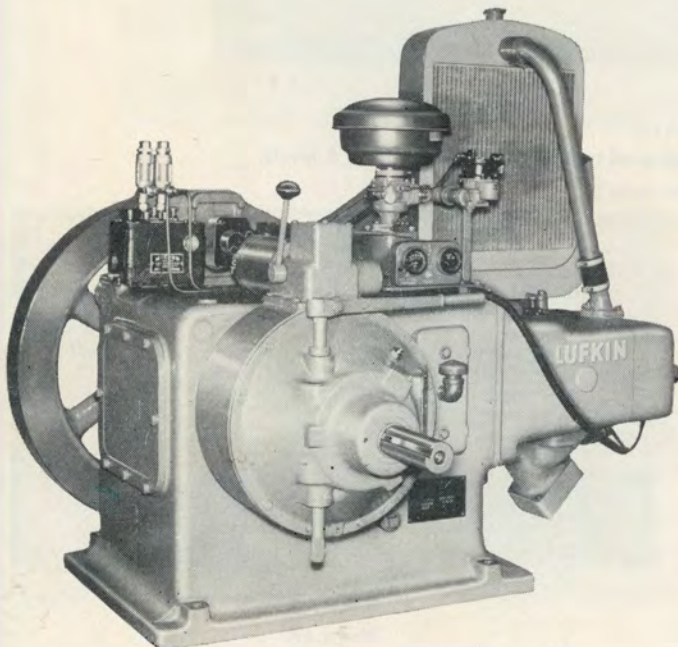


FIGURE 66  
 Clutch Side HT-333 Lufkin Engine

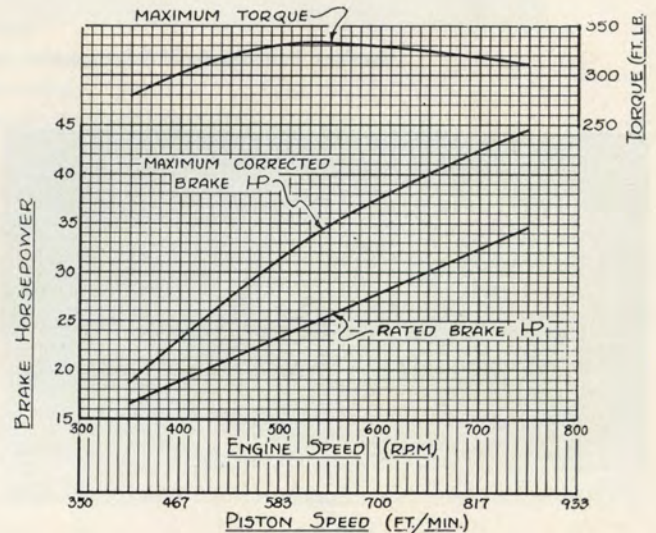


FIGURE 67  
 Performance Curves H-333 Gas Engine



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN TRAILERS OFFERS A "MODEL" TO MANY VARIATIONS OF BASIC MODELS SHOWN LUFKIN—MANUFACTURES A TRAILER FOR EVERY PURPOSE ALL LUFKIN MODELS OFFERED

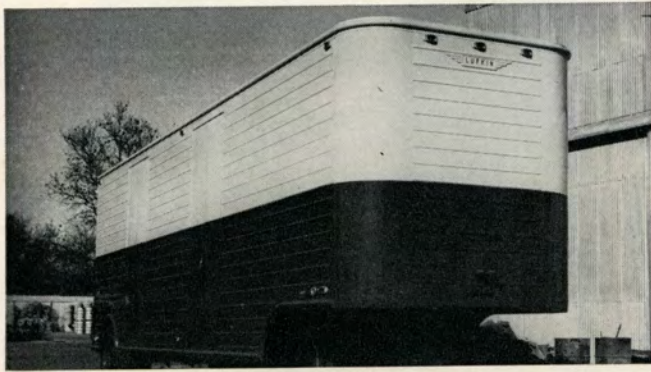


FIGURE 68

Model MV—Hicubic capacity for hauling furniture, and all bulk commodities.

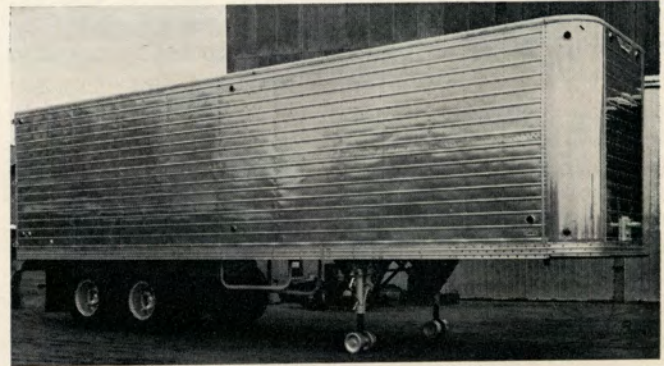


FIGURE 69

Model ALV

All Aluminum Light Weight Van for Common Freight & Other General Freight (also offered insulated).



FIGURE 70

Model IFVLA

Aluminum Van—Insulated & Refrigerated for hauling all types of fresh & frozen foods & meats.

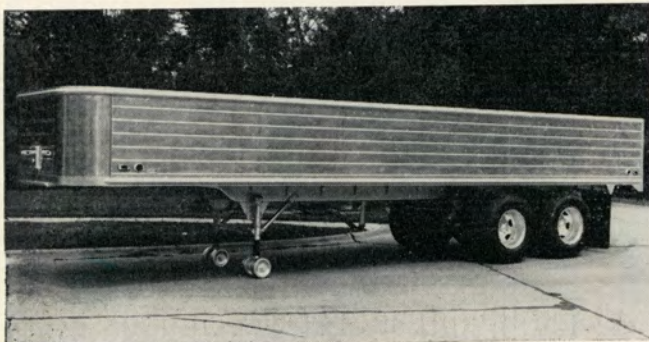


FIGURE 71

Model OVA

Open Top Van (Light Weight) Aluminum for hauling all types farm & industrial products.

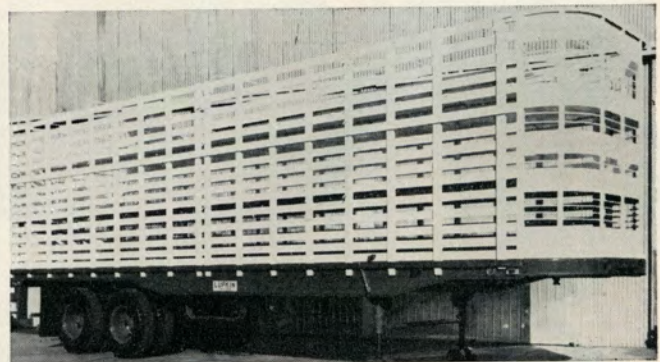


FIGURE 72

Model BF

For hauling all types livestock (has three deck levels for hauling calves, hogs & sheep, sides can be removed for flat-bed operation).

# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

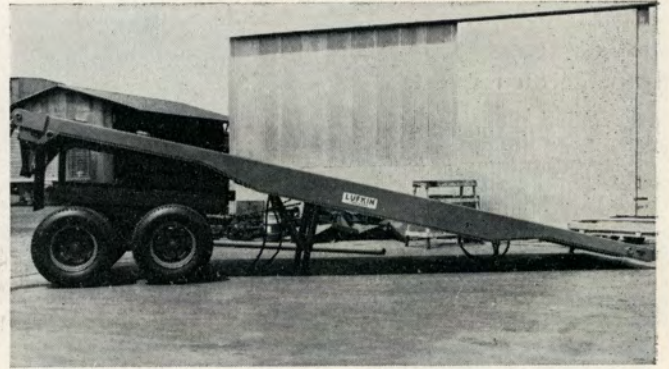


**COMPLY WITH YOUR EVERY HAULING NEED  
BELOW CAN BE QUOTED UPON REQUEST  
CALL YOUR NEAREST "LUFKIN MAN FOR DETAILS"  
IN TANDEM AND SINGLE**



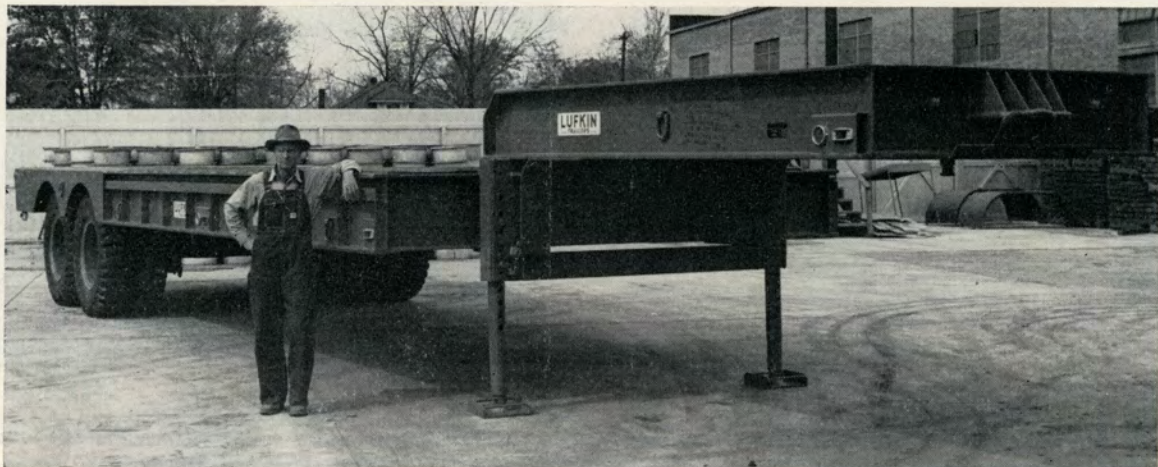
**FIGURE 73**  
**Model TOF-H**

*For the big oil field jobs—rated capacity 80,000 to 160,000 pounds.*



**FIGURE 74**  
**Model TOF-C**

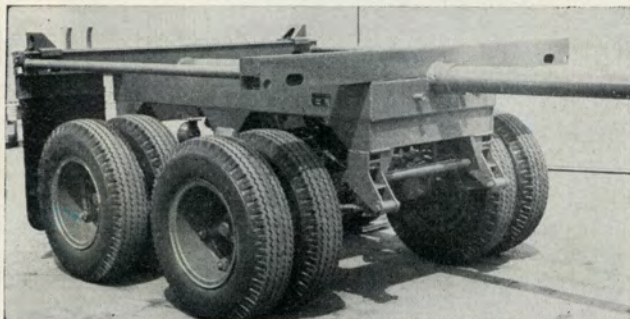
*A Combination Float & Pipe Trailer (float can be easily attached or detached. TOF-C can be used for pipe or machinery hauls.)*



**FIGURE 75**

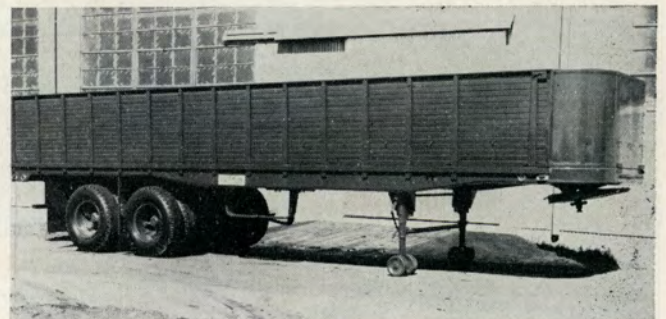
**Custom Built Low-Bed**

*All Low-Bed Models offered custom made to every need*



**FIGURE 76**  
**Model TOP**

*For hauling pipe, poles & other oilfield supplies*



**FIGURE 77**  
**Model TBF-G**

*Light weight grain trailer (used for all farm & allied products)*



# LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

## LUFKIN GEAR REDUCERS

A complete standard line of single and double reduction herringbone gear reducers and single reduction speed increasers are available. Write for Gear Catalog G-4.

Spiral bevel gear reducers are also available for such service as cooling tower fan drives. Bulletin G-3 available on request.



70VB Spiral Bevel Gear Reducer for Cooling Tower Fan Drive. A complete range of sizes available.

FIGURE 80

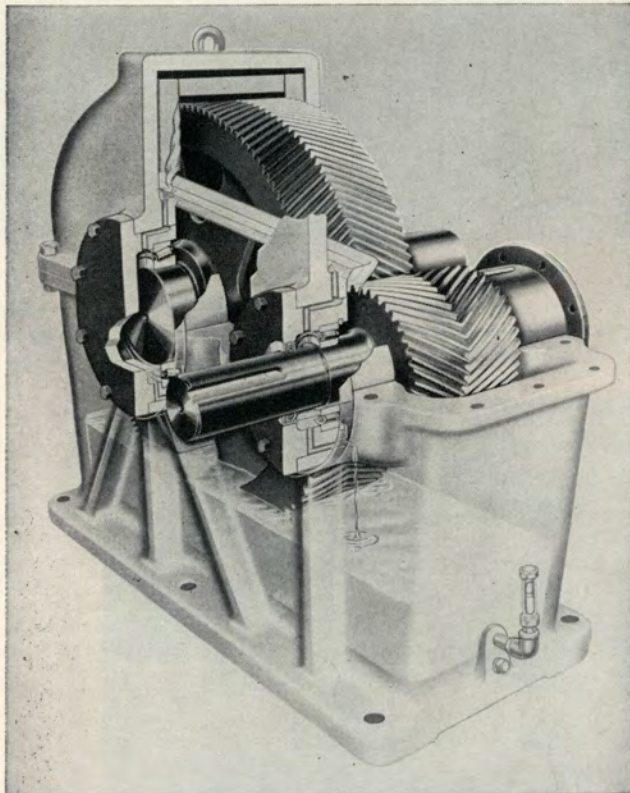


FIGURE 78

Typical Type S Single Reduction Herringbone Gear Reducer. Note simple but positive and fool-proof Lubrication System.

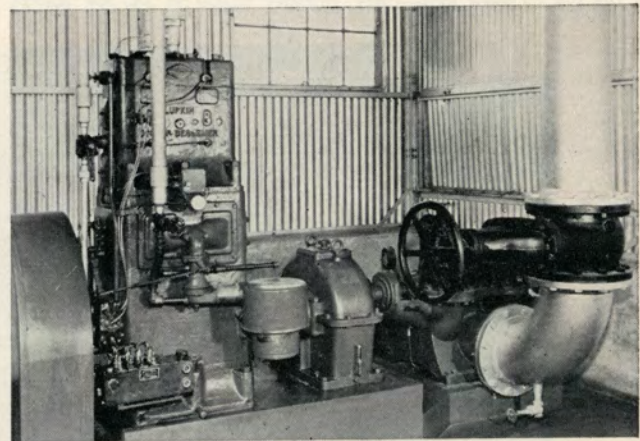


FIGURE 81

Lufkin S105 Reducer driving centrifugal pump in salt water disposal plant. Driven by Lufkin Engine.

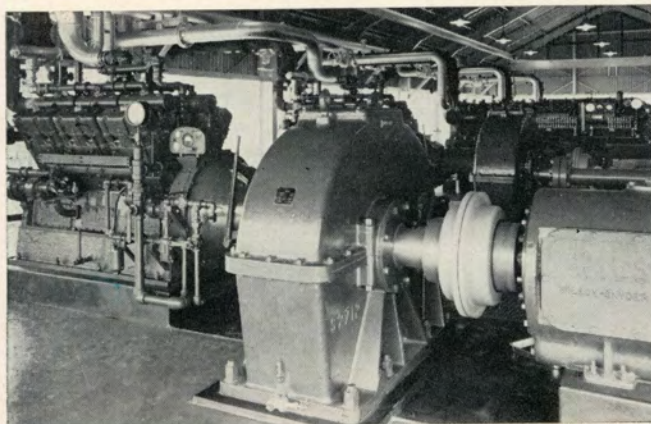


FIGURE 79

Two S2712 Reducers delivering 345 h.p. at 7.22 ratio.

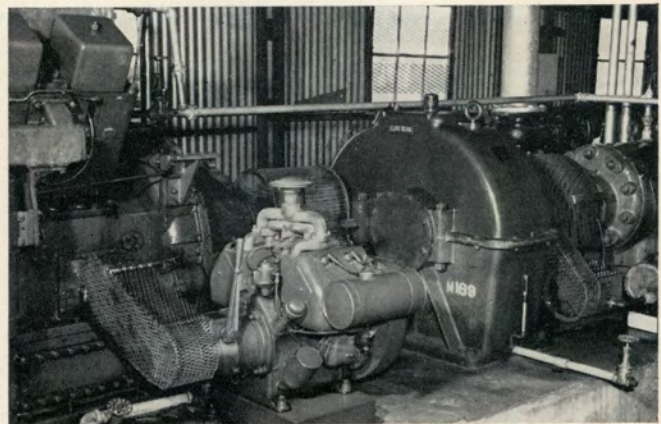


FIGURE 82

Lufkin M189 Medium Speed Reducer, driving 200 h.p. compressor.

**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS**

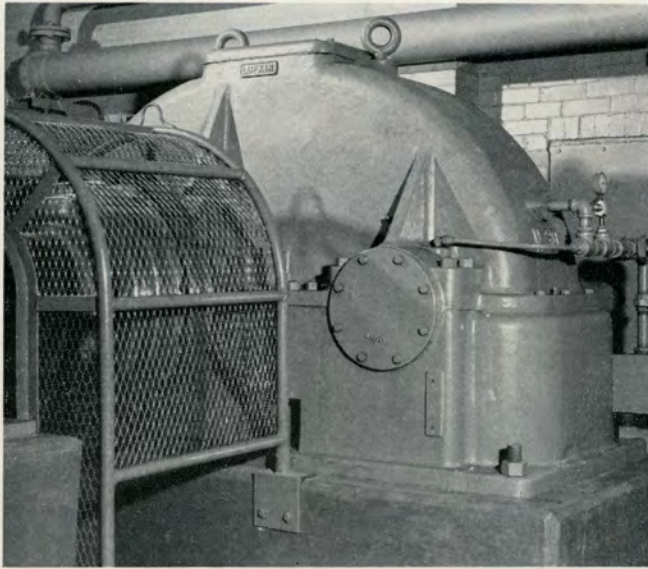


FIGURE 83

*Lufkin's Big N3012 Pipe Line Pump Speed Increaser, 1060 h.p. Capacity at 3600 r.p.m. pump speed and 7:1 ratio.*

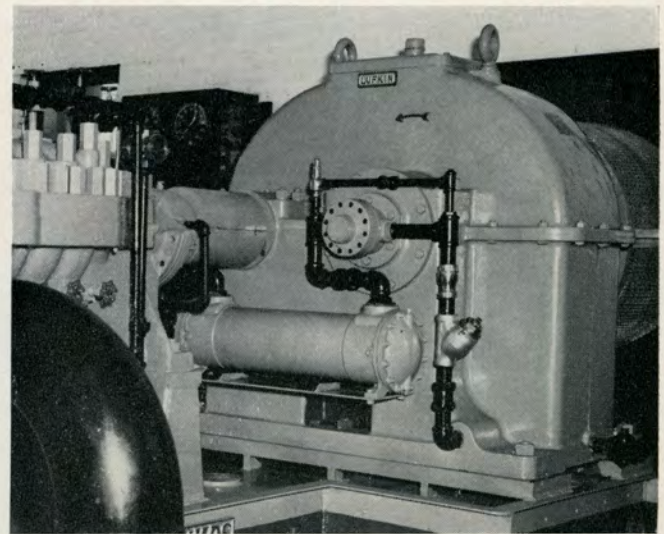


FIGURE 85

*Lufkin N2110 High Speed Increaser, delivering 540 h.p. to pipe line pump going 3750 r.p.m.*

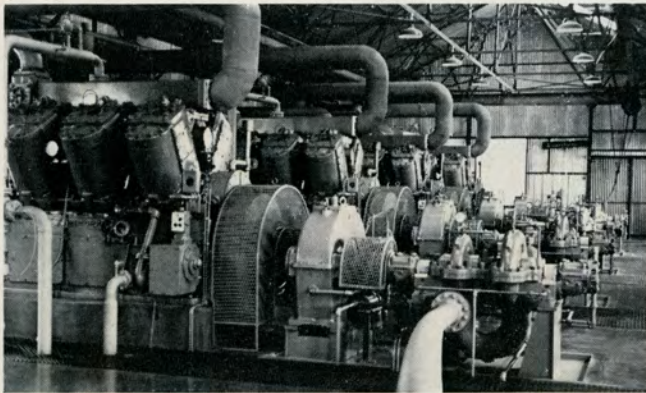


FIGURE 84

*Four Lufkin M189 Speed Increasers, ratio 4:1, installed in water station, delivering 360 h.p. to centrifugal pumps at 1710 r.p.m.*

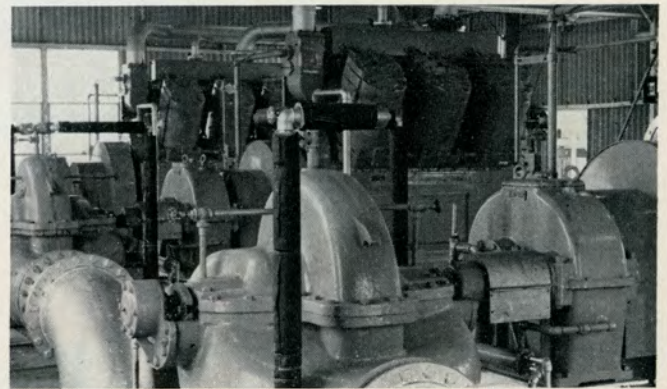


FIGURE 86

*Three Lufkin S168 Units being used as Speed Increasers, delivering 400 h.p. to slow speed high volume centrifugal pumps.*

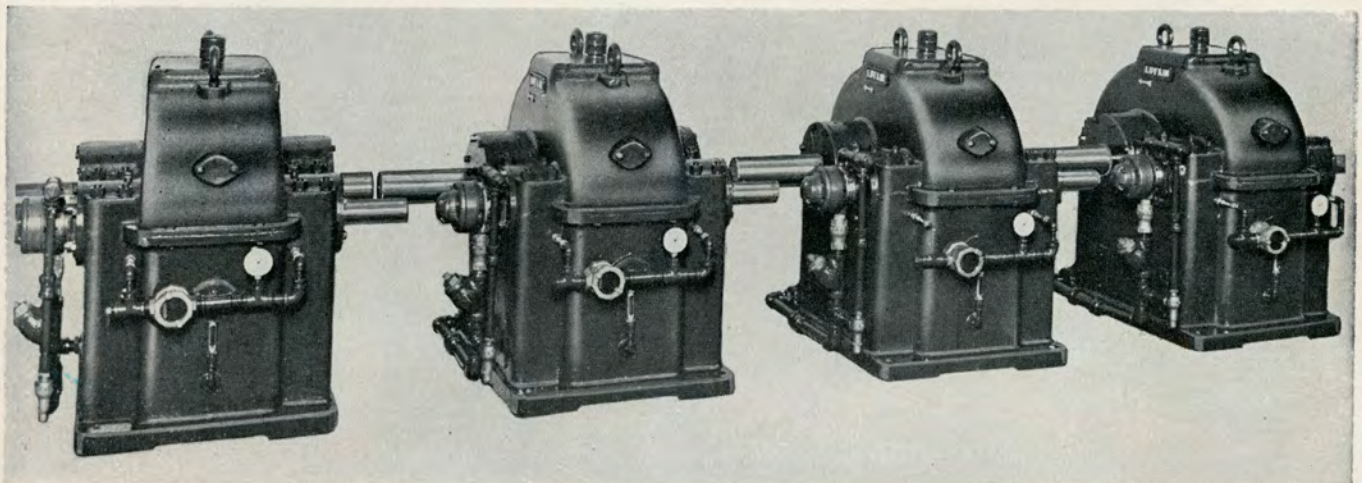


FIGURE 87

*Four of a group of twelve identical N128 Speed Increasers, 850 Hp., for pump station service, going to major pipe line company.*

# LUFKIN INSTALLATIONS

TYPICAL OF THE MORE THAN FIFTY THOUSAND  
LUFKIN PUMPING UNITS NOW GIVING SATISFACTORY SERVICE

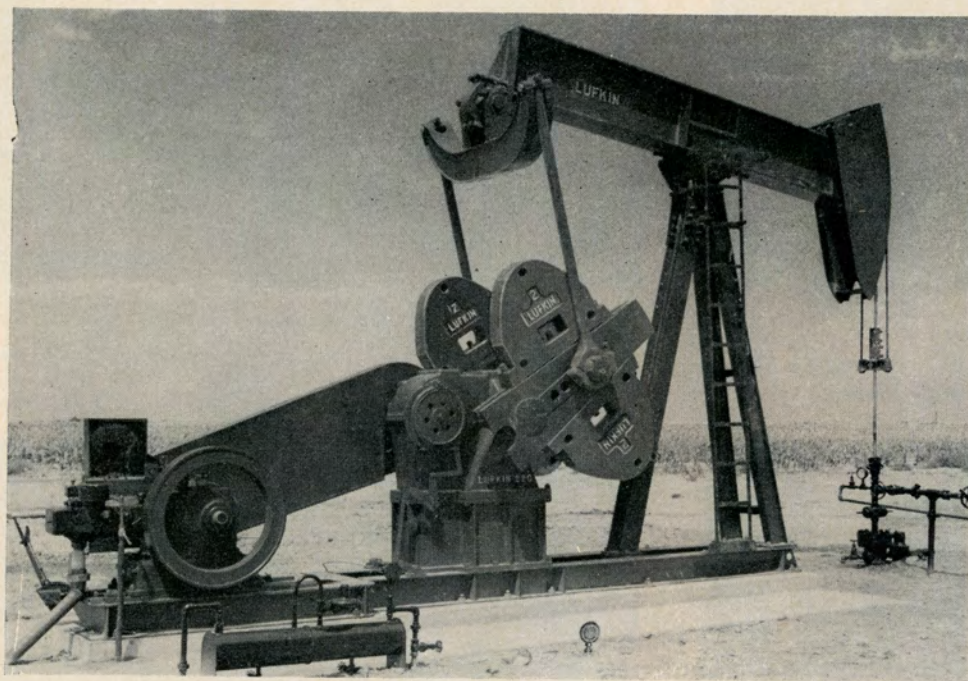


FIGURE 88  
*Lufkin C-160D-64-23 Twin Crank  
Pumping Unit with sub-base and single  
cylinder engine set on jointed base.*

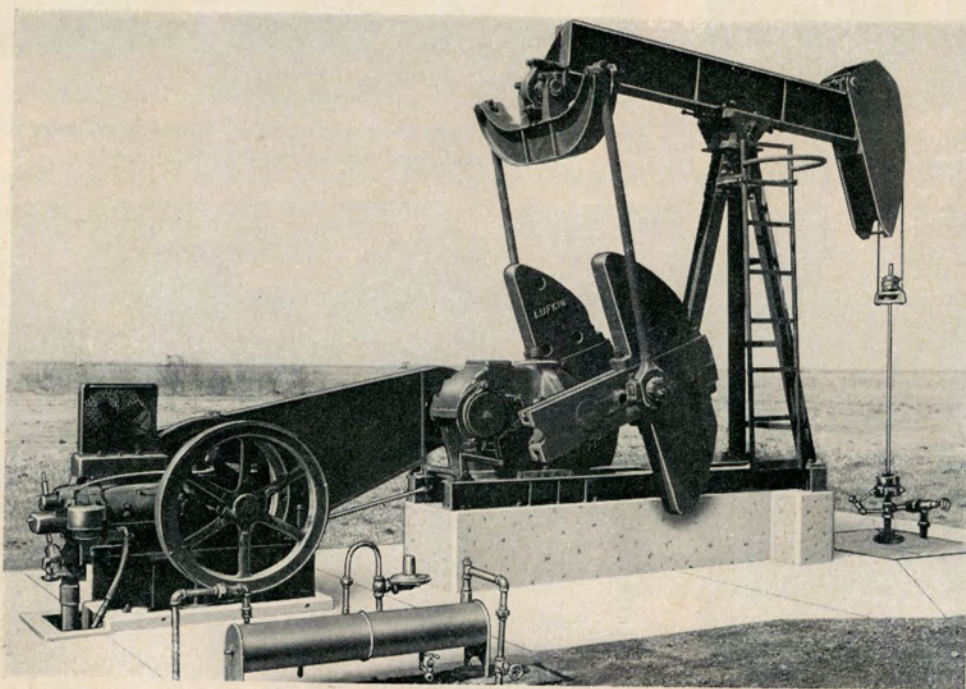


FIGURE 89  
*Lufkin C-114DA-48-14 Twin Crank  
Pumping Unit, stub base type, driven  
by single cylinder gas engine mounted  
separately on slide rails.*



# LUFKIN

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**EQUIPMENT OF ADVANCED DESIGN**

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