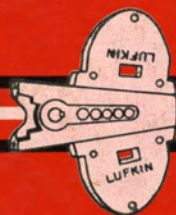


LUFKIN OIL FIELD EQUIPMENT



CATALOG 47

Featuring the

LUFKIN *Universal* PUMPING UNIT

LUFKIN FOUNDRY & MACHINE COMPANY • LUFKIN, TEXAS

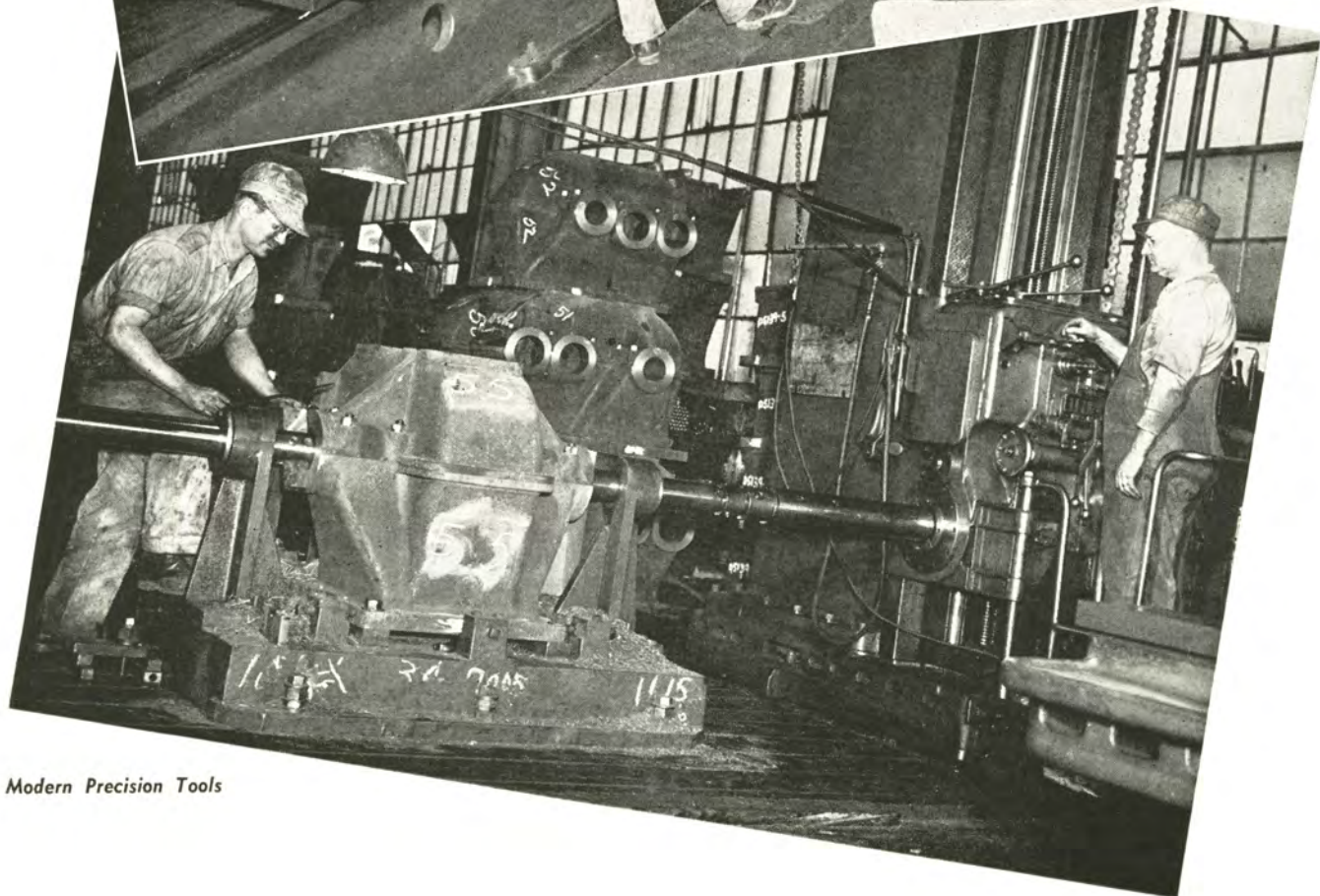
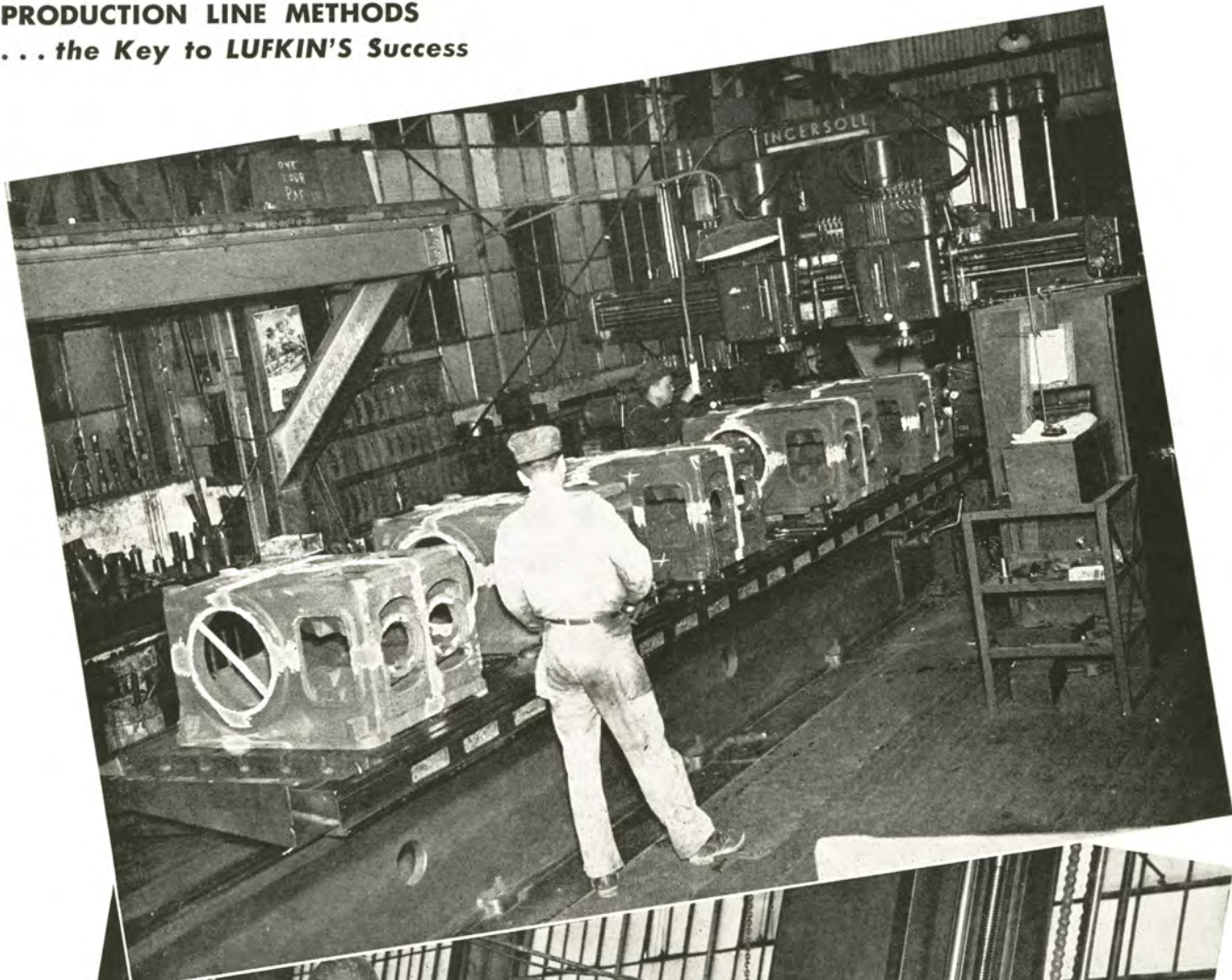
2C2D

LUFKIN EQUIPMENT OF ADVANCED DESIGN

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

PRODUCTION LINE METHODS
... the Key to LUFKIN'S Success



Modern Precision Tools

LUFKIN FOUNDRY & MACHINE CO.

FACTORY AND GENERAL OFFICES

LUFKIN, TEXAS

BRANCH OFFICES AND WAREHOUSES

DALLAS DIVISION

Dallas, Texas
1317 Magnolia Bldg.
Phone Central 5834

Odessa, Texas
P. O. Box 1632
Phone 216

Kilgore, Texas
P. O. Box 871
Phone 875

MID-CONTINENT DIVISION

Tulsa, Oklahoma
719 Thompson Bldg.
Phone 30204

Great Bend, Kansas
P. O. Box 82
Phone 1044

Seminole, Oklahoma
312 South 8th St.
Phone 34

GULF COAST DIVISION

Houston, Texas
2196 2nd Nat'l Bank Bldg.
Phone Capitol 0108

Corpus Christi, Texas
P. O. Box 1646
Phone 4488

EXPORT DIVISION

New York, N. Y.
149 Broadway
Phone Barclay 70562
Cable Address "LUFFO"

CALIFORNIA DIVISION

Los Angeles, California
5959 South Alameda
Phone Lafayette 1201

Bakersfield, California
Valley Warehouse
30th and M. Streets

INTRODUCTION

Twenty-three years ago LUFKIN manufactured and installed the first geared pumping unit ever to pump a deep well. Today thousands of LUFKIN units are operating successfully in oil fields all over the world. LUFKIN has pioneered a large majority of the steady improvements in pumping equipment during this time. LUFKIN introduced the first rotary counterbalanced crank and furnished the first unit with a brake, also was the first to develop an oil bath, dustproof pitman bearing, head and tail bearing and center iron bearing. LUFKIN introduced the first one hundred per cent center-line bear-

ing walking beam and equalizer, and, because of patents, is the only concern able to furnish them today.

Being located close to many producing areas has enabled our engineers to keep in close touch with the performance of our equipment. It has been possible to continually watch details, which many times result in success or failure in practical operation.

Our plant is completely equipped with the finest machine tools obtainable anywhere. We invite you to visit our plant and see for yourself why LUFKIN is still leading after all these years.

UNIT DESIGNATION—EXPLANATION

Lufkin units are designated by combination of letters and numerals; taking the "TC-33A-22E" as an example:

"TC" means "Twin Crank"

"33A" is the **Structural Assembly** number.

"22E" is the number of the **Gear Box**.

A design change on the assembly is indicated by using a new letter after the assembly number. If the gear box design is changed in any way, a new letter is used after the gear box number.

Walking Beams are designated by a combination of four figures indicating the weight of the beam and its length. The first two figures indicate the weight per foot of the beam material and the last two figures indicate the overall length of the beam between working points. When the four figures are followed by "CU," the beam is a Universal center-line type with Rod Hanger, as shown on page 2223. When the four figures are followed by "CH," the beam has the same Center-line pitman-end as before but the well-

end is fitted with a Hinged Horsehead with wire line.

For instance, "1525CU" means the beam is made of steel weighing 150 pounds per foot, is 25 feet long between working centers and the well-end is equipped with the Universal Rod Hanger. When the designation is "8216CH," the beam is made of material weighing 82 pounds per foot, the beam is 16 feet long between working centers and the well-end has a Hinged Horsehead.

EXCLUSIVE FEATURES OF LUFKIN PUMPING UNITS

TROUT COUNTERBALANCED CRANK



FIGURE 1

The Trout Counterbalanced Crank, using sliding weights to change the counterbalance effect, is an exclusive Lufkin feature. To change the counterbalance effect, it is not necessary for the operator to employ any tools other than a pinch bar and a wrench. With the crank slanted slightly in the direction in which the weights are to be moved, and held by the double-shoe brake, the weight is moved by means of the bar, as shown in Fig. 1. This positive method enables ONE man to change the counterbalance effect by either a few ounces or by hundreds of pounds. It is not necessary to add or to remove weight elements weighing 100 to 150 pounds. There is no waiting while needed weight elements are obtained from the supplier. There is no hazard to the safety of operator or equipment as it is impossible for the weight to slide off the crank even when the counterweight bolts are loosened so long as the nuts are not completely removed from the bolts. Either zero or negative counterbalance effect, as well as positive effect, may be obtained with the Trout Crank; this is a unique feature.

The Trout Crank provides absolute assurance that perfect counterbalance of all fixed load can be obtained. With the current emphasis on deeper wells, this is a factor of prime importance to the operator. On deeper wells, the rod load begins to exceed the fluid load, and perfect counterbalancing of the fixed rod load means decreased lifting costs. As much as 25% of fuel or electric bills is due to poor counterbalance. Since the Trout Crank does not employ weight elements the counterbalance effect can be adjusted to **exactly** offset the weight of the rods plus the portion of the fluid load that can be balanced; the remaining load to be carried is the relatively small portion of the fluid load which varies with well condition and rate of withdrawal. Saving on wear of gears and prime mover, as well as lower power consumption, makes the Trout Crank the most inexpensive method of counterbalance on an overall, long-term basis.

On the smaller Lufkin Units, no tools, other than the wrench furnished with the unit, are necessary to enable ONE man to change counterbalance as desired. Slanting the crank in the direction in which the weight is to go, the operator loosens the counterweight bolts, then shakes the weight back and forth as shown in Fig. 2, and the weight "walks" down the crank to the desired position. Trout Cranks employ the same fixed weight, regardless of position on the crank. This is an invaluable contribution to the complete pumping unit as the flywheel effect obtained damps out a large part of the shock loads encountered in oilfield pumping. Since the center of weight of a Lufkin counterbalance crank is concentrated near the crank pin, the bearing loads at the crank shaft and the stress in the crank shaft are lower than those encountered with the conventional type crank.



FIGURE 2

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 3.

Since the beam is a rolled structural member, not machined, all beams have a slight twist. When loaded as shown in Figure 3, 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 4, 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.

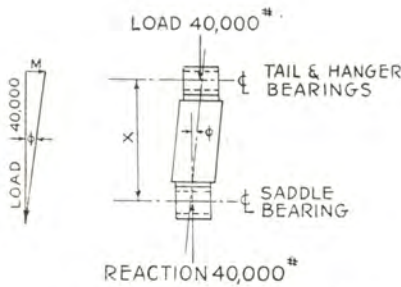


FIGURE 4

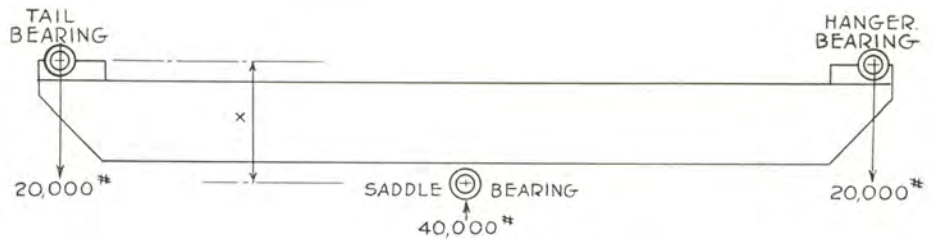


FIGURE 3

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 ϕ . The twisting load M is $40,000 \times \tan. \phi$. The twisting moment on the beam is $40,000 \times \tan. \phi \times \text{lever arm X}$, in inch-pounds.

The Lufkin Universal Center-line Beam construction applies the load at the point of reaction hence lever arm X is zero.

Instead of twisting the beam still further, this construction causes the application of load to

straighten the beam when inherent twist is present.

Lufkin Walking Beams are rated in accordance with the latest edition of A.P.I. Standard No. 4 and carry the A.P.I. monogram.

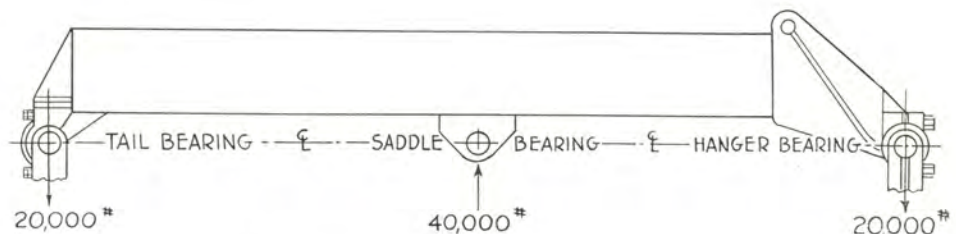
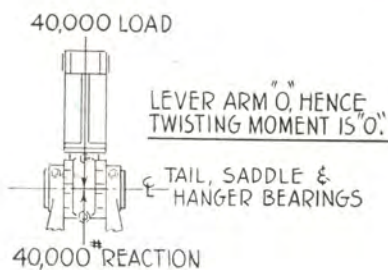


FIGURE 5

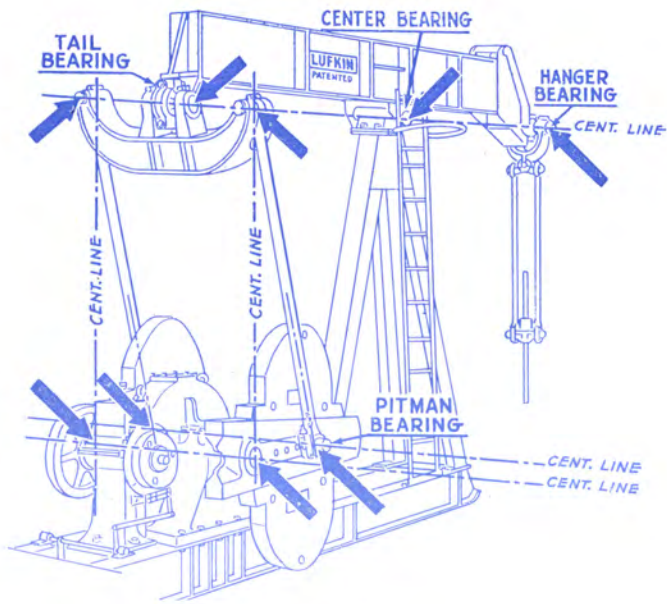


FIGURE 6

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 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.

**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



FIGURE 7
*Lufkin "Universal" Units have all working points
on the center line.*

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.

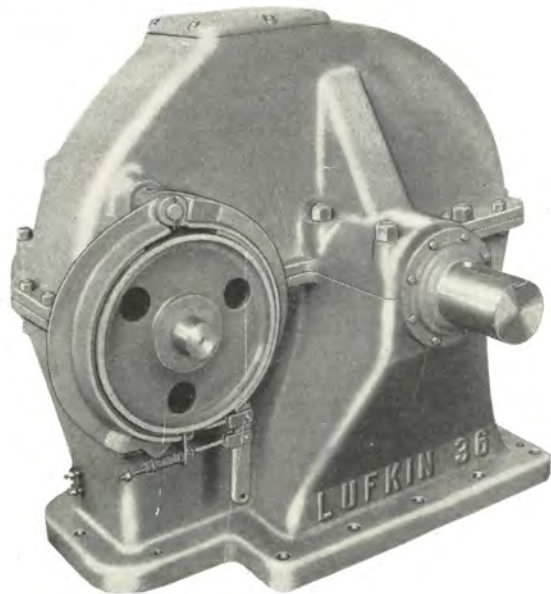


FIGURE 8

DOUBLE REDUCTION GEAR UNITS

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

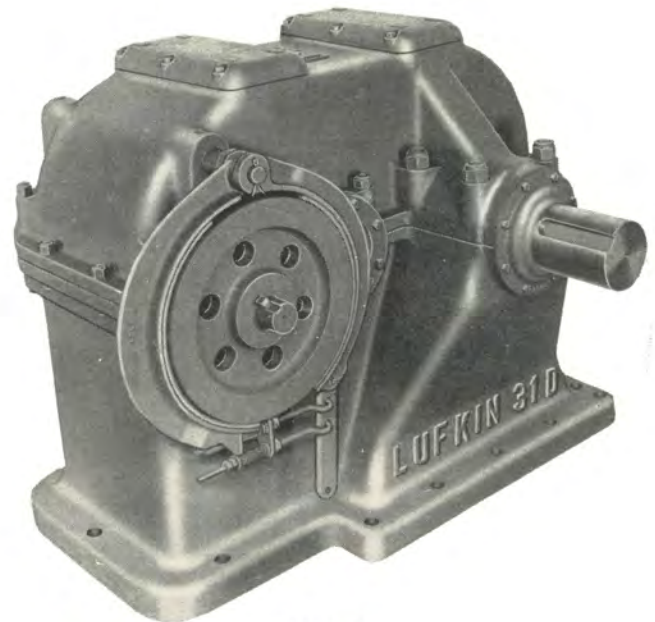


FIGURE 10

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 9

Single Reduction Gear Unit, cover removed



FIGURE 11

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. Housings 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.
6. Crankshaft held rigid by Bronzoid hub plates. All pinions float on Hy-Load Hyatt 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 FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

General Specifications—Lufkin Double Reduction Unit Assemblies TC-0A, 1A, 2A, 33A, 44A

LUFKIN UNIVERSAL TC-0A-61 UNIT ASSEMBLY—30,000 Lb. Polish Rod Load Class

WALKING BEAM: 24½" x 14" x 150 lbs., 12'-6" and 12'-6" working Centers, API Walking Beam Rating: 23,130 Lbs.	GEARS: Double Reduction. Main Gear, 41.6" x 11"		
HANGER: Centerline type, Universal, bronze bushed.	RATING: 103.3 H.P. at 20 S.P.M. 511,600 lb. ins. Peak Torque		
PITMAN: Universal Equalizer with bearings "in line", 4" Heavy pipe connections, Universal lower bearings.	RATIO: 28.6		
CENTER BEARING: No. 1AS bronze bushed, 7" x 20" oil bath, dust proof.	CRANKSHAFT: 7"		
SAMSON POST: No. 13 Tripod, 13'-3" high.	SHEAVE: 34"-7D Std., 56" Maximum, 3 1/8" Bore		
BASE: 16" deep, 50" wide at gear box.	WEIGHT: 41,950 lbs.		
CRANK: No. 7472, 71½" radius.	STATIC COUNTERBALANCE—LBS.:		
CRANK PINS: 5½" x 5½", bronze bushed, oil bath.	Stroke	No. 1 Weights	C.I. Auxiliary Weights
TAIL AND HANGER BEARINGS: 4 1/8" x 12" Bronze Bushed.	34".....	32,000	39,900
GEAR BOX OIL CAPACITY: 75 Gallons.	44".....	24,750	30,850
	54".....	20,150	25,100
	64".....	17,000	21,200
	74".....	14,700	18,325

LUFKIN UNIVERSAL TC-1A-41B UNIT ASSEMBLY—25,000 Lb. Polish Rod Load Class

WALKING BEAM: 24½" x 14" x 150 lbs., 12'-6" and 12'-6" working centers, API Walking Beam Rating: 23,130 Lbs.	GEARS: Double Reduction. Main Gear, 33.6" x 10"				
HANGER: Centerline type, Universal, bronze bushed.	RATING: 57.7 H.P. at 20 S.P.M. 285,620 lb. ins. Peak Torque				
PITMAN: Universal Equalizer with bearings "in line", 4" Heavy pipe connections, Universal lower bearings.	RATIO: 30.12				
CENTER BEARING: No. 1AS bronze bushed, 7" x 20", oil bath, dust proof.	CRANKSHAFT: 6 7/8"				
SAMSON POST: No. 13 Tripod, 13'-3" high.	SHEAVE: 24¼"-8C Std., 47¼" Maximum, 2 1/8" Bore				
BASE: 16" deep, 43" wide at gear box.	WEIGHT: 37,100 lbs.				
CRANKS: No. 7472, 71½" radius.	STATIC COUNTERBALANCE—LBS.:				
CRANK PINS: 5½" x 5½", bronze bushed, oil bath.	Stroke	No. 7466 Crank	No. 7472 Crank (Std.)		
TAIL AND HANGER BEARINGS: 4 1/8" x 12" Bronze Bushed.		No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.
GEAR BOX OIL CAPACITY: 55 Gallons.	34".....	24,200	30,100	32,000	39,900
	44".....	18,700	23,250	24,750	30,850
	54".....	15,200	18,950	20,150	25,100
	64".....	12,850	16,000	17,000	21,200
	74".....	11,150	13,850	14,700	18,325

LUFKIN UNIVERSAL TC-2A-35 UNIT ASSEMBLY—20,000 Lb. Polish Rod Load Class

WALKING BEAM: 24" x 12" x 100 lbs., 10'-0" and 10'-0" working centers, API Walking Beam Rating: 19,000 Lbs.	GEARS: Double Reduction. Main Gear, 30.3" P.D. 9" Face				
HANGER: Centerline type, Universal bronze bushed.	RATING: 43.2 H.P. at 20 S.P.M. 214,000 lb. ins. Peak Torque				
PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections, Universal lower bearings.	RATIO: 28.45				
CENTER BEARING: No. 2AS, bronze bushed, 6" x 17", oil bath, dust proof.	CRANKSHAFT: 6"				
SAMSON POST: No. 12 Tripod, 12'-1" high.	SHEAVE: 24¼"-6 "C" Std., 41¼" Maximum, 2 7/8" Bore				
BASE: 16" Deep, 37" wide at gear box.	WEIGHT: 27,220 lbs.				
CRANKS: No. 6460, 59½" radius.	STATIC COUNTERBALANCE—LBS.:				
CRANK PINS: 4¾" x 4¾", bronze bushed, oil bath.	Stroke	No. 2A Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.
TAIL AND HANGER BEARINGS: 4 1/8" x 9¼" Bronze Bushed.	24".....	25,950	31,950	28,800	35,950
GEAR BOX OIL CAPACITY: 55 Gallons.	34".....	18,300	22,550	20,350	25,350
	44".....	14,150	17,400	15,700	19,600
	54".....	11,550	14,200	12,800	15,950
	64".....	9,750	12,000	10,800	13,500

LUFKIN UNIVERSAL TC-33A-22E UNIT ASSEMBLY—17,000 Lb. Polish Rod Load Class

WALKING BEAM: 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers, API Walking Beam Rating: 15,800 Lbs.	GEARS: Double Reduction. Main Gear, 24.5" x 7 7/8"		
HANGER: Universal centerline type, bronze bushed.	RATING: 29.2 H.P. at 20 S.P.M. 144,540 lb. ins. Peak Torque		
PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections, Universal lower bearings.	RATIO: 28.67		
CENTER BEARING: No. 3AS bronze bushed, 6" x 14", oil bath, dust proof.	CRANKSHAFT: 5 7/8"		
SAMSON POST: Tripod, 12'-1" high.	SHEAVE: 24¼"-5C Std., 38" Maximum, 2 1/8" Bore		
BASE: 10" deep, 32" wide at gear box.	WEIGHT: 21,000 lbs.		
CRANKS: No. 5452, 51½" radius.	STATIC COUNTERBALANCE—LBS.:		
CRANK PINS: 4¾" x 4¾", bronze bushed, oil bath.	Stroke	No. 3 Weights	Aux. Weights
TAIL AND HANGER BEARINGS: 4 1/8" x 9¼" bronze bushed.	24".....	17,950	24,950
GEAR BOX OIL CAPACITY: 22 Gallons.	34".....	12,650	17,500
	44".....	9,750	13,575
	54".....	7,975	11,075

LUFKIN UNIVERSAL TC-44A-15 UNIT ASSEMBLY—15,000 Lb. Polish Rod Load Class

WALKING BEAM: 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers, API Walking Beam Rating: 15,800 Lbs.	GEARS: Double Reduction. Main Gear, 23.7" P.D. 6 1/4" Face		
HANGER: Universal Centerline Type, bronze bushed.	RATING: 19.8 H.P. at 20 S.P.M. 98,000 lb. ins. Peak Torque		
PITMAN: Universal Equalizer with bearings "in line", 2½" Heavy pipe connections, Universal lower bearings.	RATIO: 29.4		
CENTER BEARING: No. 3AS, bronze bushed, 6" x 14", oil bath, dust proof.	CRANKSHAFT: 4 1/8" Diameter		
SAMSON POST: Tripod, 10'-4" high.	SHEAVE: 19¼"-4C Std., 33¼" Maximum, 1 1/8" Bore.		
BASE: 8" deep, 25" wide at gear box, 19'-7½" long.	WEIGHT: 14,715 lbs.		
CRANKS: No. 4846, 46" radius.	STATIC COUNTERBALANCE—LBS.:		
CRANK PINS: 3¾" x 3¾", bronze bushed, oil bath.	Stroke	No. 5A Reg. Wts.	Aux. Wts.
TAIL BEARING: 3 1/8" x 7 1/4", bronze bushed.	24".....	12,465	16,060
GEAR BOX OIL CAPACITY: 17 Gallons.	32".....	9,350	12,050
	40".....	7,480	9,640
	48".....	6,230	8,030

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

General Specifications—Lufkin Single Reduction Unit Assemblies TC-0A, 1A, 2A, 33A, 44A

LUFKIN UNIVERSAL TC-0A-60 UNIT ASSEMBLY—30,000 Lb. Polish Rod Load Class

<p>WALKING BEAM: 24½" x 14" x 150 lbs., 12'-6" and 12'-6" working centers. API Walking Beam Rating: 23,130 Lbs.</p> <p>HANGER: Centerline type, Universal, bronze bushed.</p> <p>PITMAN: Universal Equalizer with bearings "in line", 4" Heavy pipe connections, Universal lower bearings.</p> <p>CENTER BEARING: No. 1AS bronze bushed, 7" x 20" oil bath, dust proof.</p> <p>SAMSON POST: No. 13 Tripod, 13'-3" high.</p> <p>BASE: 16" deep, 50" wide at gear box.</p> <p>CRANKS: No. 7472, 71½" radius.</p> <p>CRANK PINS: 5½" x 5½", bronze bushed, oil bath.</p> <p>TAIL AND HANGER BEARINGS: 4½" x 12" Bronze Bushed.</p> <p>GEAR BOX OIL CAPACITY: 11 Gallons.</p>	<p>GEARS: Single Reduction. Main Gear, 49.6" x 12"</p> <p>RATING: 85.5 H.P. at 20 S.P.M. 423,230 lb. ins. Peak Torque</p> <p>RATIO: 9.54</p> <p>CRANKSHAFT: 6 7/8"</p> <p>SHEAVE: 37"-7D Std., 37" Maximum. 3 1/8" Bore</p> <p>WEIGHT: 40,185 lbs.</p> <p>STATIC COUNTERBALANCE—LBS.</p> <table border="1"> <thead> <tr> <th>Stroke</th> <th>No. 1 Weights</th> <th>C.I. Auxiliary Weights</th> </tr> </thead> <tbody> <tr> <td>34"</td> <td>32,000</td> <td>39,900</td> </tr> <tr> <td>44"</td> <td>24,750</td> <td>30,850</td> </tr> <tr> <td>54"</td> <td>20,150</td> <td>25,100</td> </tr> <tr> <td>64"</td> <td>17,000</td> <td>21,200</td> </tr> <tr> <td>74"</td> <td>14,700</td> <td>18,325</td> </tr> </tbody> </table>	Stroke	No. 1 Weights	C.I. Auxiliary Weights	34"	32,000	39,900	44"	24,750	30,850	54"	20,150	25,100	64"	17,000	21,200	74"	14,700	18,325
Stroke	No. 1 Weights	C.I. Auxiliary Weights																	
34"	32,000	39,900																	
44"	24,750	30,850																	
54"	20,150	25,100																	
64"	17,000	21,200																	
74"	14,700	18,325																	

LUFKIN UNIVERSAL TC-1A-54B UNIT ASSEMBLY—25,000 Lb. Polish Rod Load Class

<p>WALKING BEAM: 24½" x 14" x 150 lbs., 12'-6" and 12'-6" working centers. API Walking Beam Rating: 23,130 Lbs.</p> <p>HANGER: Centerline type, Universal, bronze bushed.</p> <p>PITMAN: Universal Equalizer with bearings "in line", 4" Heavy pipe connections, Universal lower bearings.</p> <p>CENTER BEARING: No. 1AS bronze bushed, 7" x 20", oil bath, dust proof.</p> <p>SAMSON POST: No. 13 Tripod, 13'-3" high.</p> <p>BASE: 16" deep, 43" wide at gear box.</p> <p>CRANKS: No. 7472, 71½" radius.</p> <p>CRANK PINS: 5½" x 5½", bronze bushed, oil bath.</p> <p>TAIL AND HANGER BEARINGS: 4½" x 12", bronze bushed.</p> <p>GEAR BOX OIL CAPACITY: 29 Gallons.</p>	<p>GEARS: Single Reduction. Main Gear, 47" x 10"</p> <p>RATING: 67.8 H.P. at 20 S.P.M. 335,610 lb. ins. Peak Torque</p> <p>RATIO: 9.4</p> <p>CRANKSHAFT: 6 7/8"</p> <p>SHEAVE: 34¼"-12C Std., 34¼" Maximum. 3 1/8" Bore</p> <p>WEIGHT: 37,000 lbs.</p> <p>STATIC COUNTERBALANCE—LBS.</p> <table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 7466 Crank</th> <th colspan="2">No. 7472 Crank (Std.)</th> </tr> <tr> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> <th>No. 1 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>34"</td> <td>24,200</td> <td>30,100</td> <td>32,000</td> <td>39,900</td> </tr> <tr> <td>44"</td> <td>18,700</td> <td>23,250</td> <td>24,750</td> <td>30,850</td> </tr> <tr> <td>54"</td> <td>15,200</td> <td>18,950</td> <td>20,150</td> <td>25,100</td> </tr> <tr> <td>64"</td> <td>12,850</td> <td>16,000</td> <td>17,000</td> <td>21,200</td> </tr> <tr> <td>74"</td> <td>11,150</td> <td>13,850</td> <td>14,700</td> <td>18,325</td> </tr> </tbody> </table>	Stroke	No. 7466 Crank		No. 7472 Crank (Std.)		No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.	34"	24,200	30,100	32,000	39,900	44"	18,700	23,250	24,750	30,850	54"	15,200	18,950	20,150	25,100	64"	12,850	16,000	17,000	21,200	74"	11,150	13,850	14,700	18,325
Stroke	No. 7466 Crank		No. 7472 Crank (Std.)																																
	No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.																															
34"	24,200	30,100	32,000	39,900																															
44"	18,700	23,250	24,750	30,850																															
54"	15,200	18,950	20,150	25,100																															
64"	12,850	16,000	17,000	21,200																															
74"	11,150	13,850	14,700	18,325																															

LUFKIN UNIVERSAL TC-2A-36 UNIT ASSEMBLY—20,000 Lb. Polish Rod Load Class

<p>WALKING BEAM: 24" x 12" x 100 lbs., 10'-0" and 10'-0" working centers. API Walking Beam Rating: 19,000 Lbs.</p> <p>HANGER: Centerline type, Universal, bronze bushed.</p> <p>PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connection, Universal lower bearings.</p> <p>CENTER BEARING: No. 2AS, bronze bushed, 6" x 17", oil bath, dust proof.</p> <p>SAMSON POST: No. 12 Tripod, 12'-1", high.</p> <p>BASE: 16" deep, 37" wide at gear box.</p> <p>CRANKS: No. 6460, 59½" radius.</p> <p>CRANK PINS: 4¾" x 4½", bronze bushed, oil bath.</p> <p>TAIL AND HANGER BEARINGS: 4½" x 9¼" Bronze Bushed.</p> <p>GEAR BOX OIL CAPACITY: 20 Gallons.</p>	<p>GEARS: Single Reduction. Main Gear, 45.4" P.D. 8" Face</p> <p>RATING: 50.4 H.P. at 20 S.P.M. 249,480 lb. ins. Peak Torque</p> <p>RATIO: 9.94</p> <p>CRANKSHAFT: 6"</p> <p>SHEAVE: 34¼" P.D.-9 "C" Std., 34¼" P.D. Maximum. 3 3/8" Bore</p> <p>WEIGHT: 27,120 lbs.</p> <p>STATIC COUNTERBALANCE—LBS.</p> <table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 2A Wts.</th> <th colspan="2">No. 2 Wts.</th> </tr> <tr> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>24"</td> <td>25,950</td> <td>31,950</td> <td>28,800</td> <td>35,950</td> </tr> <tr> <td>34"</td> <td>18,300</td> <td>22,550</td> <td>20,350</td> <td>25,350</td> </tr> <tr> <td>44"</td> <td>14,150</td> <td>17,400</td> <td>15,700</td> <td>19,600</td> </tr> <tr> <td>54"</td> <td>11,550</td> <td>14,200</td> <td>12,800</td> <td>15,950</td> </tr> <tr> <td>64"</td> <td>9,750</td> <td>12,000</td> <td>10,800</td> <td>13,500</td> </tr> </tbody> </table>	Stroke	No. 2A Wts.		No. 2 Wts.		No. 2 Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.	24"	25,950	31,950	28,800	35,950	34"	18,300	22,550	20,350	25,350	44"	14,150	17,400	15,700	19,600	54"	11,550	14,200	12,800	15,950	64"	9,750	12,000	10,800	13,500
Stroke	No. 2A Wts.		No. 2 Wts.																																
	No. 2 Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.																															
24"	25,950	31,950	28,800	35,950																															
34"	18,300	22,550	20,350	25,350																															
44"	14,150	17,400	15,700	19,600																															
54"	11,550	14,200	12,800	15,950																															
64"	9,750	12,000	10,800	13,500																															

LUFKIN UNIVERSAL TC-33A-18B UNIT ASSEMBLY—17,000 Lb. Polish Rod Load Class

<p>WALKING BEAM: 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers. API Walking Beam Rating: 15,800 Lbs.</p> <p>HANGER: Universal centerline type, bronze bushed.</p> <p>PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections, Universal lower bearings.</p> <p>CENTER BEARING: No. 3AS bronze bushed, 6" x 14", oil bath, dust proof.</p> <p>SAMSON POST: Tripod, 12'-1" high.</p> <p>BASE: 10" deep, 32" wide at gear box.</p> <p>CRANKS: No. 5452, 51½" radius.</p> <p>CRANK PINS: 4¾" x 4½", bronze bushed, oil bath.</p> <p>TAIL AND HANGER BEARINGS: 4½" x 9¼" bronze bushed.</p> <p>GEAR BOX OIL CAPACITY: 20 Gallons.</p>	<p>GEARS: Single Reduction. Main Gear, 42" x 6"</p> <p>RATING: 33.0 H.P. at 20 S.P.M. 163,350 lb. ins. Peak Torque</p> <p>RATIO: 10.5</p> <p>CRANKSHAFT: 5 1/8"</p> <p>SHEAVE: 32¼"-6C Std., 32¼" Maximum. 2 1/8" Bore</p> <p>WEIGHT: 21,000 lbs.</p> <p>STATIC COUNTERBALANCE—LBS.</p> <table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 3 Weights</th> <th colspan="2">Aux. Weights</th> </tr> <tr> <th>No. 3 Weights</th> <th>Aux. Weights</th> <th>No. 3 Weights</th> <th>Aux. Weights</th> </tr> </thead> <tbody> <tr> <td>24"</td> <td>17,950</td> <td>24,950</td> <td>24,950</td> <td>31,950</td> </tr> <tr> <td>34"</td> <td>12,650</td> <td>17,500</td> <td>17,500</td> <td>22,500</td> </tr> <tr> <td>44"</td> <td>9,750</td> <td>13,575</td> <td>13,575</td> <td>17,575</td> </tr> <tr> <td>54"</td> <td>7,975</td> <td>11,075</td> <td>11,075</td> <td>14,575</td> </tr> </tbody> </table>	Stroke	No. 3 Weights		Aux. Weights		No. 3 Weights	Aux. Weights	No. 3 Weights	Aux. Weights	24"	17,950	24,950	24,950	31,950	34"	12,650	17,500	17,500	22,500	44"	9,750	13,575	13,575	17,575	54"	7,975	11,075	11,075	14,575
Stroke	No. 3 Weights		Aux. Weights																											
	No. 3 Weights	Aux. Weights	No. 3 Weights	Aux. Weights																										
24"	17,950	24,950	24,950	31,950																										
34"	12,650	17,500	17,500	22,500																										
44"	9,750	13,575	13,575	17,575																										
54"	7,975	11,075	11,075	14,575																										

LUFKIN UNIVERSAL TC-44A-24 UNIT ASSEMBLY—15,000 Lb. POLISH ROD LOAD CLASS

<p>WALKING BEAM: 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers. API Walking Beam Rating: 15,800 Lbs.</p> <p>HANGER: Universal Centerline Type, bronze bushed.</p> <p>PITMAN: Universal Equalizer with bearings "in line", 2½" Heavy pipe connections, Universal lower bearings.</p> <p>CENTER BEARING: No. 3AS bronze bushed, 6" x 14", oil bath, dust proof.</p> <p>SAMSON POST: Tripod, 10'-4" high.</p> <p>BASE: 8" deep, 25" wide at gear box, 19'-7½" long.</p> <p>CRANKS: No. 4846, 46" radius.</p> <p>CRANK PINS: 3¾" x 3½", bronze bushed, oil bath.</p> <p>TAIL BEARING: 3 1/8" x 7 1/4" bronze bushed.</p> <p>GEAR BOX OIL CAPACITY: 5.5 Gallons.</p>	<p>GEARS: Single Reduction. Main Gear, 36.2" P.D. 5½" Face</p> <p>RATING: 24.6 H.P. at 20 S.P.M. 121,750 lb. ins. Peak Torque</p> <p>RATIO: 9.67</p> <p>CRANKSHAFT: 4 1/8" Diameter</p> <p>SHEAVE: 28"-6C Std., 28" Maximum. 2 1/8" Bore</p> <p>WEIGHT: 14,715 lbs.</p> <p>STATIC COUNTERBALANCE—LBS.</p> <table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 5A Reg. Wts.</th> <th colspan="2">Aux. Wts.</th> </tr> <tr> <th>No. 5A Reg. Wts.</th> <th>Aux. Wts.</th> <th>No. 5A Reg. Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>24"</td> <td>12,465</td> <td>16,060</td> <td>16,060</td> <td>20,050</td> </tr> <tr> <td>32"</td> <td>9,350</td> <td>12,050</td> <td>12,050</td> <td>15,575</td> </tr> <tr> <td>40"</td> <td>7,480</td> <td>9,640</td> <td>9,640</td> <td>12,325</td> </tr> <tr> <td>48"</td> <td>6,230</td> <td>8,030</td> <td>8,030</td> <td>10,325</td> </tr> </tbody> </table>	Stroke	No. 5A Reg. Wts.		Aux. Wts.		No. 5A Reg. Wts.	Aux. Wts.	No. 5A Reg. Wts.	Aux. Wts.	24"	12,465	16,060	16,060	20,050	32"	9,350	12,050	12,050	15,575	40"	7,480	9,640	9,640	12,325	48"	6,230	8,030	8,030	10,325
Stroke	No. 5A Reg. Wts.		Aux. Wts.																											
	No. 5A Reg. Wts.	Aux. Wts.	No. 5A Reg. Wts.	Aux. Wts.																										
24"	12,465	16,060	16,060	20,050																										
32"	9,350	12,050	12,050	15,575																										
40"	7,480	9,640	9,640	12,325																										
48"	6,230	8,030	8,030	10,325																										

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

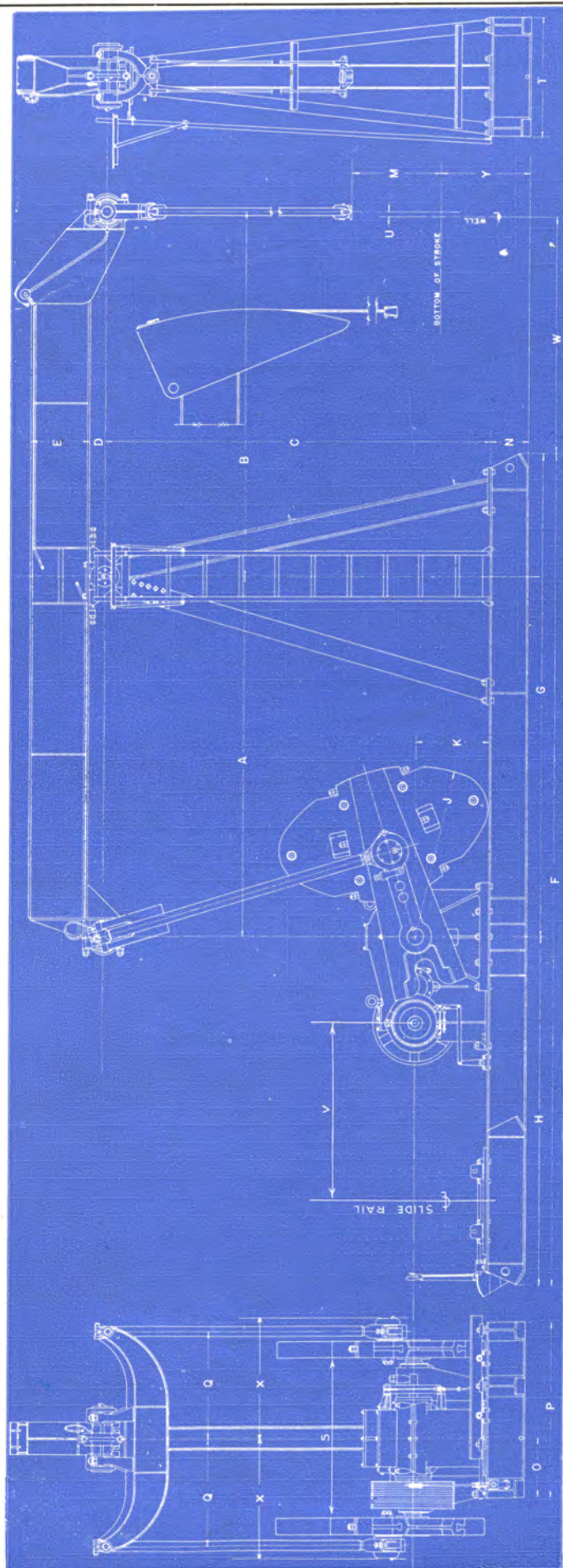


FIGURE 12

DIMENSIONS—STANDARD LUFKIN UNITS TC-OA, 1A, 2A, 33A, AND 44A

Unit	A	B	C	D	E	F	G	H	J	K	M	N	O	P	Q		S		T	U	V		X		
															Single Red.	Double Red.	Single Red.	Double Red.			Single Red.	Double Red.	Single Red.	Double Red.	
TC-OA-1823CU	12'-6"	12'-8 3/8"	13'-3"	7"	24 1/2"	33'-0"	16'-10"	13'-9"	5'-11 1/2"	2'-6"	3'-1"	15"	2'-1"	6'-2"	3'-4 7/8"	3'-5 7/8"	4'-10 1/2"	5'-6 1/2"	4'-2"	2 3/8"	7'-6 1/2"	6'-4 1/2"	3'-11 1/2"	4'-3 3/8"	2'-6 3/8"
TC-1A-1825CU	12'-6"	12'-8 3/8"	13'-3"	7"	24 1/2"	28'-0"	16'-9 1/2"	11'-9 1/2"	5'-11 1/2"	2'-4"	3'-1"	16"	1'-9 1/2"	5'-11"	3'-3 3/8"	3'-3 3/8"	4'-7 1/2"	4'-7 1/2"	3'-7"	2 3/8"	5'-10"	5'-2"	3'-10 9/8"	3'-10 9/8"	2'-6 3/8"
TC-2A-1020CU	10'-0"	10'-2 1/8"	12'-1"	6"	24"	27'-3"	13'-9"	13'-9"	4'-11 1/2"	2'-5"	2'-8"	16"	1'-6 1/2"	5'-5"	2'-11 1/8"	2'-11 1/8"	4'-2 1/2"	4'-2 1/2"	3'-1"	2 3/8"	8'-1"	7'-8"	3'-5 1/8"	3'-5 1/8"	1'-9 3/8"
TC-33A-8216CU	8'-0"	8'-2 3/8"	12'-1"	6"	21"	20'-9"	11'-2"	9'-7"	4'-3 1/2"	2'-3"	2'-3"	10"	1'-4"	4'-8 1/2"	2'-7 1/8"	2'-7 1/8"	3'-6"	3'-6"	2'-5"	2 3/8"	4'-11 3/8"	4'-8 3/8"	3'-11 1/2"	3'-11 1/2"	1'-8 3/8"
TC-44A-8216CU	8'-0"	8'-2 3/8"	10'-4"	6"	21"	19'-7 1/2"	11'-3 1/2"	8'-4"	3'-10"	*	2'-0"	8"	1'-0 1/2"	4'-1"	2'-4 1/8"	2'-4 1/8"	3'-3"	3'-3"	2'-1"	2 3/8"	4'-5"	4'-1"	4'-8 1/2"	2'-10 1/8"	2'-2 3/8"

* Dimension "K"—TC-44A-15, 1'-6" TC-44A-24, 1'-9"
The Universal centerline Rod Hanger is standard on all above Units; however, Hinged Horsehead can be furnished if desired.

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

ALTERNATIVE SETTINGS—LUFKIN UNIT ASSEMBLIES TC-0A, 1A, 2A, 33A AND 44A

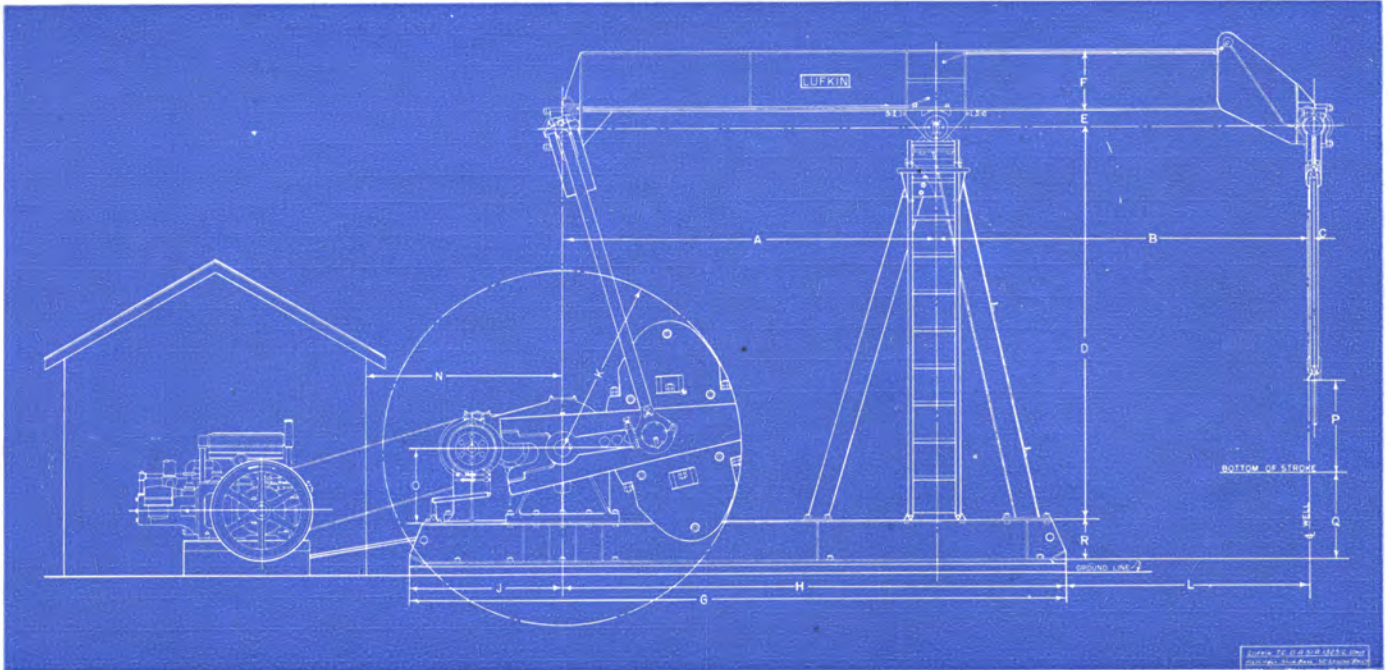


FIGURE 13

Single Reduction TC-0A, 1A, 2A, 33A and 44A with Stub Base and House for Lufkin Cooper-Bessemer Gas Engine

LUFKIN UNIT ALTERNATIVES TC-0A, 1A, 2A, 33A AND 44A

GENERAL DIMENSIONS

UNIT	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Q	R
TC-0A-1525CU...	12'-6"	12'-6"	2 5/8"	13'-3"	7"	24 1/2"	21'-3"	16'-10"	4'-5"	5'-11 1/2"	8'-2"	6'-6"	2'-6"	3'-1"	2'-6 5/8"	16"
TC-1A-1525CU...	12'-6"	12'-6"	2 5/8"	13'-3"	7"	24 1/2"	21'-11"	16'-9 1/2"	5'-1 1/2"	5'-11 1/2"	8'-2 1/2"	6'-6"	2'-4"	3'-1"	2'-6 5/8"	16"
TC-2A-1020CU...	10'-0"	10'-0"	2 5/8"	12'-1"	6"	24"	18'-0"	13'-9"	4'-3"	4'-11 1/2"	6'-3"	5'-6"	2'-3"	2'-8"	1'-9 5/8"	16"
TC-33A-8216CU..	8'-0"	8'-0"	2 5/8"	12'-1"	6"	21"	14'-8"	11'-2"	3'-6"	4'-3 1/2"	4'-10"	4'-10"	2'-3"	2'-3"	1'-8 5/8"	10"
TC-44A-8216CU..	8'-0"	8'-0"	2 5/8"	10'-4"	6"	21"	14'-1 1/2"	11'-3 1/2"	2'-10"	3'-10"	4'-8 1/2"	4'-4"	*	2'-0"	2'-2 5/8"	8"

* Dimension "0", TC-44A-15, 1'-6", TC-44A-24, 1'-9".

Ask for Certified Print before making foundations.

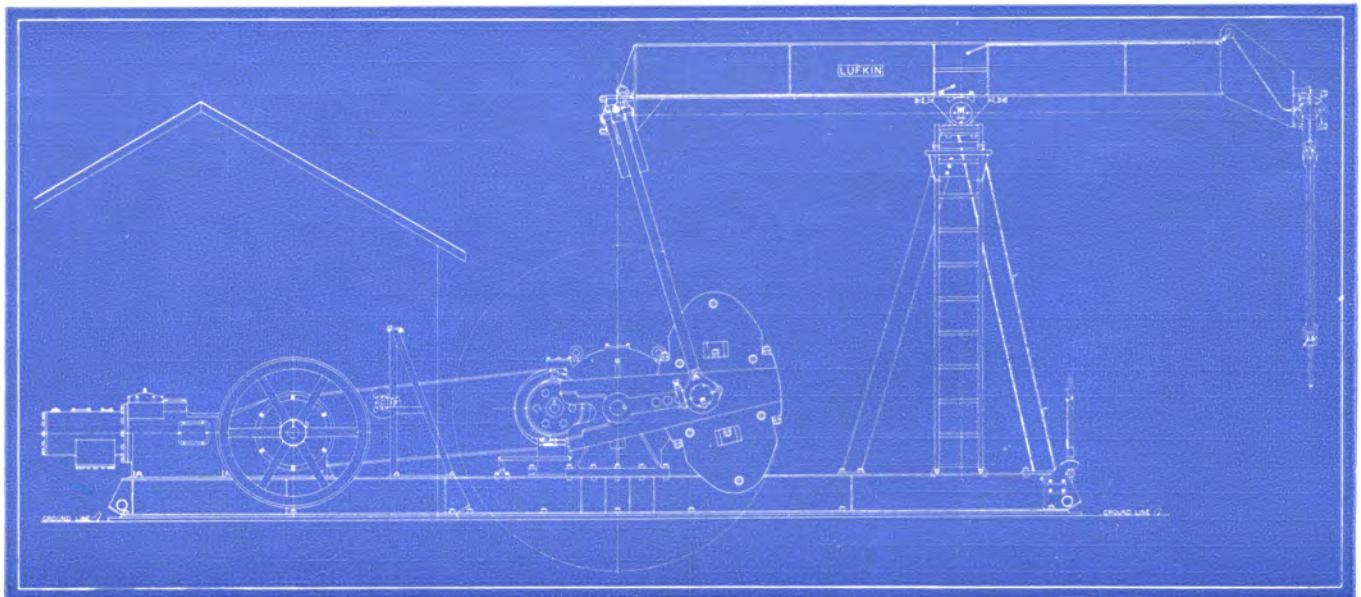


FIGURE 14

TC-0A Unit with Long Base in Two Sections to Take Single Cylinder Engines. Also Furnished with 1A, 2A, 33A and 44A Assemblies. (Except for engine end of base, same dimensions apply here as on Stub Base Unit above.)

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

General Specifications—Lufkin Double Reduction Unit Assemblies TC-1, 2, 33 and 44

LUFKIN UNIVERSAL TC-1-41B UNIT ASSEMBLY—25,000 Lb. Polish Rod Load Class

WALKING BEAM: 24" x 14" x 130 lbs., 10'-0" and 10'-0" working centers. API Walking Beam Rating: 26,650 Lbs.	GEARS: Double Reduction. Main Gear, 33.6" x 10"																																		
HANGER: Hinged Horsehead with 1" wire rope on Equalizing Sheave.	RATING: 57.7 H.P. at 20 S.P.M. 285,620 lbs. ins. Peak Torque																																		
PITMAN: Universal Equalizer with bearings "in line", 4" Heavy pipe connections. Universal lower bearings.	RATIO: 30.12																																		
CENTER BEARING: No. 1AS bronze bushed, 7" x 20" oil bath, dust proof.	CRANKSHAFT: 6 1/8"																																		
SAMSON POST: No. 13 Tripod, 13'-3" high.	SHEAVE: 24 1/4" P.D.-SC Std., 47 1/4" P.D. Maximum, 2 1/8" Bore																																		
BASE: 16" deep, 43" wide at gear box.	WEIGHT: 33,720 lbs., 7466 Cranks—35,250 lbs., 7472 Cranks																																		
CRANKS: 7472, 71 1/2" radius.	STATIC COUNTERBALANCE—LBS.																																		
CRANK PINS: 5 1/2" x 5 1/2" bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 7466 Cranks</th> <th colspan="2">No. 7472 Cranks (Std.)</th> </tr> <tr> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> <th>No. 1 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>34"</td> <td>24,200</td> <td>30,100</td> <td>32,000</td> <td>39,900</td> </tr> <tr> <td>44"</td> <td>18,700</td> <td>23,250</td> <td>24,750</td> <td>30,850</td> </tr> <tr> <td>54"</td> <td>15,200</td> <td>18,950</td> <td>20,150</td> <td>25,100</td> </tr> <tr> <td>64"</td> <td>12,850</td> <td>16,000</td> <td>17,000</td> <td>21,200</td> </tr> <tr> <td>74"</td> <td>11,150</td> <td>13,850</td> <td>14,700</td> <td>18,325</td> </tr> </tbody> </table>	Stroke	No. 7466 Cranks		No. 7472 Cranks (Std.)		No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.	34"	24,200	30,100	32,000	39,900	44"	18,700	23,250	24,750	30,850	54"	15,200	18,950	20,150	25,100	64"	12,850	16,000	17,000	21,200	74"	11,150	13,850	14,700	18,325
Stroke	No. 7466 Cranks		No. 7472 Cranks (Std.)																																
	No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.																															
34"	24,200	30,100	32,000	39,900																															
44"	18,700	23,250	24,750	30,850																															
54"	15,200	18,950	20,150	25,100																															
64"	12,850	16,000	17,000	21,200																															
74"	11,150	13,850	14,700	18,325																															
TAIL AND HANGER BEARINGS: 4 1/8" x 12" bronze bushed.																																			
GEAR BOX OIL CAPACITY: 55 Gallons.																																			

LUFKIN UNIVERSAL TC-2-35 UNIT ASSEMBLY—20,000 Lb. Polish Rod Load Class

WALKING BEAM: 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers. API Walking Beam Rating: 25,550 lbs.	GEARS: Double Reduction. Main Gear, 30.3" P.D. 9" Face																																		
HANGER: Hinged Horsehead with 1" wire rope on Equalizing Sheave.	RATING: 43.2 H.P. at 20 S.P.M. 214,000 lb. ins. Peak Torque																																		
PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections. Universal lower bearings.	RATIO: 28.45																																		
CENTER BEARING: No. 2AS, bronze bushed, 6" x 17", oil bath, dust proof.	CRANKSHAFT: 6"																																		
SAMSON POST: No. 12 Tripod, 12'-1" high.	SHEAVE: 24 1/4"-6 "C" Std. 41 1/4" Maximum 2 1/8" Bore																																		
BASE: 16" deep, 37" wide at gear box, 22'-1" long.	WEIGHT: 26,550 lbs.																																		
CRANKS: No. 6460, 59 1/2" Radius.	STATIC COUNTERBALANCE—LBS.																																		
CRANK PINS: 4 3/4" x 4 5/8" bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 2A Wts.</th> <th colspan="2">No. 2 Wts.</th> </tr> <tr> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>24"</td> <td>25,950</td> <td>31,950</td> <td>28,800</td> <td>35,950</td> </tr> <tr> <td>34"</td> <td>18,300</td> <td>22,550</td> <td>20,350</td> <td>25,350</td> </tr> <tr> <td>44"</td> <td>14,150</td> <td>17,400</td> <td>15,700</td> <td>19,600</td> </tr> <tr> <td>54"</td> <td>11,550</td> <td>14,200</td> <td>12,800</td> <td>15,950</td> </tr> <tr> <td>64"</td> <td>9,750</td> <td>12,000</td> <td>10,800</td> <td>13,500</td> </tr> </tbody> </table>	Stroke	No. 2A Wts.		No. 2 Wts.		No. 2 Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.	24"	25,950	31,950	28,800	35,950	34"	18,300	22,550	20,350	25,350	44"	14,150	17,400	15,700	19,600	54"	11,550	14,200	12,800	15,950	64"	9,750	12,000	10,800	13,500
Stroke	No. 2A Wts.		No. 2 Wts.																																
	No. 2 Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.																															
24"	25,950	31,950	28,800	35,950																															
34"	18,300	22,550	20,350	25,350																															
44"	14,150	17,400	15,700	19,600																															
54"	11,550	14,200	12,800	15,950																															
64"	9,750	12,000	10,800	13,500																															
TAIL BEARING: 4 1/8" x 9 1/4", bronze bushed.																																			
GEAR BOX OIL CAPACITY: 55 Gallons.																																			

LUFKIN UNIVERSAL TC-33-22E UNIT ASSEMBLY—17,000 Lb. Polish Rod Load Class

WALKING BEAM: 18" x 8 3/4" x 77 lbs., 7'-0" and 5'-3 1/4" working centers. API Walking Beam Rating: 17,940 Lbs.	GEARS: Double Reduction. Main Gear, 24.5" x 7 5/8"																					
HANGER: Hinged Horsehead with 1" wire line on Equalizing Sheave.	RATING: 29.2 H.P. at 20 S.P.M. 144,540 lb. ins. Peak Torque																					
PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections. Universal lower bearings.	RATIO: 28.67																					
CENTER BEARING: No. 3AS, bronze bushed, 6" x 14", oil bath, dust proof.	CRANKSHAFT: 5 1/8"																					
SAMSON POST: Tripod, 10'-4" high.	SHEAVE: 24 1/4"-5C Std., 38" Maximum, 2 1/8" Bore																					
BASE: 10" deep, 32" wide at gear box, 18'-6" long.	WEIGHT: 19,760 lbs.																					
CRANKS: No. 4152, 51 1/2" radius.	STATIC COUNTERBALANCE—LBS.																					
CRANK PINS: 4 3/4" x 4 5/8", bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 3 Wts.</th> <th colspan="2">Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>27.9"</td> <td>15,840</td> <td></td> <td>21,850</td> </tr> <tr> <td>41.2"</td> <td>10,720</td> <td></td> <td>14,800</td> </tr> <tr> <td>54.4"</td> <td>8,140</td> <td></td> <td>11,220</td> </tr> </tbody> </table>	Stroke	No. 3 Wts.		Aux. Wts.						27.9"	15,840		21,850	41.2"	10,720		14,800	54.4"	8,140		11,220
Stroke	No. 3 Wts.		Aux. Wts.																			
27.9"	15,840		21,850																			
41.2"	10,720		14,800																			
54.4"	8,140		11,220																			
TAIL BEARING: 4 1/8" x 9 1/4", bronze bushed.																						
GEAR BOX OIL CAPACITY: 22 Gallons.																						

LUFKIN UNIVERSAL TC-44-15 UNIT ASSEMBLY—13,500 Lb. Polish Rod Load Class

WALKING BEAM: 16" x 8 3/4" x 64 lbs., 6'-0" and 6'-0" working centers. API Walking Beam Rating: 14,060 Lbs.	GEARS: Double Reduction. Main Gear, 23.7" P.D. 6 1/4" Face																									
HANGER: Hinged Horsehead with 7/8" wire line on Equalizing Sheave.	RATING: 19.8 H.P. at 20 S.P.M. 98,000 lb. ins. Peak Torque																									
PITMAN: Universal Equalizer with bearings "in line", 2 1/2" Heavy pipe connections. Universal lower bearings.	RATIO: 29.4																									
CENTER BEARING: No. 4AS, bronze bushed, 5" x 10 1/2", oil bath, dust proof.	CRANKSHAFT: 4 1/8" Diameter																									
SAMSON POST: Tripod, 8'-9 1/2" high.	SHEAVE: 19 1/4"-4C Std., 33 1/4" Maximum, 1 1/8" Bore																									
BASE: 8" deep, 25" wide at gear box, 16'-1 1/4" long.	WEIGHT: 13,940 lbs.																									
CRANKS: No. 4846, 46" radius.	STATIC COUNTERBALANCE—LBS.																									
CRANK PINS: 3 3/4" x 3 1/2", bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 5A Reg. Wts.</th> <th colspan="2">Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>24"</td> <td>12,465</td> <td></td> <td>16,060</td> </tr> <tr> <td>32"</td> <td>9,350</td> <td></td> <td>12,050</td> </tr> <tr> <td>40"</td> <td>7,480</td> <td></td> <td>9,640</td> </tr> <tr> <td>48"</td> <td>6,230</td> <td></td> <td>8,030</td> </tr> </tbody> </table>	Stroke	No. 5A Reg. Wts.		Aux. Wts.						24"	12,465		16,060	32"	9,350		12,050	40"	7,480		9,640	48"	6,230		8,030
Stroke	No. 5A Reg. Wts.		Aux. Wts.																							
24"	12,465		16,060																							
32"	9,350		12,050																							
40"	7,480		9,640																							
48"	6,230		8,030																							
TAIL BEARING: 3 1/8" x 7 1/4", bronze bushed.																										
GEAR BOX OIL CAPACITY: 17 Gallons.																										

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

General Specifications—Lufkin Single Reduction Unit Assemblies TC-1, 2, 33 and 44

LUFKIN UNIVERSAL TC-1-54B UNIT ASSEMBLY—25,000 Lb. POLISH ROD LOAD CLASS

WALKING BEAM: 24" x 14" x 130 lbs., 10'-0" and 10'-0" working centers. API Walking Beam Rating: 26,650 Lbs.	GEARS: Single Reduction. Main Gear, 47" x 10"																																		
HANGER: Hinged Horsehead with 1" Wire Rope on Equalizing Sheave.	RATING: 67.8 H.P. at 20 S.P.M. 335,610 lb. ins. Peak Torque																																		
PITMAN: Universal Equalizer with Bearings "in line", 4" Heavy pipe connections, Universal lower bearings.	RATIO: 9.4																																		
CENTER BEARING: No. 1AS, bronze bushed, 7" x 20", oil bath, dust proof.	CRANKSHAFT: 6 1/8"																																		
SAMSON POST: No. 13 Tripod, 13'-3" high.	SHEAVE: 34 1/4"-12C Std., 34 1/4" Maximum, 3 1/8" Bore																																		
BASE: 16" deep, 43" wide at gear box.	WEIGHT: 35,150 lbs.																																		
CRANKS: 7472, 71 1/2" radius.	STATIC COUNTERBALANCE, LBS.																																		
CRANK PINS: 5 1/2" x 5 1/2" bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 7466 Crank</th> <th colspan="2">No. 7472 Crank (Std.)</th> </tr> <tr> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> <th>No. 1 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>34".....</td> <td>24,200</td> <td>30,100</td> <td>32,000</td> <td>39,900</td> </tr> <tr> <td>44".....</td> <td>18,700</td> <td>23,250</td> <td>24,750</td> <td>30,850</td> </tr> <tr> <td>54".....</td> <td>15,200</td> <td>18,950</td> <td>20,150</td> <td>25,100</td> </tr> <tr> <td>64".....</td> <td>12,850</td> <td>16,000</td> <td>17,000</td> <td>21,200</td> </tr> <tr> <td>74".....</td> <td>11,150</td> <td>13,850</td> <td>14,700</td> <td>18,325</td> </tr> </tbody> </table>	Stroke	No. 7466 Crank		No. 7472 Crank (Std.)		No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.	34".....	24,200	30,100	32,000	39,900	44".....	18,700	23,250	24,750	30,850	54".....	15,200	18,950	20,150	25,100	64".....	12,850	16,000	17,000	21,200	74".....	11,150	13,850	14,700	18,325
Stroke	No. 7466 Crank		No. 7472 Crank (Std.)																																
	No. 2 Wts.	Aux. Wts.	No. 1 Wts.	Aux. Wts.																															
34".....	24,200	30,100	32,000	39,900																															
44".....	18,700	23,250	24,750	30,850																															
54".....	15,200	18,950	20,150	25,100																															
64".....	12,850	16,000	17,000	21,200																															
74".....	11,150	13,850	14,700	18,325																															
TAIL AND HANGER BEARINGS: 4 1/8" x 12" bronze bushed.																																			
GEAR BOX OIL CAPACITY: 29 Gallons.																																			

LUFKIN UNIVERSAL TC-2-36 UNIT ASSEMBLY—20,000 Lb. POLISH ROD LOAD CLASS

WALKING BEAM: 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers. API Walking Beam Rating: 25,550	GEARS: Single Reduction. Main Gear, 45.4" P.D. 8" Face																																		
HANGER: Hinged Horsehead with 1" wire rope on equalizing Sheave.	RATING: 50.4 H.P. at 20 S.P.M. 249,480 lb. ins. Peak Torque																																		
PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections, Universal lower bearings.	RATIO: 9.94																																		
CENTER BEARING: No. 2AS, bronze bushed, 6" x 17", oil bath, dust proof.	CRANKSHAFT: 6"																																		
SAMSON POST: No. 12 Tripod, 12'-1" high.	SHEAVE: 34 1/4" P.D. 9 "C" Std., 34 1/4" Maximum, 3 3/8" Bore																																		
BASE: 16" deep, 37" wide at gear box, 22'-1" long.	WEIGHT: 26,450 lbs.																																		
CRANKS: No. 6460, 59 1/2" radius.	STATIC COUNTERBALANCE—LBS.																																		
CRANK PINS: 4 3/4" x 4 5/8", bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 2A Wts.</th> <th colspan="2">No. 2 Wts.</th> </tr> <tr> <th>No. 2A Wts.</th> <th>Aux. Wts.</th> <th>No. 2 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>24".....</td> <td>25,950</td> <td>31,950</td> <td>28,800</td> <td>35,950</td> </tr> <tr> <td>34".....</td> <td>18,300</td> <td>22,550</td> <td>20,350</td> <td>25,350</td> </tr> <tr> <td>44".....</td> <td>14,150</td> <td>17,400</td> <td>15,700</td> <td>19,600</td> </tr> <tr> <td>54".....</td> <td>11,550</td> <td>14,200</td> <td>12,800</td> <td>15,950</td> </tr> <tr> <td>64".....</td> <td>9,750</td> <td>12,000</td> <td>10,800</td> <td>13,500</td> </tr> </tbody> </table>	Stroke	No. 2A Wts.		No. 2 Wts.		No. 2A Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.	24".....	25,950	31,950	28,800	35,950	34".....	18,300	22,550	20,350	25,350	44".....	14,150	17,400	15,700	19,600	54".....	11,550	14,200	12,800	15,950	64".....	9,750	12,000	10,800	13,500
Stroke	No. 2A Wts.		No. 2 Wts.																																
	No. 2A Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.																															
24".....	25,950	31,950	28,800	35,950																															
34".....	18,300	22,550	20,350	25,350																															
44".....	14,150	17,400	15,700	19,600																															
54".....	11,550	14,200	12,800	15,950																															
64".....	9,750	12,000	10,800	13,500																															
TAIL BEARING: 4 1/8" x 9 1/4", bronze bushed.																																			
GEAR BOX OIL CAPACITY: 20 Gallons.																																			

LUFKIN UNIVERSAL TC-33-18B UNIT ASSEMBLY—17,000 Lb. POLISH ROD LOAD CLASS

WALKING BEAM: 18" x 8 3/4" x 77 lbs., 7'-0" and 5'-3 1/4" working centers. API Walking Beam Rating: 17,940 Lbs.	GEARS: Single Reduction. Main Gear, 42" x 6"														
HANGER: Hinged Horsehead with 1" wire line on Equalizing Sheave.	RATING: 33.0 H.P. at 20 S.P.M. 163,350 lb. ins. Peak Torque														
PITMAN: Universal Equalizer with bearings "in line", 3" Heavy pipe connections, Universal lower bearings.	RATIO: 10.5														
CENTER BEARING: No. 3AS, bronze bushed, 6" x 14", oil bath, dust proof.	CRANKSHAFT: 5 1/8"														
SAMSON POST: Tripod, 10'-4" high.	SHEAVE: 32 1/4"-6C Std., 32 1/4" Maximum, 2 1/8" Bore														
BASE: 10" deep, 32" wide at gear box, 18'-6" long.	WEIGHT: 19,300 lbs.														
CRANKS: No. 4152, 51 1/2" radius.	STATIC COUNTERBALANCE—LBS.														
CRANK PINS: 4 3/4" x 4 5/8", bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 3 Wts.</th> </tr> <tr> <th>No. 3 Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>27.9".....</td> <td>15,840</td> <td>21,850</td> </tr> <tr> <td>41.2".....</td> <td>10,720</td> <td>14,800</td> </tr> <tr> <td>54.4".....</td> <td>8,140</td> <td>11,220</td> </tr> </tbody> </table>	Stroke	No. 3 Wts.		No. 3 Wts.	Aux. Wts.	27.9".....	15,840	21,850	41.2".....	10,720	14,800	54.4".....	8,140	11,220
Stroke	No. 3 Wts.														
	No. 3 Wts.	Aux. Wts.													
27.9".....	15,840	21,850													
41.2".....	10,720	14,800													
54.4".....	8,140	11,220													
TAIL BEARING: 4 1/8" x 9 1/4", bronze bushed.															
GEAR BOX OIL CAPACITY: 20 Gallons.															

LUFKIN UNIVERSAL TC-44-24 UNIT ASSEMBLY—13,500 Lb. POLISH ROD LOAD CLASS

WALKING BEAM: 16" x 8 1/2" x 64 lbs., 6'-0" and 6'-0" working centers. API Walking Beam Rating: 14,060.	GEARS: Single Reduction. Main Gear, 36.2" P.D. 5 1/2" Face																	
HANGER: Hinged Horsehead with 3/8" wire line on Equalizing Sheave.	RATING: 24.6 H.P. at 20 S.P.M. 121,750 lb. ins. Peak Torque																	
PITMAN: Universal Equalizer with bearings "in line", 2 1/2" Heavy pipe connections, Universal lower bearings.	RATIO: 9.67																	
CENTER BEARING: No. 4AS, bronze bushed, 5" x 10 1/2", oil bath, dust proof.	CRANKSHAFT: 4 1/8" Diameter																	
SAMSON POST: Tripod, 8'-9 1/2" high.	SHEAVE: 28"-6C Std., 28" Maximum, 2 1/8" Bore																	
BASE: 8" deep, 25" wide at gear box, 16'-1 1/4" long.	WEIGHT: 13,940 lbs.																	
CRANKS: No. 4846, 46" radius.	STATIC COUNTERBALANCE—LBS.																	
CRANK PINS: 3 3/4" x 3 1/2", bronze bushed, oil bath.	<table border="1"> <thead> <tr> <th rowspan="2">Stroke</th> <th colspan="2">No. 5A Reg. Wts.</th> </tr> <tr> <th>No. 5A Reg. Wts.</th> <th>Aux. Wts.</th> </tr> </thead> <tbody> <tr> <td>24".....</td> <td>12,465</td> <td>16,060</td> </tr> <tr> <td>32".....</td> <td>9,350</td> <td>12,050</td> </tr> <tr> <td>40".....</td> <td>7,480</td> <td>9,640</td> </tr> <tr> <td>48".....</td> <td>6,230</td> <td>8,030</td> </tr> </tbody> </table>	Stroke	No. 5A Reg. Wts.		No. 5A Reg. Wts.	Aux. Wts.	24".....	12,465	16,060	32".....	9,350	12,050	40".....	7,480	9,640	48".....	6,230	8,030
Stroke	No. 5A Reg. Wts.																	
	No. 5A Reg. Wts.	Aux. Wts.																
24".....	12,465	16,060																
32".....	9,350	12,050																
40".....	7,480	9,640																
48".....	6,230	8,030																
TAIL BEARING: 3 1/8" x 7 1/4", bronze bushed.																		
GEAR BOX OIL CAPACITY: 5.5 Gallons.																		

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

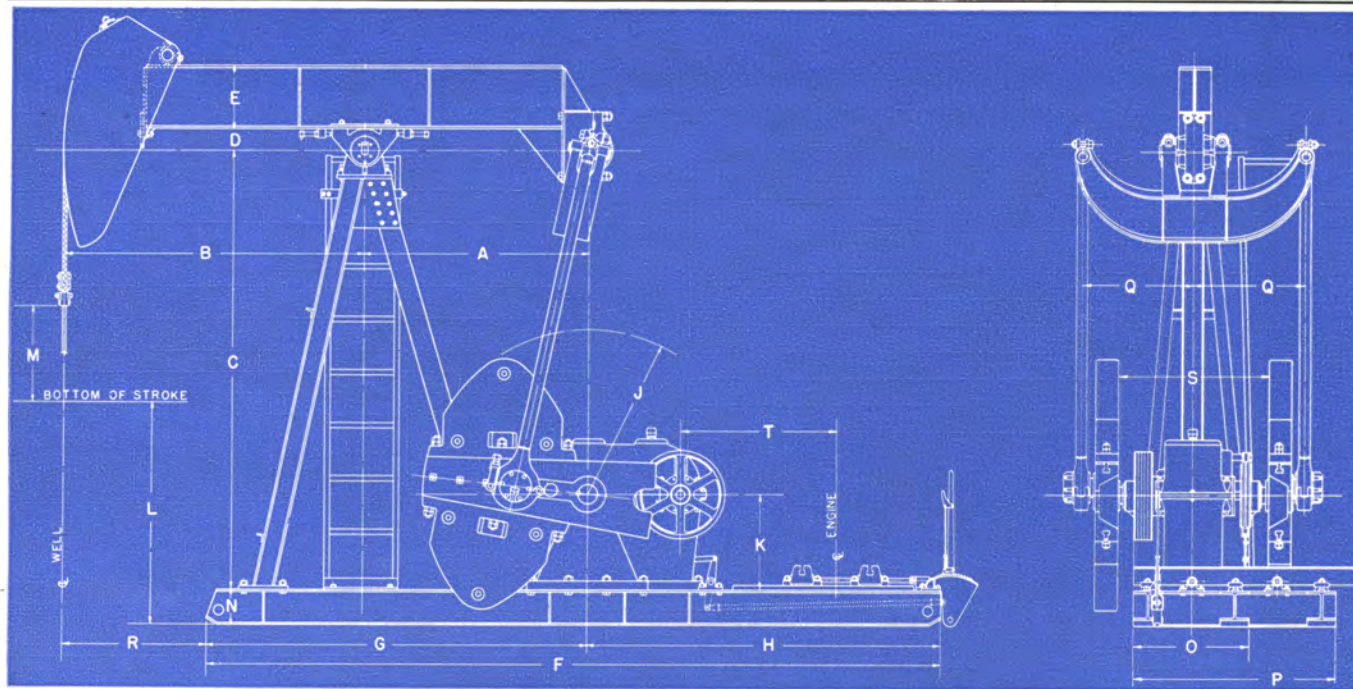


FIGURE 15
STANDARD LUFKIN UNIT ASSEMBLIES TC-1, 2, 33 AND 44

GENERAL DIMENSIONS

Unit	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	
																			Single Red.	Double Red.
TC-1.....	10'-0"	10'-0"	13'-3"	7"	24"	25'-10"	14'-3"	11'-7"	71 $\frac{1}{2}$ "	2'-4"	3'-4"	3'-1"	16"	3'-7"	5'-11"	3'-3 $\frac{3}{8}$ "	5'-9"	4'-7 $\frac{1}{2}$ "	6'-5"	5'-9"
TC-2.....	8'-0"	8'-0"	12'-1"	6"	24"	22'-1"	11'-9"	10'-4"	4'-11 $\frac{1}{2}$ "	2'-3"	5'-5"	2'-8"	16"	3'-1"	5'-5"	2'-11 $\frac{1}{8}$ "	4'-3"	4'-2 $\frac{1}{2}$ "	5'-1"	4'-8"
TC-33.....	5'-3 $\frac{1}{4}$ "	7'-0"	10'-4"	6"	18"	18'-6"	8'-10 $\frac{3}{4}$ "	9'-7 $\frac{1}{4}$ "	4'-3 $\frac{1}{2}$ "	2'-3"	5'-2 $\frac{1}{2}$ "	2'-3"	10"	2'-8"	4'-8 $\frac{1}{2}$ "	2'-7 $\frac{1}{8}$ "	3'-4 $\frac{1}{2}$ "	3'-6"	4'-11 $\frac{1}{8}$ "	4'-8 $\frac{3}{4}$ "
TC-44.....	6'-0"	6'-0"	8'-9 $\frac{1}{2}$ "	6"	16"	16'-1 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	8'-4"	3'-10"	*	3'-6"	2'-0"	8"	2'-1"	4'-1"	2'-4 $\frac{1}{8}$ "	4'-2 $\frac{3}{4}$ "	3'-3"	4'-5"	4'-1"

* Dimension "K"—TC-44-15, 1'-6" TC-44-24, 1'-9".

ALTERNATIVE FEATURES

Lufkin TC-1, 2, 33 and 44 assemblies with Stub Base and Gas Engine Drive.

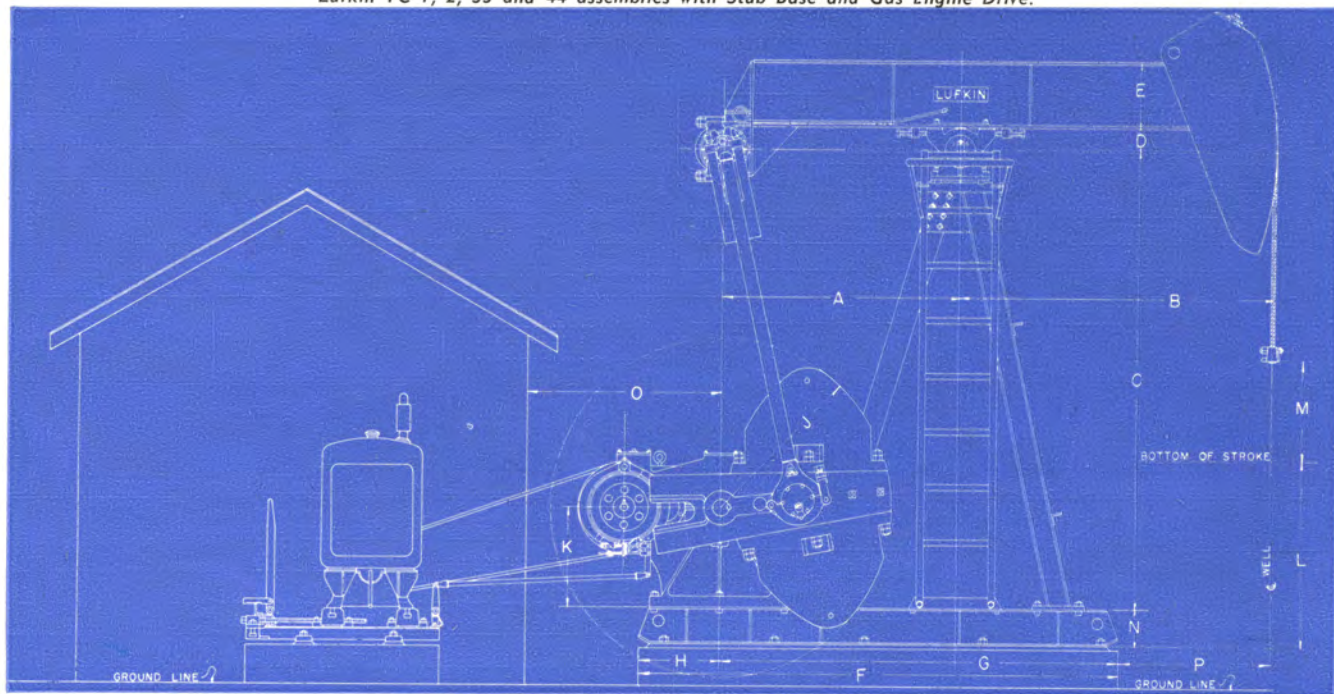


FIGURE 16

Unit	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
TC-1.....	10'-0"	10'-0"	13'-3"	7"	24"	18'-2 $\frac{5}{8}$ "	14'-5"	3'-9 $\frac{5}{8}$ "	71 $\frac{1}{2}$ "	2'-4"	3'-4"	3'-1"	16"	6'-6"	5'-7"
TC-2.....	8'-0"	8'-0"	12'-1"	6"	24"	16'-0"	11'-9"	4'-3"	4'-11 $\frac{1}{2}$ "	2'-3"	5'-5"	2'-8"	16"	6'-0"	4'-3"
TC-33.....	5'-3 $\frac{1}{4}$ "	7'-0"	10'-4"	6"	18"	12'-3 $\frac{3}{4}$ "	8'-11 $\frac{1}{4}$ "	3'-4 $\frac{1}{2}$ "	4'-3 $\frac{1}{2}$ "	2'-3"	5'-2 $\frac{1}{2}$ "	2'-3"	10"	4'-10"	3'-4"
TC-44.....	6'-0"	6'-0"	8'-9 $\frac{1}{2}$ "	6"	16"	10'-7 $\frac{1}{4}$ "	7'-9 $\frac{1}{4}$ "	2'-10"	3'-10"	*	3'-6"	2'-0"	8"	4'-4"	4'-2 $\frac{3}{4}$ "

* Dimension "K"—TC-44-15, 1'-6" TC-44-24, 1'-9".

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN FLUSH-TYPE OR FLOOR-TYPE PUMPING UNIT ASSEMBLIES

Cast Iron Sub-Base Under Gear Reducer to Clear Crank Sweep when Unit is Sitting Flush on Floor

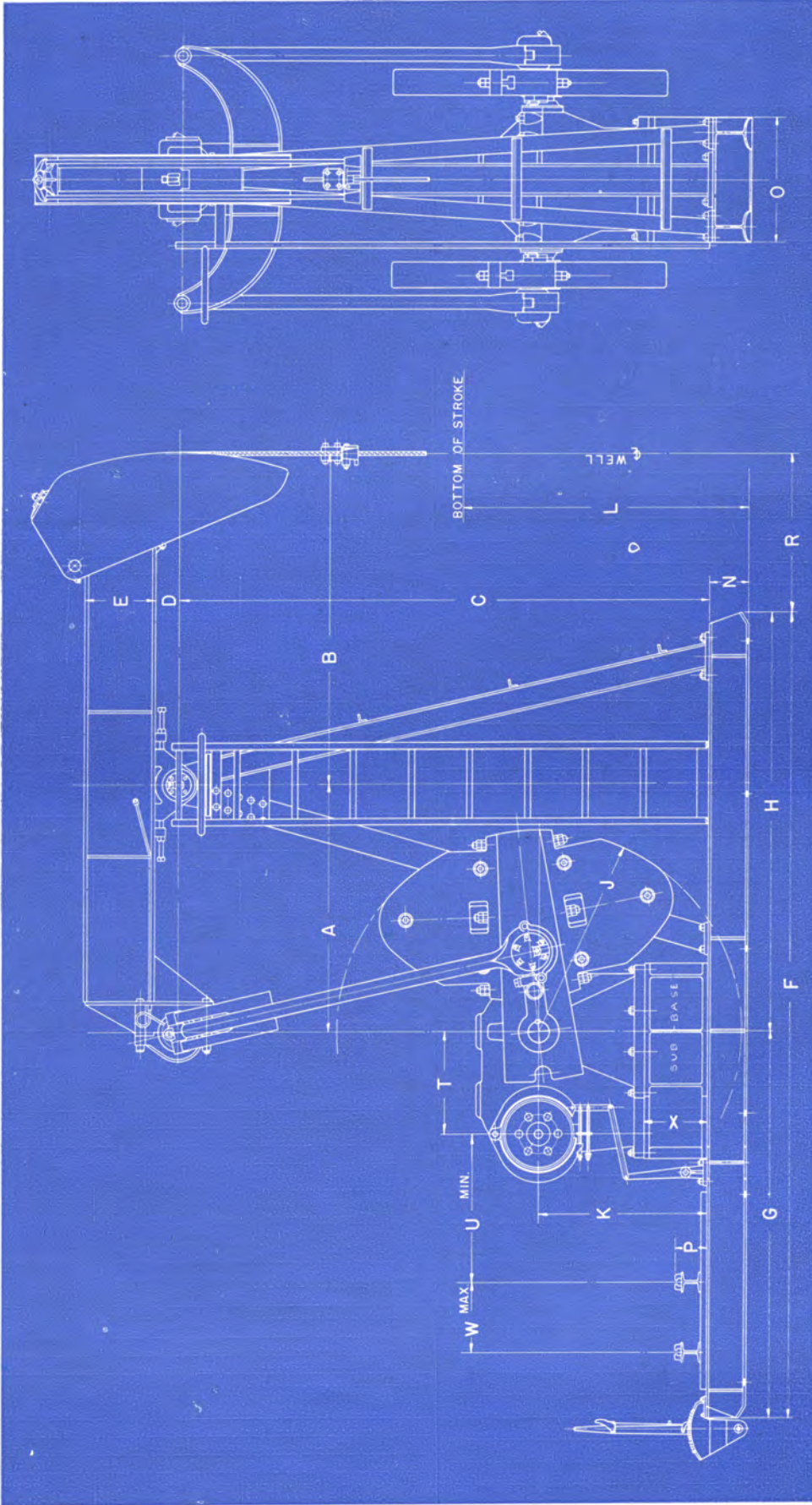


FIGURE 17

Unit	A	B	C	D	E	F	G	H	J	K	L	N	O ††	P	R	T		U		Sub-Base	
																Single Red.	Double Red.	Single Red.	Double Red.	Wt. Lbs.	Mat'l.
T6	4'-0"	4'-0"	7'-10 1/2"	2 1/4"	14"	12'-3"	7'-0"	5'-3"	3'-4"	2'-10"	4'-3 1/2"	8"	3'-2 1/2"	33%	2'-9"	1'-5 1/2"	2'-4"	2'-11"	1'-8"	480	C.I.
T5	5'-0"	5'-0"	9'-9 1/2"	4 3/8"	14"	14'-5 1/4"	7'-6"	6'-11 1/4"	3'-4"	3'-3"	5'-2 3/4"	8"	3'-9"	4 1/8"	3'-0 3/8"	1'-5 1/2"	2'-4"	2'-11"	1'-8"	725	C.I.
TC-44	6'-0"	6'-0"	9'-9 1/2"	6"	16"	16'-1 1/4"	8'-4"	7'-9 1/4"	3'-10"	3'-8"	4'-6"	8"	3'-5 1/2"	4 3/8"	3'-0 3/8"	1'-5 1/2"	2'-4"	2'-10"	1'-9"	725	C.I.
TC-33	5'-3 1/4"	7'-0"	10'-4"	6"	18"	18'-6"	9'-7 1/4"	8'-10 3/4"	4'-3 1/2"	3'-7"	5'-2 3/4"	10"	2'-8"	7 3/4"	2'-8"	2'-0"	2'-8 1/4"	2'-10"	1'-4"	925	C.I.
TC-33A	8'-0"	8'-0"	12'-1"	6"	21"	20'-9"	11'-2"	11'-2"	4'-3 1/2"	3'-7"	1'-8 3/8"	10"	2'-8"	7 3/4"	2'-8"	2'-2"	2'-5 3/8"	3'-9"	1'-4"	925	C.I.
TC-2	8'-0"	8'-0"	12'-1"	6"	24"	22'-1"	10'-4"	11'-9"	4'-11 1/2"	3'-5"	1'-8 3/8"	16"	3'-1"	7 3/4"	2'-1"	2'-6"	2'-9 1/4"	3'-9 1/2"	1'-6"	1580	C.I.
TC-2A	10'-0"	10'-0"	12'-1"	6"	24"	27'-3"	13'-9"	13'-9"	4'-11 1/2"	3'-9"	1'-9 5/8"	16"	3'-1"	7 3/4"	2'-1"	2'-6"	2'-9 1/4"	3'-9 1/2"	1'-6"	1580	C.I.
TC-1	10'-0"	10'-0"	15'-9"	7"	24"	25'-10"	11'-2 1/2"	14'-3"	5'-11 1/2"	4'-10"	5'-10"	16"	3'-7"	7 3/4"	2'-2"	2'-10"	3'-10"	3'-9 1/2"	2'-6"	2380	C.I.
TC-1A	12'-6"	12'-6"	15'-9"	7"	24 1/2"	28'-0"	11'-2 1/2"	16'-9 1/2"	5'-11 1/2"	4'-10"	5'-0 3/8"	16"	3'-7"	7 3/4"	2'-2"	2'-10"	3'-10"	3'-9 1/2"	2'-6"	2380	C.I.
TC-0A	12'-6"	12'-6"	15'-9"	7"	24 1/2"	30'-0"	13'-2"	16'-10"	5'-11 1/2"	5'-0"	5'-0 3/8"	16"	4'-2"	7 3/4"	2'-3 1/4"	3'-5 1/2"	4'-5 3/4"	3'-9 1/2"	2'-6"	2380	C.I.

* Dimension "T": T5-7B = 1'-8", T5-15 = 2'-0". † Dimension "U": T5-7B = 2'-10 1/2", T5-15 = 2'-0 1/2". †† Dimension "O" shows width of Base at Samson Post. ** Dimensions "K": TC-44-15 = 3'-3", TC-44-24 = 3'-6".

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

General Specifications—Lufkin Unit Assemblies T5, T6 and T7

LUFKIN UNIVERSAL T5-15 DOUBLE REDUCTION UNIT ASSEMBLY—10,000 LB. POLISH ROD LOAD CLASS

WALKING BEAM: 14" x 8" x 43 lbs., 5'-0" and 5'-0" working centers. API Walking Beam Rating: 10,450 Lbs.	GEARS..... Double Reduction Main Gear: 23.7" x 6 1/4"												
HANGER: Removable Horsehead with 3/4" wire line.	RATING..... 19.8 H.P. at 20 S.P.M. 98,000 lb. ins. Peak Torque												
PITMAN: Universal Cross Pin type Equalizer. Side members 4" I Beam.	RATIO..... 29.4												
CENTER BEARING: Bronze Bushed, 4 1/8" x 9".	CRANKSHAFT..... 4 1/4"												
SAMSON POST: Trinod, 8'-0" high.	SHEAVE..... 19 1/4" 4" Std. 33 1/4" Maximum 1 1/8" Bore												
BASE: 8" deep, 2'-1 1/2" wide at gear box, 14'-5 1/4" long.	WEIGHT..... 9,150 lbs.												
CRANK: No. 4242C, 42" radius.	STATIC COUNTERBALANCE—LBS.												
CRANK PINS: 3 3/4" x 3 1/2" oil bath, bronze bushed.	<table border="1"> <tr> <th>Stroke</th> <th>No. 5C Wts.</th> <th>Aux. Wts.</th> </tr> <tr> <td>22"</td> <td>9,225</td> <td>12,230</td> </tr> <tr> <td>32"</td> <td>6,340</td> <td>8,400</td> </tr> <tr> <td>42"</td> <td>4,830</td> <td>6,400</td> </tr> </table>	Stroke	No. 5C Wts.	Aux. Wts.	22"	9,225	12,230	32"	6,340	8,400	42"	4,830	6,400
Stroke	No. 5C Wts.	Aux. Wts.											
22"	9,225	12,230											
32"	6,340	8,400											
42"	4,830	6,400											
TAIL BEARING: 3 1/8" x 6 1/2", bronze bushed.													
GEAR BOX OIL CAPACITY: 17 Gallons.													

LUFKIN UNIVERSAL T5-7B DOUBLE REDUCTION UNIT ASSEMBLY—10,000 LB. POLISH ROD LOAD CLASS

WALKING BEAM: 14" x 8" x 43 lbs., 5'-0" and 5'-0" working centers. API Walking Beam Rating: 10,450 Lbs.	GEARS..... Double Reduction Main Gear: 19 1/2" x 5"												
HANGER: Removable Horsehead with 3/4" wire line.	RATING..... 11.1 H.P. at 20 S.P.M. 54,945 lb. ins. Peak Torque												
PITMAN: Universal Cross Pin type Equalizer. Side members 4" I Beam.	RATIO..... 29.32												
CENTER BEARING: Bronze Bushed, 4 1/8" x 9".	CRANKSHAFT..... 4"												
SAMSON POST: Tripod, 8'-0" high.	SHEAVE..... 23" P.D.-3C Std. 27 1/4" Maximum 1 1/8" Bore												
BASE: 8" deep, 2'-1 1/2" wide at gear box, 14'-5 1/4" long.	WEIGHT..... 8,500 lbs.												
CRANKS: No. 4242C, 42" radius.	STATIC COUNTERBALANCE—LBS.												
CRANK PINS: 3 3/4" x 3 1/2", oil bath, bronze bushed.	<table border="1"> <tr> <th>Stroke</th> <th>No. 5C Wts.</th> <th>Aux. Wts.</th> </tr> <tr> <td>22"</td> <td>9,225</td> <td>12,230</td> </tr> <tr> <td>32"</td> <td>6,340</td> <td>8,400</td> </tr> <tr> <td>42"</td> <td>4,830</td> <td>6,400</td> </tr> </table>	Stroke	No. 5C Wts.	Aux. Wts.	22"	9,225	12,230	32"	6,340	8,400	42"	4,830	6,400
Stroke	No. 5C Wts.	Aux. Wts.											
22"	9,225	12,230											
32"	6,340	8,400											
42"	4,830	6,400											
TAIL BEARING: 3 1/8" x 6 1/2", bronze bushed.													
GEAR BOX OIL CAPACITY: 12.5 Gallons.													

LUFKIN UNIVERSAL T5-16 SINGLE REDUCTION UNIT ASSEMBLY—10,000 LB. POLISH ROD LOAD CLASS

WALKING BEAM: 14" x 8" x 43 lbs., 5'-0" and 5'-0" working centers. API Walking Beam Rating: 10,450 Lbs.	GEARS..... Single Reduction Main Gear: 32 1/2" x 4"												
HANGER: Removable Horsehead with 3/4" wire line.	RATING..... 14.7 H.P. at 20 S.P.M. 72,685 lb. ins. Peak Torque												
PITMAN: Universal Cross Pin type Equalizer. Side members 4" I Beam.	RATIO..... 10												
CENTER BEARING: Bronze bushed, 4 1/8" x 9".	CRANKSHAFT..... 4"												
SAMSON POST: Tripod, 8'-0" high.	SHEAVE..... 24"-5C Std. 24" Maximum 2 1/8" Bore												
BASE: 8" deep, 2'-1 1/2" wide at gear box, 14'-5 1/4" long.	WEIGHT..... 8,500 lbs.												
CRANKS: No. 4242C, 42" radius.	STATIC COUNTERBALANCE—LBS.												
CRANK PINS: 3 3/4" x 3 1/2", oil bath, bronze bushed.	<table border="1"> <tr> <th>Stroke</th> <th>No. 5C Wts.</th> <th>Aux. Wts.</th> </tr> <tr> <td>22"</td> <td>9,225</td> <td>12,230</td> </tr> <tr> <td>32"</td> <td>6,340</td> <td>8,400</td> </tr> <tr> <td>42"</td> <td>4,830</td> <td>6,400</td> </tr> </table>	Stroke	No. 5C Wts.	Aux. Wts.	22"	9,225	12,230	32"	6,340	8,400	42"	4,830	6,400
Stroke	No. 5C Wts.	Aux. Wts.											
22"	9,225	12,230											
32"	6,340	8,400											
42"	4,830	6,400											
TAIL BEARING: 3 1/8" x 6 1/2" bronze bushed.													
GEAR BOX OIL CAPACITY: 7.5 Gallons.													

LUFKIN UNIVERSAL T6-9 DOUBLE REDUCTION UNIT ASSEMBLY—8,000 LB. POLISH ROD LOAD CLASS

WALKING BEAM: 14" x 6 3/4" x 30 lbs., 4'-0" and 4'-0" working Centers. API Walking Beam Rating: 8,708 Lbs.	GEARS..... Double Reduction Main Gear: 16.8" x 4 3/8"															
HANGER: Removable Horsehead with 5/8" wire line.	RATING..... 7.6 H.P. at 20 S.P.M. 37,680 lb. ins. Peak Torque															
PITMAN: Universal Cross Pin type Equalizer. Side members 3" I Beam.	RATIO..... 29.2															
CENTER BEARING: Bronze bushed, 2 1/8" x 10 1/2".	CRANKSHAFT..... 4"															
SAMSON POST: Tripod, 6'-2 7/8" high.	SHEAVE..... 21"-3B Std. 23" Maximum 1 1/4" Bore															
BASE: 8" deep, 12'-3" long, 1'-8" wide at gear box.	WEIGHT..... 6,915 lbs.															
CRANK: No. 3440, 40" radius.	STATIC COUNTERBALANCE—LBS.															
CRANK PINS: 2 3/4" x 3", oil bath, bronze bushed.	<table border="1"> <tr> <th>Stroke</th> <th>No. 6 Wts.</th> <th>Aux. Wts.</th> </tr> <tr> <td>16"</td> <td>10,060</td> <td>11,370</td> </tr> <tr> <td>22"</td> <td>7,260</td> <td>8,210</td> </tr> <tr> <td>28"</td> <td>5,725</td> <td>6,475</td> </tr> <tr> <td>34"</td> <td>4,700</td> <td>5,310</td> </tr> </table>	Stroke	No. 6 Wts.	Aux. Wts.	16"	10,060	11,370	22"	7,260	8,210	28"	5,725	6,475	34"	4,700	5,310
Stroke	No. 6 Wts.	Aux. Wts.														
16"	10,060	11,370														
22"	7,260	8,210														
28"	5,725	6,475														
34"	4,700	5,310														
TAIL BEARING: 3 1/8" x 6 1/2", bronze bushed.																
GEAR BOX OIL CAPACITY: 7 Gallons.																

LUFKIN UNIVERSAL T7-3A DOUBLE REDUCTION UNIT ASSEMBLY—6,000 LB. POLISH ROD LOAD CLASS

WALKING BEAM: 10" x 5 3/4" x 25 lbs., 3'-6" and 3'-6" working centers. API Walking Beam Rating: 6,285 Lbs.	GEARS..... Double Reduction Main Gear: 13.5" x 4"												
HANGER: Removable Horsehead with 5/8" wire line.	RATING..... 5 H.P. at 20 S.P.M. 25,000 lb. ins. Peak Torque												
PITMAN: Universal Cross Pin type Equalizer. Side members 3" I Beam.	RATIO..... 28.9												
CENTER BEARING: Bronze bushed, 2 1/8" x 10 1/2".	CRANKSHAFT..... 3"												
SAMSON POST: Tripod, 5'-3" high.	SHEAVE..... 18"-3A Std. 18" Maximum 1 3/8" Bore												
BASE: 6 1/4" deep, 11'-0" long, 1'-5" wide at gear box.	WEIGHT..... 4,600 lbs.												
CRANK: No. 2432, 32" radius.	STATIC COUNTERBALANCE—LBS.												
CRANK PINS: 2 3/4" x 3", oil bath, bronze bushed.	<table border="1"> <tr> <th>Stroke</th> <th>No. 7 Wts.</th> <th>Aux. Wts.</th> </tr> <tr> <td>12"</td> <td>6,200</td> <td>8,200</td> </tr> <tr> <td>18"</td> <td>4,125</td> <td>5,465</td> </tr> <tr> <td>24"</td> <td>3,100</td> <td>4,100</td> </tr> </table>	Stroke	No. 7 Wts.	Aux. Wts.	12"	6,200	8,200	18"	4,125	5,465	24"	3,100	4,100
Stroke	No. 7 Wts.	Aux. Wts.											
12"	6,200	8,200											
18"	4,125	5,465											
24"	3,100	4,100											
TAIL BEARING: 2 1/8" x 6 1/2", bronze bushed.													
GEAR BOX OIL CAPACITY: 4 Gallons.													

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

Dimensions—Standard Lufkin Units T5, T6 and T7

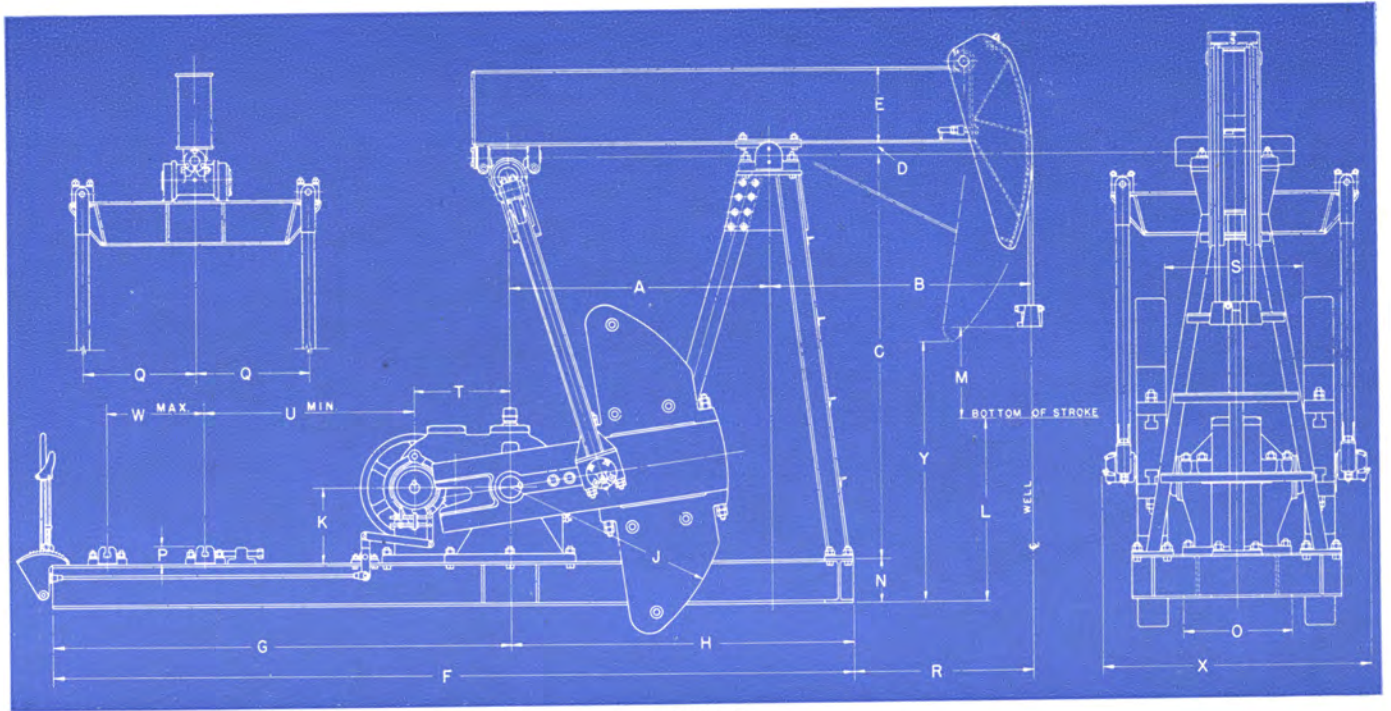


FIGURE 18

Unit	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	W	X	Y
T5-15	5'-0"	5'-0"	8'-0"	43/4"	14"	14'-5 1/4"	7'-6"	6'-11 1/4"	3'-6"	18"	3'-5 3/4"	21"	8"	2'-11 1/2"	4 7/8"	2'-5"	3'-0 1/4"	3'-3 1/4"	2'-0"	2'-6 1/2"	2'-3 1/8"	5'-5"	5'-3 3/8"
T5-7B	5'-0"	5'-0"	8'-0"	43/4"	14"	14'-5 1/4"	7'-6"	6'-11 1/4"	3'-6"	18"	3'-5 3/4"	21"	8"	2'-11 1/2"	4 7/8"	2'-11 1/2"	3'-0 1/4"	2'-8 1/2"	1'-8"	2'-10 1/2"	2'-3 1/8"	4'-10"	5'-3 3/8"
T5-16	5'-0"	5'-0"	8'-0"	43/4"	14"	14'-5 1/4"	7'-6"	6'-11 1/4"	3'-6"	18"	3'-5 3/4"	21"	8"	2'-11 1/2"	4 7/8"	2'-11 1/2"	3'-0 1/4"	2'-8 1/2"	1'-5 7/8"	3'-0 5/8"	2'-3 1/8"	4'-10"	5'-3 3/8"
T6-9	4'-0"	4'-0"	6'-2 1/8"	2 1/4"	14"	12'-3"	7'-0"	5'-3"	3'-4"	14"	2'-7 1/2"	17"	8"	1'-8"	3 3/8"	1'-8 3/4"	2'-9"	2'-1 1/2"	1'-5 1/2"	2'-4"	2'-11"	4'-11 1/4"	4'-3"
T7-3A	3'-6"	3'-6"	5'-3"	2 1/4"	10"	11'-0"	6'-4"	4'-8"	2'-8"	14"	2'-5"	12"	6 1/4"	1'-5"	3 3/8"	1'-7 5/8"	2'-0 1/2"	2'-1 1/2"	1'-1 1/8"	2'-0 5/8"	2'-7"	3'-10 5/8"	3'-10 1/2"

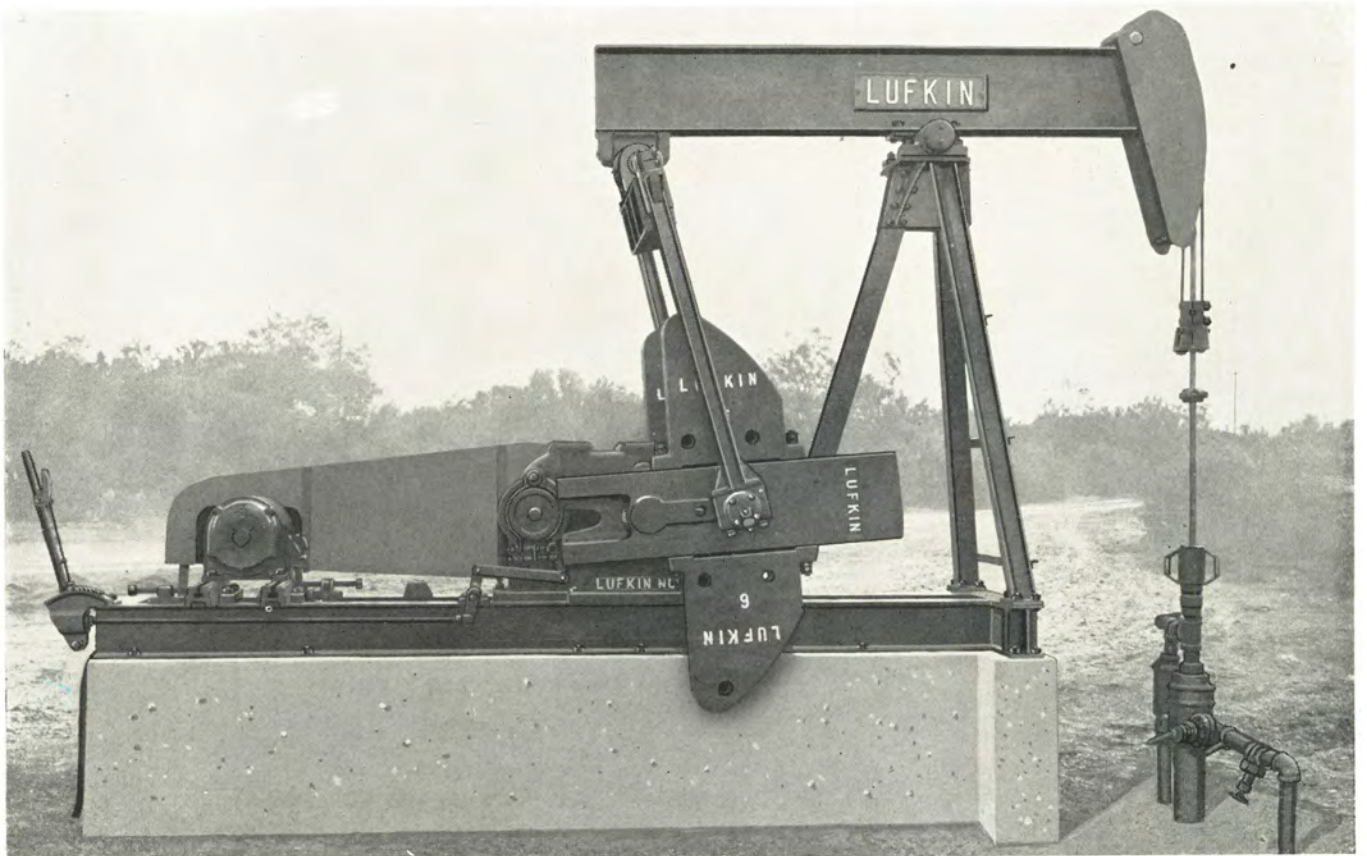
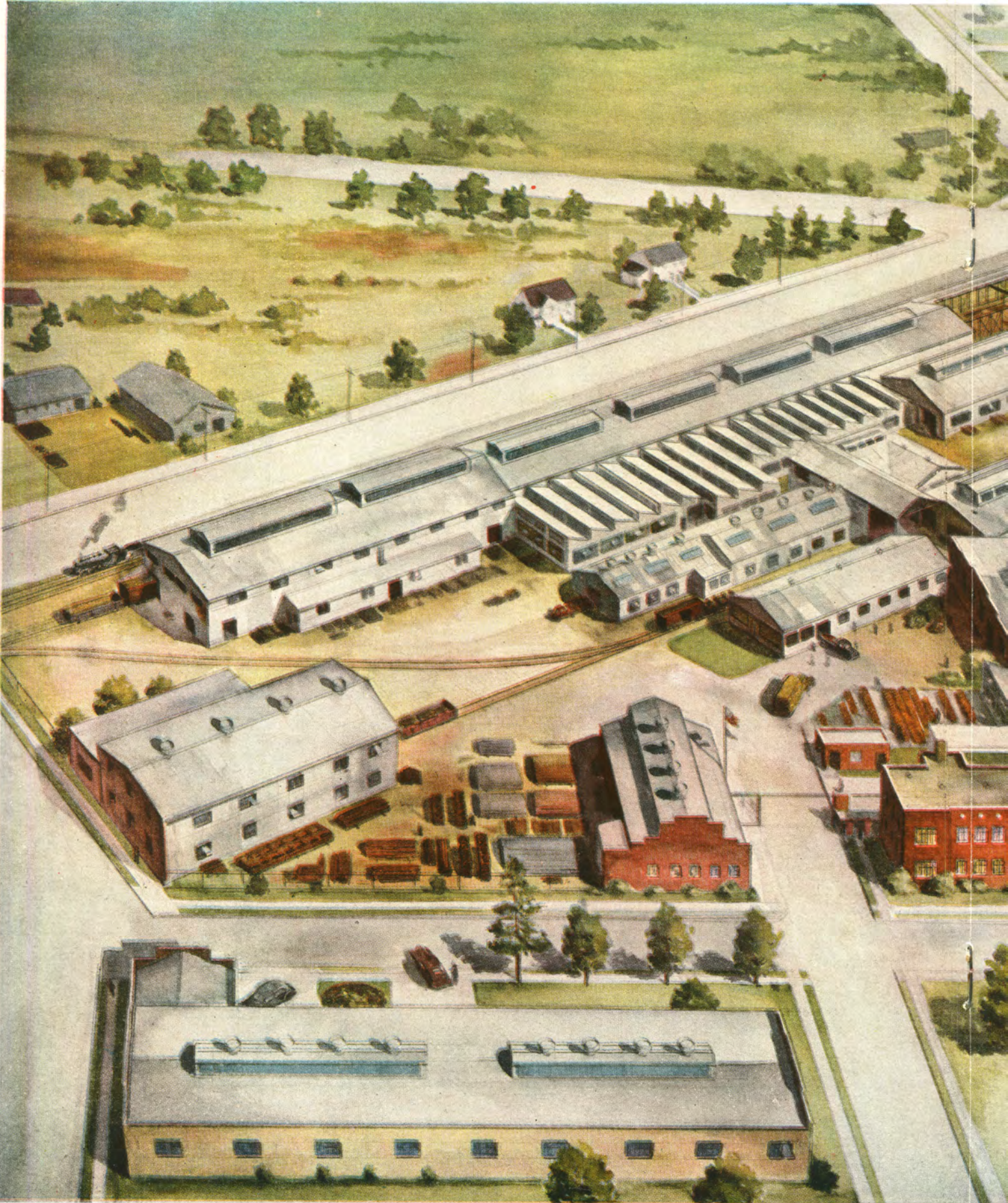


FIGURE 19

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS



LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS



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

LUFKIN SIMPLIFIED LONG STROKE UNITS

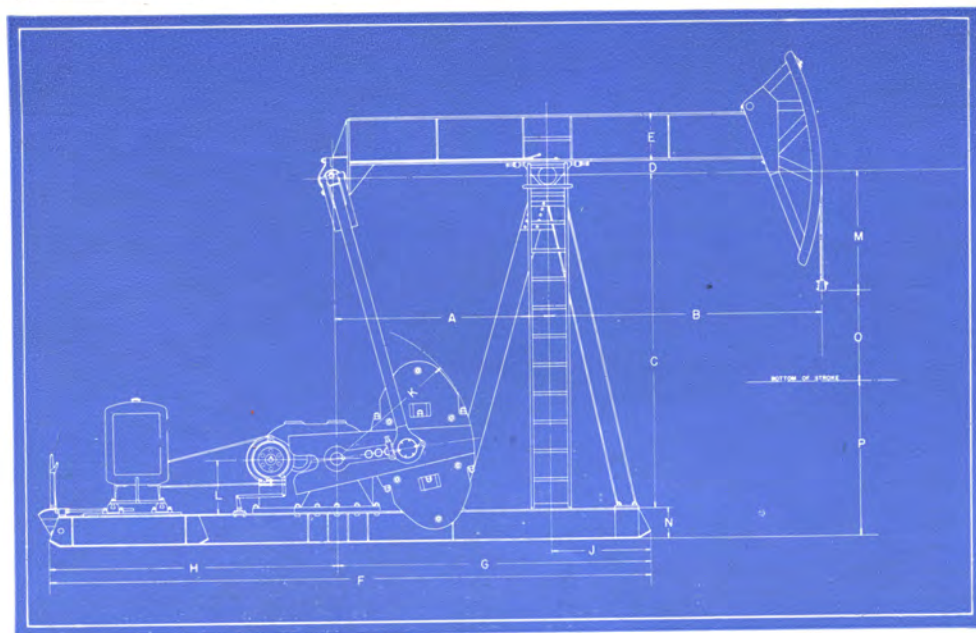
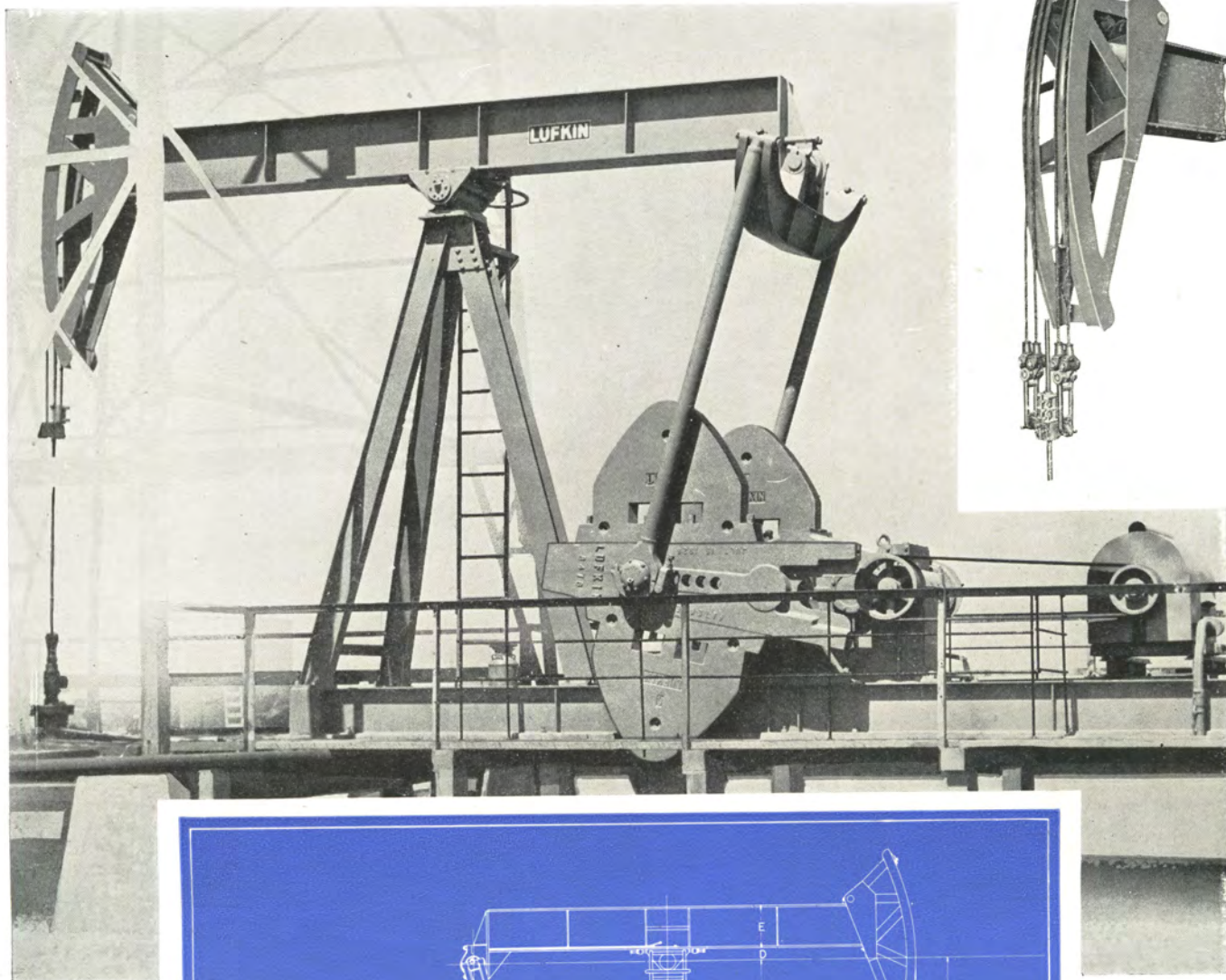


FIGURE 20

GENERAL DIMENSIONS LUFKIN LONG STROKE UNITS

UNIT	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
TC-OL-61.....	10'-11 ¹ / ₄ "	14'-0 ³ / ₄ "	14'-6"	7"	30"	28'-5"	15'-1"	13'-4"	4'-1 ³ / ₄ "	78"	2'-6"	5'-7"	16"	54"	5'-9"
TC-OOL-71.....	11'-9"	15'-0 ³ / ₄ "	16'-0"	9"	33"	30'-9"	16'-5"	14'-4"	4'-8"	92"	3'-0"	7'-1"	21"	60"	5'-8"

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN SIMPLIFIED LONG STROKE UNIT

Lufkin Long Stroke Units were engineered and built expressly to

1. Handle extremely large volumes of fluid from nominal depths.
2. Handle moderate fluid volume from extreme depths.
3. Reduce peak loading and minimize sucker rod failures.
4. Increase pump volumetric efficiency when handling gassy fluid.

The ever increasing popularity of Lufkin Long Stroke Pumping Units is responsible for our stocking these units for immediate delivery. They are an economically sound investment and fundamentally sound in their performance. They make a tough job easy; i.e., they are capable of producing greater

volumes of fluid from a given depth with a given unit rod stress.

Ten years of long stroke pumping experience on the toughest of pumping wells is our proof of a sound performance record and their increasing popularity is evidence of successful principle.

Complete analysis of test data on most wells pumped by long stroke units indicate the correct size and balance of gear box and walking beam assembly on our number 61 unit. On severe cases requiring 1 1/8" sucker rods we offer our ten foot stroke unit No. 71 which is the "Big Bertha" of the industry. It is the answer to the ultimate in sucker rod production.

Of identical design with our smaller twin crank units, these long-strokers provide simplicity, ease of counter-balance adjustment, smoothness of operation, and require practically no attention.

GENERAL SPECIFICATIONS

Lufkin Long Stroke Double Reduction Unit Assemblies TC-OOL and TC-OL

Lufkin TC-OOL-71 Unit Assembly

WALKING BEAM: 33" x 15 3/4" x 200 lbs., 15'-0" and 11'-9" working centers. API Walking Beam Rating: 33,900 Lbs.	GEARS Double Reduction Main Gear: 50.4" x 12"		
HANGER: Hinged Horsehead with four 1" wire lines. Special load-equalizing device.	RATING 151.5 H.P. at 20 S.P.M. 750,000 lb. ins. Peak Torque		
PITMAN: Universal Equalizer with bearings "in line", 5" Extra Heavy pipe.	RATIO 28.72		
CENTER BEARING: Bronze Bushed, 7 1/2" x 22 1/2", oil bath, dust proof.	CRANKSHAFT 7 1/8"		
SAMSON POST: Tripod, 16'-0" high.	SHEAVE 35"-10D Std. 66" Maximum 4 1/8" Bore		
BASE: 21" deep, 60 1/2" wide at gear box, 30'-9" long.	WEIGHT 70,000 lbs.		
CRANKS: No. 9492, 92" radius.	STATIC COUNTERBALANCE—LBS.		
CRANK PINS: 7" x 6 1/2" Bronze bushed, oil bath.	Stroke	No. 00 Weights	With Aux. Wts.
TAIL BEARING: 5 1/8" x 13 1/2", Bronze Bushed.	43.4".....	55,900	67,000
GEAR BOX OIL CAPACITY: 165 Gallons.	58.7".....	40,400	49,600
	74.0".....	32,000	39,300
	89.3".....	27,550	32,600
	104.6".....	22,650	27,800
	120.0".....	19,750	24,300

Lufkin TC-OL-61 Unit Assembly

WALKING BEAM: 30" x 15" x 172 lbs., 14'-0 3/4" and 10'-11 1/4" working centers. API Walking Beam Rating: 33,945 Lbs.	GEARS Double Reduction Main Gear: 41.6" x 11"		
HANGER: Hinged Horsehead with 1" wire lines.	RATING 103.2 H.P. at 20 S.P.M. 511,600 lb. ins. Peak Torque		
PITMAN: Universal Equalizer with bearings "in line", 5" Extra Heavy pipe.	RATIO 28.6		
CENTER BEARING: No. 1AS bronze bushed, 7" x 20", oil bath, dust proof.	CRANKSHAFT 7"		
SAMSON POST: Tripod, 14'-6" high.	SHEAVE 34"-12C Std. 56" Maximum 3 1/8" Bore		
BASE: 16" deep, 50" wide at gear box, 28'-5" long.	WEIGHT 49,100 lbs.		
CRANKS: No. 8478, 78" radius.	STATIC COUNTERBALANCE—LBS.		
CRANK PINS: 7" x 6 1/2", Bronze bushed, oil bath.	Stroke	No. 00 Weights	With Aux. Wts.
TAIL BEARING: 4 1/8" x 12", Bronze bushed.	46.4".....	35,250	44,530
GEAR BOX OIL CAPACITY: 75 Gallons.	61.9".....	26,440	33,390
	77.4".....	21,150	26,720
	92.9".....	17,620	22,260
	108.4".....	15,110	19,080

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.

Do not use any lubricant containing sulphur or sulphurized compounds.

GEAR BOX: For temperatures between 10° F. and 100° F. use an SAE 90 Transmission 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 Transmission 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 but do not fill the gear box above the top pet cock.

PITMAN BEARING: Use the same oil as in the gear box.

CENTER BEARING: Use an SAE 160 Extreme Pressure Lubricant having a pour point of 5° F. or lower.

HANGER and EQUALIZER BEARINGS: Use an SAE 160 Extreme Pressure Lubricant having a pour point of 5° F. or lower.

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.

COMBINATION BEAM AND CRANK COUNTERBALANCE UNITS

FIGURE 21

Combination beam and crank counterbalance units are furnished where exceptionally heavy beam loads are required. This unit is not recommended where pumping speeds exceed 17 SPM. These units are not stock units but can be obtained on reasonably short notice particularly on smaller units up to and including the T5-7B unit.

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

**LUFKIN UNIVERSAL CENTERLINE
PITMAN EQUALIZER**

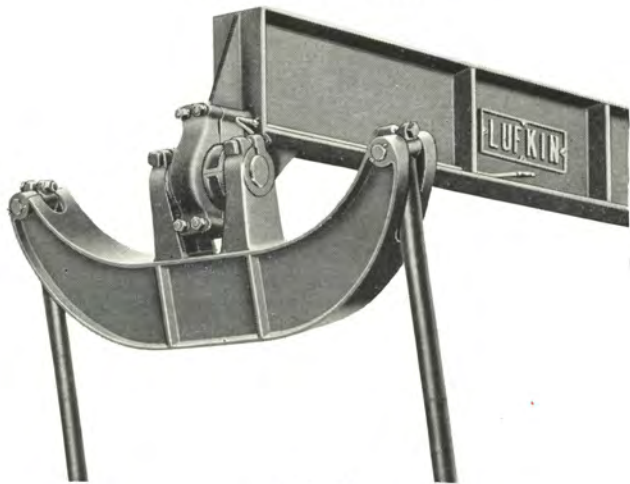


FIGURE 22

**LUFKIN UNIVERSAL CENTERLINE
ROD HANGER**

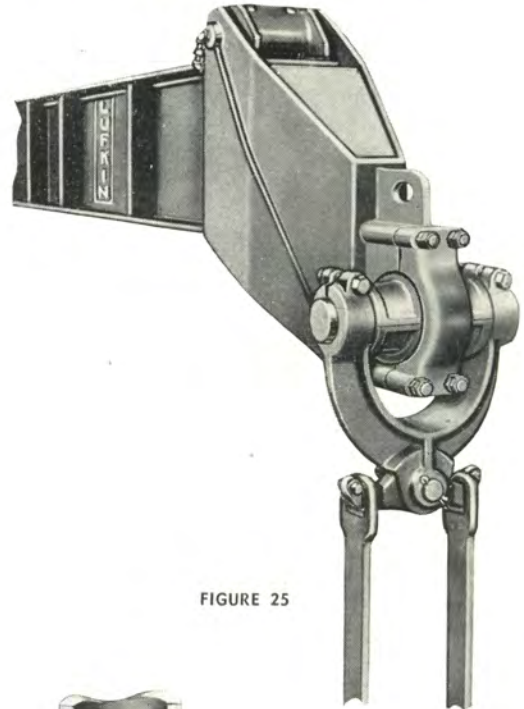


FIGURE 25

**OIL TIGHT—BRONZE BUSHED
CENTER BEARING**



FIGURE 23

Series "AS" 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 and as usual with Lufkin center bearings, beams can be swung sideways about 25° from center line. We believe this is a superior bearing in every respect, being dust proof, oil tight with renewable bronzoid bushing. They have ample bearing surface.

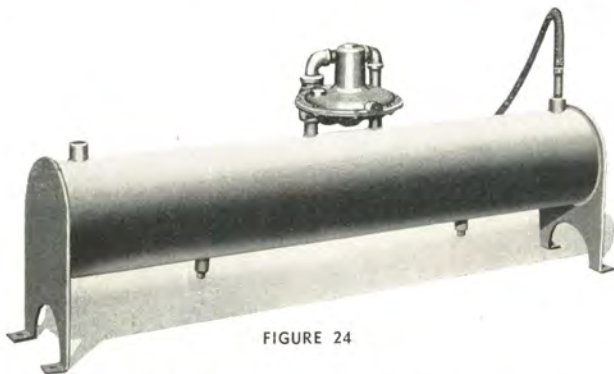


FIGURE 24

**VOLUME TANK AND REGULATOR FOR
GAS ENGINES**

Double chamber volume tanks for gas engines are furnished in two sizes. Both are equipped with Fisher regulators and dial cocks. 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 Cooper-Bessemer engines and is 14" diameter by 42" long. It has two regulators and a volume chamber of 2.5 cu. ft.

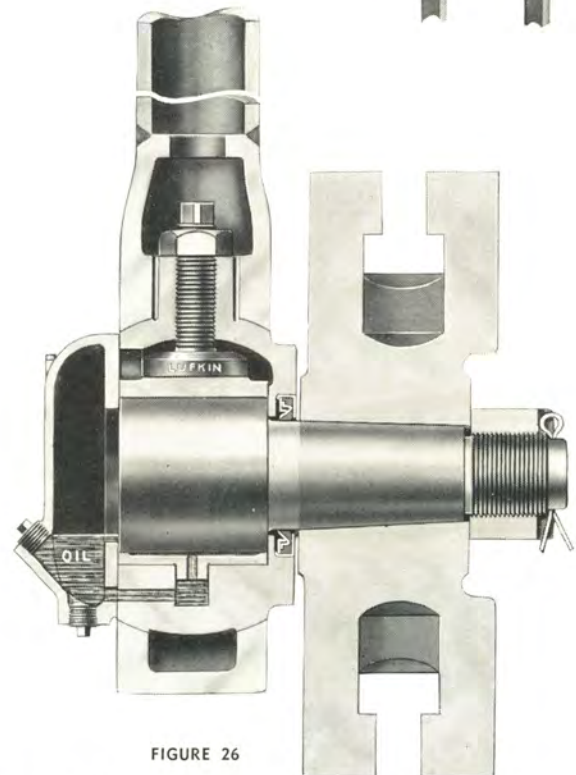


FIGURE 26

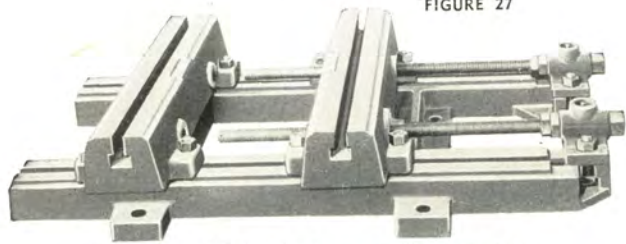
General characteristics of the new "Universal" pitman are:

1. One-third more bearing surface
2. Bronzoid Bearings top and bottom, with adjustable top bearing.
3. Patented oil seal—no leaks. No head of oil against seal.
4. Both the interior of the strap and the exterior of the pitman box are machined, and thus insure alignment without possibility of binding.
5. The pitman bearing is adjustable when strap or shackle is removed, and may be tested by hand before shackle is re-applied.
6. Lufkin Universal pitmans are designed to pull or push—no lost motion.
7. Journal box is semi-steel; straps and shackles are of cast steel welded to extra heavy tubing.
8. Crank pins are forged alloy steel turned and ground.

ROLLER BEARING PITMANS ARE FURNISHED WHEN DESIRED AT SLIGHT EXTRA COST.

UNIVERSAL RAILS—FOR MOTORS OR GAS ENGINES

FIGURE 27



Dimensions of 32" rails shown on blue print below

FIGURE 30

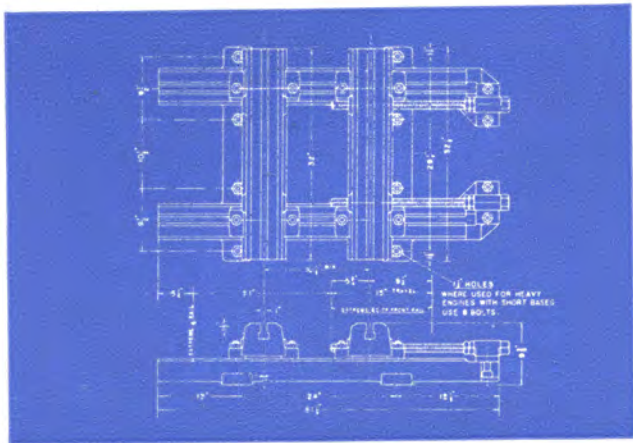
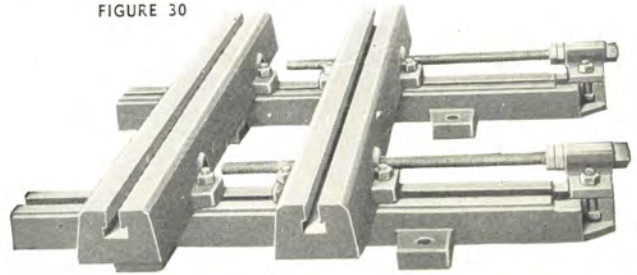


FIGURE 28

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 assist in the elimination of vibration of all types of prime movers.

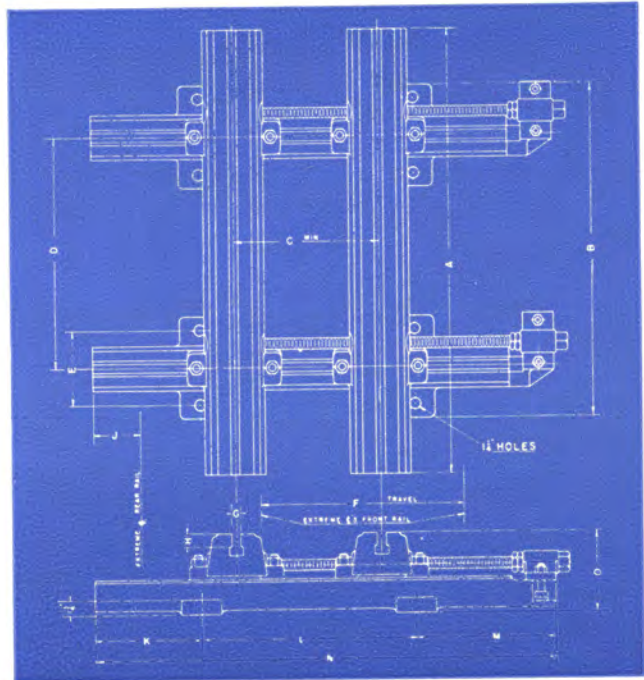


FIGURE 31

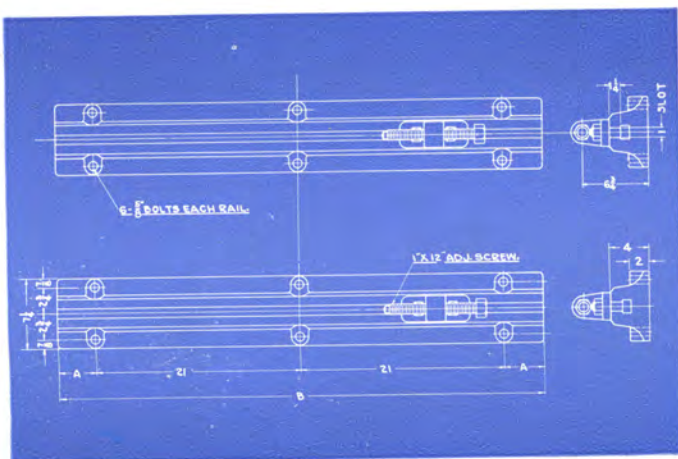


FIGURE 29

UNIVERSAL GAS ENGINE RAILS														
DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	N	O
50" ENG. RAILS	50"	37 1/2"	10 1/2"	26"	8 1/2"	23 1/2"	1"	1 1/2"	5 1/4"	12"	24"	15 1/2"	51 1/2"	9 1/8"
69" ENG. RAILS	69"	47 1/2"	10 1/2"	36"	8 1/2"	38 1/2"	1"	1 1/2"	5 1/4"	12"	36"	15 1/2"	63 1/2"	9 1/8"

50" Rails A B
 60" Rails 9" 60" (Required for GSDH Engine)

Dimensions of plain engine rail with adjusting screws for two cylinder vertical engines and horizontal engines.

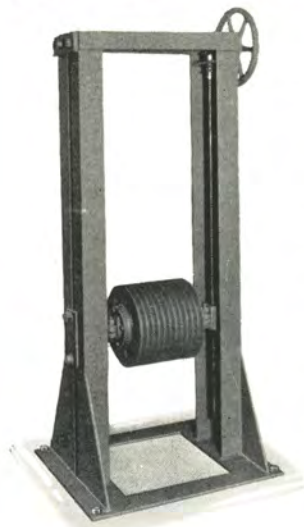


FIGURE 32

Lufkin Universal Belt Tightener is of all welded rigid construction. The sheave is raised or lowered by a hand wheel through machined miter gears to screws which turn in floating bronze nuts. The idler sheave is equipped with Timken Anti-friction bearings. One man can adjust this tightener easily and quickly by simply turning the hand wheel.

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN GEAR REDUCERS AND SPEED INCREASERS

Illustrated below are typical examples of standard and special Gear Reducers and Speed Increasers. Consult our nearest representative or our Home Office concerning your Herringbone, Helical, Spur or

Worm gear requirements. A complete Standard line of Single and Double Reduction Gear Reducers and Single Reduction Speed Increasers are available.

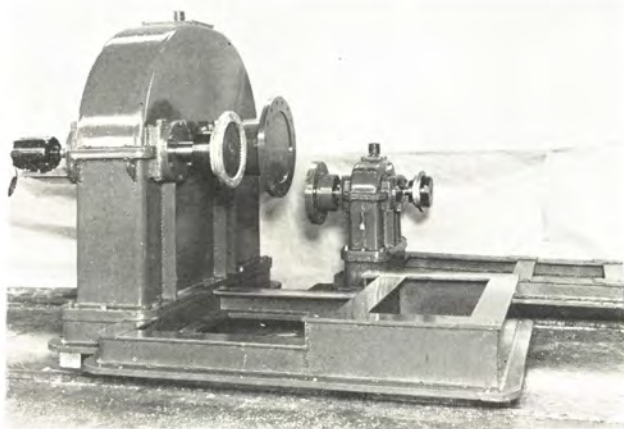


FIGURE 33
Herringbone Gear Speed Reducers for paper mill

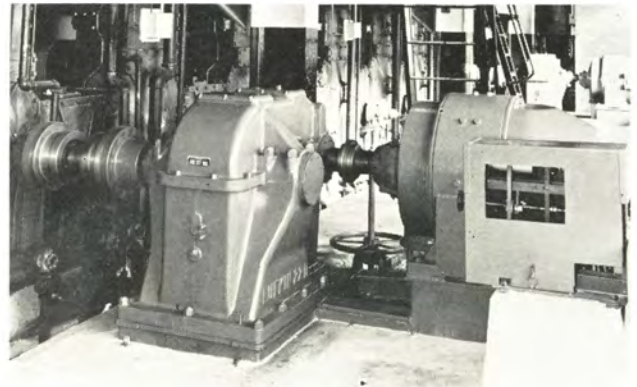


FIGURE 34
Paper Machine Drives in newsprint mill

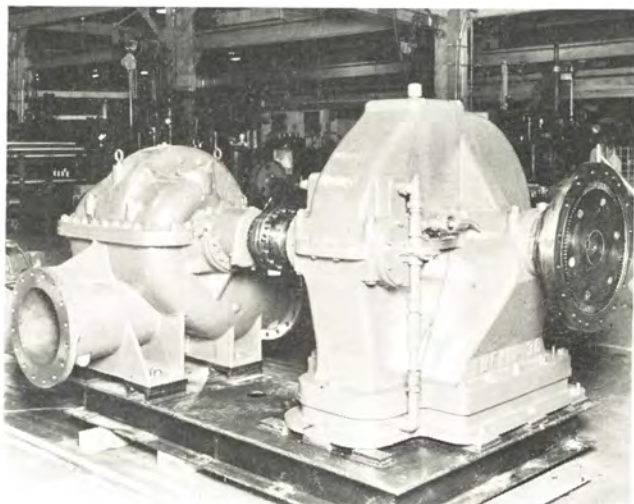


FIGURE 35
Speed Increaser for centrifugal pump

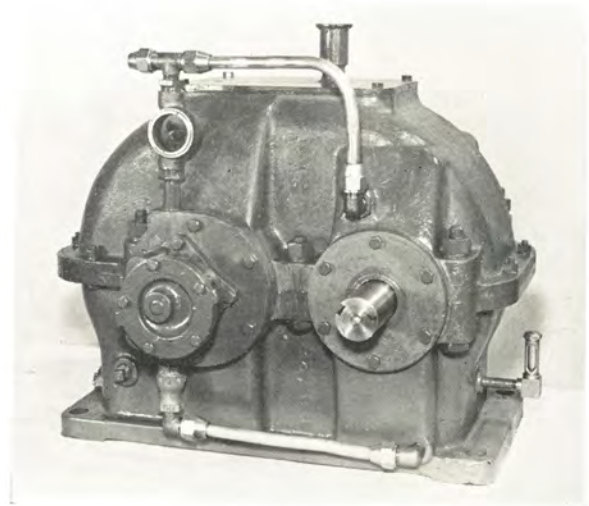


FIGURE 36
Speed Increaser for pipe line pump station

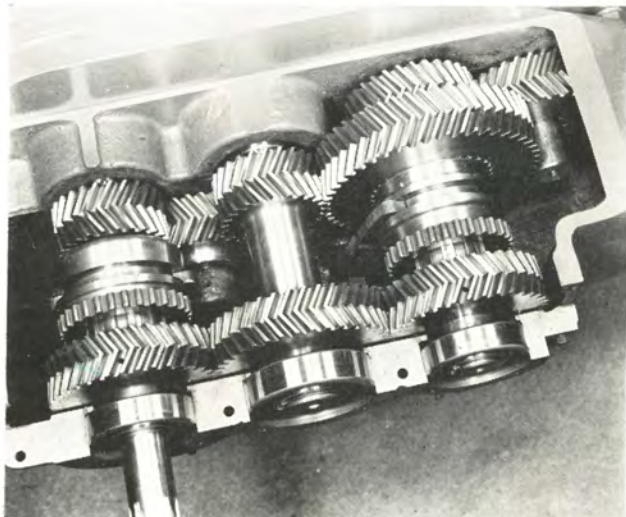


FIGURE 37
Two-Speed Forward and Two-Speed Reverse Winch Transmission

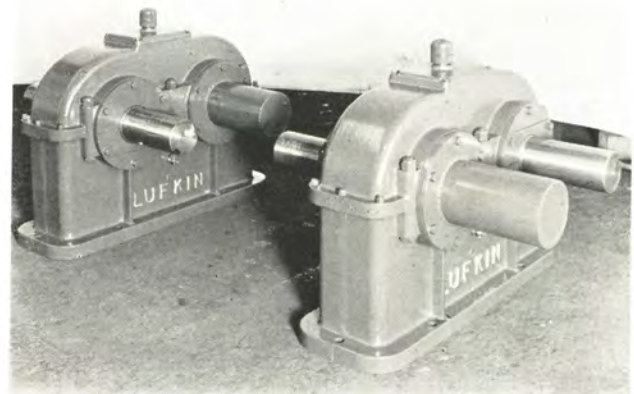


FIGURE 38
Special 1:1 Ratio Gear Assemblies for chemical plant

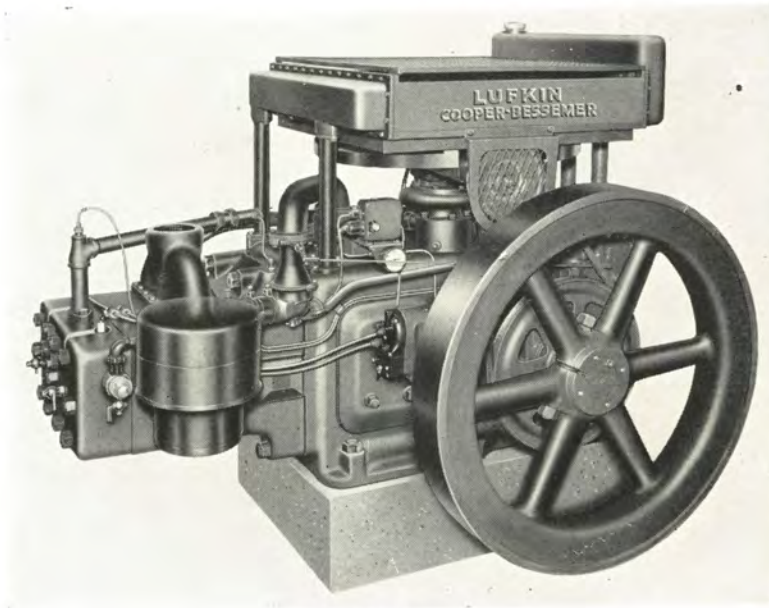
LUFKIN COOPER-BESSEMER HORIZONTAL

FIGURE 39

The GSDH engine is furnished as a complete power unit including radiator, fan and water pump, air filter, air starting valve, clutch, magneto and cylinder lubricator. A combination oil and water safety control and an overspeed safety control can be furnished as extra equipment.

This engine is furnished with clutch as standard equipment, but can be furnished less the clutch for pump or generator drive. It can be mounted on skids with other equipment making a self-contained portable unit for many applications.

For Brief Specifications, Horsepower and Speed Ratings See Following Pages

The GSDH engine is equipped with horizontally mounted radiator providing non-directional, more efficient cooling and rigidity of mounting.

The engine is furnished standard with dry pistons; however, oil cooled pistons are optional and when used, the oil cooler is built into the radiator and cooled by the fan.

Full pressure lubrication provides positive lubrication to crossheads, cylinders and all moving parts including water pump and fan.

Write for GSDH Engine Bulletin No. 46E.

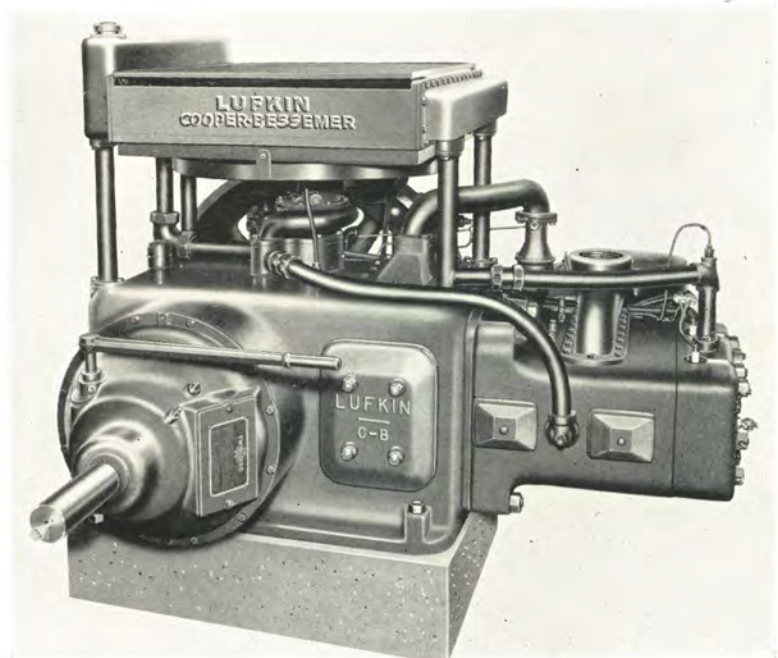


FIGURE 40

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

GSDH 2-CYCLE 2-CYLINDER GAS ENGINE

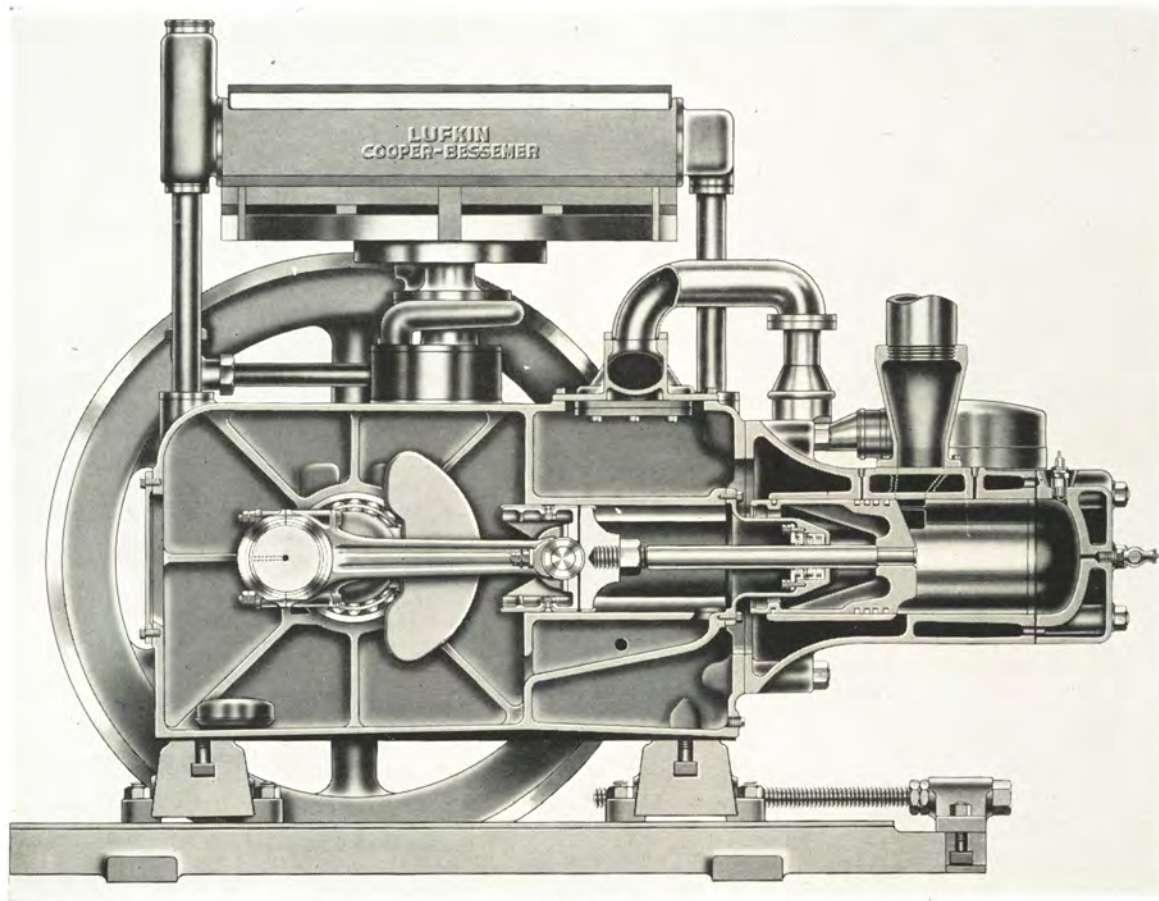


FIGURE 41

HERE'S THE ENGINE YOU WILL WANT AND THE REASONS WHY

Horizontal Mounted Radiator for Rigidity and Non-Directional Cooling, Fan and Water Pump Pressure Lubricated.

Horizontal Two-Cylinder Two-Cycle Design Assures Smoother Performance and Easy Maintenance.

Streamlined Scavenging and Top Exhaust for More Power and Easy Installation.

Wide Sturdy Rigid One-Piece Base with Crosshead Guides Integral.

Full Pressure Lubrication to Crankpins, Crosshead, Auxiliary Drive and Accessories.

Die Forged Alloy Steel Connecting Rods with Precision Thin Wall Type Crankpin Bearings.

Pistons Designed for Uniform Heat Flow and Long Life. Fitted with Four Compression and One Oil Ring. Oil Cooled Pistons Optional.

Patented Saddle Type Crosshead Pin Provides More Bearing Area. Crossheads Fitted with Die Formed Bronze Shoes and Pin Bushings. Renewable in Field.

Crankshaft with Counterweights Forged Integral Carried on Tapered Roller Main Bearings for Smoother Operation and Long Trouble-Free Service.

Cylinder Block and Head Provided with Large Clean-out Openings, Water Cooled Exhaust Ports and Positive Circulation of Water Around Sparkplugs and Relief Valves.

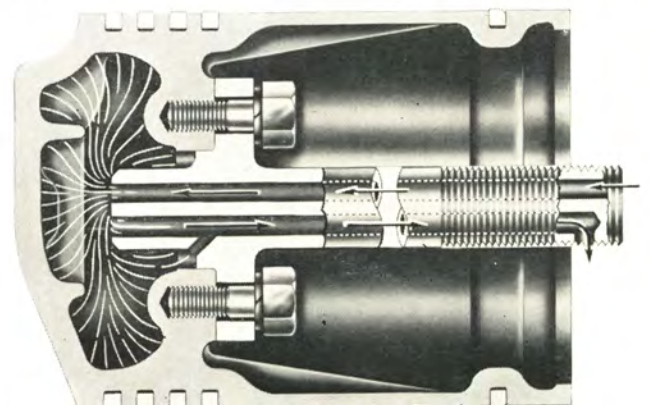


FIGURE 42

Section Oil Cooled Piston—Optional.

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

BRIEF SPECIFICATIONS LUFKIN COOPER-BESSEMER ENGINES

	GSDH	GSD	GSC
Type.....	Horizontal	Vertical	Vertical
Bore, (Inches).....	7½	7½	5½
Stroke, (Inches).....	9	9	7
Number Cylinders.....	2	2	2
Recommended Speed Range, R.P.M.....	400-600	400-600	400-850
Rated B.H.P. at Above Speeds.....	40-60	40-60	25-35
Piston Speed (Ft./Min.).....	600-900	600-900	467-950
Type Main Bearing (Tapered Roller).....	Yes	Yes	Yes
Diameter Main Bearing, (Inches).....	4½	4½	3⅞
Type Crankpin Bearing (Precision).....	Yes	Yes	Yes
Diameter Crankpin (Inches).....	4½	4½	3¾
Length Crankpin (Inches).....	3½	3½	2⅞
Diameter Crosshead Pin (Inches).....	2¾	2¾	2½
Proj. Area Crosshead Pin (Square Inches).....	13.75	13.75	11.6
Proj. Area Crosshead Shoes (Square Inches).....	60	60	35
Diameter Piston Rod (Inches).....	1½	1½	1¼
Diameter Flywheel (Inches).....	40	40	29
Weight Flywheel (Lbs.).....	800	800	530
Flywheel WR2 lbs. ft.2.....	1362	1362	460
Clutch, Twin Disc.....	B-114	B-114	B-111
Size Exhaust Pipe (Inches).....	4	4	4
Rotation Facing Flywheel (Clockwise).....	Yes	Yes	Yes
Overall Length, Horizontal, (Inches).....	69	.....	.....
Overall Length, Vertical, (Inches).....	.....	71½	59
Overall Width, (Inches).....	68½	45¾	34
Height Above Foundation, (Inches).....	48½	72	54½
Weight, (Lbs.).....	4500	4400	2700
Foundation Bolts (No. and Size).....	4-1	4-1	4-⅞

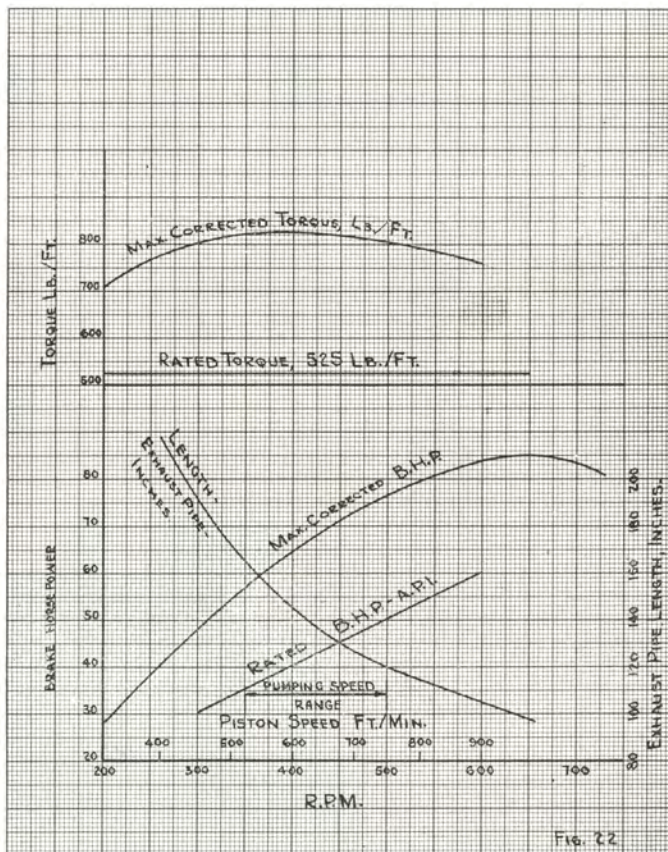


FIGURE 43

Performance Curves GSDH and GSD Gas Engines

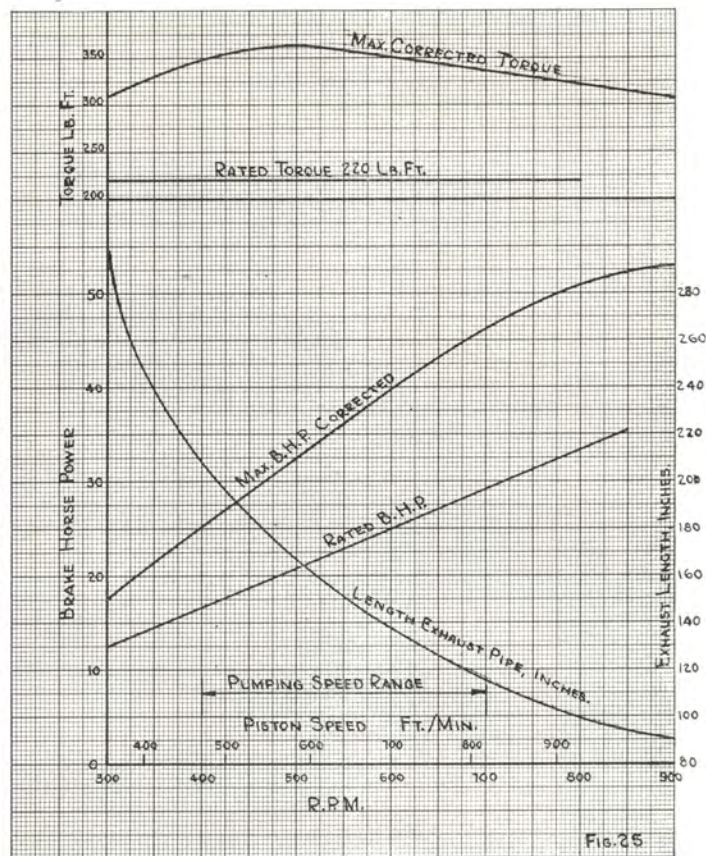


FIGURE 44

Performance Curves GSC Gas Engine

LUFKIN FOUNDRY & MACHINE CO.**LUFKIN, TEXAS****LUFKIN COOPER-BESSEMER VERTICAL
TWO-CYCLE TWO-CYLINDER GAS ENGINES****GSD 40-60 HP ENGINE**

The GSD engine has proven itself over many years of reliable trouble-free service. Its two-cycle design makes for simplicity; large cover plates provide easy accessibility; its crosshead construction and metallic packing eliminate all of the difficulties of trunk type piston engines, making it ideally adapted to sour gases by preventing contamination of lubricating oil. Its full pressure lubrication to all vital parts assures long uninterrupted service. Its roller bearing counterbalanced crankshaft provides smoothness and long life.

The GSD engine is conservatively rated 40 HP at 400 RPM with speed range of 400 to 600 RPM. Standard Equipment includes gear driven oil pump and governor, oil filter, air filter, magneto, clutch, air starter valve, radiator and fan, making a complete power unit. It can be furnished without radiator when desired.

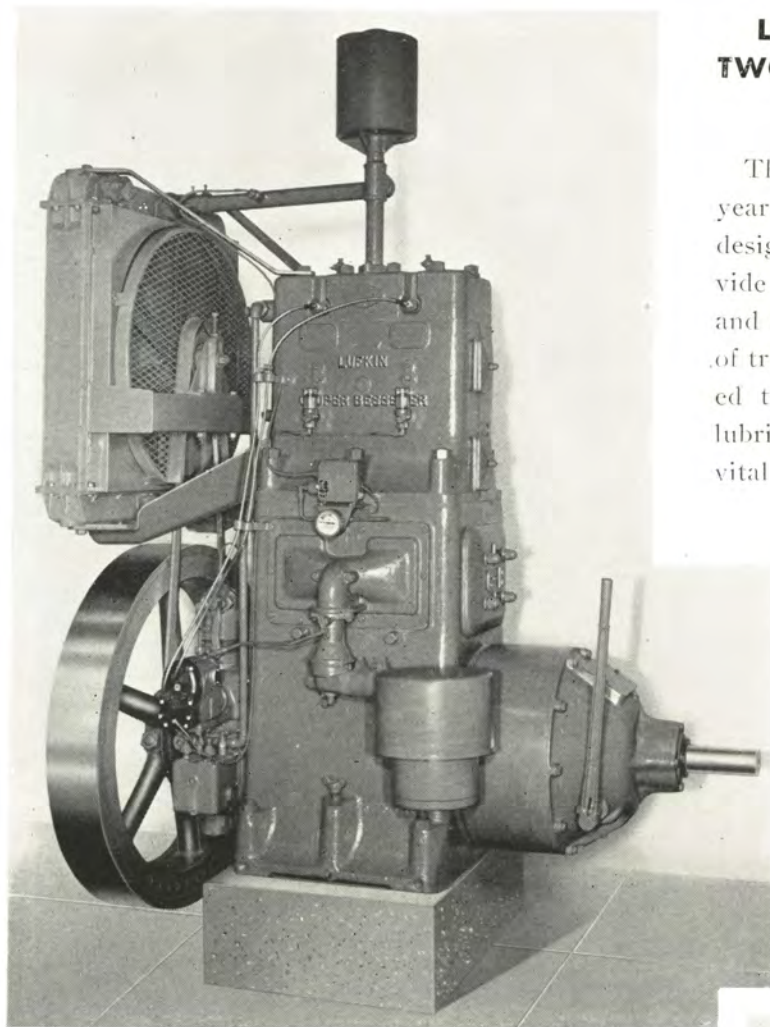


FIGURE 45—GSD 40-60 HP ENGINE

GSC 25-35 HP ENGINE

The GSC engine like its big brother is built for long-life operation and accessibility of parts.

These features make it an engine that is wanted in the oil field: two-cycle, two-cylinder design for smoothness; roller bearing crankshaft; full pressure lubrication; crosshead construction; metallic packing; streamlined scavenging for more power; gear driven governor and magneto; clutch, water pump and fan—all go to make a complete power unit easily installed on pumping unit skids.

The GSC engine is rated 25 HP at 600 RPM, 35 HP at 850 RPM. Normal pumping speed is 400 to 700 RPM.

Standard equipment includes: gear driven oil pump and governor, oil filter, air filter, magneto, clutch, water pump, radiator and fan.

Write for Descriptive Bulletin.

For Brief Specifications and Rating See Opposite Page

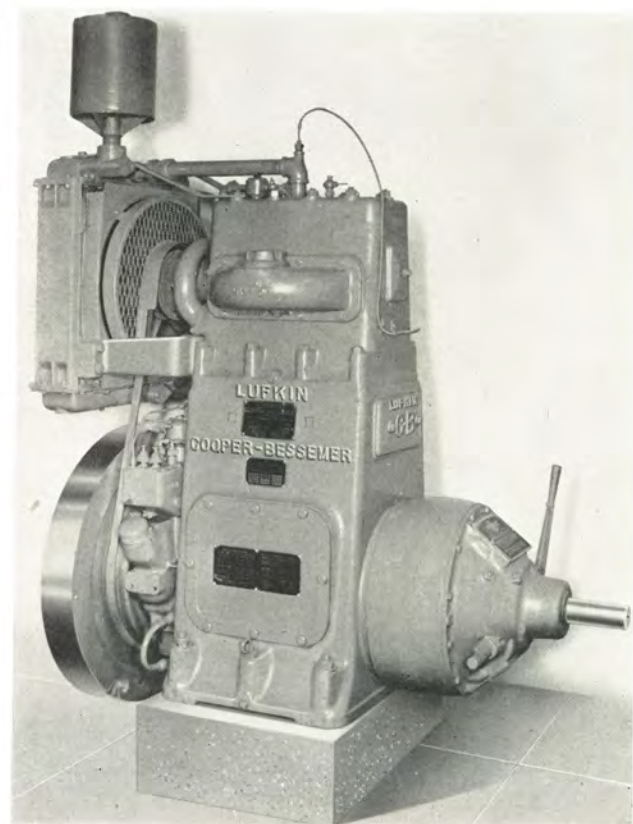


FIGURE 46—GSC 25-35 HP ENGINE

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN PIPE, POLE, FLOAT AND CUSTOM BUILT TRAILERS

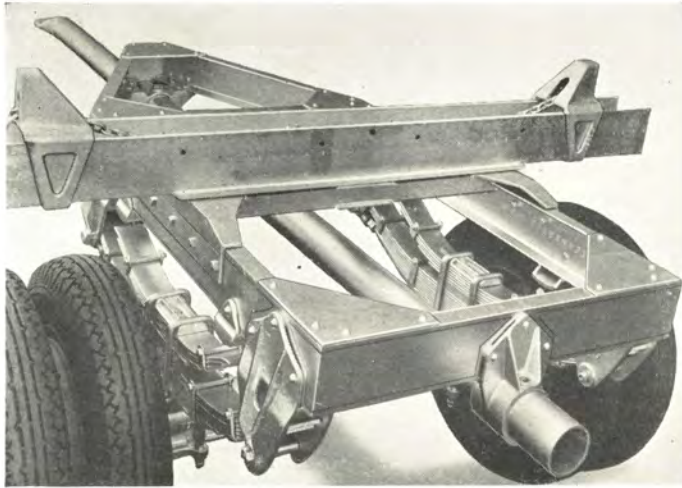


FIGURE 47

RIGHT:

Portable Laboratory for Oil-well logging service, like all Lufkin all-steel vans and bodies, is modern in design and construction and is made to special size and finish. Modern streamlining adds to the beauty of this truck body and to the prestige of its owner.



FIGURE 48



FIGURE 49

LEFT:

Another Lufkin custom built trailer, designed and constructed for transporting oil-well pulling units to the job. Modern manufacturing facilities and skilled craftsmanship guarantee quality equipment at a minimum of cost.

RIGHT:

A 50,000 pound capacity Low Bed Machinery Trailer.

OUR AIM is to build a BETTER TRAILER at a LOWER COST.

OUR JOB is to solve your Transportation problems.



FIGURE 50

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN PIPE, POLE, FLOAT AND VAN TRAILERS



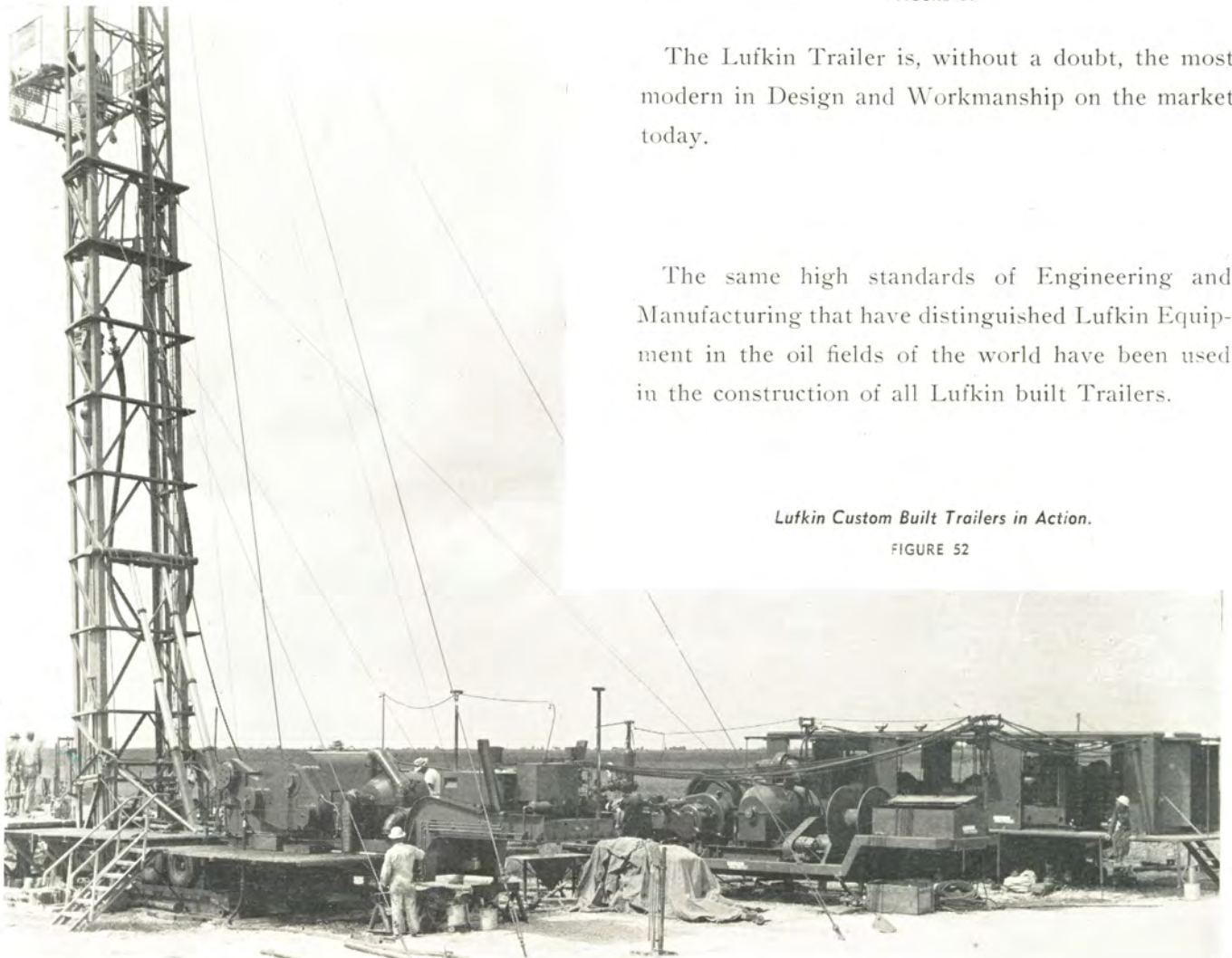
FIGURE 51

The Lufkin Trailer is, without a doubt, the most modern in Design and Workmanship on the market today.

The same high standards of Engineering and Manufacturing that have distinguished Lufkin Equipment in the oil fields of the world have been used in the construction of all Lufkin built Trailers.

Lufkin Custom Built Trailers in Action.

FIGURE 52



LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN TRUCK AND TRACTOR WINCHES

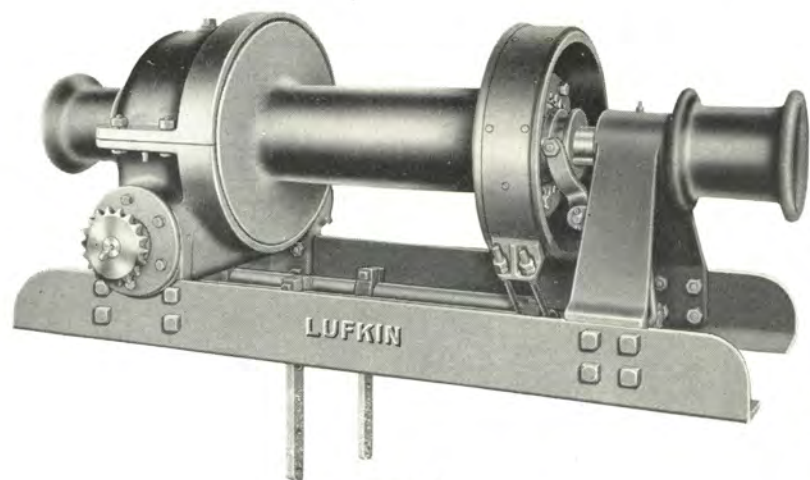


FIGURE 53

Lufkin truck and tractor worm drive winches are superior because they are more rugged and constructed of better materials than any other winch in the field today. Following are some of the features which make Lufkin winches outstanding: Special heat treated bronze worm gear—heat treated alloy steel worm and transmission gears—anti-friction bearings on all gear shafts—completely sealed throughout with grease and oil seals—herringbone transmission gears—patented tapered tooth type drum clutch—automatic safety brake on worm shaft—large worm housing oil capacity—slow positive pull in low gear. Write for our bulletin for more complete information.

TRUCK WINCHES

	Model 15	Model 30
Line Pull, Lbs.....	15,000	30,000
Overall Length.....	48"	58 ⁷ / ₈ "
Drum Diameter.....	6"	7"
Drum Flange Diameter.....	14"	18"
Drum Length.....	15 ⁷ / ₈ "	18"
Cable Capacity:		
1/2".....	650'	.....
5/8".....	458'	930'
3/4".....	.....	622'
7/8".....	.....	453'
Weight, lbs.....	780	1000

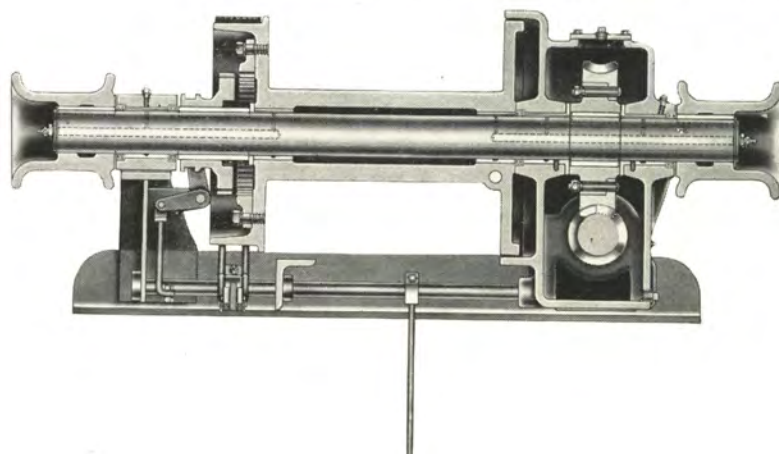


FIGURE 54

TRACTOR WINCHES

	Model 125	Model 60
Line Pull, lbs.....	125,000	60,000
Drum Center to Ground.....	47"	38"
Drum Center to Tractor.....	28"	21"
Overall Length.....	51 ¹ / ₈ "	42 ¹ / ₂ "
Drum Diameter.....	8 ³ / ₈ "	8"
Drum Flange Diameter.....	22 ¹ / ₈ "	20"
Drum Length.....	17"	16"
Cable Capacity:		
5/8".....	.....	1109'
3/4".....	.....	769'
7/8".....	681'	516'
1".....	534'	.....
1 1/8".....	403'	.....
Line Speeds f.p.m.*: (First layer)		
Forward—High.....	55	73
Forward—Low.....	24	25
Reverse—High.....	64	79
Reverse—Low.....	27	27
Weight, lbs.....	4085	2500

* Line speeds shown are based on 1200 r.p.m. power take-off shaft speed for the Model 125 and 1350 r.p.m. power take-off shaft speed for the Model 60.



FIGURE 55

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN ALLOY IRON CASTINGS

Controlled Specification Iron

Completion of our new Foundry in the Spring of 1946 will give us double our present capacity, or 150 tons per day. Our iron will be made from the most modern charging device, new cupolas, blowers, automatic weigh hopper, etc., enabling us to produce perfectly controlled specified iron. Complete sand handling equipment, the installation of two of the largest molding machines in the South and a main bay foundry craneway of 60' x 760' will enable us to make castings heretofore unobtainable in the South. Fine grades of iron will be made, tensile strengths from 30,000 to 60,000 lbs./sq. in., sizes from a fraction of a pound to twenty tons.

Let us figure on your casting requirements. Send for our special bulletin.



FIGURE 56

Modern Chemical Laboratory insures absolute check on chemical and physical analysis.

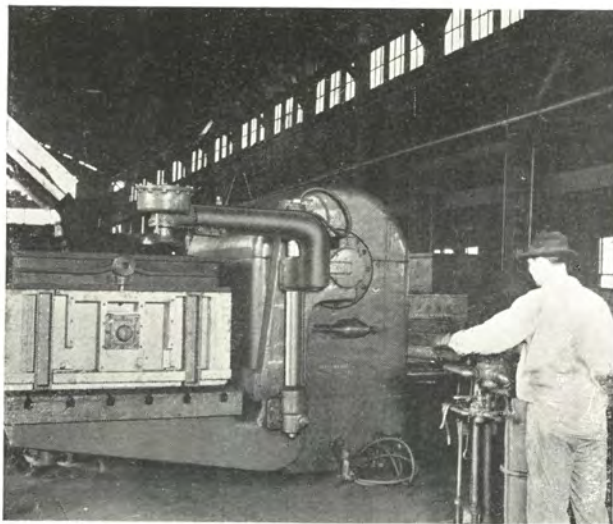


FIGURE 57

Largest Moulding Machine in the Southwest

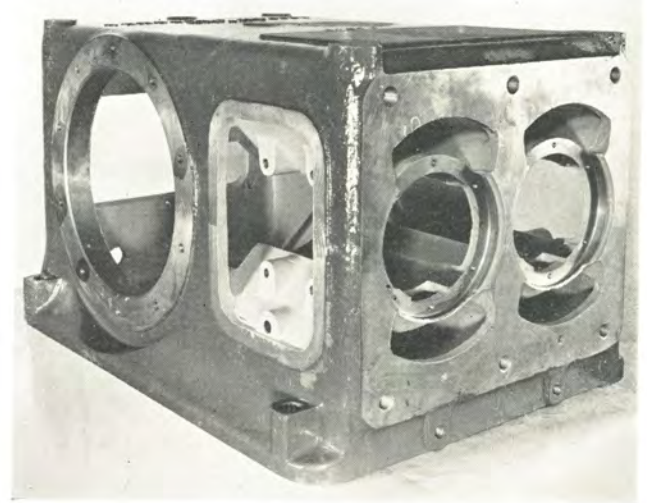


FIGURE 58

Base for Horizontal Gas Engine.

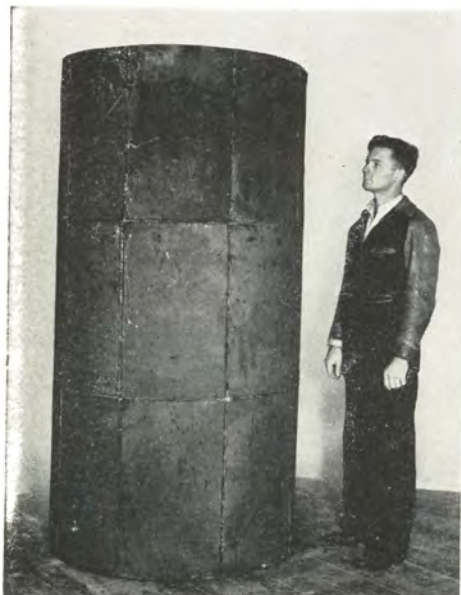


FIGURE 59

MARINE ENGINE LINER
42" Dia. x 84" high, Wt. 6000 lbs.



FIGURE 60

Table for Niles Boring Mill, 10' Dia.



FIGURE 61

Cylinder Head

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN'S CONTRIBUTION

Below and on the opposite page are shown the major war products manufactured at Lufkin from early in 1941 through V-J Day



FIGURE 62
85 155 MM. Howitzer Carriages

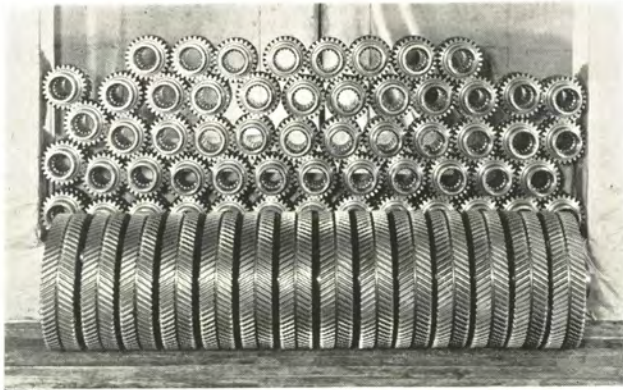


FIGURE 63
37,000 Pair Final Drive Herringbone Gears for medium tanks

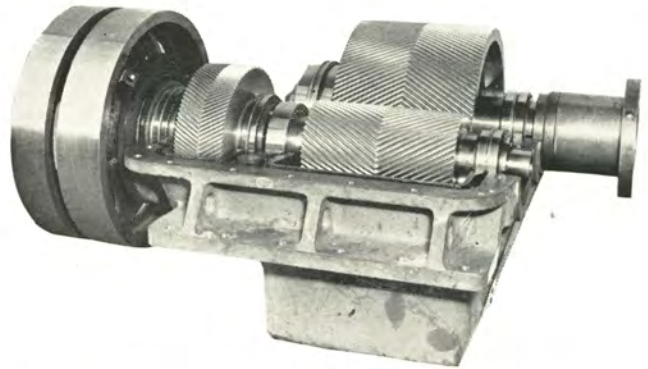


FIGURE 64
182 1000 H.P. Forward and Reverse Propulsion Gear Reducers for LSTs.

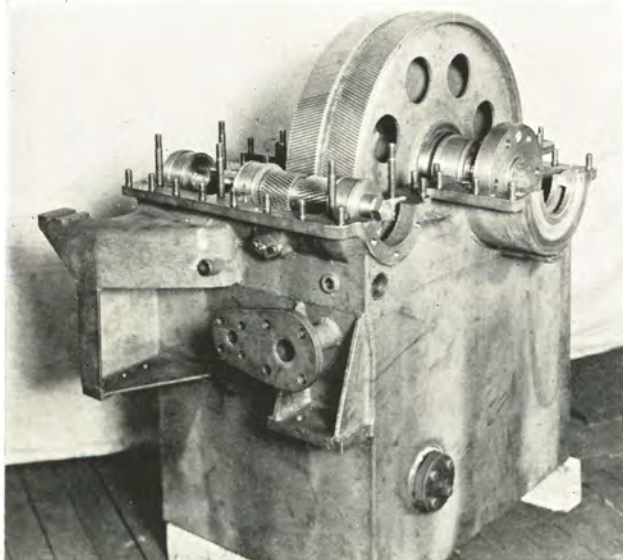


FIGURE 65
95 240 KW Turbo-Electric Lighting Set Gear Reducer Units for Destroyer Escorts. Pinion Speed 10,000 r.p.m.

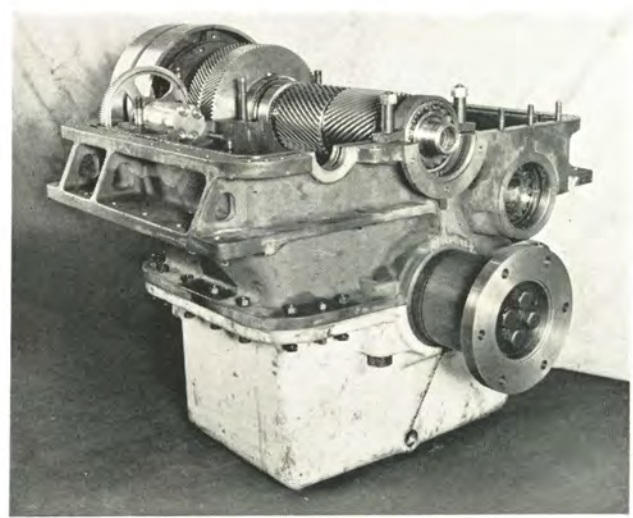


FIGURE 66
150 500 H.P. Forward and Reverse Propulsion Gear Reducers for Army Cargo Vessels.

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

TO VICTORY



Army-Navy "E" Award—June, 1943

First Star—December, 1943

Second Star—June, 1944

Third Star—December, 1944



FIGURE 67

480,000 3 Lb. Navy Practice Bombs



FIGURE 68

200 2000-Gallon Capacity Gasoline Transport Semi-Trailers for Army Air Corps.



FIGURE 69

44 24,000 Lb. Capacity Low-Bed Machinery Trailers for the Army



FIGURE 70

351 75KW Mobile Diesel Generator Units



FIGURE 71

302 Army Mobile Laundry Trailers

LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

LUFKIN EQUIPMENT USERS IN THE UNITED STATES

- | | | | |
|---|--|---|---|
| <p>A. & M. Oil Company
Adair-Morton Grain Co.
Addisson & Company
Ajax Pipe Line Corp./
Allen, T. H.
Allied Oil I.N.C.
Allison, F. M.
Allison, R. E.
Amerada Petroleum Corp.
American Republics Corp.
Anderson-Prichard Oil Co.
Arkansas Fuel Oil Co.
Associated Oil Company
Atlantic Oil Company
Atlantic Refining Co.</p> <p>Bankline Oil Company
Barnsdall Oil Company
Bartlett, W. N.
Bay Petroleum Co.
Benedum & Trees
Berg-Laney & Brown
Berry Asphalt Company
W. A. Black & Sons
Bradley, W. W.
British American Oil Co.
Broadview Oil Company
Brown, C. L.</p> <p>Caldwell, D. K.
California Company
Carter, Amon G.
Carter Oil Company
Carter-Gragg Oil Company
Century Oil Company
Cities Service Oil Co.
Clark, S. W.
Constantin & Company
Continental Oil Co.
Conway Oil Company
Cook Drilling Company
Cooperative Oil Co.
Corsicana Supply Co.
Cox and Hamon
Crabtree & Jeffries
Crail Brothers
Crown Central Petroleum Co.</p> <p>Dalport Oil Corp.
Darby-Bothwell, Inc.
Davis, Courtney B.
De Montrond Corp.
Deep Rock Oil Corp.
Devonian Oil Co.
Dillard, A. R.
Doran, Paul</p> <p>E. C. Oil Company
Eason Oil Company</p> | <p>East Whaley Oil Co.
Empire Gas & Fuel Co.</p> <p>Falvey, J. C., Estate
Fields, Bert
Fisher Drilling Co.
Flannery, L. S.
Fotiades, H. A.
Fox and Fox
Frankel Drilling Co.
Freedman Oil Corporation</p> <p>Gaskill & Godlin
Gem Oil Company
Gerhig Oil Company
Golden Bear Oil Company
Goldston, W. L.
Gralenor Oil Company
Gross, W. R.
Gulf Refining Company</p> <p>Hancock-General
Harper & Turner
Hawkeye Petroleum Co.
Herley-Kelley
Hogan Petroleum Co.
Hogg Oil Company
Honolulu Oil Company
Housh & Thompson
Houston Oil Company
Huber, J. M.
Hughes, J. K.
Humble Oil & Refg. Co.
Hunt, H. L.
Hunt Oil Company</p> <p>Illinois Oil Company
Iron Mountain Oil Co.
Isern, M. A. & Ed</p> <p>Jackson, Wise & Snedden
Jamison & Pollard
Jergins Oil Company
Johnson, T. C.
Johnson, W. B.
Johnston, E. C.
Jones, Carl
Jones & Ezzell
Jones, Frank & Fred
Jones & Jones
Jones-O'Brien</p> <p>K. & A. Oil Company
Killingsworth, S. H.
Kirby Petroleum Company
Kerr & McKee</p> <p>Lacy, Roger</p> | <p>Lechner & Hubbard
Leedecker & Vaughn
Leisk, W. C.
Lide-Rowe Oil Company
Lide & Toto
Ligon, Bert L.
Lincoln Oil Company
Lion Oil Company
Louisiana Oil & Refg. Co.
Luling Oil & Gas Company
Luse, W. P.
Lyons, C. H.</p> <p>McAlester Fuel Oil Co.
McCarthy, Glenn H.
McClanahan & Venable
McDonald Brothers
McRoberts, J. J.
McVicar & Rood
Magnolia Petroleum Co.
Manziel, Bob
Markham, E. D.
Marr, M. H.
Martin, George
Merrick, J. F.
Midstates Oil Company
Miller & Sons, M. M.
Mills Bennett Production Co.
Miramar Corporation
Moran Corporation
Morton & Edder
Moss, H. S.
Murphy & Roberts</p> <p>Navarro Oil Company
Naylor, H. M.
Nicholson-Terrell Oil Corp.
Nordill Oil Company</p> <p>Ohio Oil Company
Oil Lift Supply Company
Olson Brothers
Omega Oil Company</p> <p>Petroleum Pipe Line & Storage Co.
Pewitt, P. H.
Phillips Petroleum Co.
Placid Oil Company
Powell, N. P.
Princeton Refining Co.
Pure Oil Company
Pyramid Oil Company</p> <p>Rancho Oil Company
Retzel Drilling Co.
Richardson, S. W.
Richardson Oil Company
Richfield Oil Company
Rio Bravo Oil Company</p> | <p>Rio Grande Oil Company
Roberts Drilling Company
Roosth & Genecov
Royalty Service Corp.
Rudeco Oil Company
Ryan, A. B. & S. B. Barnes</p> <p>Sabinas Oil Company
Salt Mount Oil Company
Seaboard Oil Company
Sells Petroleum Company
Shell Petroleum Company
Simms Oil Company
Sinclair Prairie Oil Company
Sklar Oil Corporation
Skelly Oil Company
Sloan Oil & Gas Company
Sohio Petroleum Company
Sparton Drilling Company
Standard Oil Company of Calif.
Standard Oil Co. of Kansas
Standard Oil Co. of Louisiana
Standard Oil Co. of Texas
Stanolind Oil & Gas Co.
Stroube & Stroube
Sun Oil Company
Sun Shipbuilding Company
Sunray Oil Company
Superior Oil & Gas Company</p> <p>The Texas Company
Texas Gulf Petroleum Company
Texas Canadian Oil Company
Texas Gulf Producing Company
Tex Jersey Oil Company
Texas Trading Company
Thlocco Oil Company
Tide Water Companies
Trentman Oil Company
Tripplehorn Oil Company</p> <p>Union Oil Company
Union Producing Company
United Gas Company
Usean Oil Company</p> <p>Vanguard Oil Company
Vaughn, G. H.
Venable, R. H.
Virginia Drilling Company</p> <p>Waggoner, W. T. Estate
Waldron Oil Company
Western Gulf Oil Company
Westgate-Greenland Oil Co.
Wheless & Nelms
Wilshire Oil Company
Woodley Petroleum Company</p> |
|---|--|---|---|

FOREIGN

- | | | |
|---|---|--|
| <p>Anglo Mexican Petroleum Corp.
Argentine Government Oil Fields
Asiatic Petroleum Company
Burmah Oil Company
Cia Mexicana de Petroleo
Colombian Petroleum Company
Compania Consolidada de Petrolio</p> | <p>Concordia
"El Aguila"
International Petroleum Co., Ltd.
Lago Petroleum Corporation
North Saghalien Petroleum Company
Oil Well Engineering Company
Romano Americana</p> | <p>Steaua Romana
Standard Oil Co. of New Jersey
Standard Oil Co. of Argentine
Standard Oil of Venezuela
Tropical Oil Company
"Unirea"
Venezuela Gulf Oil Company</p> |
|---|---|--|

LUFKIN

EQUIPMENT OF ADVANCED DESIGN

