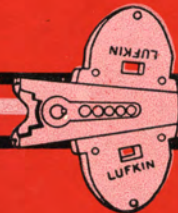


LUFKIN OIL FIELD EQUIPMENT



CATALOG 59

Featuring the

LUFKIN *Universal* PUMPING UNIT

PUMPING UNIT INDEX ON PAGE 3075

LUFKIN FOUNDRY & MACHINE COMPANY • LUFKIN, TEXAS

LUFKIN EQUIPMENT OF ADVANCED DESIGN

1. Oil Field Pumping Units:
 - A. Air Balanced Pumping Units—Pages 3102-3106
 - B. Beam Balanced Pumping Units—Pages 3096-3097
 - C. Crank Balanced Pumping Units—Pages 3075-3095
 - D. Hydraulic Pumping Units—Page 3107
2. Gas Engines for Pumping Service—Pages 3108-3111
3. Truck-Trailers—Pages 3112-3113
4. Geared Speed Reducers and Increasesers—Pages 3114-3115

LUFKIN

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

Oilfield Sales and Service—Offices and Warehouses of The Lufkin Foundry & Machine Company

ANACO, VENEZUELA, S.A.
A. J. Jumper, Jr.

BAKERSFIELD, CALIFORNIA
2500 Parker Lane
P. O. Box 444
Phone: FAirview 7-3563
Carl Frazer
Joe Skeeter

CASPER, WYOMING
P. O. Box 1849
Phone: 3-4670
Don Bowcutt

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Room 915, Old Colony Bldg.
407 South Dearborn St.
Phone: WEbster 9-3041
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CORPUS CHRISTI, TEXAS
207 S & S Building
Phone: TU 3-1881
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814 Vaughn Building
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CANADA

9950 - 65 Avenue
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Robert Spaulding
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MARACAIBO, VENEZUELA,
S. A.
Apartado 93
Roy Lilley

MIDLAND, TEXAS
1610 North "K"
Phone: MU 4-8600
George Henson

NATCHEZ, MISSISSIPPI
3701 Ridgewood Road
Phone: 4691
A. L. Christina

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350 Fifth Ave.
Empire State Bldg.
Phone: OXFord 5-0460
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ODESSA, TEXAS
P. O. Box 1632
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John Mettauer

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P. O. Box 362
Phone: MOhawk 4-2401
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312 8th Street
Phone: 34
Newell Lynch

SHREVEPORT, LOUISIANA
P. O. Box 673
Phone: 5-3451
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P. O. Box 551
Phone: 861
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Phone: LA 2-4504
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TULSA, OKLAHOMA
1515 Thompson Building
Phone: DIAMond 3-0204
D. A. Reid
H. H. Muller
Ben Queen

WICHITA FALLS, TEXAS
P. O. Box 2465
Phone: 322-1967
Ernest Slaughter



FIGURE 1

Lufkin C-228D-74-27 Crank Balanced Pumping Unit driven by Lufkin HC-333 Engine

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



STANDARD CRANK BALANCED PUMPING UNIT ASSEMBLIES

See Page 3097 for Beam Balance Assemblies and Page 3104 for Air Balance Assemblies

A.P.I. Size	Pumping Unit Assembly†	Old Lufkin Designation	WALKING BEAM			Counter-Balance At Max. Stroke, Lbs.‡	Maximum Counter-balance With Four Type D Aux. Weights§	Crank No.	Counter-weight No.	Page No.	
			CENTERS		Section						
			Well End	Unit End							
1824	C-1824D-168-35	.....	19'-7"	10'-11 1/4"	36" x 16 1/2" x 260 lbs.	15,520	23,250	94100ROA	OORO	3082
912	C-912DA-168-35A	.....	19'-7"	10'-11 1/4"	36" x 16 1/2" x 260 lbs.	15,520	23,250	94100ROA	OORO	3082
	C-912DA-144-40A	.....	16'-9"	10'-11 1/4"	36" x 16 1/2" x 245 lbs.	19,830	28,870	94100ROA	OORO	3082
	C-912DA-144-30D	TC-OLCDBR-912D	16'-9"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	17,945	26,615	94100ROA	ORO	3082	
640	C-640DB-168-35A	.....	19'-7"	10'-11 1/4"	36" x 16 1/2" x 260 lbs.	15,520	23,250	94100ROA	OORO	3082
	C-640DB-144-40A	.....	16'-9"	10'-11 1/4"	36" x 16 1/2" x 245 lbs.	19,830	28,870	94100ROA	OORO	3082
	C-640DB-144-30D	TC-OLCDBR-640DB	16'-9"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	17,945	26,615	94100ROA	ORO	3082	
	C-640DB-120100-30A	TC-OLCR-640DB	16'-0"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	16,670	23,040	82100ROA	1RO	3082	
	C-640DB-120-30A	TC-OLBR-640DB	16'-0"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	18,255	27,495	8292ROA	ORO	3082	
	C-640DB-108-30A	TC-OLR-640DB	14'-0 3/4"	10'-11 1/4"	30" x 15" x 172 lbs.	16,555	24,465	8478ROA	ORO	#	
*456	C-456DB-144-30D	TC-OLCDBR-456DB	16'-9"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	17,945	26,615	94100ROA	ORO	3084	
	C-456DB-120100F-30A	TC-OLCR-456DB	16'-0"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	16,670	23,040	82100ROA	1RO	3084	
	C-456DB-120-30A	TC-OLBR-456DB	16'-0"	10'-11 1/4"	33" x 15 3/4" x 200 lbs.	18,255	27,495	8292ROA	ORO	3084	
	C-456DB-108-30A	TC-OLR-456DB	14'-0 3/4"	10'-11 1/4"	30" x 15" x 172 lbs.	16,555	24,465	8478ROA	ORO	3084	
*320	C-320D-120-25B	TC-1LBR-41D	14'-3 1/4"	10'-0"	30" x 15" x 172 lbs.	15,350	23,090	8482ROA	ORO	3086	
	C-320D-100-28B	.....	11'-11"	10'-0"	30" x 15" x 172 lbs.	14,190	20,030	8482ROA	1RO	3086
	C-320D-84-31	.....	10'-6"	10'-6"	24" x 14" x 160 lbs.	18,090	25,050	8482ROA	1RO	#
	C-320D-84-30B	TC-OALR-41D	12'-6"	12'-6"	30" x 15" x 172 lbs.	18,090	25,050	8482ROA	1RO	3086	
	C-320D-84-27B	TC-1BR-41D	11'-4 1/4"	10'-0"	24" x 14" x 160 lbs.	15,145	21,235	7475ROA	1RO	3086	
	C-320D-74-27B	TC-1R-41D	10'-0"	10'-0"	24" x 14" x 130 lbs.	16,075	22,955	7475ROA	2RO	3086	
	C-320D-74-25.6A	.....	8'-0"	8'-0"	24" x 12" x 100 lbs.	15,380	22,260	7475ROA	2RO	#
	C-320D-74-25B	TC-1AR-41D	12'-6"	12'-6"	24" x 14" x 160 lbs.	14,380	20,500	7475ROA	3CRO	#	
	*228	C-228D-84-22.1A	9'-1"	8'-0"	24" x 12" x 100 lbs.	13,225	19,285	7475ROA	2RO	3088
C-228D-74-27B		TC-1R-35B	10'-0"	10'-0"	24" x 14" x 130 lbs.	15,840	22,720	7475ROA	2RO	3088	
C-228D-74-23B		TC-2LTR-35B	8'-0"	8'-0"	24" x 12" x 100 lbs.	13,685	19,805	7475ROA	3CRO	3088	
C-228D-74-20A		TC-2BTR-35B	9'-3"	8'-0"	27" x 10" x 102 lbs.	11,710	17,320	6466ROA	2RO	3088	
C-228D-74-19.9A		TC-2ALTR-35B	10'-0"	10'-0"	27" x 10" x 102 lbs.	11,750	16,085	7475ROA	5ARO	#	
C-228D-64-23A		TC-2TR-35B	8'-0"	8'-0"	24" x 12" x 100 lbs.	12,350	18,200	6466ROA	3CRO	3088	
C-228D-64-20A		TC-2ATR-35B	10'-0"	10'-0"	27" x 10" x 102 lbs.	12,350	18,200	6466ROA	3CRO	3088	
*160		C-160D-84-15.1A	10'-6"	8'-0"	24" x 12" x 100 lbs.	8,270	12,480	6460ROA	2RO	#
	C-160D-74-20A	TC-2BTR-22G	9'-3"	8'-0"	27" x 10" x 102 lbs.	9,630	14,425	6460ROA	2RO	3090	
	C-160D-64-23A	TC-2TR-22G	8'-0"	8'-0"	24" x 12" x 100 lbs.	11,465	17,000	6460ROA	2RO	3090	
	C-160D-64-18.5B	.....	7'-8"	5'-3 1/4"	24" x 9" x 84 lbs.	9,830	14,850	4460ROA	3CRO	3090
	C-160D-64-16B	.....	7'-0"	7'-0"	18" x 8 3/4" x 77 lbs.	9,190	12,910	6460ROA	5ARO	3090
	C-160D-64-15B	TC-33BTR-22G	8'-3"	5'-3 1/4"	21" x 9" x 82 lbs.	7,475	11,475	4152ROA	3CRO	#	
	C-160D-54-18.9	.....	7'-0"	7'-0"	21" x 9" x 82 lbs.	9,460	14,190	5452ROA	3CRO	3090
	C-160D-54-18A	TC-33ATR-22G	8'-0"	8'-0"	24" x 9" x 84 lbs.	9,460	14,190	5452ROA	3CRO	3091	
	C-160D-54-17A	TC-33TR-22G	7'-0"	5'-3 1/4"	18" x 8 3/4" x 77 lbs.	9,050	13,770	4152ROA	3CRO	3091	
	C-160D-54-16B	.....	7'-0"	7'-0"	18" x 8 3/4" x 77 lbs.	9,460	14,190	5452ROA	3CRO	#
	*114	C-114DA-64-15B	TC-44ALTR-15B	8'-0"	8'-0"	21" x 9" x 82 lbs.	8,520	12,240	6460ROA	5ARO	3092
		C-114DA-64-13A	TC-44CBTR-15B	7'-1 1/4"	6'-0"	16" x 8 1/2" x 64 lbs.	7,440	11,435	5452ROA	3CRO	#
C-114DA-64-11.6A		TC-44CBTR-15B	7'-1 1/4"	6'-0"	16" x 8 1/2" x 64 lbs.	6,415	9,465	5452ROA	5ARO	3092	
C-114DA-54-17A		TC-44DTR-15B	6'-0"	6'-0"	18" x 8 3/4" x 77 lbs.	9,050	13,770	5452ROA	3CRO	#	
C-114DA-54-16B		.....	7'-0"	7'-0"	18" x 8 3/4" x 77 lbs.	9,460	14,190	5452ROA	3CRO	3092
C-114DA-54-15.6A		TC-44CTR-15B	6'-0"	6'-0"	16" x 8 3/4" x 71 lbs.	8,925	13,655	5452ROA	3CRO	3092	
C-114DA-54-15A		TC-44ATR-15B	8'-0"	8'-0"	21" x 9" x 82 lbs.	8,790	13,520	5452ROA	3CRO	3092	
C-114DA-54-14A		TC-44CTR-15B	6'-0"	6'-0"	16" x 8 1/2" x 64 lbs.	7,705	11,325	5452ROA	5ARO	3092	
C-114DA-54-13.5A		TC-44STR-15B	6'-4 3/8"	5'-7 5/8"	16" x 8 1/2" x 64 lbs.	6,290	9,240	4846ROA	5ARA	#	
C-114DA-48-14A		TC-44TR-15B	6'-0"	6'-0"	16" x 8 1/2" x 64 lbs.	7,155	10,480	4846ROA	5ARA	3093	
C-114DA-48-12.7A		.....	6'-0"	6'-0"	16" x 8 1/2" x 64 lbs.	6,945	10,270	4846ROA	5ARA	3093
C-114DA-48-11.6A		.....	5'-0"	5'-0"	16" x 7" x 45 lbs.	6,945	10,270	4846ROA	5ARA	#
C-114DA-48-10C		T5DB-15B	5'-8 1/2"	5'-0"	16" x 7" x 45 lbs.	4,910	6,595	4246CRA	5CRA	3094	
C-114DA-42-11.6C		T5D-15B	5'-0"	5'-0"	16" x 7" x 45 lbs.	5,645	7,575	4246CRA	5CRA	3094	
80		C-80DB-54-14A	TC-44CTR-80DB	6'-0"	6'-0"	16" x 8 1/2" x 64 lbs.	7,705	11,325	5452ROA	5ARO	3092
	C-80DB-54-13.5A	TC-44STR-80DB	6'-4 3/8"	5'-7 5/8"	16" x 8 1/2" x 64 lbs.	6,290	9,240	4846ROA	5ARA	#	
	C-80DB-48-14A	TC-44TR-80DB	6'-0"	6'-0"	16" x 8 1/2" x 64 lbs.	7,155	10,480	4846ROA	5ARA	3093	
	C-80DB-48-12.7A	.....	6'-0"	6'-0"	16" x 8 1/2" x 64 lbs.	6,945	10,270	4846ROA	5ARA	3093
	C-80DB-48-11.6A	.....	5'-0"	5'-0"	16" x 7" x 45 lbs.	6,945	10,270	4846ROA	5ARA	#
	C-80DB-48-10C	T5DB-80DB	5'-8 1/2"	5'-0"	16" x 7" x 45 lbs.	4,910	6,595	4246CRA	5CRA	3094	
	C-80DB-42-11.6C	T5D-80DB	5'-0"	5'-0"	16" x 7" x 45 lbs.	5,645	7,575	4246CRA	5CRA	3094	
	*57	C-57DB-48-10C	T5DB-7C	5'-8 1/2"	5'-0"	16" x 7" x 45 lbs.	4,910	6,595	4246CRA	5CRA	3094
C-57DB-42-11.6C		T5D-7C	5'-0"	5'-0"	16" x 7" x 45 lbs.	5,645	7,575	4246CRA	5CRA	3094	
C-57DB-34-8.7B		.....	4'-0"	4'-0"	14" x 6 3/4" x 30 lbs.	5,850	7,915	3442CRA	5CRA	#
40	C-40DB-40-7.4C	T6EB-9B	4'-8 1/2"	4'-0"	14" x 6 3/4" x 30 lbs.	3,985	5,030	3441R	6R	3094	
	C-40DB-34-8.7C	T6E-9B	4'-0"	4'-0"	14" x 6 3/4" x 30 lbs.	4,785	6,015	3441R	6R	3094	
25	C-25DA-36-4B	T7A1-3B	5'-3"	3'-6"	10" x 5 3/4" x 25 lbs.	2,080	2,755	2433R	7R	#	
	C-25DA-28-7.5C	T7A3-3B	4'-1"	3'-6"	14" x 6 3/4" x 30 lbs.	2,725	3,585	2433R	7R	3094	
	C-25DA-24-6C	T7A-3B	3'-6"	3'-6"	10" x 5 3/4" x 25 lbs.	3,250	4,255	2433R	7R	3094	

† See top of next page for explanation of designations.
 * These units also furnished with single reduction gear reducers.
 # These units are shown on this page only.
 ‡ Counterbalance can be increased or decreased by using counterweights other than size shown.
 § Maximum counterbalance for units using the R, CR, or CRA cranks is tabulated on the basis of 4 type S auxiliary weights.

LUFKIN**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS****EXPLANATION OF PUMPING UNIT DESIGNATIONS**

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

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

The second group of figures is the API size of the gear reducer and indicates the peak torque rating in thousands of inch pounds. The reducer size is followed by "T," "D" or "S" to indicate whether it has triple, double or single reduction gears. When some detail of a reducer has been revised in design so as to be not interchangeable with the previous design, a revision letter is added at the end of the reducer designation. For instance, the 912D reducer has been revised by a design change to become 912DA.

The third group of figures indicates maximum polished rod

stroke in inches.

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

For instance, C-912DA-168-35A means a crank counterbalanced unit assembly using a double reduction reducer having 912,000 inch pounds peak torque rating, with 168" maximum stroke and 35,000 pounds polished rod load rating.

It is sometimes necessary to show a double set of figures in the designation where the polished rod stroke is indicated because of different cranks that can be used to effect the same stroke. When this is necessary, the unit with the non-standard cranks has the crank sweep radius added to the polished rod stroke in the unit designation. For example, the C-160D-6466-23 unit has 66" radius cranks instead of the standard 60".

LUBRICATION INSTRUCTIONS**LUFKIN PUMPING UNITS**

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

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

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

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

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

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

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

The several points requiring lubrication should be checked at regular intervals to insure that proper oil levels are maintained. For 24 hour service change oil semi-annually; for intermittent service change annually.

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

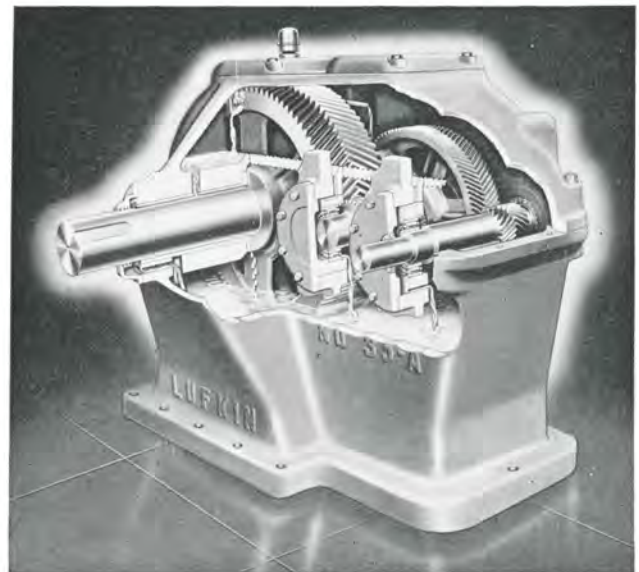


FIGURE 2

As long as the oil is maintained at the proper level, the slow speed and high speed gears dip in oil and provide continuous lubrication to the gear mesh.

Large oil wipers direct a flood of oil into oversized oil troughs which in turn provide each individual bearing with more than adequate lubrication.

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

**A WIDER RANGE OF COUNTERBALANCE NOW
AVAILABLE WITH THE *NEW* TROUT COUNTERBALANCED TYPE RO CRANK**

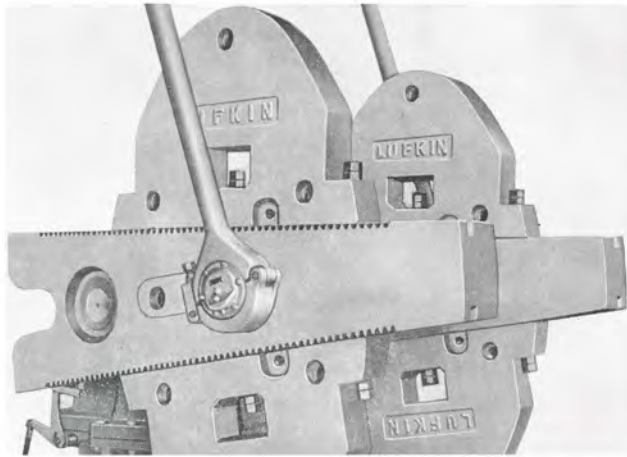


FIGURE 3—Extra large counterweights available if needed.

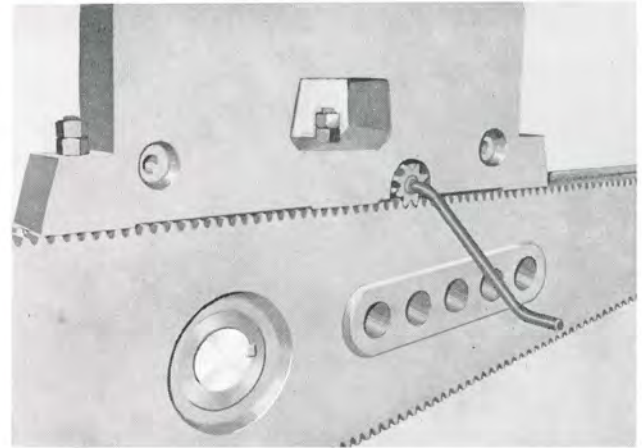


FIGURE 6—New removable pinion (with crank handle attached) is used to adjust all counterweights.

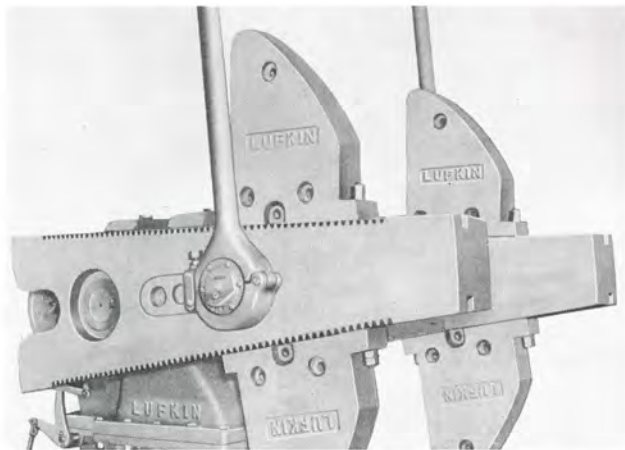


FIGURE 4—Small counterweights can be furnished where counterbalance requirements are reduced.

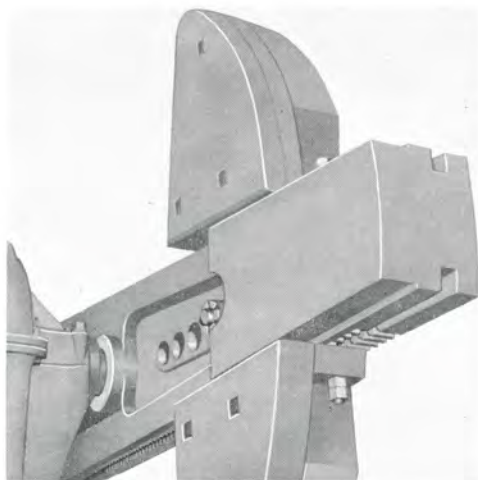


FIGURE 5—Various combinations of type S and D auxiliary counterweights available for additional counterbalance.

As shown in Figures 3, 4 and 5 a wide range of counterbalance is available on all LUFKIN units. With the various combinations of counterweights and auxiliary counterweights to choose from a very economical selection of counterbalance can be made.

Note in Figure 6 the extra counterbalance made available by the increased thickness at the end of the type RO crank. With this type crank, one or two type S (single thickness) auxiliary counterweights can be added or one type D (double thickness) auxiliary counterweight can be added to each counterweight.

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

One Man Alone, using the special combination pinion and crank shown in Figure 6, can make the adjustment in a matter of minutes. All four weights can be adjusted without changing the position of the cranks.

Rack and pinion type cranks are regularly furnished on the C-25 assemblies and larger.

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

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

LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

**LUFKIN UNIVERSAL CENTER-LINE
PITMAN EQUALIZER**

Typical for C-114 and Larger Assemblies

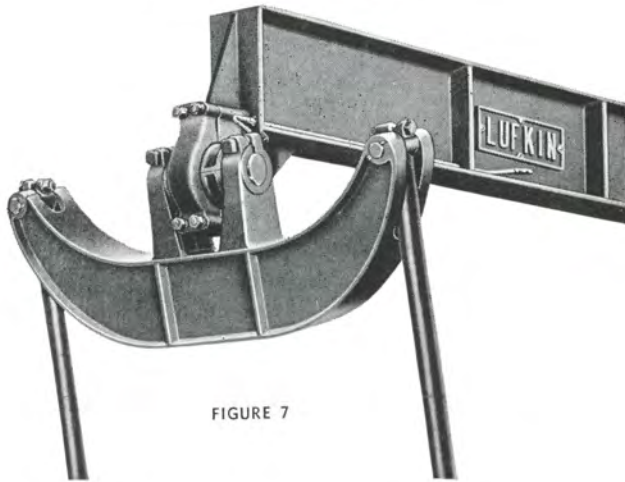


FIGURE 7

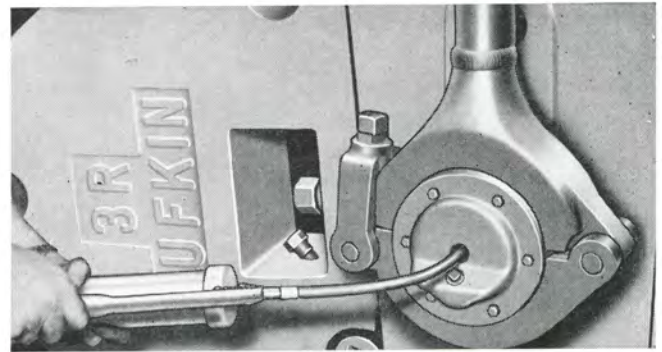
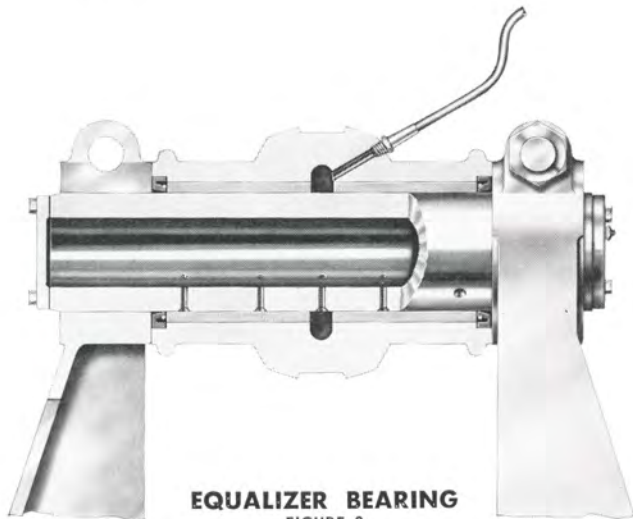


FIGURE 10

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



EQUALIZER BEARING
FIGURE 8

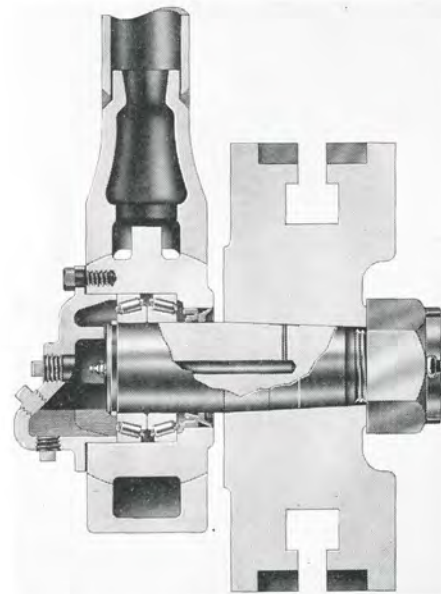
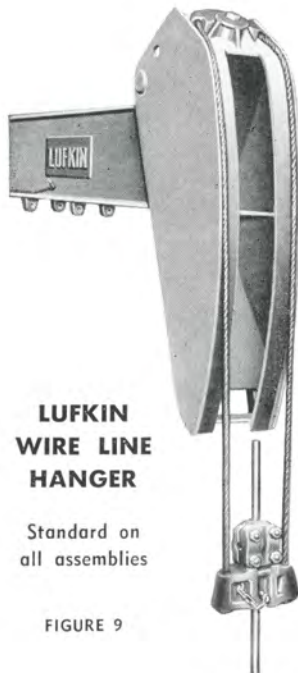


FIGURE 11

TAPERED ROLLER BEARING PITMAN BOX ASSEMBLY
Standard on C-114 and larger assemblies



**LUFKIN
WIRE LINE
HANGER**

Standard on
all assemblies

FIGURE 9

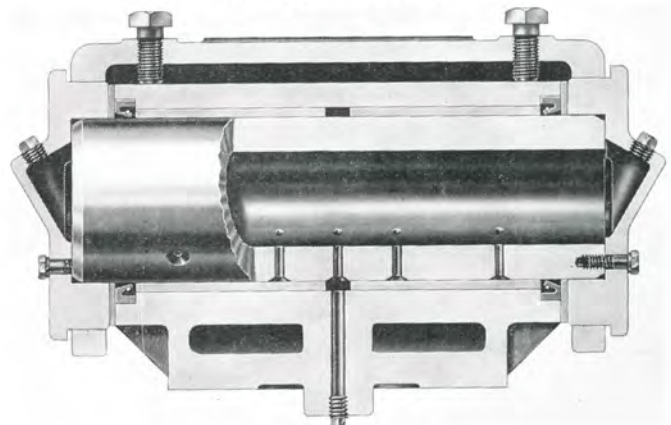


FIGURE 12

OIL BATH—BRONZE BUSHED CENTER BEARING
Used on C-114 and larger

When either of the short bolts shown at the top of the center bearing is removed and a walking beam adjusting screw is inserted in its place, the load on the end flange can be relieved. This allows the cap to be removed so that the oil seal can be replaced without removing the walking beam.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



THE LUFKIN UNIVERSAL CENTER-LINE WALKING BEAM

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

All pumping units employ an arrangement of beam loading based on variations of the method used by the original standard rig, illustrated in Figure 14. Since the beam is a rolled structural member, not

machined, all beams have a slight twist. When loaded as shown in Figure 14, 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 13, 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.

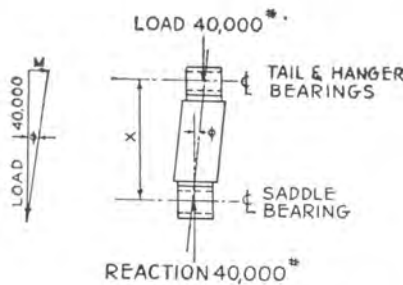


FIGURE 13

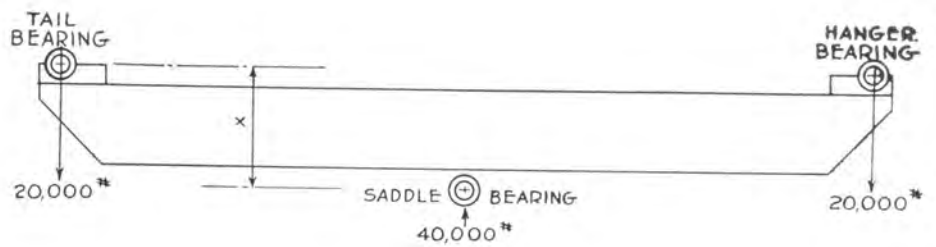


FIGURE 14

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 $40,000 \times \tan. \phi \times$ lever arm X , in inch-pounds. With Lufkin Universal Center-Line construction, no twisting moment exists since the load is applied in line with the reaction; hence lever arm X is zero and, therefore, twisting moment is zero.

THE LUFKIN UNIVERSAL CENTER-LINE UNITS

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

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

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

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

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

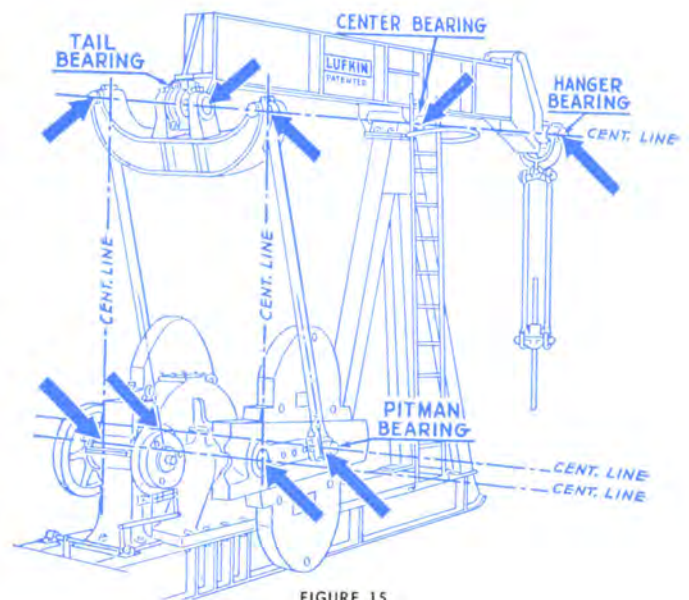


FIGURE 15



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

PORTABLE TYPE TESTING UNITS MADE IN TWO STYLES AVAILABLE IN ALL SIZES

HEAVY DUTY PORTABLE BASE unit, full skid, can be very easily moved, requires a minimum of foundation as shown in the illustration to the right.



FIGURE 16A

WIDE BASE unit shown below can be easily moved with a minimum danger of tipping, requires more foundation than the heavy duty portable base unit.



FIGURE 16



FIGURE 17

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

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

LUFKIN ENGINEERS HAVE A RICH BACKGROUND of practical experience in unit operation, and behind their design 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.

SINGLE REDUCTION, DOUBLE REDUCTION AND TRIPLE REDUCTION GEAR UNITS ARE AVAILABLE FOR EVERY PUMPING NEED

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.

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

The 1824 reducer is also available in triple reduction and is used with high speed engines or electric motors where pumping speeds are very slow.

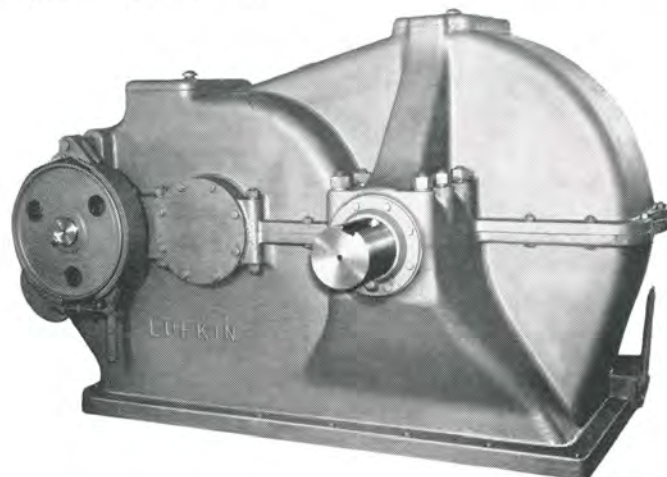


FIGURE 18
1824D Double Reduction
Gear Unit

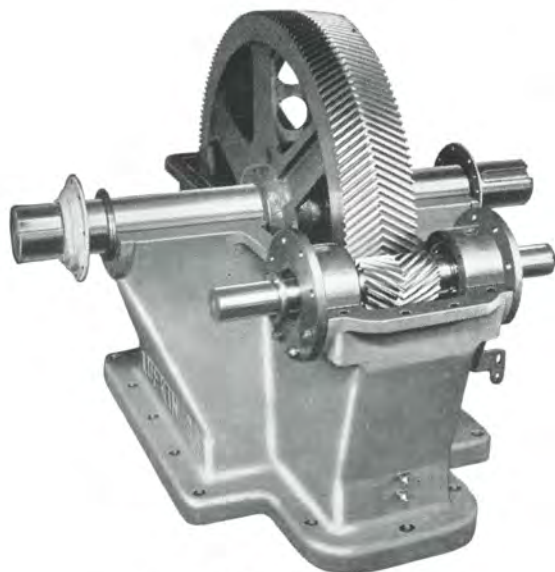


FIGURE 19
Single Reduction Gear Unit, cover removed

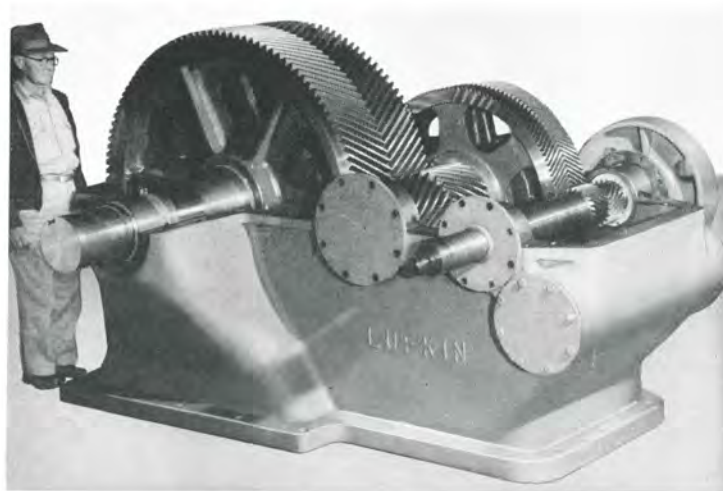


FIGURE 20
1824D Double Reduction Gear Unit, cover removed

1. Housing especially built for oil well service, of rugged construction with large factors of safety.
2. Lufkin-Sykes Herringbone Gears, precision cut on our machines, are used exclusively in Lufkin units.
3. Gear Cases are jig bored to same accuracy as gears.
4. All shafts forged from alloy steel, heat treated and precision ground.
5. Oversize Bronzoid Bearings on crankshafts. Easily renewable but seldom requiring replacement.
6. Crankshaft held rigid by Bronzoid hub plates. All pinions float on Straight Roller Bearings.
7. No Oil Leaks. Pinion shaft bearings equipped with patented oil seals; main crankshaft with collar oil slinger and drain cover.
8. No Oil Pumps. Lufkin gears operate in oil bath with gear wipers to flood bearings.
9. Clam Shell Brake. No grabbing. Improved ratchet lever and stand, locomotive type.

LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

GENERAL SPECIFICATIONS

Lufkin 1,824,000, 912,000 and 640,000 In. Lbs. Peak Torque Pumping Units
1824, 912 and 640 API Sizes

GEAR DATA

GEAR REDUCER: Double Reduction

Designation: 1824D
Gears: Main Gear 60" P.D. x 20" Face.
Rating: 1,824,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.33.
Crank Shaft Dia.: 9".
Sheave: 46" P.D.—111" Std., 4-15/16" Bore.
68" P.D.—111" Max.
Distance Centerline Unit to Centerline of Drive: 28 1/2".
Gear Box Oil Capacity: 165 Gallons.

GEAR REDUCER: Double Reduction

Designation: 912DA.
Gears: Main Gear 50.4" Diam., 13 1/2" Face.
Rating: 912,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.72.
Crank Shaft Diam.: 7".
Sheave: 47 3/8" P.D.—8D Std., 4-3/16" Bore.
55 P.D.—8D Max.
Distance Centerline Unit to Centerline Drive: 22 1/2".
Gear Box Oil Capacity: 107 Gallons.

GEAR REDUCER: Double Reduction

Designation: 640DB.
Gears: Main Gear 41.6" Diam., 12 3/4" Face.
Rating: 640,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.6.
Crank Shaft Diam.: 7".
Sheave: 34" P.D.—7D Std., 5 1/2" P.D. Max.
Without Sub-base, 55" Max. With Sub-base, 3-7/16" Bore.
Distance Centerline Unit to Centerline Drive: 21 1/2".
Gear Box Oil Capacity: 70 Gallons.

STRUCTURAL DATA

C-1824D-168-35, C-912DA-168-35A and C-640DB-168-35A PUMPING UNIT ASSEMBLIES—35,000 Lb. Polished Rod Load Class

WALKING BEAM: 36" x 16 1/2" x 260 lbs. 19'-7" and 10'-11 1/4" Working Centers.
HANGER: Hinged Horseshoe With 1 3/8" Wireline 36'-0" Long.
PITMAN: Universal Cross Pin Equalizer 5" Extra Heavy Pipe.
SAMSON POST: Tripod, 19'-4" High.
CRANKS: No. 94100ROA, 100" Radius.
POLISHED ROD STROKES: 168", 146.8", 125.3", 103.8".
BASE: C-1824D-168-35, 21" Deep, 50" Wide at gear box.
C-912DA-168-35A, 16 1/2" Deep, 46 3/4" Wide at gear box.
C-640DB-168-35A, 16 1/2" Deep, 46 3/4" Wide at gear box.
SUB-BASE: C-640DB-168-35A: 36" Deep Cast Iron on 24" Steel Beams.
C-912DA-168-35A: 34" Deep Cast Iron on 24" Steel Beams.
C-1824D-168-35: 45" Deep Fabricated Steel.

CENTER BEARING:	No. OOL, 7 1/2" x 22 1/2" Bronze Bushed
CRANK PINS:	No. OT, Tapered Roller Bearings
TAIL BEARING:	No. OC, 7" x 15 3/4" Bronze Bushed
WEIGHT:	C-1824D-168-35: 85,180 lbs. C-912DA-168-35A: 74,580 lbs. C-640DB-168-35A: 73,230 lbs.
†COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number
	#00RO 0RO 1RO
94100ROA Cranks.....	15,520 13,901 10,115
4-S Auxiliary Weights.....	19,385 17,615 12,390
4-D Auxiliary Weights.....	23,250 21,330 14,665

C-912DA-144-40A and C-640DB-144-40A Pumping Unit Assemblies—40,000 Lb. Polished Rod Load Class

WALKING BEAM: 36" x 16 1/2" x 245 lbs. 16'-9" 10'-11 1/4" Working Center.
HANGER: Hinged Horseshoe With 1 3/8" Wireline 32'-0" Long.
PITMAN: Universal Cross Pin Equalizer, 5" Extra Heavy Pipe.
SAMSON POST: Tripod, 19'-4" High.
CRANKS: No. 94100ROA, 100" Radius.
POLISHED ROD STROKES: 144", 125.6", 107.2", 88.8".
BASE: 16" Deep, 46 3/4" Wide at Gear Box.
SUB-BASE: C-640DB-144F-40A: 36" Deep Cast Iron on 24" Steel Beams.
C-912DA-144F-40A: 34" Deep Cast Iron on 24" Steel Beams.

CENTER BEARING:	No. OOL, 7 1/2" x 22 1/2" Bronze Bushed
CRANK PINS:	No. OT, Tapered Roller Bearings
TAIL BEARING:	No. OC, 7" x 15 3/4" Bronze Bushed
WEIGHT:	C-912DA-144-40A: 72,480 lbs. C-640DB-144-40A: 71,130 lbs.
†COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number
	#00RO 0RO 1RO 2RO 3CRO
94100ROA Cranks.....	19,830 17,945 13,535 12,240 10,865
4-S Auxiliary Weights.....	24,350 22,280 16,190 14,850 13,395
4-D Auxiliary Weights.....	28,870 26,615 18,845 17,460 15,425

C-912DA-144-30D and C-640DB-144-30D Pumping Unit Assemblies—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33" x 15 3/4" x 200 lbs. 16'-0" & 10'-11 1/4" Working Centers.
HANGER: Hinged Horseshoe With 1 3/4" Wireline 32'-0" Long.
PITMAN: Universal Equalizer With Bearings "in line", 5" Extra Heavy Pipe.
SAMSON POST: Tripod, 17'-4" High.
CRANKS: No. 94100ROA, 100" Radius.
POLISHED ROD STROKES: 144", 125.6", 107.2", 88.8".
BASE: 16" Deep, 46 3/4" Wide At Gear Box.
SUB-BASE: C-912DA-144F-30D, 34" High Cast Iron on 24" Steel Beams.
C-640DB-144F-30B, 36" High Cast Iron on 24" Steel Beams.

CENTER BEARING:	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS:	No. OT, Tapered Roller Bearings
TAIL BEARING:	No. O, 5 13/16" x 13 1/2" Bronze Bushed
WEIGHT:	C-912DA-144-30D: 65,052 lbs. C-640DB-144-30D: 63,722 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number
	#00RO #0RO 1RO 2RO 3CRO
94100ROA Cranks.....	19,830 17,945 13,535 12,240 10,865
4-S Auxiliary Weights.....	24,350 22,280 16,190 14,850 13,395
4-D Auxiliary Weights.....	28,870 26,615 18,845 17,460 15,425

C-640DB-120100-30A Pumping Unit Assembly—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33" x 15 3/4" x 200 lbs. 16'-0" & 10'-11 1/4" Working Centers.
HANGER: Hinged Horseshoe With 1 3/4" Wireline 28'-0" Long.
PITMAN: Universal Equalizer With Bearings "in line", 5" Extra Heavy Pipe.
SAMSON POST: Tripod, 17'-4" High.
CRANKS: No. 82100ROA, 100" Radius.
POLISHED ROD STROKES: 120", 103", 85.3", 67.6".
BASE: 16" Deep, 46 3/4" Wide At Gear Box.
SUB-BASE: 36" High Cast Iron On 24" Steel Beams.

CENTER BEARING:	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS:	No. OT, Tapered Roller Bearings
TAIL BEARING:	No. O, 5 13/16" x 13 1/2" Bronze Bushed
WEIGHT:	56,734 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number
	#00RO 0RO #1RO 2RO 3CRO
82100ROA Cranks.....	24,270 21,990 16,670 15,150 13,480
4-S Auxiliary Weights.....	29,690 27,190 19,885 18,275 16,515
4-D Auxiliary Weights.....	..... ..... 23,040 21,400 18,950

*C-640DB-120-30A Pumping Unit Assembly—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33" x 15 3/4" x 200 lbs. 16'-0" & 10'-11 1/4" Working Centers.
HANGER: Hinged Horseshoe With 1 3/4" Wireline 28'-0" Long.
PITMAN: Universal Equalizer With Bearings "in line", 5" Extra Heavy Pipe.
SAMSON POST: Tripod, 17'-4" High.
CRANKS: No. 8292ROA, 92" Radius.
POLISHED ROD STROKES: 120", 103", 85.3", 67.6".
BASE: 16" Deep, 46 3/4" Wide at Gear Box.
SUB-BASE: 36" High Cast Iron On 14" Steel Beams.

CENTER BEARING:	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS:	No. OT, Tapered Roller Bearings
TAIL BEARING:	No. O, 5 13/16" x 13 1/2" Bronze Bushed
WEIGHT:	58,874 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number
	#00RO #0RO 1RO 2RO 3CRO
8292ROA Cranks.....	20,285 18,255 13,585 12,245 10,785
4-S Auxiliary Weights.....	25,105 22,875 16,440 15,055 13,520
4-D Auxiliary Weights.....	29,925 27,495 19,295 17,865 15,720

* This unit also in stock at Los Angeles.
† If additional counterbalance required, beam can be extended for beam weights.
Counterweights used to calculate weight of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



GENERAL DIMENSIONS

Lufkin 1,824,000, 912,000 and 640,000 In. Lbs. Peak Torque Pumping Units

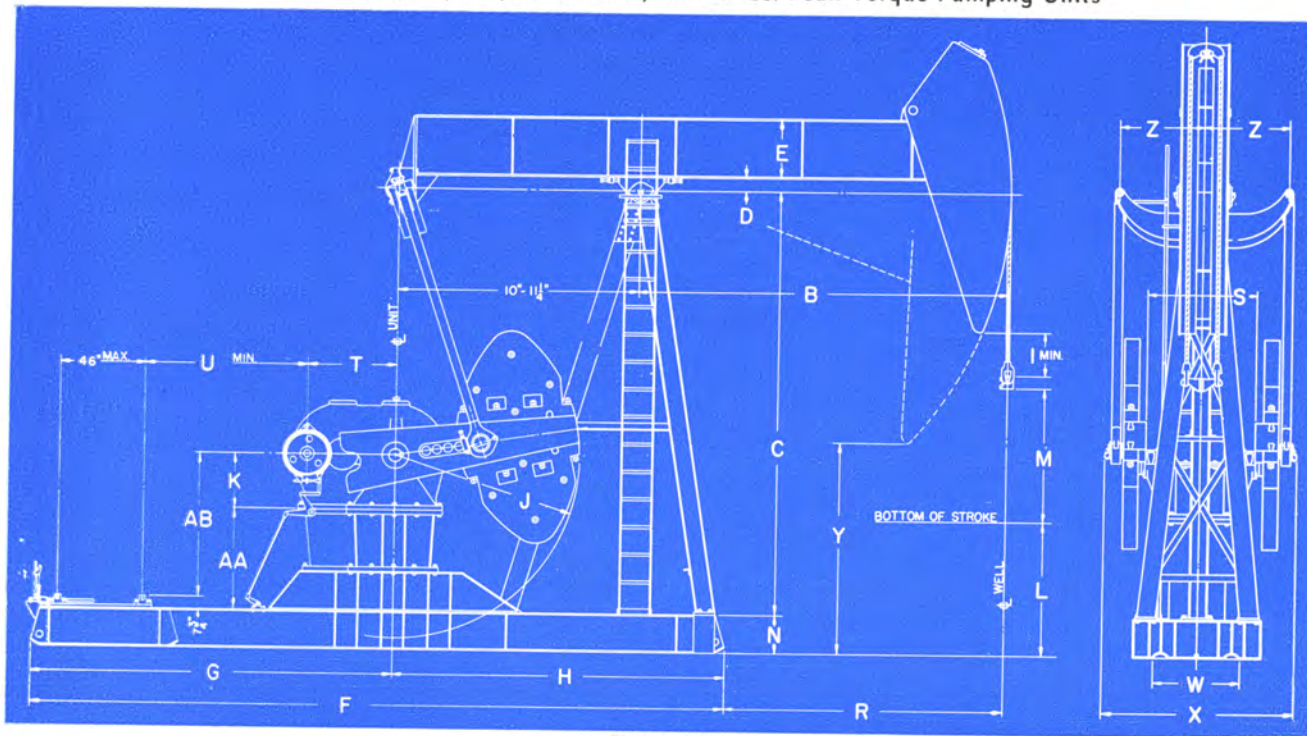


FIGURE 21

UNIT	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T	U	W	X	Y	Z	AA	AB
C-1824D-168-35	19'-7"	19'-4"	9"	36 1/4"	31'-5"	16'-4"	15'-1"	17 1/2"	100"	36"	53 1/4"	84"	21"	15'-5 1/4"	6'-2 1/4"	58 3/8"	6'-4 5/8"	50"	9'-7 5/8"	7'-0"	52 3/4"	45"	73 1/4"
C-912DA-168-35A	19'-7"	19'-4"	9"	36 1/4"	31'-5"	16'-4"	15'-1"	17 1/2"	100"	30"	48 3/8"	84"	16 1/8"	15'-5 1/4"	6 1/4"	48 1/2"	7'-3"	46 3/4"	8'-6 5/8"	7'-4"	46 3/4"	58 1/8"	80 3/8"
C-640DB-168-35A	19'-7"	19'-4"	9"	36 1/4"	31'-5"	16'-4"	15'-1"	17 1/2"	100"	28"	48 3/8"	84"	16 1/8"	15'-5 1/4"	6 1/4"	41 1/2"	7'-10"	46 3/4"	8'-6 5/8"	7'-4"	46 3/4"	60 1/8"	80 3/8"
C-912DA-144-40A	16'-0"	19'-4"	9"	36"	31'-5"	16'-4"	15'-1"	19 1/2"	100"	30"	71 3/4"	72"	16 1/8"	12'-7 1/4"	6 1/4"	48 1/2"	7'-3"	46 3/4"	8'-6 5/8"	9'-4"	46 1/4"	58 1/8"	80 3/8"
C-640DB-144-40A	16'-9"	19'-4"	9"	36"	31'-5"	16'-4"	15'-1"	19 1/2"	100"	28"	71 3/4"	72"	16 1/8"	12'-7 1/4"	6 1/4"	41 1/2"	7'-10"	46 3/4"	8'-6 5/8"	9'-4"	46 1/4"	60 1/8"	80 3/8"
C-912DA-144-30D	16'-0"	19'-4"	7"	33"	31'-5"	16'-4"	15'-1"	19 1/2"	100"	30"	71 3/4"	72"	16 1/8"	12'-7 1/4"	6 1/4"	48 1/2"	7'-3"	46 3/4"	8'-6 5/8"	9'-4"	46 1/4"	58 1/8"	80 3/8"
C-640DB-144-30D	16'-9"	19'-4"	7"	33"	31'-5"	16'-4"	15'-1"	19 1/2"	100"	28"	71 3/4"	72"	16 1/8"	12'-7 1/4"	6 1/4"	41 1/2"	7'-10"	46 3/4"	8'-6 5/8"	9'-4"	46 1/4"	60 1/8"	80 3/8"
C-640DB-120100-30A	16'-0"	17'-4"	7"	33"	30'-5"	15'-4"	15'-1"	24"	100"	28"	70 1/2"	60"	16 1/8"	11'-10 1/4"	6 1/4"	41 1/2"	6'-10"	46 3/4"	8'-6 5/8"	8'-10 5/8"	46 1/4"	50"	70 1/4"
C-640DB-120-30A	16'-0"	17'-4"	7"	33"	30'-5"	15'-4"	15'-1"	24"	92"	28"	70 1/2"	60"	16 1/8"	11'-10 1/4"	6 1/4"	41 1/2"	6'-10"	46 3/4"	8'-6 5/8"	8'-10 5/8"	46 1/4"	50"	70 1/4"

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



Lufkin CB-912DA-168-35

FIGURE 22



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

GENERAL SPECIFICATIONS

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

456 API Size

GEAR DATA

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

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

STRUCTURAL DATA

C-456DB-144-30D and C-456S-144-30D PUMP UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33' x 15¾" x 200 lbs., 16'-9" and 10'-11¼" working centers.	CENTER BEARING	No. 1AD, Bronze Bushed 7" x 20"				
HANGER: Hinged Horsehead with 1¼" Wireline, 32'-0" Long.	CRANK PINS	No. OT, Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	TAIL BEARING	No. O, 5¼" x 13½" Bronze Bushed				
SAMSON POST: Tripod, 19'-4" High.	WEIGHT	C-456DB-144-30D: 62,502 lbs. C-456S-144-30D: 62,902 lbs.				
CRANKS: No. 94100ROA, 100" Radius.	Counterweight Number					
POLISHED ROD STROKES: 144", 125.6", 107.2", 88.8"	COUNTERBALANCE, LBS., At Max. Stroke	00RO	#0RO	1RO	2RO	3CRO
BASE: 16" Deep, 46¾" Wide at Gear Box.	94100ROA Cranks.....	19,830	17,945	13,535	12,240	10,865
SUB-BASE: 36" High, Cast Iron On 24" Steel Beams.	4-S Auxiliary Weights.....	24,350	22,280	16,190	14,850	13,395
	4-D Auxiliary Weights.....	28,870	26,615	18,845	17,460	15,425

C-456DB-120100-30A and C-456S-120100-30A PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33' x 15¾" x 200 lbs., 16'-0" and 10'-11¼" working centers.	CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"				
HANGER: Hinged Horsehead with 1¼" Wireline, 28'-0" Long.	CRANK PINS	No. OT, Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	TAIL BEARING	No. O, 5¼" x 13½" Bronze Bushed				
SAMSON POST: Tripod, 17'-4" High.	WEIGHT	C-456DB-120100-30A: 55,514 lbs. C-456S-120100-30A: 55,914 lbs.				
CRANKS: No. 82100ROA, 100" Radius.	Counterweight Number					
POLISHED ROD STROKES: 120", 103", 85.3", 67.6"	COUNTERBALANCE, LBS., At Max. Stroke	00RO	0RO	#1RO	2RO	3CRO
BASE: 16" Deep, 46¾" Wide at Gear Box.	82100ROA Cranks.....	24,270	21,990	16,670	15,150	13,430
SUB-BASE: 36" High, Cast Iron On 24" Steel Beams.	4-S Auxiliary Weights.....	29,690	27,190	19,885	18,275	16,515
	4-D Auxiliary Weights.....			23,040	21,400	18,950

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

WALKING BEAM: 33' x 15¾" x 200 lbs., 16'-0" and 10'-11¼" working centers.	CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"				
HANGER: Hinged Horsehead with 1¼" Wireline, 28'-0" Long.	CRANK PINS	No. OT, Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	TAIL BEARING	No. O, 5¼" x 13½" Bronze Bushed				
SAMSON POST: Tripod, 17'-4" High.	WEIGHT	C-456DB-120-30A: 57,654 lbs. C-456S-120-30A: 58,054 lbs.				
CRANKS: No. 8292ROA, 92" Radius.	Counterweight Number					
POLISHED ROD STROKES: 120", 103", 85.3", 67.6"	COUNTERBALANCE, LBS., At Max. Stroke	00RO	#0RO	1RO	2RO	3CRO
BASE: 16" Deep, 46¾" Wide at Gear Box.	8292ROA Cranks.....	20,285	18,255	13,585	12,245	10,785
SUB-BASE: 36" High, Cast Iron On 14" Steel Beams.	4-S Auxiliary Weights.....	25,105	22,875	16,440	15,055	13,520
	4-D Auxiliary Weights.....	29,925	27,495	19,295	17,865	15,720

C-456DB-108-30A and C-456S-108-30A PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 30' x 15" x 172 lbs., 14'-0¾" and 10'-11¼" working centers.	CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"				
HANGER: Hinged Horsehead with 1¼" Wire Line, 28'-0" Long.	CRANK PINS	No. OT, Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.	TAIL BEARING	No. O, 5¼" x 13½" Bronze Bushed				
SAMSON POST: Tripod, 17'-4" high.	WEIGHT	C-456DB-108-30A: 55,550 lbs. C-456S-108-30A: 55,950 lbs.				
CRANKS: No. 8478ROA, 78" Radius.	Counterweight Number					
POLISHED ROD STROKES: 108.4", 92.9", 77.4", 61.9"	COUNTERBALANCE, LBS., At Max. Stroke	#0RO	1RO	2RO	3CRO	
BASE: 16" Deep, 46¾" Wide at Gear Box.	8478ROA Cranks.....	16,555	12,775	11,635	10,415	9,195
SUB-BASE: 36" High, Cast Iron.	4-S Auxiliary Weights.....	20,510	15,270	14,115	12,855	11,595
	4-D Auxiliary Weights.....	24,465	17,765	16,595	14,835	13,415

* This unit also in stock at Los Angeles.
 # Counterweights used to calculate weight of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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

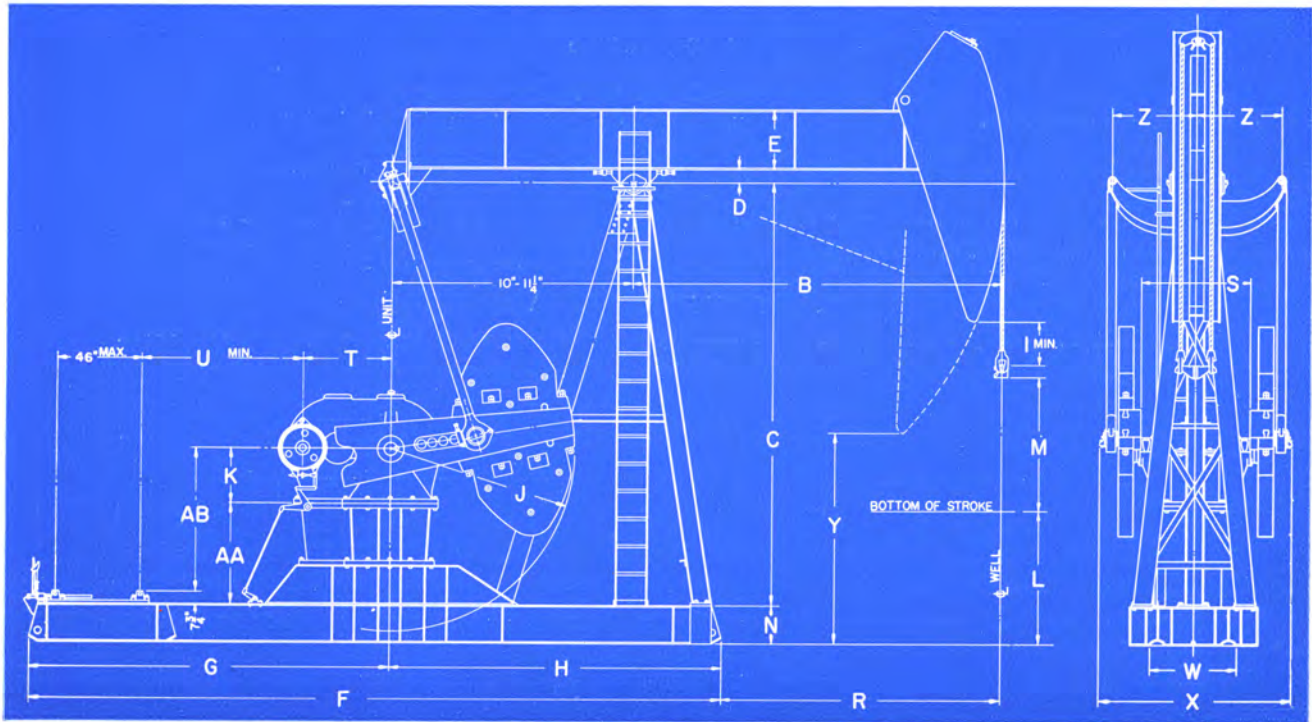


FIGURE 23

UNIT	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T	U	W	X	Y	Z	AA	AB
C-456DB-144-30D	16'-9"	19'-4"	7"	33"	31'-5"	16'-4"	15'-1"	19 1/2"	100"	28"	71 3/4"	72"	16 1/8"	12'-7 1/4"	61 1/4"	38 3/8"	8'-1 1/8"	46 3/4"	8'-6 5/8"	9'-4"	46 1/4"	60 1/8"	80 5/8"
C-456DB-120100-30A	16'-0"	17'-4"	7"	33"	31'-5"	16'-4"	15'-1"	24"	100"	28"	70 1/2"	60"	16 1/8"	11'-10 1/4"	61 1/4"	38 3/8"	8'-1 1/8"	46 3/4"	8'-6 5/8"	8'-10 5/8"	46 1/4"	60 1/8"	80 5/8"
C-456DB-120-30A	16'-0"	17'-4"	7"	33"	30'-5"	15'-4"	15'-1"	24"	92"	28"	70 1/2"	60"	16 1/8"	11'-10 1/4"	61 1/4"	38 3/8"	7'-1 1/8"	46 3/4"	8'-6 5/8"	8'-10 5/8"	46 1/4"	50"	70 1/4"
C-456DB-108-30A	14'-0 3/4"	17'-4"	7"	29 7/8"	30'-5"	15'-4"	15'-1"	28 1/2"	78"	28"	6'-4 5/8"	54.2"	16 1/8"	9'-11"	63 1/2"	38 3/8"	7'-1 1/8"	46 3/4"	8'-6 5/8"	10'-0 1/8"	46 1/4"	36"	56 1/4"

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

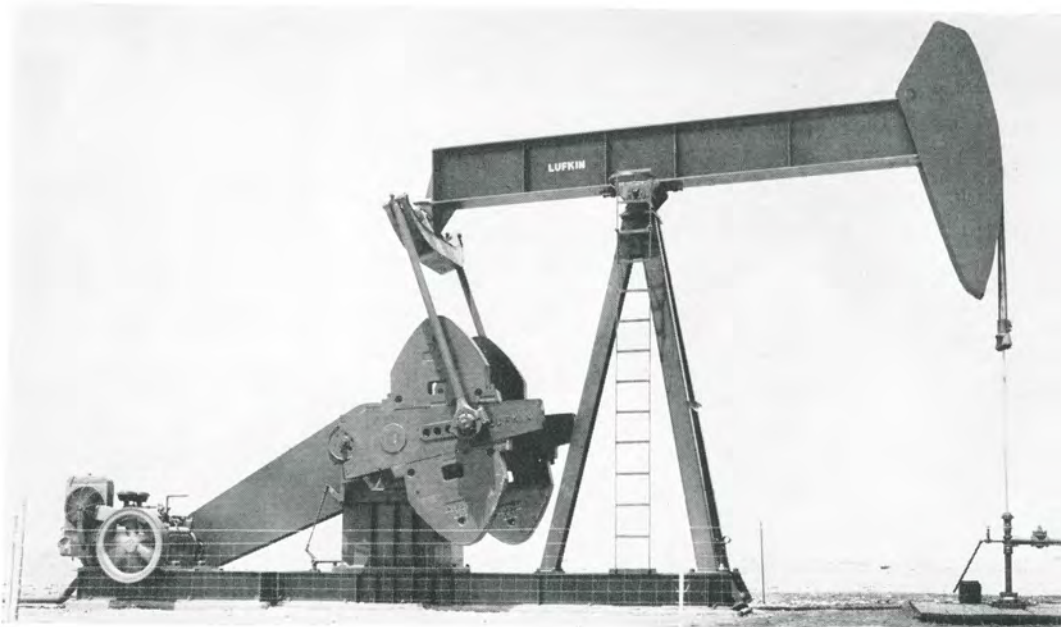


FIGURE 24



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

GENERAL SPECIFICATIONS

Lufkin 320,000 In. Lbs. Peak Torque Pumping Units

320 API Size

GEAR DATA

GEAR REDUCER: Double Reduction

Designation: 320D (Formerly 41D)
 Gears: Main Gear 33.6" Diam., 10" Face.
 Rating: 320,000 In. Lbs. Peak Torque.
 Ratio of Gears: 30:12.
 Crank Shaft Diam.: 6-7/16".
 Sheave: 25" P.D.—8C Std., 30" P.D. Alternate, 47 1/4" P.D. Max.,
 2-15/16" Bore.
 Distance Centerline Unit to Centerline Drive: 19 1/2".
 Gear Box Oil Capacity: 50 Gallons.

GEAR REDUCER: Single Reduction

Designation: 320S (Formerly 54C).
 Gears: Main Gear 47" Diam., 10" Face.
 Rating: 320,000 In. Lbs. Peak Torque.
 Ratio of Gears: 9.4.
 Crank Shaft Diam.: 6-7/16".
 Sheave: 34" P.D.—12C or 7D Std., 34" P.D. Max., 3-7/16" Bore.
 Distance Centerline Unit to Centerline Drive: 16 1/2".
 Gear Box Oil Capacity: 25 Gallons.

STRUCTURAL DATA

***C-320D-120-25B and C-320S-120-25B PUMPING UNIT ASSEMBLIES—25,000 Lb. Polished Rod Load Class**

WALKING BEAM: 30" x 15" x 172 lbs., 14'-3 1/4" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1 1/4" Wire Line, 28'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
SAMSON POST: Tripod, 15'-9" high.
CRANKS: No. 8482ROA, 82" Radius.
POLISHED ROD STROKES: 120", 103", 85.5", 68.5"
BASE: 16" Deep, 43" Wide at Gear Box.
SUB-BASE: 39" High Cast Iron.

CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS	No. 2LT, Tapered Roller Bearings
TAIL BEARING	No. 1, 4 1/8" x 12", Bronze Bushed
WEIGHT	C-320D-120-25B: 47,431 lbs. C-320S-120-25B: 47,131 lbs.
Counterweight Number	
COUNTERBALANCE, LBS., At Max. Stroke	
	#0RO #1RO #2RO #3CRO
8482ROA Cranks	15,350 11,590 10,480 9,270
4-S Auxiliary Weights	19,220 14,020 12,790 11,630
4-D Auxiliary Weights	23,090 16,450 15,100 13,520

C-320D-100-28B and C-320S-100-28B PUMPING UNIT ASSEMBLIES—28,000 Lbs. Polished Rod Load Class

WALKING BEAM: 30" x 15" x 172 lbs., 11'-11" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
SAMSON POST: Tripod, 15'-9" High.
CRANKS: No. 8482ROA, 82" Radius.
POLISHED ROD STROKES: 100", 85.7", 71.4", 57.2"
BASE: 16" Deep, 43" Wide at Gear Box.
SUB-BASE: 39" High, Cast Iron.

CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS	No. 2LT, Tapered Roller Bearings
TAIL BEARING	No. 1, 4 1/8" x 12", Bronze Bushed
WEIGHT	C-320D-100-28B: 41,643 lbs. C-320S-100-28B: 41,343 lbs.
Counterweight Number	
COUNTERBALANCE, LBS., At Max. Stroke	
	#0RO #1RO #2RO #3CRO
8482ROA Cranks	18,705 14,190 12,865 11,385
4-S Auxiliary Weights	23,350 17,110 15,750 14,215
4-D Auxiliary Weights	27,995 20,030 18,635 16,495

C-320D-84-30B and C-320S-84-30B PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 30" x 15" x 172 lbs., with 12'-6" and 12'-6" working centers.
HANGER: Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
SAMSON POST: Tripod, 15'-9" high.
CRANKS: No. 8482ROA, 82" Radius.
POLISHED ROD STROKES: 84", 72", 60", 48"
BASE: 16" Deep, 43" Wide at Gear Box.
SUB-BASE: 39" High, Cast Iron.

CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS	No. 2LT, Tapered Roller Bearings
TAIL BEARING	No. 1, 4 1/8" x 12", Bronze Bushed
WEIGHT	C-320D-84-30B: 42,943 lbs. C-320S-84-30B: 42,643 lbs.
Counterweight Number	
COUNTERBALANCE, LBS., At Max. Stroke	
	#0RO #1RO #2RO #3CRO #5ARO
8482ROA Cranks	23,480 18,090 16,520 14,770 12,780
4-S Auxiliary Weights	29,010 21,600 19,950 18,140 15,135
4-D Auxiliary Weights	25,050 23,380 20,845 17,040

***C-320D-84-27B and C-320S-84-27B PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class**

WALKING BEAM: 24 3/4" x 14 1/2" x 160 lbs., 11'-4 1/4" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
SAMSON POST: Tripod, 15'-9" high.
CRANKS: No. 7475ROA, 75" Radius.
POLISHED ROD STROKES: 84", 72.5", 61", 50"
BASE: 16" Deep, 43" Wide at Gear Box.
SUB-BASE: 32" High, Cast Iron.

CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS	No. 2T, Tapered Roller Bearings
TAIL BEARING	No. 1, 4 1/8" x 12", Bronze Bushed
WEIGHT	C-320D-84-27B: 40,021 lbs. C-320S-84-27B: 39,721 lbs.
Counterweight Number	
COUNTERBALANCE, LBS., At Max. Stroke	
	#1RO #2RO #3CRO #5ARO
7475ROA Cranks	15,145 13,765 12,275 10,585
4-S Auxiliary Weights	18,190 16,795 15,260 12,695
4-D Auxiliary Weights	21,235 19,825 17,655 14,395

C-320D-74-27B and C-320S-74-27B PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 14" x 130 lbs., 10'-0" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1 1/4" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
SAMSON POST: Tripod, 15'-9" high.
CRANKS: No. 7475ROA, 75" Radius.
POLISHED ROD STROKES: 74", 64", 54", 44"
BASE: 16" Deep, 43" Wide at Gear Box.
SUB-BASE: 32" High, Cast Iron.

CENTER BEARING	No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS	No. 2T, Tapered Roller Bearings
TAIL BEARING	No. 1, 4 1/8" x 12", Bronze Bushed
WEIGHT	C-320D-74-27B: 38,533 lbs. C-320S-74-27B: 38,233 lbs.
Counterweight Number	
COUNTERBALANCE, LBS., At Max. Stroke	
	1RO #2RO #3CRO #5ARO #5CRO
7475ROA Cranks	17,620 16,075 14,380 12,450 10,770
4-S Auxiliary Weights	21,075 19,515 17,770 14,850 12,935
4-D Auxiliary Weights	24,530 22,955 20,500 16,780 15,100

* This unit also in stock at Los Angeles.
 # Counterweights used to calculate weight of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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

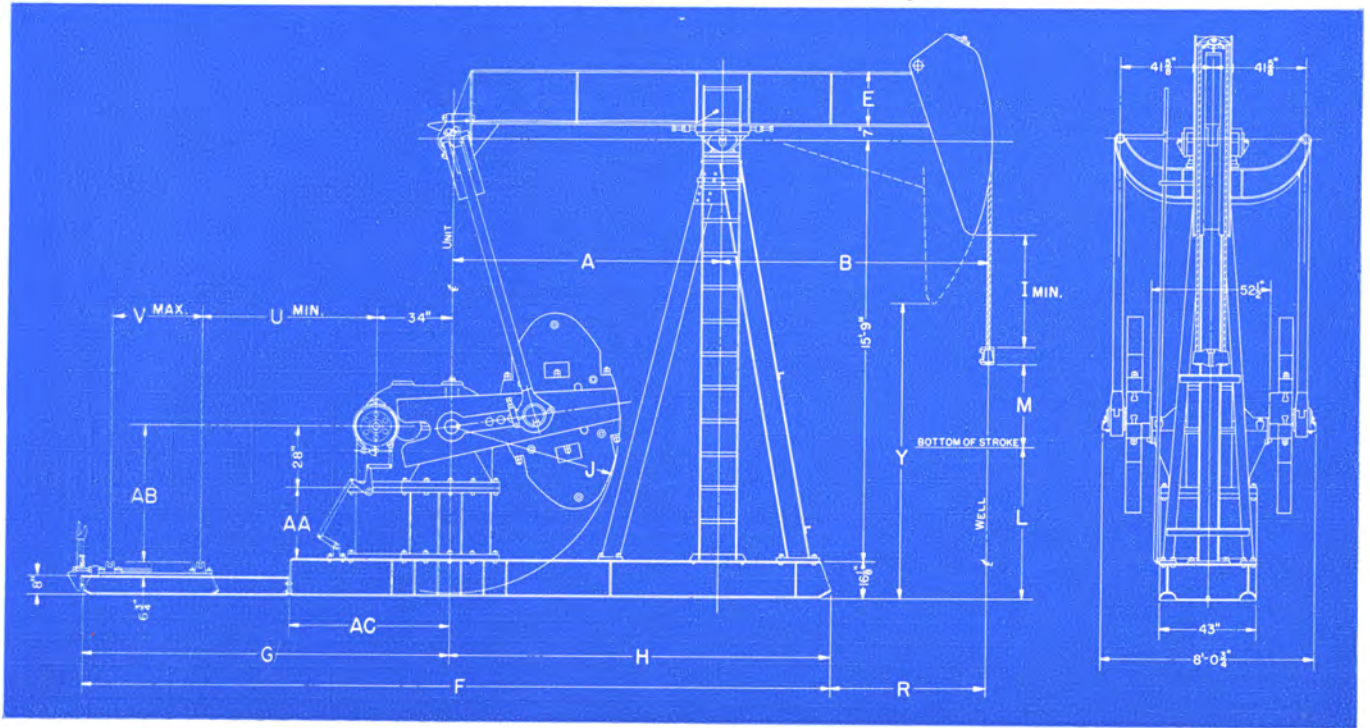


FIGURE 25

UNIT	A	B	E	F	G	H	I	J	L	M	R	U	V	Y	AA	AB	AC
*C-320D-120-25B	10'-0"	14'-3 1/2"	20 7/8"	27'-4 1/2"	13'-1 1/2"	14'-3"	17 1/4"	82"	58 1/2"	60"	10'-0 1/2"	65"	45 3/4"	7'-7 1/4"	39"	60 1/4"	70 1/4"
*C-320D-100-28B	10'-0"	11'-11"	20 7/8"	27'-4 1/2"	13'-1 1/2"	14'-3"	18 7/8"	82"	79 1/8"	50"	7'-8"	65"	45 3/4"	9'-0"	39"	60 1/4"	70 1/4"
C-320D-84-30B	12'-6"	12'-6"	20 7/8"	29'-4 3/4"	12'-6"	16'-10 3/4"	36 1/4"	82"	74 5/8"	42"	8'-11 1/4"	63 1/2"	41"	10'-2 3/4"	39"	68 3/8"	58"
*C-320D-84-27B	10'-0"	11'-4 1/4"	24 3/4"	25'-10"	11'-7"	14'-3"	36 7/8"	75"	73 7/8"	42"	7'-11 1/4"	48 1/4"	41 1/2"	10'-3 1/2"	32"	53 1/4"	70 1/4"
*C-320D-74-27B	10'-0"	10'-0"	24 1/4"	25'-10"	11'-7"	14'-3"	46 1/2"	75"	75"	37"	5'-9"	48 1/4"	41 1/2"	11'-1 1/8"	32"	53 1/4"	70 1/4"

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



FIGURE 26



LUFKIN FOUNDRY & MACHINE CO.

LUFKIN, TEXAS

GENERAL SPECIFICATIONS

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

GEAR DATA

GEAR REDUCER: Double Reduction

Designation: 228D (Formerly 35B)
Gears: Main Gear 30.3" Diam., 9" Face.
Rating: 228,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.45.
Crank Shaft Diam.: 6".
Sheave: 24 1/4" P.D.—6C Std., 30" P.D. Alt., 41 1/4" P.D. Max.,
2-7/16" Bore.
Distance Centerline Unit to Centerline Drive: 16 1/2".
Gear Box Oil Capacity: 34 Gallons.

GEAR REDUCER: Single Reduction

Designation: 228S (Formerly 36B)
Gears: Main Gear 45.4" Diam., 8" Face.
Rating: 228,000 In. Lbs. Peak Torque.
Ratio of Gears: 9.94.
Crank Shaft Diam.: 6".
Sheave: 34" P.D.—9C or 6D Std., 34" P.D. Max., 3-3/16" Bore.
Distance Centerline Unit to Centerline Drive: 15 1/2".
Gear Box Oil Capacity: 18 Gallons.

STRUCTURAL DATA

*C-228D-84-22.1A and C-228S-84-22.1A PUMPING UNIT ASSEMBLIES—22,100 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 12" x 100 lbs. with 10'-0" and 8'-0" working centers.	CENTER BEARING	No. 2AD, Bronze Bushed, 6" x 17"				
HANGER: Hinged Horsehead with 1 1/8" Wire Line, 23' 3"-0" Long.	CRANK PINS	No. 2T, Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed				
SAMSON POST: Tripod, 14'-7" High.	WEIGHT	31,995 lbs.				
CRANKS: No. 7475ROA, 75" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number				
POLISHED ROD STROKES: 84", 72.5", 61", 50".		1RO	#2RO	3CRO	5ARO	
BASE: 16" Deep, 37" Wide at Gear Box.		7475ROA Cranks	14,605	13,255	11,735	10,045
SUB-BASE: 33" High, Cast Iron.		4-S Auxiliary Weights	17,650	16,255	14,720	12,155
		4-D Auxiliary Weights	20,695	19,285	17,115	13,885

C-228D-74-27B and C-228S-74-27B PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 14" x 130 lbs., with 10'-0" and 10'-0" working centers.	CENTER BEARING	No. 2AD, Bronze Bushed, 6" x 17"					
HANGER: Hinged Horsehead with 1 1/8" Wire Line, 25'-0" Long.	CRANK PINS	No. 2T, Tapered Roller Bearings					
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.	TAIL BEARING	No. 1, 4 1/2" x 12" Bronze Bushed					
SAMSON POST: Tripod, 14'-7" High.	WEIGHT	33,373 lbs.					
CRANKS: No. 7475ROA, 75" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number					
POLISHED ROD STROKES: 74", 64", 54", 44".		1RO	#2RO	3CRO	5ARO	5CRO	
BASE: 16" Deep, 37" Wide at Gear Box.		7475ROA Cranks	17,385	15,840	14,145	12,215	10,535
SUB-BASE: 33" High, Cast Iron.		4-S Auxiliary Weights	20,840	19,280	17,535	14,615	12,700
		4-D Auxiliary Weights	24,295	22,720	20,265	16,545	14,865

*C-228D-74-23B and C-228S-74-23B PUMPING UNIT ASSEMBLIES—23,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers.	CENTER BEARING	No. 2AD, Bronze Bushed, 6" x 17"					
HANGER: Hinged Horsehead with 1 1/8" Wire Line, 23'-0" Long.	CRANK PINS	No. 2T, Tapered Roller Bearings					
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed					
SAMSON POST: Tripod, 14'-7" High.	WEIGHT	30,741 lbs.					
CRANKS: No. 7475ROA, 75" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number					
POLISHED ROD STROKES: 74", 64", 54", 44".		1RO	2RO	#3CRO	5ARO	5CRO	
BASE: 16" Deep, 37" Wide at Gear Box.		7475ROA Cranks	16,925	15,380	13,685	11,755	10,075
SUB-BASE: 33" High, Cast Iron.		4-S Auxiliary Weights	20,380	18,820	17,075	14,155	12,240
		4-D Auxiliary Weights	23,835	22,260	19,805	16,085	14,405

C-228D-74-20A and C-228S-74-20A PUMPING UNIT ASSEMBLIES—20,000 Lb. Polished Rod Load Class

WALKING BEAM: 27" x 10" x 102 lbs., 9'-3" and 8'-0" working centers.	CENTER BEARING	No. 2AD, Bronze Bushed, 6" x 17"					
HANGER: Hinged Horsehead with 1 1/8" Wire Line, 23'-0" Long.	CRANK PINS	No. 2T, Tapered Roller Bearings					
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed					
SAMSON POST: Tripod, 14'-7" High.	WEIGHT	29,596 lbs.					
CRANKS: No. 6466ROA, 65 1/2" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number					
POLISHED ROD STROKES: 74", 62.5", 51", 39".		1RO	#2RO	3CRO	5ARO	5CRO	
BASE: 16" Deep, 37" Wide at Gear Box.		6466ROA Cranks	12,910	11,710	10,415	8,905	7,515
SUB-BASE: 27" High, Cast Iron.		4-S Auxiliary Weights	15,710	14,515	13,215	10,930	9,350
		4-D Auxiliary Weights	18,510	17,320	15,475	12,550	11,185

C-228D-64-23A and C-228S-64-23A PUMPING UNIT ASSEMBLIES—23,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers.	CENTER BEARING	No. 2AD, Bronze Bushed, 6" x 17"				
HANGER: Hinged Horsehead with 1 1/8" Wire Line, 23'-0" Long.	CRANK PINS	No. 2T Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed				
SAMSON POST: Tripod, 14'-7" High.	WEIGHT	27,902 lbs.				
CRANKS: No. 6466ROA, 65 1/2" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number				
POLISHED ROD STROKES: 64", 54", 44", 34".		2RO	#3CRO	5ARO	5CRO	
BASE: 16" Deep, 37" Wide at Gear Box.		6466ROA Cranks	13,840	12,350	10,590	8,995
SUB-BASE: 27" High, Cast Iron.		4-S Auxiliary Weights	17,090	15,600	12,940	11,130
		4-D Auxiliary Weights	20,335	18,200	14,800	13,240

C-228D-64-20A and C-228S-64-20A PUMPING UNIT ASSEMBLIES—20,000 Lb. Polished Rod Load Class

WALKING BEAM: 27" x 10" x 102 lbs., 10'-0" and 10'-0" working centers.	CENTER BEARING	No. 2AD, Bronze Bushed, 6" x 17"				
HANGER: Hinged Horsehead with 1 1/8" Wire Line, 23'-0" Long.	CRANK PINS	No. 2T Tapered Roller Bearings				
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed				
SAMSON POST: Tripod, 14'-7" High.	WEIGHT	28,682 lbs.				
CRANKS: No. 6466ROA, 65 1/2" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number				
POLISHED ROD STROKES: 64", 54", 44", 34".		2RO	#3CRO	5ARO	5CRO	
BASE: 16" Deep, 37" Wide at Gear Box.		6466ROA Cranks	13,840	12,350	10,590	8,995
SUB-BASE: 27" High, Cast Iron.		4-S Auxiliary Weights	17,090	15,600	12,940	11,130
		4-D Auxiliary Weights	20,335	18,200	14,800	13,240

* This unit also in stock at Los Angeles.
Counterweights used to calculate weight of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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

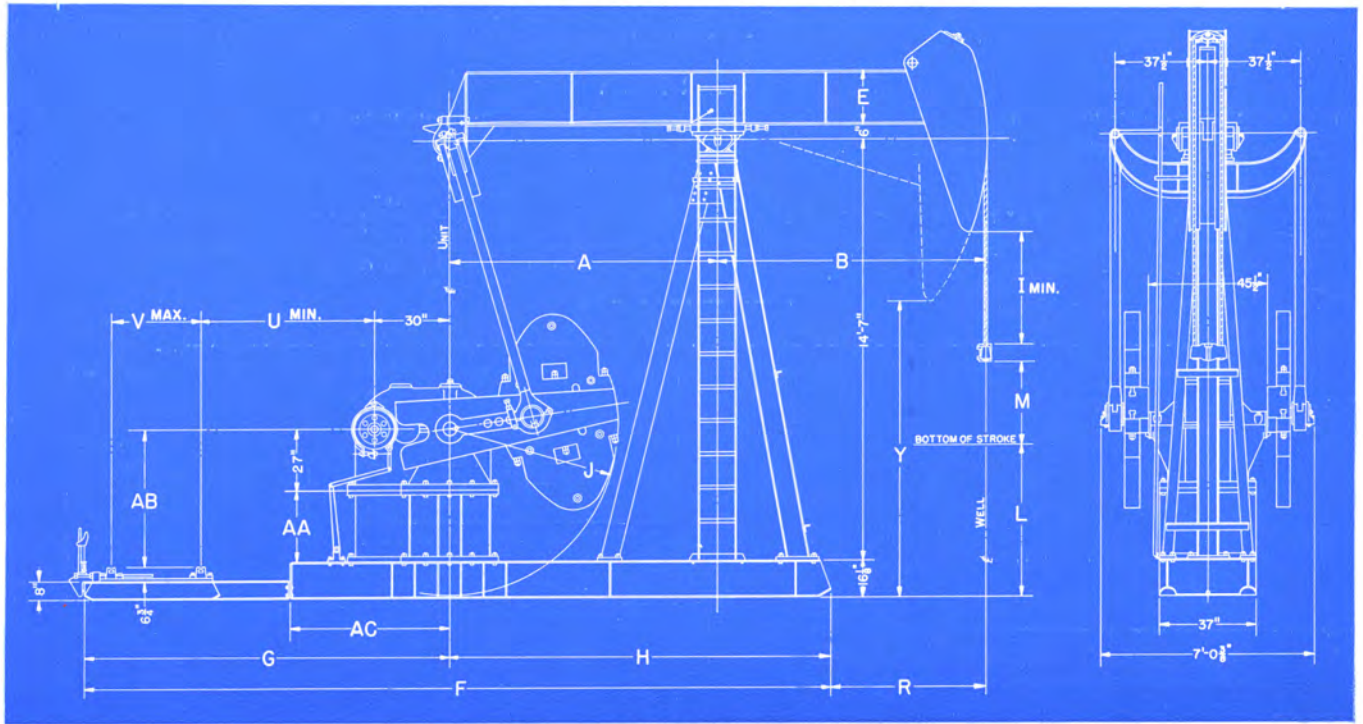


FIGURE 27

UNIT	A	B	E	F	G	H	I	J	L	M	R	U	V	Y	AA	AB	AC
*C-228D-84-22.1A	8'-0"	9'-1"	24"	24'-10"	13'-1"	11'-0"	21 1/4"	75"	6'-2"	42"	5'-4"	66 1/4"	48"	9'-4"	33"	53 7/8"	64 1/2"
C-228D-74-27B	10'-0"	10'-0"	24 1/4"	26'-2"	12'-5"	13'-0"	46"	75"	5'-0 1/8"	37"	6'-3"	56 3/4"	50 1/2"	9'-10"	33"	61 3/8"	68"
*C-228D-74-23A	8'-0"	8'-0"	24"	24'-10"	13'-1"	11'-0"	33 3/8"	75"	6'-1 3/8"	37"	4'-3"	66 1/4"	48"	10'-2"	33"	53 7/8"	64 1/2"
*C-228D-74-20A	8'-0"	9'-3"	27 1/8"	24'-10"	13'-1"	11'-0"	33 1/2"	66"	6'-0 1/4"	37"	5'-6"	66 1/4"	48"	9'-10 1/2"	27"	47 1/4"	64 1/2"
*C-228D-64-23A	8'-0"	8'-0"	24"	24'-10"	13'-1"	11'-0"	43 7/8"	66"	6'-1 1/4"	32"	4'-3"	66 1/4"	48"	10'-10"	27"	47 1/4"	64 1/2"
C-228D-64-20A	10'-0"	10'-0"	27 1/8"	26'-2"	12'-5"	13'-0"	42 1/8"	66"	6'-1 1/2"	32"	6'-3"	56 3/4"	50 1/2"	10'-6"	27"	55 3/8"	68"

Full length, one Piece Base is standard; for others Jointed Base illustrated is standard.



FIGURE 28



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

GENERAL SPECIFICATIONS

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

160 API Size

GEAR DATA

GEAR REDUCER: Double Reduction

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

GEAR REDUCER: Single Reduction

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

STRUCTURAL DATA

*C-160D-74-20A and C-160S-74-20A PUMPING UNIT ASSEMBLIES—20,000 Lb. Polished Rod Load Class

WALKING BEAM: 27" x 10" x 102 lbs., 9'-3" and 8'-0" working centers.
 HANGER: Hinged Horsehead with 1 1/2" Wire Line, 20'-0" Long.
 PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
 SAMSON POST: Tripod, 12'-1" High.
 CRANKS: No. 6460ROA, 59 1/2" Radius.
 POLISHED ROD STROKES: 74", 62.5", 51", 39"
 BASE: 10" Deep, 32" Wide at Gear Box.
 SUB-BASE: C-160D-74-20A: 24" High Cast Iron.
 C-160D-7466-20A: 16" High Cast Iron on 14" High Steel Beams.

CENTER BEARING	No. 3AD Bronze Bushed, 6" x 14"			
CRANK PINS	No. 2T, Tapered Roller Bearings			
TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed			
WEIGHT	24,542 lbs.			
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	#2RO	3CRO	5ARO	5CRO
6460ROA Cranks	9,630	8,575	7,340	
4-S Auxiliary Weights	12,025	10,615	9,105	
4-D Auxiliary Weights	14,425	12,915	10,575	
6466ROA Cranks	11,585	10,290	8,780	7,390
4-S Auxiliary Weights	14,390	13,090	10,805	9,225
4-D Auxiliary Weights	17,195	15,350	12,425	11,060

*C-160D-64-23A and C-160S-64-23A PUMPING UNIT ASSEMBLIES—23,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 12" x 100 lbs., 8'-0" and 8'-0" working centers.
 HANGER: Hinged Horsehead with 1 1/2" Wire Line, 20'-0" Long.
 PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
 SAMSON POST: Tripod, 12'-1" High.
 CRANKS: No. 6460ROA, 59 1/2" Radius.
 POLISHED ROD STROKES: 64", 54", 44", 34"
 BASE: 10" Deep, 32" Wide at Gear Box.
 SUB-BASE: C-160D-64-23A: 24" High Cast Iron.
 C-160D-6466-23A: 16" High Cast Iron on 14" High Steel Beams.

CENTER BEARING	No. 3AD, Bronze Bushed, 6" x 14"			
CRANK PINS	No. 2T Tapered Roller Bearings			
TAIL BEARING	No. 2, 4 1/2" x 9 1/4", Bronze Bushed			
WEIGHT	24,372 lbs.			
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	#2RO	3CRO	5ARO	5CRO
6460ROA Cranks	11,465	10,235	8,815	
4-S Auxiliary Weights	14,225	13,015	10,860	
4-D Auxiliary Weights	16,985	15,255	12,535	
6466ROA Cranks	13,715	12,225	10,465	8,870
4-S Auxiliary Weights	16,965	15,475	12,815	11,005
4-D Auxiliary Weights	20,210	18,075	14,675	13,115

*C-160D-64-18.8B and C-160S-64-18.8B PUMPING UNIT ASSEMBLIES—18,800 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 9" x 84 lbs., 7'-8" and 5'-3 1/4" working centers.
 HANGER: Hinged Horsehead with 1" Wire Line 19'-0" Long.
 PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
 SAMSON POST: Tripod, 12'-1" High.
 CRANKS: No. 4460ROA, 59 1/2" Radius.
 POLISHED ROD STROKES: 64", 49.5", 34.9"
 BASE: 10" Deep, 32" Wide at Gear Box.
 SUB-BASE: 24" High, Cast Iron.

CENTER BEARING	No. 3AD Bronze Bushed, 6" x 14"			
CRANK PINS	No. 2T, Tapered Roller Bearings			
TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed			
WEIGHT	21,468 lbs.			
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	2RO	=3CRO	5ARO	5CRO
4460ROA Cranks	11,060	9,830	8,410	7,010
4-S Auxiliary Weights	13,825	12,610	10,455	8,870
4-D Auxiliary Weights	16,580	14,850	12,130	10,750

C-160D-64-16B and C-160S-64-16B PUMPING UNIT ASSEMBLIES—16,000 Lbs. Polished Rod Load Class

WALKING BEAM: 18" x 8 3/4" x 77 lbs., 7'-0" and 7'-0" working centers.
 HANGER: Hinged Horsehead with 1" Wire Line, 19'-0" Long.
 PITMAN: Universal Equalizer with Bearing "in line", 3" Extra Heavy Pipe.
 SAMSON POST: Tripod, 12'-0" High.
 CRANKS: No. 6460ROA, 59 1/2" Radius.
 POLISHED ROD STROKES: 64", 54", 44", 34"
 BASE: 10" Deep, 32" Wide at Gear Box.
 SUB-BASE: 24" High, Cast Iron.

CENTER BEARING	No. 4AD, Bronze Bushed, 5" x 10 1/2"			
CRANK PINS	No. 2T, Tapered Roller Bearings			
TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed			
WEIGHT	19,923 lbs.			
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	2RO	3CRO	=5ARO	5CRO
6460ROA Cranks	11,840	10,610	9,190	7,790
4-S Auxiliary	14,600	13,390	11,235	9,650
4-D Auxiliary Weights	17,360	15,630	12,910	11,500

C-160D-54-18.9 and C-160S-54-18.9 PUMPING UNIT ASSEMBLIES—18,900 Lb. Polished Rod Load Class

WALKING BEAM: 21" x 9" x 82 lbs., 7'-0" and 7'-0" working centers.
 HANGER: Hinged Horsehead with 1" Wire Line 16'-0" Long.
 PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
 SAMSON POST: Tripod, 10'-6 1/2" High.
 CRANKS: No. 5452ROA, 51 1/2" Radius.
 POLISHED ROD STROKES: 54", 44", 34"
 BASE: 10" Deep, 32" Wide at Gear Box.
 SUB-BASE: 16" High, Cast Iron.

CENTER BEARING	No. 3AD, Bronze Bushed, 6" x 14"			
CRANK PINS	No. 2T Tapered Roller Bearings			
TAIL BEARING	No. 2, 4 1/2" x 9 1/4" Bronze Bushed			
WEIGHT	20,509 lbs.			
COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	=3CRO	5ARO	5CRO	
5452ROA Cranks		9,460	8,240	6,930
4-S Auxiliary Weights		12,090	10,230	8,730
4-D Auxiliary Weights		14,190	11,860	10,550

* This unit also in stock at Los Angeles.
 = Counterweights used to calculate weight of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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

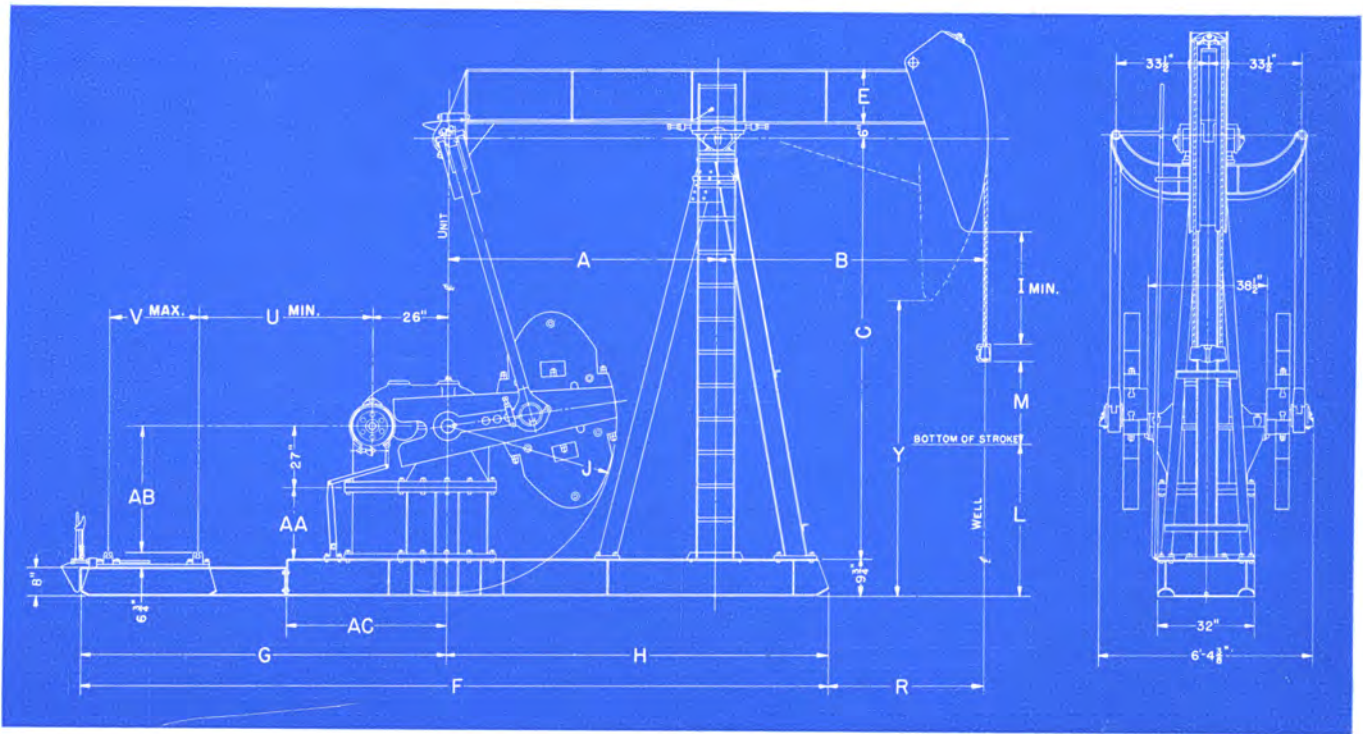


FIGURE 29

UNIT	A	B	C	E	F	G	H	I	J	L	M	R	U	V	Y	AA	AB	AC
C-160D-74-20A	8'-0"	9'-3"	12'-1"	27 1/8"	22'-2"	11'-0"	11'-2"	15 1/2"	59 1/2"	55"	37"	73"	53 3/4"	40 1/2"	6'-10 1/8"	24"	46"	52 1/4"
C-160D-64-23A	8'-0"	8'-0"	12'-1"	24"	22'-2"	11'-0"	11'-2"	25 3/4"	59 1/2"	55 3/8"	32"	58"	53 3/4"	40 1/2"	7'-9 1/2"	24"	46"	52 1/4"
*C-160D-64-18.8B	5'-3 1/4"	7'-8"	12'-1"	24 1/8"	20'-0"	11'-11 1/4"	8'-10 3/4"	26 1/2"	59 1/2"	55 1/4"	32"	48 1/2"	54 1/8"	41"	7'-9"	24"	44 1/4"	40 1/2"
C-160D-64-16B	7'-0"	7'-0"	12'-0"	18 1/8"	19'-10"	11'-0"	8'-10"	28 5/8"	59 1/2"	53 3/4"	32"	62"	53 3/4"	40 1/2"	7'-10 3/8"	24"	46"	52 1/4"
C-160D-54-18.9	7'-0"	7'-0"	10'-6 1/2"	20 7/8"	19'-10"	11'-0"	8'-10"	16 7/8"	51 1/2"	58 1/2"	27"	62"	53 3/4"	40 1/2"	7'-0 3/4"	16"	38"	52 1/4"
C-160D-54-18A	8'-0"	8'-0"	12'-1"	24 1/8"	22'-2"	11'-0"	11'-2"	36 1/8"	51 1/2"	57"	27"	58"	53 3/4"	40 1/2"	8'-5 3/4"	16"	38"	52 1/4"
*C-160D-54-17A	5'-3 1/4"	7'-0"	12'-1"	18 1/8"	18'-6"	9'-7 1/4"	8'-10 3/4"	34 7/8"	51 1/2"	58 3/4"	27.2"	40 1/2"	36 1/8"	41"	8'-7"	16"	36 1/4"	40 1/2"

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

STRUCTURAL DATA

C-160D-54-18A and C-160S-54-18A PUMPING UNIT ASSEMBLIES—18,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 9" x 84 lbs., 8'-0" and 8'-0" working centers	CENTER BEARING..	No. 3AD, Bronze Bushed, 6" x 14"
HANGER: Hinged Horsehead with 1" Wire Line, 19'-0" Long.	CRANK PINS.....	No. 2T Tapered Roller Bearings
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING.....	No. 2, 4 1/2" x 9 1/2" Bronze Bushed
SAMSON POST: Tripod, 12'-1" high.	WEIGHT.....	21,390 lbs.
CRANKS: No. 5452ROA, 51 1/2" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	
POLISHED ROD STROKES: 54.4", 41.2", 27.9"	Counterweight Number	
BASE: 10" Deep, 32" Wide at Gear Box.	=3CRO	5ARO
SUB-BASE: 16" High, Cast Iron.	=5CRO	5CRO
	5452ROA Cranks.....	9,460
	4-S Auxiliary Weights.....	12,090
	4-D Auxiliary Weights.....	14,190
		8,240
		10,230
		11,860
		6,930
		8,730
		10,550

C-160D-54-17A and C-160S-54-17A PUMPING UNIT ASSEMBLIES—17,000 Lb. Polished Rod Load Class

WALKING BEAM: 18" x 8 3/4" x 17 lbs., 7'-0" and 5'-3 1/4" working centers.	CENTER BEARING..	No. 3AD, Bronze Bushed, 6" x 14"
HANGER: Hinged Horsehead with 1" Wire Line 19'-0" Long.	CRANK PINS.....	No. 2T, Tapered Roller Bearings
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.	TAIL BEARING.....	No. 2, 4 1/2" x 9 1/2" Bronze Bushed
SAMSON POST: Tripod, 12'-1" High.	WEIGHT.....	20,158 lbs.
CRANKS: No. 4152ROA, 51 1/2" Radius.	COUNTERBALANCE, LBS., At Max. Stroke	
POLISHED ROD STROKES: 54.4", 41.2", 27.9"	Counterweight Number	
BASE: 10" Deep, 32" Wide at Gear Box.	=3CRO	5ARO
SUB-BASE: 16" High Cast Iron.	=5CRO	5CRO
	4152ROA Cranks.....	9,050
	4-S Auxiliary Weights.....	11,660
	4-D Auxiliary Weights.....	13,770
		7,870
		9,855
		8,350
		10,155

= Counterweights used to calculate weight of unit.

LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

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

GEAR DATA

GEAR REDUCER: Double Reduction

Designation: 114DA (Formerly 15B).
Gears: Main Gear 23.7" Diam., 6 1/4" Face.
Rating: 114,000 In. Lbs. Peak Torque.
Ratio of Gears: 29.4
Crank Shaft Diam.: 4-7/16".
Sheave: 19 1/4" P.D.—4C Std., 33 1/4" P.D.,
Max., 1-15/16" Bore.
Distance Centerline Unit to
Centerline Drive: 12 1/2".
Gear Box Oil Capacity: 17 Gallons.

GEAR REDUCER: Single Reduction

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

GEAR REDUCER: Double Reduction

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

STRUCTURAL DATA

C-114DA-64-15B and C-114SA-64-15B PUMPING UNIT ASSEMBLIES—15,000 Lb. Polished Rod Load Class

WALKING BEAM: 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line 19'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe.
SAMSON POST: Tripod, 12'-1" High.
CRANKS: No. 6460ROA, 59 1/2" Radius.
POLISHED ROD STROKES: 64", 54", 44", 34".
BASE: 8" Deep, 25" Wide at Gear Box.
SUB-BASE: 21" High Cast Iron on 14" Deep Steel Beams.

CENTER BEARING ..	No. 3AD, Bronze Bushed, 6" x 14"
CRANK PINS	No. 3TC, Tapered Roller Bearings
TAIL BEARING	No. 3, 3 1/2" x 7 1/4", Bronze Bushed
WEIGHT	18,244 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	
Counterweight Number	
6460ROA Cranks	2RO 11,170 3CRO 9,940 #5ARO 8,520 5CRO 7,120
4-S Auxiliary Weights	13,930 12,720 10,565 8,980
4-D Auxiliary Weights	16,690 14,960 12,240 10,840

C-114DA-64-11.6A and C-114SA-64-11.6A PUMPING UNIT ASSEMBLIES—11,600 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8 1/2" x 64 lbs., 7'-1 1/4" and 6'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line 16'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe.
SAMSON POST: Tripod, 10'-4" High.
CRANKS: No. 5452ROA, 51 1/2" Radius.
POLISHED ROD STROKES: 54", 44", 34".
BASE: 8" Deep, 25" Wide at Gear Box.
SUB-BASE: 27" High Cast Iron.

CENTER BEARING ..	No. 4AD, Bronze Bushed, 5" x 10 1/2"
CRANK PINS	No. 3TC, Tapered Roller Bearings
TAIL BEARING	No. 3, 3 1/2" x 7 1/4" Bronze Bushed
WEIGHT	15,156 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	
Counterweight Number	
5452ROA Cranks	3CRO 7,440 #5ARO 6,415 5CRO 5,315
4-S Auxiliary Weights	9,650 8,095 6,840
4-D Auxiliary Weights	11,435 9,465 8,365

C-114DA-54-16B and C-114SA-54-16B PUMPING UNIT ASSEMBLIES—16,000 Lb. Polished Rod Load Class

WALKING BEAM: 18" x 8 3/4" x 77 lbs., 7'-0" and 7'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line, 16'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
SAMSON POST: Tripod, 10'-4" High.
CRANKS: No. 5452ROA, 51 1/2" Radius.
POLISHED ROD STROKES: 54", 44", 34".
BASE: 8" Deep, 25" Wide at Gear Box.
SUB-BASE: 27" High, Cast Iron.

CENTER BEARING ..	No. 4AD, Bronze Bushed, 5" x 10 1/2"
CRANK PINS	No. 3TC, Tapered Roller Bearings
TAIL BEARING	No. 2, 4 1/2" x 9 1/4", Bronze Bushed
WEIGHT	18,260 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	
Counterweight Number	
5452ROA Cranks	#3CRO 9,460 5ARO 8,240 5CRO 6,930
4-S Auxiliary Weights	12,090 10,230 8,730
4-D Auxiliary Weights	14,190 11,860 10,550

***C-114DA-54-15.6A and C-114SA-54-15.6A PUMPING UNIT ASSEMBLIES—15,600 Polished Rod Load Class**

WALKING BEAM: 16" x 8 1/2" x 71 lbs., 6'-0" and 6'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line, 16'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe.
SAMSON POST: Tripod, 10'-4" High.
CRANKS: No. 5452ROA, 51 1/2" Radius.
POLISHED ROD STROKES: 54", 44", 34".
BASE: 8" Deep, 25" Wide at Gear Box.
SUB-BASE: 27" High, Cast Iron.

CENTER BEARING ..	No. 4AD, Bronze Bushed, 5" x 10 1/2"
CRANK PINS	No. 3TC, Tapered Roller Bearings
TAIL BEARING	No. 3, 3 1/2" x 7 1/4" Bronze Bushed
WEIGHT	16,825 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	
Counterweight Number	
5452ROA Cranks	#3CRO 8,925 5ARO 7,705 5CRO 6,395
4-S Auxiliary Weights	11,555 9,695 8,215
4-D Auxiliary Weights	13,655 11,325 9,020

C-114DA-54-15A and C-114SA-54-15A PUMPING UNIT ASSEMBLIES—15,000 Lb. Polished Rod Load Class

WALKING BEAM: 21" x 9" x 82 lbs., 8'-0" and 8'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line, 19'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe.
SAMSON POST: Tripod, 12'-1" High.
CRANKS: No. 5452ROA, 51 1/2" Radius.
POLISHED ROD STROKES: 54", 44", 34".
BASE: 8" Deep, 25" Wide at Gear Box.
SUB-BASE: 27" High, Cast Iron.

CENTER BEARING ..	No. 3AD, Bronze Bushed, 6" x 14"
CRANK PINS	No. 3TC, Tapered Roller Bearings
TAIL BEARING	No. 3, 3 1/2" x 7 1/4", Bronze Bushed
WEIGHT	18,560 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	
Counterweight Number	
5452ROA Cranks	#3CRO 8,790 5ARO 7,570 5CRO 6,260
4-S Auxiliary Weights	11,420 9,560 8,080
4-D Auxiliary Weights	13,520 11,190 9,885

C-114DA-54-14A, C-114SA-54-14A and C-80DB-54-14A PUMPING UNIT ASSEMBLIES—14,000 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8 1/2" x 64 lbs., 6'-0" and 6'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line, 16'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 2 1/2" Extra Heavy Pipe
SAMSON POST: Tripod, 10'-4" High.
CRANKS: No. 5452ROA, 51 1/2" Radius.
POLISHED ROD STROKES: 54", 44", 34".
BASE: 8" Deep, 25" Wide at Gear Box.
SUB-BASE: 27" High, Cast Iron.

CENTER BEARING ..	No. 4AD, Bronze Bushed 5" x 10 1/2"
CRANK PINS	No. 3TC, Tapered Roller Bearings
TAIL BEARING	No. 3, 3 1/2" x 7 1/4", Bronze Bushed
WEIGHT	15,106 lbs.
COUNTERBALANCE, LBS., At Max. Stroke	
Counterweight Number	
5452ROA Cranks	3CRO 8,925 #5ARO 7,705 5CRO 6,395
4-S Auxiliary Weights	11,555 9,695 8,215
4-D Auxiliary Weights	13,655 11,325 9,020

* This unit also in stock at Los Angeles.
Counterweights used to calculate weight of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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

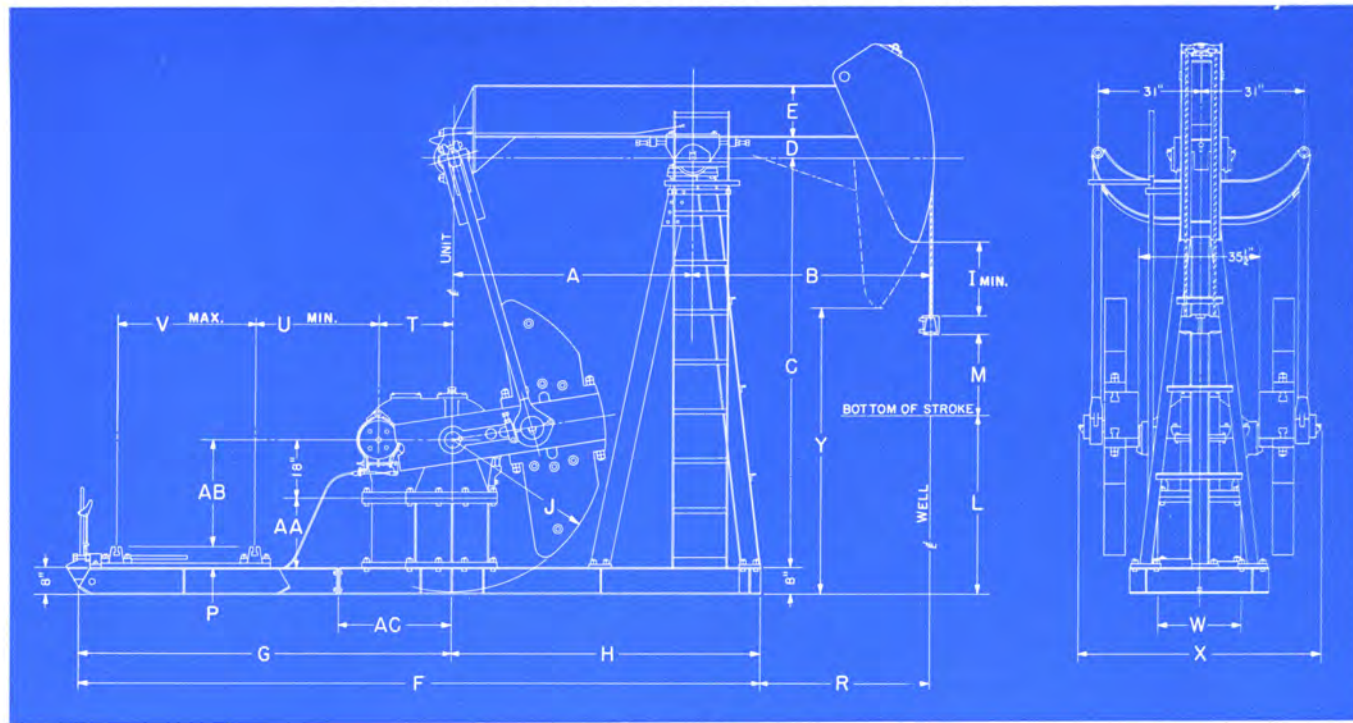


FIGURE 30

UNIT	A	B	C	D	E	F	G	H	I	J	L	M	P	R	T	U	V	W	X	Y	AA	AB	AC
C-114DA-64-15B	8'-0"	8'-0"	12'-1"	6"	20 ⁷ / ₈ "	22'-5 ³ / ₈ "	11'-2 ¹ / ₂ "	11'-3 ¹ / ₂ "	26 ¹ / ₂ "	59 ¹ / ₂ "	53 ¹ / ₂ "	32" 6 ¹ / ₂ "	56 ¹ / ₂ "	24" 57"	42" 25"	42" 25"	66 ³ / ₄ "	7'-7 ⁷ / ₈ "	34 ⁷ / ₈ "	46 ³ / ₈ "	50"		
C-114DA-64-11.6A	6'-0"	7'-1 ¹ / ₂ "	10'-4"	6"	16"	17'-7 ¹ / ₂ "	9'-10 ¹ / ₄ "	7'-9 ¹ / ₂ "	10 ⁵ / ₈ "	51 ¹ / ₂ "	50"	32" 6 ¹ / ₂ "	64"	24" 41"	42" 25"	42" 25"	70 ³ / ₄ "	6'-0 ⁵ / ₈ "	27"	38 ¹ / ₂ "	34"		
C-114DA-54-16B	7'-0"	7'-0"	10'-4"	6"	18 ¹ / ₈ "	19'-11 ¹ / ₂ "	11'-2 ¹ / ₂ "	8'-9 ¹ / ₂ "	16 ⁷ / ₈ "	51 ¹ / ₂ "	54 ¹ / ₂ "	27" 6 ¹ / ₂ "	62 ³ / ₄ "	24" 57"	42" 25"	42" 25"	66 ³ / ₄ "	6'-8 ¹ / ₈ "	27"	38 ¹ / ₂ "	50"		
C-114DA-54-15.6A	6'-0"	6'-0"	10'-4"	6"	16 ¹ / ₈ "	17'-7 ¹ / ₂ "	9'-10 ¹ / ₄ "	7'-9 ¹ / ₂ "	19 ¹ / ₂ "	51 ¹ / ₂ "	51 ⁵ / ₈ "	27" 6 ¹ / ₂ "	50 ³ / ₄ "	24" 41"	42" 25"	42" 25"	70 ³ / ₄ "	6'-9 ³ / ₈ "	27"	38 ¹ / ₂ "	34"		
C-114DA-54-15A	8'-0"	8'-0"	12'-1"	6"	20 ⁷ / ₈ "	22'-5 ³ / ₈ "	11'-2 ¹ / ₂ "	11'-3 ¹ / ₂ "	36 ¹ / ₂ "	51 ¹ / ₂ "	55 ¹ / ₂ "	27" 6 ¹ / ₂ "	56 ¹ / ₂ "	24" 57"	42" 25"	42" 25"	66 ³ / ₄ "	8'-4"	27"	38 ¹ / ₂ "	50"		
C-114DA-54-14A	6'-0"	6'-0"	10'-4"	6"	16"	17'-7 ¹ / ₂ "	9'-10 ¹ / ₄ "	7'-9 ¹ / ₂ "	19 ¹ / ₂ "	51 ¹ / ₂ "	51 ⁵ / ₈ "	27" 6 ¹ / ₂ "	50 ³ / ₄ "	24" 41"	42" 25"	42" 25"	66 ³ / ₄ "	6'-9 ³ / ₈ "	27"	38 ¹ / ₂ "	34"		
C-80DB-54-14A	6'-0"	6'-0"	10'-4"	6"	16"	17'-7 ¹ / ₂ "	9'-10 ¹ / ₄ "	7'-9 ¹ / ₂ "	19 ¹ / ₂ "	51 ¹ / ₂ "	51 ⁵ / ₈ "	27" 6 ¹ / ₂ "	50 ³ / ₄ "	22" 43"	42" 25"	42" 25"	66 ³ / ₄ "	6'-9 ³ / ₈ "	27"	38 ¹ / ₂ "	34"		
C-114DA-48-14A	6'-0"	6'-0"	10'-4"	6"	16"	17'-7 ¹ / ₂ "	9'-10 ¹ / ₄ "	7'-9 ¹ / ₂ "	22 ¹ / ₂ "	46"	54 ¹ / ₂ "	24" 6 ¹ / ₂ "	50 ³ / ₄ "	24" 41"	42" 25"	42" 25"	66 ³ / ₄ "	6'-9 ³ / ₈ "	27"	38 ¹ / ₂ "	34"		
C-80DB-48-14A	6'-0"	6'-0"	10'-4"	6"	16"	17'-7 ¹ / ₂ "	9'-10 ¹ / ₄ "	7'-9 ¹ / ₂ "	22 ¹ / ₂ "	46"	54 ¹ / ₂ "	24" 6 ¹ / ₂ "	50 ³ / ₄ "	22" 43"	42" 25"	42" 25"	66 ³ / ₄ "	7'-2 ¹ / ₈ "	21"	32 ¹ / ₂ "	34"		
C-114DA-48-12.7A	6'-0"	6'-0"	9'-10 ¹ / ₈ "	3 ⁵ / ₈ "	16"	17'-13 ³ / ₄ "	9'-2 ¹ / ₂ "	7'-11 ¹ / ₂ "	18 ¹ / ₂ "	46"	53 ¹ / ₂ "	24" 4 ⁷ / ₈ "	48 ³ / ₄ "	24" 50 ⁵ / ₈ "	28" 25 ¹ / ₂ "	28" 25 ¹ / ₂ "	71 ¹ / ₄ "	6'-8 ³ / ₄ "	21"	34 ¹ / ₈ "	43 ³ / ₄ "		
C-80DB-48-12.7A	6'-0"	6'-0"	9'-10 ¹ / ₈ "	3 ⁵ / ₈ "	16"	17'-13 ³ / ₄ "	9'-2 ¹ / ₂ "	7'-11 ¹ / ₂ "	18 ¹ / ₂ "	46"	53 ¹ / ₂ "	24" 4 ⁷ / ₈ "	48 ³ / ₄ "	22" 52 ⁵ / ₈ "	28" 25 ¹ / ₂ "	28" 25 ¹ / ₂ "	71 ¹ / ₄ "	6'-8 ³ / ₄ "	21"	34 ¹ / ₈ "	43 ³ / ₄ "		

Jointed Base is standard on all Size.

STRUCTURAL DATA

*C-114DA-48-14A, C-1145A-48-14A and *C-80DB-48-14A PUMPING UNIT ASSEMBLIES—14,000 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8 ¹ / ₂ " x 64 lbs., 6'-0" and 6'-0" working centers.	CENTER BEARING	No. 4AD, Bronze Bushed, 5" x 10 ¹ / ₂ "
HANGER: Hinged Horsehead with 1" Wire Line, 16'-0" Long.	CRANK PINS	No. 3TC, Tapered Roller Bearings
PITMAN: Universal Equalizer with Bearings "in line", 2 ¹ / ₂ " Extra Heavy Pipe.	TAIL BEARING	No. 3, 3 ¹ / ₁₆ " x 7 ¹ / ₄ ", Bronze Bushed
SAMSON POST: Tripod, 10'-4" High.	WEIGHT	C-114DA-48-14A: 15,036 lbs., C-80DB-48-14A: 14,936 lbs.
CRANKS: No. 4846ROA, 46" Radius.	Counterweight Number	
POLISHED ROD STROKES: 48", 40", 32", 24".	COUNTERBALANCE, LBS., At Max. Stroke	3CRA #5ARA 5CRA 6R
BASE: 8" Deep, 25" Wide at Gear Box.	4846ROA Cranks	8,080 7,155 5,955 5,400
SUB-BASE: 21" High, Cast Iron.	4-S Auxiliary Weights	10,400 9,000 7,640 6,440
	4-D Auxiliary Weights	12,270 10,480 9,320 7,470**

C-114DA-48-12.7A, C-1145A-48-12.7A and C-80DB-48-12.7A PUMPING UNIT ASSEMBLIES—12,700 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8 ¹ / ₂ " x 64 lbs., 6'-0" and 6'-0" working centers.	CENTER BEARING	4 ⁷ / ₁₆ " x 9" Bronze Bushed	
HANGER: Hinged Horsehead with 3/8" Wire Line, 13'-0" Long.	CRANK PINS	No. 5, Bronze Bushed, 3 ³ / ₄ " x 3 ¹ / ₂ "	
PITMAN: Universal Cross Pin Type Equalizer 4" I Beam Side Member.	TAIL BEARING	No. 5, 3 ⁷ / ₁₆ " x 6 ¹ / ₂ " Bronze Bushed	
SAMSON POST: Tripod, 9'-10 ¹ / ₈ " High.	WEIGHT	C-114DA-48-12.7A: 13,581 lbs. C-80DB-48-12.7A: 13,481 lbs.	
CRANKS: No. 4846ROA, 46" Radius.	Counterweight Number		
POLISHED ROD STROKES: 48", 40", 32", 24".	COUNTERBALANCE, LBS., At Max. Stroke	#5ARA 5CRA 6R	
BASE: 8" Deep, 25 ¹ / ₂ " Wide at Gear Box.	4846ROA Cranks	6,945 5,745 5,190	
SUB-BASE: 21" High, Cast Iron.	4-S Auxiliary Weights	8,790 7,430 6,230	
	4-D Auxiliary Weights	10,270 9,110 7,260**	

†C-114DA-48-10C, C-1145A-48-10C, C-80DB-48-10C PUMPING UNIT ASSEMBLIES—10,000 Lbs. Polished Rod Load Class

†C-114DA-42-11.6C, C-1145A-42-11.6C and *C-80DB-42-11.6C PUMPING UNIT ASSEMBLIES—11,600 Lb. Polished Rod Load Class

† For Specifications and General Dimensions see Page No. 3094 and 3095.

** For S "S" Auxiliary Weights.

Counterweights Used to Calculate Weight of Unit.

* This unit also in stock at Los Angeles.



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

STRUCTURAL DATA

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

For Gear Specifications See Pages 3092 and 3096

C-114DA-48-10C, C-1145A-48-10C, C-80DB-48-10C, C-57DB-48-10C and C-575A-48-10C PUMPING UNIT ASSEMBLIES
10,000 Lbs. Polished Rod Load Class

WALKING BEAM: 16" x 7" x 45 lbs., 5'-8½" and 5'-0" working centers.	CENTER BEARING.. No. 5C, 4 7/16" x 9", Bronze Bushed
HANGER: Hinged Horsehead with 3/8" Wire Line, 13'-0" Long.	CRANK PINS..... No. 5GC Tapered Roller Bearings
PITMAN: Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.	TAIL BEARING..... No. 5, 3 7/16" x 6 1/2", Bronze Bushed
SAMSON POST: Tripod, 9'-10 1/8" High.	WEIGHT..... C-114DA-48-10C: 11,175 lbs. C-80DB-48-10C: 11,075 lbs. C-57DB-48-10C: 10,800 lbs.
CRANKS: No. 4246CRA, 46" Radius.	
POLISHED ROD STROKES: 48", 36.5", 25.1".	
BASE: 8" Deep, 25 1/2" Wide at Gear Box.	
SUB-BASE: 21" High, Cast Iron.	
	COUNTERBALANCE, LBS., At Max. Stroke
	Counterweight Number
	5ARA 5RA #5CRA
4246CRA Cranks.....	6,100 5,495 4,910
Auxiliary Weights.....	7,945 7,070 6,595

C-114DA-42-11.6C, C-1145A-42-11.6C, C-80DB-42-11.6C, *C-57DB-42-11.6C and C-575A-42-11.6C PUMPING UNIT ASSEMBLIES
11,600 Lbs. Polished Rod Load Class

WALKING BEAM: 16 1/8" x 7" x 45 lbs., 5'-0" and 5'-0" working centers.	CENTER BEARING.. No. 5C, 4 7/16" x 9", Bronze Bushed
HANGER: Hinged Horsehead with 3/8" Wire Line, 12'-0" Long.	CRANK PINS..... No. 5GC Tapered Roller Bearings
PITMAN: Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.	TAIL BEARING..... No. 5, 3 7/16" x 6 1/2", Bronze Bushed
SAMSON POST: Tripod, 9'-10 1/8" High.	WEIGHT..... C-114DA-42-11.6C: 11,100 lbs. C-80DB-42-11.6C: 11,000 lbs. C-57DB-42-11.6C: 10,725 lbs.
CRANKS: No. 4246CRA, 46" Radius.	
POLISHED ROD STROKES: 42", 32", 22".	
BASE: 8" Deep, 25 1/2" Wide at Gear Box.	
SUB-BASE: 21" High, Cast Iron.	
	COUNTERBALANCE, LBS., At Max. Stroke
	Counterweight Number
	5ARA 5RA #5CRA
4246CRA Cranks.....	7,010 6,325 5,645
Auxiliary Weights.....	9,120 8,125 7,575

C-40DB-40-7.4C PUMPING ASSEMBLY—7,400 Lbs. Polished Rod Load Class

WALKING BEAM: 14" x 6 3/4" x 30 lbs., 4'-8 1/2" and 4'-0" working centers.	CENTER BEARING.. No. 6C, 2 1/8" x 10 1/2" Bronze Bushed
HANGER: Hinged Horsehead with 3/4" Wire Line, 11'-0" Long.	CRANK PINS..... No. 6GC Tapered Roller Bearings
PITMAN: Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.	TAIL BEARING..... No. 5, 3 7/16" x 6 1/2", Bronze Bushed
SAMSON POST: Tripod 7'-11 1/8" High.	WEIGHT..... 7,595 lbs.
CRANKS: No. 3441R, 41" Radius.	
POLISHED ROD STROKES: 40", 30.6", 21.2".	
BASE: 8" Deep, 20" Wide at Gear Box.	
SUB-BASE: 20" High, Cast Iron.	
	COUNTERBALANCE, LBS., At Max. Stroke
	Counterweight Number
	#6R 7R
3441R Cranks.....	3,985 3,050
Auxiliary Weights.....	5,030 3,880

***C-40DB-34-8.7C PUMPING UNIT ASSEMBLY—8,700 Lbs. Polished Rod Load Class**

WALKING BEAM: 14" x 6 3/4" x 30 lbs., 4'-0" and 4'-0" working centers.	CENTER BEARING.. No. 6C, 2 1/8" x 10 1/2" Bronze Bushed
HANGER: Hinged Horsehead with 3/4" Wire Line, 11'-0" Long.	CRANK PINS..... No. 6GC Tapered Roller Bearings
PITMAN: Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.	TAIL BEARING..... No. 5, 3 7/16" x 6 1/2", Bronze Bushed
SAMSON POST: Tripod 7'-11 1/8" High.	WEIGHT..... 7,510 lbs.
CRANKS: No. 3441R, 41" Radius.	
POLISHED ROD STROKES: 34", 26", 18".	
BASE: 8" Deep, 20" Wide at Gear Box.	
SUB-BASE: 20" High, Cast Iron.	
	COUNTERBALANCE, LBS., At Max. Stroke
	Counterweight Number
	#6R 7R
3441R Cranks.....	4,785 3,685
Auxiliary Weights.....	6,015 4,670

***C-25DA-28-7.5C PUMPING UNIT ASSEMBLY—7,500 Lbs. Polished Rod Load Class**

WALKING BEAM: 14" x 6 3/4" x 30 lbs., 4'-1" and 3'-6" working centers.	CENTER BEARING.. No. 6C, 2 1/8" x 10 1/2" Bronze Bushed
HANGER: Hinged Horsehead with 3/8" Wire Line, 10'-0" Long.	CRANK PINS..... No. 7GC Tapered Roller Bearings
PITMAN: Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.	TAIL BEARING..... No. 7, 2 1/8" x 6 1/2", Bronze Bushed
SAMSON POST: Tripod, 7'-1 1/8" High.	WEIGHT..... 5,395 lbs.
CRANKS: No. 2433R, 33" Radius.	
POLISHED ROD STROKES: 34", 26", 18".	
BASE: 6 1/4" Deep, 17" Wide at Gear Box.	
SUB-BASE: 14" High, Cast Iron.	
	STATIC COUNTERBALANCE, LBS.
	No. 2433R Crank
	No. 7R Cwts. Aux. Wts.
Stroke 14".....	5,380 7,105
21".....	3,610 4,760
28".....	2,725 3,585

C-25DA-24-6C PUMPING UNIT ASSEMBLY—6,000 Lbs. Polished Rod Load Class

WALKING BEAM: 10" x 5 3/4" x 25 lbs., 3'-6" and 3'-6" working centers.	CENTER BEARING.. No. 6C, 2 1/8" x 10 1/2" Bronze Bushed
HANGER: Hinged Horsehead with 3/8" Wire Line, 8'-4" Long.	CRANK PINS..... No. 7GC Tapered Roller Bearings
PITMAN: Universal Cross Pin Type Equalizer 3" I-Beam Side Members.	TAIL BEARINGS..... No. 7, 2 1/8" x 6 1/2", Bronze Bushed
SAMSON POST: Tripod, 6'-3 3/8" High.	WEIGHT..... 5,295 lbs.
CRANKS: No. 2433R, 33" Radius.	
BASE: 6 1/4" Deep, 17" Wide at Gear Box.	
SUB-BASE: 14" High, Cast Iron.	
	STATIC COUNTERBALANCE, LBS.
	No. 2433R Crank
	No. 7R Cwts. Aux. Wts.
Stroke 12".....	6,350 8,360
18".....	4,285 5,625
24".....	3,250 4,255

* This Unit also in stock at Los Angeles.
= Counterweights used to calculate unit weights.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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

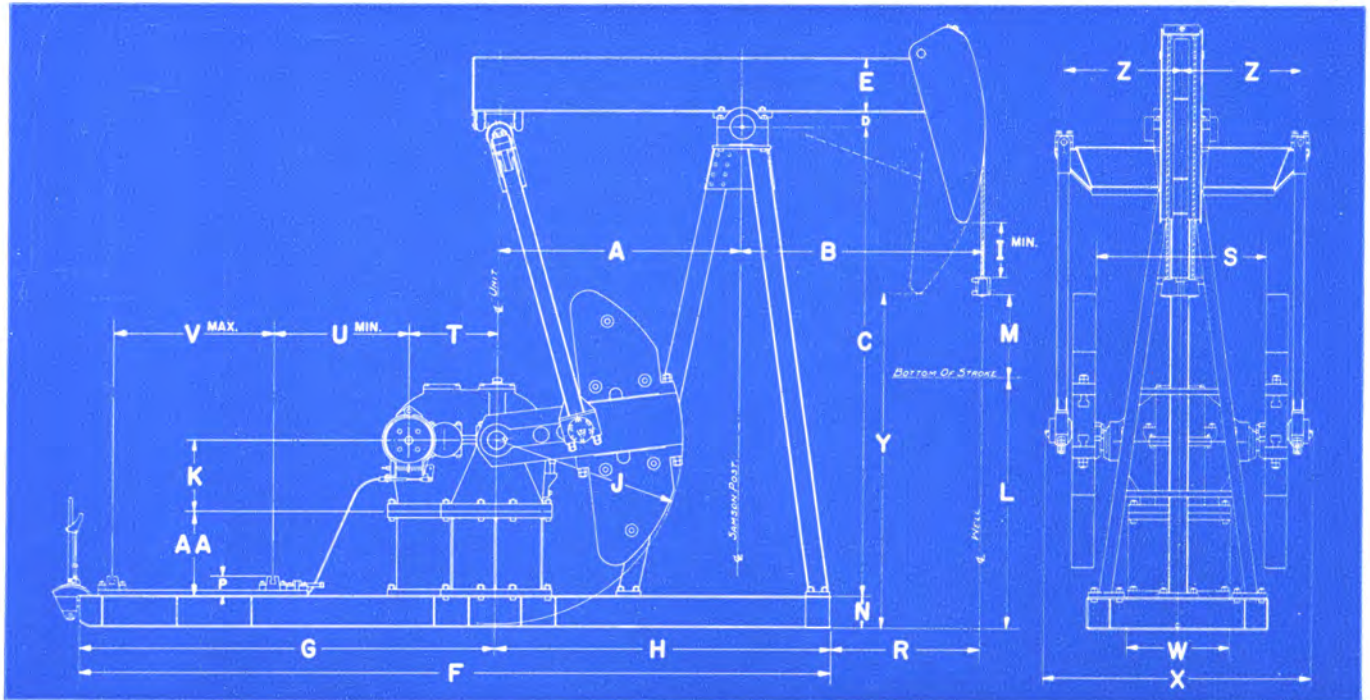


FIGURE 31

UNIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z	AA
C-114DA-48-10C	60"	68 1/2"	9'-10 1/8"	3 3/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	13"	46"	18"	55 1/2"	24"	8"	47 3/8"	45 1/4"	41 1/2"	24"	30 1/2"	39 3/8"	25 1/2"	7'-0 1/8"	6'-7"	29"	21"
C-80DB-48-10C	60"	68 1/2"	9'-10 1/8"	3 3/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	13"	46"	18"	55 1/2"	24"	8"	47 3/8"	45 1/4"	41 1/2"	22"	32 1/2"	39 3/8"	25 1/2"	7'-0 1/8"	6'-7"	29"	21"
C-114DA-42-11.6C	60"	60"	9'-10 1/8"	3 3/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	14 5/8"	46"	18"	61 1/8"	21"	8"	47 3/8"	36 3/4"	41 1/2"	24"	30 1/2"	39 3/8"	25 1/2"	67 1/4"	7'-0 1/8"	29"	21"
C-80DB-42-11.6C	60"	60"	9'-10 1/8"	3 3/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	14 5/8"	46"	18"	61 1/8"	21"	8"	47 3/8"	36 3/4"	41 1/2"	22"	32 1/2"	39 3/8"	25 1/2"	67 1/4"	7'-0 1/8"	29"	21"
C-57DB-48-10C	60"	68 1/2"	9'-10 1/8"	3 3/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	13"	46"	18"	55 1/2"	24"	8"	47 3/8"	45 1/4"	34 1/2"	20"	34 1/2"	39 3/8"	25 1/2"	60 1/4"	6'-7"	25 1/2"	21"
C-57DB-42-11.6C	60"	60"	9'-10 1/8"	3 3/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	14 5/8"	46"	18"	62 7/8"	21"	8"	47 3/8"	36 3/4"	34 1/2"	20"	34 1/2"	39 3/8"	25 1/2"	60 1/4"	7'-1 3/8"	25 1/2"	21"
C-10DB-40-7.4C	48"	56 1/2"	7'-11 1/8"	2"	137 3/8"	13'-6"	8'-3"	5'-3"	8 5/8"	41"	14"	46"	20"	8"	3 3/8"	41 1/2"	27 3/4"	17 1/2"	37"	36 1/4"	20"	52 1/4"	63"	21 3/4"	20"
C-10DB-34-8.7C	48"	48"	7'-11 1/8"	2"	137 3/8"	13'-6"	8'-3"	5'-3"	17 7/8"	41"	14"	42 1/2"	17"	8"	3 3/8"	33"	27 3/4"	17 1/2"	37"	36 1/4"	20"	52 1/4"	5'-9 5/8"	21 3/4"	20"
C-25DA-28-7.5C	42"	49"	7'-11 1/8"	2"	137 3/8"	11'-0"	6'-4"	4'-8"	12 3/4"	33"	14"	43 1/8"	14"	6 1/4"	3 3/8"	35"	25 1/2"	13 3/8"	24 3/8"	28 1/2"	17"	47 1/2"	61 7/8"	19 5/8"	14"
C-25DA-24-6C	42"	42"	6'-37 3/8"	2"	101 3/8"	11'-0"	6'-4"	4'-8"	10 3/8"	33"	14"	41 1/8"	12"	6 1/4"	3 3/8"	28"	25 1/2"	13 3/8"	29 3/8"	23 3/8"	17"	47 1/2"	4'-9 1/2"	19 5/8"	14"

For Gear Specifications, See Pages 3092 and 3096.

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



FIGURE 32

LUFKIN

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN TYPE B BEAM BALANCE PUMPING UNITS

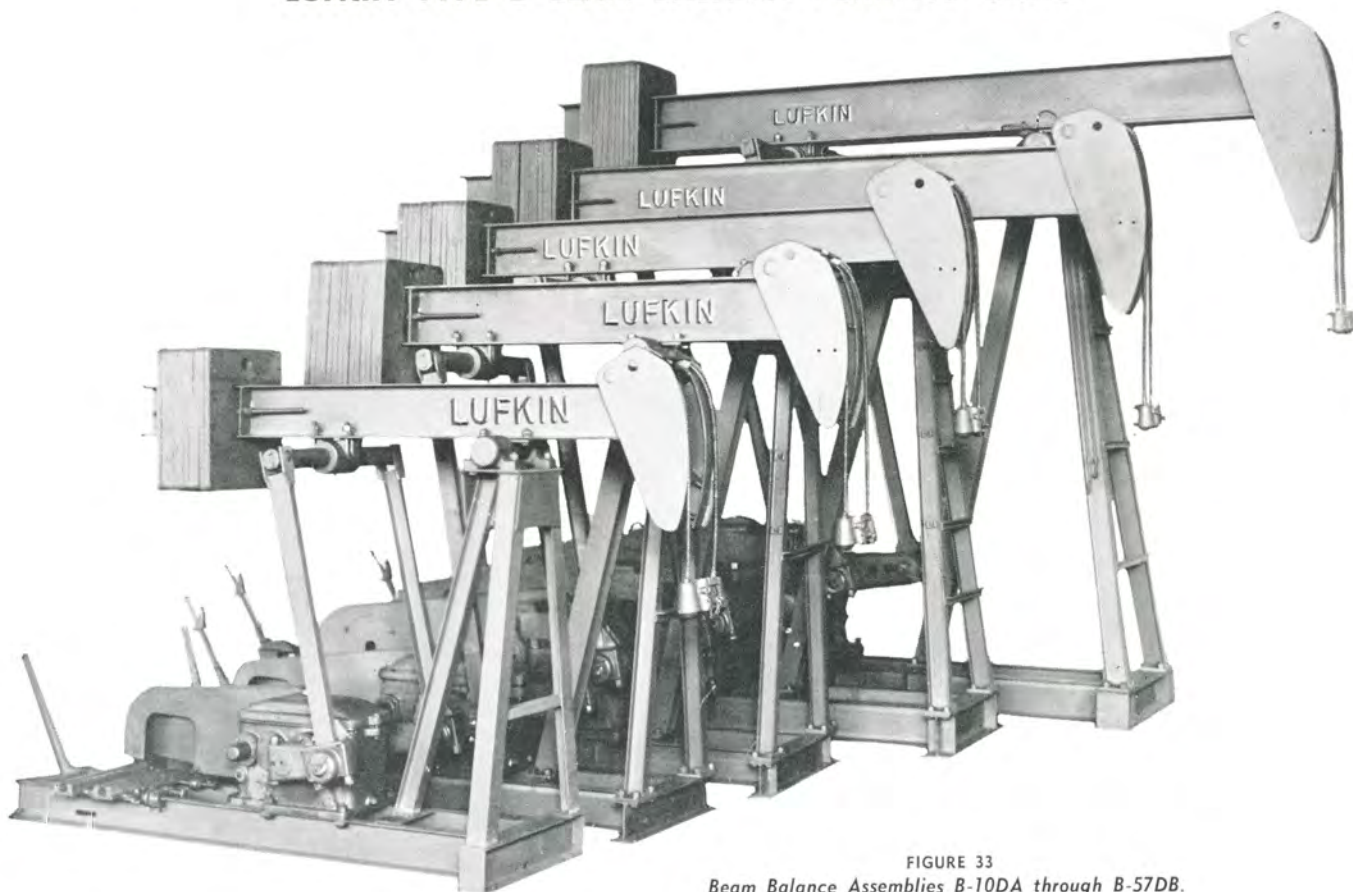


FIGURE 33
Beam Balance Assemblies B-10DA through B-57DB.

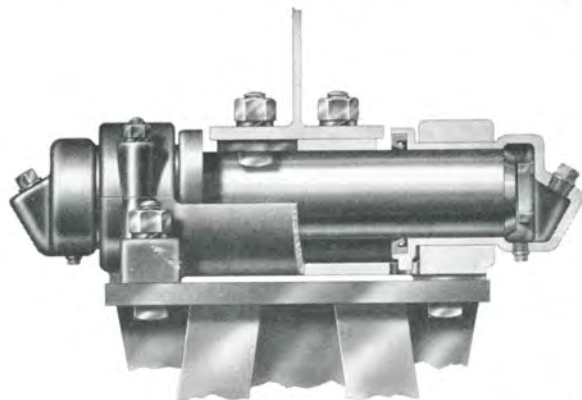


FIGURE 35
New One-Piece Center Bearing insures alignment of the two bushings standard on all Beam Balance Assemblies and Type C Units C-57 and smaller.

GEAR REDUCER SPECIFICATIONS

57DB GEAR REDUCER (Formerly 7C)

Double Reduction
Gears: Main Gear 19 1/2" P.D. x 5" Face
Rating: 57,000 in. lbs. Peak Torque
Ratio of Gears: 29.32
Crank Shaft Dia. 4"
Sheave: 19 1/4" P.D.—3C Std., 24 1/4" P.D. Alt.,
27 1/4" P.D. Max., 1-11/16" Bore.
Distance, Centerline Unit to Centerline
Drive: 11"
Gear Box Oil Capacity: 13 Gallons

16DB GEAR REDUCER

Double Reduction
Gears: Main Gear 13 1/4" Dia., 3 1/8" Face
Rating: 16,000 in. lbs. Peak Torque
Ratio of Gears: 35.7
Crank Shaft Dia. 2 1/2"
Sheave: 15" P.D.—3A or 2B or 1C
Distance, Centerline Unit to Centerline
Drive: 7 1/8"
Gear Box Oil Capacity: 5 Gallons

57SA GEAR REDUCER (Formerly 16A)

Single Reduction
Gears: Main Gear 32 1/2" P.D. x 4" Face
Rating: 57,000 in. lbs. Peak Torque
Ratio of Gears: 10.0
Crank Shaft Dia. 4"
Sheave: 23 1/2" P.D.—5C Std., 23 1/2" P.D.
Max., 2-7/16" Bore
Distance, Centerline Unit to Centerline
Drive: 9 3/8"
Gear Box Oil Capacity: 7.5 Gallons

10DA GEAR REDUCER

Double Reduction
Gears: Main Gear 11 3/8" Dia., 2 7/8" Face
Rating: 10,000 in. lbs. Peak Torque
Ratio of Gears: 36.02
Crank Shaft Dia. 2-3/16"
Sheave: 14" P.D.—3A or 2B
Distance, Centerline Unit to Centerline
Drive: 6 3/8"
Gear Box Oil Capacity: 4 Gallons

40DB GEAR REDUCER (Formerly 9B)

Double Reduction
Gears: Main Gear 16.8" P.D. x 4 3/8" Face
Rating: 40,000 in. lbs. Peak Torque
Ratio of Gears: 29.2
Crank Shaft Dia. 4"
Sheave: 21" P.D.—2C or 3B Std., 23" P.D.
Max., 1-11/16" Bore
Distance, Centerline Unit to Centerline
Drive: 9 3/8"
Gear Box Oil Capacity: 7 Gallons

25DA GEAR REDUCER (Formerly 3B)

Double Reduction
Gears: Main Gear 13.5" P.D. x 4" Face
Rating: 25,000 in. lbs. Peak Torque
Ratio of Gears: 28.9
Crank Shaft Dia. 3"
Sheave: 17 3/8" P.D.—2B or 18" P.D. 3A Std.,
18" P.D. Max., 1 3/8" Bore
Distance, Centerline Unit to Centerline
Drive: 8"
Gear Box Oil Capacity: 6 Gallons

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



LUFKIN TYPE B BEAM BALANCED PUMPING UNIT ASSEMBLIES STRUCTURAL SPECIFICATIONS AND DIMENSIONS

See preceding page for GEAR Specifications

	B-57DB-42-11.6	B-40DB-40-7.4A	B-40DB-34-8.7H	B-25DA-36-7.6D	B-25DA-28-7.5E	B-25DA-24-7.3B	B-16DB-30-5B	B-16DB-22-5C	B-10DA-20-1A
Peak Polish Rod Load	11,600 lbs.	7,400 lbs.	8,700 lbs.	7,600 lbs.	7,500 lbs.	7,340 lbs.	5,000 lbs.	5,000 lbs.	4,000 lbs.
Walking Beam Size	16 1/8" x 7" @ 45 lb.	14" x 6 3/4" @ 30 lb.	14" x 6 3/4" @ 30 lb.	14" x 6 3/4" @ 30 lb.	14" x 6 3/4" @ 30 lb.	10" x 5 3/4" @ 25 lb.	10" x 5 3/4" @ 25 lb.	10" x 5 3/4" @ 25 lb.	8" x 5 1/4" @ 17 lb.
Walking Beam Working Centers At Maximum Stroke	60" & 60"	56 1/2" & 48"	48" & 48"	50 3/4" & 48"	42" & 36"	36" & 36"	45" & 33"	33" & 33"	30" & 30"
Center Bearing, Bronze Bushed	No. 5C, 4 7/16" x 9"	No. 6C, 2 1/2" x 10 1/2"	No. 6C, 2 1/2" x 10 1/2"	No. 6C, 2 1/2" x 10 1/2"	No. 6C, 2 1/2" x 10 1/2"	No. 6C, 2 1/2" x 10 1/2"	No. 8C, 2 1/2" x 6 1/2"	No. 8C, 2 1/2" x 6 1/2"	2 7/16" x 5 1/4"
Tail Bearing, Bronze Bushed	4 7/16" x 4 1/2"	3 1/2" x 3 5/8"	3 1/2" x 3 5/8"	3 1/2" x 3 5/8"	3 1/2" x 3 5/8"	3 1/2" x 3 5/8"	3 7/16" x 3 1/16"	3 7/16" x 3 1/16"	2 1/2" x 2 3/4"
Crank Pin Bearing, Tapered Roller	No. B5GC	No. B5GC	No. B5GC	No. B5GC	No. B5GC	No. B5GC	No. B8GC	No. B8GC	No. B8GC
Stroke Length	42"-34"-26"	40"-30.6"-21.2"	34"-26"-18"	36"-27.5"-19"	28"-18.7"	24"-16"	30"-25"	22"-18"	20"-16.6"
1" Thick Beam Wts. Each Lbs.	150	125	125	125	125	100	100	100	90
Max. No. of 1" Thick Beam Weights	26	26	26	26	26	23	27	24	18
Counterbalance With No. Beam Wts. Lbs.	890	380	525	450	400	470	155	265	220
Counterbalance With 6-1" Beam Wts. Lbs.	2675	1635	2010	1845	1865	1740	1070	1415	1330
Counterbalance With 12-1" Beam Wts. Lbs.	4370	2805	3400	3160	3220	2905	1910	2455	2330
Counterbalance With 18-1" Beam Wts. Lbs.	5970	3920	4545	4375	4475	3970	2665	3385	3220
Counterbalance With Max. No. Beam Wts. Lbs.	8000	5260	6285	5880	5975	4790	3665	4155	3220
Polish Rod Hanger Wire Line	7/8" x 12'-0"	3/4" x 11'-0"	3/4" x 11'-0"	3/4" x 11'-0"	3/4" x 9'-0"	5/8" x 8'-4"	5/8" x 8'-4"	5/8" x 8'-4"	5/8" x 6'-0"
Total Wts. Less Beam Weights Lbs.	6340	3885	3800	2905	2890	2790	1740	1700	1400

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

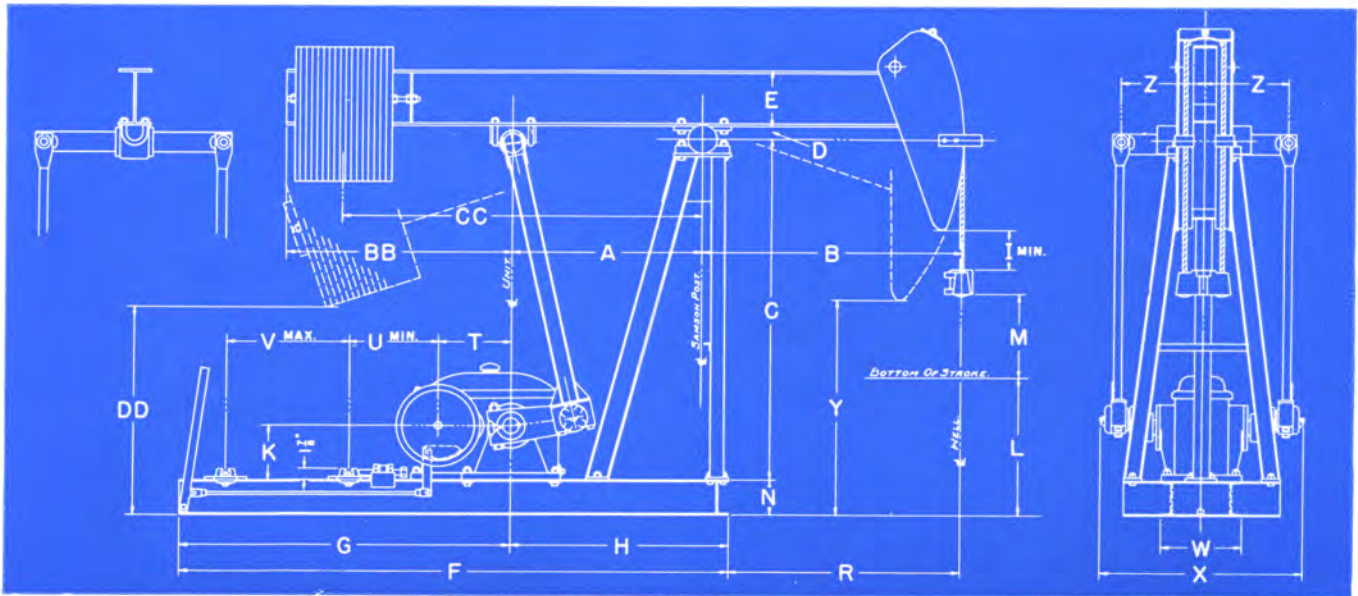


FIGURE 37
GENERAL DIMENSIONS

UNIT	A	B	C	D	E	F	G	H	I	K	L	M	N	R	T	U	V	W	X	Y	Z	BB	CC	DD
†B-57DB-42-11.6	60"	60"	9'-10 1/8"	3 5/8"	16 1/8"	15'-6"	8'-6 3/4"	6'-11 1/4"	14 5/8"	18"	62 7/8"	21"	8"	36 3/4"	20"	29 1/8"	44"	24 3/4"	56 3/4"	7'-17 1/8"	25 1/8"	62 1/2"	9'-1"	6'-4 7/8"
B-40DB-40-7.4A	48"	56 1/2"	7'-11 1/8"	2"	13 7/8"	13'-6"	8'-3"	63"	8 5/8"	14"	46"	20"	8"	41 1/2"	17 1/2"	24"	52 1/8"	19 3/4"	50 3/4"	63"	21 3/4"	50"	7'-0"	64"
†B-40DB-34-8.7H	48"	48"	7'-11 1/8"	2"	13 7/8"	13'-6"	8'-3"	63"	18 5/8"	14"	45 1/2"	17"	8"	33"	17 1/2"	24"	52 1/8"	19 3/4"	50 3/4"	70 3/4"	21 3/4"	51"	7'-2 1/4"	63 1/2"
†B-25DA-36-7.6D	48"	50 3/4"	7'-11 1/8"	2"	13 7/8"	11'-7"	6'-4"	63"	18 5/8"	14"	45"	18"	8"	35 3/4"	13 3/8"	25 3/4"	28"	16 5/8"	47 3/8"	69 1/2"	19 5/8"	51"	7'-1"	63 1/4"
†B-25DA-28-7.5E	36"	42"	7'-0 1/4"	2"	13 7/8"	9'-10 1/4"	6'-4"	42 1/4"	12 5/8"	14"	42 7/8"	14"	6 1/4"	35 3/4"	13 3/8"	28 1/2"	28 1/2"	16 5/8"	46 1/8"	60 3/4"	19 5/8"	50"	6'-2"	55 1/2"
B-25DA-24-7.3B	36"	36"	7'-0 1/4"	2"	10 1/8"	9'-10 1/4"	6'-4"	42 1/4"	11 3/8"	14"	49 3/8"	12"	6 1/4"	29 3/4"	13 3/8"	28 1/2"	28 1/2"	16 5/8"	46 1/8"	64 1/4"	19 5/8"	43 3/8"	68 3/8"	57 7/8"
†B-16DB-30-5B	33"	45"	69 1/2"	2"	10 1/8"	7'-11 1/4"	57 1/2"	37 3/4"	6 1/8"	9 1/2"	33 5/8"	15"	6 1/4"	40 1/4"	12 3/4"	16 3/8"	22 5/8"	13 3/4"	35 1/4"	46 1/2"	14 1/4"	40"	63"	44 1/2"
†B-16DB-22-5C	33"	33"	69 1/2"	2"	10 1/8"	7'-11 1/4"	57 1/2"	37 3/4"	13 1/2"	9 1/2"	34 1/4"	11"	6 1/4"	28 1/4"	12 3/4"	16 3/8"	22 5/8"	13 3/4"	35 1/4"	54 1/8"	14 1/4"	33 1/4"	56 1/4"	46 3/4"
†B-10DA-20-1A	30"	30"	54"	1 3/4"	8"	7'-7 1/4"	56"	35 1/4"	6 5/8"	8 1/2"	27 7/8"	10"	6 1/4"	24 3/4"	11 3/8"	15 1/4"	23 5/8"	13"	33 1/2"	40 1/2"	13 3/8"	35"	55 1/2"	32 1/2"

† This Unit also in stock at Los Angeles.

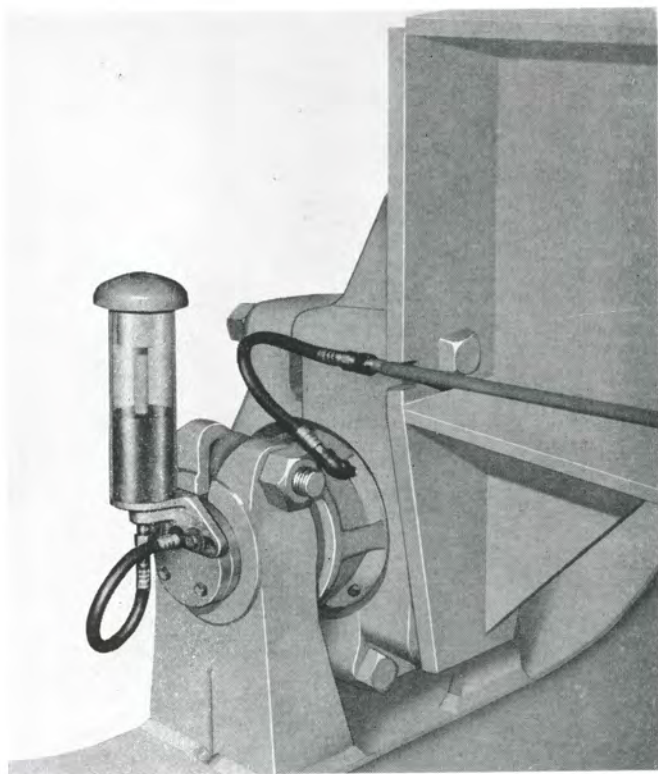


FIGURE 38

TRANSPARENT OILER ASSEMBLY

Transparent oilers give visual evidence of bearing oil level. They reduce the pressure within the bearing when oil is added and act as an oil reservoir. These assemblies are adaptable for both old and new pumping units.

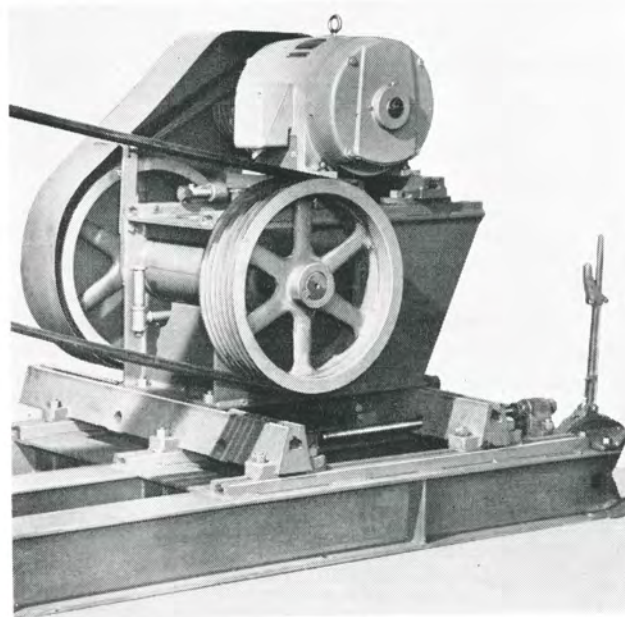


FIGURE 39

COUNTERSHAFT ASSEMBLY

This assembly utilizes an electric motor and countershaft and provides a reduction ratio up to 4:1. This compact reduction unit package will fit on conventional slide rails and was designed for use with single reduction gear reducers where slow pumping speeds are encountered. This type assembly is manufactured in two sizes:

- No. 1—25-50HP
- No. 2—up to 20HP

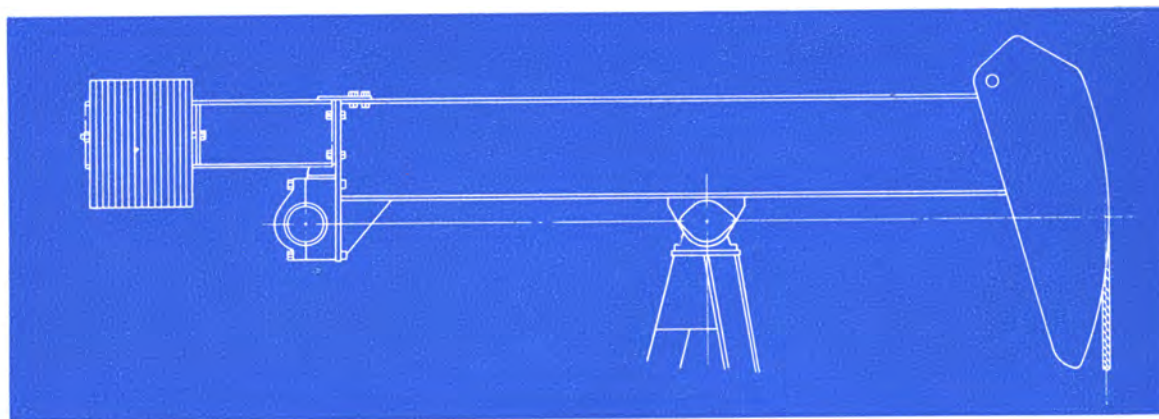


FIGURE 40

BEAM EXTENSIONS FOR EXTRA COUNTERBALANCE

These extensions are made in two sizes and can be adapted to crank balanced units now in service by burning 8 holes in the walking beam.

Extension	Max. Weight Added, Lbs.	Distance From Equalizer Bearing To Center of Weights
48"	2600	28"
60"	4000	40"

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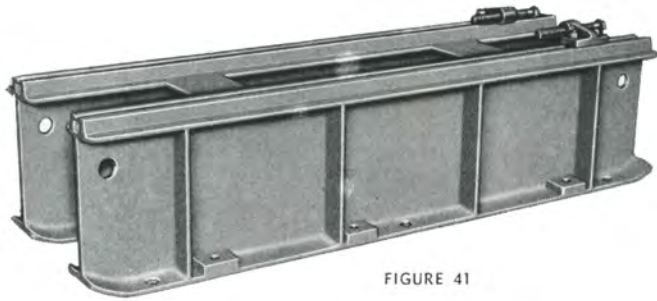


FIGURE 41

STRUCTURAL SUB-BASE FOR HORIZONTAL ENGINES.

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

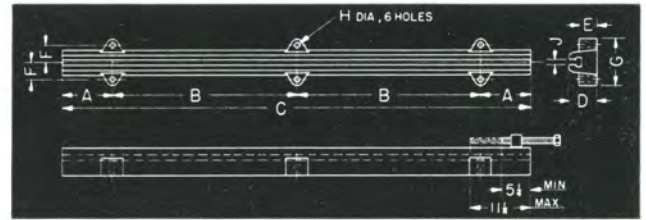


FIGURE 44

LUFKIN TYPE "A" ENGINE RAILS

Designed especially with minimum edge distance for flywheel clearance.

SIZE	A	B	C	D	E	F	G	H	J
A57 Rail.....	3"	25½"	57"	4"	2½"	2½"	6¼"	1"	1"
A69 Rail.....	3"	31½"	69"	4"	2½"	2½"	6¼"	1"	1"
A84 Rail.....	9"	33"	84"	5"	3¼"	3½"	8½"	1"	1½"

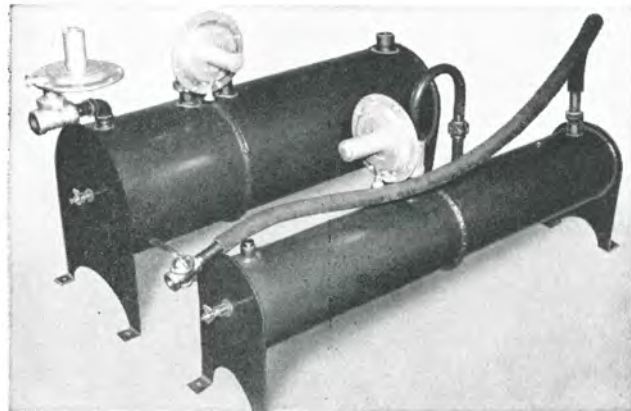


FIGURE 42

VOLUME TANK AND REGULATOR FOR GAS ENGINES.

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

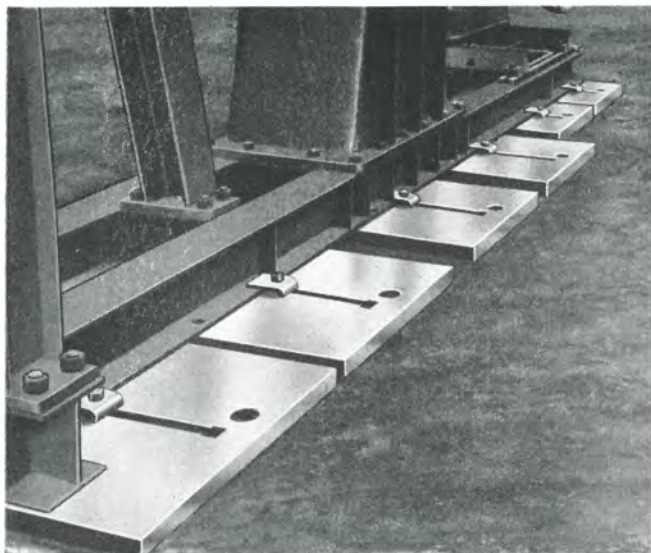


FIGURE 43

ANNEALED DUCTILE IRON FOUNDATION SLABS

Available for medium and smaller size units. With proper soil conditions, affords great saving over concrete and is 100% salvageable.

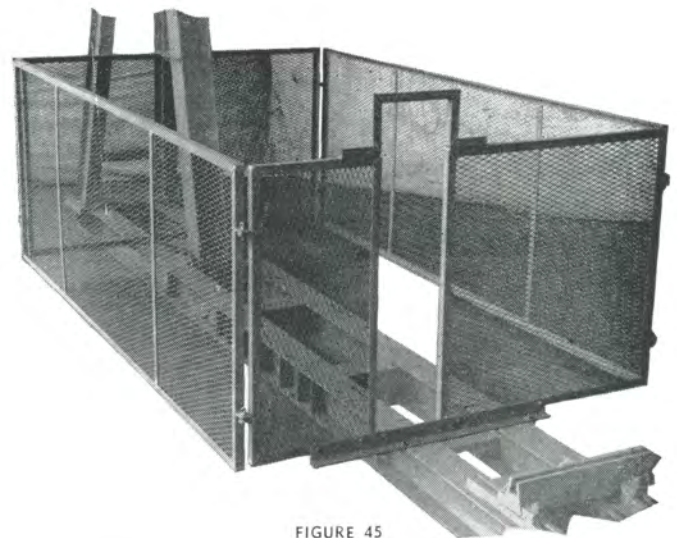


FIGURE 45

TYPE W (WIRE MESH) CRANK GUARDS

A new standard design available in stock for all Lufkin Units. No holes required in Base or Post—clamps to top flanges of Base and to Post—and can be fitted to any unit already installed. Sides are hinged and can be easily removed.



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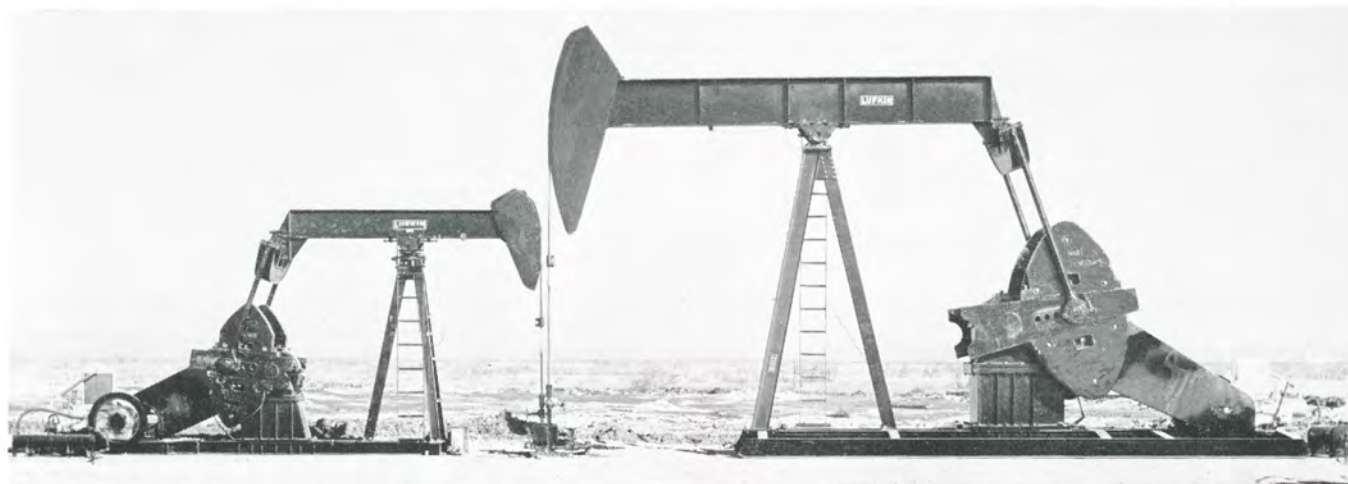


FIGURE 46

Two zones produced independently in one well by the use of two pumps with separate strings of tubing and rods.

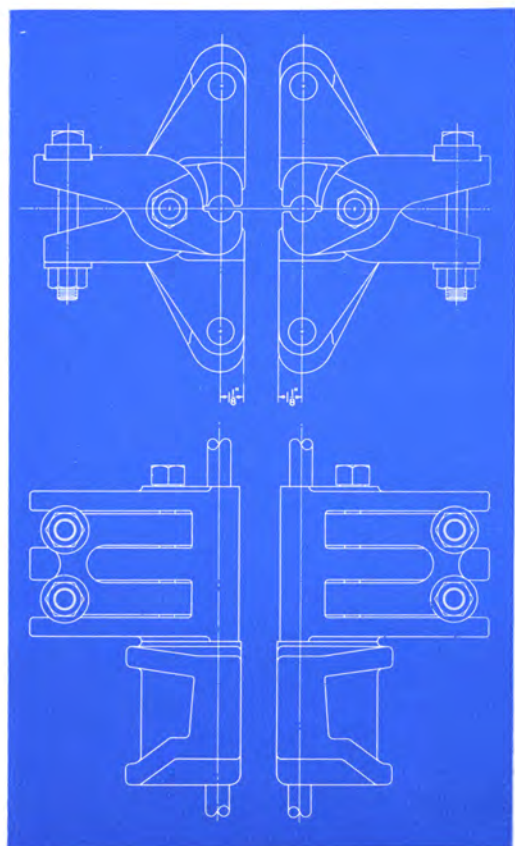


FIGURE 47

Lufkin "flush type" carrier bar and polished rod clamp designed for dual-completed wells to give maximum clearance between carrier bars.



FIGURE 48

Typical installation of ground oiling system—standard on the C-57 and larger sizes.

LUFKIN'S NEW *Hi-Prime* PUMPING UNIT

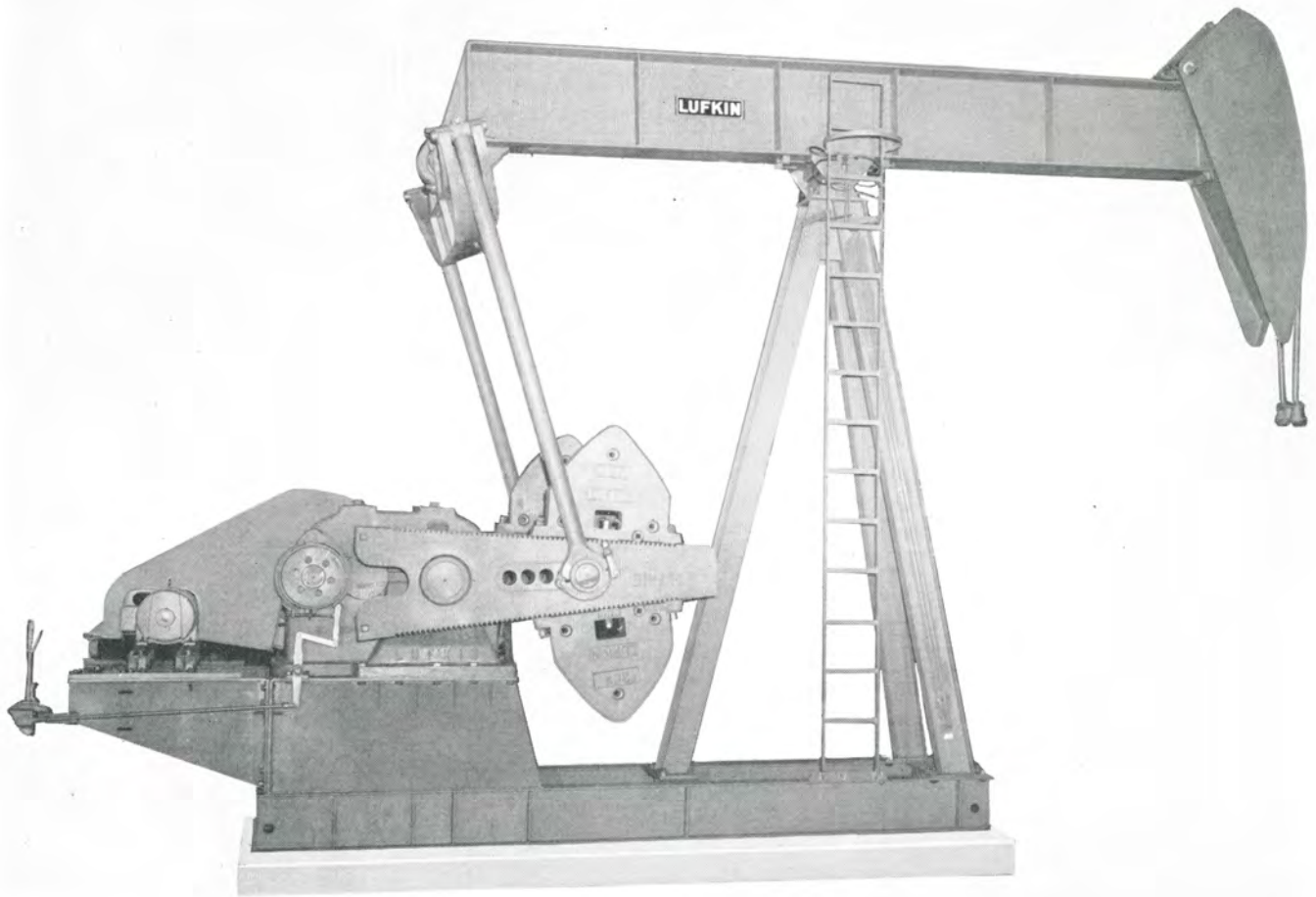


FIGURE 49

Elevated prime mover provides protection from high water and drifting sand and snow.

If unit is moved to a location where electric power is not available, bolted-on motor support can be eas-

ily removed and a jointed gas engine base installed.

Short foundation block reduces installation costs.

Available in all structures using 40D through 640DB gear reducers.

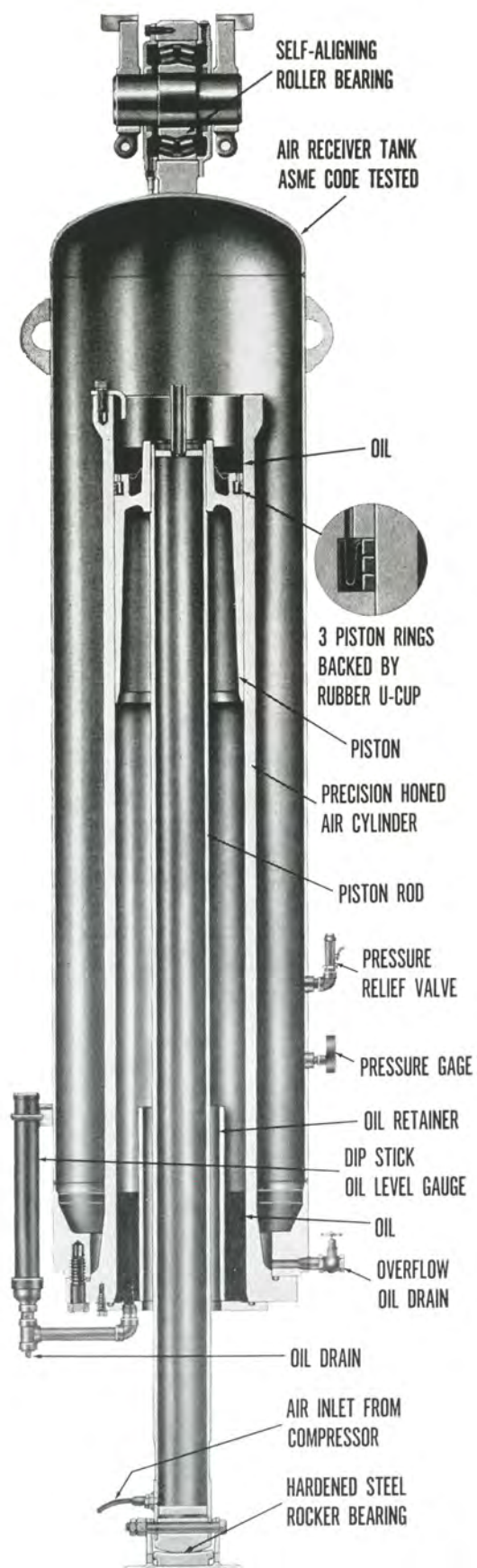
LUFKIN Air Balanced PUMPING UNITS

FIGURE 50

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

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

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

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

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

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

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

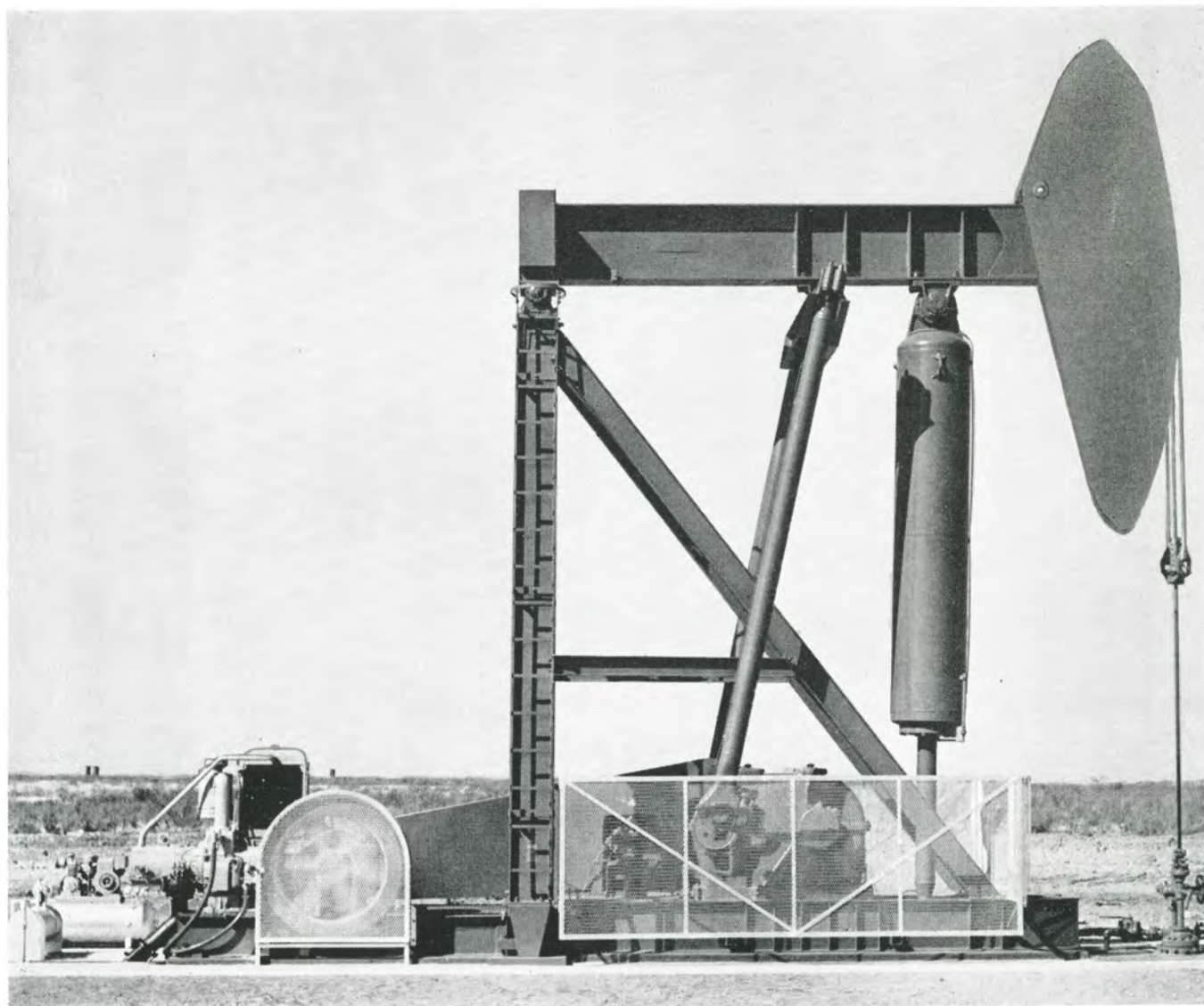
LUFKIN AIR BALANCED PUMPING UNITS

FIGURE 51

GENERAL SPECIFICATIONS**Designation:**

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

Second Number—Maximum Stroke (Inches)

Third Number—Structural Rating (Thousands of Lbs.)

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

Gear Reducer Data: See Crank Balanced Unit Specifications

Crank Pin Bearings: Tapered Roller

Samson Post Bearings: Spherical Roller

Equalizer Bearing: Spherical Roller

Air Cylinder Bearing: Spherical Roller

Hanger: Hinged Horsehead, Wire Line

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

Upper Pitman Connection: Rubber Cushioned



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

GENERAL DIMENSIONS—Lufkin Air Balanced Pumping Units

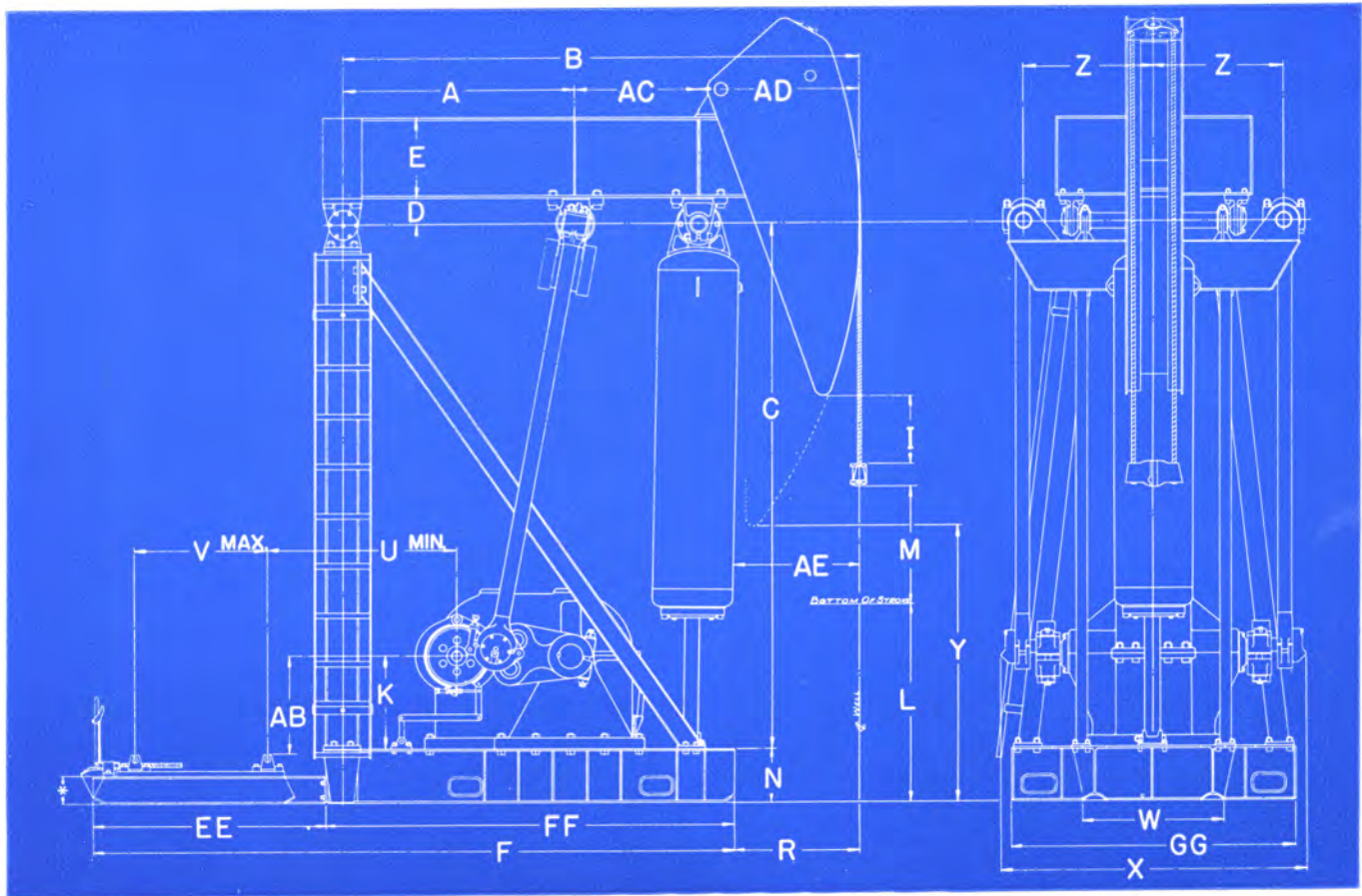


FIGURE 52

TABLE OF DIMENSIONS

UNIT	A	B	C	D	E	F	I	K	L	M	N	R	U	V	W	X	Y	Z	AB	AC	AD	AE	EE	FF	GG
A-80DB-54-19	48"	9'-7"	11'-0"	6 1/4"	16"	14'-5 3/4"	7 3/8"	18"	67 1/2"	27"	93 3/4"	36"	66"	42"	25 1/4"	66 3/4"	7'-0"	29"	13 1/4"	24 1/2"	42 1/2"	36"	7'-0 1/4"	7'-5 1/2"	63 3/4"
A-114DA-54-19	48"	9'-7"	11'-0"	6 1/4"	16"	14'-5 3/4"	7 3/8"	18"	67 1/2"	27"	93 3/4"	36"	64"	42"	25 1/4"	66 3/4"	7'-0"	29"	13 1/4"	24 1/2"	42 1/2"	36"	7'-0 1/4"	7'-5 1/2"	63 3/4"
A-114DA-64-19	48"	9'-7"	11'-0"	6 1/4"	16"	14'-5 3/4"	7 3/8"	18"	62 1/2"	32"	93 3/4"	36"	64"	42"	25 1/4"	66 3/4"	6'-7"	29"	13 1/4"	24 1/2"	42 1/2"	36"	7'-0 1/4"	7'-5 1/2"	63 3/4"
A-160D-64-25	50"	10'-0"	11'-9"	6 1/4"	18 3/8"	14'-6 3/4"	8 5/8"	27"	62 3/4"	32"	93 3/4"	35 1/2"	57"	43 1/2"	32"	69 3/4"	6'-11"	30 1/2"	22"	27 1/2"	42 1/2"	35 1/2"	6'-7 3/4"	7'-11"	6'-11 1/2"
A-160D-74-25	50"	10'-0"	11'-9"	6 1/4"	18 3/8"	14'-6 3/4"	8 5/8"	27"	57 3/4"	37"	93 3/4"	35 1/2"	57"	43 1/2"	32"	69 3/4"	6'-7"	30 1/2"	22"	27 1/2"	42 1/2"	35 1/2"	6'-7 3/4"	7'-11"	6'-11 1/2"
A-228D-74-28	56"	10'-11"	12'-5"	6 3/4"	20 3/8"	15'-0 1/4"	15 7/8"	27"	64 3/8"	37"	16 1/8"	36"	47"	50"	37 1/4"	6'-8 3/8"	7'-8"	35 1/2"	28 3/8"	31 1/2"	43 1/2"	36"	6'-9"	8'-3 1/4"	6'-11 1/2"
A-228D-86-28	56"	10'-11"	12'-5"	6 3/4"	20 3/8"	15'-0 1/4"	9 3/8"	27"	58 3/8"	43"	16 1/8"	36"	47"	50"	37 1/4"	6'-8 3/8"	6'-10"	35 1/2"	28 3/8"	31 1/2"	43 1/2"	36"	6'-9"	8'-3 3/4"	6'-11 1/2"
A-320D-86-32	70"	12'-11"	13'-4"	7 3/8"	24"	17'-8 1/4"	18 3/8"	28"	62 3/8"	43"	16 1/8"	39"	6'-6"	41"	43 1/4"	7'-3 3/8"	7'-7"	39"	29 3/8"	37"	48"	39"	7'-8"	10'-0 1/4"	7'-11 1/2"
A-320D-100-32	70"	12'-11"	13'-4"	7 3/8"	24"	17'-8 1/4"	9 7/8"	28"	55 1/8"	50"	16 1/8"	39"	6'-6"	41"	43 1/4"	7'-3 3/8"	6'-7"	39"	29 3/8"	37"	48"	39"	7'-8"	10'-0 1/4"	7'-11 1/2"
A-456DB-100-36A	6'-5"	14'-7"	15'-7"	7 3/8"	24 1/4"	18'-13 1/4"	18 3/4"	28"	73 3/8"	50"	16 1/8"	47 1/2"	6'-2"	41"	46 3/4"	8'-4 1/8"	8'-10"	45"	29 3/8"	41"	57"	47 1/2"	7'-2"	10'-11 3/4"	7'-6"
A-456DB-120-36A	6'-5"	14'-7"	15'-7"	7 3/8"	24 1/4"	18'-13 1/4"	16 5/8"	28"	54 3/4"	60"	16 1/8"	47 1/2"	6'-2"	41"	46 3/4"	8'-4 1/8"	7'-5"	45"	29 3/8"	41"	57"	47 1/2"	7'-2"	10'-11 3/4"	7'-6"
A-640DB-120-36A	6'-5"	14'-7"	15'-7"	7 3/8"	24 1/4"	18'-13 1/4"	16 5/8"	28"	54 3/4"	60"	16 1/8"	47 1/2"	7' 1"	41"	46 3/4"	8'-4 1/8"	7'-5"	45"	29 3/8"	41"	57"	47 1/2"	7'-2"	10'-11 3/4"	7'-6"
A-912DA-120-36A	6'-5"	14'-7"	15'-7"	7 3/8"	24 1/4"	19'-5"	16 5/8"	30"	54 3/4"	60"	16 1/8"	47 1/2"	6'-6"	41"	50"	8'-4 1/8"	7'-5"	45"	31 3/8"	41"	57"	45 1/2"	7'-2"	12'-3"	7'-6"
A-640DB-120-40	7'-4"	16'-8"	17'-10"	9 3/8"	24 3/4"	19'-5 1/2"	21"	28"	78 1/4"	60"	16 1/8"	59"	7'-0"	41"	46 3/4"	8'-4 1/8"	9'-5"	45"	29 3/8"	43 1/2"	68 1/2"	59"	7'-2"	12'-3 3/2"	7'-11 1/2"
A-912DA-120-40	7'-4"	16'-8"	17'-10"	9 3/8"	24 3/4"	19'-5 1/2"	21"	30"	78 1/4"	60"	16 1/8"	59"	6'-4"	41"	50"	8'-4 1/8"	9'-5"	45"	31 3/8"	43 1/2"	68 1/2"	58"	7'-2"	12'-3 3/2"	7'-11 1/2"
A-640DB-144-40	7'-4"	16'-8"	17'-10"	9 3/8"	24 3/4"	19'-5 1/2"	19 1/2"	28"	55"	72"	16 1/8"	59"	7'-0"	41"	46 3/4"	8'-4 1/8"	7'-10"	45"	29 3/8"	43 1/2"	68 1/2"	59"	7'-2"	12'-3 3/2"	7'-11 1/2"
A-912DA-144-40	7'-4"	16'-8"	17'-10"	9 3/8"	24 3/4"	19'-5 1/2"	19 1/2"	30"	55"	72"	16 1/8"	59"	6'-4"	41"	50"	8'-4 1/8"	7'-10"	45"	31 3/8"	43 1/2"	68 1/2"	58"	7'-2"	12'-3 3/2"	7'-11 1/2"
A-640DB-192-42	10'-11 1/2"	23'-0"	21'-0"	9 3/8"	33"	27'-11 3/4"	12 3/4"	30"	55"	96"	21"	48"	9'-9"	41"	46 3/4"	8'-6 5/8"	7'-8"	45"	28 3/8"	50"	104 1/2"	94"	7'-2"	19'-4 5/8"	7'-11 1/2"
A-912DA-192-42	10'-11 1/2"	23'-0"	21'-0"	9 3/8"	33"	27'-11 3/4"	12 3/4"	30"	55"	96"	21"	48"	9'-2"	41"	50"	8'-6 5/8"	7'-8"	45"	28 3/8"	50"	104 1/2"	94"	7'-2"	19'-4 5/8"	7'-11 1/2"
A-1824D-192-42	10'-11 1/2"	23'-0"	21'-0"	9 3/8"	33"	27'-11 3/4"	12 3/4"	36"	55"	96"	21"	48"	8'-1"	41"	50"	9'-7 5/8"	7'-8"	51 1/2"	34 3/8"	50"	104 1/2"	91 1/2"	7'-2"	19'-4 5/8"	7'-11 1/2"
A-1824T-192-42	10'-11 1/2"	23'-0"	21'-0"	9 3/8"	33"	27'-11 3/4"	12 3/4"	25"	55"	96"	21"	48"	7'-5"	41"	50"	9'-7 5/8"	7'-8"	51 1/2"	23 3/8"	50"	104 1/2"	91 1/2"	7'-2"	19'-4 5/8"	7'-11 1/2"

* 16 3/8" deep engine base beam used on 192" stroke units, all others use 8" deep engine base beams. Jointed base is standard on all sizes; one-piece and portable bases available.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



RATING CHART

UNIT	Peak Torque Rating, Inch Lbs.	Stroke, Inches	Polish Rod Load Class, Lbs.	Piston Dia., Inches	Effective Counter-Balance, Lbs.	Walking Beam Size	Pitman Side Member Size, Ex-Hvy. Pipe	Wire Line Hangers	*Standard Sheave Sizes, P. D. Inches	Gear Ratio	Weight, Lbs.
A-80DB-54-19	80,000	54- 44	19,000	8	10,685	16 x 8 1/2 @ 64 lb	3 1/2	1 x 16'-0"	19 1/4, 24, 29 1/4 (4C)	29.15	10,730
A-114DA-54-19	114,000	54- 44	19,000	8	10,685	16 x 8 1/2 @ 64 lb	3 1/2	1 x 16'-0"	19 1/4, 24, 29 1/4, 33 1/4 (4C)	29.4	11,000
A-114DA-64-19	114,000	64- 54	19,000	8	10,685	16 x 8 1/2 @ 64 lb	3 1/2	1 x 16'-0"	19 1/4, 24, 29 1/4, 33 1/4 (4C)	29.4	11,000
A-160D-64-25	160,000	64- 54	25,000	10	17,085	18 x 8 3/4 @ 77 lb	3 1/2	1 1/8 x 18'-6"	24 1/4, 29 1/4, 33 1/4, 38 (5C)	28.67	13,100
A-160D-74-25	160,000	74- 64- 54	25,000	10	17,085	18 x 8 3/4 @ 77 lb	3 1/2	1 1/8 x 18'-6"	24 1/4, 29 1/4, 33 1/4, 38 (5C)	28.67	13,100
A-228D-74-28	228,000	74- 64- 54	28,000	10	17,170	21 x 9 @ 82 lb	4	1 1/8 x 20'-0"	24 1/4, 30, 36, 41 1/4 (6C)	28.45	18,000
A-228D-86-28	228,000	86- 74- 64	28,000	10	17,170	21 x 9 @ 82 lb	4	1 1/8 x 21'-0"	24 1/4, 30, 36, 41 1/4 (6C)	28.45	18,500
A-320D-86-32	320,000	86- 74- 64	32,000	11	21,255	24 x 12 @ 100 lb	4	1 1/4 x 22'-0"	25, 30, 36, 42, 47 1/4 (8C)	30.12	24,500
A-320D-100-32	320,000	100- 86- 74	32,000	11	21,255	24 x 12 @ 100 lb	4	1 1/4 x 23'-6"	25, 30, 36, 42, 47 1/4 (8C)	30.12	24,800
A-456DB-100-36A	456,000	100- 86- 74	36,000	12	23,775	24 x 14 @ 130 lb	6	1 1/4 x 25'-0"	28, 34, 40, 46, 51 (10C or 7D)	29.04	28,500
A-456DB-120-36A	456,000	120-100- 86	36,000	12	23,775	24 x 14 @ 130 lb	6	1 1/4 x 28'-0"	28, 34, 40, 46, 51 (10C or 7D)	29.04	29,500
A-640DB-120-36A	640,000	120-100- 86	36,000	12	23,775	24 x 14 @ 130 lb	6	1 1/4 x 28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.6	31,500
A-912DA-120-36A	912,000	120-100- 86	36,000	12	23,775	24 x 14 @ 130 lb	6	1 1/4 x 28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.72	33,300
A-640DB-120-40	640,000	120-100- 86	40,000	13	27,065	24 x 14 @ 160 lb	6	1 1/8 x 28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.6	36,900
A-912DA-120-40	912,000	120-100- 86	40,000	13	27,065	24 x 14 @ 160 lb	6	1 1/8 x 28'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.72	38,700
A-640DB-144-40	640,000	144-120-100	40,000	13	27,065	24 x 14 @ 160 lb	6	1 1/8 x 32'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.6	37,900
A-912DA-144-40	912,000	144-120-100	40,000	13	27,065	24 x 14 @ 160 lb	6	1 1/8 x 32'-0"	28, 34, 40, 46, 51 (10C or 7D)	28.72	39,700
A-640DB-192-42	640,000	192-168-144	42,000	14 1/2	31,600	33 x 15 3/4 @ 200 lb	8	1 3/8 x 39'-2"	28, 34, 40, 46, 51 (10C or 7D)	28.6	48,200
A-912DA-192-42	912,000	192-168-144	42,000	14 1/2	31,600	33 x 15 3/4 @ 200 lb	8	1 3/8 x 39'-2"	28, 34, 40, 46, 51 (10C or 7D)	28.72	49,000
A-1824D-192-42	1,824,000	192-168-144	42,000	14 1/2	31,600	33 x 15 3/4 @ 200 lb	8	1 3/8 x 39'-2"	40, 46, 51, 55, 68 (11D)	28.33	56,800
A-1824T-192-42	1,824,000	192-168-144	42,000	14 1/2	31,600	33 x 15 3/4 @ 200 lb	8	1 3/8 x 39'-2"	28, 30, 40, 46 (11D)	58.12	57,300

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

ELECTRIC AUTOMATIC COUNTERBALANCE CONTROL

This control automatically adjusts air counterbalance with changing well conditions. It reduces the load on gears and prime movers.

Model 700-1E is used with units powered by electric motors.

Model 700-1G is used with units powered by gas engines.

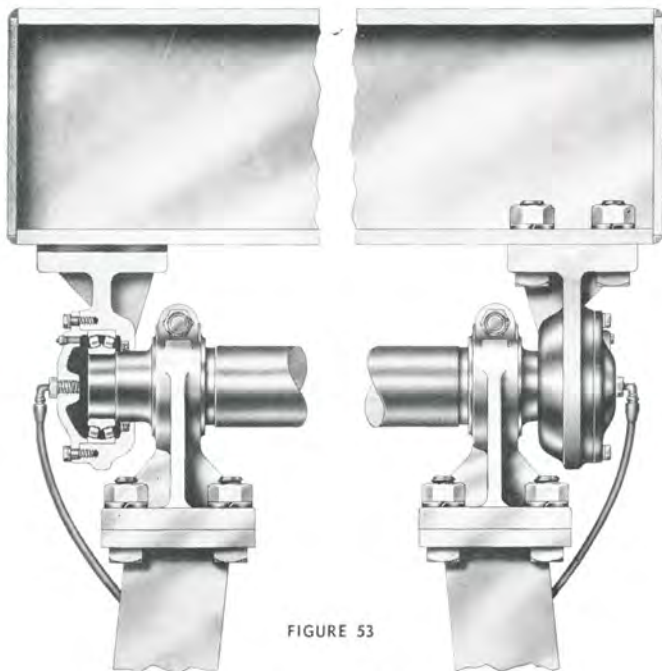


FIGURE 53

SAMSON POST BEARING ASSEMBLY

Bearings lubricated from ground level.

1824T TRIPLE REDUCTION GEAR REDUCER SPECIFICATIONS

Gears: Main Gear 60" P.D. x 20" Face
 Rating: 1,824,000 In. Lbs. Peak Torque
 Ratio of Gears: 58.12
 Crank Shaft Dia. 9"
 Sheave: 46" P.D.—11D Std., 4-15/16" Bore
 46" P.D.—11D Max.
 Distance Centerline Unit to Centerline of Drive: 28 1/8"
 Gear Box Oil Capacity: 165 Gallons

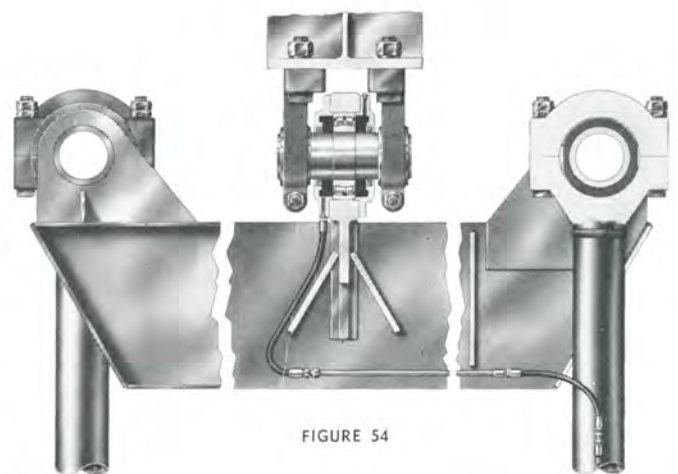


FIGURE 54

PITMAN EQUALIZER

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

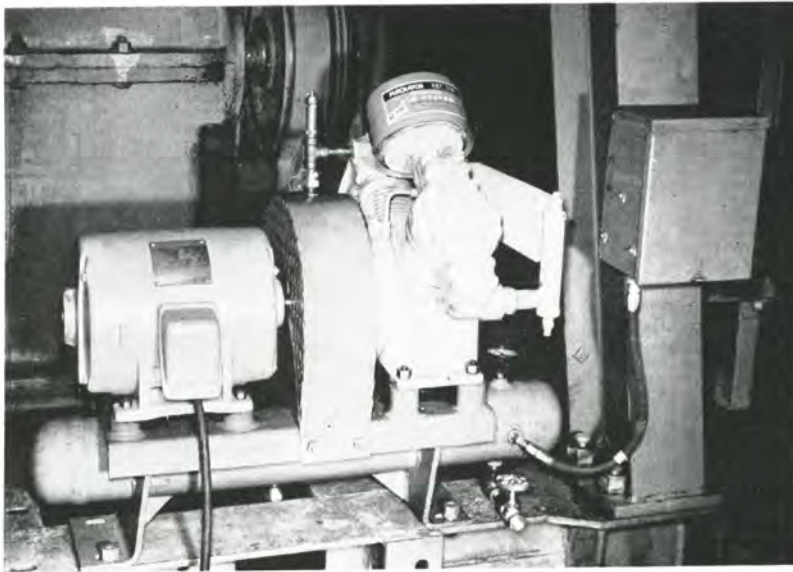


FIGURE 55

MOTOR DRIVEN COMPRESSOR

furnished on units where electric power is available; compressor operates at optimum speed for maximum air output.

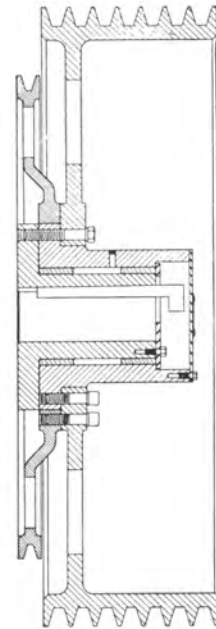


FIGURE 56

FLOATING SHEAVE ASSEMBLY

for Gear Reducer which permits running air compressor at initial starting without operating gear reducer. Note 1-C groove compressor drive rim bolted to floating hub. Select proper size to effect optimum compressor speed; 17 1/4", 23 1/2", 28", 34" and 47 1/4" P.D. rims are available.

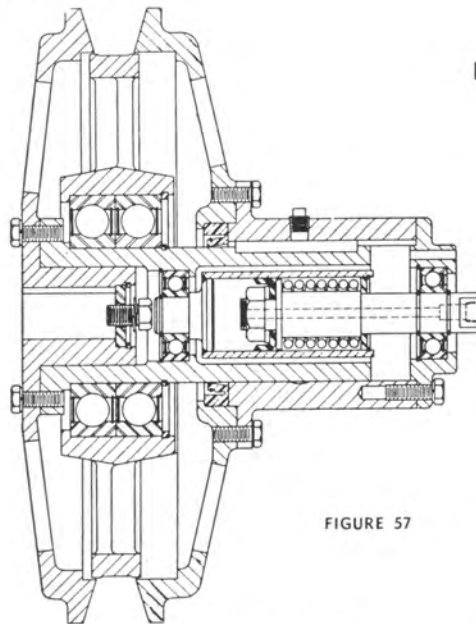


FIGURE 57

CLUTCH, 11 1/2" P.D.

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

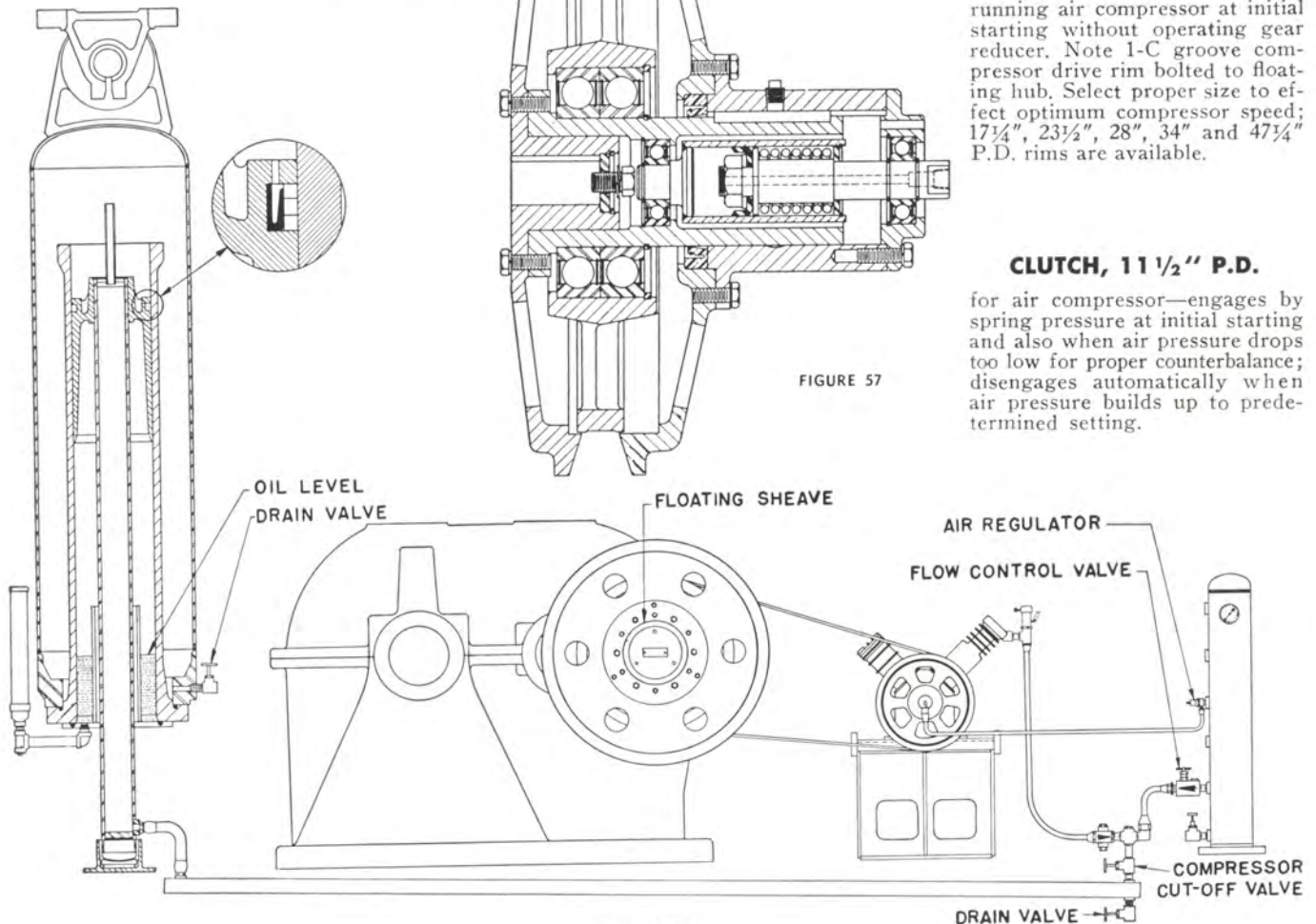


FIGURE 58

Schematic Outline of Air System

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

LUFKIN LONG STROKE HYDRAULIC PUMPING UNITS

Specifications

PEAK POLISHED ROD LOAD—35,000#
AUTOMATIC AIR COUNTERBALANCE—26,200# Maximum—Automatic counterbalance control compensates for changing well loads, requires no attention or adjustment.

MAXIMUM LOAD RANGE—26,200#

MAXIMUM OPERATING PRESSURE—
 Hydraulic Fluid—270 P.S.I.
 Counterbalance Air—200 P.S.I.

STROKE LENGTHS—20, 25, 30, and 40 Ft.

PUMPING SPEED RANGE—Dependent upon stroke length and load range. Consult your Lufkin Representative.

HYDRAULIC CYLINDER—13" Dia. Nickel Alloy Cast Iron

POLISHED ROD—1½" Dia. Alloy Steel or Monel as Ordered

POWER FLUID:

GENERAL SPECIFICATIONS: Use a straight mineral oil containing rust and oxidation inhibitors only. Do not use detergent type oils.

VISCOSITY: Use an oil that will approximate the following viscosity:

100° F	300 SUS
130° F	140 SUS
210° F	48.5 SUS

This viscosity approximates that of SAE 20 motor oil.

HYDRAULIC REVERSING PUMP DATA—

Type—Triple Screw "IMO" With Gear Driven Reversing Mechanism

Reversals—Pump is self-reversing resulting in smooth polished rod reversals; reversing valve is not required.

Material—Pump Housing and Other Critical Parts Nickel-Moly Cast Iron

Capacity—1,900 GPM at 1,000 RPM

Input Speed—976 RPM for six 20 foot Strokes Per Minute

Sheave—14½", 16", 20" and 24" P.D.—7 "D"

AIR TANKS—Two 30" Dia. x 22 Ft. Long for 20' and 25' Strokes, 28' Long for 30' and 40' Strokes. ASME—200 Lb. Safe Working Pressure.

AIR COMPRESSOR—Gardner-Denver "ADD" Duplex, Two Stage

SCAVENGING TANK—Built into Base With Capacity for All Fluid in the System

SCAVENGING PUMP—Gerotor No. 0-30 Gear Driven. Mounted Inside Pump Housing.

WEIGHT—38,540 Lbs. for No. 3520
 39,800 Lbs. for No. 3525
 41,700 Lbs. for No. 3530
 44,060 Lbs. for No. 3540

FOUR SIZES

No. 3520

No. 3525

No. 3530

No. 3540

35,000 Lb. Polished Rod Load Rating
 20', 25', 30' and 40' Strokes

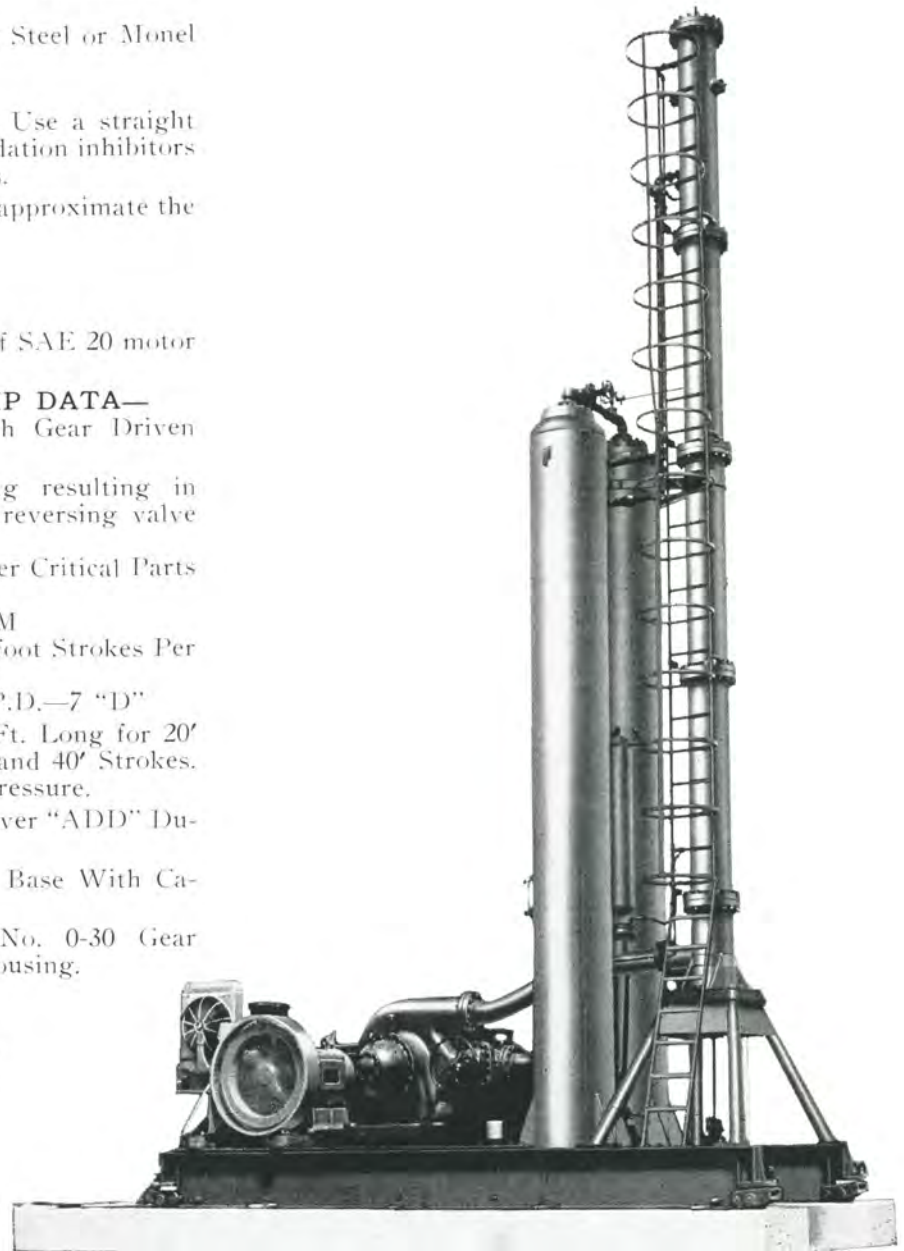


FIGURE 59

LUFKIN LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN MODEL H-795 HORIZONTAL

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

The Lufkin Model H-795 twin cylinder, 2 cycle gas engine is built as a medium speed, heavy duty, crosshead type natural gas engine. Crosshead design allows the use of metallic packing between the scavenging chamber and the crankcase to prevent combustion gases from entering the crankcase. This design gives long life, dependable power and low maintenance. Two cylinders give two power impulses for every revolution of the crankshaft which results in a smoother flow of power with less shock on the drive equipment.

Lufkin Engines are furnished as a complete power unit. Standard equipment is full pressure lubrication, force feed cylinder lubricator which is automatically filled through an oil filter from the engine base, rotary high tension magneto, centrifugal governor, Ensign natural gas mixer and regulator. Oil bath air filter, cooling system with radiator, fan, belt drive, fan and belt guards, Twin Disc power take off and built in safety control for low oil pressure and high water temperature.

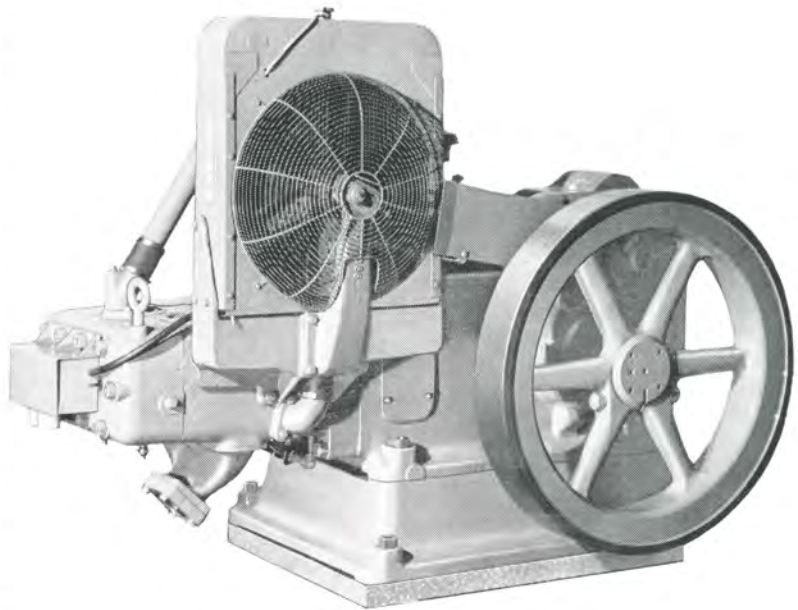


FIGURE 60
Front View—Lufkin H-795 Engine

OPTIONAL EQUIPMENT:

- 12 Volt Electric Starter
- Gas Motor Starter
- High Pressure (150±) Air Starting
- Dual Fuel Gas-Butane Operation
- Long Interval Maintenance Features
- Oil Cooled Pistons
- Cast Iron Sub-Base
- Hydraulic Governor

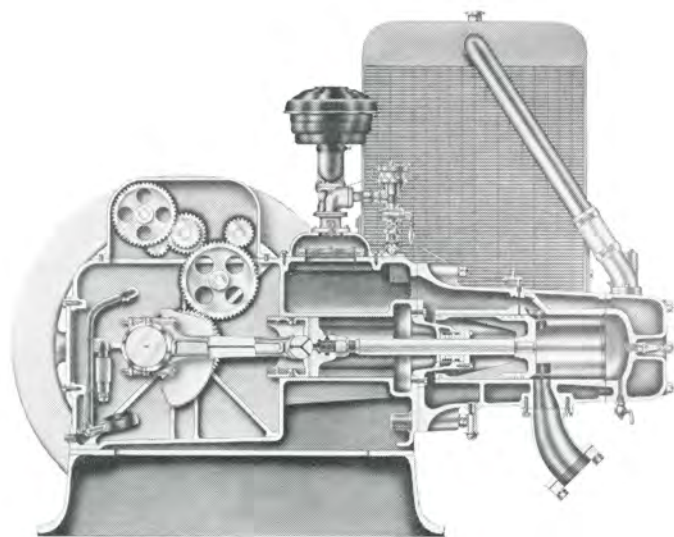


FIGURE 61
Cross Section—Lufkin H-795 Engine

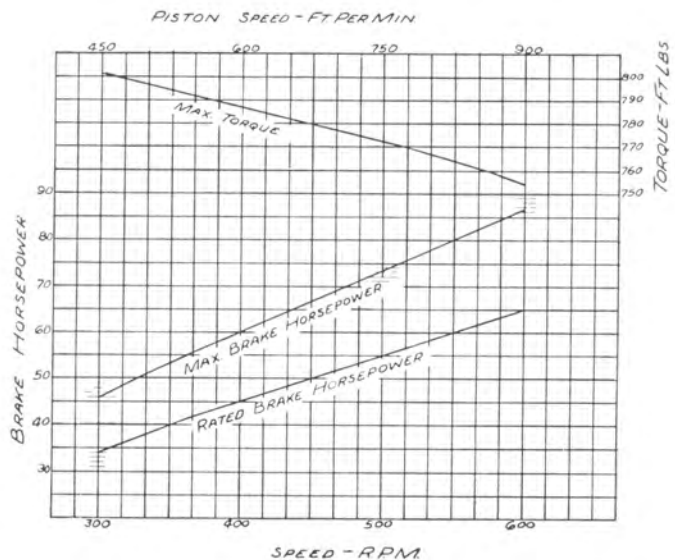


FIGURE 62
Performance Curve—Lufkin H-795 Engine

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



TWIN CYLINDER TWO CYCLE GAS ENGINE

HEAVY DUTY, MEDIUM SPEED, CROSSHEAD TYPE DESIGN

SPECIFICATIONS

Bore x Stroke	7½ x 9
Displacement, Cu. in.	795
Speed Range, RPM	300-600
Maximum Speed, RPM	600
Rated BHP-400 RPM	45
Rated BHP-600 RPM	65
Diameter Flywheel, in.	40
Flywheel WR ² (Ft ² lbs)	1580
Dia. Power take off shaft	3"
Size Exhaust pipe	4"
Size Gas Inlet	1"
Oil Capacity (Gallons)	5
Water Capacity (Gallons)	14
Foundation Bolts	(4) 1"
Weight	4250#



FIGURE 63
Drive Side (Clutch) Lufkin H-795 Engine

FEATURES

Thermosyphon Cooling maintains even temperatures at all loads and speeds. Make up water is seldom required because the system is operated under pressure.

Full Pressure Lubrication—an oil pump picks up oil in the engine base where a large reserve of oil is held and forces oil under pressure to all moving parts. The engine is equipped with a bypass type filter which is used to automatically fill the cylinder force feed lubricator eliminating daily filling of this item.

Safety Control is standard equipment and provides safety features for low oil pressure and high water temperatures.

Oil Cooled Pistons (optional) are available to provide longer ring and cylinder life and are recommended where the engine is operated under heavy loads.

Hydraulic Governor (optional) is available for close regulation such as for driving generator.

Sub Base (optional) raises the engine sufficiently for the engine flywheel to clear the base for mounting on cross rails or at floor level.

Long Interval Maintenance (optional) provides the engine with equipment to give good service and requiring maintenance at long intervals. This equipment consists of:

- Oil Level Control with Separate Reservoir
- Low Tension Ignition
- Long Life Spark Plugs
- Special Clutches Requiring Greasing at Long Intervals
- Other Items which assures the Operator of Maximum performance with minimum maintenance.

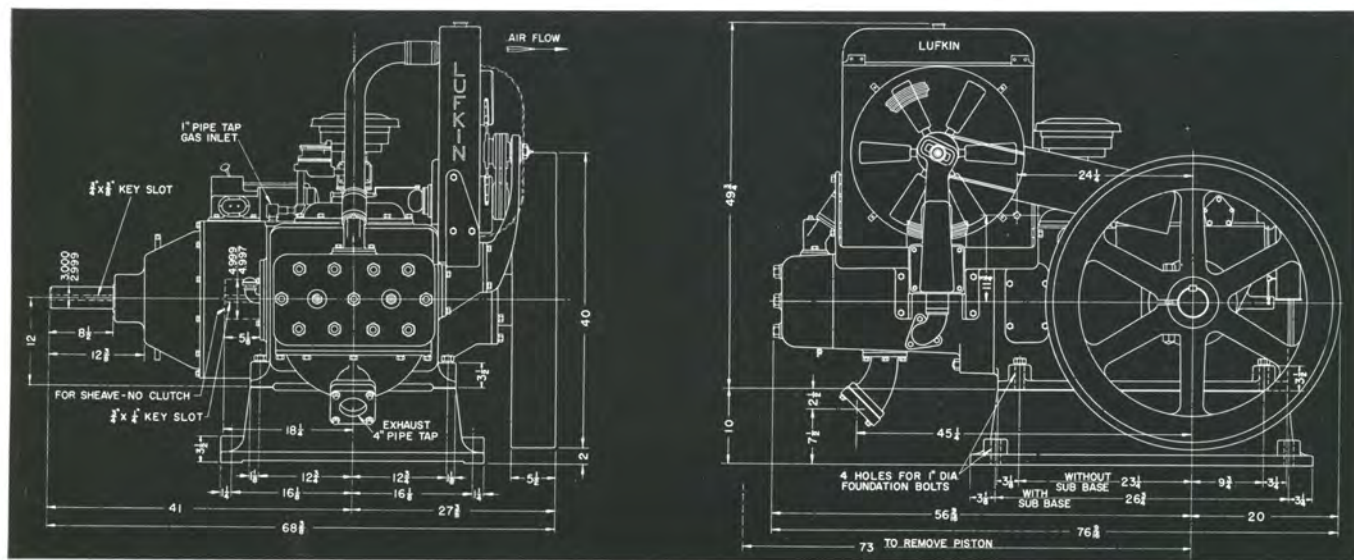


FIGURE 64
Space Plan Lufkin H-795 Engine

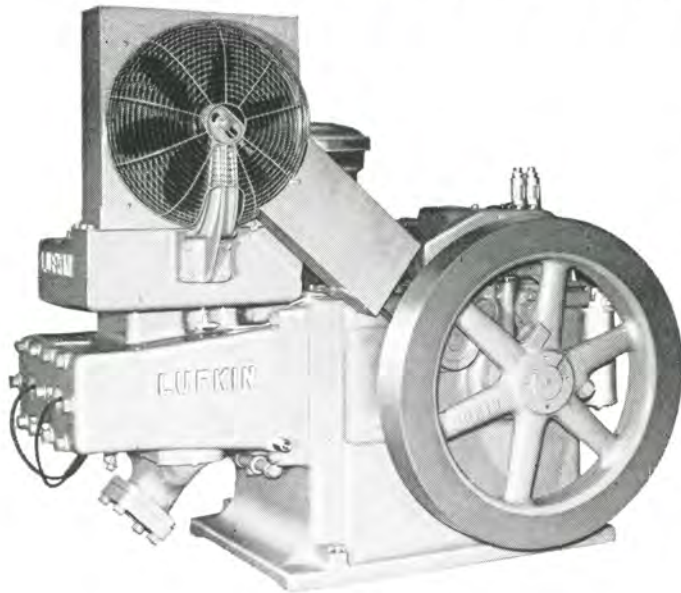
LUFKIN**LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS****LUFKIN MODEL HC-333 AND HT-333 HORIZONTAL****20 HP-425 RPM—30 HP-650 RPM CONTINUOUS SERVICE**

FIGURE 65
Flywheel Side Lufkin HC-333 Engine

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

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

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

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

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

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

FEATURES

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

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

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

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

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

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

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

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

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

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

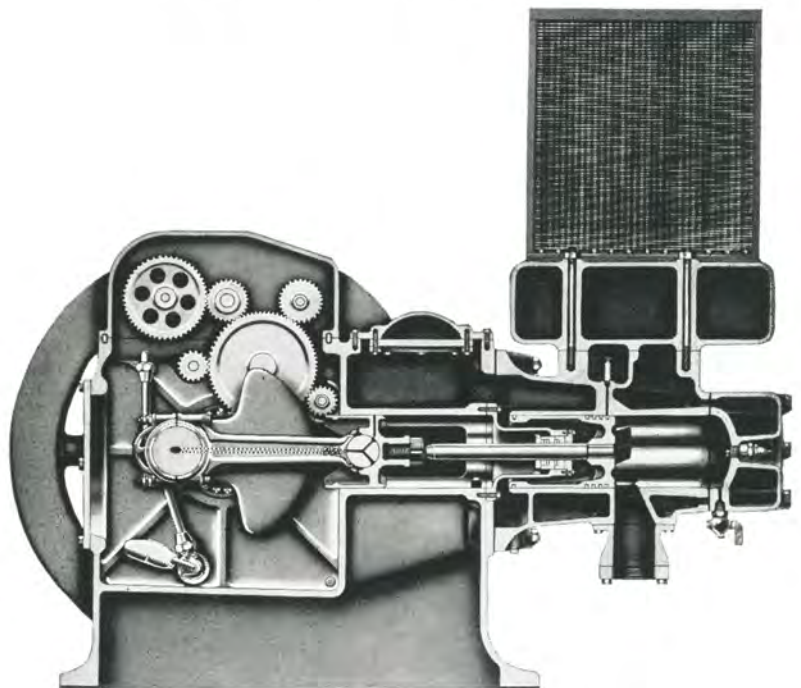


FIGURE 66
Cross Section HC-333 Engine

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



TWIN CYLINDER, TWO CYCLE GAS ENGINE

HEAVY DUTY, MEDIUM SPEED CROSSHEAD TYPE DESIGN

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

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

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

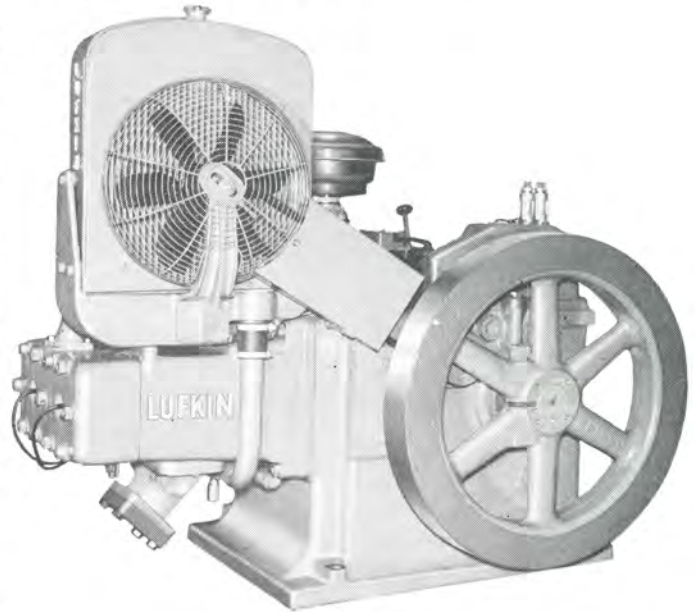


FIGURE 67
Flywheel Side Lufkin HT-333 Engine

Lufkin HC-333 and HT-333 Engine Specifications

No. of Cylinders.....	2
Bore	5½"
Stroke	7"
Displacement—Cu. In.	333
Speed Range, R.P.M.	350-750
Normal Pumping Speed Range, R.P.M.	400-650
Rated B.H.P. Continuous 425 R.P.M.	20
Rated B.H.P. Continuous 650 R.P.M.	30
Rated B.M.E.P. Lbs.	55
Piston Speed Ft. Per Min. at 650 R.P.M.	758
Flywheel WR ² (FT ² Lbs.)	1200
Diameter Flywheel	35½"
Type Cooling System (Optional)	
HC-333	Condenser
HT-333	Thermosyphon
Ignition	Rotary Magneto
Lubrication	Full Pressure

Oil Filter	Bypass Type
	(Filtered Oil Fills Cylinder Lubricator)
Clutch	Twin Disc B-111
Size Clutch Shaft.....	2¼" Diam.—5/8" Keyway
Crankshaft Main Bearings.....	Taper-Roller
Connecting Rod Bearings.....	Precision Thin Wall
Air Filter.....	Oil Bath
Oil Capacity.....	20 Qts.
Water Capacity	
HC-333	28 Qts.
HT-333	32 Qts.
Diam. Gas Inlet.....	1"
Diam. Exhaust Pipe.....	4"
Foundation Bolts	(4) 7/8"
Weight (Shipping)	3250 Lbs.

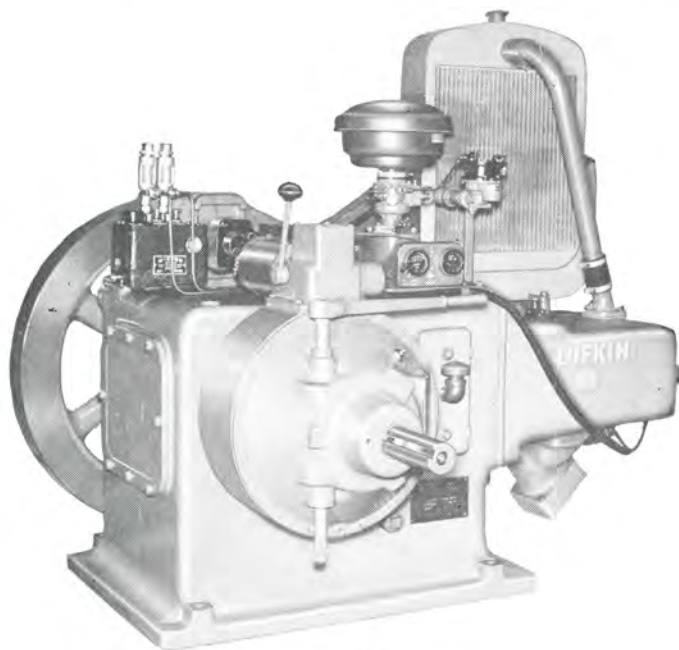


FIGURE 68
Clutch Side HT-333 Lufkin Engine

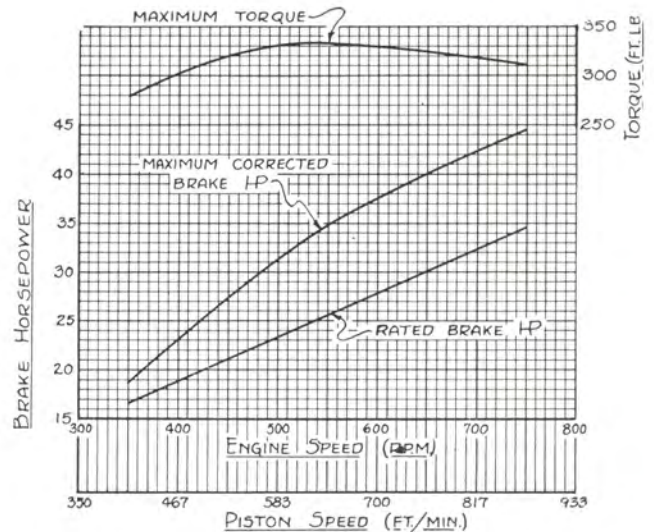


FIGURE 69
Performance Curves H-333 Gas Engine



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

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



FIGURE 70

Model THD—Lufkin's new Hydraulic Tandem Dump Trailer.

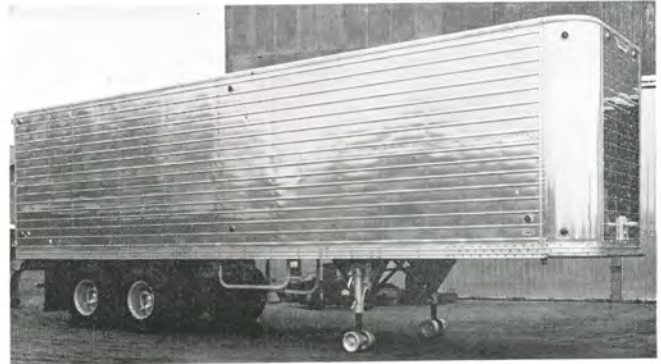


FIGURE 71

Model ALV

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

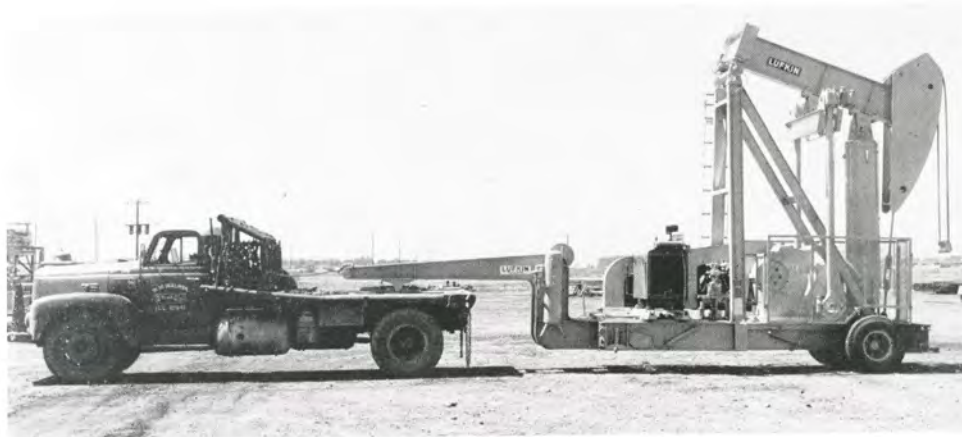


FIGURE 72

Mobile Pumping Unit for Test Purposes.

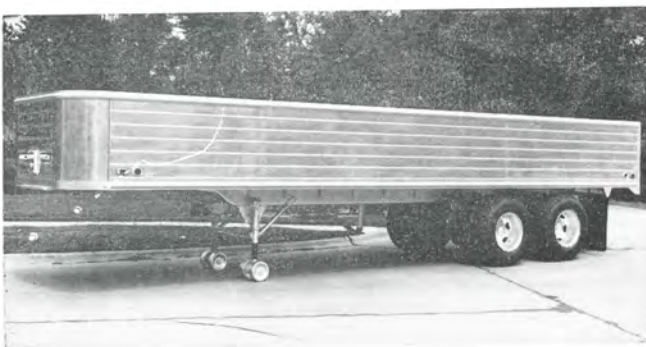


FIGURE 73

Model OVA

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

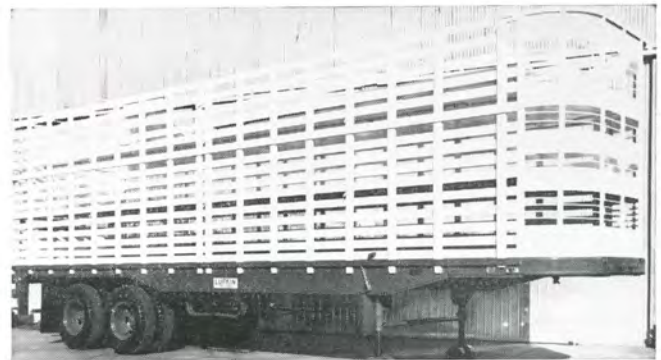


FIGURE 74

Model BF

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

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



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



FIGURE 75
Model TOF-H

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



FIGURE 76
Model TOF-C

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

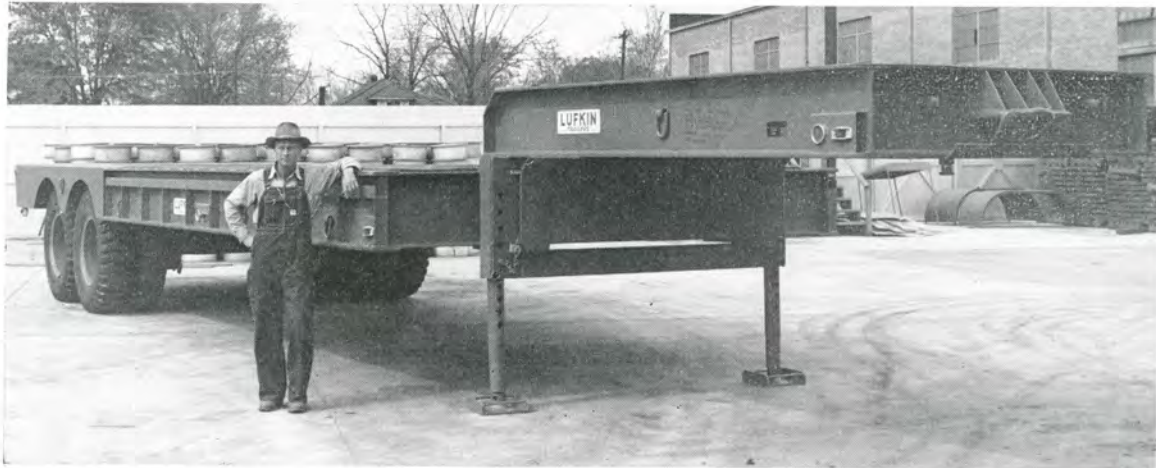


FIGURE 77

Custom Built Low-Bed

All Low-Bed Models offered custom made to every need



FIGURE 78
Model TOP

For hauling pipe, poles & other oilfield supplies



FIGURE 79

Model TBF-G

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



LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN GEAR REDUCERS

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

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

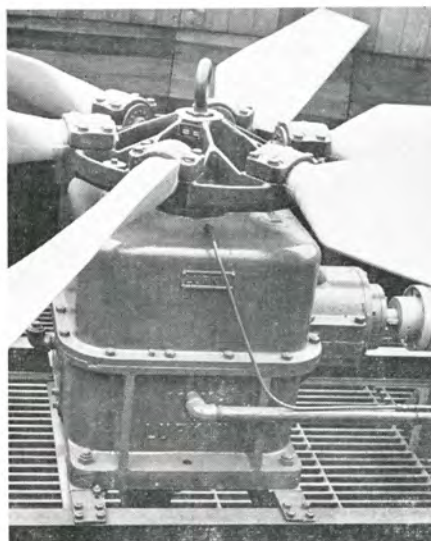


FIGURE 82
115VB Spiral Bevel Gear Reducer for Cooling Tower Fan Drive. A complete range of sizes available.

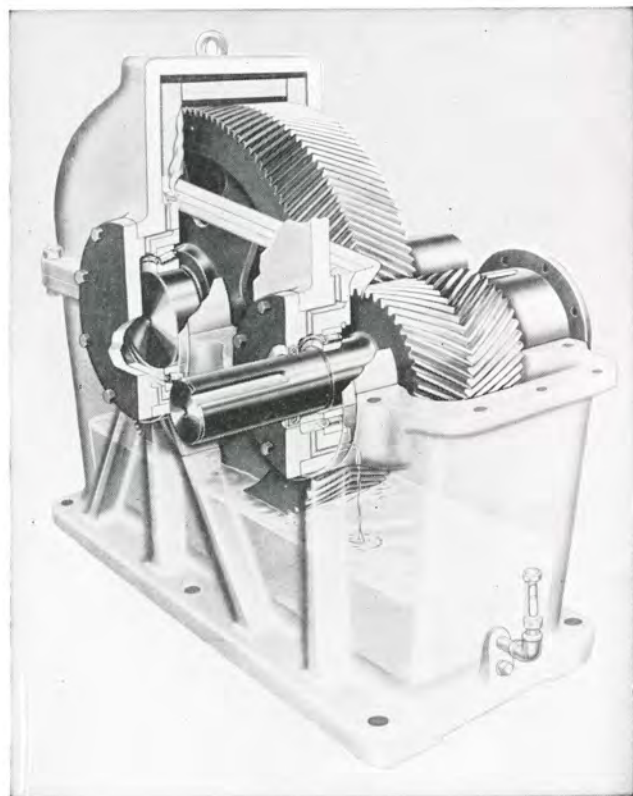


FIGURE 80
Typical Type S Single Reduction Herringbone Gear Reducer. Note simple but positive and fool-proof Lubrication System.



FIGURE 83
Lufkin S105 Reducer driving centrifugal pump in salt water disposal plant. Driven by Lufkin Engine.

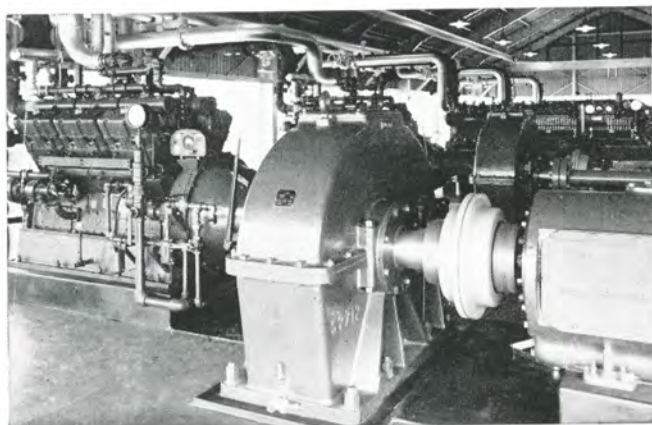


FIGURE 81
Two S2712 Reducers delivering 345 h.p. at 7.22 ratio.

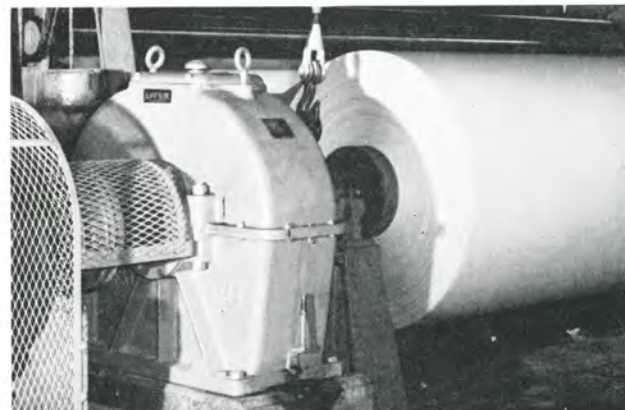


FIGURE 84
Lufkin S189 Single Reduction Herringbone Reducer Driving Rewind Machine at Newsprint Mill.

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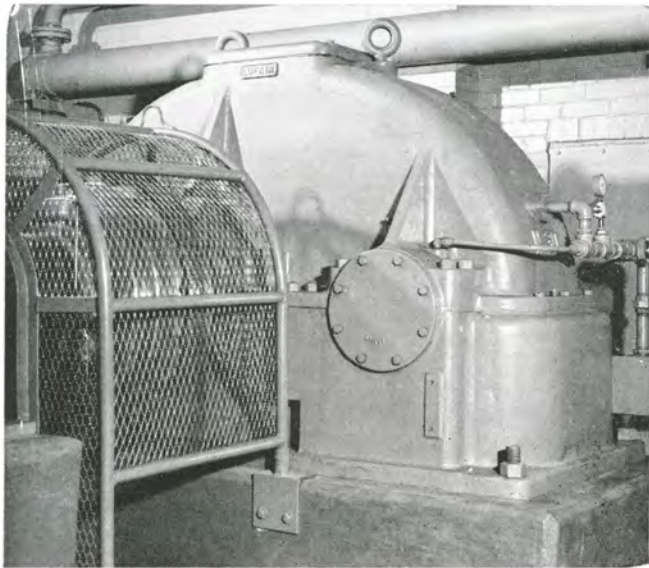


FIGURE 85

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

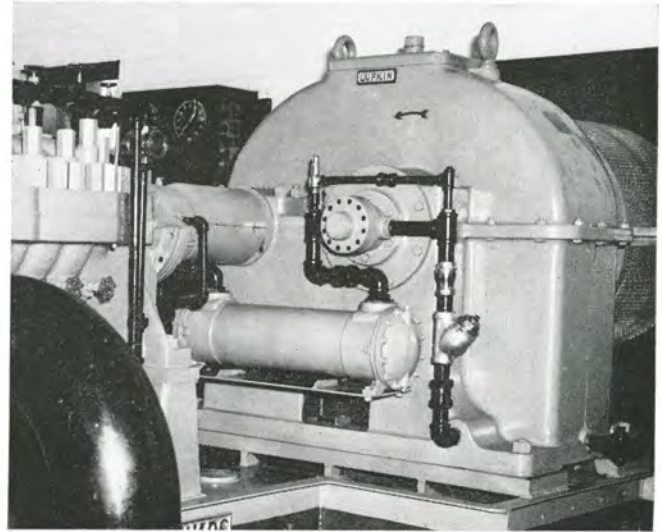


FIGURE 86

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

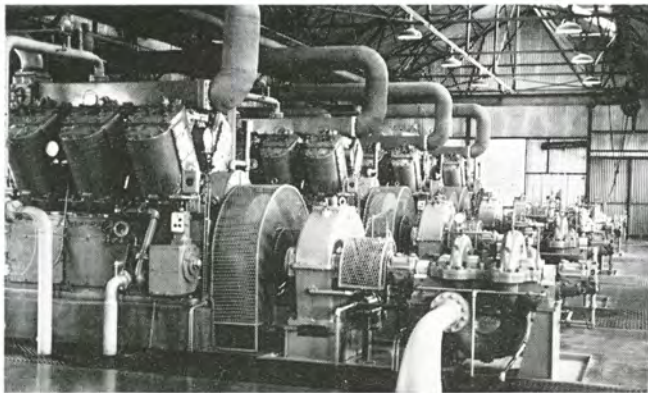


FIGURE 87

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

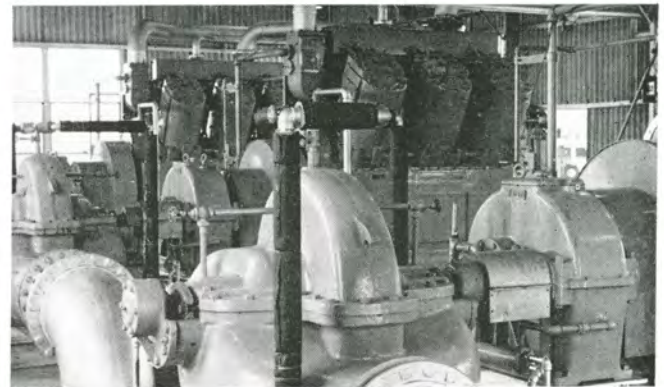


FIGURE 88

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

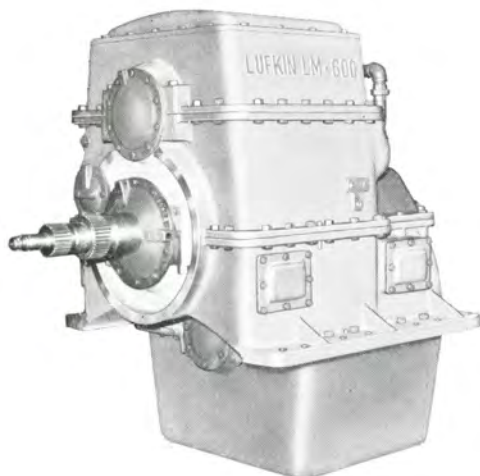


FIGURE 89

Lufkin LM600 Marine Reduction Gear; forward and reverse, 600 h.p. at 900 r.p.m.

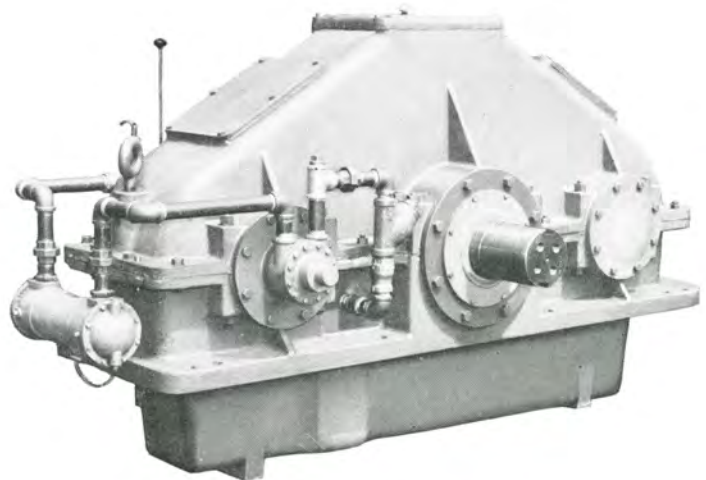


FIGURE 90

Lufkin LM608C Compound Marine Gear delivering 1100 h.p.

LUFKIN INSTALLATIONS

TYPICAL OF THE MORE THAN SIXTY-FIVE THOUSAND
LUFKIN PUMPING UNITS NOW GIVING SATISFACTORY SERVICE

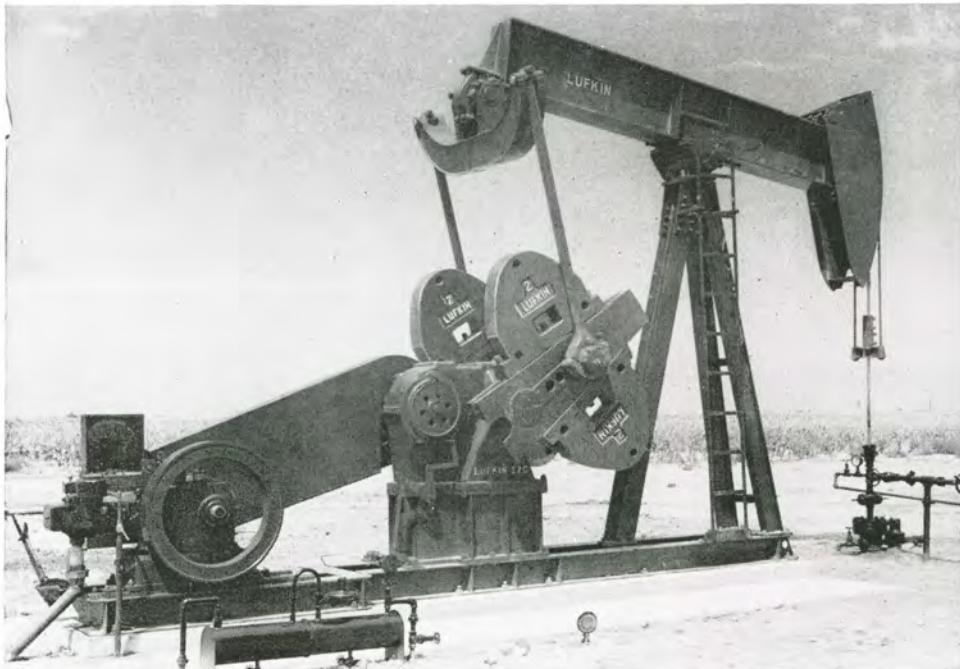


FIGURE 91

Lufkin C-160D-64-23 Twin Crank Pumping Unit with sub-base and single cylinder engine set on jointed base. Custom built engine extension bases available for all prime movers.



FIGURE 92

Lufkin A-320D-100-32 Air Balanced Pumping Unit with electric motor drive and motor driven compressor.

LUFKIN

EQUIPMENT OF ADVANCED DESIGN
