LUFKIN OIL FIELD EQUIPMENT

CATALOG 61

Featuring the

LUFKIN *Universal* PUMPING UNIT

PUMPING UNIT INDEX ON PAGE 3399

LUFKIN FOUNDRY & MACHINE COMPANY • LUFKIN, TEXAS

LUFKIN EQUIPMENT OF ADVANCED DESIGN

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FIGURE 1

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

STANDARD CRANK BALANCED PUMPING UNIT ASSEMBLIES

See Page 3421 for Beam Balance Assemblies and Page 3428 for Air Balance Assemblies

A.P.I. Size	Pumping Unit Assembly†	Old Lufkin Designation	WALKING BEAM CENTERS Well End	WALKING BEAM CENTERS Unit End	WALKING BEAM Section	Counter-Balance At Max. Stroke, Lbs.‡	Maximum Counter-Balance With Four Type D Aux. Weights§	Crank No.	Counter-weight No.	Page No.
**1824	C-1824D-168-35		19'-7"	10'-11¼"	36" x 16½" x 260 lbs.	15,520	23,250	94100ROA	OORO	3406
	C-1280D-168-35		19'-7"	10'-11⅜"	36" x 16½" x 260 lbs.	15,520	23,250	94100ROA	OORO	3406
**1280	C-1280D-144-40		16'-9"	10'-11¼"	36" x 16½" x 245 lbs.	19,830	28,870	94100ROA	OORO	3406
	C-1280D-144-30		16'-9"	10'-11¾"	33" x 15¾" x 200 lbs.	17,945	26,615	94100ROA	ORO	3406
	C-912D-168-35		19'-7"	10'-11¼"	36" x 16½" x 260 lbs.	15,520	23,250	94100ROA	OORO	3406
912	C-912D-144-40		16'-9"	10'-11¼"	36" x 16½" x 245 lbs.	19,830	28,870	94100ROA	OORO	3406
	C-912D-144-30	TC-OLCBR-912D	16'-9"	10'-11¾"	33" x 15¾" x 200 lbs.	17,945	26,615	94100ROA	ORO	3406
	C-640D-168-35		19'-7"	10'-11¼"	36" x 16½" x 260 lbs.	15,520	23,250	94100ROA	OORO	3406
	C-640D-144-40		16'-9"	10'-11¼"	36" x 16½" x 245 lbs.	19,830	28,870	94100ROA	OORO	3406
640	C-640D-144-30	TC-OLCBR-640DB	16'-9"	10'-11¼"	33" x 15¾" x 200 lbs.	17,945	26,615	94100ROA	ORO	3406
	C-640D-120100-30	TC-OLCR-640DB	16'-0"	10'-11¼"	33" x 15¾" x 200 lbs.	16,670	23,040	82100ROA	1RO	3406
	C-640D-120-30	TC-OLBR-640DB	16'-0"	10'-11¾"	33" x 15¾" x 200 lbs.	18,255	27,495	8292ROA	ORO	3406
	C-640D-108-30	TC-OLR-640DB	14'-0¾"	10'-11¾"	30" x 15" x 172 lbs.	16,555	24,465	8478ROA	ORO	#
	C-456D-144-30	TC-OLCBR-456DB	16'-9"	10'-11¼"	33" x 15¾" x 200 lbs.	17,945	26,615	94100ROA	ORO	3408
	C-456D-120100-30	TC-OLCR-456DB	16'-0"	10'-11¼"	33" x 15¾" x 200 lbs.	16,670	23,040	82100ROA	1RO	3408
*456	C-456D-120-30	TC-OLBR-456DB	16'-0"	10'-11¾"	33" x 15¾" x 200 lbs.	18,255	27,495	8292ROA	ORO	3408
	C-456D-120-25		14'-3½"	10'-0"	30" x 15" x 172 lbs.	14,230	21,370	8478ROA	ORO	3408
	C-456D-108-30	TC-OLR-456DB	14'-0¾"	10'-11¼"	30" x 15" x 172 lbs.	16,555	24,465	8478ROA	ORO	3408
	C-456D-108-26.7		14'-0¾"	10'-11¼"	30" x 15" x 172 lbs.	16,555	24,465	8478ROA	ORO	3408
	C-320D-120-25	TC-1LBR-41D	14'-3½"	10'-0"	30" x 15" x 172 lbs.	15,350	23,090	8482ROA	ORO	3410
	C-320D-100-28		11'-11"	10'-0"	30" x 15" x 172 lbs.	14,190	20,030	8482ROA	1RO	3410
	C-320D-100-25.3		13'-6"	10'-0"	30" x 15" x 172 lbs.	15,780	23,820	7475ROA	ORO	3410
*320	C-320D-84-30.6		12'-6"	12'-6"	30" x 15" x 172 lbs.	18,090	25,050	8482ROA	1RO	3410
	C-320D-84-27	TC-1BR-41D	11'-4¼"	10'-0"	24" x 14" x 160 lbs.	15,145	21,235	7475ROA	1RO	3410
	C-320D-74-27	TC-1R-41D	10'-0"	10'-0"	24" x 14" x 130 lbs.	16,075	22,955	7475ROA	2RO	3410
	C-320D-74-25.6		8'-0"	8'-0"	24" x 12" x 100 lbs.	15,380	22,260	7475ROA	2RO	#
	C-320D-74-25	TC-1AR-41D	12'-6"	12'-6"	24" x 14" x 160 lbs.	14,380	20,500	7475ROA	3CRO	#
	C-228D-84-22.9	TC-2LBTR-35B	9'-1"	8'-0"	24" x 14" x 130 lbs.	13,255	19,285	7475ROA	2RO	#
	C-228D-84-22.1		9'-1"	8'-0"	24" x 12" x 100 lbs.	13,225	19,285	7475ROA	2RO	3412
	C-228D-74-27	TC-1R-35B	10'-0"	10'-0"	24" x 14" x 130 lbs.	15,840	22,720	7475ROA	2RO	3412
*228	C-228D-74-23	TC-2LTR-35B	8'-0"	8'-0"	24" x 12" x 100 ,bs.	13,685	19,805	7475ROA	3CRO	3412
	C-228D-74-20	TC-2BTR-35B	9'-3"	8'-0"	27" x 10" x 102 lbs.	11,710	17,320	6466RO	2RO	3412
	C-228D-74-18.6		8'-1"	7'-0"	24" x 9" x 84 lbs.	8,575	12,915	6460ROA	3CRO	#
	C-228D-64-23	TC-2TR-35B	8'-0"	8'-0"	24" x 12" x 100 lbs.	12,350	18,200	6466RO	3CRO	3412
	C-228D-64-22		7'-0"	7'-0"	24" x 9" x 84 lbs.	11,840	17,360	6460ROA	2RO	3412
	C-228D-64-20	TC-2ATR-35B	10'-0"	10'-0"	27" x 10" x 102 lbs.	12,350	18,200	6466RO	3CRO	3412
	C-160D-84-15.1		10'-6"	8'-0"	24" x 12" x 100 lbs.	8,270	12,480	6460ROA	2RO	#
	C-160D-74-20	TC-2BTR-22G	9'-3"	8'-0"	27" x 10" x 102 lbs.	9,630	14,425	6460ROA	2RO	3414
	C-160D-64-23	TC-2TR-22G	8'-0"	8'-0"	24" x 12" x 100 lbs.	11,465	17,000	6460ROA	2RO	3414
	C-160D-64-18.8		7'-8"	5'-3¼"	24" x 9" x 84 lbs.	10,150	15,170	4460ROA	3CRO	3414
	C-160D-64-16		7'-0"	7'-0"	18" x 8¾" x 77 lbs.	9,190	12,910	6460ROA	5ARO	3414
	C-160D-64-15	TC-33BTR-22G	8'-3"	5'-3¼"	21" x 9" x 82 lbs.	7,475	11,475	4152RO	3CRO	#
*160	C-160D-54-18.9		7'-0"	7'-0"	21" x 9" x 82 lbs.	9,460	14,190	5452RO	3CRO	3414
	C-160D-54-18	TC-33ATR-22G	8'-0"	8'-0"	24" x 9" x 84 lbs.	9,460	14,190	5452RO	3CRO	3415
	C-160D-54-17	TC-33TR-22G	7'-0"	5'-3¼"	18" x 8¾" x 77 lbs.	9,050	13,770	4152RO	3CRO	3415
	C-160D-54-16		7'-0"	7'-0"	18" x 8¾" x 77 lbs.	9,460	14,190	5452RO	3CRO	3415
	C-114D-64-15.9		7'-0"	7'-0"	18" x 8¾" x 77 lbs.	8,905	12,625	6460ROA	5ARO	#
	C-114D-64-15	TC-44ALTR-15B	8'-0"	8'-0"	21" x 9" x 82 lbs.	8,520	12,240	6460ROA	5ARO	#
	C-114D-64-13	TC-44CBTRA-15B	7'-11¼"	6'-0"	16" x 8½" x 71 lbs.	7,440	11,435	5452RO	3CRO	#
	C-114D-64-11.6	TC-44CBTR-15B	7'-11¼"	6'-0"	16" x 8½" x 64 lbs.	6,415	9,465	5452RO	5ARO	#
	C-114D-64-11		7'-11¼"	6'-0"	16" x 8½" x 64 lbs.	6,415	9,465	5452RO	5ARO	3416
	C-114D-54-17	TC-44DTR-15B	6'-0"	6'-0"	18" x 8¾" x 77 lbs.	9,050	13,770	5452RO	3CRO	#
	C-114D-54-16		7'-0"	7'-0"	18" x 8¾" x 77 lbs.	9,460	14,190	5452RO	3CRO	3416
*114	C-114D-54-15.6	TC-44CTRA-15B	6'-0"	6'-0"	16" x 8½" x 71 lbs.	8,925	13,655	5452RO	3CRO	3416
	C-114D-54-15	TC-44ATR-15B	8'-0"	8'-0"	21" x 9" x 82 lbs.	8,790	13,520	5452RO	3CRO	3416
	C-114D-54-14.1		6'-0"	6'-0"	16" x 8½" x 64 lbs.	7,705	11,325	5452RO	5ARO	#
	C-114D-54-14	TC-44CTR-15B	6'-0"	6'-0"	16" x 8½" x 64 lbs.	7,705	11,325	5452RO	5ARO	3416
	C-114D-54-13.5	TC-44STR-15B	6'-4⅜"	5'-7⅝"	16" x 8½" x 64 lbs.	6,290	9,240	4846RO	5ARA	#
	C-114D-54-11.3		5'-9¼"	5'-1½"	16" x 8½" x 64 lbs.	6,120	9,070	4846RO	5ARA	#
	C-114D-48-14.1		6'-0"	6'-0"	16" x 8½" x 64 lbs.	6,945	10,270	4846RO	5ARA	#
	C-114D-48-14.9	TC-44CTR-15B	6'-0"	6'-0"	16" x 8½" x 64 lbs.	7,155	10,480	4846RO	5ARA	3416
	C-114D-48-12.7		6'-0"	6'-0"	16" x 8½" x 64 lbs.	6,945	10,270	4846RO	5ARA	3417
	C-114D-48-11.6		5'-0"	5'-0"	16" x 7" x 45 lbs.	6,945	10,270	4846RO	5ARA	3417
	C-114D-48-10	T5DB-15B	5'8½"	5'-0"	16" x 7" x 45 lbs.	5,450	7,135	4246CRB	5CRA	3418
	C-114D-42-11.6	T5D-15B	5'-0"	5'-0"	16" x 7" x 45 lbs.	6,260	8,190	4246CRB	5CRA	3418
	C-80D-54-14.1		6'-0"	6'-0"	16" x 8½" x 64 lbs.	7,705	11,325	5452RO	5ARO	#
	C-80D-54-14	TC-44CTR-80DB	6'-0"	6'-0"	16" x 8½" x 64 lbs.	7,705	11,325	5452ROA	5ARO	3416
	C-80D-54-13.5	TC-44STR-80DB	6'-4⅜"	5'-7⅝"	16" x 8½" x 64 lbs.	6,290	9,240	4846RO	5ARA	#
	C-80D-54-11.3		5'-9¼"	5'-1½"	16" x 8½" x 64 lbs.	6,120	9,070	4846RO	5ARA	#
	C-80D-48-14.1		6'-0"	6'-0"	16" x 8½" x 64 lbs.	6,945	10,270	4846RO	5ARA	#
80	C-80D-48-14	TC-44TR-80DB	6'-0"	6'-0"	16" x 8½" x 64 lbs.	7,155	10,480	4846RO	5ARA	3417
	C-80D-48-12.7		6'-0"	6'-0"	16" x 8½" x 64 lbs.	6,945	10,270	4846RO	5ARA	3417
	C-80D-48-11.6		5'-0"	5'-0"	16" x 7" x 45 lbs.	6,945	10,270	4846RO	5ARA	#
	C-80D-48-10	T5DB-80DB	5'-8½"	5'-0"	16" x 7" x 45 lbs.	5,450	7,135	4246CRB	5CRA	3418
	C-80D-42-11.6	T5D-80DB	5'-0"	5'-0"	16" x 7" x 45 lbs.	6,260	8,190	4246CRB	5CRA	3418
	C-57D-48-10	T5DB-7C	5'-8½"	5'-0"	16" x 7" x 45 lbs.	5,450	7,135	4246CRB	5CRA	3418
	C-57D-48-8		5'-7¾"	4'-0"	16" x 7" x 45 lbs.	3,360	4,230	3441R	6R	#
*57	C-57D-42-11.6	T5D-7C	5'-0"	5'-0"	16" x 7" x 45 lbs.	6,260	8,190	4246CRB	5CRA	3418
	C-40D-40-7.4	T6EB-9B	4'-8½"	4'-0"	14" x 6¾" x 30 lbs.	3,985	5,030	3441R	6R	3418
40	C-40D-34-8.7	T6E-9B	4'-0"	4'-0"	14" x 6¾" x 30 lbs.	4,785	6,015	3441R	6R	3418
	C-25D-36-4	T7AL-3B	5'-3"	3'-6"	10" x 5¾" x 25 lbs.	2,080	2,755	2433R	7R	3418
25	C-25D-28-7.5	T7AB-3B	4'-1"	3'-6"	14" x 6¾" x 30 lbs.	2,725	3,585	2433R	7R	3418
	C-25D-24-6	T7A-3B	3'-6"	3'-6"	10" x 5¾" x 25 lbs.	3,250	4,255	2433R	7R	3418

† 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 CRB cranks is tabulated on the basis of 4 type S auxiliary weights.
** These units are also furnished with triple reduction gear reducers.

EXPLANATION OF PUMPING UNIT DESIGNATIONS

C-1280D-144-40

- **Type Counterbalance:**
  - A—Air Counterbalance
  - B—Beam Counterbalance
  - C—Trout Crank Counterbalance
  - CB—Combination Beam and Crank Counterbalance
- **Peak Torque Rating In Thousands Of Inch Pounds**
- **D—Double Reduction Gear Reducer**
  S—Single Reduction Gear Reducer
  T—Triple Reduction Gear Reducer
- **Stroke Length In Inches**
- **Polished Rod Load Rating In Thousands of Pounds**

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 will have the crank sweep radius added to the polished rod stroke in the unit designation. For example, the C-640-120100-30 unit has 100″ radius cranks instead of the standard 92″.

A letter added to the end of the unit designation indicates that there is some structural change in the unit that effects the standard foundation plan. The C-160S-74-20 and the C-160S-74-20A are basically the same unit as far as stroke, rating, etc. are concerned, but their foundation plans are different. Structural and detail changes that do not effect the foundation plan will not change the unit designation but will be coded into the serial number of the unit.

INSTRUCTIONS FOR ORDERING SPARE PARTS

The part number and description of the part should be furnished if at all possible. If the part number is not available, give the description of the part, the unit designation, serial number, and order number. The designation alone is not sufficient. By supplying all the information available our personnel will have a cross check on the particular part wanted and errors in typing, etc. can be circumvented.

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.

GEAR REDUCER: For temperatures between 10° F. and 100° F. use an SAE 90 mineral oil with rust and oxidation inhibitors and with an anti-foam agent and having a pour point of 0° F. or lower. (This is a 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 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.

If desired, units can be shipped with the gear reducer filled with oil that will comply with the above specifications.

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

After the oil has been in service for one year the operator should give the oil a good visual inspection for possible dirt, sludge, water emulsion or other forms of contamination.

After this first inspection a similar inspection should be made every six months.

It is recommended that a quart sample be taken from the reducer every year and checked for acidity.

CRANK PIN BEARINGS: All sizes factory lubrirated with a special high quality lubricant. These bearings do not require field lubrication.

CENTER BEARING AND EQUALIZER BEARING: Can be furnished factory lubricated as described above (optional and at extra cost in some cases); however, unless otherwise specified, these bearings will be furnished with provisions for field lubrication. Use an SAE 140 Extreme Pressure Lubricant having a pour point of 5° F. or lower.

The foregoing 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.

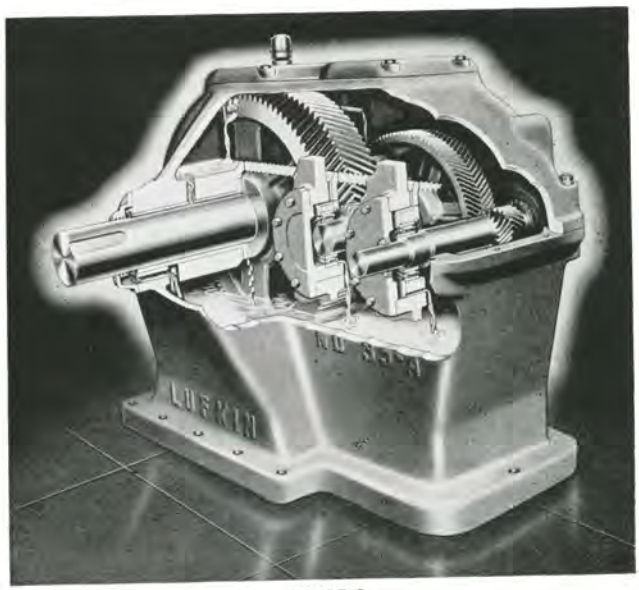


FIGURE 2

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.

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

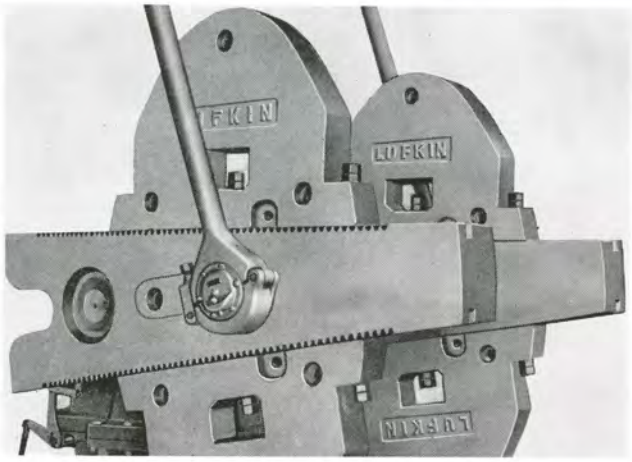


FIGURE 3—*Extra large counterweights available if needed.*

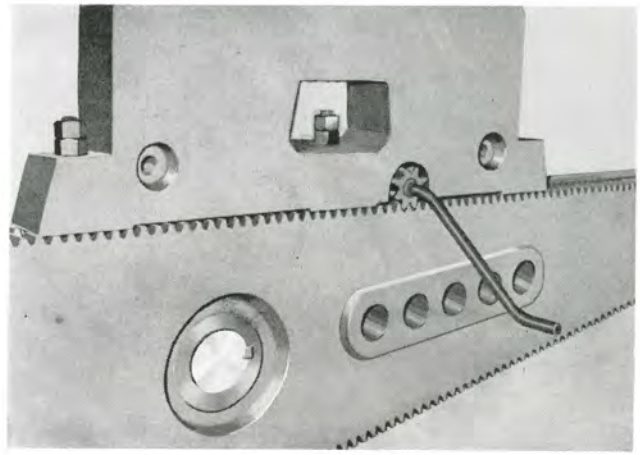


FIGURE 6—*New removable pinion (with crank handle attached) is used to adjust all counterweights.*

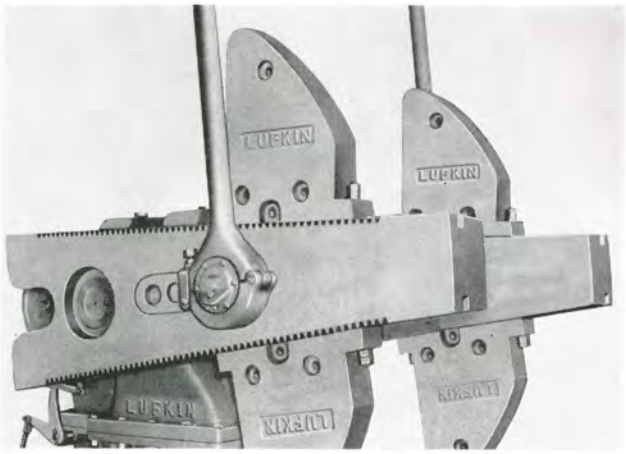


FIGURE 4—*Small counterweights can be furnished where counterbalance requirements are reduced.*

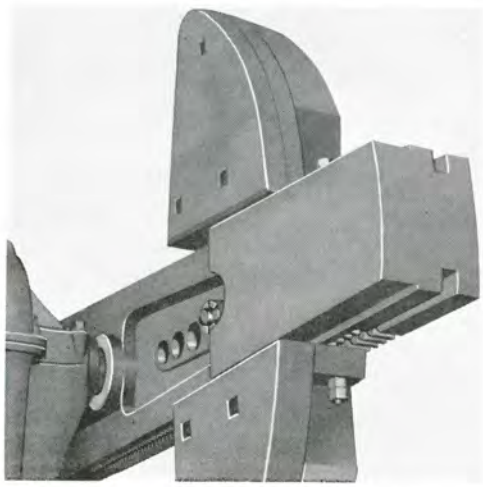


FIGURE 5—*Various combinations of type S and D auxiliary counterweights available for additional counterbalance.*

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 5 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 UNIVERSAL CENTER-LINE PITMAN EQUALIZER

Typical for C-114 and Larger Assemblies

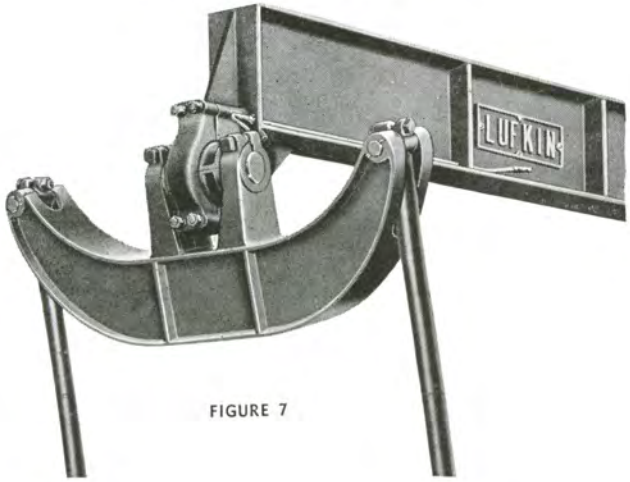
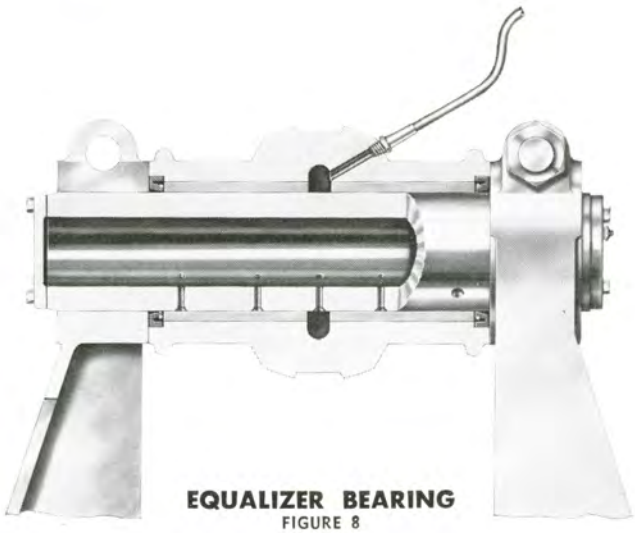
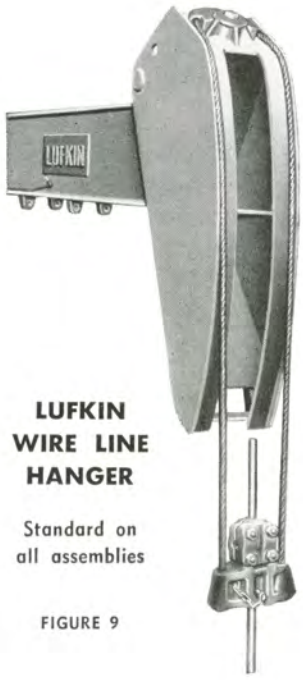


FIGURE 7



EQUALIZER BEARING

FIGURE 8



LUFKIN WIRE LINE HANGER

Standard on all assemblies

FIGURE 9

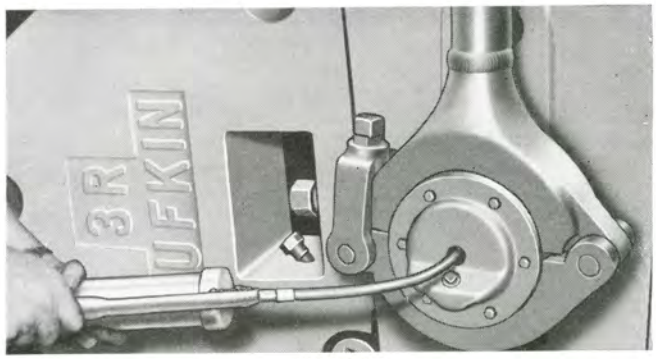


FIGURE 10

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.

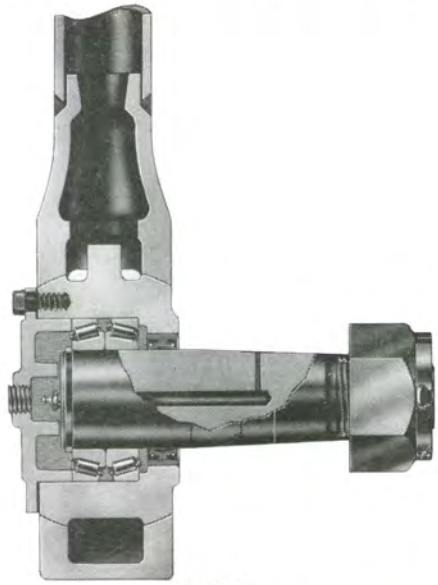


FIGURE 11

FACTORY LUBRICATED TAPERED ROLLER BEARING CRANK PIN ASSEMBLY

Standard on all assemblies

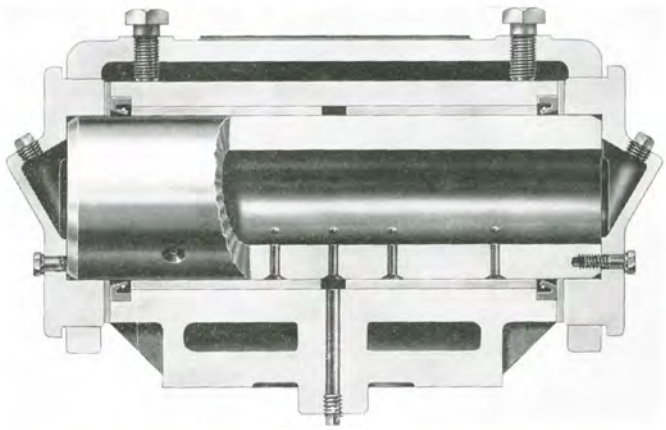


FIGURE 12

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.

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 orginial 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.

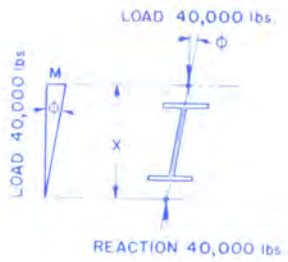


FIGURE 13

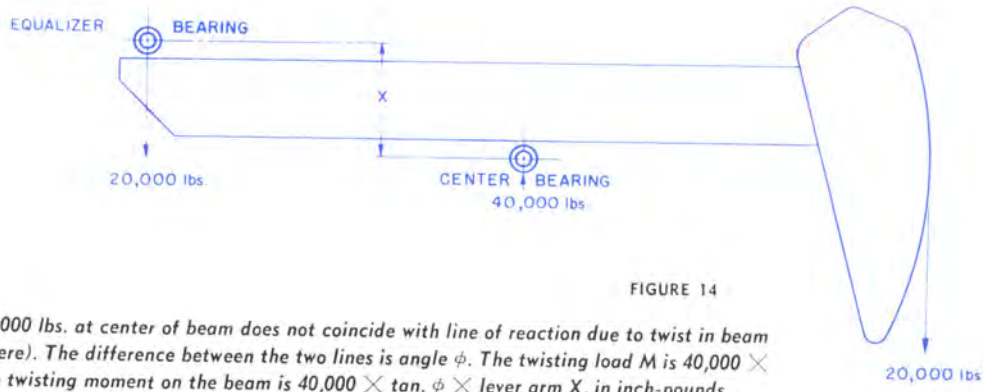


FIGURE 14

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 × tan. ϕ. The twisting moment on the beam is 40,000 × tan. ϕ × 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 at the 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.

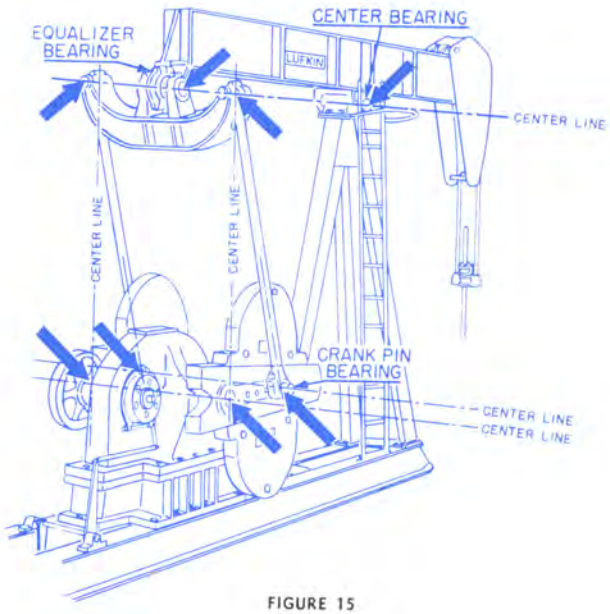


FIGURE 15

FIGURE 16

HI-PRIME PUMPING UNIT with elevated motor 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 easily removed and a jointed gas engine base installed. Short foundation block reduces installation costs. Available in all structures using 25D through 640D gear reducers.

FIGURE 17

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

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 sixteen sizes.

The 1280 and 1824 reducers are also available in triple reduction and are used with high speed engines or electric motors where pumping speeds are very slow.

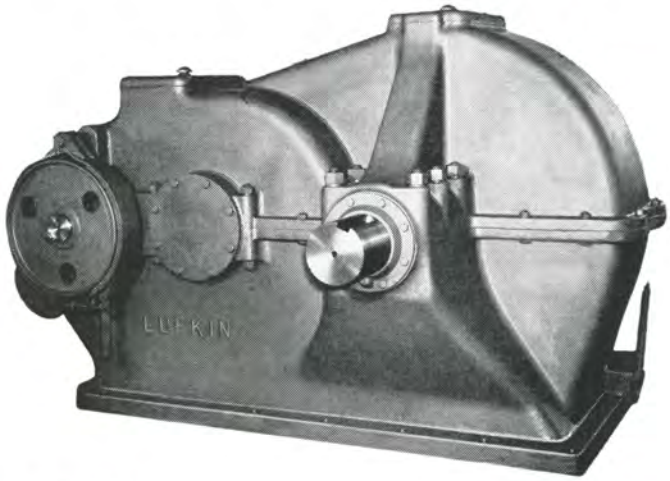


FIGURE 18
1824D Double Reduction Gear Unit

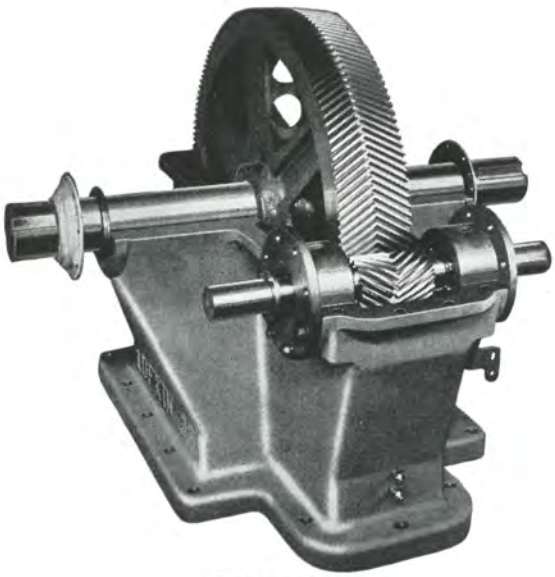


FIGURE 19
Single Reduction Gear Unit, cover removed

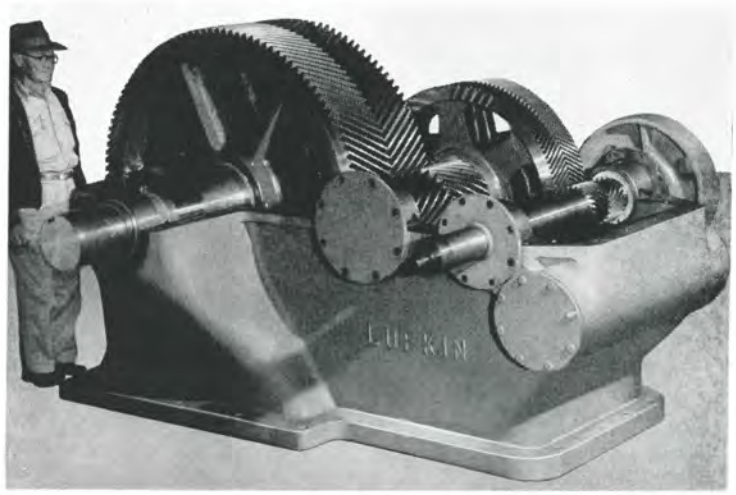


FIGURE 20
1824D Double Reduction Gear Unit, cover removed

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. Heat treated alloy steel gears are furnished as standard on the 25D and larger reducers. Heat treated nodular (or ductile) iron gears are furnished as standard on the 16D and smaller. Nodular iron gears can be furnished in some sizes larger than the 16D at a price reduction. Consult your Lufkin representative.
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.

GENERAL SPECIFICATIONS

Lufkin 1,824,000, 1,280,000, 912,000 and 640,000 In. Lbs. Peak Torque Pumping Units

1824, 1280, 912 and 640 API Sizes

GEAR DATA

1824D GEAR REDUCER: Double Reduction
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.—11D Std., 4-15/16" Bore, 68" P.D.—11D Max.
Distance Centerline Unit to Centerline of Drive: 28⅛".
Gear Box Oil Capacity: 165 Gallons.

912D GEAR REDUCER: Double Reduction
Gears: Main Gear 50.4" Diam., 13½" Face.
Rating: 912,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.72.
Crank Shaft Diam.: 7".
Sheave: 47⅜" P.D.—8D Std., 4-3/16" Bore, 55 P.D.—8D Max.
Distance Centerline Unit to Centerline Drive: 22½".
Gear Box Oil Capacity: 107 Gallons.

1280D GEAR REDUCER: Double Reduction
Main Gear: 54" P.D. x 15⅝" Face.
Rating: 1,280,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.05.
Crankshaft Dia.: 8½".
Sheave: 68" P.D.—10 D. Max., 4-15/16" Bore.
Distance Centerline Unit to Centerline Drive: 23⅜".
Oil Capacity: 120 Gallons (Approx.).
Weight: 18,000 Lbs.

640D GEAR REDUCER: Double Reduction.
Gears: Main Gear 41.6" Diam., 12⅝" Face.
Rating: 640,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.6.
Crank Shaft Diam. 7".
Sheave: 34" P.D.—7D Std., 51" P.D. Max. Without Sub-Base, 55" Max. With Sub-base, 3-7/16" Bore.
Distance Centerline Unit to Centerline Drive: 21½".
Gear Box Oil Capacity: 70 Gallons.

STRUCTURAL DATA

**C-1824D-168-35, **C-1280D-168-35, C-912D-168-35 and C-640D-168-35 PUMPING UNIT ASSEMBLIES—35,000 Lb. Polished Rod Load Class

WALKING BEAM: 36" x 16½" x 260 lbs. 19'-7" and 10'-11¼" Working Centers.
HANGER: Hinged Horsehead With 1⅜" Wireline 36'-0" Long.
PITMAN: Universal Cross Pin Equalizer 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 168", 146.8", 125.3", 103.8"
CENTER BEARING: No. OOL, 7½" x 22½" Bronze Bushed.
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. OC, 7" x 15¾" Bronze Bushed.

WEIGHT: C-1824D-168-35: 85,180 lbs. C-912D-168-35: 74,580 lbs. C-640D-168-35: 73,230 lbs.

†COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #00RO	0RO	1RO
94100ROA Cranks	15,520	13,900	10,115
4-S Auxiliary Weights	19,385	17,615	12,390
4-D Auxiliary Weights	23,250	21,330	14,665

** C-1280D-144-40, C-912D-144-40, and C-640D-144-40 Pumping UNIT ASSEMBLIES—40,000 Lb. Polished Rod Load Class

WALKING BEAM: 36" x 16½" x 245 lbs. 16'-9" 10'-11¼" Working Center.
HANGER: Hinged Horsehead with 1⅜" Wireline 32'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer, 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 144", 125.6", 107.2", 88.8".
CENTER BEARING: No. OOL, 7½" x 22½" Bronze Bushed.
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. OC, 7" x 15¾" Bronze Bushed.

WEIGHT: C-1280D-144-40: 79,080 lbs. C-912D-144-40: 72,480 lbs. C-640D-144-40: 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-1280D-144-30, * C-912D-144-30 and * C-640D-144-30 PUMPING UNIT ASSEMBLIES—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33" x 15¾" x 200 lbs. 16'-9" & 10'-11¼" Working Centers.
HANGER: Hinged Horsehead With 1¼" Wireline, 32'-0" Long.
PITMAN: Universal Equalizer With Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 144", 125.6", 107.2", 88.8".
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20".
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5¹⁵⁄₁₆" x 13½" Bronze Bushed.

WEIGHT: C-1280D-144-30: 71,652 lbs. C-912D-144-30: 65,052 lbs. C-640D-144-30: 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-640D-120100-30 PUMPING UNIT ASSEMBLY—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33" x 15¾" x 200 lbs. 16'-0" & 10'-11¼" Working Centers.
HANGER: Hinged Horsehead With 1¼" Wireline 28'-0" Long.
PITMAN: Universal Equalizer With Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 120", 103", 85.3", 67.6".
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20".
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5¹⁵⁄₁₆" x 13½" 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-640D-120-30 PUMPING UNIT ASSEMBLY—30,000 Lb. Polished Rod Load Class

WALKING BEAM: 33" x 15¾" x 200 lbs. 16'-0" & 10'-11¼" Working Centers.
HANGER: Hinged Horsehead With 1¼" Wireline 28'-0" Long.
PITMAN: Universal Equalizer With Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 120", 103", 85.3", 67.6".
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20".
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5¹⁵⁄₁₆" x 13½" 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

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

** This unit also available with triple reduction gear reducer. See page 3429.
* 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.

GENERAL DIMENSIONS

Lufkin 1,824,000, 1,280,000, 912,000 and 640,000 In. Lbs. Peak Torque Pumping Units

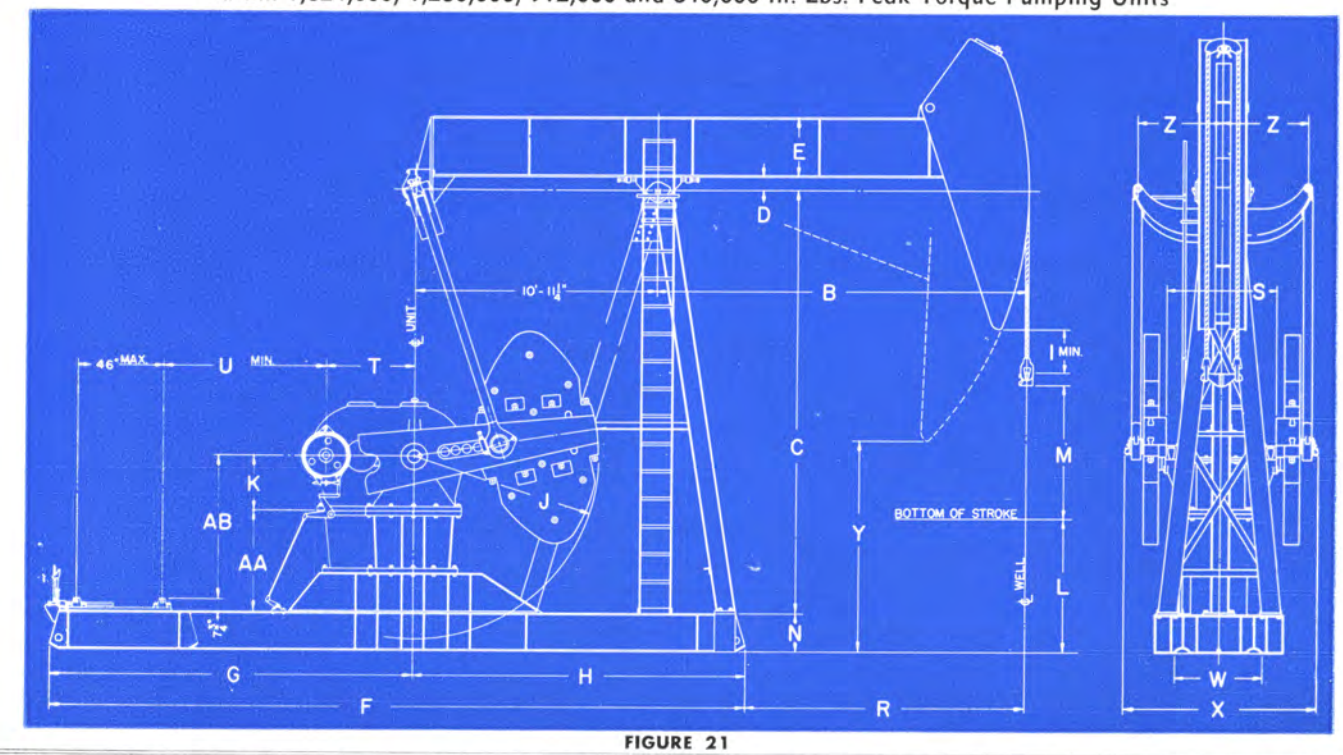


FIGURE 21

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"	36¼"	31'-0"	16'-4"	14'-8"	185⅜"	100"	36"	521⅛"	84"	21"	15'-10¼"	6'-2¼"	58⅞"	6'-4⅝"	50"	9'-5⅛"	7'-9"	523¼"	45"	731⅜"
C-1280D-168-35	19'-7"	19'-4"	9"	36¼"	31'-0"	16'-4"	14'-8"	185⅜"	100"	36"	521⅛"	84"	21"	15'-10¼"	68¼"	52½"	6'-11"	50"	8'-11⅛"	7'-9"	493¼"	45"	731¼"
C-912D-168-35	19'-7"	19'-4"	9"	36¼"	31'-0"	16'-4"	14'-8"	185⅜"	100"	30"	471¼"	84"	16⅛"	15'-10¼"	61¼"	48½"	7'-3"	46¾"	8'-4⅛"	7'-4"	461¼"	58⅛"	803⅜"
C-640D-168-35	19'-7"	19'-4"	9"	36¼"	31'-0"	16'-4"	14'-8"	185⅜"	100"	28"	471¼"	84"	16⅛"	15'-10¼"	61¼"	41½"	7'-10"	46¾"	8'-4⅛"	7'-4"	461¼"	60⅛"	803⅜"
C-1280D-144-40	16'-9"	19'-4"	9"	36"	31'-0"	16'-4"	14'-8"	191½"	100"	36"	765⅝"	72"	21"	13'-0¼"	68¼"	52½"	6'-11"	50"	8'-11⅛"	9'-9"	493¼"	45"	731¼"
C-912D-144-40	16'-9"	19'-4"	9"	36"	31'-0"	16'-4"	14'-8"	191½"	100"	30"	713¼"	72"	16⅛"	13'-0¼"	61¼"	48½"	7'-3"	46¾"	8'-4⅛"	9'-4"	461¼"	58⅛"	803⅜"
C-640D-144-40	16'-9"	19'-4"	9"	36"	31'-0"	16'-4"	14'-8"	191½"	100"	28"	713¼"	72"	16⅛"	13'-0¼"	61¼"	41½"	7'-10"	46¾"	8'-4⅛"	9'-4"	461¼"	60⅛"	803⅜"
C-1280D-144-30	16'-9"	19'-4"	7"	33"	31'-0"	16'-4"	14'-8"	191½"	100"	36"	765⅝"	72"	21"	13'-0¼"	68¼"	52½"	6'-11"	50"	8'-11⅛"	9'-9"	493¼"	45"	731¼"
C-912D-144-30	16'-9"	19'-4"	7"	33"	31'-0"	16'-4"	14'-8"	191½"	100"	30"	713¼"	72"	16⅛"	13'-0¼"	61¼"	48½"	7'-3"	46¾"	8'-4⅛"	9'-4"	461¼"	58⅛"	803⅜"
C-640D-144-30	16'-9"	19'-4"	7"	33"	31'-0"	16'-4"	14'-8"	191½"	100"	28"	713¼"	72"	16⅛"	13'-0¼"	61¼"	41½"	7'-10"	46¾"	8'-4⅛"	9'-4"	461¼"	60⅛"	803⅜"
C-640D-120100-30	16'-0"	17'-4"	7"	33"	31'-0"	16'-4"	14'-8"	24"	100"	28"	691⅛"	60"	16⅛"	12'-3¼"	61¼"	41½"	6'-10"	46¾"	8'-4⅛"	8'-10⅝"	461¼"	50"	701¼"
C-640D-120-30	16'-0"	17'-4"	7"	33"	30'-0"	15'-4"	14'-8"	24"	92"	28"	691⅛"	60"	16⅛"	12'-3¼"	61¼"	41½"	6'-10"	46¾"	8'-4⅛"	8'-10⅝"	461¼"	50"	701¼"

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

Lufkin CB-912D-168-35

FIGURE 22

GENERAL SPECIFICATIONS

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

456 API Size

GEAR DATA

456D GEAR REDUCER: Double Reduction
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.

456S GEAR REDUCER: Single Reduction
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-456D-144-30 and C-456S-144-30 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.
HANGER: Hinged Horsehead with 1¼" Wireline, 32'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 144", 125.6", 107.2", 88.8".
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20".
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5 15/16" x 13½", Bronze Bushed.

WEIGHT: C-456D-144-30: 62,502 lbs. C-456S-144-30: 62,902 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-456D-120100-30 and C-456S-120100-30 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.
HANGER: Hinged Horsehead with 1¼" Wireline, 28'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 120", 103", 85.3", 67.6".
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20"
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5 15/16" x 13½" Bronze Bushed.

WEIGHT: C-456D-120100-30: 55,514 lbs. C-456S-120100-30: 55,914 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 00RO	0RO	#1RO	2RO	3CRO
82100ROA Cranks	24,270	21,990	16,670	15,150	13,430
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-456D-120-30 and C-456S-120-30 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.
HANGER: Hinged Horsehead with 1¼" Wireline, 28'-0" long.
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 120", 103", 85.3", 67.6"
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20".
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5 15/16" x 13½", Bronze Bushed.

WEIGHT: C-456D-120-30:57,654 lbs. C-456S-120-30: 58,054 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

C-456D-120-25 and C-456S-120-25 PUMPING UNIT ASSEMBLIES—25,000 Lb. Polished Rod Load Class

WALKING BEAM: 30" x 15" x 172 lbs., 14'-3½" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1¼" wireline 28'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 120", 103", 85.5", 68.5".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2LGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4 15/16" x 12", Bronze Bushed.

WEIGHT: C-456D-120-25: 48,977 lbs. C-456S-120-25: 49,377 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #0RO	1RO	2RO	3CRO	5ARO
8478ROA Cranks	14,230	10,800	9,780	8,670	7,380
4-S Auxiliary Weights	17,800	13,070	12,030	10,880	8,920
4-D Auxiliary Weights	21,370	15,340	14,280	12,670	10,155

*C-456D-108-30 and C-456S-108-30 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.
HANGER: Hinged Horsehead with 1¼" Wire Line, 28'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 5" Extra Heavy Pipe.
POLISHED ROD STROKES: 108.4", 92.9", 77.4", 61.9".
CENTER BEARING: No. 1AD, Bronze Bushed, 7" x 20".
CRANK PINS: No. OGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. O, 5 15/16" x 13½", Bronze Bushed.

WEIGHT: C-456D-108-30: 55,550 lbs. C-456S-108-30: 55,950 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number	#0RO	1RO	2RO	3CRO
8478ROA Cranks		16,555	12,775	11,635	10,415
4-S Auxiliary Weights		20,510	15,270	14,115	12,855
4-D Auxiliary Weights		24,465	17,765	16,595	14,835

C-456D-108-26.7 and C-456S-108-26.7 PUMPING UNIT ASSEMBLIES—26,700 Lb. Polished Rod Load Class

WALKING BEAM: 30" x 15" x 172 lbs. 14'-0¾" and 10'-11¼" working centers.
HANGER: Hinged horsehead with 1¼" Wireline 28'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 108.4", 92.9", 77.4", 61.9".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2LGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4 15/16" x 12" Bronze Bushed.

WEIGHT: C-456D-108-26.7: 51,722 lbs. C-456S-108-26.7: 52,122 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #0RO	1RO	2RO	3CRO	5ARO
8478ROA Cranks	16,555	12,775	11,635	10,415	8,985
4-S Auxiliary Weights	20,510	15,270	14,115	12,855	10,695
4-D Auxiliary Weights	24,465	17,765	16,595	14,835	12,065

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

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

GENERAL DIMENSIONS

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

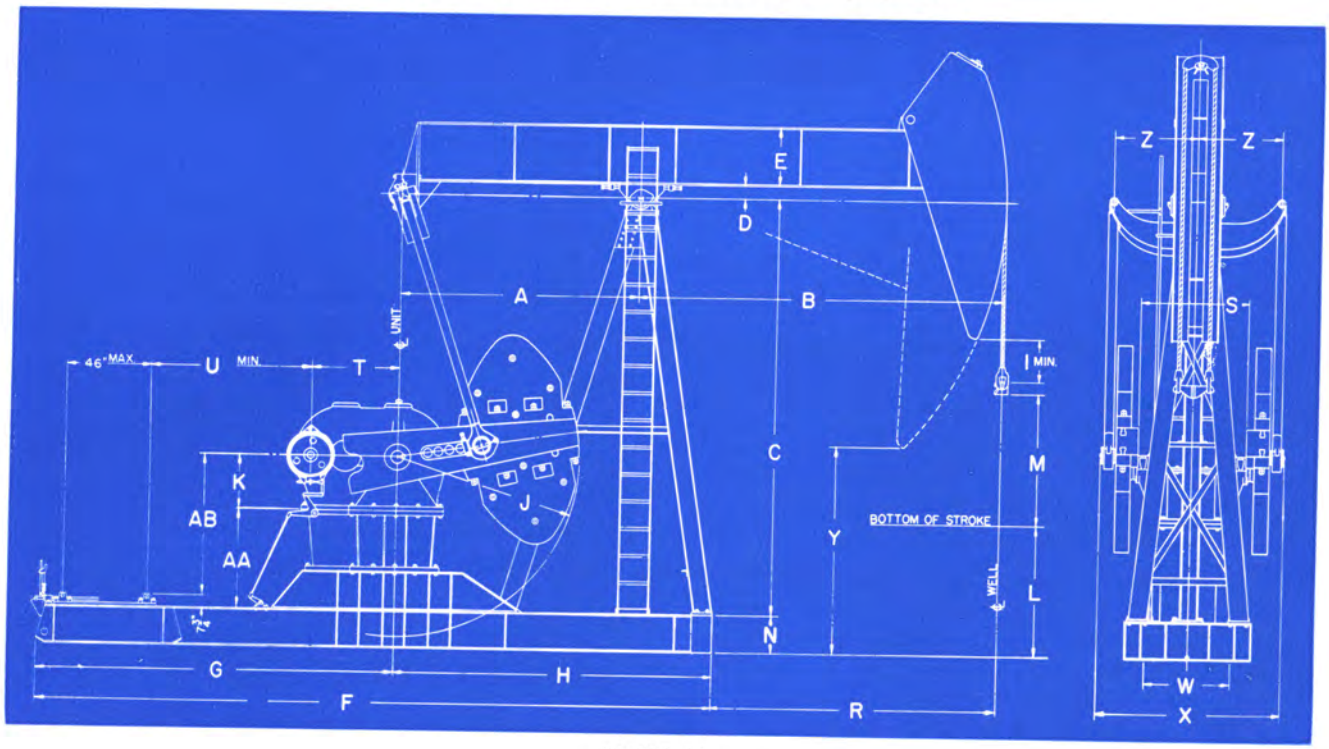


FIGURE 23

UNIT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T	U	W	X	Y	Z	AA	AB
C-456D-144-30	10′-11¼″	16′-9″	19′-4″	7″	33″	31′-0″	16′-4″	14′-8″	16½″	100″	28″	6′-3⅜″	72″	16⅛″	13′-0¼″	61¼″	38⅜″	8′-1⅛″	46¾″	8′-4⅛″	9′-4″	46¼″	60⅛″	80⅜″
C-456D-120100-30	10′-11¼″	16′-0″	17′-4″	7″	33″	31′-0″	16′-4″	14′-8″	23¾″	100″	28″	6′-9⅛″	60″	16⅛″	12′-3¼″	61¼″	38⅜″	8′-1⅛″	46¾″	8′-4⅛″	8′-10⅝″	46¼″	60⅛″	80⅜″
C-456D-120-30	10′-11¼″	16′-0″	17′-4″	7″	33″	30′-0″	15′-4″	14′-8″	23¾″	92″	28″	6′-9⅛″	60″	16⅛″	12′-3¼″	61¼″	38⅜″	7′-11⅛″	46¾″	8′-4⅛″	8′10⅝″	46¼″	50″	70¼″
C-456D-120-25	10′-0″	14′-3½″	15′-7″	6″	29⅞″	29′-6¾″	15′-4″	14′-2¾″	17¼″	78″	28″	5′-1½″	60″	16⅛″	10′-0¾″	63½″	38⅜″	7′-11⅛″	46¾″	8′-3¾″	7′-4¼″	46½″	36″	56¼″
C-456D-108-30	10′-11¼″	14′-0¾″	17′-4″	7″	29⅞″	30′-0″	15′-4″	14′-8″	28½″	78″	28″	6′-4⅝″	54.2″	16⅛″	10′-4″	63½″	38⅜″	7′-11⅛″	46¾″	8′-4⅛″	10′-0⅛″	46¼″	36″	56¼″
C-456D-108-26.7	10′-11¼″	14′-0¾″	17′-2″	6″	29⅞″	30′-0″	15′-4″	14′-8″	28½″	78″	28″	6′-2⅝″	54.2″	16⅛″	10′-4″	63½″	38⅜″	7′-11⅛″	46¾″	8′-3¾″	9′-10⅛″	46½″	36″	56¼″

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

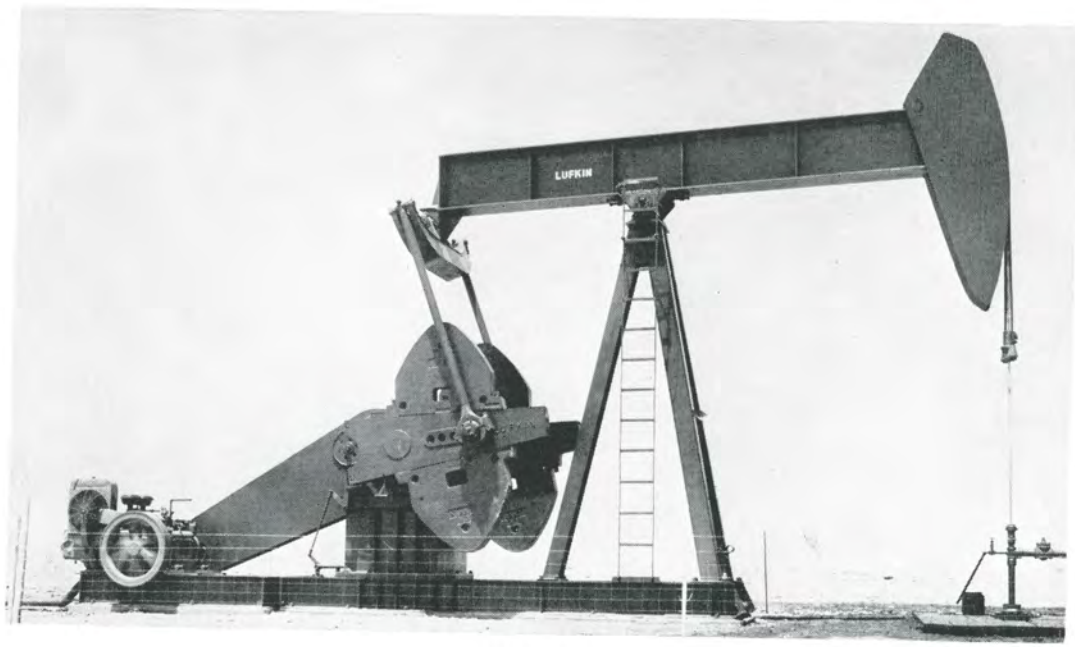


FIGURE 24

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

GENERAL SPECIFICATIONS

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

320 API Size

GEAR DATA

320D GEAR REDUCER: Double Reduction
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., 29" or 30" P.D. Alternate.
47¾" P.D. Max., 2-15/16" Bore.
Distance Centerline Unit to Centerline Drive: 19½".
Gear Box Oil Capacity: 50 Gallons.

320S GEAR REDUCER: Single Reduction
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: 16⅜".
Gear Box Oil Capacity: 25 Gallons.

STRUCTURAL DATA

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

WALKING BEAM: 30" x 15" x 172 lbs. 14'-3½" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1¼" Wire Line, 28'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 120", 103", 85.5", 68.5".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2LGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4¹⁵⁄₁₆" x 12", Bronze Bushed.

WEIGHT: C-320D-120-25: 47,431 lbs.
C-320S-120-25: 47,131 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	#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-100-28 and C-320S-100-28 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 1¼" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 100", 85.7", 71.4", 57.2".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2LGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4¹⁵⁄₁₆" x 12", Bronze Bushed.

WEIGHT: C-320D-100-28: 41,643 lbs.
C-320S-100-28: 41,343 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	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-100-25.3 and C-320S-100-25.3 PUMPING UNIT ASSEMBLIES—25,300 Lb. Polished Rod Load Class

WALKING BEAM: 30" x 15" x 172 lbs. 13'-6" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1¼" Wireline, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 100", 85.3", 72", 58.7".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4¹⁵⁄₁₆" x 12", Bronze Bushed.

WEIGHT: C-320D-100-25.3: 39,735 lbs.
C-320S-100-25.3: 39,435 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number				
	0RO	1RO	#2RO	3CRO	5ARO
7475ROA Cranks	15,780	11,945	10,805	9,550	8,110
4-S Auxiliary Weights	19,800	14,500	13,350	12,060	9,885
4-D Auxiliary Weights	23,820	17,055	15,895	14,075	11,310

C-320D-84-30.6 and C-320S-84-30.6 PUMPING UNIT ASSEMBLIES—30,600 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 1¼" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 84", 72", 60", 48".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2LGC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4¹⁵⁄₁₆" x 12", Bronze Bushed.

WEIGHT: C-320D-84-30.6: 42,943 lbs.
C-320S-84-30.6: 42,643 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number				
	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-84-27 and C-320S-84-27 PUMPING UNIT ASSEMBLIES—27,000 Lb. Polished Rod Load Class

WALKING BEAM: 24¾" x 14⅛" x 160 lbs., 11'-4¼" and 10'-0" working centers.
HANGER: Hinged Horsehead with 1¼" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 84", 72.5", 61", 50".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4¹⁵⁄₁₆" x 12", Bronze Bushed.

WEIGHT: C-320D-84-27: 40,021 lbs.
C-320S-84-27: 39,721 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number			
	#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-74-27 and C-320S-74-27 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 1¼" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 74", 64", 54", 44".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4¹⁵⁄₁₆" x 12", Bronze Bushed.

WEIGHT: C-320D-74-27: 38,533 lbs.
C-320S-74-27: 38,233 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number				
	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

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

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

GENERAL DIMENSIONS

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

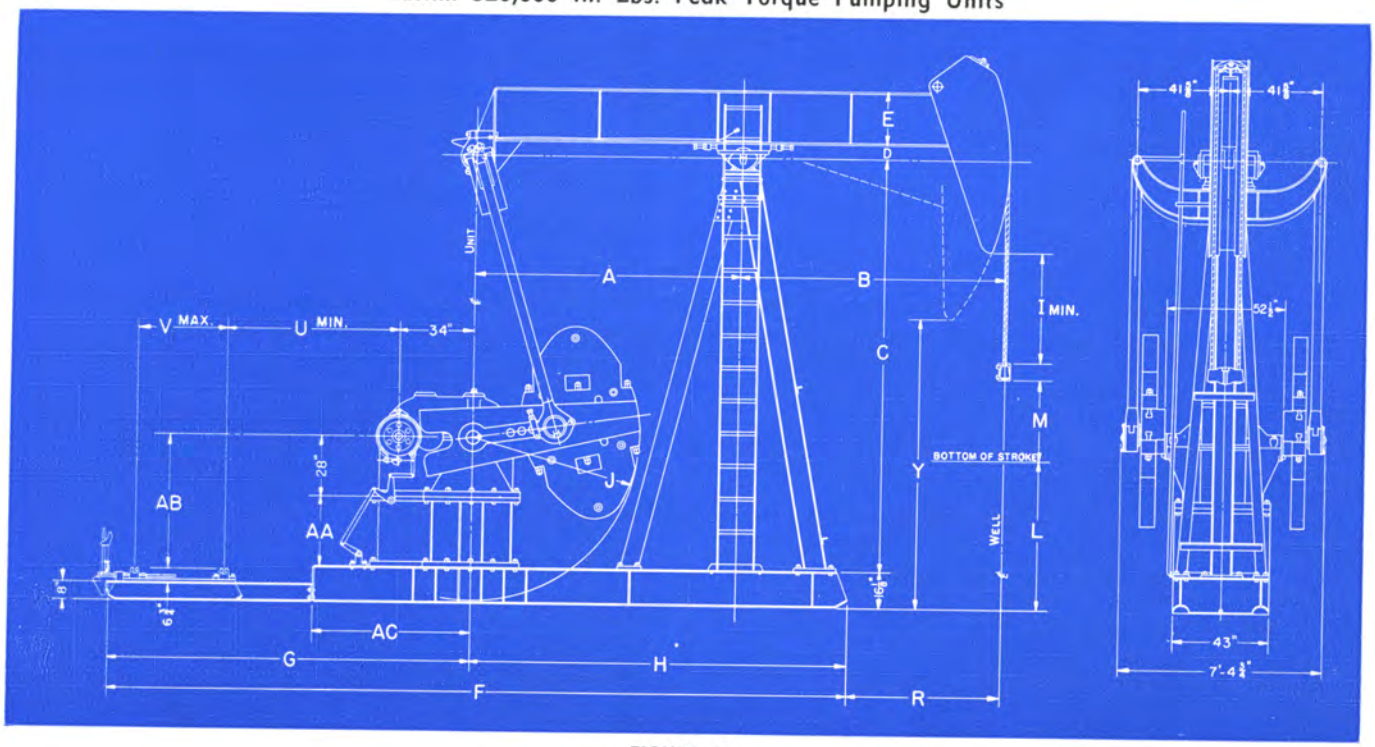


FIGURE 25

UNIT	A	B	C	D	E	F	G	H	I	J	L	M	R	U	V	Y	AA	AB	AC
*C-320D-120-25	10'-0"	14'-3½"	15'-7"	6"	29⅞"	27'-4½"	13'-1½"	14'-3"	17¼"	82"	55½"	60"	10'-0½"	65"	45¾"	7'4¼"	39"	60¼"	70¼"
*C-320D-100-28	10'-0"	11'-11"	15'-7"	6"	29⅞"	27'-4½"	13'-1½"	14'-3"	18⅞"	82"	72⅛"	50"	7'-8"	65"	45¾"	8'-9"	39"	60¼"	70¼"
*C-320D-100-25.3	10'-0"	13'-6"	15'-7"	6"	29⅞"	25'-10"	11'-7"	14'-3"	18⅞"	75"	73⅛"	50"	9'-3"	48¼"	41½"	8'-9"	32"	53¼"	70¼"
C-320D-84-30.6	12'-6"	12'-6"	15'-7"	6"	29⅞"	29'-4¾"	12'-6"	16'-10¾"	36¼"	82"	71⅝"	42"	8'-11¼"	63½"	41"	9'-11¾"	39"	68⅜"	58"
*C-320D-84-27	10'-0"	11'-4¼"	15'-7"	6"	24¾"	25'-10"	11'-7"	14'-3"	36⅞"	75"	70⅞"	42"	7'-1¼"	48¼"	41½"	10'-0½"	32"	53¼"	70¼"
*C-320D-74-27	10'-0"	10'-0"	15'-7"	6"	24¼"	25'-10"	11'-7"	14'-3"	46½"	75"	72"	37"	5'-9"	48¼"	41½"	10'-10"	32"	53¼"	70¼"

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

FIGURE 26

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

GEAR DATA

228D GEAR REDUCER: Double Reduction
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: 24¼" P.D.—6C Std., 19½" or 30" P.D. Alt., 41⅛" P.D. Max., 2-7/16" Bore.
Distance Centerline Unit to Centerline Drive: 16⅜".
Gear Box Oil Capacity: 34 Gallons.

228S GEAR REDUCER: Single Reduction
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: 15¼".
Gear Box Oil Capacity: 18 Gallons.

STRUCTURAL DATA

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

WALKING BEAM: 24" x 12" x 100 lbs. 9'-1" and 8'-0" working centers.
HANGER: Hinged Horsehead with 1⅛" Wire Line, 23'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 84", 72.5", 61", 50".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT ..... 31,995 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 1RO	#2RO	3CRO	5ARO	5CRO
7475ROA Cranks	14,605	13,255	11,735	10,045	8,555
4-S Auxiliary Weights	17,650	16,255	14,720	12,155	10,460
4-D Auxiliary Weights	20,695	19,285	17,115	13,885	12,365

C-228D-74-27 and C-228S-74-27 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.
HANGER: Hinged Horsehead with 1¼" Wire Line, 25'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 4" Extra Heavy Pipe.
POLISHED ROD STROKES: 74", 64", 54", 44".
CENTER BEARING: No. 2AD, Bronze Bushed, 6" x 17".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 1, 4 15/16" x 12", Bronze Bushed.

WEIGHT ..... 33,373 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 1RO	#2RO	3CRO	5ARO	5CRO
7475ROA Cranks	17,385	15,840	14,145	12,215	10,535
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-74-23 and C-228S-74-23 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 1⅛" Wire Line, 23'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 74", 64", 54", 44".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT ..... 30,741 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 1RO	2RO	#3CRO	5ARO	5CRO
7475ROA Cranks	16,925	15,380	13,685	11,755	10,075
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-74-20 and C-228S-74-20 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 1⅛" Wire Line, 23'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 74", 62.5", 51", 39"
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT ..... 29,596 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 1RO	#2RO	3CRO	5ARO	5CRO
6466RO Cranks	12,910	11,710	10,415	8,905	7,515
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-64-23 and C-228S-64-23 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 1⅛" Wire Line, 23'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 64", 54", 44", 34".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT ..... 27,902 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 2RO	#3CRO	5ARO	5CRO
6466RO Cranks	13,840	12,350	10,590	8,995
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-64-22 and C-228S-64-22 PUMPING UNIT ASSEMBLIES—22,000 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 9" x 84 lbs., 7'-0" and 7'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line 19'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 64", 54", 44", 34".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT ..... 24,095 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 Weights	14,600	13,390	11,235	9,650
4-D Auxiliary Weights	17,360	15,630	12,910	11,500

C-228D-64-20 and C-228S-64-20 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.
HANGER: Hinged Horsehead with 1⅛" Wire Line, 23'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 64", 54", 44", 34".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT ..... 28,682 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 2RO	#3CRO	5ARO	5CRO
6466RO Cranks	13,840	12,350	10,590	8,995
4-S Auxiliary Weights	17,090	15,600	12,940	11,130
4-D Auxiliary Weights	20,335	18,200	14,800	13,240

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

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

GENERAL DIMENSIONS

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

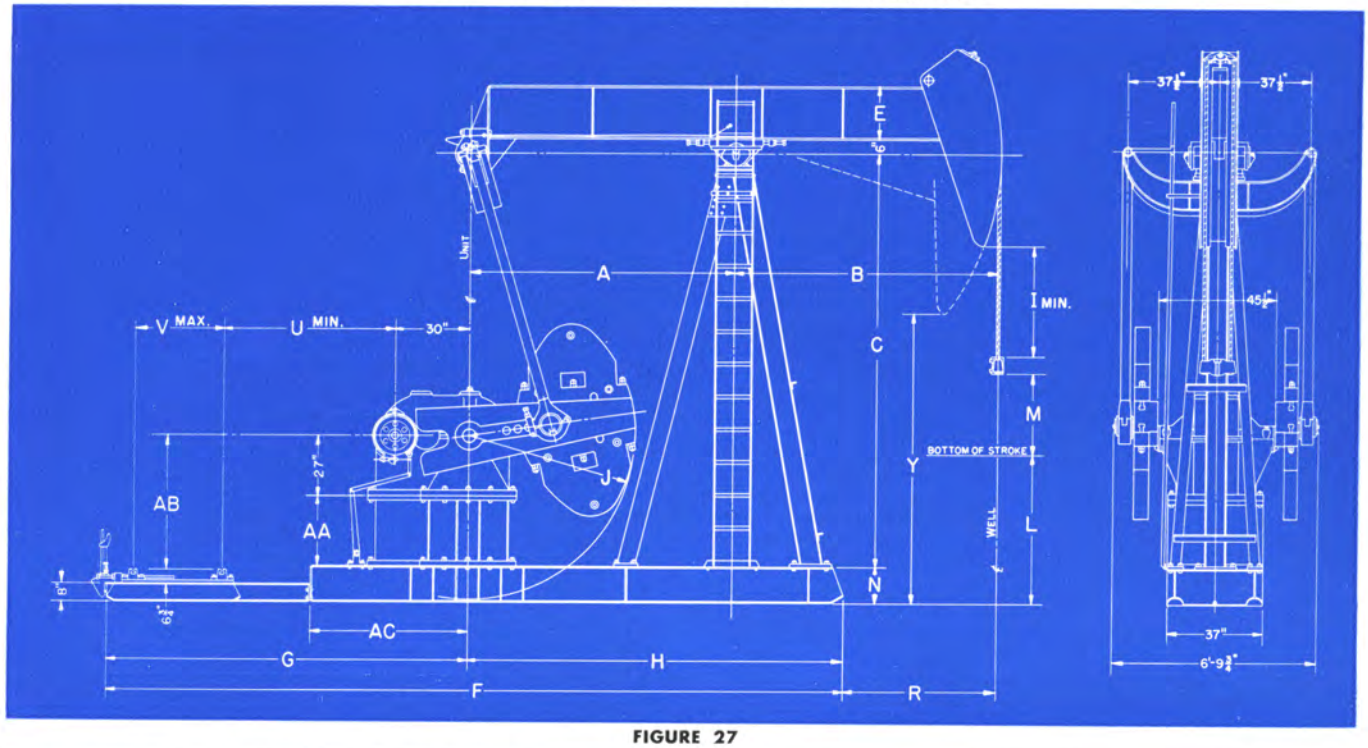


FIGURE 27

UNIT	A	B	C	E	F	G	H	I	J	L	M	N	R	U	V	Y	AA	AB	AC
*C-228D-84-22.1	8′-0″	9′-1″	14′-7″	24″	24′-10″	13′-1″	11′-9″	21¼″	75″	6′-2″	42″	16⅛″	5′-4″	66¼″	48″	9′-4″	33″	53⅞″	64½″
C-228D-74-27	10′-0″	10′-0″	14′-7″	24¼″	26′-2″	12′-5″	13′-9″	46″	75″	5′-0⅛″	37″	16⅛″	6′-3″	56¾″	50½″	9′-10″	33″	61⅜″	68″
*C-228D-74-23	8′-0″	8′-0″	14′-7″	24″	24′-10″	13′-1″	11′-9″	33⅞″	75″	6′-1⅜″	37″	16⅛″	4′-3″	66¼″	48″	10′-2″	33″	53⅞″	64½″
*C-228D-74-20	8′-0″	9′-3″	14′-7″	27⅛″	24′-10″	13′-1″	11′-9″	33½″	66″	6′-0¼″	37″	16⅛″	5′-6″	66¼″	48″	9′-10½″	27″	47¼″	64½″
*C-228D-64-23	8′-0″	8′-0″	14′-7″	24″	24′-10″	13′-1″	11′-9″	43⅞″	66″	6′-1¼″	32″	16⅛″	4′-3″	66¼″	48″	10′-10″	27″	47¼″	64½″
*C-228D-64-22	7′-0″	7′-0″	12′-2½″	24⅛″	19′-11¼″	11′-1¼″	8′-10″	24⅜″	59½″	58¾″	32″	9¾″	5′-2″	50⅛″	41″	8′-0″	24″	44¼″	41″
C-228D-64-20	10′-0″	10′-0″	14′-7″	27⅛″	26′-2″	12′-5″	13′-9″	42⅛″	66″	6′-1½″	32″	16⅛″	6′-3″	56¾″	50½″	10′-6″	27″	55⅜″	68″

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

FIGURE 28

GENERAL SPECIFICATIONS

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

160 API Size

GEAR DATA

160D GEAR REDUCER: Double Reduction
Gears: Main Gear 24.5" Diam. 7¾" Face.
Rating: 160,000 In. Lbs. Peak Torque.
Ratio of Gears: 28.67.
Crank Shaft Diam.: 5-7/16".
Sheave: 21¼" P.D.—5C Std., 19¼", 29¼" or 33½" P.D. Alt., 38" P.D. Max., 2-3/16" Bore.
Distance Centerline Unit to Centerline Drive: 114".
Gear Box Oil Capacity: 22 Gallons.

160S GEAR REDUCER: Single Reduction
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: 31¼" P.D.—6C or 31½" P.D. 4D Std., 28" P.D. 4D Alt., 31¼" P.D. Max., 2-15/16" Bore.
Distance Centerline Unit to Centerline Drive: 117⅛".
Gear Box Oil Capacity: 18 Gallons.

STRUCTURAL DATA

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

WALKING BEAM: 27" x 10" x 102 lbs., 9'-3" and 8'-0" working centers.
HANGER: Hinged Horsehead with 1⅛" Wire Line, 20'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 74", 62.5", 51", 39".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", 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-64-23 and C-160S-64-23 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 1⅛" Wire Line, 20'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 64", 54", 44", 34"
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", 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-64-18.8 and C-160S-64-18.8 PUMPING UNIT ASSEMBLIES—18,800 Lb. Polished Rod Load Class

WALKING BEAM: 24" x 9" x 84 lbs., 7'-8" and 5'-3¼" working centers.
HANGER: Hinged Horsehead with 1" Wire Line 19'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 64", 49.5", 34.9"
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT 21,750 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 2RO	#3CRO	5ARO	5CRO
4460ROA Cranks	11,060	10,150	8,410	7,010
4-S Auxiliary Weights	13,825	12,610	10,455	8,870
4-D Auxiliary Weights	16,580	15,170	12,130	10,730

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

WALKING BEAM: 18" x 8¾" 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.
POLISHED ROD STROKES: 64", 54", 44", 34".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", 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 Weights	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 Lbs. 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.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT 20,509 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #3CRO	5ARO	5CRO
5452RO 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

C-160D-54-18 and C-160S-54-18 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.
HANGER: Hinged Horsehead with 1" Wire Line, 19'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT 21,390 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #3CRO	5ARO	5CRO
5452RO 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.

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

GENERAL DIMENSIONS

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

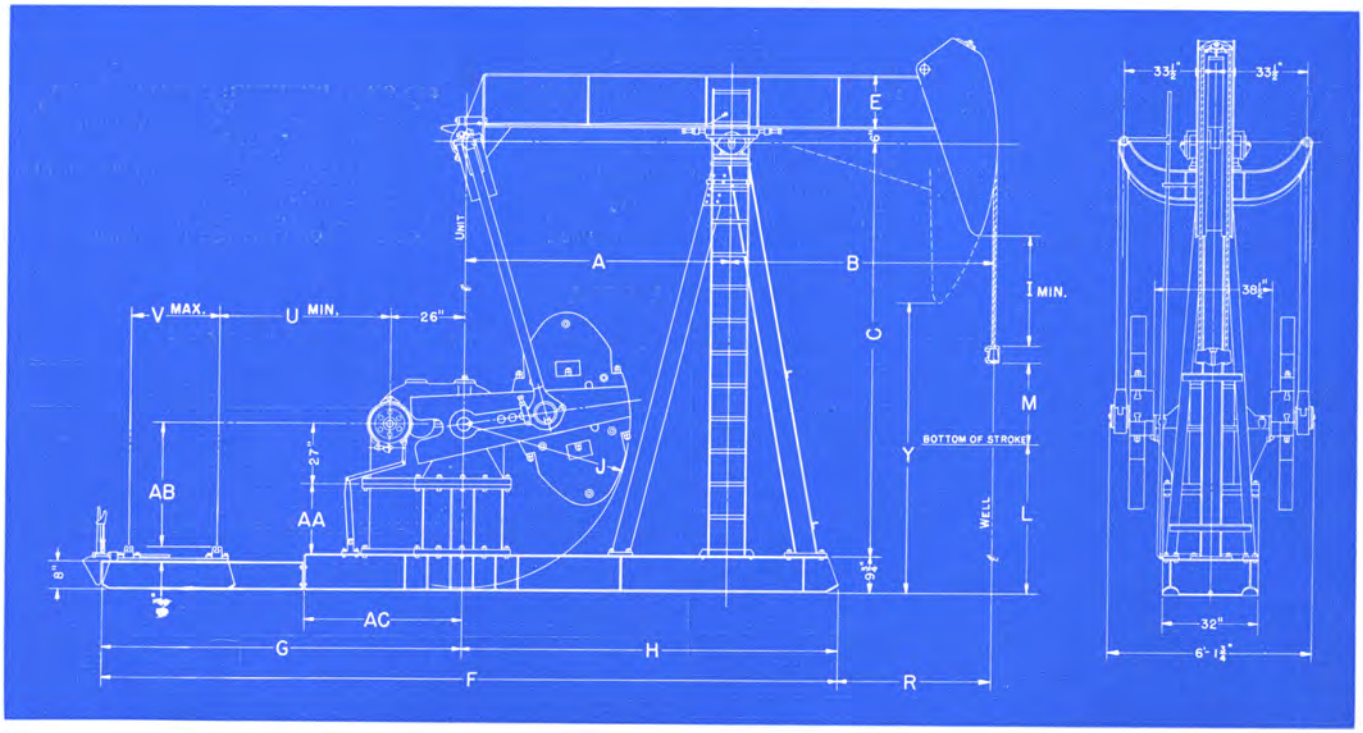


FIGURE 29

UNIT	A	B	C	E	F	G	H	I	J	L	M	R	U	V	Y	AA	AB	AC
C-160D-74-20	8'-0"	9'-3"	12'-1"	27⅛"	22'-2"	11'-0"	11'-2"	15½"	59½"	55"	37"	73"	50¾"	43½"	6'-10⅛"	24"	46"	52¼"
C-160D-64-23	8'-0"	8'-0"	12'-1"	24"	22'-2"	11'-0"	11'-2"	25¾"	59½"	55⅜"	32"	58"	50¾"	43½"	7'-9½"	24"	46"	52¼"
*C-160D-64-18.8	5'-3¼"	7'-8"	12'-1"	24⅛"	20'-0"	11'-1¼"	8'-10¾"	26½"	59½"	55¼"	32"	48½"	54⅜"	41"	7'- 9"	24"	44¼"	40½"
C-160D-64-16	7'-0"	7'-0"	12'-0"	18⅛"	20'-1¾"	11'-3¾"	8'-10"	28⅝"	59½"	53¾"	32"	62"	54½"	40½"	7'-10⅜"	24"	46"	52¼"
C-160D-54-18.9	7'-0"	7'-0"	10'-6½"	20⅞"	20'-1¾"	11'-3¾"	8'-10"	16⅞"	51½"	58½"	27"	62"	54½"	40½"	7'- 0¾"	16"	38"	52¼"
C-160D-54-18	8'-0"	8'-0"	12'-1"	24⅛"	22'-2"	11'-0"	11'-2"	36⅛"	51½"	57"	27"	58"	50¾"	43½"	8'- 5¾"	16"	38"	52¼"
*C-160D-54-17	5'-3¼"	7'-0"	12'-1"	18⅛"	18'-6"	9'-7¼"	8'-10¾"	34⅞"	51½"	58¾"	27.2"	40½"	36⅛"	41"	8'- 7"	16"	36¼"	40½"
C-160D-54-16	7'-0"	7'-0"	10'-4"	18⅛"	20'-1¾"	11'-3¾"	8'-10"	16⅞"	51½"	56"	27"	62"	54½"	40½"	6'-10¼"	16"	38"	52¼"

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

STRUCTURAL DATA

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

WALKING BEAM: 18" x 8¾" x 77 lbs., 7'-0" and 5'-3¼" working centers.
HANGER: Hinged Horsehead with 1" Wire Line 19'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 54.4", 41.2", 27.9".
CENTER BEARING: No. 3AD, Bronze Bushed, 6" x 14".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4¹⁵⁄₁₆" x 9¼", Bronze Bushed.

WEIGHT ..... 20,158 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #3CRO	5ARO	5CRO
4152RO Cranks	9,050	7,870	6,545
4-S Auxiliary Weights	11,660	9,855	8,350
4-D Auxiliary Weights	13,770	11,450	10,155

C-160D-54-16 and C-160S-54-16 PUMPING UNIT ASSEMBLIES—16,000 Lb. Polished Rod Load Class

WALKING BEAM: 18" x 8¾" x 77 lbs., 7'-0" and 7'-0" working centers.
HANGER: Hinged Horsehead with 1" Wireline 16'-0" Long.
PITMAN: Universal Equalizer with Bearing "in line", 3" Extra Heavy Pipe.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 2GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4¹⁵⁄₁₆" x 9¼", Bronze Bushed.

WEIGHT ..... 18,210 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 3CRO	#5ARO	5CRO
5452RO 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

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

Counterweights used to calculate weight of unit.

GENERAL SPECIFICATIONS

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

114 and 80 API Sizes

GEAR DATA

114D GEAR REDUCER: Double Reduction
Gears: Main Gear 23.7" Diam., 6¾" Face.
Rating: 114,000 In. Lbs. Peak Torque.
Ratio of Gears: 29.4.
Crank Shaft Diam.: 4-7/16".
Sheave: 19¼" P.D.—4C Std., 24" or 29¼" P.D. Alt., 33¾" P.D. Max., 1-15/16" Bore.
Distance Centerline Unit to Centerline Drive: 12⅛".
Gear Box Oil Capacity: 17 Gallons.

114S GEAR REDUCER: Single Reduction
Gears: Main Gear 36.2" Diam., 5½" 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: 10⅝".
Gear Box Oil Capacity: 5½ Gallons.

80D GEAR REDUCER: Double Reduction
Gears: Main Gear 22.2" Diam., 5½" Face.
Rating: 80,000 In. Lbs. Peak Torque.
Ratio of Gears: 29.15.
Crank Shaft Diam.: 4-7/16".
Sheave: 19¼" P.D.—4C Std., 24" P.D. Alt., 29¼" P.D. Max., 1-15/16" Bore.
Distance Centerline Unit to Centerline Drive: 12⅛".
Gear Box Oil Capacity: 17 Gallons.

STRUCTURAL DATA

C-114D-64-11 and C-114S-64-11 PUMPING UNIT ASSEMBLIES—11,000 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8½" x 64 lbs., 7'-1¼" and 6'-0" working centers.
HANGER: Hinged Horsehead with 1" Wire Line 16'-0" Long.
PITMAN: Universal Equalizer with Bearings "in line", 2½" Extra Heavy Pipe.
POLISHED ROD STROKES: 64", 52.2", 40.3", 28.4".
CENTER BEARING: No. 5C, 4 7/16" x 9", Bronze Bushed.
CRANK PINS: No. 3GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 3, 3 15/16" x 7¼", Bronze Bushed.

WEIGHT 15,186 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 3CRO	#5ARO	5CRO
5452RO Cranks	7,440	6,415	5,315
4-S Auxiliary Weights	9,650	8,095	6,840
4-D Auxiliary Weights	11,435	9,465	8,365

C-114D-54-16 and C-114S-54-16 PUMPING UNIT ASSEMBLIES—16,000 Lb. Polished Rod Load Class

WALKING BEAM: 18" x 8¾" 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.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 3GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 2, 4 15/16" x 9¼", Bronze Bushed.

WEIGHT 18,260 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #3CRO	5ARO	5CRO
5452RO 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

*C-114D-54-15.6 and C-114S-54-15.6 PUMPING UNIT ASSEMBLIES—15,600 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8½" 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", 2½" Extra Heavy Pipe.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 3GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 3, 3 15/16" x 7¼", Bronze Bushed.

WEIGHT 16,825 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #3CRO	5ARO	5CRO
5452RO Cranks	8,925	7,705	6,395
4-S Auxiliary Weights	11,555	9,695	8,215
4-D Auxiliary Weights	13,655	11,325	9,020

C-114D-54-15 and C-114S-54-15 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", 2½" Extra Heavy Pipe.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 3GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 3, 3 15/16" x 7¼", Bronze Bushed.

WEIGHT 18,560 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #3CRO	5ARO	5CRO
5452RO Cranks	8,790	7,570	6,260
4-S Auxiliary Weights	11,420	9,560	8,080
4-D Auxiliary Weights	13,520	11,190	9,885

C-114D-54-14, C-114S-54-14 and C-80D-54-14 PUMPING UNIT ASSEMBLIES—14,000 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8½" 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", 2½" Extra Heavy Pipe.
POLISHED ROD STROKES: 54", 44", 34", 24".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 3GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 3, 3 15/16" x 7¼", Bronze Bushed.

WEIGHT 15,106 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 3CRO	#5ARO	5CRO
5452RO Cranks	8,925	7,705	6,395
4-S Auxiliary Weights	11,555	9,695	8,215
4-D Auxiliary Weights	13,655	11,325	9,020

*C-114D-48-14, C-114S-48-14 and *C-80D-48-14 PUMPING UNIT ASSEMBLIES—14,000 Lb. Polished Rod Load Class

WALKING BEAM: 16" x 8½" 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", 2½" Extra Heavy Pipe.
POLISHED ROD STROKES: 48", 40", 32", 24".
CENTER BEARING: No. 4AD, Bronze Bushed, 5" x 10½".
CRANK PINS: No. 3GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 3, 3 15/16" x 7¼", Bronze Bushed.

WEIGHT C-114D-48-14: 15,036 lbs., C-80D-48-14: 14,936 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 3CRA	#5ARA	5CRA	6R
4846RO Cranks	8,080	7,155	5,955	5,400
4-S Auxiliary Weights	10,400	9,000	7,640	6,440
4-D Auxiliary Weights	12,270	10,480	9,320	7,470**

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

** For 8 "S" Auxiliary Weights.
# Counterweights Used to Calculate Weight of Unit.
* This unit also in stock at Los Angeles.

GENERAL DIMENSIONS

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

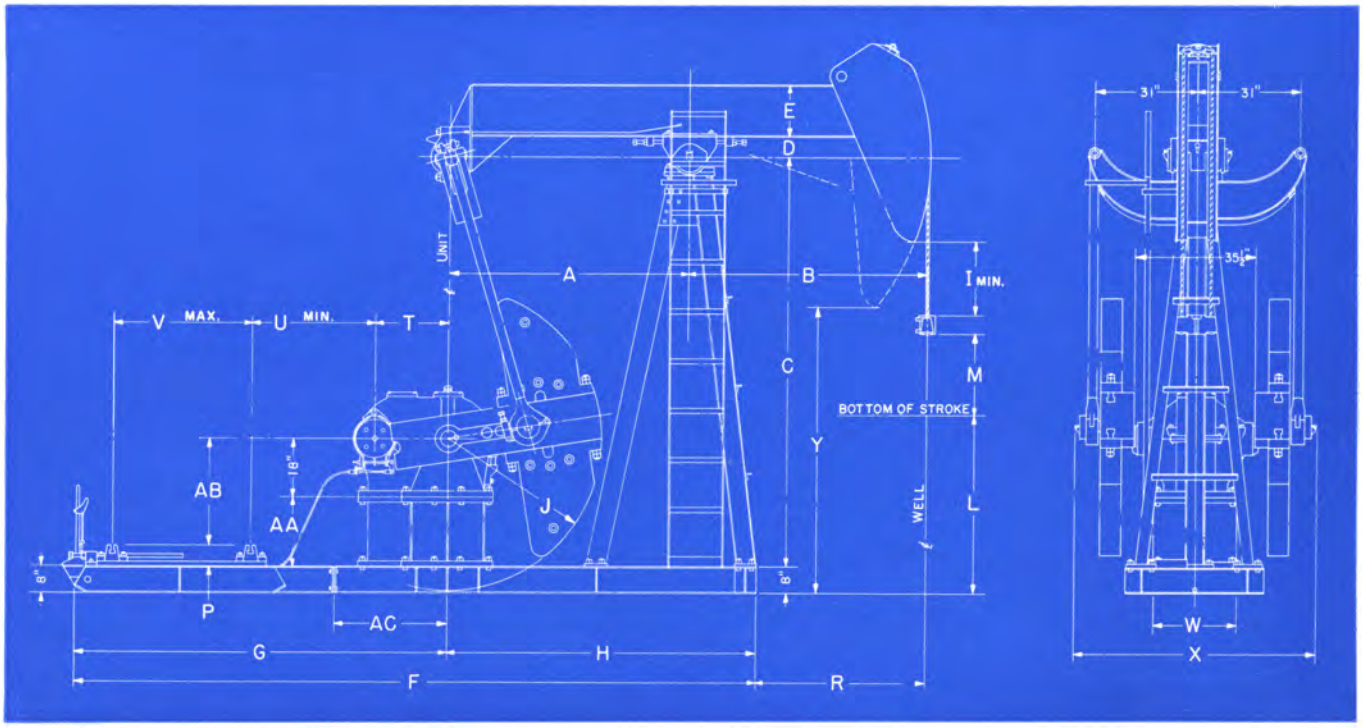


FIGURE 30

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-114D-64-11	6′-0″	7′-11¼″	10′-4⅜″	3⅝″	16″	17′- 7½″	9′-10¼″	7′- 9¼″	10⅝″	51½″	50⅜″	32″	6½″	64″	24″	41″	42″	25″	67⅞″	6′-0⅛″	27″	38½″	34″
C-114D-54-16	7′-0″	7′-0″	10′-4″	6″	18⅛″	19′-11½″	11′- 2¼″	8′- 9¼″	16⅞″	51½″	54¼″	27″	6½″	62¾″	24″	57″	42″	25″	67⅞″	6′-8½″	27″	38½″	50″
C-114D-54-15.6	6′-0″	6′-0″	10′-4″	6″	16⅛″	17′- 7½″	9′-10¼″	7′- 9¼″	19⅛″	51½″	51⅝″	27″	6½″	50¾″	24″	41″	42″	25″	67⅞″	6′-9⅜″	27″	38½″	34″
C-114D-54-15	8′-0″	8′-0″	11′-10½″	6″	20⅞″	22′- 5¾″	11′- 2¼″	11′- 3½″	36⅛″	51½″	52¾″	27″	6½″	56½″	24″	57″	42″	25″	67⅞″	8′-11⅜″	27″	38½″	50″
C-114D-54-14	6′-0″	6′-0″	10′-4″	6″	16″	17′- 7½″	9′-10¼″	7′- 9¼″	19⅛″	51½″	51⅝″	27″	6½″	50¾″	24″	41″	42″	25″	67⅞″	6′-9⅜″	27″	38½″	34″
C-80D-54-14	6′-0″	6′-0″	10′-4″	6″	16″	17′- 7½″	9′-10¼″	7′- 9¼″	19⅛″	51½″	51⅝″	27″	6½″	50¾″	22″	43″	42″	25″	67⅞″	6′-9⅜″	27″	38½″	34″
C-114D-48-14	6′-0″	6′-0″	10′-4″	6″	16″	17′- 7½″	9′-10¼″	7′- 9¼″	22⅛″	46″	54½″	24″	6½″	50¾″	24″	41″	42″	25″	67⅞″	7′-2⅛″	21″	32½″	34″
C-80D-48-14	6′-0″	6′-0″	10′-4″	6″	16″	17′- 7½″	9′-10¼″	7′- 9¼″	22⅛″	46″	54½″	24″	6½″	50¾″	22″	43″	42″	25″	67⅞″	7′-2⅛″	21″	32½″	34″
C-114D-48-12.7	6′-0″	6′-0″	9′-10⅛″	3⅝″	16″	17′-13¾″	9′- 2½″	7′-11¼″	18½″	46″	53¼″	24″	4⅞″	48¾″	24″	50⅝″	28″	25½″	67¼″	6′-8¾″	21″	34⅛″	43¼″
C-80D-48-12.7	6′-0″	6′-0″	9′-10⅛″	3⅝″	16″	17′-13¾″	9′- 2½″	7′-11¼″	18½″	46″	53¼″	24″	4⅞″	48¾″	22″	52⅝″	28″	25½″	67¼″	6′-8¾″	21″	34⅛″	43¼″
C-114D-48-11.6	60″	60″	9′-10⅛″	3⅝″	16⅛″	15′- 6″	8′- 6¾″	6′-11¼″	13½″	46″	56⅛″	24″	4⅞″	36¾″	24″	31⅛″	39¾″	25½″	67¼″	6′-8¾″	21″	34⅛″	34″
C-80D-48-11.6	60″	60″	9′-10⅛″	3⅝″	16⅛″	15′- 6″	8′- 6¾″	6′-11¼″	13½″	46″	56⅛″	24″	4⅞″	36¾″	22″	33⅛″	39¾″	25½″	67¼″	6′-8¾″	21″	34⅛″	34″

Jointed Base is standard on all sizes.

STRUCTURAL DATA

C-114D-48-12.7, C-114S-48-12.7 and C-80D-48-12.7 PUMPING UNIT ASSEMBLIES—12,700 Lb. Polished Rod Load Class

WALKING BEAM: 16″ x 8½″ x 64 lbs., 6′-0″ and 6′-0″ working centers.
HANGER: Hinged Horsehead with ⅞″ Wire Line, 13′-0″ Long.
PITMAN: Universal Cross Pin Type Equalizer 4″ I-Beam Side Member.
POLISHED ROD STROKES: 48″, 40″, 32″, 24″.
CENTER BEARING: No. 5C, 4 7/16″ x 9″, Bronze Bushed.
CRANK PINS: No. 5GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 5, 3 7/16″ x 6½″, Bronze Bushed.

WEIGHT ..... C-114D-48-12.7: 13,581 lbs.
C-80D-48-12.7: 13,481 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #5ARA	5CRA	6R
4846ROA Cranks	6,945	5,745	5,190
4-S Auxiliary Weights	8,790	7,430	6,230
4-D Auxiliary Weights	10,270	9,110	7,260**

C-80D-48-11.6, C-114D-48-11.6 and C-114S-48-11.6 PUMPING UNIT ASSEMBLIES—11,600 Lb. Polished Rod Load Class

WALKING BEAM: 16″ x 7″ x 45 lbs., 5′-0″ and 5′-0″ working centers.
HANGER: Hinged Horsehead with ⅞″ Wire Line, 13′-0″ Long.
PITMAN: Universal Cross Pin Type Equalizer, 4″ I-Beam Side Members.
POLISHED ROD STROKES: 48″, 40″, 32″, 24″.
CENTER BEARING: No. 5C, 4 7/16″ x 9″, Bronze Bushed.
CRANK PINS: No. 5GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 5, 3 7/16″ x 6½″, Bronze Bushed.

WEIGHT ..... C-80D-48-11.6: 11,570 lbs.
C-114D-48-11.6: 11,670 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 5ARA	#5CRA	6R
4846ROA Cranks	6,945	5,745	5,190
4-S Auxiliary Weights	8,790	7,430	6,230
4-D Auxiliary Weights	10,270	9,110	7,260**

†C-114D-48-10, C-114S-48-10, C-80D-48-10 PUMPING UNIT ASSEMBLIES—10,000 Lbs. Polished Rod Load Class

†C-114D-42-11.6, C-114S-42-11.6 and *C-80D-42-11.6 PUMPING UNIT ASSEMBLES—11,600 Lb. Polished Rod Load Class

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

† For Specifications and General Dimensions see Page No. 3418 and 3419.
** For 8 "S" Auxiliary Weights.
# Counterweights Used to Calculate Weight of Unit.
* This unit also in stock at Los Angeles.

STRUCTURAL DATA

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

For Gear Specifications See Pages 3416 and 3420

C-114D-48-10, C-114S-48-10, C-80D-48-10, C-57D-48-10 and C-57S-48-10 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.
HANGER: Hinged Horsehead with ⅞" Wire Line, 13'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.
POLISHED ROD STROKES: 48", 36.5", 25.1".
CENTER BEARING: No. 5C, 4 7/16" x 9", Bronze Bushed.
CRANK PINS: No. 5GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 5, 3 7/16" x 6½" Bronze Bushed.

WEIGHT..... C-114D-48-10: 11,535 lbs.
C-80D-48-10: 11,435 lbs.
C-57D-48-10: 11,160 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 5ARA†	5RA†	#5CRA
4246CRB Cranks	6,640	6,035	5,450
Auxiliary Weights	8,485	7,610	7,135

C-114D-42-11.6, C-114S-42-11.6, *C-80D-42-11.6, *C-57D-42-11.6 and C-57S-42-11.6 PUMPING UNIT ASSEMBLIES
11,600 Lbs. Polished Rod Load Class

WALKING BEAM: 16" x 7" x 45 lbs., 5'-0" and 5'-0" working centers.
HANGER: Hinged Horsehead with ⅞" Wire Line, 12'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer, 4" I-Beam Side Members.
POLISHED ROD STROKES: 42", 32", 22".
CENTER BEARING: No. 5C, 4 7/16" x 9", Bronze Bushed.
CRANK PINS: No. 5GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 5, 3 7/16" x 6½", Bronze Bushed.

WEIGHT..... C-114D-42-11.6: 11,460 lbs.
C-80D-42-11.6: 11,360 lbs.
C-57D-42-11.6: 11,085 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number 5ARA†	5RA†	#5CRA
4246CRB Cranks	7,625	6,940	6,260
Auxiliary Weights	9,735	8,740	8,190

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

WALKING BEAM: 14" x 6¾" x 30 lbs., 4'-8½" and 4'-0" working centers.
HANGER: Hinged Horsehead with ¾" Wire Line, 11'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.
POLISHED ROD STROKES: 40", 30.6", 21.2".
CENTER BEARING: No. 6C, 2 15/16" x 10½", Bronze Bushed.
CRANK PINS: No. 6GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 5, 3 7/16" x 6½", Bronze Bushed.

WEIGHT..... 7,595 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #6R	7R
3441R Cranks	3,985	3,050
Auxiliary Weights	5,030	3,880

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

WALKING BEAM: 14" x 6¾" x 30 lbs. 4'-0" and 4'-0" working centers.
HANGER: Hinged Horsehead with ¾" Wire Line, 11'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.
POLISHED ROD STROKES: 34", 26", 18".
CENTER BEARING: No. 6C, 2 15/16" x 10½", Bronze Bushed.
CRANK PINS: No. 6GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 5, 3 7/16" x 6½", Bronze Bushed.

WEIGHT..... 7,510 lbs.

COUNTERBALANCE, LBS., At Max. Stroke	Counterweight Number #6R	7R
3441R Cranks	4,785	3,685
Auxiliary Weights	6,015	4,670

C25D-36-4 PUMPING UNIT ASSEMBLIES—4,000 Lb. Polished Rod Load Class

WALKING BEAM: 10" x 5¾" x 25 lbs. 5'-3" and 3'-6" working centers.
HANGER: Hinged Horsehead with ⅝" Wire Line, 10'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer 3" I-Beam Side Members.
POLISHED ROD STROKES: 36", 27", 18".
CENTER BEARING: No. 6C, 2 15/16" x 10½", Bronze Bushed.
CRANK PINS: No. 7GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 7, 2 15/16" x 6½", Bronze Bushed.

WEIGHT..... 5,330 lbs.

STATIC COUNTERBALANCE, LBS.,

Stroke	No. 2433R Crank No. 7R Cwts.	Aux. Wts.
18"	4,140	5,490
27"	2,770	3,670
36"	2,080	2,755

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

WALKING BEAM: 14" x 6¾" x 30 lbs., 4'-1" and 3'-6" working centers.
HANGER: Hinged Horsehead with ⅝" Wire Line, 10'-0" Long.
PITMAN: Universal Cross Pin Type Equalizer, 3" I-Beam Side Members.
CENTER BEARING: No. 6C, 2 15/16" x 10½", Bronze Bushed.
CRANK PINS: No. 7GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 7, 2 15/16" x 6½", Bronze Bushed.

WEIGHT..... 5,395 lbs.

STATIC COUNTERBALANCE, LBS.

Stroke	No. 2433R Crank No. 7R Cwts.	Aux. Wts.
14"	5,380	7,105
21"	3,610	4,760
28"	2,725	3,585

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

WALKING BEAM: 10" x 5¾" x 25 lbs., 3'-6" and 3'-6" working centers.
HANGER: Hinged Horsehead with ⅝" Wire Line, 8'-4" Long.
PITMAN: Universal Cross Pin Type Equalizer 3" I-Beam Side Members.
CENTER BEARING: No. 6C, 2 15/16" x 10½", Bronze Bushed.
CRANK PINS: No. 7GC, Tapered Roller Bearings.
EQUALIZER BEARING: No. 7, 2 15/16" x 6½", Bronze Bushed.

WEIGHT..... 5,295 lbs.

STATIC COUNTERBALANCE, LBS.

Stroke	No. 2433R Crank No. 7R Cwts.	Aux. Wts.
12"	6,350	8,360
18"	4,285	5,625
24"	3,250	4,255

SEE PAGE 3399 FOR OTHER STANDARD ASSEMBLIES

* This Unit also in stock at Los Angeles.
\# Counterweights used to calculate unit weights.
† These Counterweights not to be used on C-57D-48-10 and C-57D-42-11.6

GENERAL DIMENSIONS

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

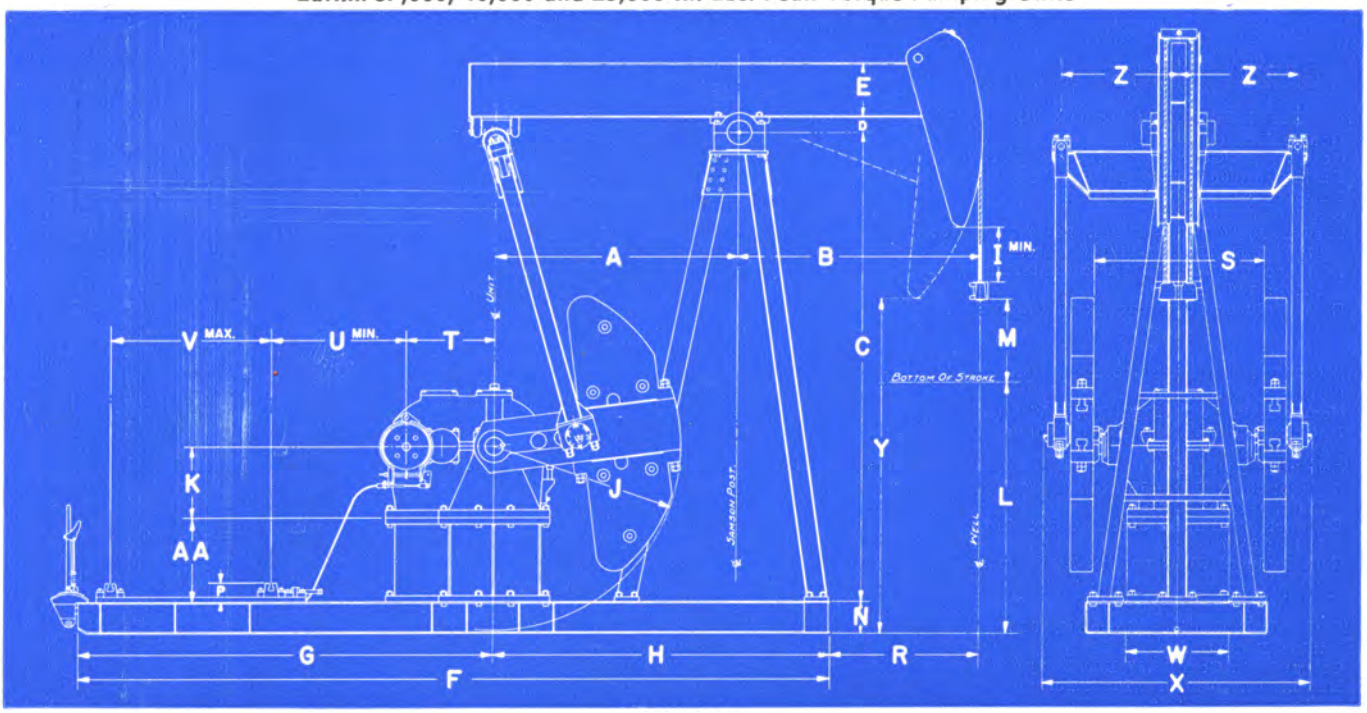


FIGURE 31

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-114D-48-10	60″	68½″	9′-10⅛″	3⅝″	16⅛″	15′-6″	8′-6¾″	6′-11¼″	13″	46″	18″	55½″	24″	8″	47⅝″	45¼″	36″	24″	30½″	39¾″	25½″	63¼″	6′-7″	29″	21″
C-80D-48-10	60″	68½″	9′-10⅛″	3⅝″	16⅛″	15′-6″	8′-6¾″	6′-11¼″	13″	46″	18″	55½″	24″	8″	47⅝″	45¼″	36″	22″	33⅛″	39¾″	25½″	63¼″	6′-7″	29″	21″
C-114D-42-11.6	60″	60″	9′-10⅛″	3⅝″	16⅛″	15′-6″	8′-6¾″	6′-11¼″	14⅝″	46″	18″	63⅛″	21″	8″	47⅝″	36¾″	36″	24″	31⅛″	39¾″	25½″	63¼″	7′-1⅞″	29″	21″
C-80D-42-11.6	60″	60″	9′-10⅛″	3⅜″	16⅛″	15′-6″	8′-6¾″	6′-11¼″	14⅝″	46″	18″	63⅛″	21″	8″	47⅝″	36¾″	36″	22″	33⅛″	39¾″	25½″	63¼″	7′-1⅞″	29″	21″
C-57D-48-10	60″	68½″	9′-10⅛″	3⅝″	16⅛″	15′-6″	8′-6¾″	6′-11¼″	13″	46″	18″	55½″	24″	8″	47⅝″	45¼″	29″	20″	35⅛″	39¾″	25½″	56¼″	6′-7″	25½″	21″
C-57D-42-11.6	60″	60″	9′-10⅛″	3⅝″	16⅛″	15′-6″	8′-6¾″	6′-11¼″	14⅝″	46″	18″	63⅛″	21″	8″	47⅝″	36¾″	29″	20″	35⅛″	39¾″	25½″	56¼″	7′-1⅞″	25½″	21″
C-40D-40-7.4	48″	56½″	7′-11⅛″	2″	13⅞″	13′-6″	8′-3″	5′-3″	8⅝″	41″	14″	46″	20″	8″	33⅝″	41½″	27¾″	17½″	28″	45¼″	20″	49⅜″	63″	21¾″	20″
C-40D-34-8.7	48″	48″	7′-11⅛″	2″	13⅞″	13′-6″	8′-3″	5′-3″	17⅞″	41″	14″	42½″	17″	8″	33⅝″	33″	27¾″	17½″	28″	45¼″	20″	49⅜″	5′-9⅝″	21¾″	20″
C-25D-36-4	42″	63″	7′-1⅞″	2″	10⅛″	11′-0″	6′-4″	4′-8″	12¾″	33″	14″	43⅛″	18″	6¼″	33⅝″	49″	25½″	13 9/16″	24⅜″	28½″	17″	44⅞″	61⅞″	19⅝″	14″
C-25D-28-7.5	42″	49″	7′-1⅞″	2″	13⅞″	11′-0″	6′-4″	4′-8″	12¾″	33″	14″	43⅛″	14″	6¼″	33⅝″	35″	25½″	13 9/16″	24⅜″	28½″	17″	44⅞″	61⅞″	19⅝″	14″
C-25D-21-6	42″	42″	7′-1⅞″	2″	10⅛″	11′-0″	6′-4″	4′-8″	10⅜″	33″	14″	51¼″	12″	6¼″	33⅝″	28″	25½″	13 9/16″	24⅜″	28½″	17″	44⅞″	67½″	19⅝″	14″

For Gear Specifications, See Pages 3416 and 3420. Electric motor Bases are full length, one piece; separate out-riggers furnished when required for engines.

FIGURE 32

LUFKIN TYPE B BEAM BALANCE PUMPING UNITS

GEAR SPECIFICATIONS

57D GEAR REDUCER (Formerly 7C)
Double Reduction
Gears: Main Gear 19½" P.D. x 5" Face
Rating: 57,000 in. lbs. Peak Torque
Ratio of Gears: 29.32
Crankshaft Dia. 4"
Sheave: 19¼" P.D.—3C Std., 24¼" P.D. Alt., 27¼" P.D. Max., 1-11/16" Bore.
Distance, Centerline Unit to Centerline Drive: 11"
Gear Reducer Oil Capacity: 13 Gallons

57S GEAR REDUCER (Formerly 16A)
Single Reduction
Gears: Main Gear 32½" P.D. x 4" Face
Rating: 57,000 in. lbs. Peak Torque
Ratio of Gears: 10.0
Crankshaft Dia. 4"
Sheave: 23½" P.D.—5C Std., 23½" P.D. Max., 2-7/16" Bore
Distance, Centerline Unit to Centerline Drive: 9⅜"
Gear Reducer Oil Capacity: 7.5 Gallons

40D GEAR REDUCER (Formerly 9B)
Double Reduction
Gears: Main Gear 16.8" P.D. x 4⅜" Face
Rating: 40,000 in. lbs. Peak Torque
Ratio of Gears: 29.2
Crankshaft Dia. 4"
Sheave: 21" P.D.—2C or 3B Std., 23" P.D. Max. 1-11/16" Bore
Distance, Centerline Unit to Centerline Drive: 9⅜"
Gear Reducer Oil Capacity: 7 Gallons

25D GEAR REDUCER (Formerly 3B)
Double Reduction
Gears: Main Gear 13.5" P.D. x 4" Face
Rating: 25,000 in. lbs. Peak Torque
Ratio of Gears: 28.9
Crankshaft Dia. 3"
Sheave: 17¾" P.D.—2B or 18" P.D. 3A Std., 18" P.D. Max., 1⅜" Bore
Distance, Centerline Unit to Centerline Drive: 8"
Gear Reducer Oil Capacity: 6 Gallons

16D GEAR REDUCER
Double Reduction
Gears: Main Gear 13¼" Dia., 3⅛" Face
Rating: 16,000 in. lbs. Peak Torque
Ratio of Gears: 35.7
Crankshaft Dia. 2½"
Sheave: 15" P.D.—3A or 2B or 1C, 1.180" Bore
Distance, Centerline Unit to Centerline Drive: 7⅛"
Gear Reducer Oil Capacity: 5 Gallons

10D GEAR REDUCER
Double Reduction
Gears: Main Gear 11⅞" Dia., 2⅜" Face
Rating: 10,000 in. lbs. Peak Torque
Ratio of Gears: 36.02
Crankshaft Dia. 2-3/16"
Sheave: 14" P.D.—3A or 2B, 15/16" Bore
Distance, Centerline Unit to Centerline Drive: 6¾"
Gear Reducer Oil Capacity: 4 Gallons

6D GEAR REDUCER
Double Reduction
Gears: Main Gear 10.3" P.D. x 2" Face
Rating: 6,000 in. lbs. Peak Torque
Ratio of Gears: 34.76
Crankshaft Dia. 2"
Sheave: 13" P.D.—2A, ¾" Bore
Distance, Centerline Unit to Centerline Drive: 5⅞"
Gear Reducer Oil Capacity: 5 quarts

FIGURE 33
Lufkin B-25D-28-7.5 Pumping Unit

FIGURE 34
Lufkin B-6D-16-3 Pumping Unit

LUFKIN TYPE B BEAM BALANCED PUMPING UNIT ASSEMBLIES

STRUCTURAL SPECIFICATIONS AND DIMENSIONS

See preceding page for GEAR Specifications

	B-57D-42-11.6	B-40D-34-8.7	B-25D-36-7.6	B-25D-28-7.5	B-25D-24-7.3	B-16D-30-5	B-16D-24-5	B-10D-30-3	B-10D-20-4	B-6D-24-2.2	B-6D-16-3
Peak Polished Rod Load	11,600 lbs.	8,700 lbs.	7,600 lbs.	7,500 lbs.	7,300 lbs.	5,000 lbs.	5,000 lbs.	3,000 lbs.	4,000 lbs.	2,200 lbs.	3,000 lbs.
Walking Beam Size	16″ x 7″ @ 45 lb.	14″ x 6¾″ @ 30 lb.	14″ x 6¾″ @ 30 lb.	14″ x 6¾″ @ 30 lb.	10″ x 5¾″ @ 25 lb.	10″ x 5¾″ @ 21 lb.	10″ x 5¾″ @ 21 lb.	8″ x 5¼″ @ 17 lb.	8″ x 5¼″ @ 17 lb.	6″ x 4″ @ 12 lb.	6″ x 4″ @ 12 lb.
Walking Beam Working Centers At Maximum Stroke	60″ & 60″	48″ & 48″	50¾″ & 48″	42″ & 36″	36″ & 36″	41¼″ & 33″	33″ & 33″	45″ & 30″	30″ & 30″	33″ & 22″	24″ & 24″
Center Bearing, Bronze Bushed	No. 5C 4 7/16″ x 9″	No. 6C 2 13/16″ x 10½″	No. 6C 2 13/16″ x 10½″	No. 6C 2 13/16″ x 10½″	No. 6C 2 13/16″ x 10½″	No. 8C 2 13/16″ x 6½″	No. 8C 2 13/16″ x 6½″	2 7/16″ x 5¼″	2 7/16″ x 5¼″	2″ x 5″	2″ x 5″
Equalizer Bearing, Bronze Bushed	3 7/16″ x 6½″	3 7/16″ x 6½″	2 13/16″ x 6½″	2 13/16″ x 6½″	2 13/16″ x 6½″	3 7/16″ x 3 1/16″	3 7/16″ x 3 1/16″	2 13/16″ x 2¾″	2 13/16″ x 2¾″	1 7/16″ x 2¾″	1 7/16″ x 2¾″
Crank Pin Bearing, Tapered Roller	No. B5GC	No. B5GC	No. B5GC	No. B5GC	No. B5GC	No. B8GC	No. B8GC	No. B8GC	No. B8GC	No. B9GC	No. B9GC
†Stroke Length	42″-34″-26″	34″-26″-18″	36″-27.5″-19″	28″-18.7″	24″-16″	30″-25″	24″-18.2″	30″-25″	20″-16.6″	24″-20″	16″-13.5″
*1″ Thick Beam Weights, Each Lbs.	150	125	125	125	100	100	100	90	90	75	75
Max. No. of 1″ Thick Beam Wts.	26	26	26	26	26	27	24	18	18	16	16
Ratio Of Beam Weights To Counterbalance At Polish Rod	1.82	1.77	1.67	1.71	1.83	1.42	1.7	1.24	1.85	1.38	1.96
Counterbalance With No Beam Weights, Lbs.	890	525	450	400	470	170	265	80	220	50	100
Counterbalance With 6 1″ Beam Weights, Lbs.	2675	2010	1845	1865	1740	1175	1445	820	1330	740	1075
Counterbalance With 12 1″ Beam Weights, Lbs.	4370	3400	3160	3220	2905	2090	2525	1485	2330	1345	1935
Counterbalance With 18 1″ Beam Weights, Lbs.	5970	4545	4375	4475	3970	2920	3485	2080	3220	....	....
Counterbalance With Max. No. Of Beam Weights, Lbs.	8000	6285	5880	5975	5240	4000	4340	2080	3220	1705	2450
Polish Rod Hanger Wire Line	⅞″ x 12′-0″	¾″ x 11′-0″	¾″ x 11′-0″	¾″ x 9′-9″	⅝″ x 8′-4″	½″ x 8′-0″	½″ x 8′-0″	½″ x 8′-0″	½″ x 6′-8″	½″ x 6′-8″	½″ x 5′-8″
Total Weight, Less Beam Wts., Lbs.	6340	3800	2995	2890	2790	1390	1350	1220	1150	800	775

* Note: 3″ Thick Beam weight Optional for all Beam Balanced Units. †On B-16D, B-10D, and B-6D, Stroke Length Changes are Obtained by Moving Tail Bearings on Beam.

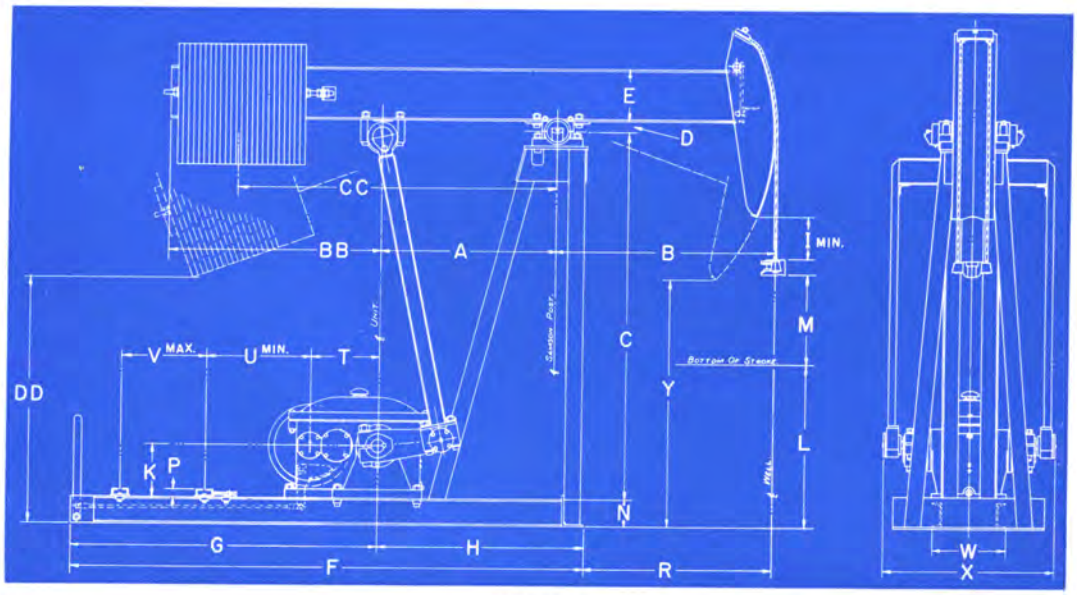


FIGURE 35

GENERAL DIMENSIONS

UNIT	A	B	C	D	E	F	G	H	I	K	L	M	N	P	R	T	U	V	W	X	Y	BB	CC	DD
†B-57D-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″	2 5/8″	36 3/4″	20″	29 1/8″	44″	24 3/4″	54 1/4″	7′-17 5/8″	62 1/2″	9′-1″	6′-47 5/8″
†B-40D-34-8.7	48″	48″	7′-11 1/8″	2″	13 7/8″	13′-6″	8′-3″	63″	18 3/8″	14″	45 1/2″	17″	8″	3 3/8″	33″	17 1/2″	28″	45 1/4″	20″	47 1/2″	70 3/4″	51″	7′-1″	63 1/2″
†B-25D-36-7.6	48″	50¾″	7′-11 1/8″	2″	13 7/8″	11′-7″	6′-4″	63″	18 5/8″	14″	45″	18″	8″	1 5/8″	35 3/4″	13 3/16″	25 3/4″	28″	17″	43 1/4″	69 1/2″	51″	7′-1″	63 1/4″
†B-25D-28-7.5	36″	42″	7′-01/4″	2″	13 7/8″	9′-10 1/4″	6′-4″	42 1/4″	12 5/8″	14″	42 7/8″	14″	6 1/4″	1 5/8″	35 3/4″	13 3/16″	28 1/2″	28 1/2″	16 5/8″	43 1/4″	60 3/4″	50″	6′-0″	55 1/2″
B-25D-24-7.3	36″	36″	7′-01/4″	2″	10 1/4″	9′-10 1/4″	6′-4″	42 1/4″	11 3/8″	14″	49 3/8″	12″	6 1/4″	1 5/8″	29 3/4″	13 3/16″	28 1/2″	28 1/2″	16 5/8″	43 1/4″	64 1/4″	43 7/8″	66″	57 7/8″
B-16D-30-5	33″	41¼″	70″	2″	9 7/8″	8′- 0 3/8″	57 1/2″	38 7/8″	6″	10″	34 1/2″	15″	5″	1 1/2″	35 3/8″	12 3/4″	10 1/2″	25 1/4″	13 3/4″	35 1/4″	46 1/2″	40″	58 1/2″	42 1/2″
B-16D-24-5	33″	33″	70″	2″	9 7/8″	8′- 0 3/8″	57 1/2″	38 7/8″	12 1/2″	10″	34 1/4″	12″	5″	1 1/2″	27 1/8″	12 3/4″	10 1/2″	25 1/4″	13 3/4″	35 1/4″	52″	36″	56″	44″
B-10D-30-3	30″	45″	54 1/8″	1¾″	8″	7′- 7¾″	56″	35¾″	6″	8½″	18 5/8″	15″	5″	1 1/2″	39 1/4″	11 3/8″	10 1/4″	25 3/8″	13″	33 1/2″	29 3/4″	35″	55 1/2″	31″
B-10D-20-4	30″	30″	54 1/8″	1¾″	8″	7′- 7¾″	56″	35¾″	8½″	8½″	27″	10″	5″	1 1/2″	24 1/4″	11 3/8″	10 1/4″	25 3/8″	13″	33 1/2″	39 3/4″	35″	55 1/2″	31″
B-6D-24-2.2	22″	33″	47″	1 3/8″	6″	70″	42″	28″	5″	7 1/2″	17″	12″	3″	1 1/2″	29″	10″	9″	16 1/4″	10″	26″	27″	32″	45 1/2″	25 3/8″
†B-6D-16-3	24″	24″	47″	1 3/8″	6″	70″	42″	28″	6″	7 1/2″	23 1/2″	8″	3″	1 1/2″	20″	10″	9″	16 1/4″	10″	26″	34 1/8″	32″	47″	26 1/4″

† This Unit also in stock at Los Angeles.

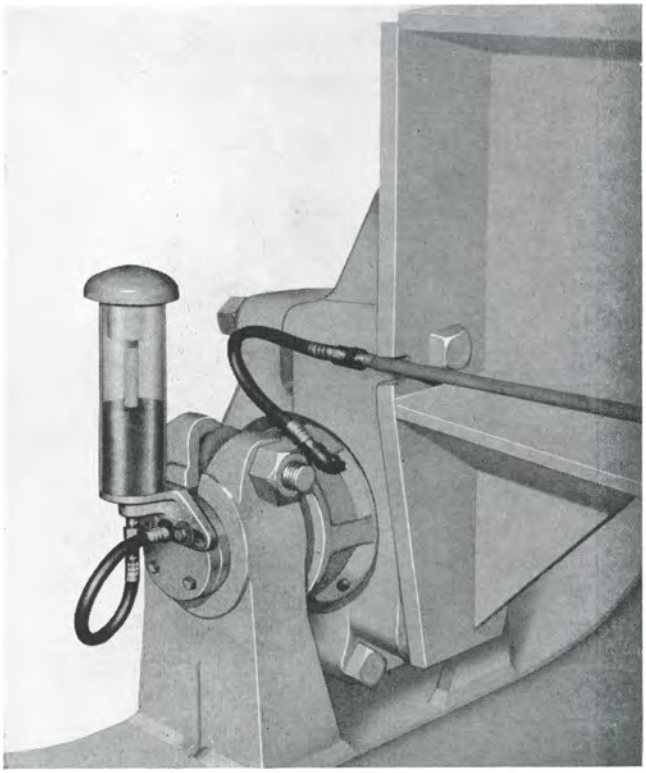


FIGURE 36

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.

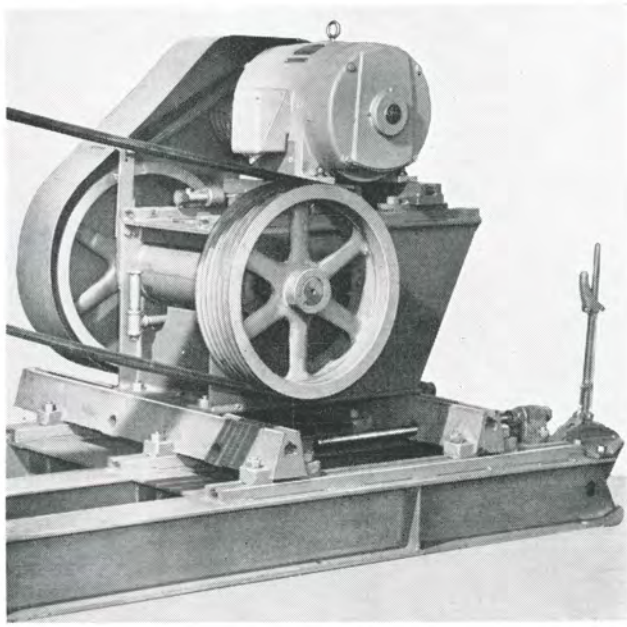


FIGURE 37

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

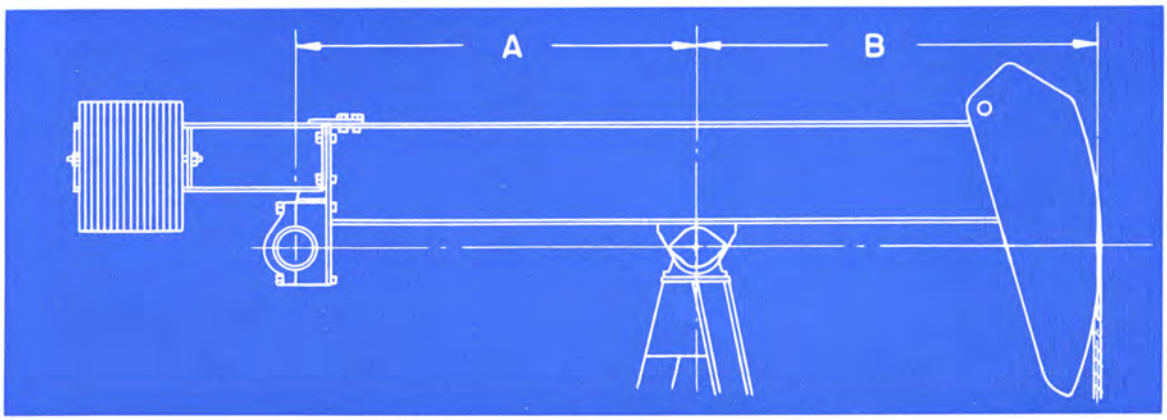


FIGURE 38

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	Max. Counterbalance Added, Lbs.*
48″	2600	28″	2600(A+28″)÷B
60″	4000	40″	4000(A+40″)÷B

* For the A and B dimensions refer to the General Dimensions Sheet of the particular unit in question.

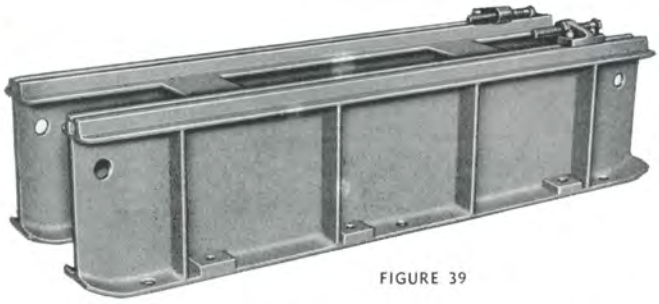


FIGURE 39

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.

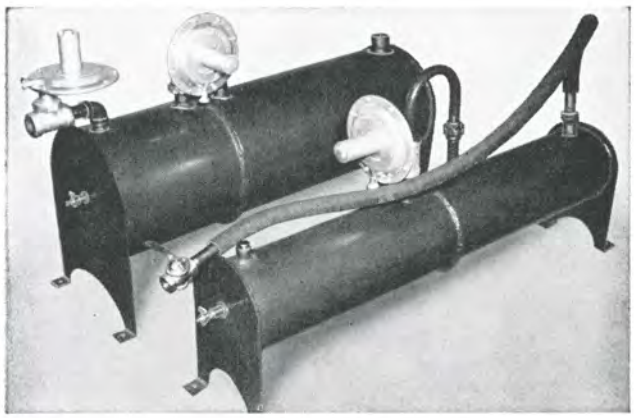


FIGURE 40

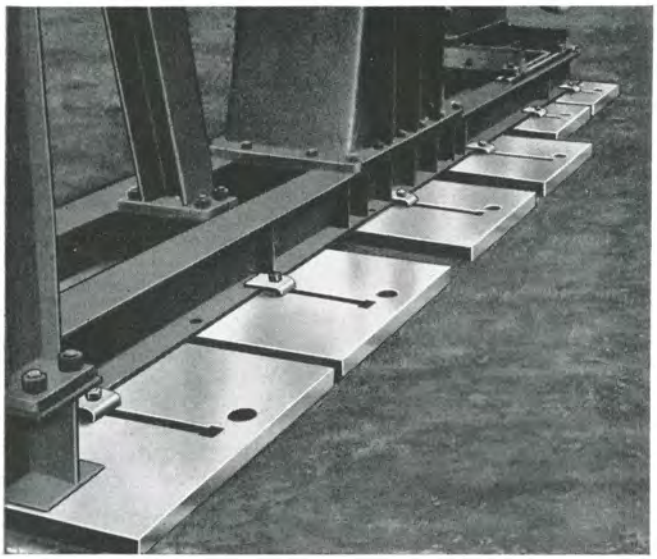


FIGURE 41

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.

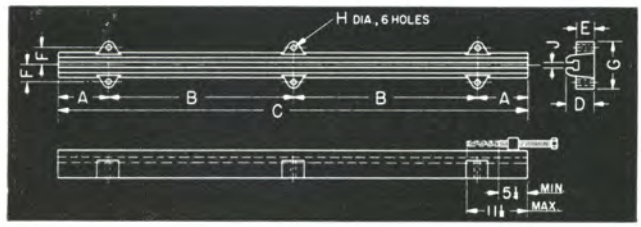


FIGURE 42

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"	2⅛"	6¼"	1"	1"
A69 Rail.....	3"	31½"	69"	4"	2½"	2⅛"	6¼"	1"	1"
A84 Rail.....	9"	33"	84"	5"	3¼"	3⅛"	8½"	1"	1⅛"

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.

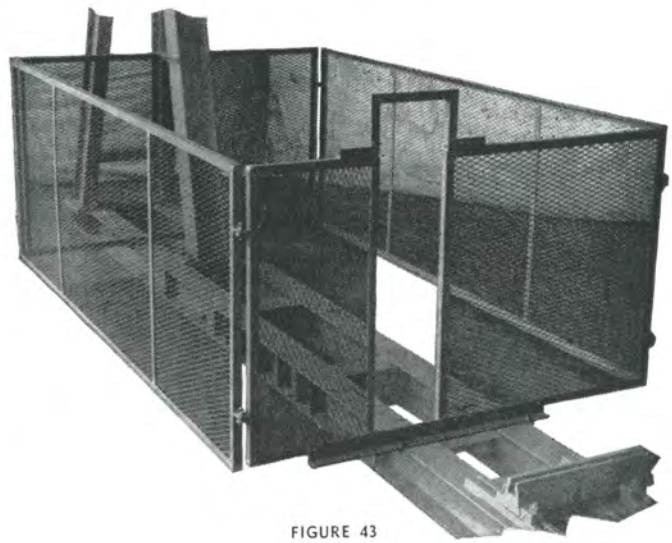


FIGURE 43

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.

FIGURE 44

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

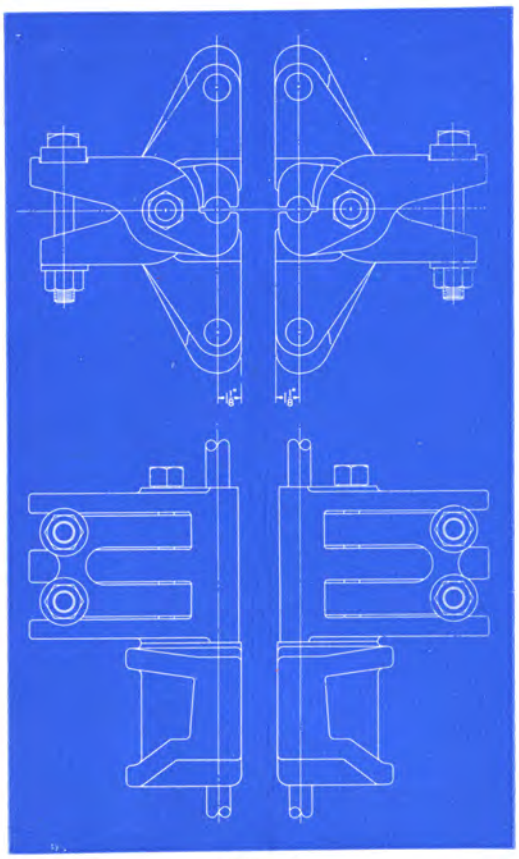


FIGURE 45

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

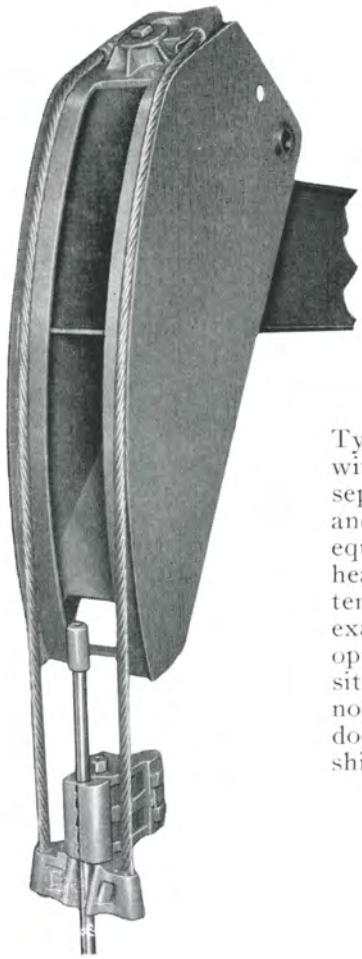


FIGURE 46

Type DB wire line hanger for use with dual well installations. Note separate wire lines, one right lay and one left lay, babbitted to equalizer sheave at top of horsehead. Regardless of load, the tendency for one wire to twist is exactly offset by the wire of the opposite lay to twist in the opposite direction. The net result is a non-twisting carrier bar which does not require a carrier bar shield.

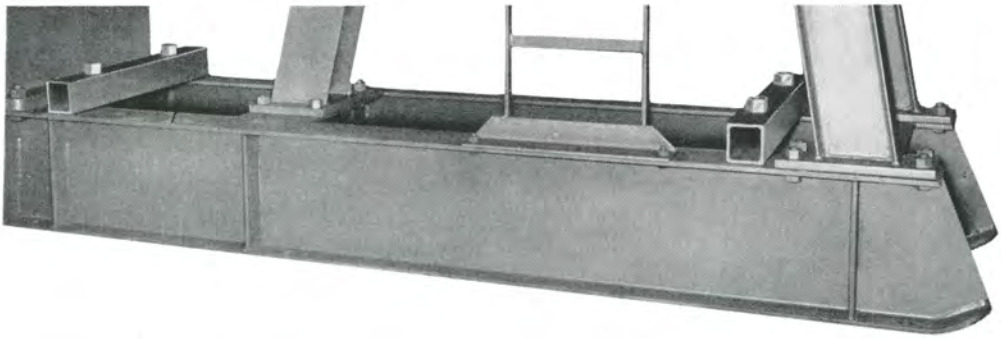


FIGURE 47

Typical top flange hold-down installation. Two bolt clamps are standard on the C-160 size and larger. One bolt clamps are standard on all smaller units. The number and location of clamps on the base is dependent on the size of the unit.

FIGURE 48

Three pumping units with three separate tubing and rod strings operating in a single casing. In this type installation the units can be operated simultaneously or selectively. These units utilize the Type S wire line hanger assembly shown below.

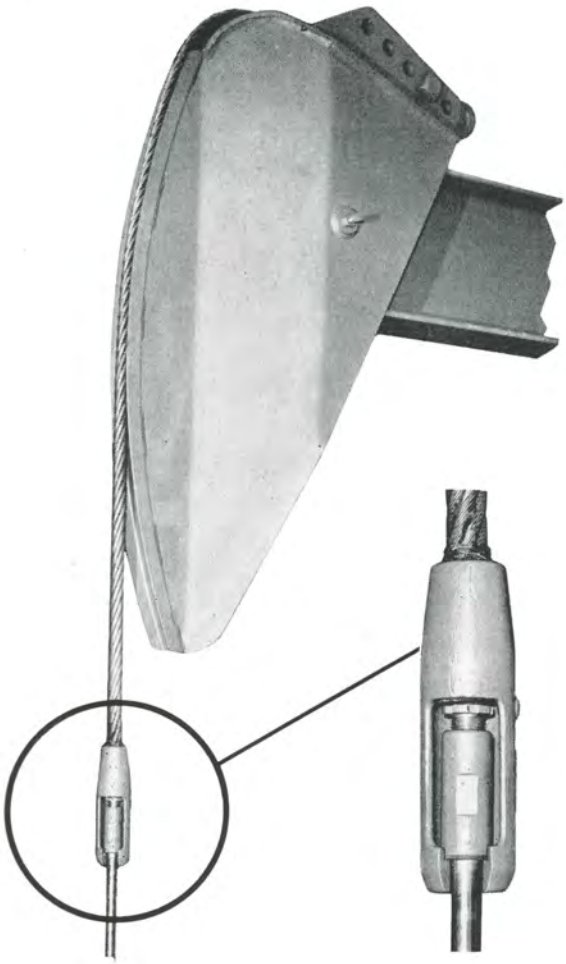


FIGURE 49

Lufkin's new Type S hanger assembly utilizes a single wire line and a quick-disconnect attachment to the polished rod. A standard sucker rod coupling attaches to the top of the polished rod and rests on a recessed shoulder of the wire line connection. A lock bolt screws into the top of the coupling and tightens against the top of the wire line connection.

Well spacing can be effected by moving the bolt at the top of horsehead to a different hole. Two horsehead alignment set screws, which are fabricated into the horsehead side plates, bear against the walking beam. These set screws can be used to properly align the horsehead without removing the well load.

The Type S hanger assembly can be used for dual, triple, or other multiple installation applications.

LUFKIN *Air Balanced* PUMPING UNITS

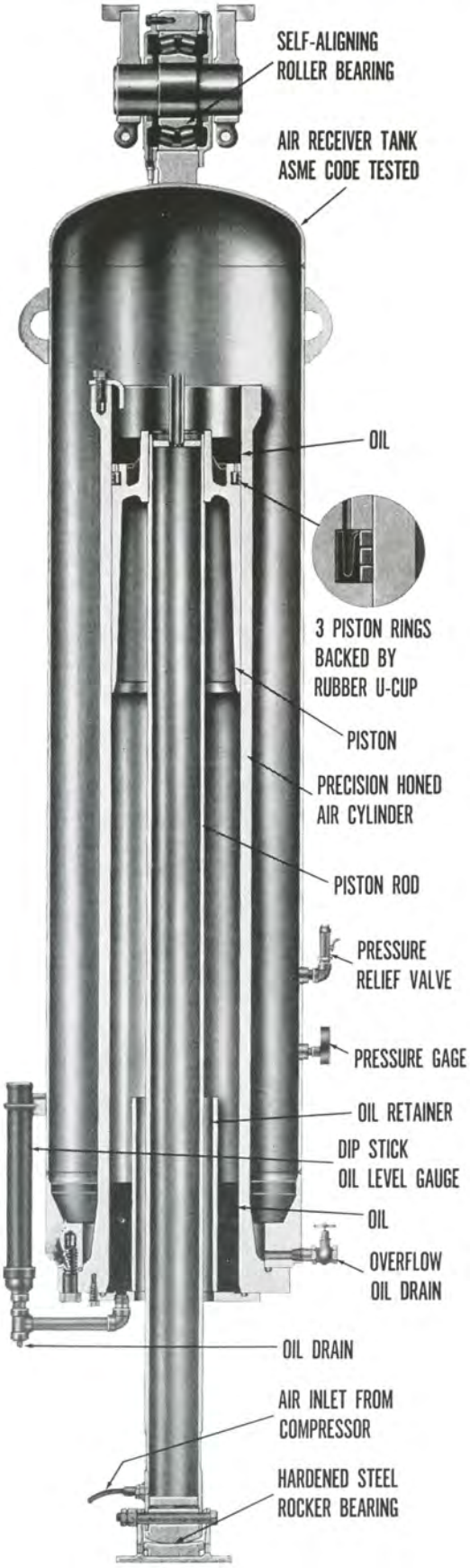


FIGURE 50

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

Gear Reducer Data: 1824T and 1280T Shown on Page 3428. For Other Sizes See Crank Balanced Unit Specifications.
Crank Pin Bearings: Tapered Roller, Factory Lubricated
Samson Post Bearings: Spherical Roller, Factory Lubricated
Equalizer Bearing: Spherical Roller, Factory Lubricated
Air Cylinder Bearing: Spherical Roller, Factory Lubricated
Hanger: Hinged Horsehead, Wire Line
Air Counterbalance Pressure: 450 P.S.I. (Max.)
Upper Pitman Connection: Rubber Cushioned

GENERAL DIMENSIONS—Lufkin Air Balanced Pumping Units

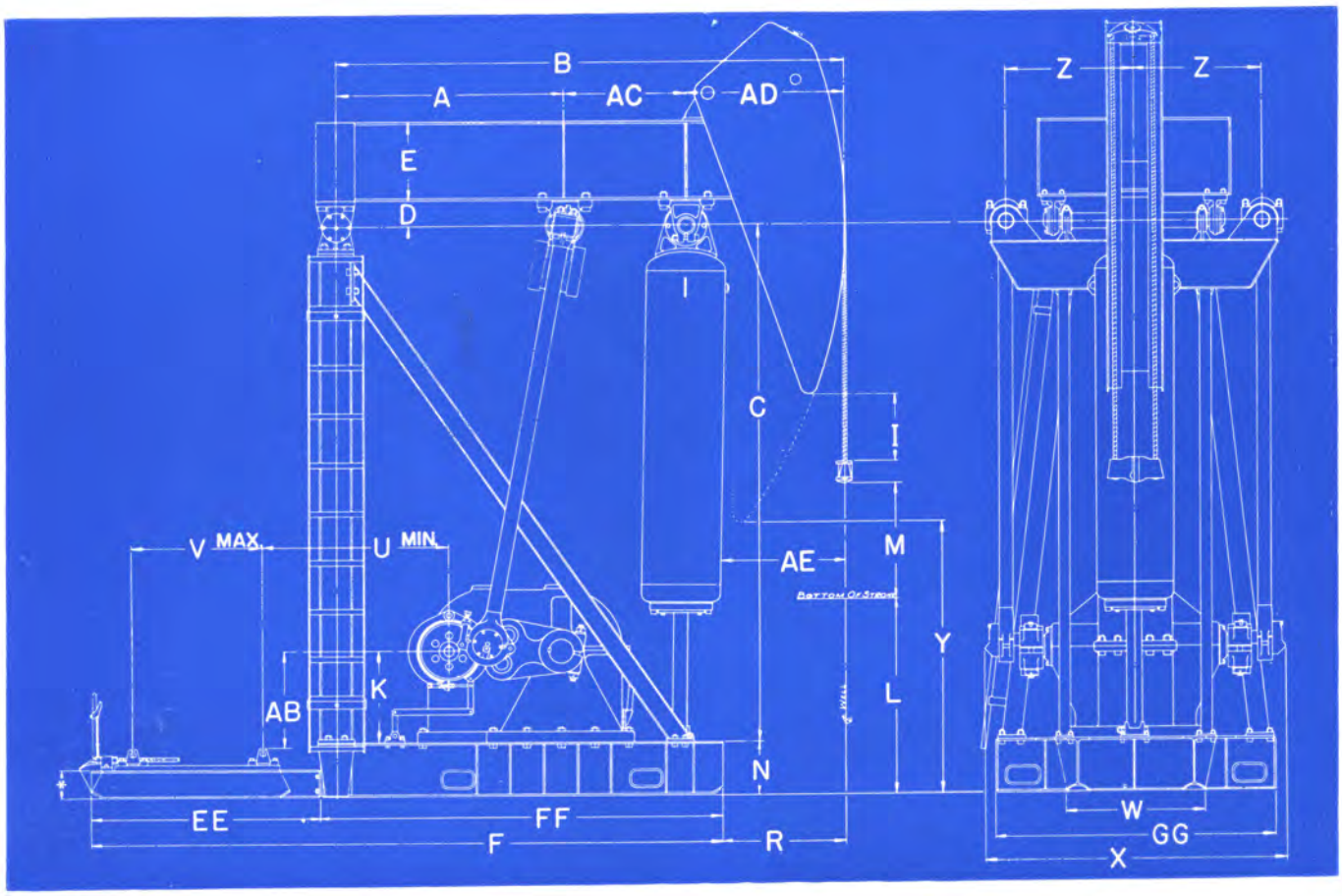


FIGURE 52

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-80D-54-19	48″	9′-7″	11′-0″	6¼″	16″	14′-5⅜″	7⅞″	18″	67½″	27″	9¾″	36″	66″	42″	25¼″	63⅞″	7′-0″	29″	13¼″	24½″	42½″	36″	7′-0¼″	7′- 5½″	63¾″
A-114D-54-19	48″	9′-7″	11′-0″	6¼″	16″	14′-5⅜″	7⅞″	18″	67½″	27″	9¾″	36″	64″	42″	25¼″	63⅞″	7′-0″	29″	13¼″	24½″	42½″	36″	7′-0¼″	7′- 5½″	63¾″
A-114D-64-19	48″	9′-7″	11′-0″	6¾″	16″	14′-5¾″	7⅞″	18″	62½″	32″	9¾″	36″	64″	42″	25¼″	63⅞″	6′-7″	29″	13¼″	24½″	42½″	36″	7′-0¼″	7′- 5½″	63¾″
A-160D-64-25	50″	10′-0″	11′-9″	6¼″	18½″	14′-6⅜″	8⅝″	27″	62¾″	32″	9¾″	35½″	57″	43½″	32″	66⅞″	6′-11″	30½″	22″	27½″	42½″	35½″	6′-7¾″	7′-11″	6′- 1½″
A-160D-74-25	50″	10′-0″	11′-9″	6¾″	18⅜″	14′-6¾″	8⅝″	27″	57¾″	37″	9¾″	35½″	57″	43½″	32″	66⅞″	6′-7″	30½″	22″	27½″	42½″	35½″	6′-7¾″	7′-11″	6′- 1½″
A-228D-74-28	56″	10′-11″	12′-5″	6¾″	20⅞″	15′-0⅛″	15⅞″	27″	64⅜″	37″	16⅛″	36″	47″	50″	37¼″	6′-5⅞″	7′-8″	35½″	28⅜″	31½″	43½″	36″	6′-9″	8′-3¼″	6′- 1½″
A-228D-86-28	56″	10′-11″	12′-5″	6¾″	20⅞″	15′-0¼″	9⅜″	27″	58⅝″	43″	16⅛″	36″	47″	50″	37¼″	6′-5⅞″	6′-10″	35½″	28⅜″	31½″	43½″	36″	6′-9″	8′-3¼″	6′- 1½″
A-320D-86-32	70″	12′-11″	13′-4″	7⅞″	24″	17′-8¼″	18¼″	28″	62⅝″	43″	16⅛″	39″	6′-6″	41″	43¼″	7′-2⅞″	7′-7″	39″	29⅜″	37″	48″	39″	7′-8″	10′-0¼″	7′-1½″
A-320D-100-32	70″	12′-11″	13′-4″	7⅞″	24″	17′-8¼″	9⅞″	28″	55⅛″	50″	16⅛″	39″	6′-6″	41″	43¼″	7′-2⅞″	6′-7″	39″	29⅜″	37″	48″	39″	7′-8″	10′-0¼″	7′- 1½″
A-456D-100-36	6′-5″	14′-7″	15′-7″	7⅞″	24¼″	18′-1¾″	18¾″	28″	73⅜″	50″	16⅛″	47½″	6′-2″	41″	46¾″	8′-1⅝″	8′-10″	45″	29⅜″	41″	57″	47½″	7′-2″	10′-11¾″	7′-6″
A-456D-120-36	6′-5″	14′-7″	15′-7″	7⅞″	24¼″	18′-1¾″	16⅝″	28″	53¾″	60″	16⅛″	47½″	6′-2″	41″	46¾″	8′-1⅝″	7′-5″	45″	29⅜″	41″	57″	47½″	7′-2″	10′-11¾″	7′-6″
A-640D-120-36	6′-5″	14′-7″	15′-7″	7⅞″	24¼″	18′-1¾″	16⅝″	28″	54¾″	60″	16⅛″	47½″	71″	41″	46¾″	8′-1⅝″	7′-5″	45″	29⅜″	41″	57″	47½″	7′-2″	10′-11¾″	7′-6″
A-912D-120-36	6′-5″	14′-7″	15′-7″	7⅞″	24¼″	19′-5″	16⅝″	30″	54¾″	60″	16⅛″	47½″	6′-6″	41″	50″	8′-1⅝″	7′-5″	45″	31⅜″	41″	57″	45½″	7′-2″	12′-3″	7′-6″
A-640D-120-40	7′-4″	16′-8″	17′-10″	9¼″	24¾″	19′-5½″	21″	28″	78¼″	60″	16⅜″	59″	7′-0″	41″	46¾″	8′-1⅝″	9′-5″	45″	29⅜″	43½″	68½″	59″	7′-2″	12′-3½″	7′-11½″
A-912D-120-40	7′-4″	16′-8″	17′-10″	9¼″	24¾″	19′-5½″	21″	30″	78¼″	60″	16⅜″	59″	6′-4″	41″	50″	8′-1⅝″	9′-5″	45″	31⅜″	43½″	68½″	58″	7′-2″	12′-3½″	7′-11½″
A-640D-144-40	7′-4″	16′-8″	17′-10″	9¼″	24¾″	19′-5½″	19½″	28″	55″	72″	16⅜″	59″	7′-0″	41″	46¾″	8′-1⅝″	7′-10″	45″	29⅜″	43½″	68½″	59″	7′-2″	12′-3½″	7′-11½″
A-912D-144-40	7′-4″	16′-8″	17′-10″	9¼″	24¾″	19′-5½″	19½″	30″	55″	72″	16⅜″	59″	6′-4″	41″	50″	8′-1⅝″	7′-10″	45″	31⅜″	43½″	68½″	58″	7′-2″	12′-3½″	7′-11½″
A-1280D-144-40	7′-4″	16′-8″	17′-10″	9¼″	24¾″	19′-5½″	19½″	36″	55″	72″	16⅜″	59″	6′-0″	41″	50¼″	8′-11⅛″	7′-10″	49¾″	37⅜″	43½″	68½″	56″	7′-2″	12′-3½″	7′-11½″
A-1280T-144-40	7′-4″	16′-8″	17′-10″	9¼″	24¾″	19′-5½″	19½″	28⅜″	55″	72″	16⅜″	59″	59¼″	41″	50¼″	8′-11⅛″	7′-10″	49¾″	29¾″	43½″	68½″	56″	7′-2″	12′-3½″	7′-11½″
A-640D-192-42	10′-1½″	23′-0″	21′-0″	9¼″	33″	27′-1⅞″	12¼″	28″	55″	96″	21″	48″	9′-9″	41″	46¾″	8′-4⅛″	7′-8″	46¼″	28⅜″	50″	104½″	94″	7′-2″	19′-4⅝″	7′-11½″
A-912D-192-42	10′-1½″	23′-0″	21′-0″	9¼″	33″	27′-1⅞″	12¼″	30″	55″	96″	21″	48″	9′-2″	41″	50″	8′-4⅛″	7′-8″	46¼″	28⅜″	50″	104½″	94″	7′-2″	19′-4⅝″	7′-11½″
A-1280D-192-42	10′-1½″	23′-0″	21′-0″	9¼″	33″	27′-1⅞″	12¼″	36″	55″	96″	21″	48″	8′-7⅜″	41″	50¼″	8′-11⅛″	7′-8″	49¾″	34⅜″	50″	104½″	91½″	7′-2″	19′-4⅝″	7′-11½″
A-1280T-192-42	10′-1½″	23′-0″	21′-0″	9¼″	33″	27′-1⅞″	12¼″	28⅜″	55″	96″	21″	48″	7′-6⅝″	41″	50¼″	8′-11⅛″	7′-8″	49¾″	26½″	50″	104½″	91½″	7′-2″	19′-4⅝″	7′-11½″
A-1824D-192-42	10′-1½″	23′-0″	21′-0″	9⅛″	33″	27′-1⅞″	12¼″	36″	55″	96″	21″	48″	8′-1″	41″	50¼″	9′-5⅛″	7′-8″	52¾″	34⅜″	50″	104½″	91½″	7′-2″	19′-4⅝″	7′-11½″
A-1824T-192-42	10′-1½″	23′-0″	21′-0″	9⅛″	33″	27′-1⅞″	12¼″	25″	55″	96″	21″	48″	7′-5″	41″	50¼″	9′-5⅛″	7′-8″	52¾″	23⅜″	50″	104½″	91½″	7′-2″	19′-4⅝″	7′-11½″
A-912D-240-62	11′-2½″	28′-0″	25′-3½″	9¼″	36″	32′-0″	17½″	30″	55″	120″	21″	48″	9′-7″	44¾″	50¼″	8′-4⅛″	8′-5″	46¼″	22¼″	99″	102½″	91½″	†	†	8′-0″
A-1280D-240-62	11′-2½″	28′-0″	25′-3½″	9¼″	36″	32′-0″	17½″	36″	55″	120″	21″	48″	9′-3″	44¾″	50¼″	8′-11⅛″	8′-5″	49¾″	28¼″	99″	102½″	91½″	†	†	8′-0″
A-1280T-240-62	11′-2½″	28′-0″	25′-3½″	9¼″	36″	32′-0″	17½″	28⅜″	55″	120″	21″	48″	8′-2¼″	44¾″	50¼″	8′-11⅛″	8′-5″	49¾″	20⅝″	99″	102½″	91½″	†	†	8′-0″
A-1824D-240-62	11′-2½″	28′-0″	25′-3½″	9⅛″	36″	32′-0″	17½″	36″	55″	120″	21″	48″	8′-8⅝″	44¾″	50¼″	9′-5⅛″	8′-5″	52¾″	28¼″	99″	102½″	91½″	†	†	8′-0″
A-1824T-240-62	11′-2½″	28′-0″	25′-3½″	9⅛″	36″	32′-0″	17½″	25″	55″	120″	21″	48″	7′-10⅝″	44¾″	50¼″	9′-5⅛″	8′-5″	52¾″	17¼″	99″	102½″	91½″	†	†	8′-0″

*16⅛″ deep engine base beam used on 192″ stroke units, all others use 8″ deep engine base beams.
Jointed base is standard on all sizes except as noted; one-piece and portable bases available.
† Portable Base is Standard.

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-80D-54-19	80,000	54– 44	19,000	8	10,685	16 x 8½ @ 64 lb	3½	1 x 16′-0″	19¼, 24, 29¼ (4C)	29.15	11,500
A-114D-54-19	114,000	54– 44	19,000	8	10,685	16 x 8½ @ 64 lb	3½	1 x 16′-0″	19¼, 24, 29¼, 33¼ (4C)	29.4	11,600
A-114D-64-19	114,000	64– 54	19,000	8	10,685	16 x 8½ @ 64 lb	3½	1 x 16′-0″	19¼, 24, 29¼, 33¼ (4C)	29.4	11,600
A-160D-64-25	160,000	64– 54	25,000	10	17,085	18 x 8¾ @ 77 lb	3½	1⅛ x 18′-6″	24¼, 29¼, 33¼, 38 (5C)	28.67	14,600
A-160D-74-25	160,000	74– 64– 54	25,000	10	17,085	18 x 8¾ @ 77 lb	3½	1⅛ x 18′-6″	24¼, 29¼, 33¼, 38 (5C)	28.67	14,600
A-228D-74-28	228,000	74– 64– 54	28,000	10	17,170	21 x 9 @ 82 lb	4	1⅛ x 20′-0″	24¼, 30, 36, 41¼ (6C)	28.45	18,300
A-228D-86-28	228,000	86– 74– 64	28,000	10	17,170	21 x 9 @ 82 lb	4	1⅛ x 21′-0″	24¼, 30, 36, 41¼ (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	1¼ x 22′-0″	25, 30, 36, 42, 47¼ (8C)	30.12	24,425
A-320D-100-32	320,000	100– 86– 74	32,000	11	21,255	24 x 12 @ 100 lb	4	1¼ x 23′-6″	25, 30, 36, 42, 47¼ (8C)	30.12	24,800
A-456D-100-36	456,000	100– 86– 74	36,000	12	23,775	24 x 14 @ 130 lb	6	1¼ x 25′-0″	28, 34, 40, 46, 51 (10C or 7D)	29.04	28,900
A-456D-120-36	456,000	120–100– 86	36,000	12	23,775	24 x 14 @ 130 lb	6	1¼ x 28′-0″	28, 34, 40, 46, 51 (10C or 7D)	29.04	29,900
A-640D-120-36	640,000	120–100– 86	36,000	12	23,775	24 x 14 @ 130 lb	6	1¼ x 28′-0″	28, 34, 40, 46, 51 (10C or 7D)	28.6	31,800
A-912D-120-36	912,000	120–100– 86	36,000	12	23,775	24 x 14 @ 130 lb	6	1¼ x 28′-0″	28, 34, 40, 46, 51 (10C or 7D)	28.72	34,500
A-640D-120-40	640,000	120–100– 86	40,000	13	27,065	24 x 14 @ 160 lb	6	1⅜ x 28′-0″	28, 34, 40, 46, 51 (10C or 7D)	28.6	35,200
A-912D-120-40	912,000	120–100– 86	40,000	13	27,065	24 x 14 @ 160 lb	6	1⅜ x 28′-0″	28, 34, 40, 46, 51 (10C or 7D)	28.72	36,200
A-640D-144-40	640,000	144–120–100	40,000	13	27,065	24 x 14 @ 160 lb	6	1⅜ x 32′-0″	28, 34, 40, 46, 51 (10C or 7D)	28.6	36,200
A-912D-144-40	912,000	144–120–100	40,000	13	27,065	24 x 14 @ 160 lb	6	1⅜ x 32′-0″	28, 34, 40, 46, 51 (10C or 7D)	28.72	37,200
A-1280D-144-40	1,280,000	144–120–100	40,000	13	27,065	24 x 14 @ 160 lb	6	1⅜ x 32′-0″	40, 46, 51, 55, 68 (11D)	28.05	43,200
A-1280T-144-40	1,280,000	144–120–100	40,000	13	27,065	24 x 14 @ 160 lb	6	1⅜ x 32′-0″	28, 34, 40, 46, 51, 53½ (7D)	111.02	43,700
A-640D-192-42	640,000	192–168–144	42,000	14½	31,600	33 x 15¾ @ 200 lb	8	1⅜ x 39′-2″	28, 34, 40, 46, 51 (10C or 7D)	28.6	49,000
A-912D-192-42	912,000	192–168–144	42,000	14½	31,600	33 x 15¾ @ 200 lb	8	1⅜ x 39′-2″	28, 34, 40, 46, 51 (10C or 7D)	28.72	50,000
A-1280D-192-42	1,280,000	192–168–144	42,000	14½	31,600	33 x 15¾ @ 200 lb	8	1⅜ x 39′-2″	40, 46, 51, 55, 68 (11D)	28.05	56,000
A-1280T-192-42	1,280,000	192–168–144	42,000	14½	31,600	33 x 15¾ @ 200 lb	8	1⅜ x 39′-2″	28, 34, 40, 46, 51, 53½ (7D)	111.02	56,500
A-1824D-192-42	1,824,000	192–168–144	42,000	14½	31,600	33 x 15¾ @ 200 lb	8	1⅜ x 39′-2″	40, 46, 51, 55, 68 (11D)	28.33	60,000
A-1824T-192-42	1,824,000	192–168–144	42,000	14½	31,600	33 x 15¾ @ 200 lb	8	1⅜ x 39′-2″	28, 30, 40, 46 (11D)	112.14	60,500
A-912D-240-62	912,000	240–200	62,000	14½	34,000	36 x 16½ @ 245 lb	8	Double 1¼″	28, 34, 40, 46, 51 (10C or 7D)	28.72	65,000
A-1280D-240-62	1,280,000	240–200	62,000	14½	34,000	36 x 16½ @ 245 lb	8	Double 1¼″	40, 46, 51, 55, 68 (11D)	28.05	71,000
A-1280T-240-62	1,280,000	240–200	62,000	14½	34,000	36 x 16½ @ 245 lb	8	Double 1¼″	28, 34, 40, 46, 51, 53½ (7D)	111.02	71,500
A-1824D-240-62	1,824,000	240–200	62,000	14½	34,000	36 x 16½ @ 245 lb	8	Double 1¼″	40, 46, 51, 55, 68 (11D)	28.33	75,000
A-1824T-240-62	1,824,000	240–200	62,000	14½	34,000	36 x 16½ @ 245 lb	8	Double 1¼″	28, 30, 40, 46 (11D)	112.14	75,500

* 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.

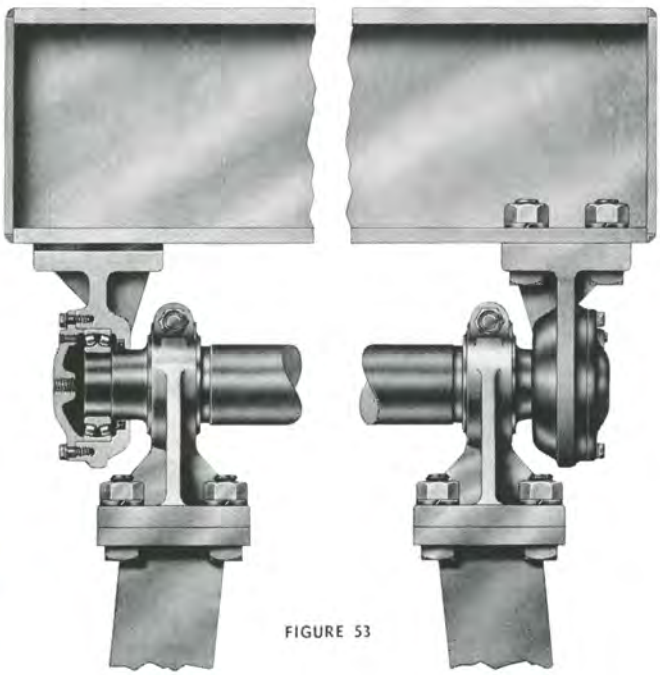


FIGURE 53

SAMSON POST BEARING ASSEMBLY

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: 112.14
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: 28⅛″
Gear Box Oil Capacity: 165 Gallons

1280T TRIPLE REDUCTION GEAR REDUCER SPECIFICATIONS

Gears: Main Gear 54″ P.D. x 15¾″ Face
Rating: 1,280,000 In. Lbs. Peak Torque
Ratio of Gears: 111.02
Crank Shaft Dia. 8½″
Sheave: 53½″ P.D.—7D Max., 3-7/16″ Bore
Distance Centerline Unit to Centerline of Drive: 21½″
Gear Box Oil Capacity: 120 Gallons

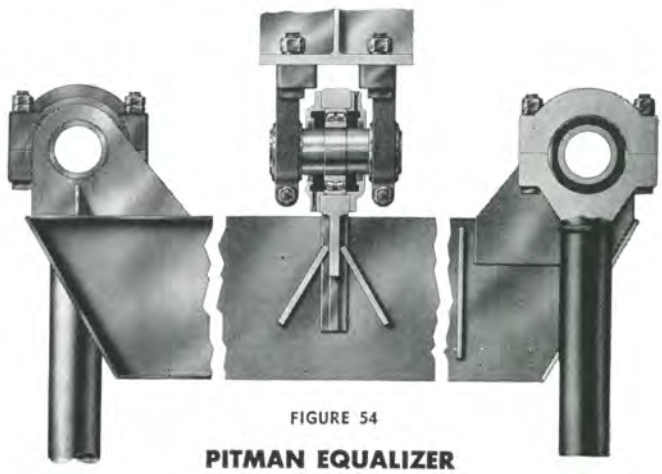


FIGURE 54

PITMAN EQUALIZER

Showing self-aligning roller bearing at center and rubber cushions at upper Pitman connections.

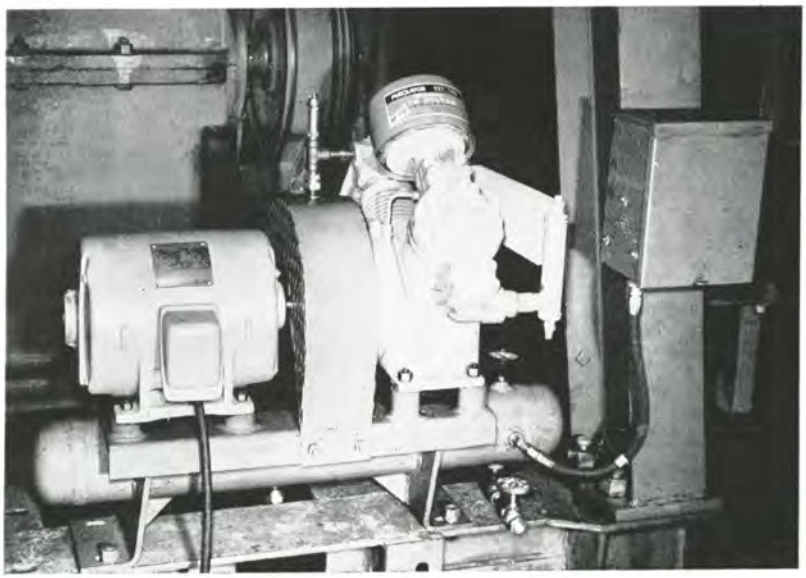


FIGURE 55

MOTOR DRIVEN COMPRESSOR

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

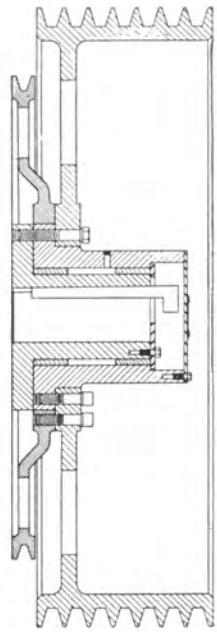


FIGURE 56

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; 17¼", 23½", 28", 34" and 47¼" P.D. rims are available.

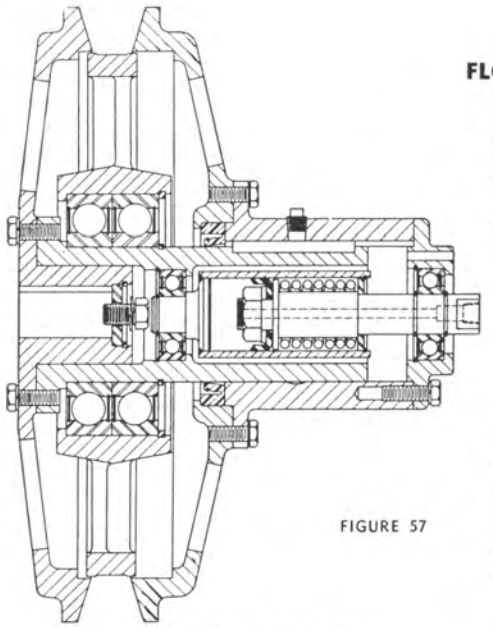


FIGURE 57

CLUTCH, 11½" 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 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 Presure.

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

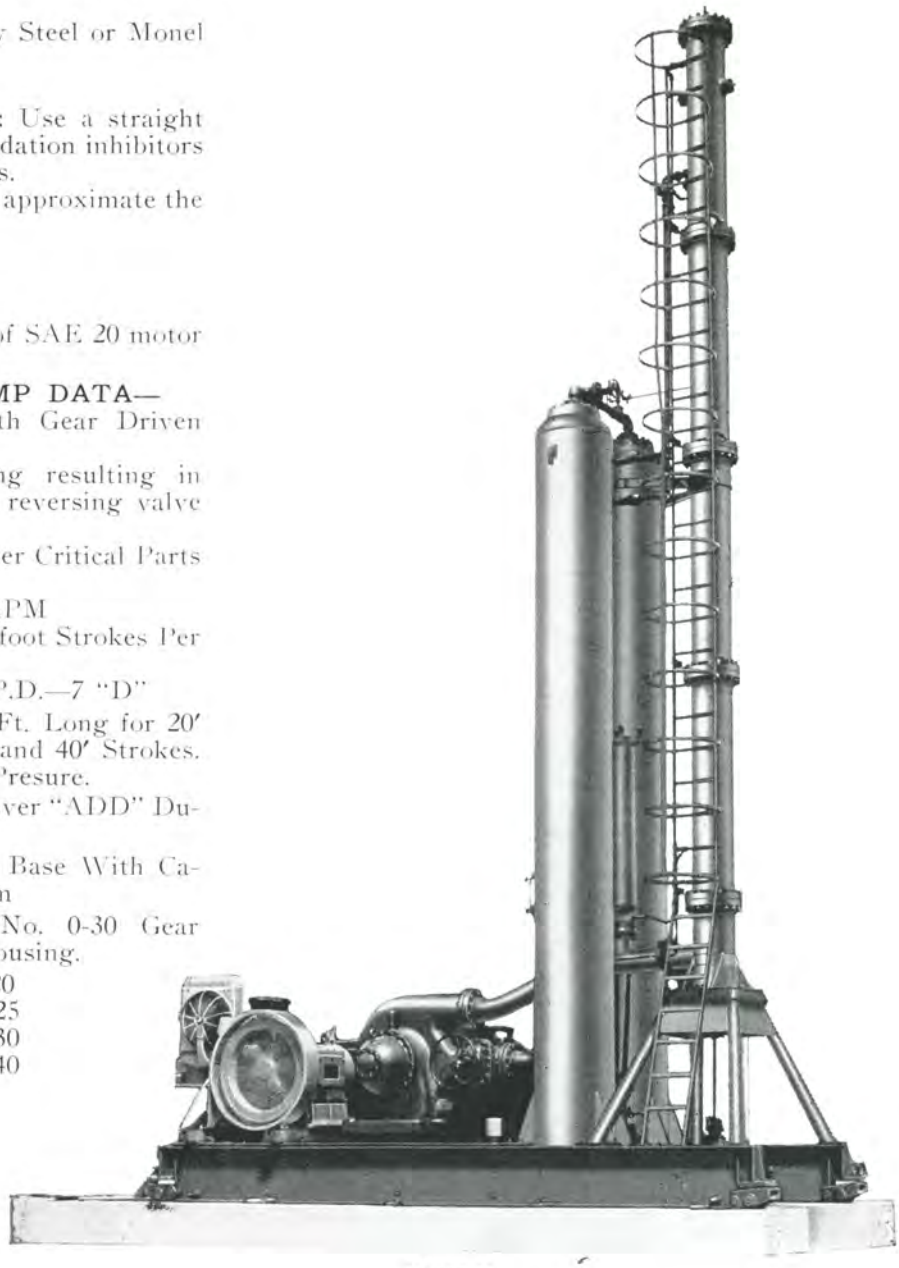


FIGURE 59

LUFKIN HORIZONTAL, TWIN CYLINDER

MODEL	SPEED RANGE	CONTINUOUS RATING
HC-333	350-750 RPM	20- 30 BHP
HT-333	350-750 RPM	20- 30 BHP
H-795	300-600 RPM	45- 65 BHP
H-1770	200-475 RPM	57-120 BHP
H-2165	200-475 RPM	70-145 BHP

Lufkin's four sizes of heavy duty, medium speed, twin cylinder, horizontal, two cycle, engines now cover a range of horsepower which is broad enough to supply your engine requirements for the entire lease work of pumping, salt water disposal, gas lift, gas compression, pipeline pumps, generators, etc. New models added to the line are the Models H-1770 and H-2165.

Lufkin engines are compact and easily mounted to all types of oil field installations. They are rugged, dependable, easily maintained engines that are built for constant unattended service. Lufkin engines are manufactured in the Southwest in the midst of the oil fields. They are dependable and long life. The operator is assured of an adequate stock of all replaceable parts from our field warehouses or from the factory.

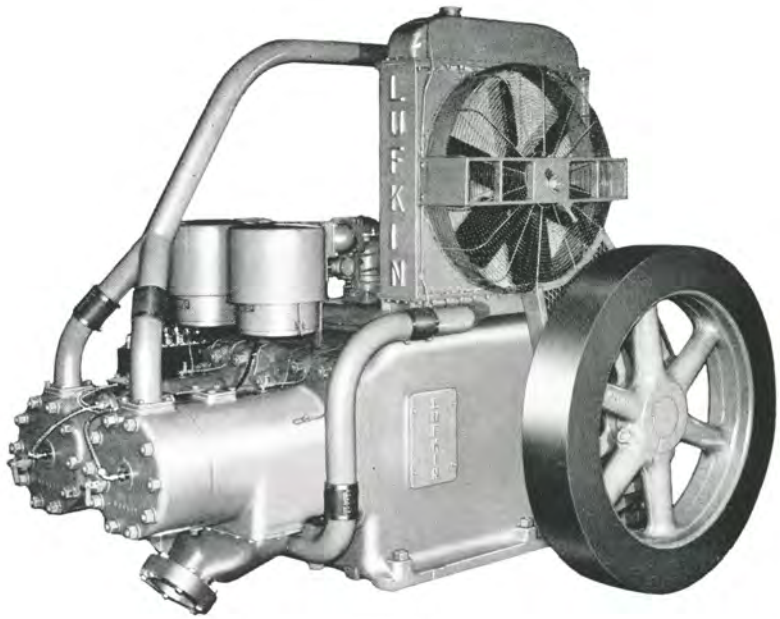


FIGURE 60

Flywheel Side of Lufkin H-1770 and H-2165 Engines

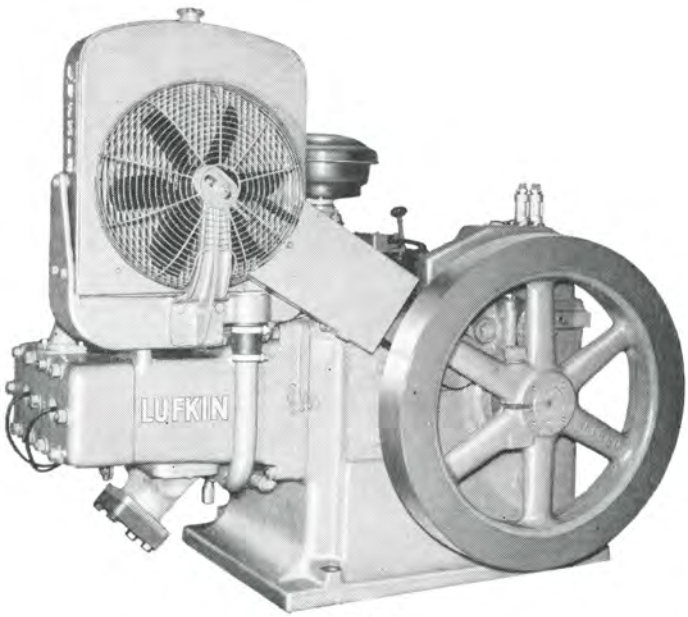


FIGURE 61

Flywheel Side Lufkin HT-333 Engine

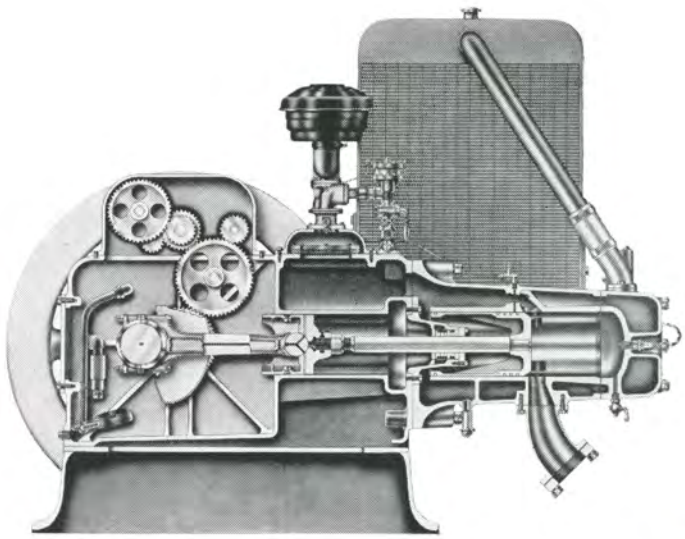


FIGURE 62

Cross Section—Lufkin H-795 Engine

TWO CYCLE GAS ENGINES

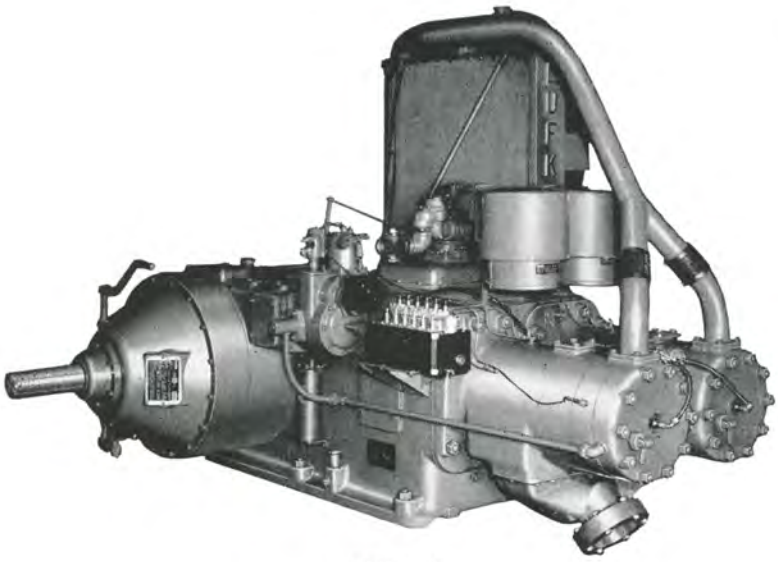


FIGURE 63

Clutch Side of Lufkin H-1770 and H-2165 Engines

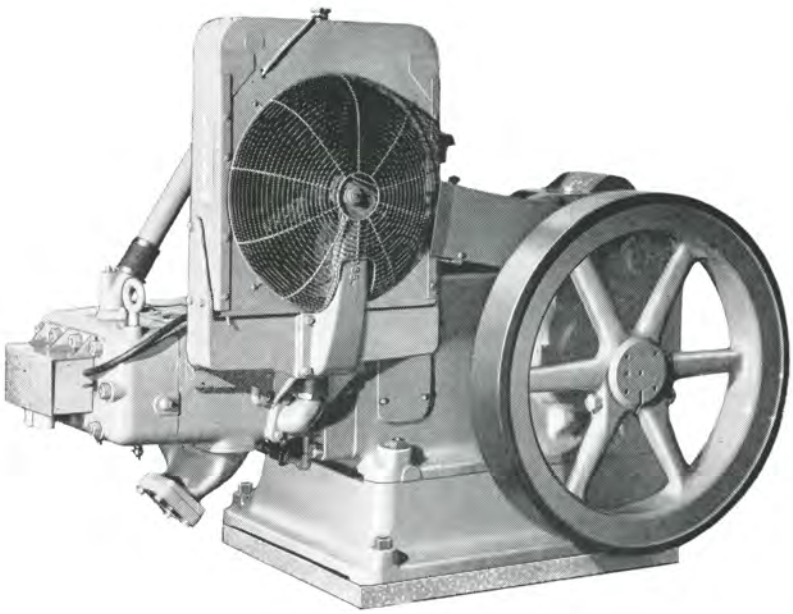


FIGURE 64

Front View—Lufkin H-795 Engine

FEATURES

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

Two Cycle Design is rugged and simple. There are no valves to burn or stick and no excessive oil consumption when rings are worn.

Crosshead Construction with full floating metallic piston rod packing seals the crankcase from the combustion gases. Oil changes are less frequent and less maintenance is required.

Full Pressure Lubrication. Oil picked up by pump is forced under pressure to all moving parts giving better lubrication and less wear. A cylinder lubricator is provided to furnish metered oil to the power cylinders. The lubricator is automatically fiilled by the pressure system through a replaceable filter.

Oil Cooled Pistons are available on the H-795 and H-2165 engines. Oil Cooled Pistons result in longer ring and cylinder life and are recommended where the engine is operating continuously on heavy loads.

Water Cooled Exhaust Ports. Water is circulated through exhaust port bridges and keeps them cooler resulting in less wear of cylinders and rings.

Thermosyphon Cooling maintains even water temperatures at all loads and speeds. This system operates under pressure and make-up water is seldom required.

Built-In Safety Controls are standard equipment and provide safety controls for low oil pressure and high water temperatures.

Long Interval Maintenance Equipment is available to reduce materially the frequency of maintenance. This equipment consists of:

Oil Level Control with separate reservoir
Low Tension Ignition
Long Life Spark Plugs
Special Assemblies of clutch, fan and other parts, requiring lubrication and maintenance only at 6 month intervals.

EQUIPMENT

All Lufkin engines are furnished as a complete power unit with the following standard equipment:

Full Pressure Lubrication with oil pump
Oil Filter, By-pass type, replacable element
Rotary High Tension Magneto
Centrifugal Governor
Ensign Natural Gas Mixer and Regulator
Oil Bath Air Filter
Cooling System complete with fan, belt drive, fan and belt guards
Twin Disc Power Take Off
Safety Controls for low oil pressure and high temperature

OPTIONAL EQUIPMENT

12 volt Electric Starter (24 volt on H-1770 and H-2165)
Gas Motor Starter (Requires 30-40# gas)
Air Starting Valve (Requires 150-200# air
Friction Wheel Starter
Dual Fuel (gas-butane) Operation
Long Interval Maintenance Features
Oil Cooled Pistons (available on H-795 and H-2165 only)
Cast Iron Sub Base
Hydraulic Governor
Low Tension Ignition
Overspeed Stop
Fuel Injection (On H-1770 and H-2165 only)

LUFKIN ENGINE SPECIFICATIONS

MODEL	HC-333	HT-333	H-795	H-1770	H-2165
No. Cylinders	2	2	2	2	2
Bore, In.	5½	5½	7½	9½	10½
Stroke, In.	7	7	9	12½	12½
Displacement, Cu. In.	333	333	795	1770	2165
Compression Ratio	5.75	5.75	5.3	5.2	5.2
Speed Range, RPM	350–750	350–750	300–600	200–475	200–475
Diam. Flywheel, Inches	35½	35½	40	48	48
Flywheel WR², Ft.² Lbs.	1200	1200	1580	5250	5250
Cooling System Type	Condenser	Thermosyphon			
Capacity, Gallons	7½	7½	14	28	28
Lubrication	Full Pressure				
Crankcase Capacity, Gals.	5	5	5	16	16
Cylinder Lubricator	McCord Model 55 (Automatically filled by Pressure System)				
Oil Filter	Cuno By-Pass Type				
Ignition—Standard	Rotary High Tension Magneto				
Optional	Rotary Low Tension Magneto				
Gas Mixer—Ensign	1½"XG	1½"XG	2"XG	3" DG	3½" DG
Air Filter	Oil Bath Type				
Clutch, Twin Disc	SPE 111	SPE 111	SPE 114	SPE 214	SPE 314
Size Shaft	2¼x6½	2¼x6½	3x8½	3½x10	3 15/16x10
Keyway	5/8"x5/16"	5/8"x5/16"	¾"x⅜"	⅞"x7/16"	1"x1½"
Dia. Exhaust Pipe	4"	4"	4"	6"	6"
Dia. Gas Inlet	1"	1"	1"	1½"	2"
Weight, Lbs.	3250	3250	4300	9000	9500
Safety Controls					
Water & Oil	Standard				
Overspeed	Optional				
Starting Systems (Optional)					
Air Starting Valve					
Electric Motor					
Air-Gas Motor					
Friction Wheel					

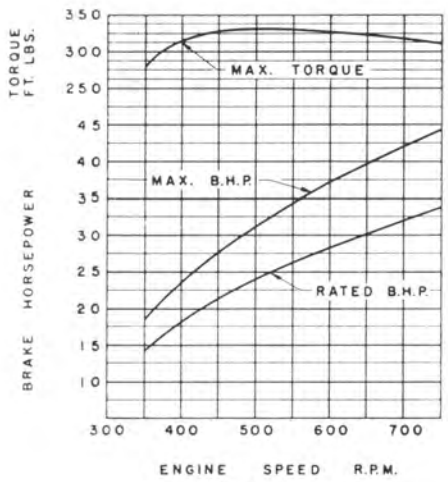


FIGURE 65
Performance Curves H-333 Gas Engine

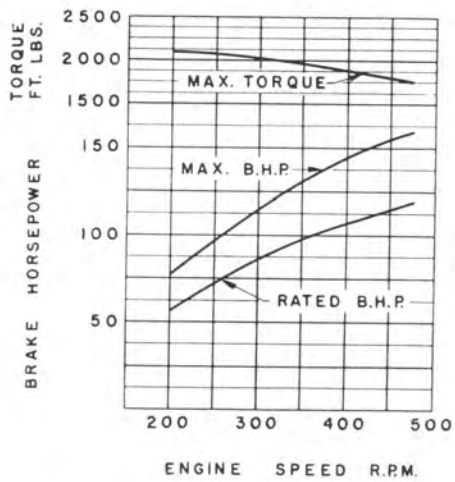


FIGURE 66
Performance Curves H-1770 Gas Engine

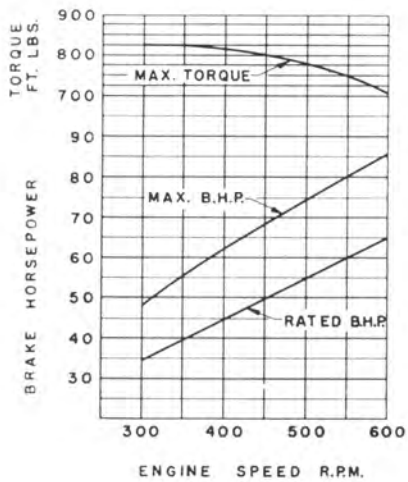


FIGURE 67
Performance Curves H-795 Gas Engine

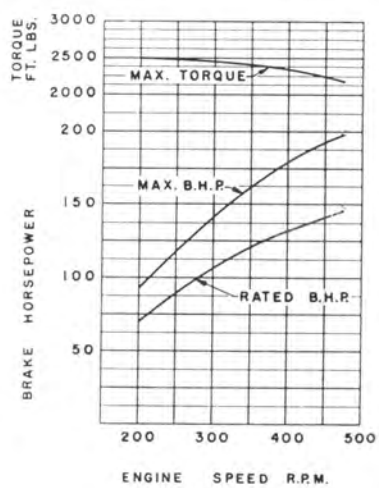


FIGURE 68
Performance Curves H-2165 Gas Engine

LUFKIN CH-795 ENGINE DRIVEN COMPRESSOR UNITS

The Model CH-795 engine driven, direct connected, compressor and all accessory equipment is mounted on a heavy fabricated steel base to form a complete packaged compressor unit. This unit is available as a single stage or two stage 55 BHP—500 RPM packaged unit, tailored to meet the customer's specifications.

Engine. The Lufkin Model H-795 engine equipped with oil cooled pistons is used as the prime mover. The compressor base is bolted to the engine base in place of the clutch. Where water cooling of the compressor cylinders is required, a water pump is mounted on the engine cylinder block and the engine radiator cools both the engine and the compressor cylinders. The cylinder lubricator, automatically filled, is made with two compartments for engine and compressor cylinders.

Compressor Base. The compressor base is arranged so that a single stage cylinder is mounted horizontally and if two stage operation is required, the second stage cylinder is mounted vertically, with no changes or replacement of base parts. The compressor base is bolted rigidly to the engine base and has its own oil sump which is separate from the engine. The compressor crankshaft is bored and fits over the end of the engine crankshaft where it is keyed in place and supported by the engine bearing on this end and by a large roller bearing on the outboard side. All of the parts in the compressor base are full pressure lubricated by an oil pump and filter assembly. The connecting rod bearings are interchangeable with the engine bearings. A phosphorus bronze crosshead is fitted into a distance piece, which forms the mounting for the compressor cylinder. A single stage unit can be converted in the field into a two stage unit by the addition of the compressor cylinder, distance piece, and connecting rod assembly. No alterations are necessary in the compressor base assembly.

Compressor Cylinders: Time tested Cooper-Bessemer compressor cylinders are available for pressures to 6000#. These cylinders range in size from 1⅝" to 11" diameter, all with 9" stroke. Either single acting or double acting cylinders are available. Lubrication is by means of a force feed lubricator mounted on and driven by the engine. Full metallic packing seals around the piston rod.

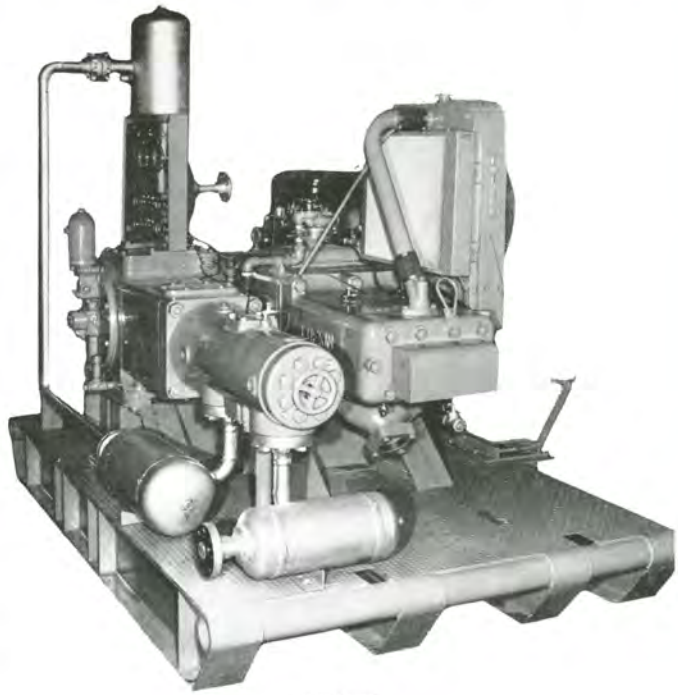


FIGURE 69
Single Stage Compressor Unit

Skid Base: This is fabricated into one piece from heavy beam sections. The engine fuel volume tank is built into the base under the engine. The base is small, being approximately 6 ft. wide x 10 ft. long, yet all accessories are mounted to give a complete package job.

Accessories: Complete packaged compressor units are available with suction scrubbers, intercoolers, aftercoolers, safety control panels, and starting units. On a packaged compressor unit there are many accessories required which can be secured and mounted to the customer's specifications. All packaged compressor units are furnished standard with suction and discharge surge drums. Suction scrubbers and equipment is according to customer's specifications. A complete control panel with oil pressure, temperature, suction and discharge high-low gages with indicators is considered standard. Where intercoolers, aftercoolers and interscrubbers are required, they can easily be mounted on the skid base and piped as an integral part of the unit.

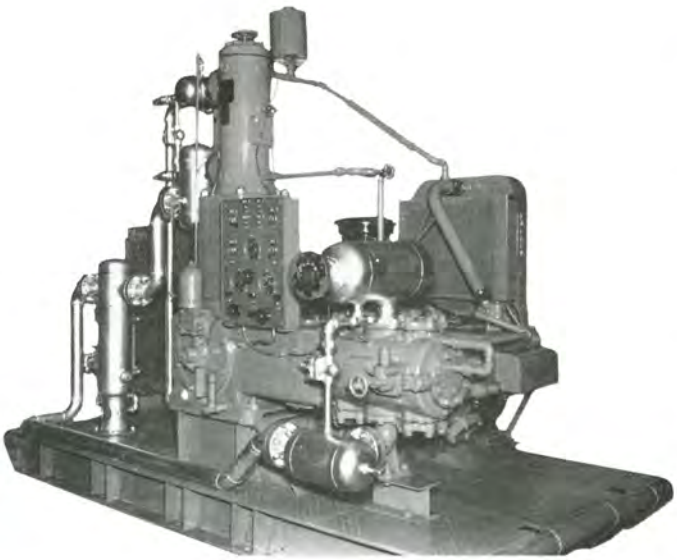


FIGURE 70
Two Stage Compressor Unit

SPECIFICATIONS

Compressor Cylinders	Cooper-Bessemer
Bore, Range	1⅝ to 11 inch diameter
Stroke	9"
Pressure Range	to 6000#
Horsepower	55

DIMENSIONS

Length Skid	10 ft.
Width Skid	6 ft.
Height—Single Stage	73"
Height—2 Stage	8 ft.
Cu. Yds. Foundation	8

LUFKIN TRAILERS OFFERS A "MODEL" TO MANY VARIATIONS OF BASIC MODELS SHOWN ALL LUFKIN MODELS OFFERED

FIGURE 71

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

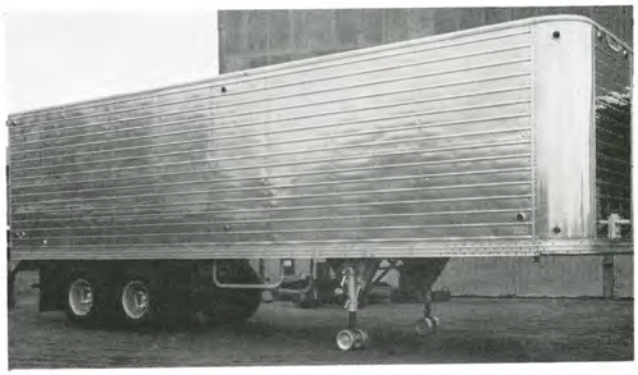


FIGURE 72

Model ALV

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

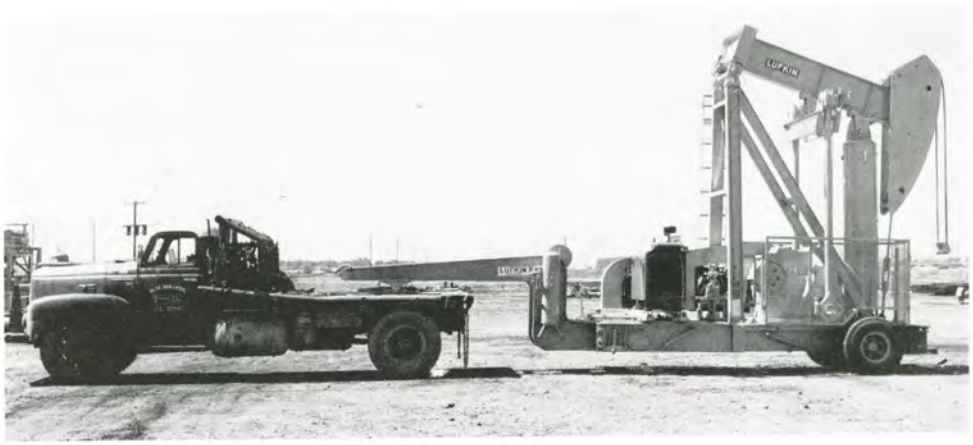


FIGURE 73

Mobile Pumping Unit for Test Purposes.

FIGURE 74

Model TOVLA

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

FIGURE 75

Adaptable for any type livestock haul

COMPLY WITH YOUR EVERY HAULING NEED
BELOW CAN BE QUOTED UPON REQUEST
IN TANDEM AND SINGLE

FIGURE 76

Model TOF-H

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

FIGURE 77

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 78

Custom Built Low-Bed

All Low-Bed Models offered custom made to every need

FIGURE 79

Model TOP

For hauling pipe, poles & other oilfield supplies

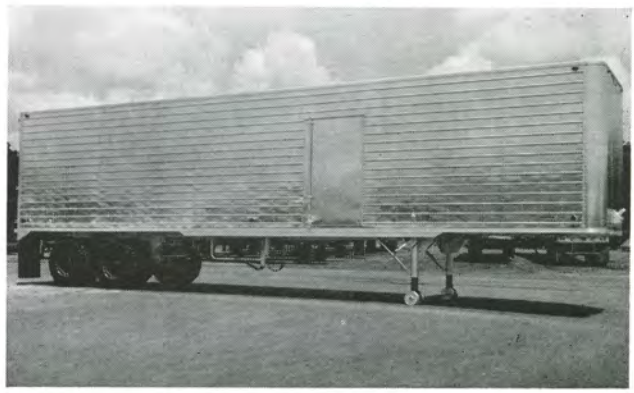


FIGURE 80

Model TKV-12

High Cube, lightweight van for general freight (offered either dry freight or produce)

LUFKIN GEAR REDUCERS

A complete line of Single, Double and Triple Reduction Herringbone Gear Reducers, also Single and Double 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. Bulletins G-7 and G-8 are available on request.

A complete line of Marine Gears including reduction, reverse and reduction, and multiple pinion units are available. Write for Marine Gear Bulletin G-6.

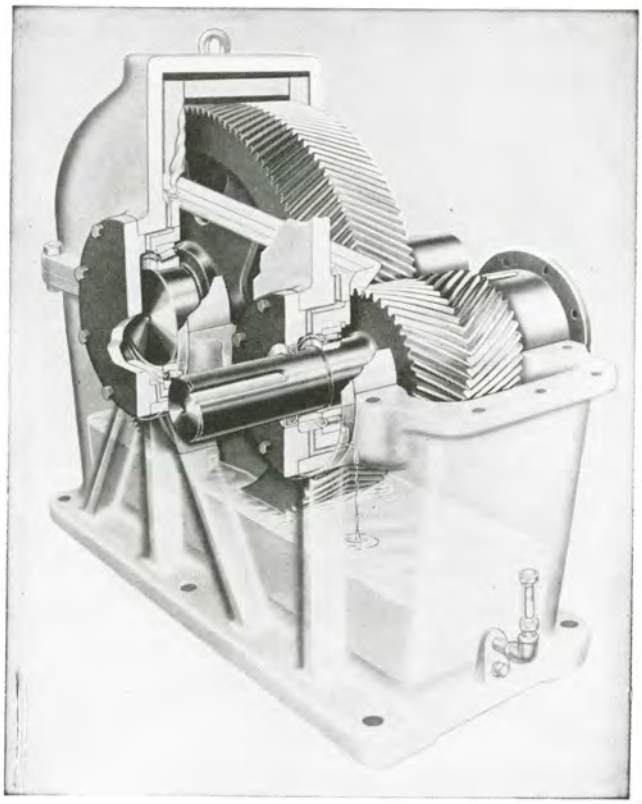


FIGURE 81
Typical Type S Single Reduction Herringbone Gear Reducer. Note simple but positive and fool-proof Lubrication System.

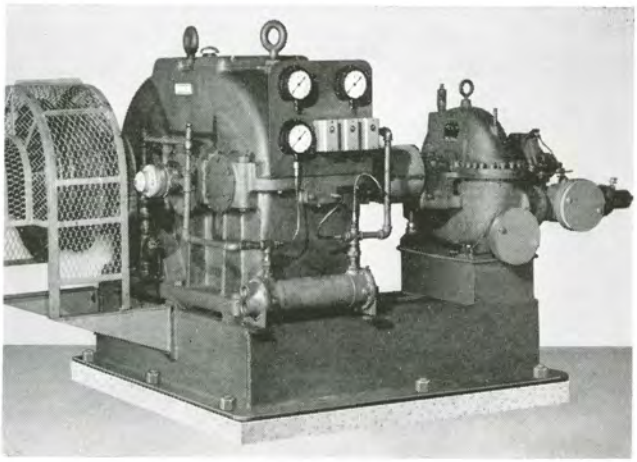


FIGURE 82
Lufkin N290 High Speed Reducer, Ratio 33.6:1, Delivering 227 H. P. From a 6670 RPM Turbine to a Reciprocating Pump.

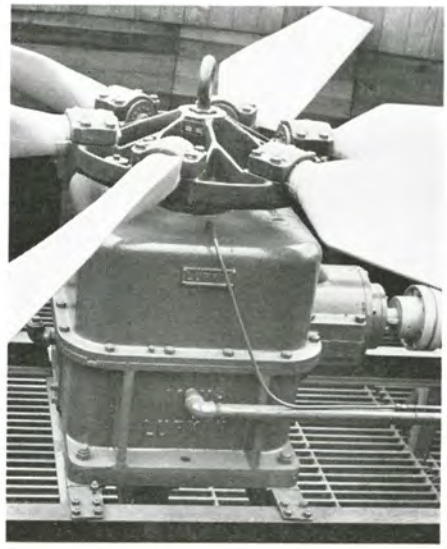


FIGURE 83
115VB Spiral Bevel Gear Reducer for Cooling Tower Fan Drive. A complete range of sizes available.

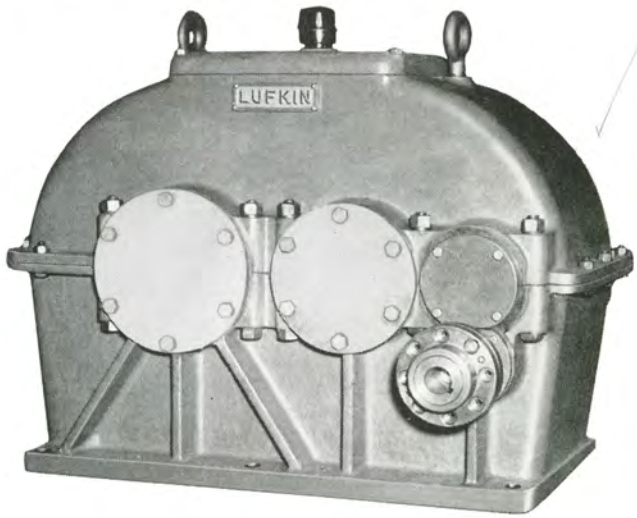


FIGURE 84
Lufkin T195 Typical Type T Triple Reduction Herringbone Gear Reducer.

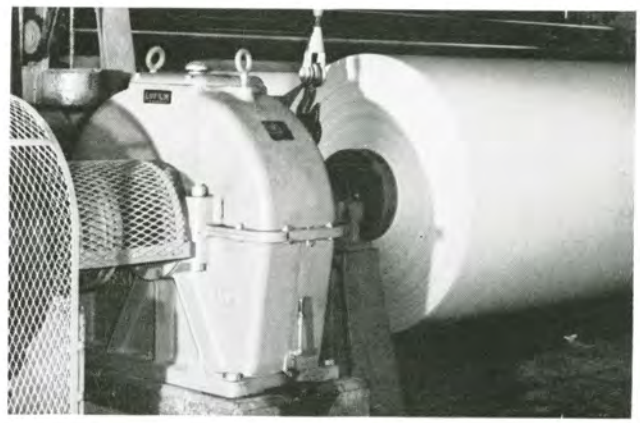


FIGURE 85
Lufkin S189 Single Reduction Herringbone Reducer Driving Rewind Machine at Newsprint Mill.

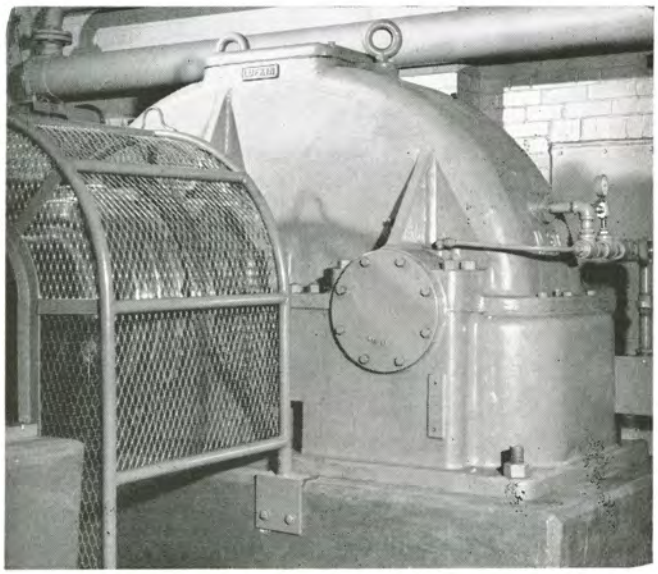


FIGURE 86

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

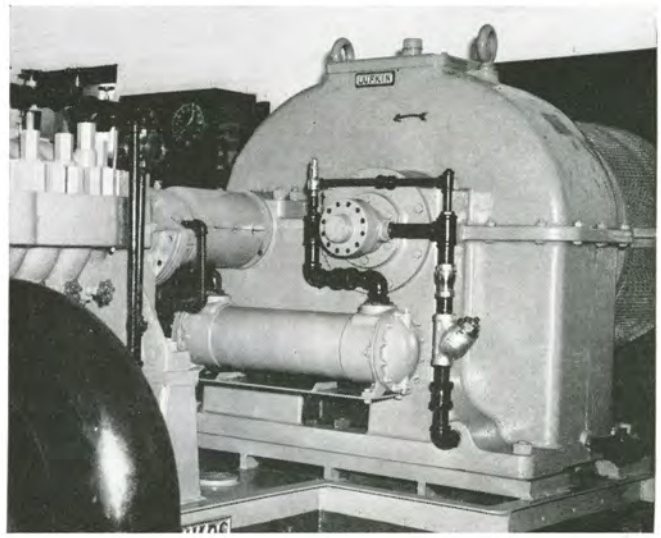


FIGURE 87

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

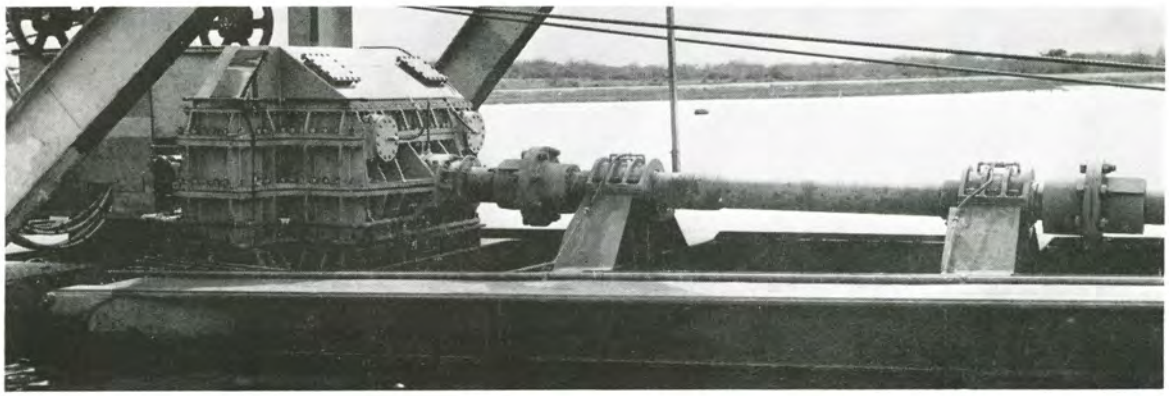


FIGURE 88

Lufkin DC3620 Dredge Cutter Reduction Gear Ratio 32. 6:1 Delivering 1200 h.p. at 1200 r.p.m.

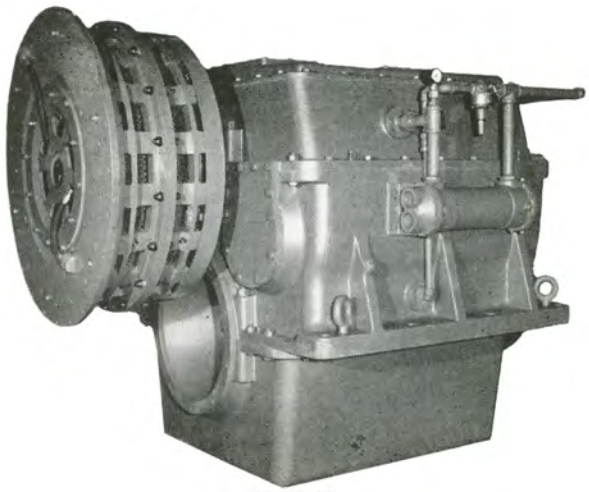


FIGURE 89

Lufkin R2520 Marine Reverse and Reduction Unit, 1600 h.p., 750 r.p.m., 3:1 ratio.

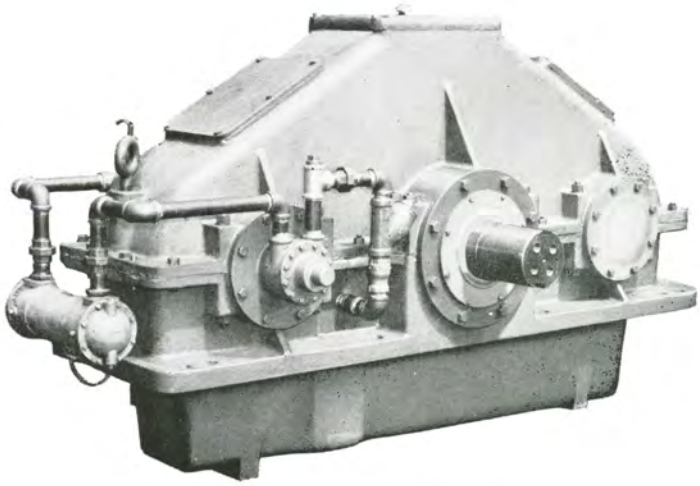


FIGURE 90

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

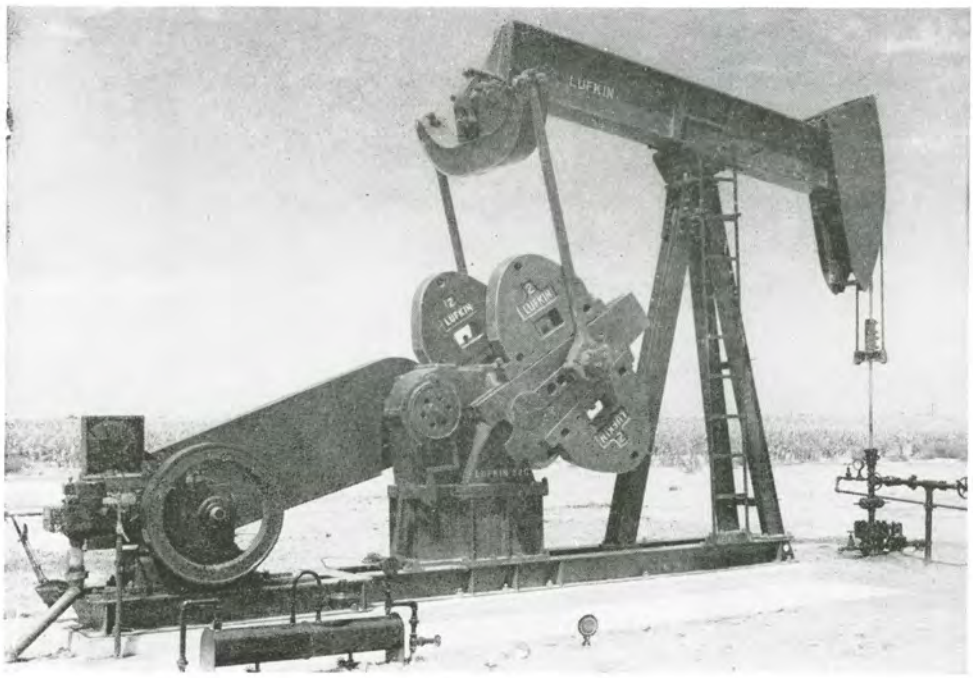


FIGURE 91

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.

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LUFKIN

EQUIPMENT OF ADVANCED DESIGN