CABOT SHOPS, INC.

P. O. Box 1101 PAMPA, TEXAS Mohawk Ph. 4-3277

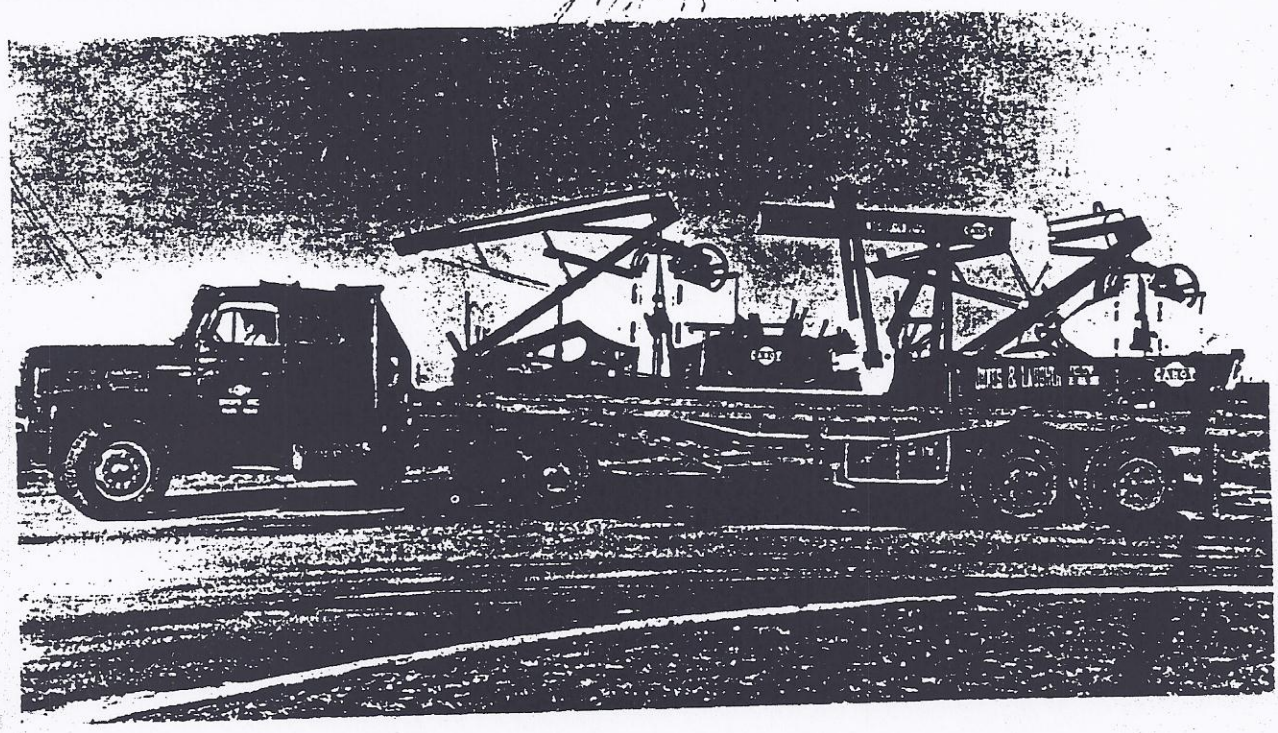
OILFIELD PUMPING EQUIPMENT

Distributed Exclusively By

JONES & LAUGHLIN SUPPLY COMPANY, Tulsa, Okla. & Branches

Export Sales Office: 405 Lexington Avenue, New York, N. Y.

OILFIELD PUMPING EQUIPMENT



COMPLETE SERVICE AND A COMPLETE LINE OF PUMPING UNITS

CABOT TRUCKS DELIVER DIRECT TO LEASE—Cabot trucks deliver Cabot Units from the factory direct to the purchaser's lease—at a substantial saving in time and cost of freight and handling for the operator.

The service men who deliver Cabot Units are thoroughly trained in service and assembly work, and can handle setup, ordinary repairs, and replacements expertly and with a minimum of expense. A request made to any Jones & Laughlin store or representative will bring the service of these trained men to any Cabot customer.

CABOT OFFERS A VERSATILE LINE OF PUMPING UNITS—With 12 basic sizes, ranging from 4,000 to 32,000 pound Beam Rating, and Reducer sizes from 10,000 inch-pounds to 456,000 inch-pounds; over 40 different combinations of structures and reducers are available. This allows the purchaser to select the correct size of unit for any well condition, as well as to provide for his future needs of interchanging reducers at a later date, if needed.

Universal Structural assemblies accommodate several different sizes of reducers, and allow the use of any common power unit—single or multiple cylinder engine or electric motor.

CABOT UNITS ARE BEAM, CRANK, OR COMBINATION BALANCE—Two series of Cabot Units are offered—BEAM BALANCED, with provision for limited crank balancing, and CRANK BALANCED, also having provision for beam balance as optional extra equipment.

With this selection, the user is assured of having the best combination of balancing for his particular well condition.

Jones & Laughlin Steel Corporation, Supply Division, distributor of Cabot Pumping Units, is an old, reliable, well-established oil field supply company with complete representation and with stores in all the major fields.

CABOT SHOPS, INC. PAMPA, TEXAS

Adjustable-Crank Series

The Cabot Adjustable Crank Series is complete, ranging from 9,000 to 32,000 pounds maximum polish rod load. Every detail of the A-C Series has been engineered for simplicity of design, stability and strength and the complete unit has undergone years of tests in the field. All walking beams are large, wide-flange sections rated according to API standards with ample capacity for the unit rating. Samson posts are of the four-legged derrick type with heavy angle legs, well designed girts and diagonal bracing, and are solidly boxed in at the top with steel plates. On all Adjustable Crank Units bolt-on type samson posts and floor clearing sub-bases are furnished as standard equipment. Three, four or five-hole cranks are used on all units in this series. Vee belts, belt guards and adjustable slide rails are furnished as standard equipment on all Cabot Units.

The design and operation of the Cabot Adjustable-Crank is amazingly simple. The adjustment can be done by one man standing on the ground and with the cranks in only one position. No heavy lifting or complicated tools are required. The crank arm is stopped in an approximately horizontal position and the crank adjusted in these three simple steps: 1) Loosen the two lock bolts on each of the weights. 2) Move the weights to the desired position by turning the adjuster bolt. 3) Tighten the lock bolts. Complete assembly and disassembly can be accomplished in the field without the aid of special tools or instructions.

INNER WEIGHTS

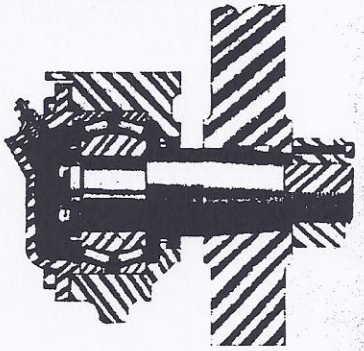
Inner half weights are available for all size A-C units giving a wide variation in counterweight effect at minimum cost. The inner half weight is a single casting occupying half the space in the master weight and secured with three bolts. Two half weights are used for maximum counterweighting. Inner half weights may be ordered with the unit or separately as needed. D type, extra heavy master and inner half weights are available where full counterweighting is required.

WRIST PIN AND BEARING

Wrist pin bearings are self-aligning, double-row roller bearings adjusted by steel shims under the housing cover. The inner race is spherical, with misalignment taken within the bearing. Bearings are enclosed in sealed, dust tight housing with a large oil reservoir.

On all units, wrist pins have a taper fit in the crank and on larger units, are keyed to prevent turning.

The wrist pin may be shifted to change stroke lengths without disturbing the wrist pin bearing or housing.

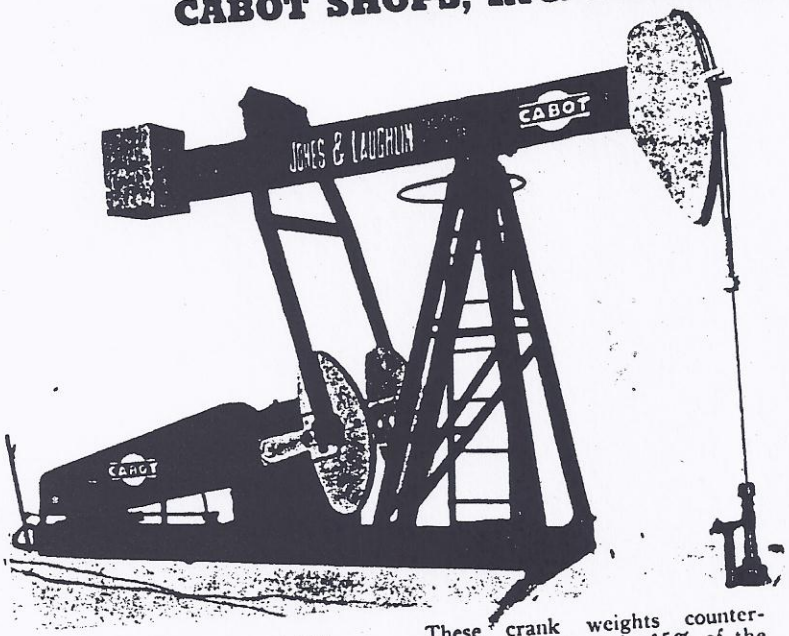


ADJUSTABLE-CRANK SERIES SPECIFICATIONS

AC 9-46D to AC 16-160D	AC 9-46D	AC 9-57D	AC 11-57D	AC 11-86D	AC 13-86D	AC 13-114D	AC 15-114D	AC 16-160D
Manufacturers Rated Polish Rod Load—Pounds Maximum	9,000	9,000	11,000	11,000	13,000	13,000	15,000	16,000
A.P.I. Walking Beam Rating—Pounds Maximum	9,970	9,970	11,030	11,030	14,040	14,040	16,550	16,550
Walking Beam Section—Wide Flange	14 x 6¾ @ 38 lb	14 x 6¾ @ 38 lb	14 x 8 @ 48 lb	14 x 8 @ 48 lb	16 x 6½ @ 64 lb	16 x 8½ @ 61 lb	16 x 8½ @ 77 lb	16 x 8½ @ 77 lb
Stroke Length—Inches	20-28-36	20-28-36	28-34-42	28-34-42	29-34-48	28-38-48	34-44-54	34-44-54
Working Centers—Well End	4'-6"	4'-6"	5'-3"	5'-3"	6'-0"	6'-0"	6'-9"	6'-9"
Working Centers—Pitman End	4'-6"	4'-6"	5'-3"	5'-3"	6'-0"	6'-0"	6'-9"	6'-9"
Samson Post Height—Foundation to Bearing Center	8'-2⅝"	8'-2⅝"	9'-7½"	9'-7½"	10'-8⅛"	10'-8⅛"	11'-6⅝"	11'-6⅝"
Overall Gear Ratio	30.1	30.2	30.2	30.2	30.2	29.9	29.9	29.8
A.P.I. Peak Torque—20 S.P.M.—Inch-Pounds	40,000	57,000	57,000	80,000	80,000	114,000	114,000	160,000
Manufacturers Nominal Horsepower Rating	8	11.5	11.5	16	16	23	23	32
Type of Gearing—Hardened Steel	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank	3½"	4"	4"	4½"	4½"	5"	5"	5½"
Reducer Sheave—Pitch Diameter and Number Belts	18" P.D. -3B	18" P.D. 4B	18" P.D. 4B	22" P.D. 5B	22" P.D. 5B	22" P.D. 5B	22" P.D. 6B	24" P.D. 5B
Counterweights Effect—Standard Weights:								
Master Counterweights—Weight per Set—Pounds			1,800	1,800	2,090	2,090	2,090	
Inner Counterweights—Weight per Set—Pounds			635	635	860	860	860	
Counterweights Effect—Maximum Stroke—Master Weights—Only			3,900	3,900	5,050	5,050	5,340	
Counterweights Effect—Maximum Stroke—One Set Inner Weights			4,850	4,850	6,405	6,405	6,610	
Counterweights Effect—Maximum Stroke—Two Sets Inner Weights			5,795	5,795	7,760	7,760	7,880	
Counterweights Effect—"D" Type Weights:								
Master Counterweights—Weight per Set—Pounds	2,880	2,880	2,880	2,880	4,050	4,050	3,780	3,780
Inner Counterweights—Weight per Set—Pounds	845	845	845	845	1,280	1,280	1,180	1,180
Counterweight Effect—Maximum Stroke—Master Weights—Only	5,355	5,355	4,980	4,980	7,400	7,400	7,515	7,530
Counterweight Effect—Maximum Stroke—One Set Inner Weights	6,550	6,550	6,085	6,085	9,150	9,150	9,165	9,175
Counterweight Effect—Maximum Stroke—Two Sets Inner Weights	7,735	7,735	7,160	7,160	10,860	10,860	10,785	10,800

AC 18-160D to AC 32-456D	AC 18-160D	AC 18-228D	AC 21-160D	AC 21-228D	AC 21-320D	AC 25-228D	AC 25-320D	AC 32-456D
Manufacturers Rated Polish Rod Load—Pounds Maximum	18,000	18,000	21,000	21,000	21,000	25,000	25,000	32,000
A.P.I. Walking Beam Rating—Pounds Maximum	18,510	18,510	21,280	21,280	21,280	25,020	25,020	33,160
Walking Beam Section—Wide Flange	21 x 9 @ 96 lb	21 x 9 @ 96 lb	24 x 12 @ 100 lb	24 x 12 @ 100 lb	24 x 12 @ 100 lb	24 x 14 @ 130 lb	24 x 14 @ 130 lb	33 x 15½ @ 201 lb
Stroke Length—Inches	36-44-54-64	44 54 64 74	36 44 54-64 74	36 44 54-64 74	44 54-64 74	44 54-64 74 84	44 54 64 74 84	67 80 93 107 120
Working Centers—Well End	8'-0"	8'-0"	9'-3"	9'-3"	9'-3"	10'-6"	10'-6"	13'-6"
Working Centers—Pitman End	8'-0"	8'-0"	9'-3"	9'-3"	9'-3"	10'-6"	10'-6"	13'-6"
Samson Post Height—Foundation to Bearing Center	14'-5¼"	14'-5¼"	15'-6⅝"	15'-6⅝"	15'-6⅝"	17'-10⅝"	17'-10⅝"	22'-0⅛"
Overall Gear Ratio	29.8	29.4	29.8	29.4	25.95	29.4	25.95	30.1
A.P.I. Peak Torque—20 S.P.M.—Inch-Pounds	160,000	228,000	160,000	228,000	320,000	228,000	320,000	456,000
Manufacturers Nominal Horsepower Rating	32	46	32	46	63	46	65	92
Type of Gearing—Hardened Steel	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank	5½"	6"	5½"	6"	7"	6"	7"	7½"
Reducer Sheave—Pitch Diameter and Number Belts	24" P.D. 5B	24" P.D. 6B	24" P.D. 5B	24" P.D. 6B	24" P.D. 8B	24" P.D. 6B	24" P.D. 8B	24" P.D. 10B
Counterweights Effect—Standard Weights:								
Master Counterweights—Weight per Set—Pounds	4,080	4,080	4,080	4,080	4,840	4,840	4,840	11,[illegible]
Inner Counterweights—Weight per Set—Pounds	1,375	1,375	1,375	1,375	1,760	1,760	1,760	3,[illegible]
Counterweights Effect—Maximum Stroke—Master Weights—Only	7,980	7,980	8,265	8,265	9,985	9,765	9,765	16,[illegible]
Counterweights—Maximum Stroke—One Set Inner Weights	9,805	9,805	10,130	10,130	11,980	12,120	12,120	20,[illegible]
Counterweights Effect—Maximum Stroke—Two Sets Inner Weights	11,615	11,615	11,990	11,990	14,070	14,470	14,470	24,730
Counterweights Effect—"D" Type Weights:								
Master Counterweights—Weight per Set—Pounds	5,350	5,350	6,700	6,700	8,700	8,100	8,100	
Inner Counterweights—Weight per Set—Pounds	1,980	1,980	2,000	2,000	2,000	2,595	2,595	
Counterweight Effect—Maximum Stroke—Master Weights—Only	9,290	9,290	11,145	11,145	11,210	13,395	13,455	
Counterweight Effect—Maximum Stroke—One Set Inner Weights	11,540	11,540	13,650	13,650	13,690	16,615	16,675	
Counterweight Effect—Maximum Stroke—Two Sets Inner Weights	13,760	13,760	16,030	16,030	16,110	19,790	19,850	

CABOT SHOPS, INC. PAMPA, TEXAS



Beam Balanced Series

All units of the Cabot Beam Balanced Series are furnished with full beam counterweighting, with 15% crank counterweighting as an optional extra.

Interchangeable reducers, structures, bearings and accessories permit a wide variety of combinations. A well-planned manufacturing program makes possible the quick assembly of the combination you choose.

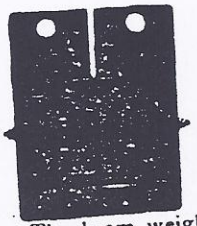
The structures on these units are of exceptionally sturdy design with large walking beams, heavy four-legged samson posts, and deep, wide-flanged steel base members.

All Cabot pumping units are equipped with floor clearing sub-bases eliminating the construction of an expensive foundation in the field.

In comparing pumping unit prices it should be noted that Cabot's basic prices include many items that are available only at extra cost on most other units. These include vee belts, belt guard, slide rails, bolts and clamps, reducer filled with correct grade of lubricant, normal counterweights required and others. There is an allowance on these items when not required. Particularly important is the fact that Cabot prices are F.O.B. well location with the unit assembled in place if foundation is ready. This saves the usual trucking charge from store or freight yard to the well, as well as truck time for setting up the unit.

The Cabot "Equalastic" Bearing is provided on the pitmans of all units from the B5 up, along with self-aligning roller bearing wrist pins, oil bath center bearings, and a one-bolt, quickly detachable horsehead.

All reducers have Sykes-cut herringbone gears, with sturdy one-piece housings. Shafts and bearings are extra large, carried on large roller bearings, and automatically flood-lubricated.



BEAM WEIGHTS

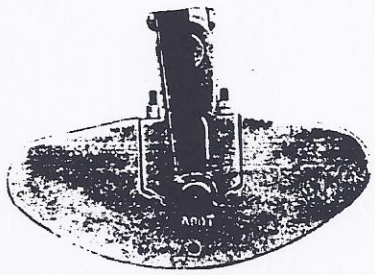
Beam counterweights are furnished as standard equipment on all BEAM BALANCED units. The beam weights are made in halves with large cored holes for handling. Safety rails are welded on either side of the walking beam with a retainer plate at the end. This prevents the weights from falling off before being clamped in position by a single retainer bolt. Weights may be installed at any point along the beam without moving any other weights.

CRANK WEIGHTS

On the BEAM BALANCED units, limited crank counterbalance is offered as optional extra equipment.

These crank weights counterbalance approximately 15% of the rated polish rod load. The "flywheel effect" results in smoother operation and better balancing of the unit than when beam weights alone are used.

The counterweight is a single casting that fits the crank on a ball-and-socket type joint. It is easily installed and is held in place by two heavy bolts.



BEAM BALANCE SERIES SPECIFICATIONS

	B4-10S	B4-10D	B5-16S	B5-16D	B7-25D
Manufacturers Rated Polish Rod Load—Pounds Maximum	4,000	4,000	5,000	5,000	7,000
A.P.I. Walking Beam Rating—Pounds Maximum	3,935	3,935	5,735	5,735	7,580
Walking Beam Section—Wide Flange Beam	8 x 4 @ 15 lb	8 x 4 @ 15 lb	10 x 5¾ @ 21 lb	10 x 5¾ @ 21 lb	12 x 6½ @ 27 lb
Stroke Length—Inches	12-16-20	12-16-20	20-25	20-25	18-24-30
Working Centers—Well End—Feet and Inches	2'-6"	2'-6"	3'-1½"	3'-1½"	3'-9"
Working Centers—Pitman End—Feet and Inches	3'-6½" to 1'-11¼"	3'-6½" to 1'-11¼"	3'-1½"	3'-1½"	3'-9"
Samson Post Height—Foundation to Bearing Center—Ft. and Ins.	5'-10"	5'-10"	7'-0¼"	7'-0¼"	7'-5"
Overall Gear Ratio	11.0	30.0	10.6	29.9	28.9
A.P.I. Peak Torque at 20 S.P.M.—Inch-Pounds	10,000	10,000	16,000	16,000	25,000
Manufacturers Nominal Horsepower Rating	2	2	3	3	5
Type of Gearing—Hardened Alloy Steel	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank—Inches	2½	2½	2½	2½	3
Reducer Sheave—Pitch Diameter and Number of Belts	15.5"—2B	16"—2B	19"—2B	16"—2B	18"—3B
Beam Counterweights—Sets Furnished and Weight per Set	0—190	0—190	3—250	3—250	3—250
Crank Counterweights—(Extra Equipment)—Weight per Set	280	280	280	280	680
Maximum Counterweight Effect at Maximum Stroke	2760	2760	4445	4445	6745

	B9-40D	B9-57D	B11-57D	B11-80D
Manufacturers Rated Polish Rod Load—Pounds Maximum	9,000	9,000	11,000	11,000
A.P.I. Walking Beam Rating—Pounds Maximum	9,970	9,970	11,030	11,030
Walking Beam Section—Wide Flange Beam	14 x 6¾ @ 36 lb	14 x 6¾ @ 38 lb	14 x 8 @ 48 lb	14 x 8 @ 48 lb
Stroke Length—Inches	20-28-36	20-28-36	26-34-42	26-34-42
Working Centers—Well End—Feet and Inches	4'-6"	4'-6"	5'-3"	5'-3"
Working Centers—Pitman End—Feet and Inches	4'-6"	4'-6"	5'-3"	5'-3"
Samson Post Height—Foundation to Bearing Center—Feet and Inches	7'-8½"	7'-8½"	8'-11¼"	8'-11¼"
Overall Gear Ratio	30.1	30.2	30.2	30.2
A.P.I. Peak Torque at 20 S.P.M.—Inch-Pounds	40,000	57,000	57,000	80,000
Manufacturers Nominal Horsepower Rating	8	11.5	11.5	16
Type of Gearing—Hardened Alloy Steel	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank—Inches	3½	4	4	4½
Reducer Sheave—Pitch Diameter and Number of Belts	18"—3B	18"—4B	18"—4B	22"—3C
Beam Counterweights—Sets Furnished and Weight per Set	5—320	5—320	6—320	6—320
Crank Counterweights—(Extra Equipment)—Weight per Set	1130	1130	1130	1130
Maximum Counterweight Effect at Maximum Stroke	7745	7745	8315	8315

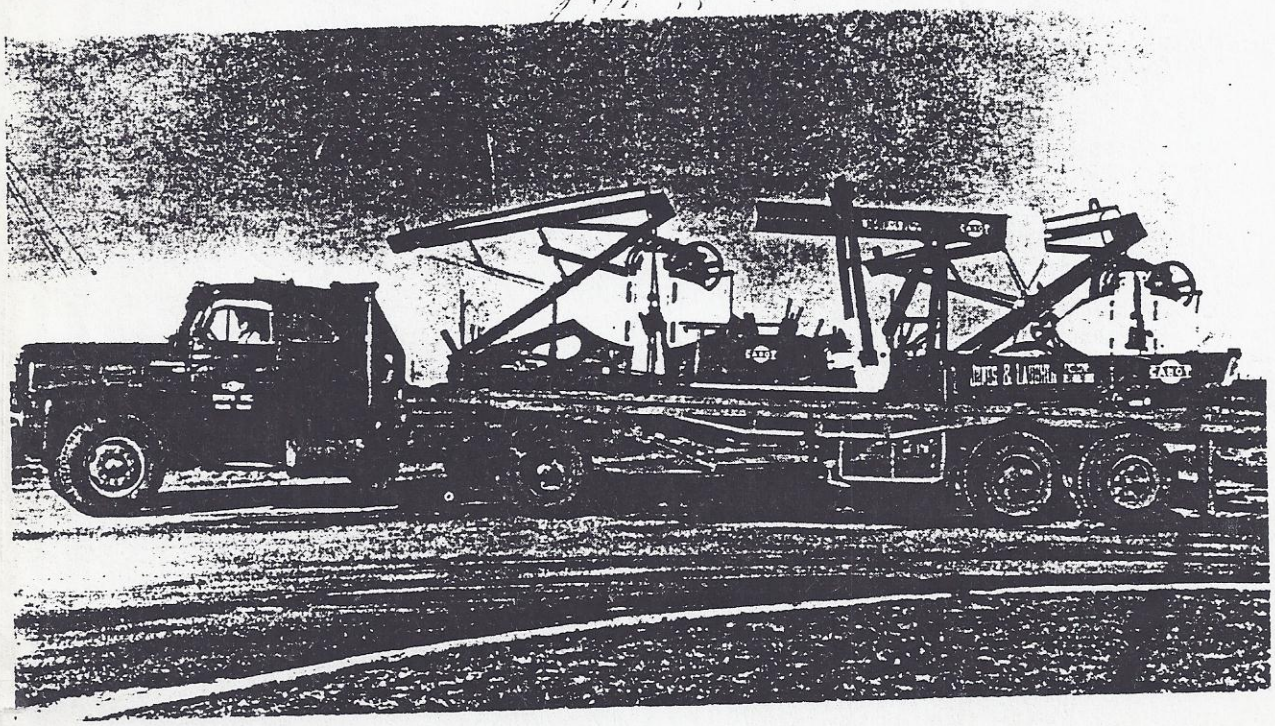
CABOT SHOPS, INC.

P. O. Box 1101 PAMPA, TEXAS Ph. 4-3277

OILFIELD PUMPING EQUIPMENT

Distributed Exclusively By
JONES & LAUGHLIN SUPPLY COMPANY, Tulsa, Okla. & Branches
Export Sales Office: 405 Lexington Avenue, New York, N. Y.

OILFIELD ■ PUMPING ■ EQUIPMEN



COMPLETE SERVICE AND A COMPLETE LINE OF PUMPING UNITS

CABOT TRUCKS DELIVER DIRECT TO LEASE—Cabot trucks deliver Cabot Units from the factory direct to the purchaser's lease—at a substantial saving in time and cost of freight and handling for the operator.

The service men who deliver Cabot Units are thoroughly trained in service and assembly work, and can handle setup, ordinary repairs, and replacements expertly and with a minimum of expense. A request made to any Jones & Laughlin store or representative will bring the service of these trained men to any Cabot customer.

CABOT OFFERS A VERSATILE LINE OF PUMPING UNITS—With 12 basic sizes, ranging from 4,000 to 32,000 pound Beam Rating, and Reducer sizes from 10,000 inch-pounds to 456,000 inch-pounds; over 40 different combinations of structures and reducers are available. This allows the purchaser to select the correct size of unit for any well condition, as well as to provide for his future needs of interchanging reducers at a later date, if needed.

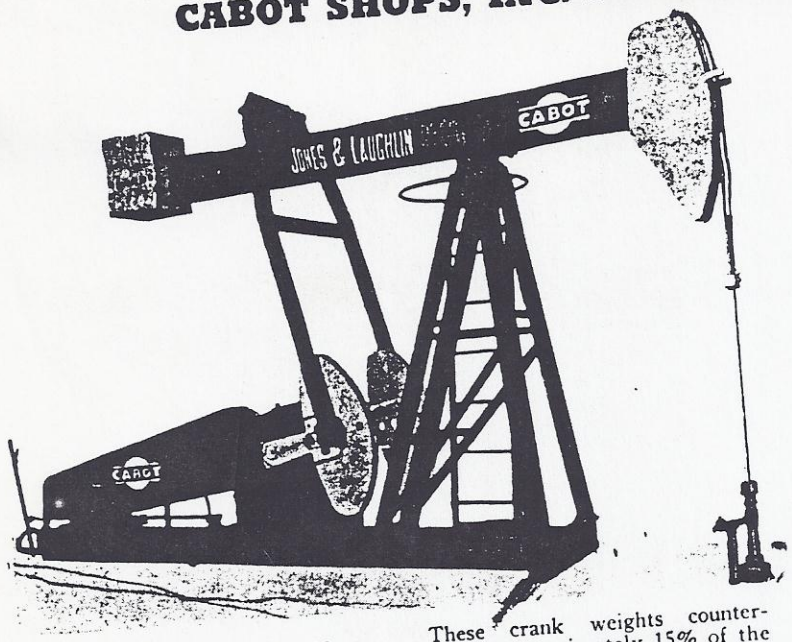
Universal Structural assemblies accommodate several different sizes of reducers, and allow the use of any common power unit—single or multiple cylinder engine or electric motor.

CABOT UNITS ARE BEAM, CRANK, OR COMBINATION BALANCE—Two series of Cabot Units are offered—BEAM BALANCED, with provision for limited crank balancing, and CRANK BALANCED, also having provision for beam balance as optional extra equipment.

With this selection, the user is assured of having the best combination of balancing for his particular well condition.

Jones & Laughlin Steel Corporation, Supply Division, distributor of Cabot Pumping Units, is an old, reliable, well-established oil field supply company with complete representation and with stores in all the major fields.

CABOT SHOPS, INC. PAMPA, TEXAS



Beam Balanced Series

All units of the Cabot Beam Balanced Series are furnished with full beam counterweighting, with 15% crank counterweighting as an optional extra.

Interchangeable reducers, structures, bearings and accessories permit a wide variety of combinations. A well-planned manufacturing program makes possible the quick assembly of the combination you choose.

The structures on these units are of exceptionally sturdy design with large walking beams, heavy four-legged samson posts, and deep, wide-flanged steel base members.

All Cabot pumping units are equipped with floor clearing sub-bases eliminating the construction of an expensive foundation in the field.

In comparing pumping unit prices it should be noted that Cabot's basic prices include many items that are available only at extra cost on most other units. These include vee belts, belt guard, slide rails, bolts and clamps, reducer filled with correct grade of lubricant, normal counterweights required and others. There is an allowance on these items when not required. Particularly important is the fact that Cabot prices are F.O.B. well location with the unit assembled in place if foundation is ready. This saves the usual trucking charge from store or freight yard to the well, as well as truck time for setting up the unit.

The Cabot "Equalastic" Bearing is provided on the pitmans of all units from the B5 up, along with self-aligning roller bearing wrist pins, oil bath center bearings, and a one-bolt, quickly detachable horsehead.

All reducers have Sykes-cut herringbone gears, with sturdy one-piece housings. Shafts and bearings are extra large, carried on large roller bearings, and automatically flood-lubricated.

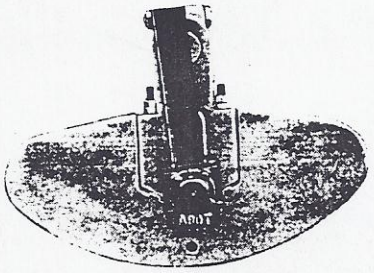
BEAM WEIGHTS

Beam counterweights are furnished as standard equipment on all BEAM BALANCED units. The beam weights are made in halves with large cored holes for handling. Safety rails are welded on either side of the walking beam with a retainer plate at the end. This prevents the weights from falling off before being clamped in position by a single retainer bolt. Weights may be installed at any point along the beam without moving any other weights.

CRANK WEIGHTS

On the BEAM BALANCED units, limited crank counterbalance is offered as optional extra equipment. These crank weights counterbalance approximately 15% of the rated polish rod load. The "flywheel effect" results in smoother operation and better balancing of the unit than when beam weights alone are used.

The counterweight is a single casting that fits the crank on a ball-and-socket type joint. It is easily installed and is held in place by two heavy bolts.

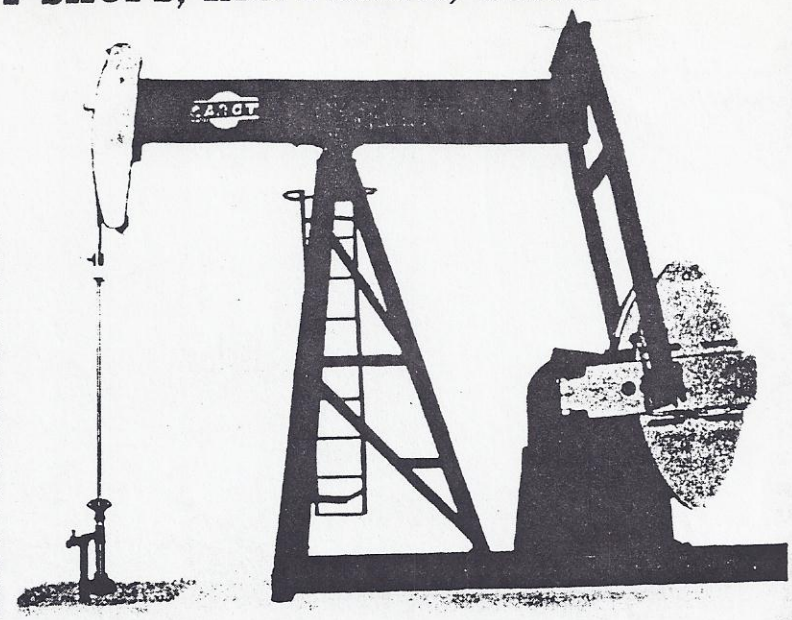


BEAM BALANCE SERIES SPECIFICATIONS

	B4-10S	B4-10D	B5-16S	B5-16D	B7-25D
Manufacturers Rated Polish Rod Load—Pounds Maximum	4,000	4,000	5,000	5,000	7,000
A.P.I. Walking Beam Rating—Pounds Maximum	3,935	3,935	5,735	5,735	7,580
Walking Beam Section—Wide Flange Beam	8 x 4 @ 15 lb	8 x 4 @ 15 lb	10 x 5¾ @ 21 lb	10 x 5¾ @ 21 lb	12 x 6½ @ 27 lb
Stroke Length—Inches	12-16-20	12-16-20	20-25	20-25	18-24-30
Working Centers—Well End—Feet and Inches	2'-6"	2'-6"	3'-1½"	3'-1½"	3'-9"
Working Centers—Pitman End—Feet and Inches	3'-6½" to 1'-11¼"	3'-6½" to 1'-11¼"	3'-1½"	3'-1½"	3'-9"
Samson Post Height—Foundation to Bearing Center—Ft. and Ins.	5'-10"	5'-10"	7'-0¼"	7'-0¼"	7'-5"
Overall Gear Ratio	11.0	30.0	10.6	29.9	28.9
A.P.I. Peak Torque at 20 S.P.M.—Inch-Pounds	10,000	10,000	16,000	16,000	25,000
Manufacturers Nominal Horsepower Rating	2	2	3	3	5
Type of Gearing—Hardened Alloy Steel	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank—Inches	2½	2½	2½	2¼	3
Reducer Sheave—Pitch Diameter and Number of Belts	15.5"—2B	16"—2B	19"—2B	16"—2B	18"—3B
Beam Counterweights—Sets Furnished and Weight per Set	0—190	0—190	3—250	3—250	3—250
Crank Counterweights—(Extra Equipment)—Weight per Set	280	280	280	280	680
Maximum Counterweight Effect at Maximum Stroke	2760	2760	4445	4445	6745

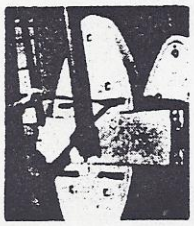
	B9-40D	B9-57D	B11-57D	B11-80D
Manufacturers Rated Polish Rod Load—Pounds Maximum	9,000	9,000	11,000	11,000
A.P.I. Walking Beam Rating—Pounds Maximum	9,970	9,970	11,030	11,030
Walking Beam Section—Wide Flange Beam	14 x 6¾ @ 36 lb	14 x 6¾ @ 38 lb	14 x 8 @ 48 lb	14 x 8 @ 48 lb
Stroke Length—Inches	20-28-36	20-28-36	26-34-42	26-34-42
Working Centers—Well End—Feet and Inches	4'-6"	4'-6"	5'-3"	5'-3"
Working Centers—Pitman End—Feet and Inches	4'-6"	4'-6"	5'-3"	5'-3"
Samson Post Height—Foundation to Bearing Center—Feet and Inches	7'-8½"	7'-8½"	8'-11¼"	8'-11¼"
Overall Gear Ratio	30.1	30.2	30.2	30.2
A.P.I. Peak Torque at 20 S.P.M.—Inch-Pounds	40,000	57,000	57,000	80,000
Manufacturers Nominal Horsepower Rating	8	11.5	11.5	16
Type of Gearing—Hardened Alloy Steel	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank—Inches	3½	4	4	4½
Reducer Sheave—Pitch Diameter and Number of Belts	18"—3B	18"—4B	18"—4B	22"—3C
Beam Counterweights—Sets Furnished and Weight per Set	5—320	5—320	6—320	6—320
Crank Counterweights—(Extra Equipment)—Weight per Set	1130	1130	1130	1130
Maximum Counterweight Effect at Maximum Stroke	7745	7745	8315	8315

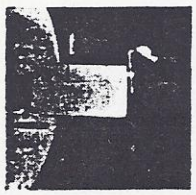
CABOT SHOPS, INC. PAMPA, TEXAS



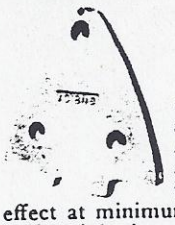
Adjustable-Crank Series

The Cabot Adjustable Crank Series is complete, ranging from 9,000 to 32,000 pounds maximum polish rod load. Every detail of the A-C Series has been engineered for simplicity of design, stability and strength and the complete unit has undergone years of tests in the field. All walking beams are large, wide-flange sections rated according to API standards with ample capacity for the unit rating. Samson posts are of the four-legged derrick type with heavy angle legs, well designed girts and diagonal bracing, and are solidly boxed in at the top with steel plates. On all Adjustable Crank Units bolt-on type samson posts and floor clearing sub-bases are furnished as standard equipment. Three, four or five-hole cranks are used on all units in this series. Vee belts, belt guards and adjustable slide rails are furnished as standard equipment on all Cabot Units.





The design and operation of the Cabot Adjustable-Crank is amazingly simple. The adjustment can be done by one man standing on the ground and with the cranks in only one position. No heavy lifting or complicated tools are required. The crank arm is stopped in an approximately horizontal position and the crank adjusted in these three simple steps: 1) Loosen the two lock bolts on each of the weights. 2) Move the weights to the desired position by turning the adjuster bolt. 3) Tighten the lock bolts. Complete assembly and disassembly can be accomplished in the field without the aid of special tools or instructions.



INNER WEIGHTS

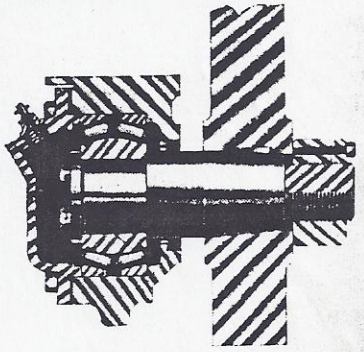
Inner half weights are available for all size A-C units giving a wide variation in counterweight effect at minimum cost. The inner half weight is a single casting occupying half the space in the master weight and secured with three bolts. Two half weights are used for maximum counterweighting. Inner half weights may be ordered with the unit or separately as needed. D type, extra heavy master and inner half weights are available where full counterweighting is required.

WRIST PIN AND BEARING

Wrist pin bearings are self-aligning, double-row roller bearings adjusted by steel shims under the housing cover. The inner race is spherical, with misalignment taken within the bearing. Bearings are enclosed in sealed, dust tight housing with a large oil reservoir.

On all units, wrist pins have a taper fit in the crank and on larger units, are keyed to prevent turning.

The wrist pin may be shifted to change stroke lengths without disturbing the wrist pin bearing or housing.



ADJUSTABLE-CRANK SERIES SPECIFICATIONS

AC 9-40D to AC 16-160D	AC 9-40D	AC 9-57D	AC 11-57D	AC 11-80D	AC 13-80D	AC 13-114D	AC 15-114D	AC 16-160D
Manufacturers Rated Polish Rod Load—Pounds Maximum	9,000	9,000	11,000	11,000	13,000	13,000	15,000	16,000
A.P.I. Walking Beam Rating—Pounds Maximum	9,970	9,970	11,030	11,030	14,040	14,040	16,550	16,550
Walking Beam Section—Wide Flange	14 x 6¾ @ 38 lb	14 x 6¾ @ 38 lb	14 x 8 @ 48 lb	14 x 8 @ 48 lb	16 x 8½ @ 64 lb	16 x 8½ @ 64 lb	18 x 8½ @ 77 lb	18 x 8½ @ 77 lb
Stroke Length—Inches	20-28-36	20-28-36	26-34-42	26-34-42	28-38-48	28-38-48	34-44-54	34-44-54
Working Centers—Well End	4'-6"	4'-6"	5'-3"	5'-3"	6'-0"	6'-0"	6'-9"	6'-9"
Working Centers—Pitman End	4'-6"	4'-6"	5'-3"	5'-3"	6'-0"	6'-0"	6'-9"	6'-9"
Samson Post Height—Foundation to Bearing Center	8'-2⅝"	8'-2⅝"	9'-7½"	9'-7½"	10'-8¾"	10'-8¾"	11'-6¾"	11'-6¾"
Overall Gear Ratio	30.1	30.2	30.2	30.2	30.2	29.9	29.9	29.8
A.P.I. Peak Torque—20 S.P.M.—Inch-Pounds	40,000	57,000	57,000	80,000	90,000	114,000	114,000	160,000
Manufacturers Nominal Horsepower Rating	8	11.5	11.5	16	16	23	23	32
Type of Gearing—Hardened Steel	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank	3½"	4"	4"	4½"	4½"	5"	5"	5½"
Reducer Sheave—Pitch Diameter and Number Belts	18" P.D. -3B	18" P.D. 4B	18" P.D. 4B	22" P.D. 4B	22" P.D. 4B	22" P.D. -5B	22" P.D. 5B	24" P.D. -5B
Counterweights Effect—Standard Weights:								
Master Counterweights—Weight per Set—Pounds			1,800	1,800	2,090	2,090	2,090	
Inner Counterweights—Weight per Set—Pounds			635	635	960	860	860	
Counterweights Effect—Maximum Stroke—Master Weights—Only			3,900	3,900	5,050	5,050	5,340	
Counterweights Effect—Maximum Stroke—One Set Inner Weights			4,850	4,850	6,405	6,405	6,610	
Counterweights Effect—Maximum Stroke—Two Sets Inner Weights			5,795	5,795	7,760	7,760	7,880	
Counterweights Effect—"D" Type Weights:								
Master Counterweights—Weight per Set—Pounds	2,880	2,880	2,880	2,880	4,090	4,090	3,780	3,780
Inner Counterweights—Weight per Set—Pounds	845	845	845	845	1,280	1,280	1,180	1,180
Counterweight Effect—Maximum Stroke—Master Weights—Only	5,355	5,355	4,980	4,980	7,400	7,400	7,515	7,530
Counterweight Effect—Maximum Stroke—One Set Inner Weights	6,550	6,550	6,065	6,065	9,150	9,150	9,165	9,175
Counterweight Effect—Maximum Stroke—Two Sets Inner Weights	7,735	7,735	7,160	7,160	10,860	10,860	10,785	10,860

AC-18-160D to AC 32-456D	AC 18-160D	AC 18-228D	AC 21-160D	AC 21-228D	AC 21-320D	AC 25-228D	AC 25-320D	AC 32-456D
Manufacturers Rated Polish Rod Load—Pounds Maximum	18,000	18,000	21,000	21,000	21,000	25,000	25,000	32,000
A.P.I. Walking Beam Rating—Pounds Maximum	18,510	18,510	21,200	21,200	21,200	25,020	25,020	33,000
Walking Beam Section—Wide Flange	21 x 9 @ 96lb	21 x 9 @ 96 lb	24 x 12 @ 100 lb	24 x 12 @ 100 lb	24 x 12 @ 100 lb	24 x 14 @ 130 lb	24 x 14 @ 130 lb	24 x 14 @ 130 lb
Stroke Length—Inches	34-44-54-64	34-44-54-64	34-44-54-64-74	34-44-54-64-74	34-44-54-64-74	44-54-64-74-84	44-54-64-74-84	67-80-93-106-120
Working Centers—Well End	8'-0"	8'-0"	9'-3"	9'-3"	9'-3"	10'-6"	10'-6"	15'-0"
Working Centers—Pitman End	8'-0"	8'-0"	9'-3"	9'-3"	9'-3"	10'-6"	10'-6"	15'-0"
Samson Post Height—Foundation to Bearing Center	14'-5¾"	14'-5¾"	15'-6¾"	15'-6¾"	15'-6¾"	17'-10¾"	17'-10¾"	22'-0¾"
Overall Gear Ratio	29.8	29.8	29.8	29.8	29.8	25.05	25.05	30.1
A.P.I. Peak Torque—20 S.P.M.—Inch-Pounds	160,000	228,000	160,000	228,000	320,000	228,000	320,000	456,000
Manufacturers Nominal Horsepower Rating	32	46	32	46	65	46	65	92
Type of Gearing—Hardened Steel	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone	Herringbone
Slow Speed Shaft Diameter at Crank	5½"	6"	5½"	6"	7"	6"	7"	8"
Reducer Sheave—Pitch Diameter and Number Belts	24" P.D. -5B	24" P.D. -6B	24" P.D. -5B	24" P.D. -6B	24" P.D. -8B	24" P.D. -6B	24" P.D. -8B	40" P.D. -10B or 8" P.D. -2B
Counterweights Effect—Standard Weights:								
Master Counterweights—Weight per Set—Pounds	4,090	4,090	4,090	4,090	4,840	4,840	4,840	11,[illegible]
Inner Counterweights—Weight per Set—Pounds	1,375	1,375	1,375	1,375	1,760	1,760	1,760	[illegible]
Counterweights Effect—Maximum Stroke—Master Weights—Only	7,980	7,980	8,265	8,265	11,090	9,765	12,120	21,[illegible]
Counterweights—Maximum Stroke—One Set Inner Weights	9,405	9,405	10,130	10,130	13,580	12,120	14,470	24,750
Counterweights Effect—Maximum Stroke—Two Sets Inner Weights	11,615	11,615	11,990	11,990	14,670	14,470		
Counterweights Effect—"D" Type Weights:								
Master Counterweights—Weight per Set—Pounds	5,350	5,350	6,700	6,700	6,700	8,100	8,100	
Inner Counterweights—Weight per Set—Pounds	1,980	1,980	2,000	2,000	2,000	2,595	2,595	
Counterweight Effect—Maximum Stroke—Master Weights—Only	9,290	9,290	11,145	11,145	11,210	13,365	13,455	
Counterweight Effect—Maximum Stroke—One Set Inner Weights	11,540	11,540	13,620	13,620	13,680	15,615	16,675	
Counterweight Effect—Maximum Stroke—Two Sets Inner Weights	13,750	13,750	16,050	16,050	16,110	17,790	19,955	

CABOT SHOPS, INC.

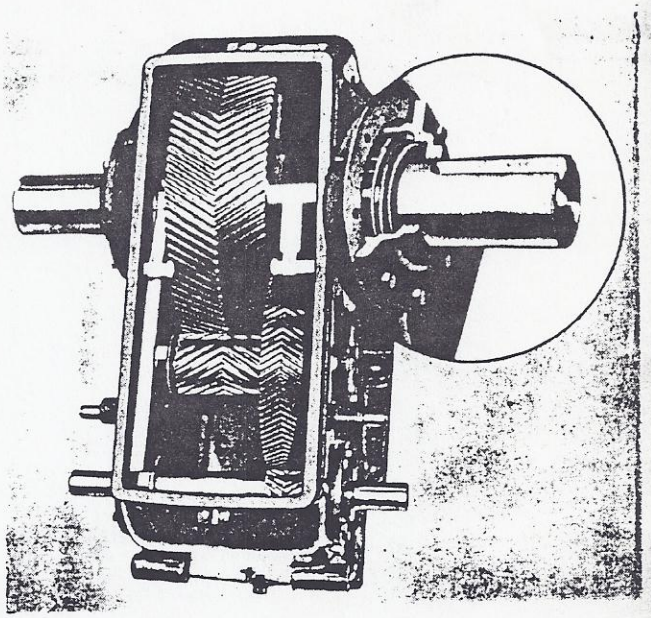
OILFIELD • PUMPING • EQUIPMENT

REDUCERS

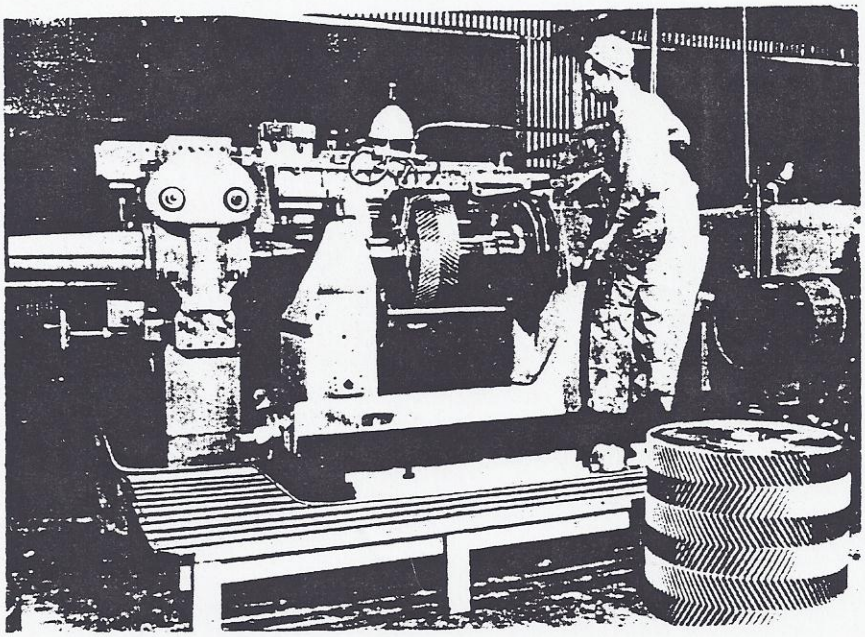
All reducers have Sykes-cut, herringbone gears. A complete battery of Sykes gear generators installed at Cabot Shops assures complete control of quality and delivery of herringbone gears.

Reducer housings are one piece castings, with no split at the center line of the shafts. Pinions and gears are heat treated alloy steel forgings with integrally cut teeth. Slow speed shafts are heat treated high carbon steel and are extra large so that deflection is reduced to a minimum. Slow speed shafts are mounted on Timken roller bearings and intermediate and high speed shafts on Hyatt roller bearings, to allow the herringbone gears to center on slow speed gear. Gears are cut with a minimum backlash, and the reducer tested under full load on a Prony brake. The flood oiling system is fully automatic, and self-contained in the reducer housing.

An outstanding feature of Cabot reducers is the elimination of oil seals on all reducer shafts. Oil slingers and labyrinth grooving, with no parts to wear, are used on both high and slow speed shafts.



Pictured above is the Cabot Reducer. Note the easily accessible, seamless housing and the elimination of oil seals (inset) on reducer shaft.

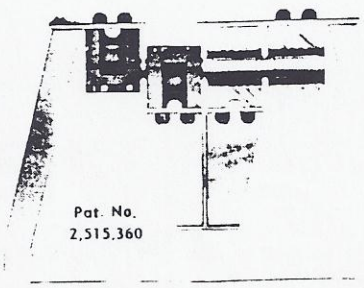


Pictured at left is one of four Sykes gear generators now in operation at Cabot Shops. The gear generators are of the latest type and are operated by Cabot's highly skilled machinists.

RUBBER BEARINGS

An outstanding patented development found only on Cabot Pumping Units is the "EQUALASTIC" BEARING. In this bearing, the conventional shaft, bearings, evener beam, and fittings are eliminated, and in their place a single alloy steel shaft is provided, with four heavy rubber bushings vulcanized to it. On the outside of each rubber bushing, two steel half-shells are vulcanized, with space between to allow for clamping.

Each bushing is clamped in a heavy split housing. The two inner housings (and bushings) are then secured to the walking beam by eight bolts and the two outer ones fastened to the pitman in the same manner. In operation, the oscillating movement of the pitman relative to the walking beam is taken entirely by the torsional deflection of the rubber within the bushings.



This EQUALASTIC BEARING requires no lubrication and is resistant to salt water, sand, grease, grit and weather. It absorbs most vibrations, including high frequency vibration from prime movers, and well shocks. Dynagraph tests show a substantial reduction in maximum polish rod load when this bearing is used.

CABOT

PAMPA, TEXAS

FROM TEN A MONTH TO TEN A DAY

From a little shop and a big idea in 1938 to one of the "Big Five" leaders in the business in 1954, has been the history of Cabot Shops, Inc., for the last sixteen years. This business is making and selling oil well pumping equipment, but the Shops have made other history of their own in that time.

In 1938 most oil wells were pumped with a "standard rig" weighing about fifteen tons and costing four or five thousand dollars, even then. The central power, with pumping jacks and miles of steel rod lines, cost less per well, but interfered with farming the land, and required lots of attention. Some pumping units were made, but were heavy and high priced.

At this time Cabot Shops broke into the market with the first high quality, light weight unit in the field, and proved that a three thousand foot well could be pumped with an eight-horsepower unit weighing two tons. It was "all muscle and no fat", but it had plenty of strength where it counted, and it changed the whole course of design in the business, for it sold for less than the manufacturer's cost of most other units and for a fraction of the price of a standard rig.

To back their play the Shops made the first five year service guarantee in the business, and started direct delivery from the factory to the user's lease by Cabot truck.

Attracting the attention of a national sales organization was not too difficult, and in 1939 an exclusive distributor's agreement was made with Frick-Reid Supply Company, who later became the Supply Division of Jones & Laughlin Steel Corporation with over seventy stores in all of the oil fields of the country. From "ten a month to ten a day" has been the sales record of this fine organization since.

The Shops haven't exactly been dragging their feet along other lines either. From 1942 through 1945 the Ordnance Division built and operated a new plant, and delivered thousands of gun barrel forgings to the Army and Navy. This plant was taken over for the enlarged machine shop in 1946, but when Korea made headlines, Army Ordnance wanted more gun tubes quickly, and re-equipped the Ordnance Plant with a complete new setup of machine tools and equipment costing several million dollars. This is a completely integrated forging plant, melting its own steel, pouring ingots, forging guns, machining, drilling and heat treating them ready for shipment to the finishing arsenal.

To keep up with pumping unit sales, a new machine shop, a hundred feet wide and a block long, was built in 1951, and was equipped with the latest in machinery, including five herringbone gear generators, new lathes, radial drills, milling machines and cranes by the dozens.

A new line of API Monogrammed pumping units of the latest floor clearing design, all in accordance with API standards, was put into production during 1952-53. Sales features included the famous "Equalastic" rubber evener bearing, adjustable crank counterweights, floor clearing bases requiring only a flat floor foundation with little or no forming, and a new thirty-two thousand pound rated unit with a ninety-five-horsepower gear box and a ten-foot stroke.

A national sales campaign is now in progress with the Jones & Laughlin Steel Corporation Supply Division. A four day sales meeting is held in each Jones & Laughlin district during the year with sales engineers from each manufacturer presenting sales and service data. To date these meetings have ranged from Edmonton, Alberta, Canada to Pittsburgh, Pennsylvania to New Orleans, Louisiana, and really mean "hustling for business" in a well organized way. Results to date have been excellent, and Cabot Shops, Inc. fully expect to keep their share of a highly competitive business.

H. E. McCray

NEW UNIT LINES

UNIT	MAXIMUM STROKE
BEAM COUNTERWEIGHT	
B3-6.4D	20"
B4-10D	20"
B5-16D or 16S	25"
B7-25D	30"
B9-40D or 57D	36"
B11-57 or 80D	42"
ADJUSTABLE CRANK COUNTERWEIGHT	
AC9-40D or 57D	36"
AC11-57D or 80D	42"
AC13-80D or 114D	48"
AC15-114D	54"
AC16-160D	54"
AC18-160D or 228D	64"
AC21-160D or 228D	74"
AC25-228D or 320D	84"
AC32-456D	120"

The type and size of the new Cabot units is indicated by their designations.

The first group of digits designates the unit structure, and begins with one or more letters indicating the method of counterbalancing. "B" means "Beam Balanced", "AC" means"Adjustable Crank Balanced", "ACD" means "Adjustable Crank Balanced using "D" style weights". The numbers in the first group indicate the rated polish rod load in thousands of pounds.

The second group of digits designates the speed reducer, and begins with a number indicating reducer torque capacity in thousands of inch-pounds. The final letter, "S" or "D", indicates whether the reducer is "Single" or "Double" reduction.

For example:

B5-16S indicates a beam balanced unit of 5, 000-lb. load capacity with a 16, 000 inch-pound single-reduction reducer

OUTLINE OF PRESENTATION

1. THE NEW CABOT PUMPING UNITS

Entire line API monogrammed - Unit and Reducers.
A universal base is used. An engine extension to fit the prime mover desired is bolted to the universal base.
All units are floor clearing (except AC-32).
4-way spread Samson post bolts onto base.
Adjustable crank counterweights (on AC series) provide easy, quick one-man adjustment. Standard weights provide up to 60% counterbalance; "D" type weights up to about 80%.
Height is increased on all units to allow minimum ground clearance below the rod hanger of 3'-10".
Beam centers are equal (except on AC-32, B-3 and B-4).
Wide horsehead allows exceptional well-servicing clearance beyond end of walking beam.

2. CABOT SHOPS, INC., PAMPA, TEXAS

L to R - Ordnance Plant and Cooling Shed
Shop Office and Engineering
Machine Shop and Reducer Assembly
Storage and Welding Shed
Erecting Floor
Fabricating Shop
Stores Building
Sheet Metal Shop
Steel Storage and Gantry
Parts and Finished Goods Storage

3. AC SERIES UNITS

All units are floor clearing (except AC-32).
Ratchet type universal brake may be assembled either L or R hand (see Paragraph 6).
High Samson post - 3'-10" minimum clearance below rod hanger.
Equal center distances between beam loads.
Wide horsehead - adequate well clearance for servicing without removing beam.
Equalastic tail bearings throughout (except AC-32). Four-way spread, four-legged Samson post, bolts to base. Assembled in a jig and welded throughout for maximum accuracy and strength.
Reducer sheave assembled either side as ordered.
Stroke adjustment is made by moving wrist pins to different holes in cranks.

4. B SERIES UNITS (BEAM BALANCED)

All units floor clearing.
Ratchet type universal brake may be assembled either R or L hand. (B-7 and smaller units have simple hand brake unless ratchet brake is ordered.)
High Samson post - 3'-10" minimum clearance below hanger at bottom of maximum downstroke in all sizes.
Equal beam centers.
Wide horsehead - adequate well clearance for servicing without removing walking beam.
Equalastic tail bearings throughout (except B-3 and B-4).
4-way spread, 4-legged Samson post. Welded to [illegible]

OUTLINE OF PRESENTATION - Cont'd.

5. THE CABOT UNIVERSAL BASE (See universal base drawing)

A. Stub bases - All AC units of 11, 000-lb. or greater capacity are made with stub bases. Provision for different prime movers is made by furnishing different but interchangeable engine extensions.
Base, forward of engine extension, is always the same.
With straight engine extension and outrigger on left side, fits all multi-cylinder engines. (This layout is standard.)
With same extension but outrigger moved to right side (easily done in field) fits Continental & Witte engines.
With same extensions and no outrigger, fits electric motors & Fairbanks-Morse sub-base engines.
With different extensions (offset to the near side) fits Ajax engines and F-M engines with no sub-base.

B. Full length base - Smaller units are made with full length bases.
Provision for different prime movers is made by relocating or removing an outrigger as above. No engine applicable to units of these sizes requires an offset extension.

6. UNIVERSAL RATCHET BRAKE (See brake drawing)

Operating lever at back of unit has locking ratchet.
Brake shoe bears against inside of reducer sheave.
Brake shoe & lever are independent of each other, and either may be assembled on either R or L side. Rearrangement easily done in field.
Cross shaft below reducer is square. Arms may be moved to any desired position on shaft & held in place with set screws.
A frame plate, for support of operating lever, is provided on each side of engine extension.
Only difference between brakes of different size units is in linkage at shoe and length of vertical and horizontal rods.

7. WIDE CLEARANCE MULEHEAD

6" or more additional servicing clearance.
One-bolt fastening.
Fully adjustable - pivots around fastening bolt to attain vertical position, locks in place after adjustment. Load not supported by bolt.
Side clips keep loose wire lines in place.
One piece wire line.
Curved top sheave.
6" minimum clearance between bottom of mulehead and top of rod hanger.

8. PLAIN CENTER BEARING (See drawing)

Used on all B units and on AC-9 and AC-11.
Bearing surface is Gatke molded plastic, pressed into a machined housing.
Beam plate welded to shaft, machined afterward.
Beam plate holes are slotted, allowing 1-1/2" total beam movement forward and back.
Alemite pressure and relief fittings.
Oil capacity for one month or more.
No squeak.

OUTLINE OF PRESENTATION - Cont'd.

9. NEEDLE BEARING CENTER BEARING (See drawing)

Used on Units AC-13 through AC-32.
Completely enclosed - dust sealed out, oil sealed in.
Oversized needle bearings in oil bath.
Both bearings seated in same housing - no initial misalignment.
Beam plate holes are slotted allowing 2" total beam movement forward & back.
Beam moved by adjuster screws. Two screws on larger sizes.
Shaft, inner races, thrust bearings, and end housings are pulled up tight by end bolts; act as a solid unit, prevent misalignment.
Set screws prevent shaft rotation.

10. ROLLER WRIST PIN BEARING (See drawings)

Standard on all B and AC units except B-3.
Bearing is an ample sized, double row, self aligning roller bearing and is fully adjustable for wear by shimming.
New oil enters between the outer two races.
Operators to be cautioned not to overgrease.
Wrist pins are all tapered and the larger sizes are keyed.
Wrist pins are fastened in place with lock nuts on small sizes - large sizes have a heavy plain nut with a separate lock.
Wrist pin nut wrenches are provided for all sizes - large sizes being equipped with slug wrenches.

11. EQUALASTIC BEARING (See bulletin)

Patented exclusive with Cabot.
All the rubber is kept in shear or compression - no tension.
Bearing is shock absorbing and requires no oiling.
No knocking or looseness is possible.
Bearing has been in service in field eight years and on over 11,000 units. (Jan. '55)
The rubber bearing and pitman eliminates many parts and much maintenance.
It costs more and is worth more.

12. B TYPE CRANK WEIGHTS

Optional extra on all B units.
Ball socket joint between weight and crank.
Two large bolts hold each weight.
Easy to align, and weights are large enough to give good flywheel effect.

13. CABOT SAFETY BEAM WEIGHTS

Handling holes on centerline of each weight allow weight to hang straight, and gives ease of installation.
Each half hooks on and stays on until bolted up tight with one bolt for each pair of weights.
End weights cannot fall off.
Any pair of weights may be removed or installed without interfering with other pairs of weights that are already in place.

OUTLINE OF PRESENTATION - Cont'd.

14. & 15. CABOT ADJUSTABLE COUNTERWEIGHT CRANKS (See drawing)

To adjust counterweights place cranks in horizontal or nearly horizontal position. Loosen the two clamp bolts on each master weight with a 24" crescent wrench, then, using special box wrench furnished, turn adjuster screw for each master weight to move weight along crank to desired position. Tighten two clamp bolts on each master weight, and unit is ready to put back into operation.

Adjusting screw is cadmium plated and operated through a bronze adjuster nut bolted to the master weight. There will be no rusting to cause trouble. Sliding surface on master weight is ground, and sliding surface on crank is milled to make smooth contact and easy adjustment.

Inner weights can be installed or removed without disturbing master weights. Inner weights in no way interfere with crank weight sliding adjustment.

Counterweights can be set for lead and lag counterbalance if operator so desires.

14. & 15. "D" TYPE WEIGHTS

Standard type adjustable crank counterbalance with two sets of inner weights will furnish approximately 60% counterbalance. This is the maximum recommended by API and by good practice.

"D" weights give more counterbalance, and have been provided because several major companies requested maximum counterbalance equal to the beam rating minus pitman pull. For example:

AC9-40D Unit:

Beam rating = 9,968#

Pitman pull = $\frac{\text{Peak Torque}}{\text{Crank Radius}} = \frac{40,000 \text{ in.-lbs.}}{18\text{-inch}}$ = 2,222#

Counterbalance required = 7,746#

This gives approximately 80% counterbalance. This is not recommended by Cabot Shops, Inc., because if this much counterbalance is necessary, the unit will be overloaded in service. Poor balancing (over or under) always increases load.

"D" weights are completely interchangeable with standard weights.

If a change is made in the field from one type to the other, full credit will be allowed for the returned weight.

16. CABOT HERRINGBONE REDUCERS

Added strength and rigidity of gear teeth through use of herringbone gears.

Slow speed shaft is mounted on Timken tapered roller bearings, locking it in place and allowing it no side play.

Intermediate and high speed shafts are mounted on Hyatt straight roller bearings, allowing these shafts to float and the gear train to align itself with the slow speed gear.

Case manufactured in one piece to get maximum [illegible] and tractor trans[illegible]

OUTLINE OF PRESENTATION - Cont'd.

16. CABOT HERRINGBONE REDUCERS - Cont'd.

Sheave and brake can be mounted on either side.
Bearings are mounted in machined quills and either bearing or quill is fully interchangeable on either side.
All shafts, gears and bearings are oversize.
No old style oil seals anywhere in reducer.

17. REDUCER OILING SYSTEM (See vertical cross section of reducer)

Knife edge wipers remove oil from each side of slow speed gear and carry it in channel troughs to vee passages cast in each side of the case. There it is divided proportionately between slow speed, intermediate and high speed bearings.
Oil is taken to the inner face of the bearings, works its way through the rollers and the excess is drained off by deflectors.
The slow speed and high speed shafts are equipped with labyrinth seals to trap any oil attempting to leak out along the shaft and return it to the oil sump by means of a drip return.
Positive oiling in either direction of rotation of the cranks.

18. GEAR GENERATORS

The Cabot factory is equipped to machine its own herringbone gears in all sizes, insuring that all the elements in a Cabot reducer comply with Cabot's exacting standards of quality.

19. CABOT SERVICE AND DELIVERY POLICY

Cabot delivers unit direct to lease. There is no railroad-to-lease haul.
A competent, factory-trained service man, with years of experience in our factory and on the road, will deliver the unit.
Cabot service can be powerful sales help.
Service man is direct factory representative to the user; user's representative to us.

20. SERVICE REPORT RESUME

Complete resume of all complaint reports received by Cabot Shops, Inc. during the year 1953 on all units both old and new, ever produced by Cabot Shops, Inc. Oldest of these units was put in service in 1938.
Observe the excellent service record indicated by this report.

21. PUMPING UNIT PARTS (See nomenclature drawings)

Nomenclature drawings show appearance and names of major parts, not parts numbers.
To order parts, determine name of

OUTLINE OF PRESENTATION - Cont'd.

21. PUMPING UNIT PARTS - Cont'd.

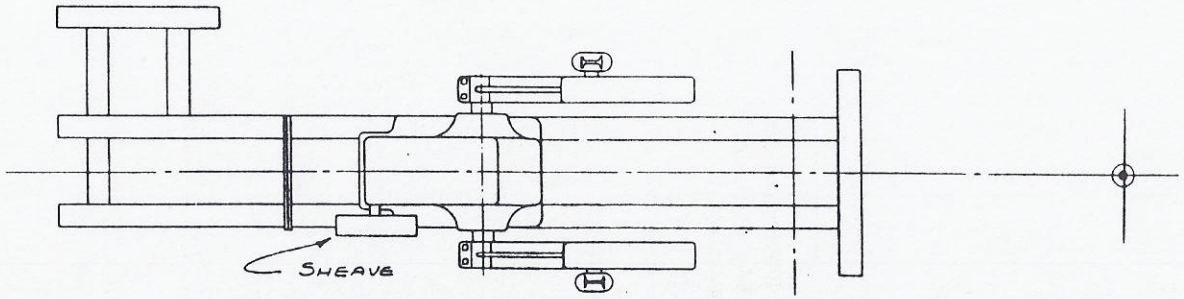
Component parts of assemblies are listed below the assembly in the parts lists. Find the assembly name from the nomenclature drawing (if necessary); consult the parts list immediately following the assembly listing, and select the name and part number of the part required. Note that nomenclature drawings for the brake linkage, wrist pin assemblies and center bearing assemblies are provided separately.

Always give the unit and reducer serial numbers when ordering parts. Advances in design have made changes in most units. Parts lists are for recent production and older units sometime require different parts. The serial number will enable the factory to be sure that the part shipped will fit.

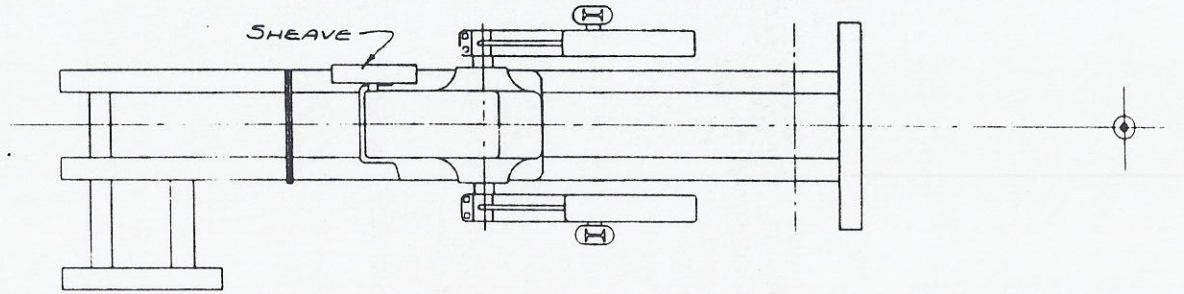
22. REDUCER PARTS (See nomenclature drawing)

The procedure for ordering reducer parts is similar to that outlined in Paragraph 21 for pumping unit parts. Be careful to use the correct reducer parts list for the reducer in question, and give the reducer serial number.

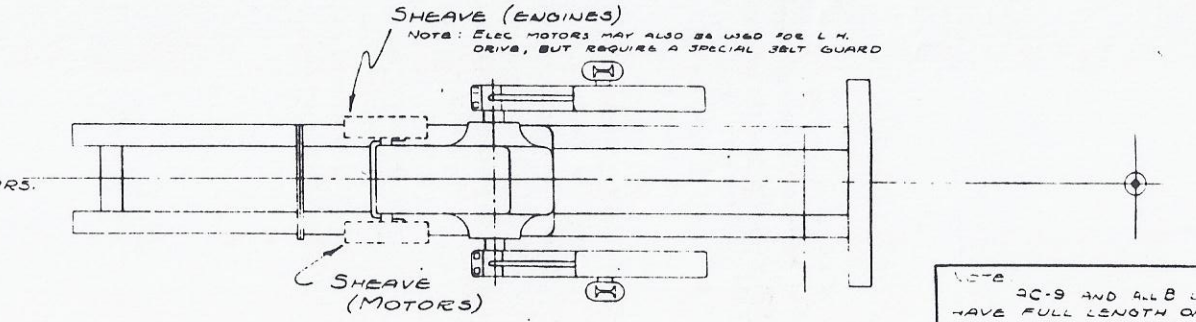
ANDARD ARRANGEMENT
— STRAIGHT BASE EXTENSION WITH
TRIGGER BOLTED ON LEFT SIDE.
— FITS ALL MULTI-CYLINDER ENGINES.



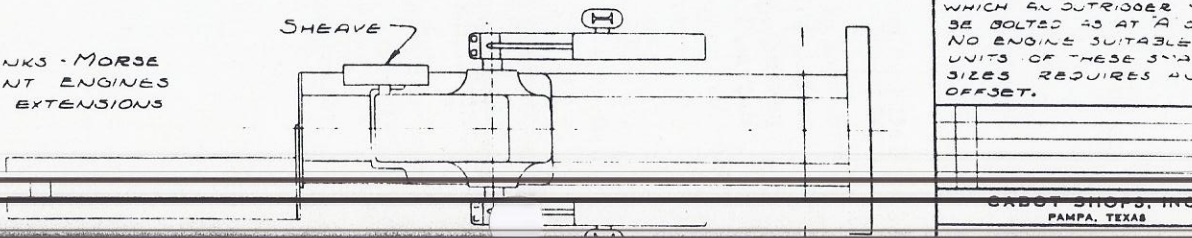
XTENSION AS ON ARRANGEMENT "A", BUT
UTRIGGER BOLTED ON RIGHT SIDE.
— FITS CONTINENTAL & WITTE SINGLE-
YLINDER ENGINES. — ALSO FITS MULTI-
YLINDER ENGINES FOR LEFT HAND DRIVE.



EXTENSION AS ON ARRANGEMENT "A", BUT
WITH NO OUTRIGGER.
— FITS FAIRBANKS-MORSE ENGINES
WITH SUB-BASES, AND ALL ELECTRIC MOTORS.



OFFSET BASE EXTENSION
— FITS AJAX ENGINES AND FAIRBANKS-MORSE
ENGINES WITHOUT SUB-BASES. — DIFFERENT ENGINES
REQUIRE SIMILAR, BUT NOT IDENTICAL, EXTENSIONS



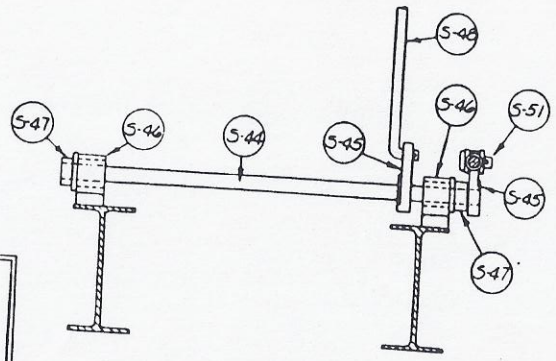
NOTE
2C-9 AND ALL B UN
HAVE FULL LENGTH ONE
PIECE BASES SIMILAR T
ARRANGEMENT "C", TO
WHICH AN OUTRIGGER MA
BE BOLTED AS AT "A" OR
NO ENGINE SUITABLE F
UNITS OF THESE SMALL
SIZES REQUIRES AL
OFFSET.

CABOT SHOPS, INC.
PAMPA, TEXAS

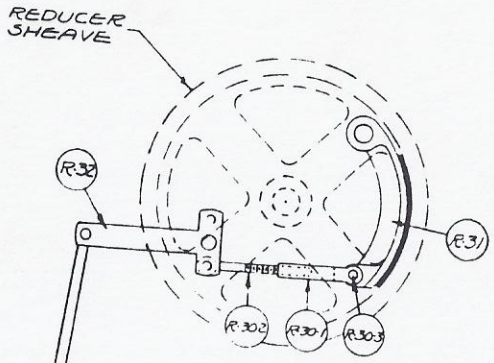
EM	NAME
	BRAKE LINK ASSEMBLY
-30-1	YOKE END
-30-2	ROD END
-30-3	YOKE PIN
	BRAKE SHOE, WITH LINING
	BRAKE LEVER
	QUADRANT & BRAKE LEVER ASSEMBLY
	BRAKE CROSS SHAFT
	LEVER ARM
	BRAKE CROSS SHAFT BEARING
	BRAKE CROSS SHAFT BUSHING
	UPPER BRAKE ROD
	LOWER BRAKE ROD
	YOKE END
	YOKE PIN

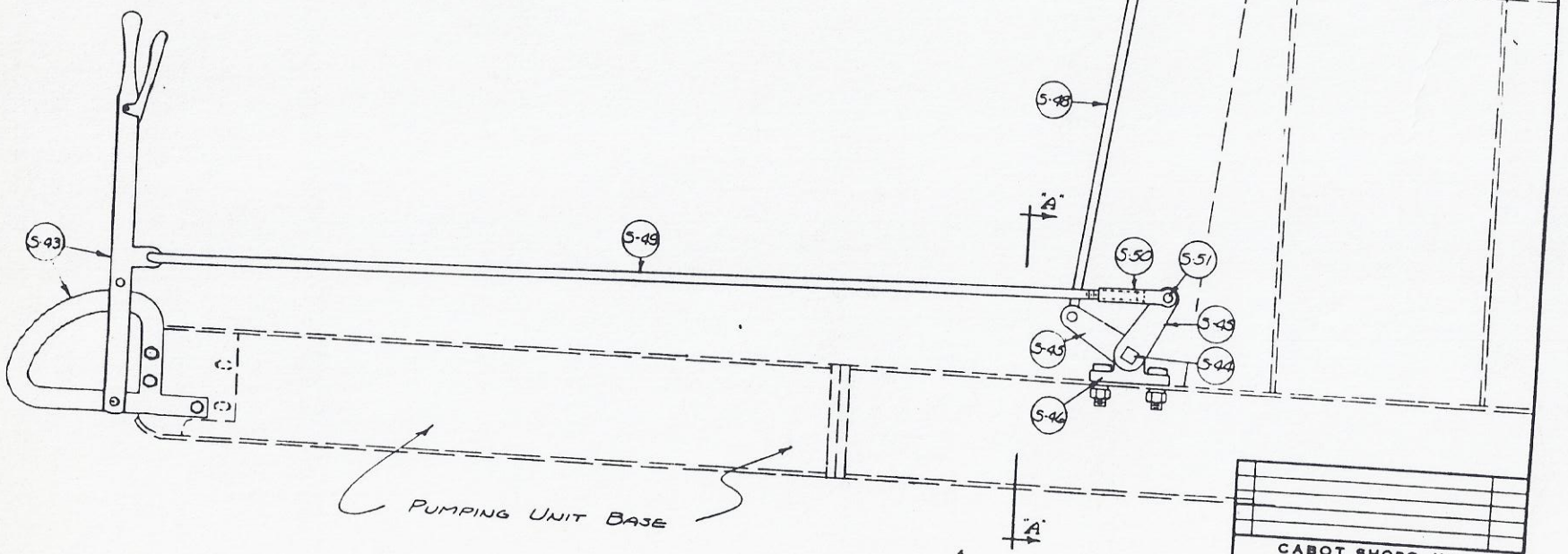
RTANT:

TEM NUMBERS ARE SHOWN FOR IDENTIFICATION LY. PREFIX "R" INDICATES PARTS SHOWN IN DUCER PARTS LIST; PREFIX "S" INDICATES PARTS WN IN PUMPING UNIT PARTS LIST.
HEN ORDERING PARTS, CONSULT THE CATALOG RTS LIST FOR THE UNIT OR REDUCER CONCERNED GIVE THE PART NUMBER. (NOT ITEM NO. SHOWN HERE)
LWAYS GIVE THE SERIAL NUMBER OF THE UNIT REDUCER WHEN ORDERING PARTS OR SERVICE



SECTION "A-A"

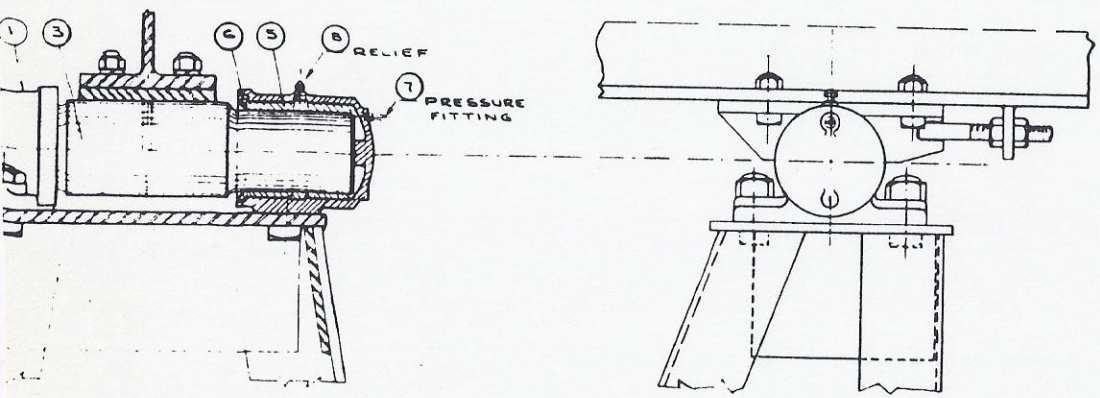




CABOT SHOPS INC.
PAMPA, TEXAS

NOMENCLATURE
QUADRANT TYPE BRAKE

DRAWN BY DINGUS
CHKD BY
APPROVED BY
DATE 25 JAN 56

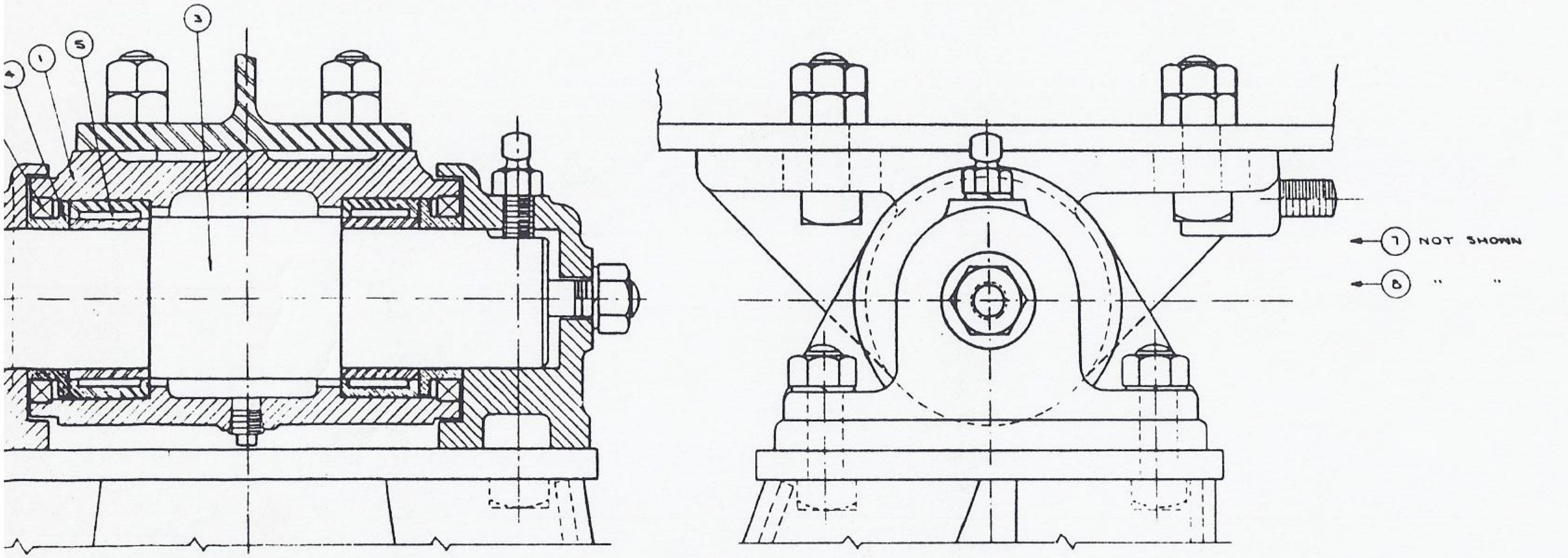


ITEM NO.	NO REQD	DESCRIPTION	B3	B4	B5	B7	B9 AC9	B11 AC11
38	2	CENTER BEARING HOUSING ASSEMBLY	ST200-CBH	ST300-CBH	DT400-CBH	DTG00-CBH	DT1000-CBH	DT1000-CBH
38 (1)	2	CENTER BEARING HOUSING	ST201	DT201	DT401	DTG01	DT801	DT801
38 (3)	2	CENTER BEARING BUSHING	—	—	—	DTG03	JIG112	JIG112
38 (6)	2	OIL SEAL	273124	350214	4003	450314	5124	5124
38 (7)	2	ALEMITE PRESSURE FITTING	A-336	A-336	A-336	A-336	A-336	A-336
38 (8)	2	ALEMITE PRESSURE RELIEF 12½#	47G40	47G40	47G40	47G40	47G40	47G40

(ADDITIONAL PART USED WITH ABOVE ASSEMBLIES)

38 (3)	1	CENTER BEARING SHAFT	ST23G	DT33G-B	DT43G-A	DTG3G-A	DT83G-A	DT113G-B

CACOT SHOPS INC
PAMPA TEXAS
CROSS SECTION

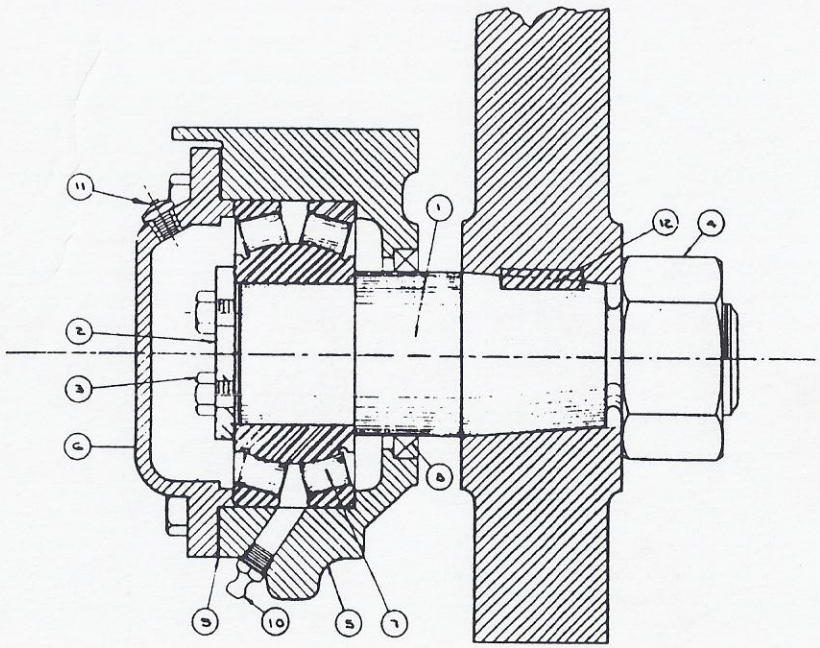


ITEM NO	NO REQD	DESCRIPTION	AC13	AC15 AC16	AC18	AC21	AC25	AC32
58		CENTER BEARING HOUSING ASSEMBLY, COMPLETE	DT1300-CB	DT1400-CB	CT1600-CB	CT1800 CB	CT2500-CB	AC3200-CB
58 (1)	1	CENTER BEARING HOUSING	DT1301-A	DT1401-A	DT1601-A	DT2001 A	CT2501	AC3201
58 (2)	2	CENTER BEARING BRACKET	DT1202-A	DT1402-A	DT2002-A	DT2002-A	CT2502	AC3202
58 (3)	1	CENTER BEARING SHAFT	DT1236-A	DT1436-A	DT1636-A	DT2036-A	CT2536	AC3236
58 (4)	2	THRUST WASHER	JN1257	JN1657	DT2007	DT2007	CT2507	AC3207
58 (5)	2	BANTAM ROLLER BEARING	567232-1475632	648032-1566432	8010436-1680036	8010436-1680036	8811248-1728848	13216248-3112132 48
58 (6)	2	OIL SEAL	450314	8124	65058	65058	700324	1084
58 (7)	2	ALEMITE PRESSURE FITTING	A-336	A-336	A-336	A-336	A-336	A-336
58 (8)	2	ALEMITE PRESSURE RELIEF $12\frac{1}{2}$#	47640	47640	47640	47640	47640	47640

CABOT SHOPS INC
PAMPA TEXAS

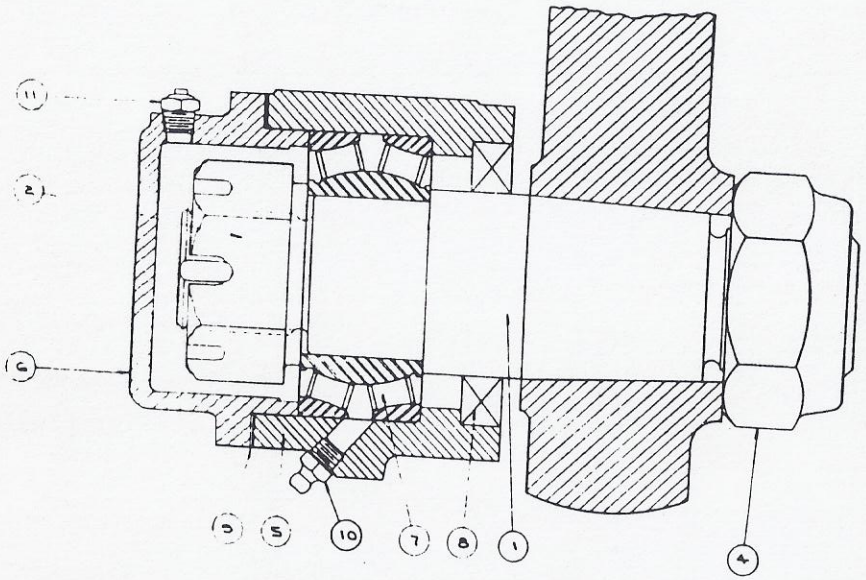
CROSS-SECTION
TYPICAL CENTER BEARING
UNITS AC13 TO AC32

DRAWN BY [illegible] DATE 1-22-36



ITEM NO	NO REQD	DESCRIPTION	AC13	AC15 AC16 AC18 AC21	AC25	AC32
S18	2	WRIST PIN ASSEMBLY, COMPLETE	AC1300-WP	AC2100-WP	AC2500-WP	AC3200-WP
S18 (1)	2	WRIST PIN	DT1437	DT1697	CT2537	AC3287
S18 (2)	2	WRIST PIN CAP PLATE	DT1438	DT1698	DT1698	AC3288
S18 (3)	2	DRILLED CAP SCREW	$\frac{1}{2}$"-13" HEX. HD.	HB412	HB412	HB412
S18 (4)	2	WRIST PIN NUT	AC2512G	AC2512G	AC2512G	AC3212G
S18 (5)	2	WRIST PIN BEARING HOUSING	DT1694-A	DT2094-A	DT2512-A	AC3204
S18 (6)	2	WRIST PIN BEARING HOUSING COVER	DT1695-A	DT2095-A	DT2512-A	AC3255
S18 (7)	2	SHAFER BEARING	S122-D	G000-D	7472-D	8460-D
S18 (8)	2	OIL SEAL	S124	S124	S124	G235
S18 (9)	2	SHIM	DT1694-S	#24	#30	#32
S18 (10)	2	ALEMITE PRESSURE FITTING	A-336	A-336	A-336	A-336
S18 (11)	2	ALEMITE PRESSURE FITTING				

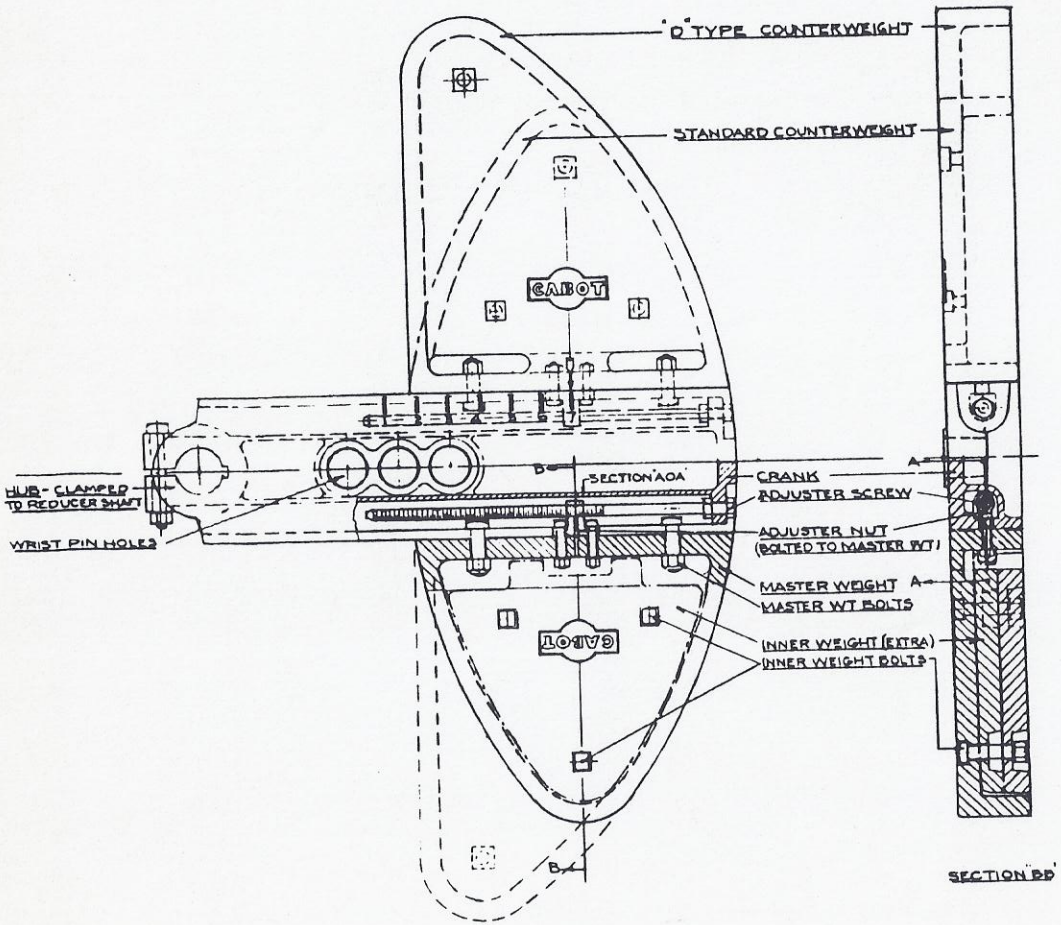
CABOT SHOPS INC.
PAMPA, TEXAS



ITEM NO	NO REQD	DESCRIPTION	B4 B5	B7	B5 B11 AC9 AC11
S18	2	WRIST PIN ASSEMBLY, COMPLETE	DT500-WPR	IT800-WP	IT1000-WP
S18 1	2	WRIST PIN	IT537-A	IT807	IT1187
S18 2	2	WRIST PIN NUT, SLOTTED	DT467	DT867	DT1167
S18 6	2	WRIST PIN HOUSING	DT454 B	DT854-A	DT1154-A
S18 9	2	WRIST PIN HOUSING COVER	DT485-A	DT885-A	DT1185-A
S18 3	2	SHAFER BEARING	2830-0	3540-0	3541-0
S18 8	2	OIL SEAL	275124	35028	375280
S18 7	2	TIMKEN SHIM	#12	#14	#16
S18 10	2	ELASTIC STOP NUT	45U-246	45U-286	45U-326
S18 5	2	ALEMITE PRESSURE FITTING	A-336	A-336	A-336
S18 11	2	ALEMITE PRESSURE RELIEF 12½#	47G40	47G40	47G40

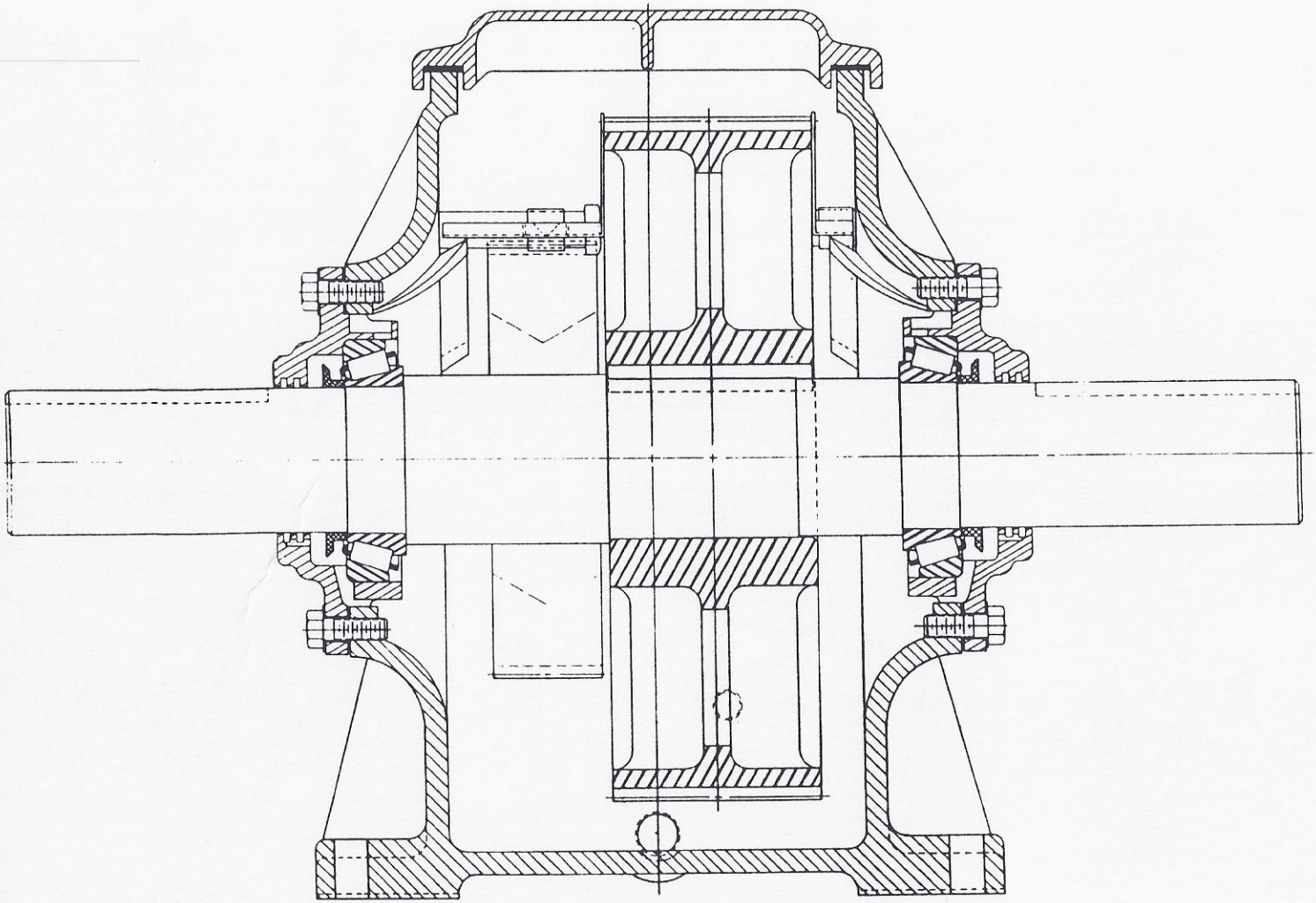
CABOT SHOPS, INC.
PAMPA TEXAS
TYPICAL CROSS SECTION
WRIST PIN BEARINGS
UNITS B4 THRU AC11

DRAWN BY [illegible] DATE 1-22-54
CHECKED BY
APPROVED BY



CABOT ADJUSTABLE COUNTERWEIGHT CRANK.

CABOT SHOPS, INC.
PAMPA, TEXAS



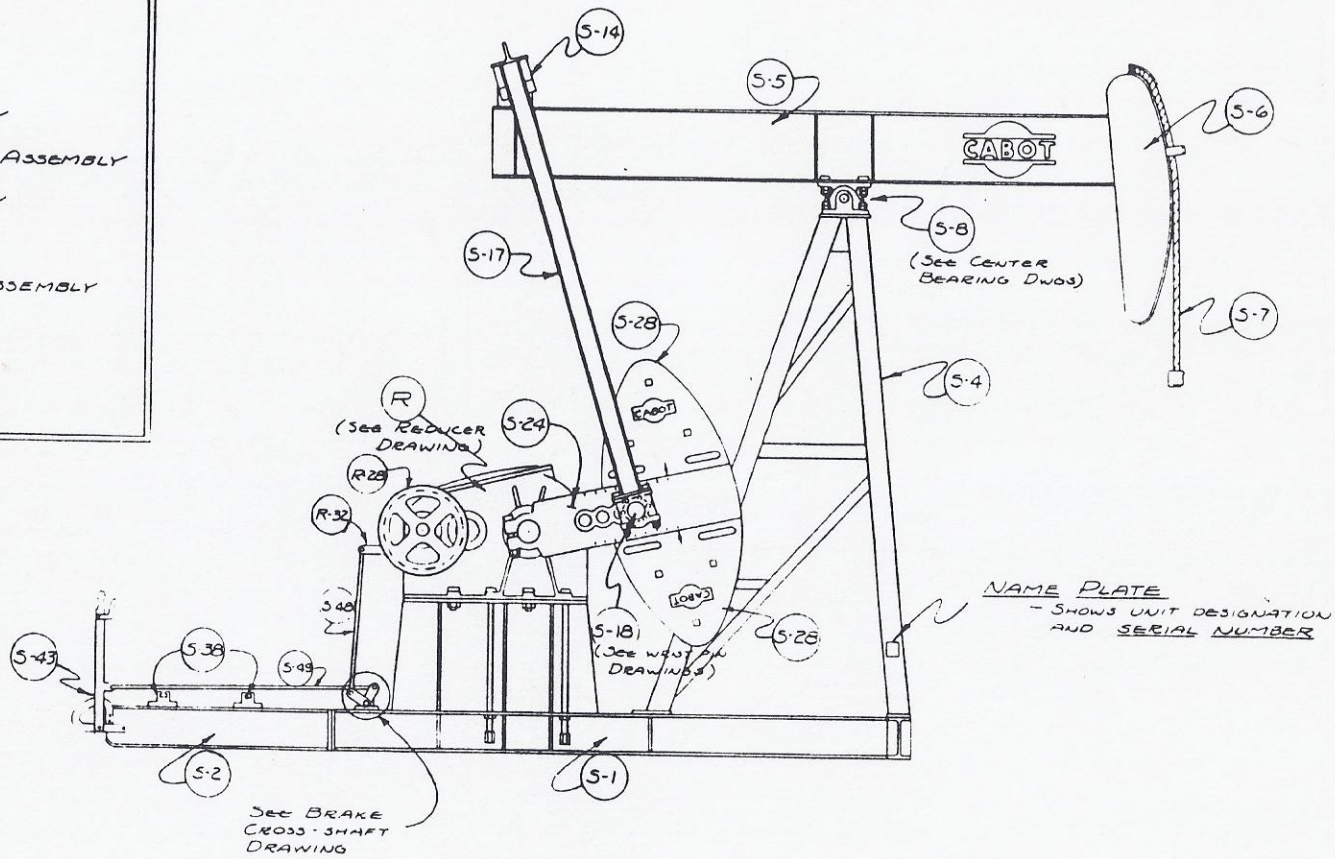
CABOT SHOPS, INC.
PAMPA, TEXAS

VERTICAL CROSS SECTION
THROUGH SLOW SPEED
SHAFT ~ 57 D.
DOUBLE REDUCTION

DRAWN BY MLJ
CHECKED BY
APPROVED BY

DATE
9-10-53

NAME
– Base
– Base Extension
– Samson Post
– Walking Beam
– Mulehead
– Wire Line Hanger Assembly
– Center Bearing Assembly
– Equalastic Evener Bearing Assembly
– Pitman
– Wrist Pin Bearing Assembly
– Crank Assembly
– Master Crank Weights
– Slide Rails
– Brake Lever & Quadrant Assembly
– Upper Brake Rod
– Lower Brake Rod
– Reducer
– Reducer Sheave
– Brake Lever



NAME PLATE
– Shows unit designation and serial number

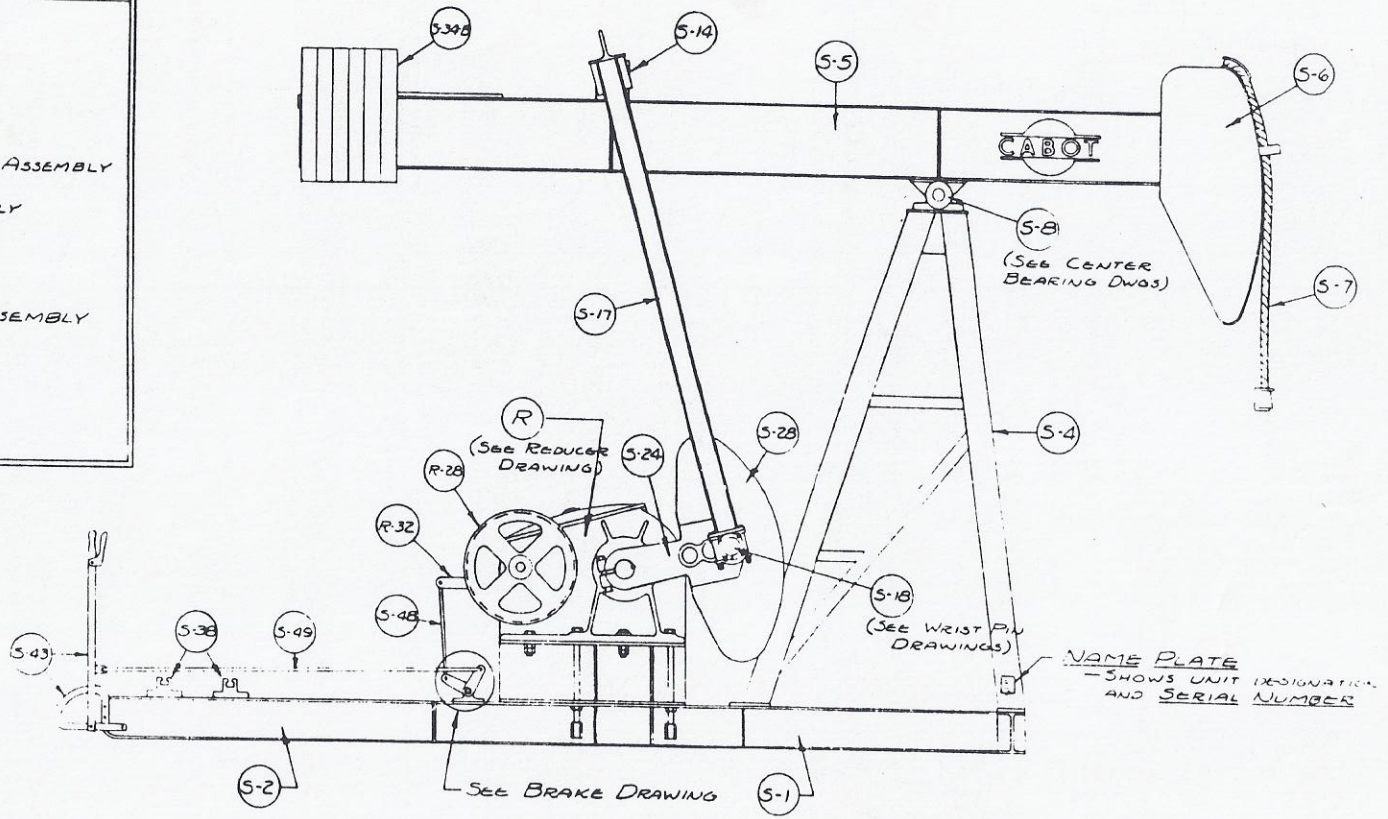
IMPORTANT:

1. Item numbers are shown only for identification of principal parts and assemblies. See the catalog parts lists for names of small parts and component parts of assemblies.
2. When ordering parts, consult the parts list for the type of unit in question, and give the part number (not the item number shown here.)
3. When ordering parts or service, ALWAYS give the serial number of the unit and reducer.

CABOT SHOPS, INC.
PAMPA, TEXAS

NOMENCLATURE

	NAME
	BASE
	BASE EXTENSION
	SAMSON POST
	WALKING BEAM
	MULEHEAD
	WIRE LINE HANGER ASSEMBLY
	CENTER BEARING ASSEMBLY
	EQUALASTIC EVENER BEARING ASSEMBLY
	PITMAN
	WRIST PIN BEARING ASSEMBLY
	CRANK
	CRANK WEIGHT
B	BEAM WEIGHTS
	SLIDE RAILS
	BRAKE LEVER & QUADRANT ASSEMBLY
	UPPER BRAKE ROD
	LOWER BRAKE ROD
	REDUCER
	REDUCER SHEAVE
	BRAKE LEVER



IMPORTANT:

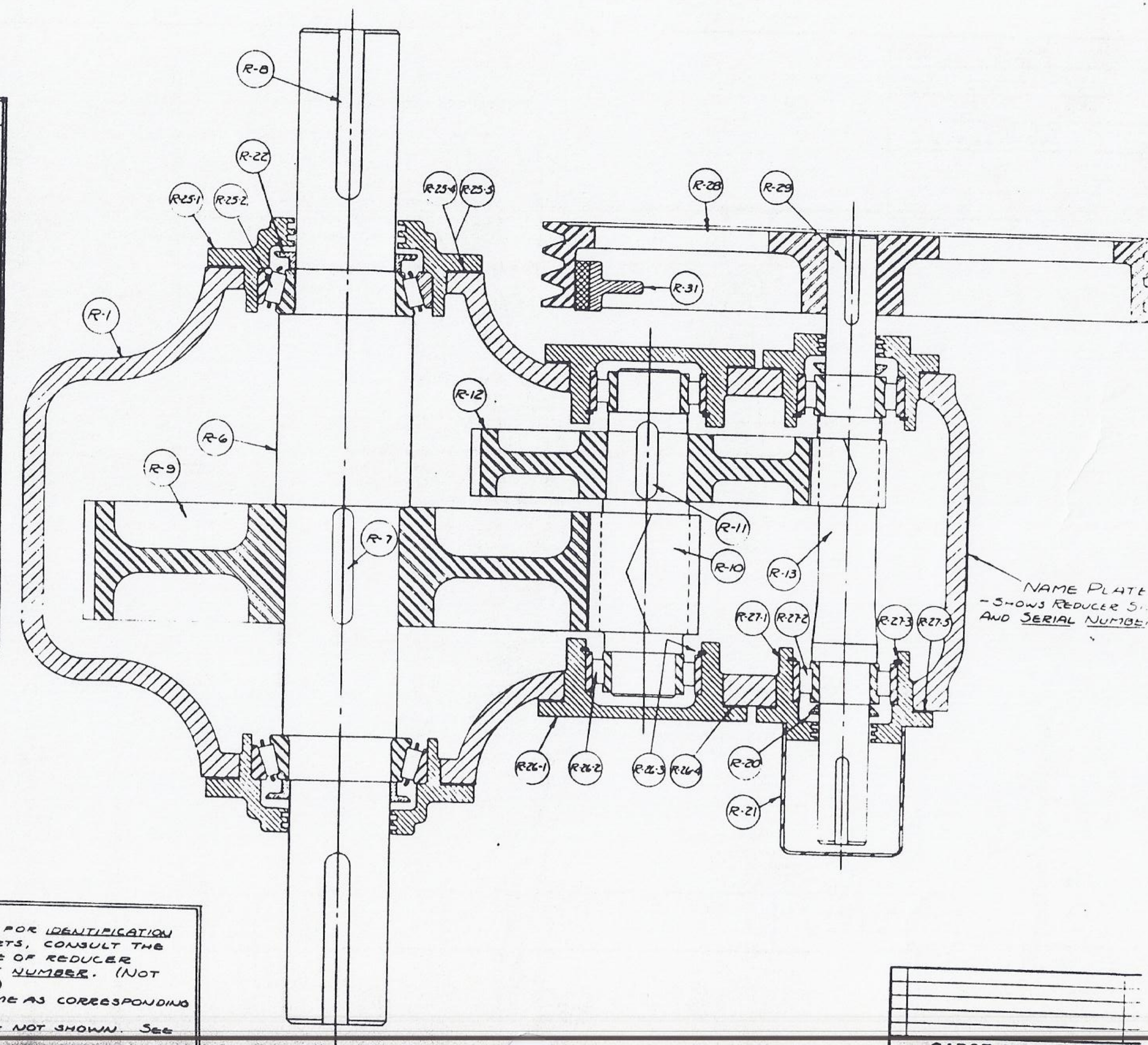
1. ITEM NUMBERS ARE SHOWN ONLY FOR IDENTIFICATION OF ASSEMBLIES, PARTS AND ASSEMBLIES. SEE THE CATALOG PARTS LISTS FOR NAMES OF SMALL PARTS AND COMPONENT PARTS OF ASSEMBLIES.
2. WHEN ORDERING PARTS, CONSULT THE PARTS LIST FOR THE TYPE OF UNIT CONCERNED, AND GIVE THE PART NUMBER. (NOT THE ITEM NUMBER SHOWN HERE.)
3. ALWAYS GIVE THE SERIAL NUMBER OF THE UNIT AND REDUCER WHEN ORDERING PARTS OR SERVICE.

CABOT SHOPS, INC.
PAMPA, TEXAS

CONVENTIONAL
CABOT B SERIES UNITS

DRAWN BY J. USUS
CHECKED BY
APPROVED BY
DATE 26 AUG 54

NAME
REDUCER CASE
SLOW SPEED SHAFT
SLOW SPEED GEAR KEY
CRANK KEY
SLOW SPEED GEAR
INTERMEDIATE PINION AND SHAFT
INTERMEDIATE GEAR KEY
INTERMEDIATE GEAR
HIGH SPEED PINION AND SHAFT
HIGH SPEED OIL SLINGER
HIGH SPEED SHAFT COVER
SLOW SPEED OIL SLINGER
SLOW SPEED BEARING CARRIER ASS'Y
SLOW SPEED BEARING CARRIER
SLOW SPEED BEARING (TIMKEN)
BEARING CARRIER SHIMS (TIMKEN)
TAN FIBER GASKET
INTERMEDIATE BEARING CARRIER ASS'Y
INTERMEDIATE BEARING CARRIER
INTERMEDIATE BEARING (HYATT)
RETAINING RING
TAN FIBER GASKET
HIGH SPEED BEARING CARRIER ASS'Y
HIGH SPEED BEARING CARRIER
HIGH SPEED BEARING (HYATT)
RETAINING RING
TAN FIBER GASKET
V-BELT SHEAVE
SHEAVE KEY
BRAKE SHOE, WITH LINING



ORTANT:

1. ITEM NUMBERS ARE SHOWN ONLY FOR IDENTIFICATION OF PARTS. WHEN ORDERING PARTS, CONSULT THE CATALOG PARTS LIST FOR THE SIZE OF REDUCER IN QUESTION AND GIVE THE PART NUMBER. (NOT THE ITEM NUMBER SHOWN HERE)
2. PARTS NOT NUMBERED ARE SAME AS CORRESPONDING PARTS ON OPPOSITE SIDE.
3. COVER AND OILER PARTS ARE NOT SHOWN. SEE CATALOG PARTS ...

CABOT SHOPS INC
PAMPA, TEXAS

COMMON SALES QUESTIONS
CABOT PUMPING UNITS

Are Cabot units API monogrammed? Why?

The new line of Cabot units, both AC and B Series, are designed in API sizes for standardization. In this way, they are directly comparable with units of other manufacturers. All Cabot units have always been designed to exceed API specifications.

What purpose does the Cabot Universal Base serve?

Different types of prime movers are used in the oil fields to power pumping units, and each has its own mounting requirements. The Cabot Universal Base permits arrangement of the bases to fit any prime mover, and conversions can be made using ordinary wrenches only.

What is a floor-clearing unit? Why is it desirable?

Floor-clearing means no moving part of the unit extends below the bottom of the unit base. Concrete foundations can be flush with ground level at a savings in costs.

Do Cabot units have ample clearance for well servicing?

With the mulehead removed and walking beam at top of the stroke, servicing clearance is up to 33" on the largest units. In every case, it is more than ample to clear suitable size well-servicing equipment.

How often should bearings be lubricated?

Follow the recommendations shown on the "Lubrication Instructions" accompanying each unit delivered. Avoid over-lubrication.

What types of lubricants are recommended?

Follow the recommendations shown on the "Lubrication Instructions" accompanying each unit delivered.

What are the advantages of Cabot's "Equalastic" evener bearing?

The "Equalastic" evener bearing is made of rubber and has no moving parts to wear or get loose. It insulates the gear box from shock loads and vibration and is not affected by sand, salt water, grease or other foreign matter. It eliminates costly wear and maintenance, and requires no oiling.

Does any other manufacturer use this bearing on pumping units?

No, because it is a patented feature, developed by Cabot Shops, Inc., and manufactured by U. S. Rubber Company under a license for exclusive use on Cabot Pumping Units.

Why is the "Equalastic" bearing not used as a center bearing?

The added advantages gained by using the "Equalastic" bearing as a center bearing do not justify the additional cost and construction modifications. The center bearing on all pumping units must have twice the capacity of the evener or tail bearing.

Why are the crank-balanced series equipped with adjustable counterweights?

Because the counterbalance requirements of any oil well cannot be exactly predicted and will change with different well conditions. Cabot Adjustable Crank gives crank balancing at its best, simply constructed and easily operated. There are few moving parts, completely rust proof, requiring little maintenance time and cost, yet it offers complete safety, accuracy and flexibility.

How may the counterbalance be adjusted on beam-balanced units?

By adding or removing pairs of beam weights, or, for closer balancing, by relocating the weights along the beam.

Why does Cabot use a one-piece gear reducer case?

A one-piece case is both lighter and stronger than a split case. There is no joint in the highly loaded part of the case to develop misalignment or leakage, and no heavy, bolted flanges are required.

Why are herringbone gears used?

Because of their great strength, quietness, and smoothness of operation, and because they produce no side thrust on their bearings. They are self-centered and will adjust themselves to equalize wear and load along the whole length of each tooth.

Their superiority for pumping unit gears is obvious, and only one or two major manufacturers remain who have not changed over from a spur-gear or helical-gear system.

How long will a Cabot Pumping Unit last?

Cabot Pumping Units are designed for 100, 000 hours average life. Every unit is guaranteed against defects of design, material, or workmanship, and further backed by a five-year service guarantee on the reducer.

What kind of bearings are used in the reducer?

Timken tapered roller bearings are used on the slow speed shaft to prevent end-wise movement. They are adjustable for wear by removing shims. Intermediate and high speed shafts are mounted on Hyatt straight roller wide series bearings, which allow the gears to float into and maintain alignment.

When repair parts are needed, are they shipped promptly, priced reasonably and will they fit on arrival?

Cabot maintains a stock or can produce any part required for any unit ever placed in service. Shipment of parts is made by the most direct method available and prompt, competent servicemen are available where required.

LONG STROKE EXTRAS

Unit Size	Max. Stroke	Beam Size	Price Extra	Walking Beam Rating	Max. Counter Balance	No. Weights
B3L	25"	8 x 4 at 13#	$ 12.00	2451	1390	6 Sets Beam
B4L	25"	8 x 4 at 15#	12.00	3056	1933	6 Sets Beam
B4LS	25"	8 x 5-1/4 at 20#	22.50	4517	1933	6 Sets Beam
B4LL	30"	8 x 5-1/4 at 17#	28.50	3133	1631	6 Sets Beam
B5L	30"	10 x 5-3/4 at 21#	20.00	4778	3405	10 Sets Beam
B5LS	30"	10 x 5-3/4 at 25#	35.00	5867	3405	10 Sets Beam
B7L	36"	12 x 6-1/2 at 27#	42.00	6290	4920	10 Sets Beam
B9L	42"	14 x 6-3/4 at 38#	44.00	8356	5620	10 Sets Beam
B9LS	42"	14 x 8 at 48#	80.00	11143	5620	10 Sets Beam
B11L	48"	14 x 8 at 48#	47.00	9480	6155	12 Sets Beam
ACD7L	34"	12 x 6-1/2 at 27#	21.00	6686	4555	2 Sets D Crank
AC7SL	42"	14 x 6-3/4 at 30#	42.00	6393	6630	2 Sets D Crank
AC9L	42"	14 x 6-3/4 at 38#	44.00	8356	5430	2 Sets Light Crank
AC9LS	42"	14 x 8 at 48#	61.00	10743	5430	2 Sets Light Crank
					6630	2 Sets D Crank
AC11L	48"	14 x 8 at 48#	47.00	9480	5072	2 Sets Light Crank
AC11LS	48"	16 x 8-1/2 at 64#	89.00	12482	6250	2 Sets D Crank
AC13L	54"	16 x 8-1/2 at 64#	54.00	12265	6900	2 Sets Light Crank
					9630	2 Sets D Crank
AC13LS	54"	18 x 8-3/4 at 64#	60.00	13874	6900	2 Sets Light Crank
					9630	2 Sets D Crank
AC15L	64"	18 x 8-3/4 at 64#	65.00	11171	6648	2 Sets Light Crank
AC15L	64"	18 x 8-3/4 at 77#	104.00	13529	6648	2 Sets Light Crank
AC15LS	64"	18 x 8-3/4 at 85#	130.00	14893	9100	2 Sets D Crank
AC16L	64"	18 x 8-3/4 at 77#	104.00	13529	6763	2 Sets Light Crank
AC17L	64"	18 x 8-3/4 at 85#	106.00	14893	9115	2 Sets D Crank
AC18L	74"	21 x 9 at 96#	131.00	15507	10047	2 Sets Light Crank
AC20L	74"	24 x 12 at 100#	132.00	21648	11895	2 Sets D Crank
AC21L	84"	24 x 12 at 100#	169.50	18265	10905	2 Sets Light Crank
					14140	2 Sets D Crank
AC24L	84"	24 x 14 at 130#	190.00	25472	10905	2 Sets Light Crank
					14140	2 Sets D Crank
AC25L	94"	24 x 14 at 130#	196.00	21950	12925	2 Sets Light Crank
AC29L	94"	24 x 14 at 160#	243.00	26742	17690	2 Sets D Crank
AC32L	144"	33 x 15-3/4 at 200#	128.00	29335	17290	1 Set Light Weights
					20590	2 Sets Light Weight

CABOT AC UNIT VEE BELTS

(For Standard Reducer Sheave and Engine Sheave for 20 SPM)

UNIT	POWER USED	BELTS REQUIRED
ACD9-40D	Standard	4 - 210B
ACD9E-40D	Electric	4 - 210B
ACD9X-40D	ZC-118	4 - 195B
ACD9Y-40D	ZC-208	4 - 195B
ACD9FM-40D	ZC-346 & ZC-503	4 - 225B
ACD9C-40D	Cont. C-66 & Witte "B"	
	Cont. C-46 & Witte "C"	
	Witte "98RC"	4 - 195B
ACD9-57D	Standard	4 - 210B
ACD9E-57D	Electric	4 - 210B
ACD9X-57D	ZC-118	4 - 195B
ACD9Y-57D	ZC-208	4 - 195B
ACD9FM-57D	ZC-346 & ZC-503	4 - 225B
ACD9C-57D	Cont. C-66 & Witte "B"	
	Cont. C-46 & Witte "C"	
	Witte "98RC"	4 - 195B
AC11-57D	Standard	4 - 210B
AC11E-57D	Electric	4 - 210B
AC11FM-57D	ZC-346 & ZC-503	4 - 225B
AC11C-57D	Cont. C-46 & Witte "B"	
	Cont. C-66 & Witte "C"	
	Witte "98RC"	4 - 195B
AC11Y-57D	ZC-208	4 - 195B
AC11A-57D	Ajax 6-1/2 x 8 & 7-1/4 x 8	4 - 195B
AC11-80D	Standard	3 - 210C
AC11E-80D	Electric	3 - 210C
AC11FM-80D	ZC-346 & ZC-503	3 - 240C
AC11C-80D	Cont. C-46 & Witte "B"	
	Cont. C-66 & Witte "C"	
	Witte "98RC"	3 - 210C
AC11Y-80D	ZC-208	3 - 210C
AC11A-80D	Ajax 6-1/2 x 8 & 7-1/4 x 8	3 - 210C
AC13-80D -114D	Standard	3 - 225C
AC13E-80D -114D	Electric	4 - 225C
AC13FM-80D -114D	ZC-346 & ZC-503	3 - 225C
AC13C-80D -114D	Cont. C-66	4 - 225C
AC13C-80D -114D	Witte C	3 - 240C
AC13Y-80D -114D	ZC-208	4 - 240C
AC13A-80D -114D	Ajax 6-1/2 x 8 & 7-1/4 x 8	3 - 225C
AC13C9-80D -114D	Cont. C-96	4 - 225C
		4 - 210C
		3 - 210C
		4 - 210C
		4 - 210C
		3 - 225C
		4 - 225C
		3 - 210C
		4 - 195C
AC15-114D	Standard	4 - 225C
AC15E-114D	Electric	4 - 225C
AC15FM-114D	ZC-346 & ZC-503	4 - 240C
AC15C-114D	Witte "C"	4 - 210C
AC15C-114D	Cont. C-66	4 - 225C
AC15C9-114D	Cont. C-96	4 - 210C
AC 5A-114D	Ajax 6-1/2 x 8 & 7-1/4 x 8	4 - 225C

UNIT	POWER USED	BELTS REQUIRED
ACD16-160D	Standard	5 - 210C
ACD16E-160D	Electric	5 - 210C
ACD16FM-160D	ZC-346 & ZC-503	5 - 240C
ACD16C-160D	Cont. C-96	5 - 210C
ACD16A-160D	Ajax 6-1/2 x 8 & 7-1/4 x 8	5 - 225C
ACD16A10-160D	Ajax 7-1/2 x 10 & 8-1/2 x 10	5 - 225C
ACD16Z7-160D	ZC-739	5 - 240C
AC17-160D same as above		
AC18-160D	Standard	5 - 225C
AC18E-160D	Electric	5 - 225C
AC18FM-160D	ZC-503	5 - 240C
AC18C-160D	Cont. C-96	5 - 225C
AC18A-160D	Ajax 6-1/2 x 8 & 7-1/4 x 8	5 - 240C
AC18A10-160D	Ajax 7-1/2 x 10 & 8-1/2 x 10	5 - 240C
AC18Z7-160D	ZC-739	5 - 240C
AC18-228D	Standard	6 - 225C
AC18E-228D	Electric	6 - 225C
AC18FM-228D	ZC-503	6 - 240C
AC18C-228D	Cont. C-96	6 - 225C
AC18A-228D	Ajax 6-1/2 x 8 & 7-1/4 x 8	6 - 240C
AC18A10-228D	Ajax 7-1/2 x 10 & 8-1/2 x 10	6 - 240C
AC18Z7-228D	ZC-739	6 - 240C
AC20-160D & 228D - same as above		
AC21-160D	Standard	5 - 240C
AC21E-160D	Electric	5 - 270C
AC21FM-160D	ZC-503	5 - 270C
AC21A-160D	Ajax 7-1/2 x 10 & 8-1/2 x 10	5 - 270C
AC21Z7-160D	ZC-739	5 - 270C
AC21-228D	Standard	6 - 240C
AC21E-228D	Electric	6 - 270C
AC21FM-228D	ZC-503	6 - 270C
AC21A-228D	Ajax 7-1/2 x 10 & 8-1/2 x 10	6 - 270C
AC21Z7-228D	ZC-739	6 - 270C
AC21-320D	Standard	8 - 240C
AC21E-320D	Electric	8 - 270C
AC21FM-320D	ZC-503	8 - 270C
AC21Z7-320D	ZC-739	8 - 270C
AC24-160D through 320D - same as above		
AC25-228D	Standard	6 - 240C
AC25E-228D	Electric	6 - 270C
AC25A-228D	Ajax 7-1/2 x 10 & 8-1/2 x 10	6 - 270C
AC25Z7-228D	ZC-739	6 - 270C
AC25-320D	Standard	8 - 240C
AC25E-320D	Electric	8 - 270C
AC25Z7-320D	ZC-739	8 - 270C
AC32-456D	Standard	7-330D Super
AC32A-456D	Ajax 11 x 14	7-330D Super (longer for separate base setting)
AC29-228D and 320D - same as above		

Note: These belt lengths change: if reducer sheave is changed from standard, or undersize prime mover sheave is used for slow speed pumping, or 900 or 1800 RPM motors are used.

AC8-30-25D
AC8-30-40D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 18"	24"	30"
PITMAN, W. PINS, BEAM & CRANKS ONLY		1,533	1,156	918
WEIGHTS-POSITION	1	3,343	2,503	2,002
	2	3,642	2,726	2,181
	3	3,943	2,951	2,361
	4	4,245	3,178	2,542
	5	4,547	3,404	2,723
	6	4,850	3,630	2,904
	7	5,150	3,855	3,084
	8	5,453	4,081	3,265

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION				
	1	4,076	3,051	2,441
	2	4,496	3,365	2,692
	3	4,920	3,683	2,946
	4	5,344	4,000	3,200
	5	5,767	4,316	3,453
	6	6,191	4,634	3,707
	7	6,615	4,951	3,961
	8	7,039	5,269	4,215

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION				
	1	4,810	3,600	2,880
	2	5,349	4,004	3,203
	3	5,895	4,413	3,530
	4	6,441	4,821	3,857
	5	6,987	5,230	4,184
	6	7,533	5,639	4,511
	7	8,079	6,048	4,838

AC8L-36-25D
AC8L-36-40D
WITH "D" TYPE WEIGHTS
LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 22"	29"	36"
PITMANS, W. PINS, BEAM & CRANKS ONLY		1,300	963	765
WEIGHTS-POSITION	1	2,835	2,100	1,668
	2	3,089	2,290	1,817
	3	3,344	2,480	1,967
	4	3,600	2,668	2,117
	5	3,856	2,859	2,268
	6	4,111	3,048	2,419
	7	4,369	3,237	2,570
	8	4,624	3,427	2,720

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	3,458	2,563	2,034
	2	3,814	2,828	2,244
	3	4,174	3,094	2,455
	4	4,533	3,360	2,667
	5	4,894	3,626	2,879
	6	5,253	3,894	3,090
	7	5,613	4,160	3,302
	8	5,972	3,954	3,513

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	4,078	3,022	2,400
	2	4,536	3,362	2,668
	3	4,998	3,704	2,940
	4	5,461	4,049	3,213
	5	5,924	4,391	3,485
	6	6,387	4,733	3,757
	7	6,851	5,077	4,030
	8	7,313	5,417	4,300

ACD9-40D OR 57D
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 20"	28"	36"
PITMAN, W. PINS, BEAM & CRANKS ONLY		2,015	1,570	1,320
WEIGHTS-POSITION	1	5,830	4,290	3,440
	2	6,690	4,910	3,915
	3	7,555	5,525	4,395
	4	8,415	6,140	4,875
	5	9,280	6,755	5,355

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,950	5,095	4,060
	2	8,070	5,895	4,685
	3	9,190	6,695	5,305
	4	10,310	7,495	5,930
	5	11,430	8,295	6,550

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,065	5,890	4,680
	2	9,435	6,870	5,445
	3	10,810	7,850	6,205
	4	12,185	8,835	6,970
	5	13,560	9,815	7,735

AC10-36-40D
AC10-36-57D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES		
		20"	28"	36"
PITMAN, W. PINS, BEAM & CRANKS ONLY		2,015	1,570	1,320
WEIGHTS-POSITION	1	5,830	4,290	3,440
	2	6,690	4,910	3,915
	3	7,555	5,525	4,395
	4	8,415	6,140	4,875
	5	9,280	6,755	5,355

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,950	5,095	4,060
	2	8,070	5,895	4,685
	3	9,190	6,695	5,305
	4	10,310	7,495	5,930
	5	11,430	8,295	6,550

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,065	5,890	4,680
	2	9,435	6,870	5,445
	3	10,810	7,850	6,205
	4	12,185	8,835	6,970
	5	13,560	9,815	7,735

AC10L-42-40D
AC10L-42-57D

WITH "D" TYPE WEIGHTS

LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

DESCRIPTION		STROKES 23"	33"	42"
PITMAN, W. PINS, BEAM & CRANK ONLY		1,725	1,345	1,130
MASTER WEIGHTS ONLY				
WEIGHTS-POSITION	1	4,995	3,675	2,860
	2	5,735	4,205	3,355
	3	6,470	4,740	3,850
	4	7,205	5,270	4,340
	5	7,945	5,800	4,835
MASTER WEIGHTS AND (1) SET INNER WEIGHTS				
WEIGHTS-POSITION	1	5,955	4,365	3,480
	2	6,915	5,050	4,015
	3	7,875	5,735	4,550
	4	8,835	6,420	5,085
	5	9,795	7,105	5,625
MASTER WEIGHTS AND (2) SETS INNER WEIGHTS				
WEIGHTS-POSITION	1	6,910	5,045	4,010
	2	8,085	5,885	4,665
	3	9,260	6,725	5,320
	4	10,435	7,565	5,975
	5	11,610	8,405	6,630

AC11-57D & 80D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 26"	34"	42"
PITMAN, W. PIN & CRANKS ONLY		1,689	1,388	1,201
WEIGHTS - POSITION	1	3,973	3,135	2,615
	2	4,388	3,452	2,872
	3	4,802	3,768	3,128
	4	5,220	4,088	3,387
	5	5,635	4,406	3,644
	6	6,051	4,723	3,901

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	4,775	3,748	3,111
	2	5,336	4,177	3,459
	3	5,895	4,604	3,805
	4	6,460	5,036	4,154
	5	7,020	5,465	4,502
	6	7,582	5,894	4,849

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS - POSITION	1	5,577	4,362	3,608
	2	6,284	4,902	4,046
	3	6,989	5,441	4,482
	4	7,700	5,984	4,922
	5	8,405	6,525	5,359
	6	9,114	7,065	5,797

AC12-42-57D
AC12-42-80D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 26"	34"	42"
PITMAN, W. PINS & CRANKS ONLY		1,715	1,415	1,225
WEIGHTS-POSITION	1	4,425	3,485	2,905
	2	5,090	3,995	3,315
	3	5,750	4,500	3,725
	4	6,415	5,010	4,135
	5	7,080	5,515	4,550
	6	7,745	6,025	4,960

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	5,225	4,095	3,400
	2	6,085	4,755	3,930
	3	6,945	5,415	4,465
	4	7,805	6,075	5,000
	5	8,670	6,730	5,530
	6	9,530	7,390	6,065

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	6,015	4,705	3,890
	2	7,070	5,510	4,540
	3	8,130	6,320	5,195
	4	9,185	7,125	5,850
	5	10,245	7,935	6,505
	6	11,300	8,745	7,160

AC12-48-57D
AC12-48-80D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 28"	38"	48"
PITMAN, W. PINS & CRANKS ONLY		2,660	2,095	1,770
WEIGHTS-POSITION	1	7,085	5,360	4,350
	2	7,955	6,000	4,860
	3	8,825	6,640	5,365
	4	9,695	7,285	5,875
	5	10,570	7,925	6,385
	6	11,440	8,565	6,890
	7	12,310	9,210	7,400

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	8,445	6,360	5,145
	2	9,585	7,205	5,810
	3	10,730	8,045	6,475
	4	11,870	8,885	7,140
	5	13,010	9,725	7,810
	6	14,150	10,565	8,475
	7	15,290	11,410	9,150

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	9,935	7,455	6,015
	2	11,370	8,515	6,850
	3	12,805	9,575	7,690
	4	14,240	10,630	8,525
	5	15,680	11,690	9,365
	6	17,110	12,750	10,200
	7	18,240	13,580	10,860

AC12L-54-114D UNITS
WITH "D" TYPE WEIGHTS
LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 32"	43"	54"
PITMAN, W. PINS & CRANKS ONLY		2,430	1,870	1,550
WEIGHTS-POSITION	1	6,365	4,770	3,845
	2	7,140	5,340	4,295
	3	7,910	5,910	4,745
	4	8,685	6,480	5,200
	5	9,460	7,050	5,650
	6	10,235	7,620	6,080
	7	11,010	8,190	6,555

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	7,575	5,660	4,550
	2	8,590	6,410	5,140
	3	9,605	7,155	5,735
	4	10,615	7,905	6,325
	5	11,630	8,650	6,915
	6	12,645	9,400	7,490
	7	13,660	10,145	8,100

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,770	6,545	5,250
	2	10,025	7,465	5,980
	3	11,275	8,390	6,710
	4	12,525	9,310	7,440
	5	13,780	10,230	8,170
	6	15,030	11,155	8,880
	7	16,280	12,075	9,630

AC13-80D & 114D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 28"	38"	48"
PITMAN, W. PIN & CRANKS ONLY		2,633	2,072	1,744
WEIGHTS-POSITION	1	5,614	4,269	3,483
	2	6,062	4,598	3,744
	3	6,509	4,928	4,005
	4	6,956	5,258	4,266
	5	7,406	5,589	4,528
	6	7,853	5,918	4,789
	7	8,300	6,248	5,050

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,837	5,170	4,196
	2	7,468	5,634	4,564
	3	8,098	6,099	4,932
	4	8,729	6,564	5,300
	5	9,363	7,031	5,670
	6	9,994	7,495	6,038
	7	10,624	7,960	6,406

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,059	6,070	4,909
	2	8,873	6,670	5,384
	3	9,687	7,270	5,859
	4	10,501	7,870	6,334
	5	11,320	8,473	6,811
	6	12,134	9,072	7,286
	7	12,947	9,672	7,761

ACD13-80D & 114D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 28"	38"	48"
PITMAN, W. PINS & CRANKS ONLY		2,660	2,095	1,770
WEIGHTS-POSITION	1	7,085	5,360	4,350
	2	7,955	6,000	4,860
	3	8,825	6,640	5,365
	4	9,695	7,285	5,875
	5	10,570	7,925	6,385
	6	11,440	8,565	6,890
	7	12,310	9,210	7,400

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	8,445	6,360	5,145
	2	9,585	7,205	5,810
	3	10,730	8,045	6,475
	4	11,870	8,885	7,140
	5	13,010	9,725	7,810
	6	14,150	10,565	8,475
	7	15,290	11,410	9,150

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	9,935	7,455	6,015
	2	11,370	8,515	6,850
	3	12,805	9,575	7,690
	4	14,240	10,630	8,525
	5	15,680	11,690	9,365
	6	17,110	12,750	10,200
	7	18,240	13,580	10,860

AC14-48- 80D
AC14-48-114D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 28"	38"	48"
PITMAN, W. PINS & CRANKS ONLY		2,660	2,095	1,770
WEIGHTS-POSITION	1	7,085	5,360	4,350
	2	7,955	6,000	4,860
	3	8,825	6,640	5,365
	4	9,695	7,285	5,875
	5	10,570	7,925	6,385
	6	11,440	8,565	6,890
	7	12,310	9,210	7,400

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	8,445	6,360	5,145
	2	9,585	7,205	5,810
	3	10,730	8,045	6,475
	4	11,870	8,885	7,140
	5	13,010	9,725	7,810
	6	14,150	10,565	8,475
	7	15,290	11,410	9,150

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	9,935	7,455	6,015
	2	11,370	8,515	6,850
	3	12,805	9,575	7,690
	4	14,240	10,630	8,525
	5	15,680	11,690	9,365
	6	17,110	12,750	10,200
	7	18,240	13,580	10,860

AC14-54-80D
AC14-54-114D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PINS & CRANKS ONLY		3,085	2,595	2,285
WEIGHTS-POSITION	1	6,680	5,370	4,545
	2	7,355	5,890	4,970
	3	8,035	6,415	5,400
	4	8,700	6,935	5,820
	5	9,375	7,455	6,245
	6	10,050	7,975	6,670
	7	10,725	8,495	7,095
	8	11,395	9,015	7,515
MASTER WEIGHTS & (1) SET INNER WEIGHTS				
WEIGHTS-POSITION	1	7,835	6,260	5,275
	2	8,715	6,945	5,830
	3	9,605	7,630	6,390
	4	10,480	8,310	6,940
	5	11,360	8,990	7,495
	6	12,245	9,670	8,050
	7	12,680	10,355	8,610
	8	14,010	11,035	9,165
MASTER WEIGHTS & (2) SETS INNER WEIGHTS				
WEIGHTS-POSITION	1	8,975	7,145	5,990
	2	10,065	7,985	6,675
	3	11,155	8,830	7,365
	4	12,240	9,665	8,045
	5	13,325	10,505	8,730
	6	14,410	11,345	9,415
	7	15,050	12,190	10,100
	8	16,590	13,030	10,785

AC14L-64-114D

WITH "D" TYPE WEIGHTS
LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

DESCRIPTION		40"	52"	64"
PITMAN, W. PIN & CRANKS ONLY		2,615	2,200	1,940
MASTER WEIGHTS ONLY				
WEIGHTS - POSITION	1	5,650	4,545	3,850
	2	6,220	4,985	4,205
	3	6,785	5,420	4,570
	4	7,354	5,860	4,925
	5	7,920	6,300	5,285
	6	8,490	6,740	5,635
	7	9,060	7,180	5,995
	8	9,630	7,620	6,355
MASTER WEIGHTS & (1) SET INNER WEIGHTS				
WEIGHTS - POSITION	1	6,625	5,295	4,465
	2	7,370	5,870	4,930
	3	8,115	6,445	5,405
	4	8,860	7,025	5,870
	5	9,605	7,600	6,335
	6	10,350	8,175	6,805
	7	13,145	8,750	7,275
	8	11,835	9,325	7,740
MASTER WEIGHTS & (2) SETS INNER WEIGHTS				
WEIGHTS - POSITION	1	7,585	6,035	5,070
	2	8,505	6,750	5,650
	3	9,420	7,460	6,225
	4	10,340	8,170	6,805
	5	11,260	8,880	7,380
	6	12,175	9,590	7,960
	7	13,095	10,300	8,549
	8	14,015	11,010	9,115

AC15-114D
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PIN & CRANKS ONLY		3,050	2,558	2,249
WEIGHTS-POSITION	1	5,383	4,361	3,718
	2	5,752	4,646	3,950
	3	6,120	4,930	4,182
	4	6,489	5,215	4,414
	5	6,857	5,500	4,646
	6	7,225	5,784	4,878
	7	7,594	6,069	5,110
	8	7,962	6,354	5,342

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,340	5,101	4,321
	2	6,860	5,502	4,648
	3	7,379	5,903	4,975
	4	7,899	6,304	5,302
	5	8,418	6,706	5,634
	6	8,937	7,107	5,956
	7	9,457	7,509	6,283
	8	9,976	7,910	6,610

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	7,297	5,840	4,923
	2	7,968	6,358	5,345
	3	8,637	6,875	5,767
	4	9,308	7,393	6,189
	5	9,978	7,912	6,611
	6	10,649	8,430	7,034
	7	11,320	8,948	7,456
	8	11,990	9,466	7,878

ACD15-114D
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PINS & CRANKS ONLY		3,085	2,595	2,285
WEIGHTS-POSITION	1	6,680	5,370	4,545
	2	7,355	5,890	4,970
	3	8,035	6,415	5,400
	4	8,700	6,935	5,820
	5	9,375	7,455	6,245
	6	10,050	7,975	6,670
	7	10,725	8,495	7,095
	8	11,395	9,015	7,515

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	7,835	6,260	5,275
	2	8,715	6,945	5,830
	3	9,605	7,630	6,390
	4	10,480	8,310	6,940
	5	11,360	8,990	7,495
	6	12,245	9,670	8,050
	7	12,680	10,355	8,610
	8	14,010	11,035	9,165

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,975	7,145	5,990
	2	10,065	7,985	6,675
	3	11,155	8,830	7,365
	4	12,240	9,665	8,045
	5	13,325	10,505	8,730
	6	14,410	11,345	9,415
	7	15,050	12,190	10,100
	8	16,590	13,030	10,785

ACD16-160D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PIN & CRANKS ONLY		3,100	2,605	2,300
WEIGHTS-POSITION	1	6,695	5,385	4,560
	2	7,365	5,905	4,985
	3	8,050	6,430	5,415
	4	8,715	6,945	5,835
	5	9,390	7,465	6,260
	6	10,060	7,985	6,680
	7	10,735	8,510	7,105
	8	11,410	9,030	7,530

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	7,850	6,275	5,290
	2	8,730	6,960	5,845
	3	9,620	7,645	6,405
	4	10,495	8,325	6,955
	5	11,375	9,005	7,510
	6	12,260	9,685	8,065
	7	13,145	10,370	8,620
	8	14,025	11,050	9,175

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,990	7,155	6,005
	2	10,075	8,000	6,690
	3	11,170	8,845	7,380
	4	12,250	9,680	8,060
	5	13,340	10,520	8,745
	6	14,425	11,360	9,430
	7	15,515	12,200	10,115
	8	16,605	13,045	10,800

AC17-54-114D
AC17-54-160D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PIN & CRANKS ONLY		3,100	2,605	2,300
WEIGHTS-POSITION	1	6,695	5,385	4,560
	2	7,365	5,905	4,985
	3	8,050	6,430	5,415
	4	8,715	6,945	5,835
	5	9,390	7,465	6,260
	6	10,060	7,985	6,680
	7	10,735	8,510	7,105
	8	11,410	9,030	7,530

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	7,850	6,275	5,290
	2	8,730	6,960	5,845
	3	9,620	7,645	6,405
	4	10,495	8,325	6,955
	5	11,375	9,005	7,510
	6	12,260	9,685	8,065
	7	13,145	10,370	8,620
	8	14,025	11,050	9,175

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,990	7,155	6,005
	2	10,075	8,000	6,690
	3	11,170	8,845	7,380
	4	12,250	9,680	8,060
	5	13,340	10,520	8,745
	6	14,425	11,360	9,430
	7	15,515	12,200	10,115
	8	16,605	13,045	10,800

ACG17-64-114D
ACG17-64-160D
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"
PITMANS, W. PINS & CRANKS ONLY		4,040	3,345	2,905	2,605
WEIGHTS-POSITION	1	8,930	7,120	5,985	5,200
	2	9,890	7,865	6,590	5,710
	3	10,855	8,610	7,195	6,225
	4	11,815	9,350	7,800	6,735
	5	12,780	10,095	8,405	7,245
	6	13,740	10,840	9,010	7,755
	7	14,705	11,585	9,620	8,270
	8	15,665	12,325	10,225	8,780
	9	16,625	13,070	10,830	9,290

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	10,540	8,365	7,000	6,055
	2	11,830	9,365	7,810	6,740
	3	13,120	10,360	8,620	7,425
	4	14,410	11,355	9,435	8,110
	5	15,700	12,355	10,245	8,800
	6	16,990	13,350	11,060	9,485
	7	18,280	14,345	11,870	10,170
	8	19,570	15,345	12,680	10,855
	9	20,860	16,340	13,495	11,540

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	12,125	9,590	7,995	6,700
	2	13,735	10,835	9,010	7,755
	3	15,350	12,085	10,025	8,610
	4	16,960	13,330	11,040	9,470
	5	18,575	14,575	12,055	10,325
	6	20,190	15,820	13,070	11,180
	7	21,800	17,335	14,085	12,040
	8	23,410	18,315	15,100	12,895
	9	25,025	19,560	16,115	13,750

ACG17L-74-114D
ACG17L-74-160D

LONG STROKE

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 39"	51"	62"	74"
PITMAN, W. PINS & CRANKS ONLY		3,463	2,861	2,482	2,221
WEIGHTS-POSITION	1	7,307	5,832	4,902	4,264
	2	7,931	6,314	5,295	4,595
	3	8,505	6,795	5,428	4,926
	4	9,125	7,277	6,080	5,257
	5	9,744	7,758	6,472	5,588
	6	10,364	8,240	6,865	5,920
	7	10,984	8,722	7,257	6,250
	8	11,604	9,204	7,650	6,582
	9	12,224	9,685	8,042	6,913

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	8,591	6,824	5,711	4,946
	2	9,423	7,467	6,234	5,388
	3	10,255	8,110	6,758	5,830
	4	11,087	8,752	7,282	6,271
	5	11,917	9,394	7,805	6,712
	6	12,749	10,037	8,329	7,154
	7	13,581	10,679	8,852	7,596
	8	14,413	11,322	9,377	8,038
	9	15,245	11,965	9,899	8,480

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	9,875	7,816	6,519	5,628
	2	10,915	8,620	7,173	6,180
	3	11,956	9,424	7,829	6,733
	4	12,995	10,226	8,483	7,285
	5	14,034	11,030	9,137	7,837
	6	15,074	11,833	9,793	8,390
	7	16,113	12,636	10,447	8,942
	8	17,154	13,440	11,102	9,494
	9	18,194	14,244	11,756	10,047

AC18-160D & 228D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"
PITMANS, W. PINS & CRANKS ONLY		4,004	3,308	2,869	2,568
WEIGHTS-POSITION	1	8,448	6,742	5,667	4,929
	2	9,169	7,299	6,121	5,312
	3	9,890	7,856	6,575	5,695
	4	10,611	8,413	7,029	6,078
	5	11,330	8,969	7,482	6,460
	6	12,051	9,526	7,936	6,843
	7	12,772	10,083	8,390	7,226
	8	13,493	10,640	8,844	7,609
	9	14,214	11,197	9,297	7,992

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	9,932	7,889	6,602	5,718
	2	10,894	8,632	7,207	6,229
	3	11,856	9,376	7,813	6,740
	4	12,817	10,118	8,418	7,250
	5	13,777	10,860	9,023	7,760
	6	14,739	11,603	9,629	8,271
	7	15,700	12,346	10,234	8,782
	8	16,662	13,089	10,840	9,293
	9	17,624	13,832	11,444	9,804

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	11,416	9,036	7,536	6,506
	2	12,619	9,965	8,293	7,145
	3	13,822	10,895	9,051	7,784
	4	15,023	11,822	9,807	8,422
	5	16,224	12,751	10,563	9,060
	6	17,427	13,680	11,321	9,699
	7	18,628	14,608	12,077	10,337
	8	19,831	15,537	12,835	10,976
	9	21,034	16,467	13,591	11,615

ACD18-160D & 228D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"
PITMANS, W. PINS & CRANKS ONLY		4,040	3,345	2,905	2,605
WEIGHTS-POSITION	1	8,930	7,120	5,985	5,200
	2	9,890	7,865	6,590	5,710
	3	10,855	8,610	7,195	6,225
	4	11,815	9,350	7,800	6,735
	5	12,780	10,095	8,405	7,245
	6	13,740	10,840	9,010	7,755
	7	14,705	11,585	9,620	8,270
	8	15,665	12,325	10,225	8,780
	9	16,625	13,070	10,830	9,290

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	10,540	8,365	7,000	6,055
	2	11,830	9,365	7,810	6,740
	3	13,120	10,360	8,620	7,425
	4	14,410	11,355	9,435	8,110
	5	15,700	12,355	10,245	8,800
	6	16,990	13,350	11,060	9,485
	7	18,280	14,345	11,870	10,170
	8	19,570	15,345	12,680	10,855
	9	20,860	16,340	13,495	11,540

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	12,125	9,590	7,995	6,700
	2	13,735	10,835	9,010	7,755
	3	15,350	12,085	10,025	8,610
	4	16,960	13,330	11,040	9,470
	5	18,575	14,575	12,055	10,325
	6	20,190	15,820	13,070	11,180
	7	21,800	17,335	14,085	12,040
	8	23,410	18,315	15,100	12,895
	9	25,025	19,560	16,115	13,750

AC20-64-160D
AC20-64-228D
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"
PITMANS, W. PINS & CRANKS ONLY		4,040	3,345	2,905	2,605
WEIGHTS-POSITION	1	8,930	7,120	5,985	5,200
	2	9,890	7,865	6,590	5,710
	3	10,855	8,610	7,195	6,225
	4	11,815	9,350	7,800	6,735
	5	12,780	10,095	8,405	7,245
	6	13,740	10,840	9,010	7,755
	7	14,705	11,585	9,620	8,270
	8	15,665	12,325	10,225	8,780
	9	16,625	13,070	10,830	9,290

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	10,540	8,365	7,000	6,055
	2	11,830	9,365	7,810	6,740
	3	13,120	10,360	8,620	7,425
	4	14,410	11,355	9,435	8,110
	5	15,700	12,355	10,245	8,800
	6	16,990	13,350	11,060	9,485
	7	18,280	14,345	11,870	10,170
	8	19,570	15,345	12,680	10,855
	9	20,860	16,340	13,495	11,540

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	12,125	9,590	7,995	6,700
	2	13,735	10,835	9,010	7,755
	3	15,350	12,085	10,025	8,610
	4	16,960	13,330	11,040	9,470
	5	18,575	14,575	12,055	10,325
	6	20,190	15,820	13,070	11,180
	7	21,800	17,335	14,085	12,040
	8	23,410	18,315	15,100	12,895
	9	25,025	19,560	16,115	13,750

AC20-74-160D
AC20-74-228D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		5,025	4,085	3,495	3,085	2,790
WEIGHTS-POSITION	1	11,795	9,315	7,755	6,685	5,900
	2	12,990	10,240	8,510	7,320	6,450
	3	14,185	11,165	9,260	7,955	7,000
	4	15,380	12,085	10,015	8,585	7,545
	5	16,555	13,010	10,765	9,225	8,095
	6	17,770	13,935	11,520	9,860	8,645
	7	18,965	14,860	12,270	10,495	9,195
	8	20,160	15,780	13,025	11,130	9,745
	9	21,355	16,705	13,775	11,765	10,295
	10	22,550	17,630	14,530	12,395	10,840
	11	23,350	18,245	15,030	12,820	11,210
MASTER WEIGHTS & (1) SET INNER WEIGHTS						
WEIGHTS-POSITION	1	13,765	10,840	8,995	7,730	6,805
	2	15,315	12,035	9,975	8,555	7,515
	3	16,865	13,235	10,950	9,375	8,230
	4	18,410	14,425	11,920	10,195	8,940
	5	19,940	15,625	12,895	11,020	9,650
	6	21,505	16,820	13,870	11,840	10,360
	7	23,055	18,015	14,845	12,665	11,075
	8	24,600	19,210	15,820	13,485	11,785
	9	26,150	20,410	16,795	14,310	12,495
	10	27,700	21,605	17,770	15,130	13,205
	11	28,730	22,400	18,420	15,680	13,680
MASTER WEIGHTS & (2) SETS INNER WEIGHTS						
WEIGHTS-POSITION	1	15,700	12,335	10,215	8,755	7,695
	2	17,595	13,800	11,410	9,765	8,565
	3	19,490	15,265	12,600	10,770	9,435
	4	21,385	16,725	13,790	11,775	10,305
	5	23,260	18,190	14,990	12,785	11,175
	6	25,175	19,655	16,180	13,790	12,045
	7	27,070	21,120	17,375	14,800	12,920
	8	28,965	22,580	18,565	15,805	13,790
	9	30,855	24,045	19,760	16,810	14,660
	10	32,750	25,510	20,950	17,815	15,530

AC21-160D & 228D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"	74"
HITMAN, W. PINS & CRANKS ONLY		4,928	3,988	3,397	2,990	2,693
WEIGHTS-POSITION	1	10,097	7,982	6,652	5,736	5,068
	2	10,811	8,534	7,101	6,115	5,396
	3	11,540	9,097	7,560	6,503	5,731
	4	12,256	9,651	8,011	6,883	6,060
	5	12,972	10,204	8,462	7,264	6,389
	6	13,699	10,766	8,920	7,650	6,723
	7	14,415	11,319	9,370	8,030	7,052
	8	15,138	11,877	9,825	8,414	7,384
	9	15,858	12,434	10,279	8,797	7,715
	10	16,579	12,991	10,733	9,179	8,046
	11	17,060	13,362	11,035	9,435	8,267

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	11,823	9,316	7,739	6,653	5,861
	2	12,777	10,053	8,339	7,159	6,299
	3	13,748	10,803	8,950	7,676	6,746
	4	14,704	11,542	9,552	8,183	7,185
	5	15,658	12,280	10,153	8,691	7,623
	6	16,629	13,030	10,765	9,207	8,069
	7	17,583	13,767	11,365	9,713	8,508
	8	18,548	14,512	11,972	10,226	8,951
	9	19,508	15,255	12,577	10,736	9,392
	10	20,471	15,998	13,683	11,247	9,834
	11	21,112	16,493	13,586	11,588	10,129

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	13,549	10,649	8,825	7,570	6,654
	2	14,742	11,571	9,576	8,203	7,202
	3	15,956	12,509	10,340	8,849	7,760
	4	17,151	13,433	11,093	9,483	8,309
	5	18,344	14,355	11,844	10,118	8,857
	6	19,558	15,293	12,609	10,763	9,415
	7	20,751	16,215	13,359	11,396	9,963
	8	21,957	17,146	14,118	12,037	10,517
	9	23,158	18,075	14,875	12,675	11,069

ACD21-160D & 228D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		4,965	4,025	3,430	3,025	2,730
WEIGHTS-POSITION	1	11,735	9,255	7,695	6,620	5,840
	2	12,930	10,180	8,450	7,255	6,390
	3	14,125	11,105	9,200	7,895	6,940
	4	15,320	12,025	9,950	8,525	7,485
	5	16,515	12,950	10,705	9,160	8,035
	6	17,710	13,875	11,460	9,795	8,585
	7	18,905	14,795	12,210	10,430	9,135
	8	20,100	15,720	12,965	11,065	9,685
	9	21,295	16,645	13,715	11,700	10,230
	10	22,490	17,565	14,470	12,335	10,780
	11	23,285	18,180	14,970	12,760	11,145

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION						
	1	13,705	10,775	8,935	7,670	6,745
	2	15,255	11,975	9,910	8,490	7,455
	3	16,805	13,170	10,885	9,315	8,170
	4	18,350	14,365	11,860	10,135	8,880
	5	19,900	15,565	12,835	10,960	9,590
	6	21,445	16,760	13,810	11,780	10,300
	7	23,990	17,955	14,785	12,605	11,010
	8	24,540	19,150	15,760	13,425	11,725
	9	26,090	20,350	16,735	14,250	12,435
	10	27,635	21,545	17,710	15,070	13,145
	11	28,670	22,340	18,360	15,620	13,620

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION						
	1	15,640	12,270	10,155	8,695	7,635
	2	17,535	13,735	11,350	9,705	8,505
	3	19,430	15,200	12,540	10,710	9,375
	4	21,320	16,665	13,730	11,715	10,245
	5	23,220	18,130	14,925	12,725	11,115
	6	25,115	19,595	16,120	13,730	11,985
	7	27,010	21,060	17,315	14,735	12,855
	8	28,900	22,520	18,505	15,745	13,725
	9	30,795	23,985	19,695	16,750	14,595
	10	32,690	25,450	20,890	17,755	15,470
	11	33,955	26,425	21,685	18,425	16,050

AC21-320D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		4,989	4,049	3,458	3,051	2,754
WEIGHTS-POSITION	1	11,101	8,772	7,306	6,298	5,562
	2	11,954	9,431	7,843	6,751	5,954
	3	12,805	10,088	8,379	7,203	6,345
	4	13,658	10,748	8,916	7,656	6,737
	5	14,511	11,407	9,453	8,110	7,129
	6	15,364	12,066	9,991	8,563	7,521
	7	16,215	12,724	10,526	9,015	7,912
	8	17,068	13,383	11,064	9,468	8,304
	9	17,922	14,042	11,601	9,921	8,696
	10	18,775	14,702	12,138	10,375	9,088

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	13,313	10,481	8,699	7,473	6,578
	2	14,474	11,378	9,474	8,090	7,112
	3	15,634	12,374	10,160	8,706	7,645
	4	16,795	13,172	10,891	9,322	8,178
	5	17,956	14,069	11,622	9,940	8,712
	6	19,118	14,967	12,354	10,557	9,246
	7	20,277	15,863	13,083	11,173	9,778
	8	21,439	16,760	13,816	11,790	10,312
	9	22,201	17,657	14,547	12,407	10,846
	10	23,763	18,556	15,278	13,025	11,380

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	15,524	12,189	10,091	8,648	7,594
	2	16,993	13,324	11,105	9,428	8,269
	3	18,462	14,459	11,941	10,208	8,944
	4	19,931	15,595	12,865	10,988	9,619
	5	21,400	16,730	13,790	11,770	10,294
	6	22,871	17,867	14,717	12,551	10,970
	7	24,338	19,001	15,640	13,330	11,644
	8	25,809	20,137	16,567	14,112	12,320
	9	27,279	21,272	17,492	14,892	12,995
	10	28,750	22,410	18,419	15,673	13,671

ACD21-320D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		5,025	4,085	3,495	3,085	2,790
WEIGHTS-POSITION	1	11,795	9,315	7,755	6,685	5,900
	2	12,990	10,240	8,510	7,320	6,450
	3	14,185	11,165	9,260	7,955	7,000
	4	15,380	12,085	10,015	8,585	7,545
	5	16,555	13,010	10,765	9,225	8,095
	6	17,770	13,935	11,520	9,860	8,645
	7	18,965	14,860	12,270	10,495	9,195
	8	20,160	15,780	13,025	11,130	9,745
	9	21,355	16,705	13,775	11,765	10,295
	10	22,550	17,630	14,530	12,395	10,840
	11	23,350	18,245	15,030	12,820	11,210

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	13,765	10,840	8,995	7,730	6,805
	2	15,315	12,035	9,975	8,555	7,515
	3	16,865	13,235	10,950	9,375	8,230
	4	18,410	14,425	11,920	10,195	8,940
	5	19,940	15,625	12,895	11,020	9,650
	6	21,505	16,820	13,870	11,840	10,360
	7	23,055	18,015	14,845	12,665	11,075
	8	24,600	19,210	15,820	13,485	11,785
	9	26,150	20,410	16,795	14,310	12,495
	10	27,700	21,605	17,770	15,130	13,205
	11	28,730	22,400	18,420	15,680	13,680

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	15,700	12,335	10,215	8,755	7,695
	2	17,595	13,800	11,410	9,765	8,565
	3	19,490	15,265	12,600	10,770	9,435
	4	21,385	16,725	13,790	11,775	10,305
	5	23,260	18,190	14,990	12,785	11,175
	6	25,175	19,655	16,180	13,790	12,045
	7	27,070	21,120	17,375	14,800	12,920
	8	28,965	22,580	18,565	15,805	13,790
	9	30,855	24,045	19,760	16,810	14,660
	10	32,750	25,510	20,950	17,815	15,530
	11	34,015	26,485	21,745	18,485	16,110

AC23-74-228D
AC23-74-320D

WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		5,025	4,085	3,495	3,085	2,790
WEIGHTS-POSITION	1	11,795	9,315	7,755	6,685	5,900
	2	12,990	10,240	8,510	7,320	6,450
	3	14,185	11,165	9,260	7,955	7,000
	4	15,380	12,085	10,015	8,585	7,545
	5	16,555	13,010	10,765	9,225	8,095
	6	17,770	13,935	11,520	9,860	8,645
	7	18,965	14,860	12,270	10,495	9,195
	8	20,160	15,780	13,025	11,130	9,745
	9	21,355	16,705	13,775	11,765	10,295
	10	22,550	17,630	14,530	12,395	10,840
	11	23,350	18,245	15,030	12,820	11,210
MASTER WEIGHTS & (1) SET INNER WEIGHTS						
WEIGHTS-POSITION	1	13,765	10,840	8,995	7,730	6,805
	2	15,315	12,035	9,975	8,555	7,515
	3	16,865	13,235	10,950	9,375	8,230
	4	18,410	14,425	11,920	10,195	8,940
	5	19,940	15,625	12,895	11,020	9,650
	6	21,505	16,820	13,870	11,840	10,360
	7	23,055	18,015	14,845	12,665	11,075
	8	24,600	19,210	15,820	13,485	11,785
	9	26,150	20,410	16,795	14,310	12,495
	10	27,700	21,605	17,770	15,130	13,205
	11	28,730	22,400	18,420	15,680	13,680
MASTER WEIGHTS & (2) SETS INNER WEIGHTS						
WEIGHTS-POSITION	1	15,700	12,335	10,215	8,755	7,695
	2	17,595	13,800	11,410	9,765	8,565
	3	19,490	15,265	12,600	10,770	9,435
	4	21,385	16,725	13,790	11,775	10,305
	5	23,260	18,190	14,990	12,785	11,175
	6	25,175	19,655	16,180	13,790	12,045
	7	27,070	21,120	17,375	14,800	12,920
	8	28,965	22,580	18,565	15,805	13,790
	9	30,855	24,045	19,760	16,810	14,660
	10	32,750	25,510	20,950	17,815	15,530
	11	34,015	26,485	21,745	18,485	16,110

ACG23-86-228D
ACG23-86-320D
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 51"	63"	75"	86"
PITMAN, W. PINS & CRANKS ONLY		4,495	4,000	3,640	3,365
WEIGHTS-POSITION	1	11,140	9,605	8,485	7,635
	2	12,045	10,370	9,145	8,215
	3	12,950	11,135	9,810	8,800
	4	13,855	11,900	10,470	9,380
	5	14,760	12,660	11,130	9,960
	6	15,665	13,425	11,790	10,545
	7	16,575	14,190	12,450	11,125
	8	17,480	14,955	13,115	11,710
	9	18,385	15,720	13,775	12,290
	10	19,290	16,485	14,435	12,875
	11	20,195	17,250	15,095	13,455

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	13,255	11,395	10,030	8,995
	2	14,450	12,400	10,905	9,765
	3	15,645	13,410	11,775	10,530
	4	16,840	14,415	12,645	11,300
	5	18,035	15,425	13,520	12,065
	6	19,230	16,430	14,390	12,835
	7	20,425	17,440	15,265	13,605
	8	21,620	18,450	16,135	14,370
	9	22,815	19,455	17,005	15,140
	10	24,010	20,465	17,880	15,905
	11	25,205	21,475	18,750	16,675

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	15,345	13,155	11,555	10,340
	2	16,825	14,405	12,635	11,290
	3	18,305	15,655	13,715	12,240
	4	19,785	16,900	14,795	13,190
	5	21,265	18,150	15,875	14,140
	6	22,740	19,395	16,955	15,095
	7	24,225	20,645	18,035	16,045
	8	25,705	21,895	19,115	16,995

AC25-228D & 320D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 44"	54"	64"	74"	84"
PITMAN, W. PINS & CRANKS ONLY		5,294	4,506	3,964	3,568	3,267
WEIGHTS-POSITION	1	11,115	9,249	7,966	7,029	6,316
	2	11,773	9,785	8,419	7,420	6,661
	3	12,432	10,322	8,871	7,812	7,006
	4	13,090	10,859	9,324	8,203	7,351
	5	13,749	11,395	9,777	8,595	7,696
	6	14,408	11,932	10,230	8,986	8,041
	7	15,066	12,469	10,683	9,378	8,386
	8	15,727	13,007	11,137	9,771	8,732
	9	16,385	13,543	11,590	10,162	9,077
	10	17,044	14,080	12,042	10,554	9,422
	11	17,703	14,617	12,495	10,946	9,767
MASTER WEIGHTS & (1) SET INNER WEIGHTS						
WEIGHTS-POSITION	1	13,221	10,965	9,414	8,281	7,419
	2	14,117	11,695	10,030	8,813	7,889
	3	15,014	12,426	10,646	9,347	8,359
	4	15,911	13,158	11,263	9,880	8,829
	5	16,808	13,888	11,881	10,414	9,299
	6	17,705	14,619	12,497	10,946	9,768
	7	18,602	15,350	13,114	11,480	10,238
	8	19,500	16,182	13,732	12,015	10,709
	9	20,398	16,813	14,349	12,548	11,179
	10	21,295	17,544	14,970	13,081	11,649
	11	22,192	18,275	15,582	13,615	12,119
MASTER WEIGHTS & (2) SETS INNER WEIGHTS						
WEIGHTS-POSITION	1	15,326	12,680	10,861	9,533	8,522
	2	16,460	13,604	11,641	10,206	9,116
	3	17,596	14,530	12,421	10,882	9,711
	4	18,731	15,456	13,202	11,557	10,306
	5	19,867	16,380	13,984	12,233	10,901
	6	21,002	17,305	14,763	12,906	11,495
	7	22,137	18,231	15,545	13,582	12,090
	8	23,275	19,157	16,327	14,259	12,686
	9	24,410	20,082	17,108	14,934	13,281
	10	25,545	21,007	17,887	15,608	13,875
	11	26,681	21,933	18,668	16,284	14,470

ACD25-228D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 44"	54"	64"	74"	84"
PITMAN, W. PINS & CRANKS ONLY		5,155	4,435	3,940	3,580	3,300
WEIGHTS-POSITION	1	13,310	11,075	9,545	8,425	7,570
	2	14,420	11,985	10,310	9,085	8,155
	3	15,535	12,890	11,075	9,745	8,735
	4	16,645	13,795	11,835	10,410	9,320
	5	17,755	14,700	12,600	11,070	9,900
	6	18,865	15,605	13,365	11,730	10,485
	7	19,980	16,510	14,130	12,390	11,065
	8	21,090	17,420	14,895	13,050	11,650
	9	22,200	18,325	15,660	13,710	12,230
	10	23,315	19,230	16,425	14,375	12,815
	11	24,425	20,135	17,185	15,035	13,395
MASTER WEIGHTS & (1) SET INNER WEIGHTS						
WEIGHTS-POSITION	1	15,910	13,195	11,330	9,970	8,935
	2	17,375	14,390	12,340	10,845	9,700
	3	18,840	15,585	13,350	11,715	10,470
	4	20,310	16,780	14,355	12,585	11,240
	5	21,775	17,975	15,365	13,460	12,005
	6	23,240	19,165	16,370	14,330	12,775
	7	24,705	20,365	17,380	15,200	13,540
	8	26,170	21,560	18,390	16,075	14,310
	9	27,640	22,755	19,395	16,945	15,080
	10	29,105	23,950	20,400	17,815	15,845
	11	30,570	25,140	21,410	18,690	16,615
MASTER WEIGHTS & (2) SETS INNER WEIGHTS						
WEIGHTS-POSITION	1	18,475	15,285	13,095	11,495	10,275
	2	20,290	16,765	14,345	12,575	11,230
	3	22,105	18,245	15,590	13,655	12,180
	4	23,920	19,725	16,840	14,735	13,130
	5	25,735	21,200	18,085	15,815	14,080
	6	27,550	22,680	19,335	16,895	15,030
	7	29,370	24,160	20,585	17,975	15,985
	8	31,185	25,640	21,835	19,055	16,935
	9	33,000	27,120	23,080	20,130	17,885
	10	34,815	28,600	24,330	21,215	18,840
	11	36,630	30,080	25,580	22,295	19,790

ACD25-320D UNITS
WITH "D" TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 44"	54"	64"	74"	84"
PITMAN, W. PINS & CRANKS ONLY		5,220	4,495	4,000	3,640	3,365
WEIGHTS-POSITION	1	13,370	11,140	9,605	8,485	7,635
	2	14,480	12,045	10,370	9,145	8,215
	3	15,595	12,950	11,135	9,810	8,800
	4	16,705	13,855	11,900	10,470	9,380
	5	17,815	14,760	12,660	11,130	9,960
	6	18,925	15,665	13,425	11,790	10,545
	7	20,040	16,575	14,190	12,450	11,125
	8	21,150	17,480	14,955	13,115	11,710
	9	22,260	18,385	15,720	13,775	12,290
	10	23,375	19,290	16,485	14,435	12,875
	11	24,485	20,195	17,250	15,095	13,455

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	15,970	13,255	11,395	10,030	8,995
	2	17,435	14,450	12,400	10,905	9,765
	3	18,900	15,645	13,410	11,775	10,530
	4	20,370	16,840	14,415	12,645	11,300
	5	21,835	18,035	15,425	13,520	12,065
	6	23,300	19,230	16,430	14,390	12,835
	7	24,765	20,425	17,440	15,265	13,605
	8	26,235	21,620	18,450	16,135	14,370
	9	27,700	22,815	19,455	17,005	15,140
	10	29,165	24,010	20,465	17,880	15,905
	11	30,630	25,205	21,475	18,750	16,675

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	18,535	15,345	13,155	11,555	10,340
	2	20,350	16,825	14,405	12,635	11,290
	3	22,165	18,305	15,655	13,715	12,240
	4	23,980	19,785	16,900	14,795	13,190
	5	25,795	21,265	18,150	15,875	14,140
	6	27,610	22,740	19,395	16,955	15,095
	7	29,430	24,225	20,645	18,035	16,045
	8	31,245	25,705	21,895	19,115	16,995
	9	33,060	27,180	23,145	20,195	17,945
	10	34,875	28,665	24,390	21,275	18,900
	11	36,695	30,140	25,640	22,355	19,850

B3-16-6.4D
B3-16- 10D UNITS

COUNTERBALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTER WEIGHTS	EFFECTIVE COUNTERBALANCE OF EACH SET	TOTAL EFFECTIVE COUNTERBALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		82
1	190	388	470
2	380	369	839
3	570	350	1189
4	760	331	1520
5	950	313	1833
6	1140	294	2127

COUNTERBALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	8"	12"	16"
2-IT312 CRANK WEIGHTS	543	411	338

B3L-24-6.4D STROKES
B3L-24-10 D
Long Stroke

COUNTERBALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTER WEIGHTS	EFFECTIVE COUNTERBALANCE OF EACH SET	TOTAL EFFECTIVE COUNTERBALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		55
1	250	260	315
2.	500	247	562
3	750	234	796
4	1000	222	1018
5	1250	210	1228
6	1500	197	1425

COUNTERBALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	12"	16"	24"
2 - IT312 CRANK WEIGHTS	362	274	225

B4-20-10D
B4-20-16D

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		130
1	190	426	556
2	380	410	966
3	570	394	1360
4	760	378	1738
5	950	362	2100
6	1140	346	2446

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	12"	16"	20"
2 - IT312 CRANK WEIGHTS	571	407	313

B4L-30-10D UNITS
B4L-30-16D UNITS
LONG STROKE

COUNTERBALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTER WEIGHTS	EFFECTIVE COUNTERBALANCE OF EACH SET	TOTAL EFFECTIVE COUNTERBALANCE
0	Wt. of Beam, Evener, Pitman, etc.		85
1	190	286	371
2	380	275	646
3	570	264	910
4	760	254	1164
5	950	243	1407
6	1140	232	1639

COUNTERBALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	18"	24"	30"
2 - IT312 CRANK WEIGHTS	381	271	210

B5-25-16D
B5-25-25D

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		282
1	250	475	757
2	500	460	1217
3	750	440	1657
4	1000	425	2082
5	1250	405	2487
6	1500	390	2877
7	1750	370	3247
8	2000	355	3602
9	2250	335	3937
10	2500	320	4257

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	20"	25"
2 - IT312 CRANK WEIGHTS	456	365

B5L-30-16D
B5L-30-25D

LONG STROKE

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTER WEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		235
1	250	396	631
2	500	383	1014
3	750	367	1381
4	1000	354	1735
5	1250	337	2072
6	1500	325	2397
7	1750	308	2705
8	2000	296	3001
9	2250	279	3280
10	2500	267	3547

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	24"	30"
2-IT312 CRANK WEIGHTS	380	305

B7-30-25D
B7-30-40D

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		400
1	250	535	935
2	500	520	1455
3	750	510	1965
4	1000	495	2460
5	1250	480	2940
6	1500	465	3405
7	1750	450	3855
8	2000	440	4295
9	2250	425	4720
10	2500	410	5130
11	2750	395	5525
12	3000	385	5910

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	18"	24"	30"
2 - IT812 CRANK WEIGHTS	1390	1040	835

B7L-36-25D
B7L-36-40D

LONG STROKE

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		350
1	250	440	790
2	500	435	1225
3	750	425	1650
4	1000	410	2060
5	1250	400	2460
6	1500	385	2845
7	1750	375	3220
8	2000	360	3580
9	2250	355	3935
10	2500	340	4275
11	2750	330	4605
12	3000	315	4920

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	22"	29"	36"
2 - IT812 CRANK WEIGHTS	1158	866	696

B8-36-40D UNITS

COUNTERBALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTER WEIGHTS	EFFECTIVE COUNTERBALANCE OF EACH SET	TOTAL EFFECTIVE COUNTERBALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		645
1	250	520	1165
2	500	508	1673
3	750	495	2168
4	1000	483	2651
5	1250	471	3122
6	1500	459	3581
7	1750	447	4028
8	2000	435	4463
9	2250	422	4885
10	2500	410	5295
11	2750	398	5693
12	3000	386	6079

COUNTERBALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	20"	28"	36"
2-IT1112 CRANK WEIGHTS	2125	1520	1180

B8L-42-40D

LONG STROKE

COUNTERBALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTER WEIGHTS	EFFECTIVE COUNTERBALANCE OF EACH SET	TOTAL EFFECTIVE COUNTERBALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		553
1	250	447	1000
2	500	435	1435
3	750	424	1859
4	1000	414	2273
5	1250	404	2677
6	1500	393	3070
7	1750	383	3453
8	2000	373	3826
9	2250	362	4188
10	2500	351	4539
11	2750	341	4880
12	3000	331	5211

COUNTERBALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	23"	33"	42"
2-IT1112 CRANK WEIGHTS	1820	1300	1010

B10-36-40D
B10-36-57D

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		745
1	320	665	1410
2	640	645	2060
3	960	630	2685
4	1280	610	3295
5	1600	590	3890
6	1920	575	4460
7	2240	555	5015
8	2560	535	5550
9	2880	515	6070
10	3200	500	6565

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	20"	28"	36"
2 - IT1112 CRANK WEIGHTS	2125	1520	1180

B10L-42-40D
B10L-42-57D

LONG STROKE

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		640
1	320	570	1210
2	640	555	1760
3	960	540	2300
4	1280	525	2820
5	1600	505	3325
6	1920	495	3815
7	2240	475	4290
8	2560	460	4750
9	2880	440	5190
10	3200	425	5620

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	23"	33"	42"
2 - IT1112 CRANK WEIGHTS	1820	1300	1010

B12-42-57D
B12-42-80D

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		790
1	320	615	1405
2	640	600	2005
3	960	585	2590
4	1280	570	3160
5	1600	550	3710
6	1920	535	4245
7	2240	520	4770
8	2560	505	5275
9	2880	490	5760
10	3200	475	6235
11	3520	455	6690
12	3840	440	7135

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	26"	34"	42"
2 - IT1112 CRANK WEIGHTS	1910	1460	1180

B12L-48-57D
B12L-48-80D

LONG STROKE

COUNTER-BALANCE EFFECT OF BEAM WEIGHTS

SETS OF WEIGHTS	TOTAL WEIGHT OF COUNTERWEIGHTS	EFFECTIVE COUNTER-BALANCE OF EACH SET	TOTAL EFFECTIVE COUNTER-BALANCE
0	Wt. of Beam, Pitman, Evener, Cranks		605
1	320	540	1145
2	640	525	1670
3	960	510	2180
4	1280	495	2675
5	1600	485	3160
6	1920	470	3630
7	2240	455	4085
8	2560	440	4525
9	2880	430	4955
10	3200	415	5370
11	3520	400	5770
12	3840	385	6155

COUNTER-BALANCE EFFECT OF CRANK WEIGHTS

LENGTH OF STROKE	30"	39"	48"
2 - IT1112 CRANK WEIGHTS	1670	1275	1035

AC9-40D & 57D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT-COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 20"	28"	36"
PITMAN, W. PINS, BEAM & CRANK ONLY		2,015	1,570	1,320
WEIGHTS-POSITION	1	5,160	3,815	3,070
	2	5,700	4,205	3,370
	3	6,240	4,585	3,665
	4	6,780	4,970	3,965
	5	7,320	5,355	4,265

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,290	4,625	3,695
	2	7,025	5,150	4,105
	3	7,760	5,670	4,510
	4	8,490	6,195	4,915
	5	9,225	6,720	5,325

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	7,375	5,400	4,300
	2	8,300	6,060	4,810
	3	9,125	6,710	5,320
	4	10,135	7,370	5,830
	5	11,055	8,025	6,340

AC10-36-40D
AC10-36-57D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT-COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES		
		20"	28"	36"
PITMAN, W. PINS, BEAM & CRANK ONLY		2,015	1,570	1,320
WEIGHTS-POSITION	1	5,160	3,815	3,070
	2	5,700	4,205	3,370
	3	6,240	4,585	3,665
	4	6,780	4,970	3,965
	5	7,320	5,355	4,265

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,290	4,625	3,695
	2	7,025	5,150	4,105
	3	7,760	5,670	4,510
	4	8,490	6,195	4,915
	5	9,225	6,720	5,325

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1,	7,375	5,400	4,300
	2	8,300	6,060	4,810
	3	9,125	6,710	5,320
	4	10,135	7,370	5,830
	5	11,055	8,025	6,340

AC10L-42-40D
AC10L-42-57D

WITH STANDARD TYPE WEIGHTS

LONG STROKE
CRANK WEIGHT-COUNTER-BALANCE EFFECT

DESCRIPTION		STROKES 23"	33"	42"
PITMAN, W. PINS, BEAM & CRANK ONLY		1,725	1,345	1,130
MASTER WEIGHTS ONLY				
WEIGHTS-POSITION	1	4,420	3,270	2,630
	2	4,485	3,605	2,890
	3	5,350	3,930	3,140
	4	5,810	4,260	3,400
	5	6,270	4,590	3,655
MASTER WEIGHTS AND (1) SET INNER WEIGHTS				
WEIGHTS-POSITION	1	5,390	3,965	3,165
	2	6,020	4,415	3,520
	3	6,650	4,860	3,865
	4	7,275	5,310	4,210
	5	7,905	5,760	4,560
MASTER WEIGHTS AND (2) SETS INNER WEIGHTS				
WEIGHTS-POSITION	1	6,320	4,630	3,685
	2	7,120	5,195	4,120
	3	7,820	5,750	4,560
	4	8,685	6,315	4,995
	5	9,475	6,875	5,430

AC12-42-57D
AC12-42-80D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 26"	34"	42"
PITMAN, W.PIN & CRANKS ONLY		1,689	1,388	1,201
WEIGHTS - POSITION	1	3,973	3,135	2,615
	2	4,388	3,452	2,872
	3	4,802	3,768	3,128
	4	5,220	4,088	3,387
	5	5,635	4,406	3,644
	6	6,051	4,723	3,901

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS - POSITION	1	4,775	3,748	3,111
	2	5,336	4,177	3,459
	3	5,895	4,604	3,805
	4	6,460	5,036	4,154
	5	7,020	5,465	4,502
	6	7,582	5,894	4,849

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS - POSITION	1	5,577	4,362	3,608
	2	6,284	4,902	4,046
	3	6,989	5,441	4,482
	4	7,700	5,984	4,922
	5	8,405	6,525	5,359
	6	9,114	7,065	5,797

AC12-48-57D
AC12-48-80D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 28"	38"	48"
PITMAN, W. PIN & CRANKS ONLY		2,633	2,072	1,744
WEIGHTS-POSITION	1	5,614	4,269	3,483
	2	6,062	4,598	3,744
	3	6,509	4,928	4,005
	4	6,956	5,258	4,266
	5	7,406	5,589	4,528
	6	7,853	5,918	4,789
	7	8,300	6,248	5,050

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,837	5,170	4,196
	2	7,468	5,634	4,564
	3	8,098	6,099	4,932
	4	8,729	6,564	5,300
	5	9,363	7,031	5,670
	6	9,994	7,495	6,038
	7	10,624	7,960	6,406

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,059	6,070	4,909
	2	8,873	6,670	5,384
	3	9,687	7,270	5,859
	4	10,501	7,870	6,334
	5	11,320	8,473	6,811
	6	12,134	9,072	7,286
	7	12,947	9,672	7,761

AC12L-54-114D UNITS
WITH STANDARD TYPE WEIGHTS
LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 32"	43"	54"
PITMAN, W. PIN & CRANKS ONLY		2,340	1,842	1,550
WEIGHTS-POSITION	1	4,990	3,795	3,096
	2	5,388	4,087	3,328
	3	5,786	4,380	3,560
	4	6,183	4,674	3,792
	5	6,583	4,968	4,025
	6	6,980	5,260	4,257
	7	7,378	5,554	4,489

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,077	4,596	3,730
	2	6,638	5,008	4,057
	3	7,198	5,421	4,384
	4	7,759	5,835	4,711
	5	8,323	6,250	5,040
	6	8,884	6,662	5,367
	7	9,444	7,076	5,694

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	7,164	5,396	4,364
	2	7,887	5,929	4,786
	3	8,611	6,462	5,208
	4	9,334	6,996	5,630
	5	10,062	7,532	6,054
	6	10,786	8,064	6,477
	7	11,509	8,597	6,900

AC14-48- 80D
AC14-48-114D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 28"	38"	48"
PITMAN, W. PIN & CRANKS ONLY		2,633	2,072	1,744
WEIGHTS-POSITION	1	5,614	4,269	3,483
	2	6,062	4,598	3,744
	3	6,509	4,928	4,005
	4	6,956	5,258	4,266
	5	7,406	5,589	4,528
	6	7,853	5,918	4,789
	7	8,300	6,248	5,050

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6,837	5,170	4,196
	2	7,468	5,634	4,564
	3	8,098	6,099	4,932
	4	8,729	6,564	5,300
	5	9,363	7,031	5,670
	6	9,994	7,495	6,038
	7	10,624	7,960	6,406

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	8,059	6,070	4,909
	2	8,873	6,670	5,384
	3	9,687	7,270	5,859
	4	10,501	7,870	6,334
	5	11,320	8,473	6,811
	6	12,134	9,072	7,286
	7	12,947	9,672	7,761

AC14-54-80D
AC14-54-114D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PIN & CRANKS ONLY		3, 050	2, 558	2, 249
WEIGHTS-POSITION	1	5, 383	4, 361	3, 718
	2	5, 752	4, 646	3, 950
	3	6, 120	4, 930	4, 182
	4	6, 489	5, 215	4, 414
	5	6, 857	5, 500	4, 646
	6	7, 225	5, 784	4, 878
	7	7, 594	6, 069	5, 110
	8	7, 962	6, 354	5, 342

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	6, 340	5, 101	4, 321
	2	6, 860	5, 502	4, 648
	3	7, 379	5, 903	4, 975
	4	7, 899	6, 304	5, 302
	5	8, 418	6, 706	5, 634
	6	8, 937	7, 107	5, 956
	7	9, 457	7, 509	6, 283
	8	9, 976	7, 910	6, 610

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	7, 297	5, 840	4, 923
	2	7, 968	6, 358	5, 345
	3	8, 637	6, 875	5, 767
	4	9, 308	7, 393	6, 189
	5	9, 978	7, 913	6, 611

AC14L-64-114D
WITH STANDARD TYPE WEIGHTS

LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHT ONLY

DESCRIPTION		STROKES 40"	52"	64"
PITMAN, W. PINS & CRANKS ONLY		3,420	2,227	1,966
WEIGHTS - POSITION	1	4,634	3,762	3,215
	2	4,946	4,001	3,411
	3	5,258	4,245	3,608
	4	5,570	4,489	3,805
	5	5,882	4,728	4,001
	6	6,199	4,972	4,198
	7	6,511	5,211	4,395
	8	6,823	5,455	4,591

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS - POSITION	1	5,463	4,403	3,736
	2	5,912	4,750	4,019
	3	6,353	5,092	4,296
	4	6,797	5,434	4,579
	5	7,182	5,776	4,856
	6	7,686	6,122	5,139
	7	8,131	6,438	5,416
	8	8,576	6,810	5,694

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS - POSITION	1	6,267	5,027	4,245
	2	6,844	5,468	4,604
	3	7,409	5,908	4,963
	4	7,986	6,348	5,322
	5	8,554	6,793	5,681
	6	9,127	7,233	6,045
	7	9,696	7,674	6,400
	8	10,269	8,118	6,763

AC16-160D UNITS
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PINS & CRANKS ONLY		4,000	2,605	2,300
WEIGHTS - POSITION	1	5,420	4,400	3,760
	2	5,785	4,680	3,990
	3	6,150	4,965	4,220
	4	6,515	5,250	4,450
	5	6,880	5,530	4,680
	6	7,250	5,815	4,910
	7	7,615	6,095	5,140
	8	7,980	6,380	5,370

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS - POSITION	1	6,390	5,150	4,370
	2	6,915	5,555	4,700
	3	7,430	5,955	5,025
	4	7,950	6,355	5,355
	5	8,400	6,755	5,680
	6	8,990	7,160	6,010
	7	9,510	7,560	6,335
	8	10,030	7,965	6,660

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS - POSITION	I	7,330	5,880	4,965
	2	8,005	6,395	5,385
	3	8,665	6,910	5,805
	4	9,340	7,425	6,225
	5	10,005	7,945	6,645
	6	10,675	8,460	7,070
	7	11,340	8,975	7,485
	8	12,010	9,495	7,910

AC17-54-114D
AC17-54-160D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 34"	44"	54"
PITMAN, W. PINS & CRANKS ONLY		4,000	2,605	2,300
WEIGHTS - POSITION	1	5,420	4,400	3,760
	2	5,785	4,680	3,990
	3	6,150	4,965	4,220
	4	6,515	5,250	4,450
	5	6,880	5,530	4,680
	6	7,250	5,815	4,910
	7	7,615	6,095	5,140
	8	7,980	6,380	5,370

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS - POSITION	1	6,390	5,150	4,370
	2	6,915	5,555	4,700
	3	7,430	5,955	5,025
	4	7,950	6,355	5,355
	5	8,400	6,755	5,680
	6	8,990	7,160	6,010
	7	9,510	7,560	6,335
	8	10,030	7,965	6,660

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS - POSITION	1	7,330	5,880	4,965
	2	8,005	6,395	5,385
	3	8,665	6,910	5,805
	4	9,340	7,425	6,225
	5	10,005	7,945	6,645
	6	10,675	8,460	7,070
	7	11,340	8,975	7,485
	8	12,010	9,495	7,910

ACG17-64-114D
ACG17-64-160D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES			
		34"	44"	54"	64"
PITMANS, W. PINS & CRANKS ONLY		4,004	3,308	2,869	2,568
WEIGHTS-POSITION	1	8,448	6,742	5,667	4,929
	2	9,169	7,299	6,121	5,312
	3	9,890	7,856	6,575	5,695
	4	10,611	8,413	7,029	6,078
	5	11,330	8,969	7,482	6,460
	6	12,051	9,526	7,936	6,843
	7	12,772	10,083	8,390	7,226
	8	13,493	10,640	8,844	7,609
	9	14,214	11,197	9,297	7,992

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	9,932	7,889	6,602	5,718
	2	10,894	8,632	7,207	6,229
	3	11,856	9,376	7,813	6,740
	4	12,817	10,118	8,418	7,250
	5	13,777	10,860	9,023	7,760
	6	14,739	11,603	9,629	8,271
	7	15,700	12,346	10,234	8,782
	8	16,662	13,089	10,840	9,293
	9	17,624	13,832	11,444	9,804

MASTER WEIGHTS & (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	11,416	9,036	7,536	6,506
	2	12,619	9,965	8,293	7,145
	3	13,822	10.895	9,051	7,784
	4	15,023	11,822	9,807	8,422
	5	16,224	12,751	10,563	9,060
	6	17,427	13,680	11,321	9,699
	7	18,628	14,608	12,077	10,337
	8	19,831	15,537	12,835	10,976

ACG17L-74-114D
ACG17L-74-160D
WITH "D" TYPE WEIGHTS
LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

DESCRIPTION		STROKES 39"	51"	62"	74"
PITMAN, W. PINS & CRANKS ONLY		3,495	2,895	2,515	2,255
	MASTER WEIGHTS ONLY				
WEIGHTS-POSITION	1	7,725	6,160	5,175	4,500
	2	8,555	6,805	5,700	4,940
	3	9,390	7,445	6,225	5,385
	4	10,220	8,090	6,745	5,825
	5	11,055	8,730	7,270	6,270
	6	11,885	9,375	7,795	6,710
	7	12,715	10,020	8,320	7,150
	8	13,550	10,660	8,845	7,595
	9	14,380	11,305	9,370	8,035
	MASTER WEIGHTS & (1) SET INNER WEIGHTS				
WEIGHTS-POSITION	1	9,120	7,235	6,055	5,240
	2	10,235	8,095	6,755	5,835
	3	11,350	8,960	7,460	6,425
	4	12,470	9,820	8,160	7,020
	5	13,585	10,685	8,865	7,610
	6	14,700	11,545	9,565	8,205
	7	15,815	12,410	10,265	8,800
	8	16,930	13,270	10,970	9,390
	9	18,045	14,135	11,675	9,985
	MASTER WEIGHTS & (2) SETS INNER WEIGHTS				
WEIGHTS-POSITION	1	10,490	8,295	6,915	5,795
	2	11,885	9,375	7,795	6,560
	3	13,280	10,450	8,670	7,320
	4	14,675	11,530	9,550	8,080
	5	16,070	12,600	10,430	8,845
	6	17,465	13,685	11,305	9,605
	7	18,860	14,765	12,185	10,370
	8	20,255	15,840	13,060	11,130
	9	21,650	16,920	13,940	11,895

AC20-64-160D
AC20-64-228D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES			
		34"	44"	54"	64"
PITMANS, W. PINS & CRANKS ONLY		4,004	3,308	2,869	2,568
WEIGHTS-POSITION	1	8,448	6,742	5,667	4,929
	2	9,169	7,299	6,121	5,312
	3	9,890	7,856	6,575	5,695
	4	10,611	8,413	7,029	6,078
	5	11,330	8,969	7,482	6,460
	6	12,051	9,526	7,936	6,843
	7	12,772	10,083	8,390	7,226
	8	13,493	10,640	8,844	7,609
	9	14,214	11,197	9,297	7,992
MASTER WEIGHTS & (1) SET INNER WEIGHTS					
WEIGHTS-POSITION	1	9,932	7,889	6,602	5,718
	2	10,894	8,632	7,207	6,229
	3	11,856	9,376	7,813	6,740
	4	12,817	10,118	8,418	7,250
	5	13,777	10,860	9,023	7,760
	6	14,739	11,603	9,629	8,271
	7	15,700	12,346	10,234	8,782
	8	16,662	13,089	10,840	9,293
	9	17,624	13,832	11,444	9,804
MASTER WEIGHTS & (2) SETS INNER WEIGHTS					
WEIGHTS-POSITION	1	11,416	9,036	7,536	6,506
	2	12,619	9,965	8,293	7,145
	3	13,822	10.895	9,051	7,784
	4	15,023	11,822	9,807	8,422
	5	16,224	12,751	10,563	9,060
	6	17,427	13,680	11,321	9,699
	7	18,628	14,608	12,077	10,337
	8	19,831	15,537	12,835	10,976
	9	21,034	16,467	13,591	11,615

AC20-74-160D
AC20-74-228D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES				
		34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		4,989	4,049	3,458	3,051	2,754
	1	11,101	8,772	7,306	6,298	5,562
	2	11,954	9,431	7,843	6,751	5,954
	3	12,805	10,088	8,379	7,203	6,345
	4	13,658	10,748	8,916	7,656	6,737
	5	14,511	11,407	9,453	8,110	7,129
	6	15,364	12,066	9,991	8,563	7,521
	7	16,215	12,724	10,526	9,015	7,912
	8	17,068	13,383	11,064	9,468	8,304
	9	17,922	14,042	11,601	9,921	8,696
	10	18,775	14,702	12,138	10,375	9,088
MASTER WEIGHTS & (1) SET INNER WEIGHTS						
WEIGHTS-POSITION	1	13,313	10,481	8,699	7,473	6,578
	2	14,474	11,378	9,474	8,090	7,112
	3	15,634	12,374	10,160	8,706	7,645
	4	16,795	13 172	10,891	9,322	8,178
	5	17,956	14,069	11,622	9,940	8,712
	6	19,118	14,967	12,354	10,557	9,246
	7	20,277	15,863	13,083	11,173	9,778
	8	21,439	16,760	13,816	11,790	10,312
	9	22,201	17,657	14,547	12,407	10,846
	10	23,763	18,556	15,278	13,025	11,380
MASTER WEIGHTS AND (2) SETS INNER WEIGHTS						
WEIGHTS-POSITION	1	15,524	12,189	10,091	8,648	7,594
	2	16,993	13,324	11,105	9,428	8,269
	3	18,462	14,459	11,941	10,208	8,944
	4	19,931	15,595	12,865	10,988	9,619
	5	21,400	16,730	13,790	11,770	10,294
	6	22,871	17,867	14,717	12,551	10,970
	7	24,338	19,001	15,640	13,330	11,644

AC23-74-228D
AC23-74-320D

WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES				
		34"	44"	54"	64"	74"
PITMAN, W. PINS & CRANKS ONLY		4,989	4,049	3,458	3,051	2,754
	1	11,101	8,772	7,306	6,298	5,562
	2	11,954	9,431	7,843	6,751	5,954
	3	12,805	10,088	8,379	7,203	6,345
	4	13,658	10,748	8,916	7,656	6,737
	5	14,511	11,407	9,453	8,110	7,129
	6	15,364	12,066	9,991	8,563	7,521
	7	16,215	12,724	10,526	9,015	7,912
	8	17,068	13,383	11,064	9,468	8,304
	9	17,922	14,042	11,601	9,921	8,696
	10	18,775	14,702	12,138	10,375	9,088

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION						
	1	13,313	10,481	8,699	7,473	6,578
	2	14,474	11,378	9,474	8,090	7,112
	3	15,634	12,374	10,160	8,706	7,645
	4	16,795	13 172	10,891	9,322	8,178
	5	17,956	14,069	11,622	9,940	8,712
	6	19,118	14,967	12,354	10,557	9,246
	7	20,277	15,863	13,083	11,173	9,778
	8	21,439	16,760	13,816	11,790	10,312
	9	22,201	17,657	14,547	12,407	10,846
	10	23,763	18,556	15,278	13,025	11,380

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION						
	1	15,524	12,189	10,091	8,648	7,594
	2	16,993	13,324	11,105	9,428	8,269
	3	18,462	14,459	11,941	10,208	8,944
	4	19,931	15,595	12,865	10,988	9,619
	5	21,400	16,730	13,790	11,770	10,294
	6	22,871	17,867	14,717	12,551	10,970
	7	24,338	19,001	15,640	13,330	11,644
	8	25,809	20,137	16,567	14,112	12,320

ACG23-86-228D
ACG23-86-320D
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES 51"	63"	75"	86"
PITMAN, W. PINS & CRANKS ONLY		4, 506	3, 964	3, 568	3, 267
WEIGHTS-POSITION	1	9, 249	7, 966	7, 029	6, 316
	2	9, 785	8, 419	7, 420	6, 661
	3	10, 322	8, 871	7, 812	7, 006
	4	10, 859	9, 324	8, 203	7, 351
	5	11, 395	9, 777	8, 595	7, 696
	6	11, 932	10, 230	8, 986	8, 041
	7	12, 469	10, 683	9, 378	8, 386
	8	13, 007	11, 137	9, 771	8, 732
	9	13, 543	11, 590	10, 162	9, 077
	10	14, 080	12, 042	10, 554	9, 422
	11	14, 617	12, 495	10, 946	9, 767

MASTER WEIGHTS AND (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	10, 965	9, 414	8, 281	7, 419
	2	11, 695	10, 030	8, 813	7, 889
	3	12, 426	10, 646	9, 347	8, 359
	4	13, 158	11, 263	9, 880	8, 829
	5	13, 888	11, 881	10, 414	9, 299
	6	14, 619	12, 497	10, 946	9, 768
	7	15, 350	13, 114	11, 480	10, 238
	8	16, 182	13, 732	12, 015	10, 709
	9	16, 813	14, 349	12, 548	11, 179
	10	17, 544	14, 970	13, 081	11, 649
	11	18, 275	15, 582	13, 615	12, 119

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	12, 680	10, 861	9, 533	8, 522
	2	13, 604	11, 641	10, 206	9, 116
	3	14, 530	12, 421	10, 882	9, 711
	4	15, 456	13, 202	11, 557	10, 306
	5	16, 380	13, 984	12, 233	10, 901
	6	17, 305	14, 763	12, 906	11, 495
	7	18, 231	15, 545	13, 582	12, 090
	8	19, 157	16, 327	14, 259	12, 686

AC33-120-456D
WITH STANDARD TYPE WEIGHTS

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES				
		67"	80"	93"	107"	120"
PITMAN, W. PINS & CRANKS ONLY		6,055	5,205	4,600	4,125	3,790
WEIGHTS-POSITION	1	17,670	14,890	12,900	11,390	10,250
	2	18,850	15,870	13,740	12,120	10,900
	3	20,030	16,850	14,580	12,860	11,560
	4	21,210	17,840	15,430	13,600	12,210
	5	22,400	18,820	16,270	14,340	12,870
	6	23,580	19,810	17,115	15,080	13,530
	7	24,760	20,790	17,960	15,810	14,180
	8	25,940	21,780	18,800	16,550	14,860
	9	27,120	22,760	19,650	17,290	15,500
	10	28,300	23,750	20,490	18,030	16,150
	11	29,480	24,730	21,330	18,770	16,810
MASTER WEIGHTS & (1) SET INNER WEIGHTS						
WEIGHTS-POSITION	1	21,200	17,810	15,420	13,590	12,210
	2	22,740	19,110	16,520	14,550	13,060
	3	24,280	20,390	17,620	15,510	13,920
	4	25,820	21,680	18,720	16,480	14,770
	5	27,360	22,960	19,820	17,440	15,630
	6	28,900	24,240	20,920	18,400	16,480
	7	30,440	25,530	22,020	19,370	17,340
	8	31,980	26,810	23,120	20,300	18,210
	9	33,520	28,100	24,220	21,290	19,050
	10	35,060	29,380	25,320	22,250	19,910
	11	36,600	30,660	26,420	23,220	20,760
MASTER WEIGHTS & (2) SETS INNER WEIGHTS						
WEIGHTS-POSITION	1	24,730	20,750	17,950	15,800	14,170
	2	26,630	22,350	19,300	16,980	15,220
	3	28,530	23,930	20,660	18,170	16,280
	4	30,430	25,520	22,020	19,360	17,330
	5	32,330	27,100	23,380	20,540	18,390
	6	34,220	28,680	24,730	21,730	19,440
	7	36,120	30,260	26,090	22,920	20,496
	8	38,020	31,850	27,450	24,070	21,570
	9	39,920	33,430	28,800	25,290	22,610
	10	41,820	35,010	30,160	26,480	23,660
	11	43,720	36,600	31,520	27,670	24,720

AC33L-144-456D
WITH STANDARD TYPE WEIGHTS
LONG STROKE

CRANK WEIGHT COUNTER-BALANCE EFFECT

MASTER WEIGHTS ONLY

DESCRIPTION		STROKES				
		80"	96"	112"	128"	144"
PITMAN, W. PINS & CRANKS ONLY		5,050	4,345	3,835	3,440	3,160
WEIGHTS-POSITION	1	14,710	12,400	10,750	9,490	8,540
	2	15,710	13,210	11,460	10,100	9,075
	3	16,710	14,030	12,140	10,700	9,620
	4	17,860	14,880	12,880	11,320	10,180
	5	18,690	15,700	13,550	11,940	10,710
	6	19,650	16,500	14,280	12,550	11,290
	7	20,620	17,310	14,970	13,190	11,800
	8	21,610	18,120	15,680	13,800	12,380
	9	22,600	18,920	16,380	14,400	12,910
	10	23,590	19,780	17,090	15,020	13,460
	11	24,590	20,600	17,780	15,620	13,900

MASTER WEIGHTS & (1) SET INNER WEIGHTS

WEIGHTS-POSITION	1	17,670	14,830	12,860	11,310	10,180
	2	18,920	15,920	13,780	12,120	10,880
	3	20,220	16,980	14,700	12,920	11,600
	4	21,550	18,080	15,600	13,720	12,300
	5	22,790	19,100	16,520	14,530	13,030
	6	24,080	20,200	17,410	15,330	13,710
	7	25,400	21,250	18,350	16,120	14,440
	8	26,610	22,350	19,250	16,910	15,190
	9	27,920	23,400	20,200	17,630	15,880
	10	29,220	24,430	21,070	18,530	16,600
	11	30,500	25,550	22,040	19,350	17,290

MASTER WEIGHTS AND (2) SETS INNER WEIGHTS

WEIGHTS-POSITION	1	20,600	17,290	14,970	13,170	11,800
	2	22,210	18,610	16,100	14,140	12,700
	3	23,780	19,920	17,210	15,110	13,580
	4	25,400	21,250	18,380	16,100	14,440
	5	26,950	22,600	19,490	17,100	15,320
	6	28,550	23,920	20,600	18,090	16,210
	7	30,100	25,210	21,770	19,090	17,100
	8	31,700	26,580	22,880	20,070	17,970
	9	33,250	27,850	23,610	21,080	18,870
	10	34,850	29,200	25,120	22,060	19,720
	11	36,410	30,500	26,250	23,040	20,600

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B3-16

(See Drawings Attached)

Manufacturer's Type No. B3-16 Rated Polish Rod Load for Rig Parts 3,200 lbs.
Gear Units Used With This Frame 6.4D - 10D
Polish Rod Strokes, Inches 8" - 12" - 16"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 3,200 lbs.
Structural Section 8" x 4" at 10 lbs. Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 2'-0" Pitman End 30 1/2" - 22" - 17"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 9" Amount of Adjustment to and from Well 1 1/2"

BEAM HANGER

Horsehead Type: Mat'l. Welded Steel Plate
Size Wire Rope 5/8" preformed
Type Wire Rope 6 x 19 imp. plow steel
Type Upper End Stationary Steel Sheave
Type Lower End Cast gate with taper socket for zinced-in wire rope
Foundation Clearance at Midstroke 2'- 1 1/2"

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Horsehead cross member rests on beam behind bar welded to beam. Single bolt in lower front end of beam retains horsehead in position.

SAMPSON POST

Type WF Column-Channel Bracing
Size Members:
Legs 6" x 4" WF at 8.5 lbs.
Top 6" x 1/2" x 10" plate

Height (Top Skids to Top S. Post) 3'-5 3/8"
Height (Fd'n. to Center Line) 4'-0"
Bracing 6" channel at 8.2 lbs.
Girts

Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 2'-4"
Height (Bottom of Frame to top of Beam) 4'-9 1/4"
Bolted or welded to Base Welded

BASE

Structural Section 5" channels - 6.7 lbs.
Length, Standard Base 7'-7 5/8"
Length, Short Base
Are Slide Rails Furnished Yes
Foundation Bolts 10 - 3/4" x 18"

Width (back to back) 6"
Length of Outrigger (Detachable)
Length of Engine Extension
Is Reducer Sub-Base Furnished No
Reducer Bolts 6 - 3/4"

PITMAN

Structural Shape 2" x 2" x 5/16" tee at 4.3 lbs.
Can detachable from Wrist Pin Bearing? Yes

Length (Center of Brg. to Center of Brg.) 3'-8 1/2"

EQUALIZATION BEAM

Structural Section 5" x 2 1/2" x 7/16" tee at 9.45 lb.
Pitman Centers 12" at beam
23 1/2" at wrist pin - 6.4D

Material Carbon steel
Max. Stress at Rated Capacity 1365 Lbs. Sq. In.
(50 % Counterbalanced)

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	1.750"		1.750"	1.500"
Total Bearing Length (or Type)	5 1/4"		4 5/8"	4"
Total Projected Area (or Mfg.)	9.2 sq. in.		8.1 sq. in.	6 sq. in.
Bearing Material (or Mfg. No.)	Bronze		Bronze	Bronze
Method of Lubrication	Alemite oil bath		Alemite oil bath	Alemite oil bath
Type of Oil Seal	Neoprene		Neoprene	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease.			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 1020	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 1 3/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 1.500"

Min. Yield Point Matl. 36,000 Lb. Per Sq. In. A.P.I. Capacity each 2,239 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Optional extra equipment Beam Weights (Weight per Set) 190 lbs.

Maximum Counterbalance Effect at Polish Rod 2127 lbs. with 6 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 140 lbs No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 543 lbs. at 8" stroke
411 lbs. at 12" stroke
359 lbs. at 16" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and Sheaves and Brake 826 lbs. 0 lbs. Counterweights, but Less Reducer, Reducer

Weight Complete With 6.4D Reducer 1080 lbs., With 10D Reducer 1177 lbs., With Reducer lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B5-25

(See Drawings Attached)

Manufacturer's Type No. B5-25D Rated Polish Rod Load for Rig Parts 5,730 lbs.
Gear Units Used With This Frame 16D - 25D
Polish Rod Strokes, Inches 20" - 25"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 5,730 lbs.
Structural Section 10" x 5 3/4" WF at 21 lbs. Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 3'-1 1/2" Pitman End 3'-1 1/2"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 1'-2" Amount of Adjustment to and from Well 2"

BEAM HANGER

Horsehead Type: Mat'l. - Welded steel plate
Size Wire Rope 3/4" preformed
Type Wire Rope 6 x 19 Imp. plow steel
Type Upper End Stationary cast steel sheave
Type Lower End Cast gate with taper sockets for zinced-in wire rope
Foundation Clearance at Midstroke 4'-10 1/2"

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Cross member on horsehead rests on beam behind bar welded to beam. Single bolt in lower front end of beam retains horsehead in position. Set screws on each side adjust the alignment of horsehead.

SAMPSON POST

Type Derrick-Type - 4 angle legs
Size Members:
Legs 3 1/2" x 3 1/2" x 1/4" angles
Top 10" x 1/2" x 16" plate
Height (Top Skids to Top S. Post) 6'-3 1/2"
Height (Fd'n. to Center Line) 7'-0 1/4"
Bracing 2" x 2" x 3/16" angles
Girts 2" x 2" x 3/16" angles
Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 3'-0"
Height (Bottom of Frame to top of Beam) 8'-0 11/16"
Bolted or welded to Base Welded

BASE

Structural Section 6" x 4" WF at 12 lbs.
Length, Standard Base 8'-11"
Length, Short Base
Are Slide Rails Furnished Yes
Foundation Bolts 15 - 7/8" x 24"
Width (Center to Center) 8"
Length of Outrigger (Detachable) 3'-3"
Length of Engine Extension
Is Reducer Sub-Base Furnished Yes
Reducer Bolts 6 - 7/8"

PITMAN

Structural Shape 4" x 2 3/4" - 7.7 lb. I-beam
Pitman detachable from Wrist Pin Bearing? Yes
Length (Center of Brg. to Center of Brg.) 6'-3 5/8"

EQUALIZATION BEAM

Structural Section ST6 WF tee (6 1/2"x6"x3/8") at 13.5# Material Carbon steel
Pitman Centers 1'-6 5/16" at beam Max. Stress at Rated Capacity 883 Lbs. Sq. In.

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	3"		2.500"	1.3775"
Total Bearing Length (or Type)	7 1/2"		11 1/2"	Roller
Total Projected Area (or Mfg.)	22.5 sq. in.		24 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Bronze		Rubber	2830-D
Method of Lubrication	Alemite oil bath		None	Alemite oil bath
Type of Oil Seal	Neoprene		None	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 1 3/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 1.749"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 3,250 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Regularly furnished Beam Weights (Weight per Set) 250 lbs.

Maximum Counterbalance Effect at Polish Rod 4257 lbs. with 10 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 140 No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 456 lbs. at 20" stroke

365 lbs. at 25" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 1516 lbs.

Weight Complete With 16D Reducer 1960 lbs., With 25D Reducer 2130 lbs., With _____ Reducer _____ lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B4L-30

(See Drawings Attached)

Manufacturer's Type No. B4L-30 Rated Polish Rod Load for Rig Parts 3,100 lbs.
Gear Units Used With This Frame 10D - 16D
Polish Rod Strokes, Inches 18" - 24" - 30"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 3100 lbs.
Structural Section 8 x 5 1/4" at 20# Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 4'-6" Pitman End 45" - 36" - 27"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 8" Amount of Adjustment to and from Well 1 1/2"

BEAM HANGER

Horsehead Type: Mat'l. Welded steel plate
Size Wire Rope 5/8" preformed
Type Wire Rope 6 x 19 Imp. plow steel
Type Upper End Stationary steel sheave
Type Lower End Cast gate with taper socket for inced-in wire rope
Foundation Clearance at Midstroke 3'-5 1/2"

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Horsehead cross member rests on beam behind angle welded to beam. Single bolt in lower front end of beam retains horsehead in position.

SAMPSON POST

Type Derrick Type - 3 legs
Size Members: 2 - 3"x3"x1/4" angle front Legs 1 - 6" channel at 8.2 lbs. rear
Top 8" x 5/8" x 12" plate

Height (Top Skids to Top S. Post) 5'-1 7/8"
Height (Fd'n. to Center Line) 5'-10"
Bracing
Girts

Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 2'-6"
Height (Bottom of Frame to top of Beam) 6'-7 3/4"
Bolted or welded to Base Welded

BASE

Structural Section 6" channels - 8.2 lbs.
Length, Standard Base 8'-2 7/8"
Length, Short Base
Are Slide Rails Furnished Yes
Foundation Bolts 10 - 3/4" x 18"

Width (Center to Center) back to back 6"
Length of Outrigger (Detachable) 3'-0"
Length of Engine Extension
Is Reducer Sub-Base Furnished No
Reducer Bolts 6 - 3/4"

PITMAN

Structural Shape 2" x 2" x 5/16" tee at 4.3 lbs.
Is Pitman detachable from Wrist Pin Bearing? Yes

Length (Center of Brg. to Center of Brg.) 5'-4 1/2"

EQUALIZATION BEAM

Structural Section 5"x2 1/2"x7/16" tee at 9.45 lb.
Pitman Centers 26 1/2" at wrist pin

Material Carbon steel
Max. Stress at Rated Capacity 1820 Lbs. Sq. In.

BEARINGS

B4L-30

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	2.4375"		1.750"	1.3775"
Total Bearing Length (or Type)	6 1/2"		4 5/8"	Roller
Total Projected Area (or Mfg.)	15.84 sq. in.		8.1 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Bronze		Bronze	2830-D
Method of Lubrication	Alemite oil bath		Alemite oil bath	Alemite oil bath
Type of Oil Seal	Neoprene		Neoprene	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 1020	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 1 3/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 1.749"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 3,250 lbs.

BEAM COUNTERBALANCE

Type Available Beam Optional extra equipment Beam Weights (Weight per Set) 190 lbs.

Maximum Counterbalance Effect at Polish Rod 1639 lbs. with 6 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 140 lb. No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 381 lb. at 18" stroke
271 lb. at 24" stroke
210 lb. at 30" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 980 lbs.

Weight Complete With 10D Reducer 1398 lbs., With 16D Reducer 1458 lbs., With Reducer lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B4-20

(See Drawings Attached)

Manufacturer's Type No. B4-20

Gear Units Used With This Frame 10D - 16D — Rated Polish Rod Load for Rig Parts 3, 900 lbs.

Polish Rod Strokes, Inches 12" - 16" - 20"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 3, 900 lbs.

Structural Section 8 x 5 1/4" at 17# — Weight Carbon, Silicon or Alloy Carbon

Distance between Working Centers: Well End 3'-0" — Pitman End 45" - 36" - 27"

Provision Made for Servicing Well Detachable single bolt horsehead

Clearance between well and walking beam when servicing 8" — Amount of Adjustment to and from Well 1 1/2"

BEAM HANGER

Horsehead Type: Matl. - Welded Steel Plate — Link Type:

Size Wire Rope 5/8" preformed — Trunion Diameter

Type Wire Rope 6 x 19 imp. plow steel — Bearing Length or Mfg. No.

Type Upper End Stationary steel sheave — Proj. Bearing Area or Rating

Type Lower End Cast gate with taper socket for zinced-in wire rope — Hanger Reins

Foundation Clearance at Midstroke 3'-11 1/2" — Length

Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Horsehead cross member rests on beam behind angle welded to beam. Single bolt in lower front end of beam retains horsehead in position.

SAMPSON POST

Type Derrick Type - 3 legs — Height (Top Skids to Top S. Post) 5'-1 7/8"

Size Members: Legs 2 - 3"x3" x 1/4" angle front, 1 - 6" channel at 8.2 lbs. rear — Height (Fd'n. to Center Line) 5'-10"

Top 8" x 5/8" x 12" plate — Bracing

Girts

Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 2'-6"

Height (Bottom of Frame to top of Beam) 6'-7 3/4"

Bolted or welded to Base Welded

BASE

Structural Section 6" channels - 8.2 lbs. — Width (~~Center to Center~~ back to back) 6"

Length, Standard Base 8'-2 7/8" — Length of Outrigger (Detachable) 3'-0"

Length, Short Base — Length of Engine Extension

Are Slide Rails Furnished Yes — Is Reducer Sub-Base Furnished No

Foundation Bolts 10 - 3/4" x 18" — Reducer Bolts 6 - 3/4"

PITMAN

Structural Shape 2"x2"x5/16" tee at 4.3 lbs. — Length (Center of Brg. to Center of Brg.) 5'-4 1/2"

Is Pitman detachable from Wrist Pin Bearing? Yes

EQUALIZATION BEAM

Structural Section 5"x2 1/2"x7/16" tee at 9.45 lb. — Material Carbon steel

Pitman Centers 26 1/2" at wrist pin, 12" at beam — Max. Stress at Rated Capacity 1820 Lbs. Sq. In. (50% counterbalanced)

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	2.4375"		1.750"	1.3775"
Total Bearing Length (or Type)	6 1/2"		4 5/8"	Roller
Total Projected Area (or Mfg.)	15.84 sq. in.		8.1 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Bronze		Bronze	2830-D
Method of Lubrication	Alemite oil bath		Alemite oil bath	Alemite oil bath
Type of Oil Seal	Neoprene		Neoprene	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 1020	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 1 3/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 1.749"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 3,250 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Optional extra equipment Beam Weights (Weight per Set) 190 lbs.

Maximum Counterbalance Effect at Polish Rod 2446 lbs. with 6 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 140 lb. No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 571 lb. at 12" stroke

407 lb. at 16" stroke

313 lb. at 20" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 980 lbs.

Weight Complete With 10D Reducer 1320 lbs., With 16D Reducer 1380 lbs., With Reducer lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B3L-24

(See Drawings Attached)

Manufacturer's Type No. B3L-24 Rated Polish Rod Load for Rig Parts 2,600 lbs.
Gear Units Used With This Frame 6.4D - 10D
Polish Rod Strokes, Inches 12" - 18" - 24"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 2600 lbs.
Structural Section 8" x 4" at 13 lbs. Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 3'-0" Pitman End 30 1/2" - 22" - 17"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 9" Amount of Adjustment to and from Well 1 1/2"

BEAM HANGER

Horsehead Type: Mat'l. - Welded steel plate
Size Wire Rope 5/8" preformed
Type Wire Rope 6 x 19 Imp. plow steel
Type Upper End Stationary Steel Sheave
Type Lower End Cast gate with taper socket for zinced-in wire rope
Foundation Clearance at Midstroke 1'-11 1/2"

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Horsehead cross member rests on beam behind angle welded to beam. Single bolt in lower front end of beam retains horsehead in position.

SAMPSON POST

Type WF column-channel bracing
Size Members:
Legs 6" x 4" WF at 8.5 lbs.
Top 6" x 1/2" x 10" plate
Height (Top Skids to Top S. Post) 3'-5 3/8"
Height (Fd'n. to Center Line) 4'-0"
Bracing 6" channel at 8.2 lbs
Girts
Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 2'-4"
Height (Bottom of Frame to top of Beam) 4'-9 1/4"
Bolted or welded to Base Welded

BASE

Structural Section 5" channels - 6.7 lbs.
Length, Standard Base 7'-7 5/8"
Length, Short Base
Axle Slide Rails Furnished Yes
Foundation Bolts 10 - 3/4" zx 18"
Width (back to back) 6"
Length of Outrigger (Detachable)
Length of Engine Extension
Is Reducer Sub-Base Furnished No
Reducer Bolts 6 - 3/4"

PITMAN

Structural Shape 2" x 2" x 5/16" tee at 4.3 lbs.
Is Pitman detachable from Wrist Pin Bearing? Yes
Length (Center of Brg. to Center of Brg.) 3'-8 1/2"

EQUALIZATION BEAM

Structural Section 5" x 2 1/2" x 7/16" tee at 9.45 lb.
Material Carbon steel
Pitman Centers 12" at beam
23 1/2" at wrist pin - 6.4D
26 1/2" at wrist pin - 10D
Max. Stress at Rated Capacity 1365 Lbs. Sq. In.
(50% counterbalanced)

BEARINGS

B3L-24

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	1.750"		1.750"	1.500"
Total Bearing Length (or Type)	5 1/4"		4 5/8"	4"
Total Projected Area (or Mfg.)	9.2 sq. in.		8.1 sq. in.	6 sq. in.
Bearing Material (or Mfg. No.)	Bronze		Bronze	Bronze
Method of Lubrication	Alemite oil bath		Alemite oil bath	Alemite oil bath
Type of Oil Seal	Neoprene		Neoprene	Neoprene
Weight of Oil Recommended	High quality-semi-fluid, aluminum soap grease.			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 1020	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 1 3/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 1.500"

Min. Yield Point Matl 36,000 Lb. Per Sq. In. A.P.I. Capacity each 2,239 Lbs.

BEAM COUNTERBALANCE

Type Available

Beam Optional extra equipment Beam Weights (Weight per Set) 190 lbs.

Maximum Counterbalance Effect at Polish Rod 1425 lbs. with 6 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 140 lb. No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 521 lb. at 12" stroke
395 lb. at 18" stroke
324 lb. at 24" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 876 lbs.

Weight Complete With 6.4D Reducer 1130 lbs., With 10D Reducer 1227 lbs., With Reducer lbs.

REMARKS

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B5L-30

(See Drawings Attached)

Manufacturer's Type No. B5L-30 Rated Polish Rod Load for Rig Parts 4,800 lbs.
Gear Units Used With This Frame 16D - 25D
Polish Rod Strokes, Inches 24" - 30"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 4,800 lbs.
Structural Section 10" x 5 3/4" WF at 21 lbs. Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 3'-9" Pitman End 3'-1 1/2"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 1'-2" Amount of Adjustment to and from Well 2"

BEAM HANGER

Horsehead Type: Mat'l. Welded steel plate. Link Type:
Size Wire Rope 3/4" preformed Trunion Diameter:
Type Wire Rope 6 x 19 Imp. plow steel Bearing Length or Mfg. No.
Type Upper End Stationary cast steel sheave Proj. Bearing Area or Rating
Type Lower End Cast gate with taper sockets for zinced-in wire rope Hanger Reins
Length
Foundation Clearance at Midstroke 4'-10" Foundation Clearance at Midstroke
Method of Securing Beam Hanger to Walking Beam Cross member on horsehead rests on beam behind bar welded to beam. Single bolt in lower front end of beam retains horsehead in place. Set screws on each side adjust the alignment of horsehead.

SAMPSON POST

Type Derrick Type 4 angle legs Height (Top Skids to Top S. Post) 6'-3 1/2"
Size Members: Height (Fd'n. to Center Line) 7'-0 1/4"
Legs 3 1/2" x 3 1/2" x 1/4" angles Bracing 2" x 2" x 3/16" angles
Top 10" x 1/2" x 16" plate Girts 2" x 2" x 3/16" angles
Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 3'-0"
Height (Bottom of Frame to top of Beam) 8'-0 11/16"
Bolted or welded to Base Welded

BASE

Structural Section 6" x 4" WF at 12 lbs. Width (Center to Center) 8"
Length, Standard Base 8'-11" Length of Outrigger (Detachable) 3'-3"
Length, Short Base Length of Engine Extension
Are Slide Rails Furnished Yes Is Reducer Sub-Base Furnished Yes
Foundation Bolts 15 - 7/8" x 24" Reducer Bolts 6 - 7/8"

PITMAN

Structural Shape 4" x 2 3/4" - 7.7 lb. I beam Length (Center of Brg. to Center of Brg.) 6'-3 5/8"
Is Pitman detachable from Wrist Pin Bearing? Yes

EQUALIZATION BEAM

Structural Section ST6 WF tee (6 1/2" x 6" x 3/8") at 13.5# Material Carbon steel
Pitman Centers 1'-6 5/16" at beam Max. Stress at Rated Capacity 883 Lbs. Sq. In.
26 1/2" at wrist pin - 16D (50% counterbalanced)
34" at wrist pin - 25D

BEARINGS

B5L-30

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	3"		2.500"	1.3775"
Total Bearing Length (or Type)	7 1/2"		11 1/2"	Roller
Total Projected Area (or Mfg.)	22.5 sq. in.		24 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Bronze		Rubber	2830-D
Method of Lubrication	Alemite oil bath		None	Alemite oil bath
Type of Oil Seal	Neoprene		None	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease.			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 1 3/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 1.749"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 3,250 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Regularly furnished Beam Weights (Weight per Set) 250 lbs.

Maximum Counterbalance Effect at Polish Rod 3547 lbs. with 10 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 140 No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 380 lbs. at 24" stroke

305 lbs. at 30" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 1566 lbs.

Weight Complete With 16D Reducer 2010 lbs., With 25D Reducer 2180 lbs., With Reducer lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS   No B7-30

(See Drawings Attached)

Manufacturer's Type No. B7-30   Rated Polish Rod Load for Rig Parts 7,600 lbs.
Gear Units Used With This Frame 25D - 40D
Polish Rod Strokes, Inches 18" - 24" - 30"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 7,600 lbs.
Structural Section 12" x 6 1/2" WF at 27 lb.   Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 3'-9"   Pitman End 3'-9"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 1'-2"   Amount of Adjustment to and from Well 2"

BEAM HANGER

Horsehead Type: Mat'l. - Welded steel plate   Link Type:
Size Wire Rope 3/4" preformed   Trunion Diameter
Type Wire Rope 6 x 19 Imp. plow steel   Bearing Length or Mfg. No.
Type Upper End Stationary cast steel sheave   Proj. Bearing Area or Rating
Type Lower End Cast gate with taper socket   Hanger Reins
for zinced-in wire rope   Length
Foundation Clearance at Midstroke 5'-1 3/8"   Foundation Clearance at Midstroke
Method of Securing Beam Hanger to Walking Beam Cross member on horsehead rests on beam behind
r welded to beam. Single bolt in lower front end of beam retains horsehead in
position. Set screws on each side adjust the alignment of horsehead.

SAMPSON POST

Type Derrick Type - 4 angle legs   Height (Top Skids to Top S. Post) 6'-8 5/8"
Size Members: Height (Fd'n. to Center Line) 7'-5 3/8"
Legs 4 x 4 x 1/4 angles   Bracing 2" x 2" x 3/16" angles
Top 12" x 1/2" x 17" plate   Girts 2" x 2" x 3/16" angles
Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 3'-8"
Height (Bottom of Frame to top of Beam) 8'-8"
Bolted or welded to Base Welded

BASE

Structural Section 6" x 4" WF at 16#   Width (Center to Center) 8" - 25D, 15" - 40D
Length, Standard Base 11'-6 1/2"-25D, 11'-10 1/2" 40D   Length of Outrigger (Detachable) 3'-3"
Length, Short Base   Length of Engine Extension
Are Slide Rails Furnished Yes   Is Reducer Sub-Base Furnished Yes
Foundation Bolts 15 - 7/8" x 24"   Reducer Bolts 6 - 7/8"

PITMAN

Structural Shape 4" x 2 3/4" x 7.7 lb. I beam   Length (Center of Brg. to Center of Brg.) 6'-6 3/4"
Is Pitman detachable from Wrist Pin Bearing? Yes

EQUALIZATION BEAM

Structural Section ST6 WF tee (6 1/2" x 6" x 3/8") at 13.5#   Material Carbon steel
Pin Centers 1'-6 5/16" at beam   Max. Stress at Rated Capacity 1236 Lbs. Sq. In
2'-10" at wrist pin -25D   (50% counterbalanced)
3'-7" at wrist pin - 40D

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	3.4375"		2.500"	1.968"
Total Bearing Length (or Type)	9 1/4"		11 1/2"	Roller
Total Projected Area (or Mfg.)	31.8 sq. in.		24 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Gatke		Rubber	3540-D
Method of Lubrication	Alemite oil bath		None	Alemite oil bath
Type of Oil Seal	Neoprene		None	Neoprene
Weight of Oil Recommended	High quality - semi-fluid, aluminum soap grease			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 2 1/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 2.013"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 6,000 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Regularly furnished Beam Weights (Weight per Set) 250 lbs.

Maximum Counterbalance Effect at Polish Rod 5910 lbs. with 12 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 340 No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 1390 lbs. at 18" stroke

1040 lbs. at 24" stroke

835 lbs. at 30" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 2172 lbs.

Weight Complete With 25D Reducer 2785 lbs., With 40D Reducer 3189 lbs., With Reducer lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B7L-36

(See Drawings Attached)

Manufacturer's Type No. B7L-36 Rated Polish Rod Load for Rig Parts 6,300 lbs.
Gear Units Used With This Frame 25D - 40D
Polish Rod Strokes, Inches 22" - 29" - 36"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 6300 lbs.
Structural Section 12" x 6 1/2" WF at 27 lb. Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 4'-6" Pitman End 3'-9"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 1'-2" Amount of Adjustment to and from Well 2"

BEAM HANGER

Horsehead Type: Mat'l. - Welded steel plate
Size Wire Rope 3/4" preformed
Type Wire Rope 6 x 19 Imp. plow steel
Type Upper End Stationary cast steel sheave
Type Lower End Cast gate with taper sockets for zinced-in wire rope.
Foundation Clearance at Midstroke 5'-0 3/8"

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Cross member on horsehead rests on beam behind bar welded to beam. Single bolt in lower front end of beam retains horsehead in position Set screws on each side adjust the alignment of horsehead.

SAMPSON POST

Type Derrick Type - 4 angle legs
Size Members:
Legs 4 x 4 x 1/4 angles
Top 12" x 1/2" x 17" plate

Height (Top Skids to Top S. Post) 6'-8 5/8"
Height (Fd'n. to Center Line) 7'-5 3/8"
Bracing 2" x 2" x 3/16" angles
Girts 2" x 2" x 3/16" angles

Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 3'-8"
Height (Bottom of Frame to top of Beam) 8'-8"
Bolted or welded to Base Welded

BASE

Structural Section 6" x 4" WF at 16#
Length, Standard Base 11'-6 1/2"-25D, 11'-10 1/2" 40D
Length, Short Base
Are Side Rails Furnished Yes
Foundation Bolts 15 - 7/8" x 24"

Width (Center to Center) 8" - 25D, 15" - 40D
Length of Outrigger (Detachable) 3'-3"
Length of Engine Extension
Is Reducer Sub-Base Furnished Yes
Reducer Bolts 6 - 7/8"

PITMAN

Structural Shape 4" x 2 3/4" x 7.7 lb. I beam
Is Pitman detachable from Wrist Pin Bearing? Yes

Length (Center of Brg. to Center of Brg.) 6'-6 3/4"

EQUALIZATION BEAM

Structural Section ST6 WF tee (6 1/2" x 6" x 3/8") at 13.5# Material Carbon steel
Pitman Centers 1' -6 5/16" at beam Max. Stress at Rated Capacity 1236 Lbs. Sq. In.
(50% counterbalanced)
2'-10" at wrist pin - 25D
3'-7" at wrist pin - 40D

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	3.4375"		2.500"	1.968"
Total Bearing Length (or Type)	9 1/4"		11 1/2"	Roller
Total Projected Area (or Mfg.)	31.8 sq. in.		24 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Gatke		Rubber	3540-D
Method of Lubrication	Alemiteoil bath		None	Alemite oil bath
Type of Oil Seal	Neoprene		None	Neoprene
Weight of Oil Recommended	High quality - semi-fluid, aluminum soap grease			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 2 1/4" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 2.013"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 6,000 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Regularly furnished Beam Weights (Weight per Set) 250 lbs.

Maximum Counterbalance Effect at Polish Rod 4920 lbs. with 12 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 340 No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 1158 lbs. at 22" stroke

866 lbs. at 29" stroke

696 lbs. at 36" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 Lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 2232 lbs.

Weight Complete With 25D Reducer 2845 lbs., With 40D Reducer 3249 lbs., With _____ Reducer _____ lbs.

REMARKS

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B8-36

(See Drawings Attached)

Manufacturer's Type No. B8-36 Rated Polish Rod Load for Rig Parts 8,800 lbs.
Gear Units Used With This Frame 40D
Polish Rod Strokes, Inches 20" - 28" - 36"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 8,800 lbs.
Structural Section 12" x 6 1/2" WF at 31 lbs. Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 4'-6" Pitman End 4'-6"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 1'-5 3/8" Amount of Adjustment to and from Well 2"

BEAM HANGER

Horsehead Type: Mat'l. Welded steel plate
Size Wire Rope 3/4" preformed
Type Wire Rope 6 x 19 Imp. plow steel
Type Upper End Stationary cast steel sheave
Type Lower End Cast gate with taper sockets for zinced-in wire rope
Foundation Clearance at Midstroke 5'-4"

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

Method of Securing Beam Hanger to Walking Beam Horsehead cross member rests on beam behind bar welded to beam. Single bolt in lower front end of beam retains horsehead in position. Set screws on each side adjust alignment of horsehead.

SAMPSON POST

Type Derrick Type - 4 angle legs
Size Members:
Legs 4" x 4" x 1/4" angles
Top 12" x 1/2" x 17" plate

Height (Top Skids to Top S. Post) 6'-9 1/2"
Height (Fd'n. to Center Line) 7'-8 1/2"
Bracing 2" x 2" x 3/16" angles
Girts 2" x 2" x 3/16" angles

Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 4'-3 3/4"
Height (Bottom of Frame to top of Beam) 8'-11 1/4"
Bolted or welded to Base Welded

BASE

Structural Section 8" x 5 1/4" WF at 17 lbs.
Length, Standard Base 12'-7"
Length, Short Base
Are Slide Rails Furnished Yes
Foundation Bolts 18 - 7/8" x 24"

Width (Center to Center) 1'-2 1/4"
Length of Outrigger (Detachable) 3'-5"
Length of Engine Extension
Is Reducer Sub-Base Furnished Yes
Reducer Bolts 6 - 7/8"

PITMAN

Structural Shape 4" x 2 3/4" - 7.7 lb. I beam
Is Pitman detachable from Wrist Pin Bearing? Yes

Length (Center of Brg. to Center of Brg.) 6'-6 1/2"

EQUALIZATION BEAM

Structural Section ST5 WF tee (8" x 5" x 7/16") at 16.5#
Pitman Centers 3'-7" at wrist pins
2'-3 1/2" at beam

Material Carbon steel
Max. Stress at Rated Capacity 2093 Lbs. Sq. In.
(50% counterbalanced)

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	4"		3.750"	2.250"
Total Bearing Length (or Type)	10"		22"	Roller
Total Projected Area (or Mfg.)	40 sq. in.		82.5 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Gatke		Rubber	3941-D
Method of Lubrication	Alemite oil bath		None	Alemite oil bath
Type of Oil Seal	Neoprene		None	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease.			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 2 15/16" taper - 3/4" per ft.
Overhang-Face Crank to Center Wrist Pin Bearing 2.016"
Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 13,330 lbs.

BEAM COUNTERBALANCE

Type Available Beam Regularly furnished Beam Weights (Weight per Set) 320
Maximum Counterbalance Effect at Polish Rod 6565 lbs. with 10 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 565 No. per set 2
Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 2125 lbs. at 20" stroke
1520 lbs. at 28" stroke
1180 lbs. at 36" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 Lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 3795 Lbs.
Weight Complete With 40D Reducer 4810 Lbs., With Reducer Lbs., With Reducer Lbs.

REMARKS

November 15, 1958

CABOT PUMPING UNITS - STRUCTURAL PARTS No. B8L-42

(See Drawings Attached)

Manufacturer's Type No. B8L-42 Rated Polish Rod Load for Rig Parts 7,300 lbs.
Gear Units Used With This Frame 40D
Polish Rod Strokes, Inches 23" - 33" - 42"

WALKING BEAM

A. P. I. Polished Rod Load Rating (Allow for bolt holes) 7,300 lbs.
Structural Section 12" x 6 1/2" WF at 31# Weight Carbon, Silicon or Alloy Carbon
Distance between Working Centers: Well End 5'-3" Pitman End 4'-6"
Provision Made for Servicing Well Detachable single bolt horsehead
Clearance between well and walking beam when servicing 1'-5 3/8" Amount of Adjustment to and from Well 2"

BEAM HANGER

Horsehead Type: Mat'l. Welded steel plate
Size Wire Rope 3/4" preformed
Type Wire Rope 6 x 19 Imp. plow steel
Type Upper End Stationary cast steel sheave
Type Lower End Cast gate with taper sockets for zinced-in wire rope
Foundation Clearance at Midstroke 4'-10"
Method of Securing Beam Hanger to Walking Beam Horsehead cross member restson beam behind bar welded to beam. Single bolt in lower front end of beam retains horsehead in position. Set screws on each side adjust alignment of horsehead.

Link Type:
Trunion Diameter
Bearing Length or Mfg. No.
Proj. Bearing Area or Rating
Hanger Reins
Length
Foundation Clearance at Midstroke

SAMPSON POST

Type Derrick type - 4 angle legs Height (Top Skids to Top S. Post) 6'-9 1/2"
Size Members: Height (Fd'n. to Center Line) 7'-8 1/2"
Legs 4" x 4" x 1/4" angles Bracing 2" x 2" x 3/16" angles
Top 12" x 1/2" x 17" plate Girts 2" x 2" x 3/16" angles
Horizontal Distance from Center Line of Sampson Post to Center Line of Crankshaft of Gear Unit 4'-3 3/4"
Height (Bottom of Frame to top of Beam) 8'-11 1/4"
Bolted or welded to Base Welded

BASE

Structural Section 8" x 5 1/4" WF at 17 lbs. Width (Center to Center) 1'-2 1/4"
Length, Standard Base 12'-7" Length of Outrigger (Detachable) 3'-5"
Length, Short Base Length of Engine Extension
Are Slide Rails Furnished Yes Is Reducer Sub-Base Furnished Yes
Foundation Bolts 18 - 7/8" x 24" Reducer Bolts 6 - 7/8"

PITMAN

Structural Shape 4" x 2 3/4" - 7.7lb. I beam Length (Center of Brg. to Center of Brg.) 6'-6 1/2"
Is Pitman detachable from Wrist Pin Bearing? Yes

EQUALIZATION BEAM

Structural Section ST5 WF tee (8" x 5" x 7/16") at 16.5 # Material Carbon steel
Pitman Centers 3'-7" at wrist pins Max. Stress at Rated Capacity 2093 Lbs. Sq. In.
2'-3 1/2" at beam (50% counterbalanced)

BEARINGS

B8L-42

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Upper Pitman	Pitman Equalizer	Wrist Pin
Trunnion Diameter	4"		3.750"	2.250"
Total Bearing Length (or Type)	10"		22"	Roller
Total Projected Area (or Mfg.)	40 sq. in.		82.5 sq. in.	Link Belt
Bearing Material (or Mfg. No.)	Gatke		Rubber	3941-D
Method of Lubrication	Alemite oil bath		None	Alemite oil bath
Type of Oil Seal	Neoprene		None	Neoprene
Weight of Oil Recommended	High quality, semi-fluid, aluminum soap grease			
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 2 15/16" taper - 3/4" per ft.

Overhang-Face Crank to Center Wrist Pin Bearing 2.016"

Min. Yield Point Matl. 36,000 lb. Per Sq. In. A.P.I. Capacity each 13,330 lbs.

BEAM COUNTERBALANCE

Type Available

Beam Regularly furnished Beam Weights (Weight per Set) 320

Maximum Counterbalance Effect at Polish Rod 5620 lbs. with 10 sets of weights

CRANK COUNTERBALANCE

Rotary Crank Optional extra equipment Weight of each extra crank weight 565 No. per set 2

Maximum Counterbalance Effect at Polish Rod (Pounds at each stroke) 1820 lbs. at 23" stroke

1300 lbs. at 33" stroke

1010 lbs. at 42" stroke

WEIGHTS

Weight Complete With Cranks, Belt Guard, Slide Rails and 0 lbs. Counterweights, but Less Reducer, Reducer Sheaves and Brake 3910 lbs.

Weight Complete With 40D Reducer 4924 lbs., With _____ Reducer _____ lbs., With _____ Reducer _____ lbs.

REMARKS

November 15, 1958

CABOT SHOPS, INC. No. B9-36
B9L-42

STRUCTURAL SPECIFICATIONS

Type	B9-36	B9L-42	
Gear Units Used with this Structure	40D-57D	40D-57D	
A. P. I. Structural Capacity	9,000 lbs.	7,950 lbs.	
Polished Rod Stroke, inches	20"-28"-36"	23"-33"-42"	

WALKING BEAM

Structural Section	14" WF at 34#	14" WF at 34#	
Working Centers - well end	4'-3	4'-11 1/2	
Working Centers - pitman end	4'-3	4'-3	

Provisions Made for Servicing Well: Hinge back horsehead
Well Servicing Clearance: 1'-5
Adjustment to and from well: 1 1/2"

HORSEHEAD

Size and Type Wire Rope: 3/4" preformed 6 x 19 Improved Plow Steel
Type Upper End: Stationary Cast Steel Sheave
Type Lower End: Cast gate with taper sockets for zinced-in wire rope
Foundation Clearance at Midstroke: 4'-11 | 4'-5
Method of Securing Horsehead to Walking Beam: Cross member rests in bracket welded to beam. Single bolt in lower front end of beam.

SAMSON POST

Type: Derrick-4 angle legs — Height (Fdn. to Center Line): 7'-8 1/2
Size Members: Front Legs: 4x4x1/4 — Bracing: 2x2x3/16 angle
Rear Legs: 4x4x1/4
Top: 12x1/2x17 plate — Girts: 2x2x3/16 angle
Horizontal Distance from Center Line Samson Post to Center Line of Crank Shaft of Gear Unit: 4'-0 1/2 — Bolted or welded to base: Welded

BASE

Structural Section: 8" WF at 17# — Width (Center to Center): 14 1/4"
Length, Long Base: -- — Length of Outrigger (Detachable): 3'- 6
Length, Short Base: 8'-7 1/4 — Length of Engine Estension: 4'-8 1/2
Are Slide Rails Furnished: yes — Are Cranks Floor Clearing: yes
Foundation Bolts: — Reducer Bolts: 6 - 7/8"
Base: 8 - 7/8" x 14"
Extension: 4 - 7/8" x 14"
Outrigger: 2 - 7/8" x 14"

PITMAN

Structural Shape: 4" I at 7.7# — Length (Center of Brg. to Center of Brg.): 6'-8 1/2
Is Pitman Detachable from Wrist Pin: Yes

EQUALIZER BEAM

Structural Section: ST5 WF tee at 16.5#

No. B9-36
B9L-42

BEARINGS

Bearing Selection is for at least 100,000 hours Minimum Life at 20 S.P.M.

	Saddle	Optional Equalizer	Equalizer	Wrist Pin
Trunnion Diameter	4"		3.750"	2.250"
Total Bearing Length (or Type)	10"		22"	Sph. Roller
Total Projected Area	40 sq. in.		82.5 sq. in.	
Bearing Material (or Mfg. No.)	Bronze		Rubber	3941-D
Method of Lubrication	Grease		None	Grease
Type of Oil Seal	Neoprene		None	Neoprene
Is Bearing Self-Aligning	No		Yes	Yes
Trunnion Material	SAE 1020		SAE 4140	SAE 1020

WRIST PIN

Material SAE 1020 Dimension of Crank Fit 2 15/16" tapered

Overhang-Face Crank to Center Wrist Pin Bearing 2.016"

Min. Yield Point of Material 36,000 lbs. Per Sq. In.

COUNTERBALANCE

Type Available Safety beam weights in pairs and one piece crank weights for partial crank counterbalance.

For Counterbalance Effect at Polished Rod, see Counterbalance Tables for Each Type Unit

WEIGHTS

Shipping Weight of Unit Complete with Engine Extension, Cranks, Belt Guard, Slide Rails and Master Crank Weights (A and AC units only), but less beam weights and inner crank weights.

B9-36	With 40D	Reducer	5140	lbs.
B9L-42	With 40D	Reducer	5260	lbs.
B9-36	With 57D	Reducer	5790	lbs.
B9L-42	With 57D	Reducer	5910	lbs.