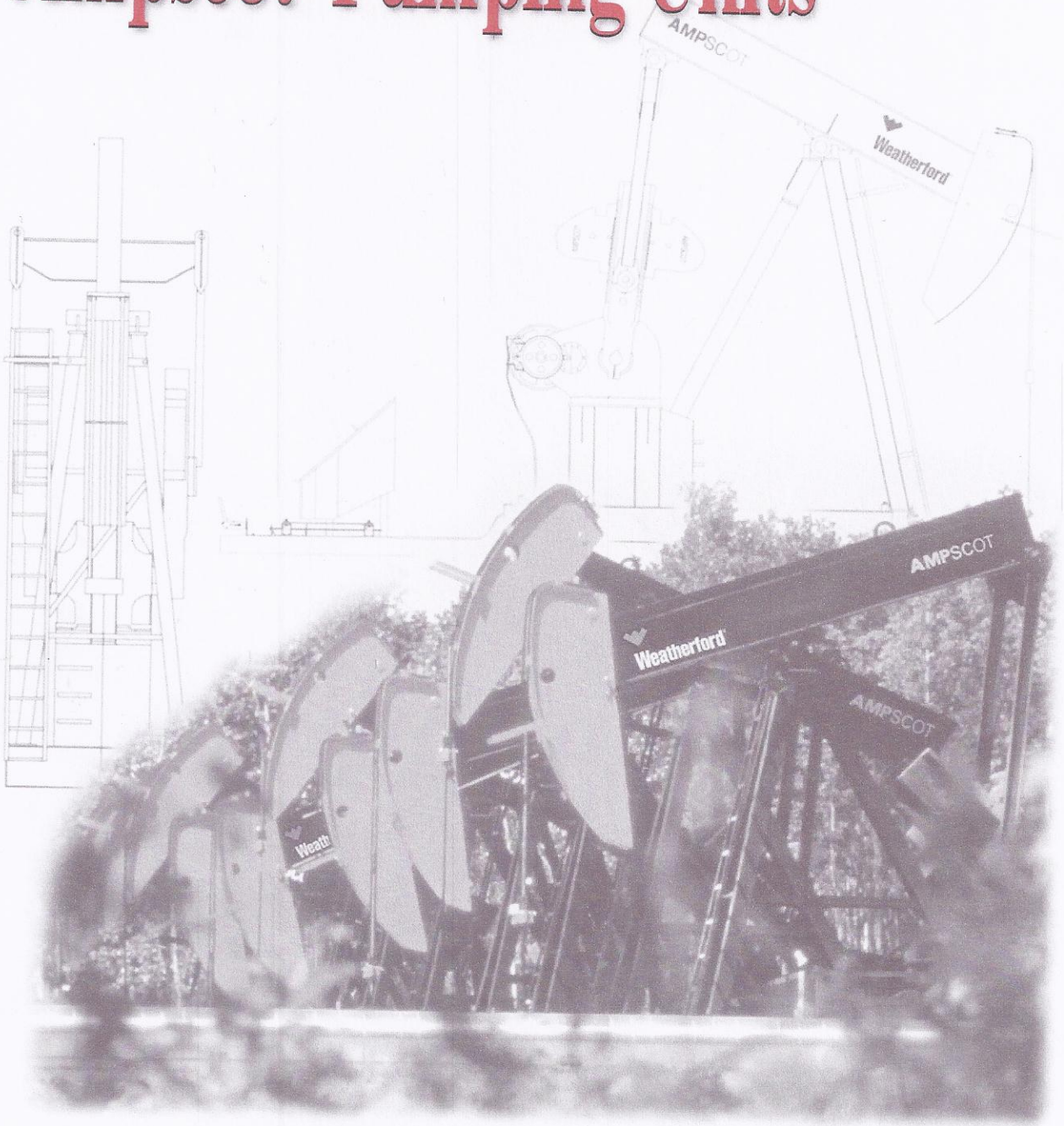
Weatherford®

Ampscot™ Pumping Units



Product Catalog 2006

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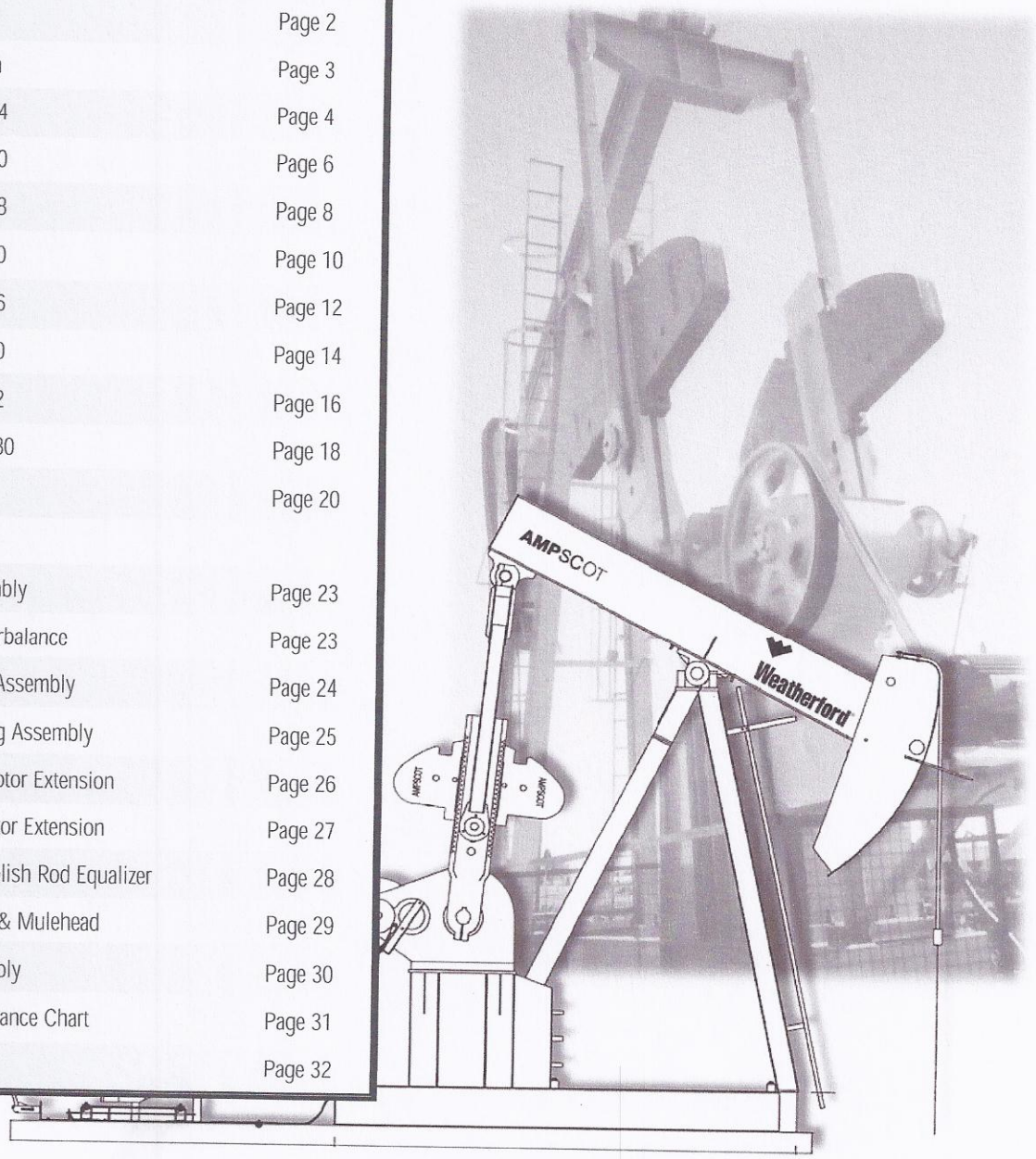
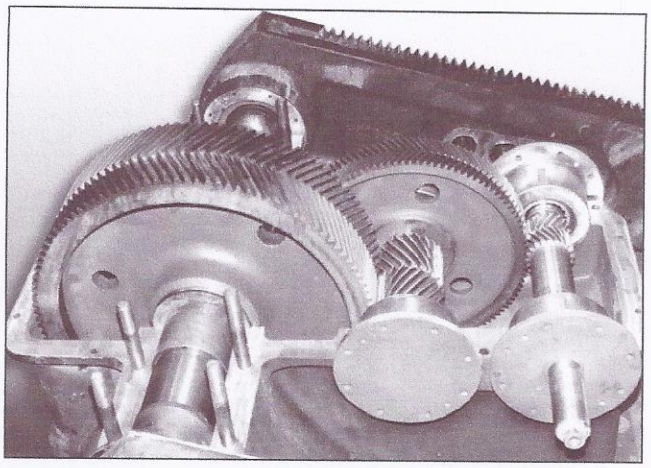




Conventional pumping units have long been the workhorse of the artificial lift market, producing oil day in and day out, year after year. Their simple, rugged construction requires little maintenance, technical support or specialized equipment to operate, under the most adverse conditions.

Ampscot™ Pumping Units have been active in oilfields for more than two decades. They are recognized worldwide for their dependability, durability and extended service life. These qualities, plus very high mechanical efficiency, low operating costs, infinite life and high resale value have earned Ampscot pumping units an excellent reputation in the oilfield industry.

MANUFACTURING AT ITS BEST

An integral part of Weatherford's complete portfolio of artificial lift systems, products and services, Ampscot pumping units and reducers are manufactured in a variety of sizes from 114 through 1280. Located in Canada, the exceptionally sophisticated machine and fabrication facility dedicated to these pumping units is constantly enhancing its capabilities to address the technological challenges of the new millennium. A high rate of productivity, while maintaining a superior standard of quality, is achieved through the use of the most modern production machinery.

The Weatherford manufacturing facility for Ampscot pumping units and related products holds an American Petroleum Institute (API) license. Customers can be confident knowing that each one of the products is designed to exceed the latest API's Specifications 11E and is backed by the added protection of the API Specification Q1 Quality Assurance Program.

EXCELLENT SERVICE AND REPAIR

Parts and service are vital to the overall support and maintenance of pumping units. Pumping unit parts and gears for all makes and models of pumping units are supported by Weatherford. As a matter of fact, Weatherford has the largest pumping unit rebuild facility in Canada. The service department repairs everything from the smallest wrist pin to the largest gear reducer. Equipment includes a 300-ton horizontal press and a 100-ton vertical press for disassembling gear reducers and straightening beams.

Inventories include a large supply of replacement gears, pinions and wrist pins for the most popular makes and models of pumping units, including American™, Lufkin, Legrand, etc. Bearings, seals and many exchange bearing assemblies for the most popular brands are in stock and readily available when you need them.

Note: Ampscot™ Products & Services, (formerly Ampscot Equipment Ltd.) is now a part of the Completion and Production Systems division of Weatherford International, Inc.

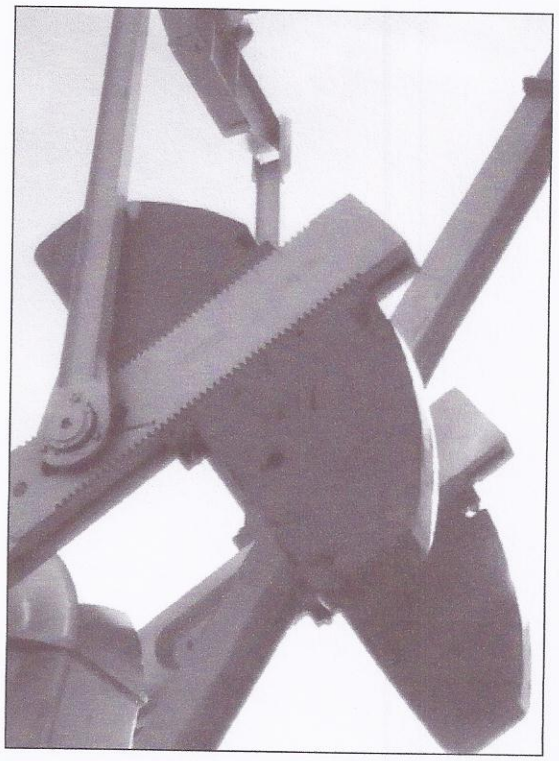
EQUIPMENT

Ampscot™ pumping units and reducers represent a series of equipment founded on practical and effective technology. This rugged, serviceable equipment is designed to perform reliably under the most adverse conditions. These pumping units are available with a standard T-frame base or a wide-frame base, which is skid-mounted for easy relocation. The sampson posts are a three-legged design; the third leg is removable to facilitate shipping. Walking beams are rated in accordance with the latest API Specifications and constructed from a minimum of A36 wide flange steel.

Ampscot pumping units come with a complete list of standard equipment. A wide selection of optional items is also available.

STANDARD EQUIPMENT

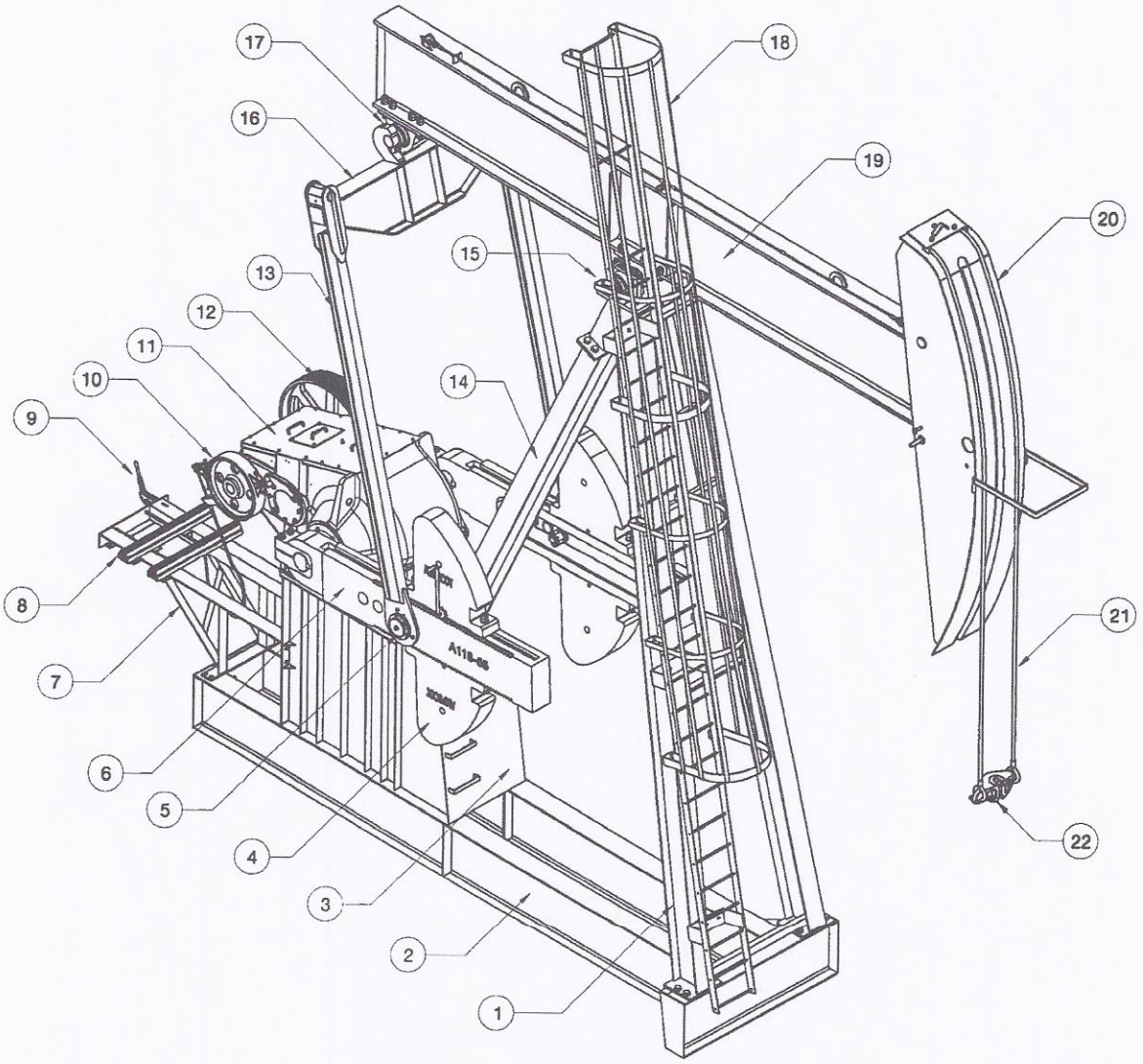
- T-Frame Base
- High-Mount Package
- Sampson Post Ladder with Ring
- Brake Assembly
- Wrist Pin & Weight Wrenches
- Wireline Assembly
- Adjustable Motor Rails
- Reducer Sheave
- Beltguard



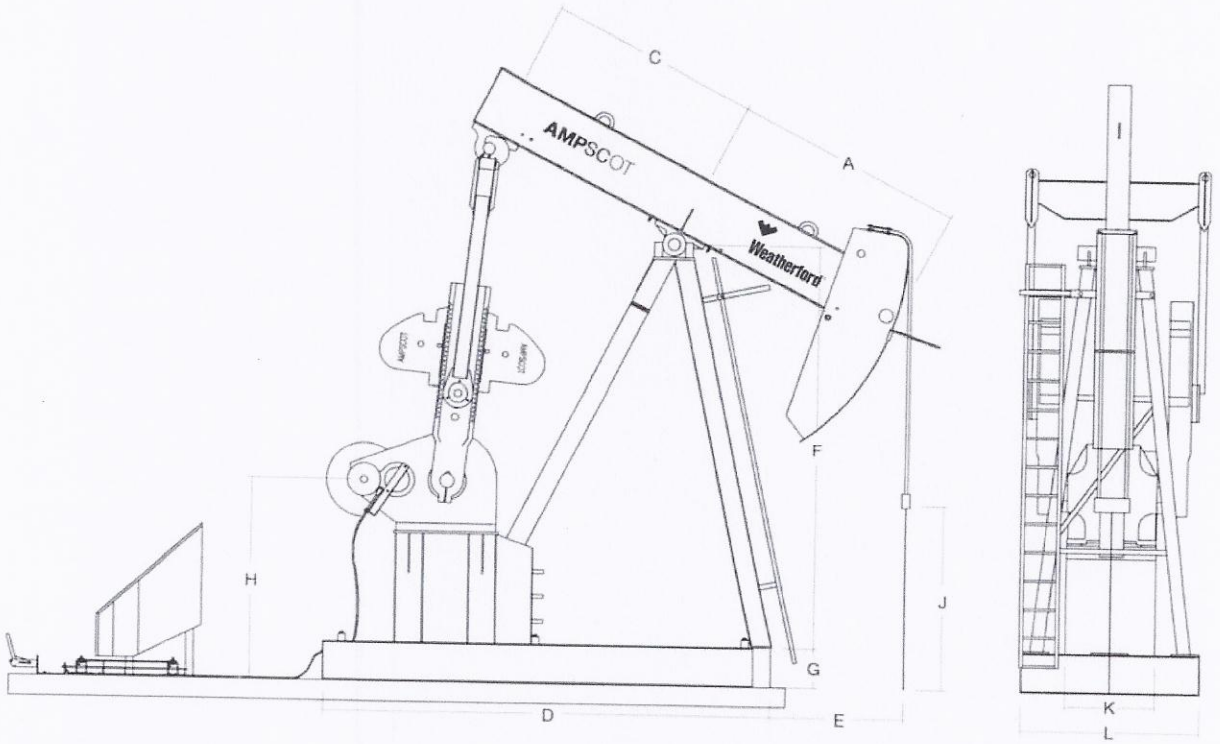
OPTIONAL EQUIPMENT

- Wide-Frame Base
- Low-Mount Extension Package
- Direct-Mount Extension Package
- Tiedowns: Single or Dual
- Crankguards: Mesh
- Gear Oil
- Counterweights
- Concrete Base
- Prime Mover
- Belts and Sheave for the Prime Mover
- Caged Sampson Post Ladder
- Wireline Stabilizers: Dual Completion
- Jackshaft Assembly
- Polish Rod Equalizer
- Central Lubrication System

Transportation and installation on location may also be quoted on request.



1	Sampson Post A-Leg	9	Brake Lever	17	Equalizer Bearing Assembly
2	Main Frame	10	Brake Assembly	18	Sampson Post Ladder
3	Reducer Sub-Base	11	Gear Reducer	19	Walking Beam
4	Counterweights	12	Reducer Sheave	20	Mulehead
5	Wrist Pin Assembly	13	Pitman Arm	21	Wireline
6	Crank	14	Sampson Post Support Leg	22	Polish Rod Hanger
7	High-Mount Base Extension	15	Saddle Bearing Assembly		
8	Motor Rails	16	Equalizer Beam		



DIMENSIONS

	API SIZE (GROUP)			
	114-133-054 (1A)	114-173-064 (1A) 114-143-064 (1A)	114-143-074 (2A)	114-119-086 (2A)
A	71	84	84	95
C	72 1/4	72 1/4	85	83
D	132 3/4	132 3/4	180	180
E	41	54	42 1/2	53 1/2
F	132	132	163	163
G	12 1/4	12 1/4	16	16
H	57 1/4	57 1/4	82	82
J	71 1/2	63 1/2	70	69 1/4
K	27	27	30	30
L	62	62	72	72
L/M V-BELT	C225	C225	C285	C285
H/M V-BELT			C180	C180
L/M BRAKE CABLE			198	198
H/M BRAKE CABLE	126	126	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

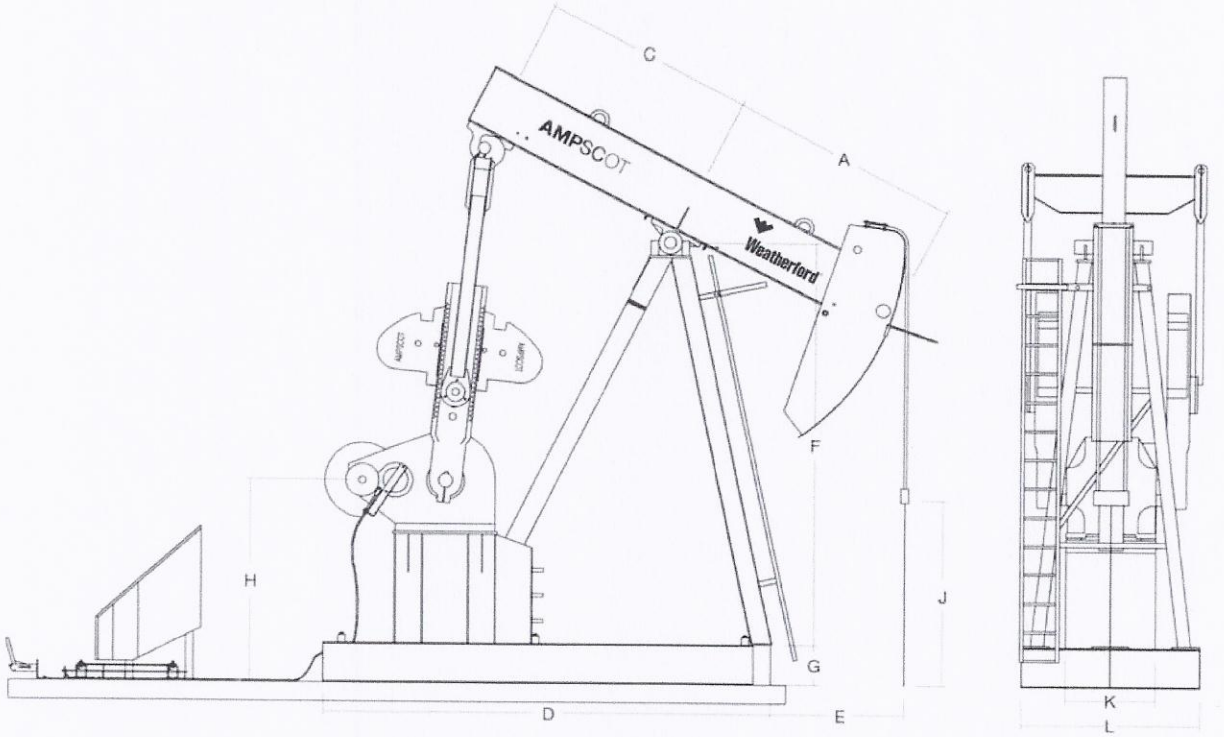
	API SIZE			
	114-133-054	114-173-064 114-143-064	114-143-074	114-119-086
MAX. POLISHED ROD CAPACITY (POUNDS)	13,300	17,300	14,300	11,900
STROKES (INCHES)	54, 44, 34	64, 52, 40	74, 63, 52	86, 73, 61
TORQUE FACTOR AT 90° (INCHES)	27, 22, 17	32, 26, 20	36, 31, 26	42, 36, 30
WIRELINE SIZE	1" X 19'	1" X 19'	1" X 22'-10"	1" X 22'-10"
WIRELINE CENTRE	11"	11"	11"	11"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE			
	114-133-054	114-173-064 114-143-064	114-143-074	114-119-086
STRUCTURAL IMBALANCE (POUNDS)	+300	+100	+300	+25
CRANK NUMBER	A55L-27	A55L-27	A80L-36	A80L-36
CRANK ONLY	2629	2068	3668	2929
2 - B	3989	3218	5257	4299
4 - B	5350	4368	6846	5669
2 - B, 2 - D	5765	4719	7338	6094
4 - D	6180	5070	7830	6518
2 - D, 2 - F	6611	5434	8403	7012
4 - F	7041	5798	8976	7506
2 - F, 2 - H	7423	6120	9470	7932
4 - H	7804	6443	9965	8359
2 - H, 2 - J	8204	6781	10508	8827
4 - J	8603	7118	11051	9295
2 - J, 2 - L	9073	7515		
4 - L	9542	7912		
2 - L, 2 - N	10135	8413		
4 - N		8914		
2 - N, 2 - P		9441		
4 - P		9969		
2 - P, 2 - R		10356		
4 - R		10744		
2 - R, 2 - S		12569		
4 - S		14394		

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)			
	160-173-064 (1A)	160-200-074 (2A) 160-173-074 (2A)	160-173-086 (2A)	160-173-100 (*2A)
A	84	84	95	110 1/4
C	72 1/4	85	83	83
D	132 3/4	180	180	180
E	54	42 1/2	53 1/2	68 3/4
F	132	163	163	163
G	12 1/4	16	16	16
H	57 1/4	82	82	82
J	63 1/2	70	69 1/4	62 3/4
K	27	30	30	30
L	62	72	72	72
L/M V-BELT	C225	C285	C285	C285
H/M V-BELT		C180	C180	C180
L/M BRAKE CABLE		198	198	198
H/M BRAKE CABLE	126	156	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

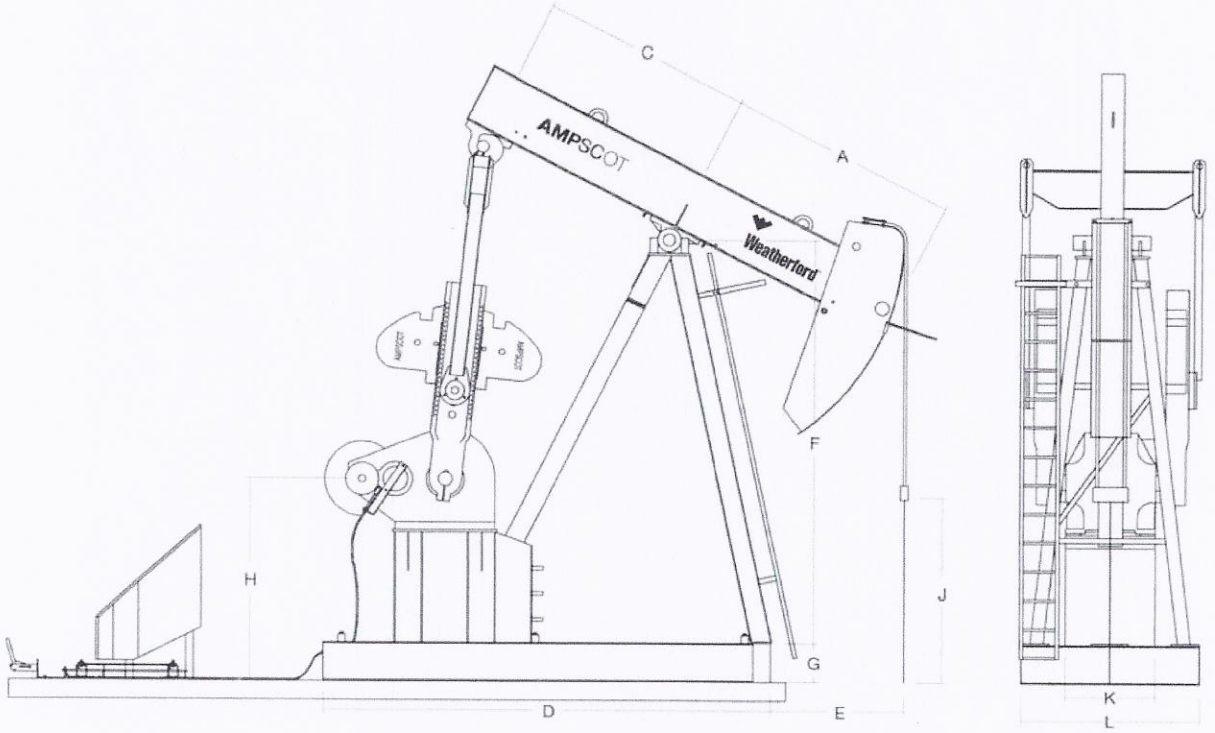
	API SIZE			
	160-173-064	160-200-074 160-173-074	160-173-086	160-173-100
MAX. POLISHED ROD CAPACITY (POUNDS)	17,300	20,000	17,300	17,300
STROKES (INCHES)	64, 52, 40	74, 63, 52	86, 73, 61	100, 85, 71
TORQUE FACTOR AT 90° (INCHES)	32, 26, 20	36, 31, 26	42, 36, 30	48, 42, 35
WIRELINE SIZE	1" X 19'	1" X 22'-10"	1" X 22'-10"	1" X 25'
WIRELINE CENTRE	11"	11"	11"	11"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE			
	160-173-064	160-200-074 160-173-074	160-173-086	160-173-100
STRUCTURAL IMBALANCE (POUNDS)	+100	+300	+25	-300
CRANK NUMBER	A55L-27	A80L-36	A80L-36	A80L-36
CRANK ONLY	2068	3668	2929	2202
2 - B	3218	5257	4299	3383
4 - B	4368	6846	5669	4563
2 - B, 2 - D	4719	7338	6094	4929
4 - D	5070	7830	6518	5294
2 - D, 2 - F	5434	8403	7012	5720
4 - F	5798	8976	7506	6146
2 - F, 2 - H	6120	9470	7932	6513
4 - H	6443	9965	8359	6881
2 - H, 2 - J	6781	10508	8827	7284
4 - J	7118	11051	9295	7687
2 - J, 2 - L	7515	11674	9832	8150
4 - L	7912	12297	10370	8613
2 - L, 2 - N	8413	13152	11107	9248
4 - N	8914	14007	11844	9883
2 - N, 2 - P	9441	14948	12655	10582
4 - P	9969	15889	13466	11281
2 - P, 2 - R	10356			11707
4 - R	10744			12133
2 - R, 2 - S	12569			14172
4 - S	14394			

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)					
	228-200-074(2)	228-173-086(*2A)	228-213-086(2)	228-246-086(3)	228-213-100(*2) 228-173-100(2)	228-213-120(3)
A	84	95	95	97 1/2	112	136
C	84	83	84	118	84	118
D	180	180	180	246 3/4	180	246 3/4
E	42 1/2	53 1/2	53 1/2	44 1/4	70 1/2	82 3/4
F	163 1/4	163	163 1/4	227 1/2	163 1/4	227 1/2
G	16	16	16	16	16	16
H	82	82	82	103 1/4	82	103 1/4
J	65	69 1/4	64	89	56 1/2	86
K	36	30	36	36	36	36
L	72	72	72	72 3/4	72	72 3/4
L/M V-BELT	C285	C285	C285	C345	C285	C345
H/M V-BELT	C180	C180	C180	C210	C180	C210
L/M BRAKE CABLE	198	198	198	240	198	240
H/M BRAKE CABLE	156	156	156	156	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

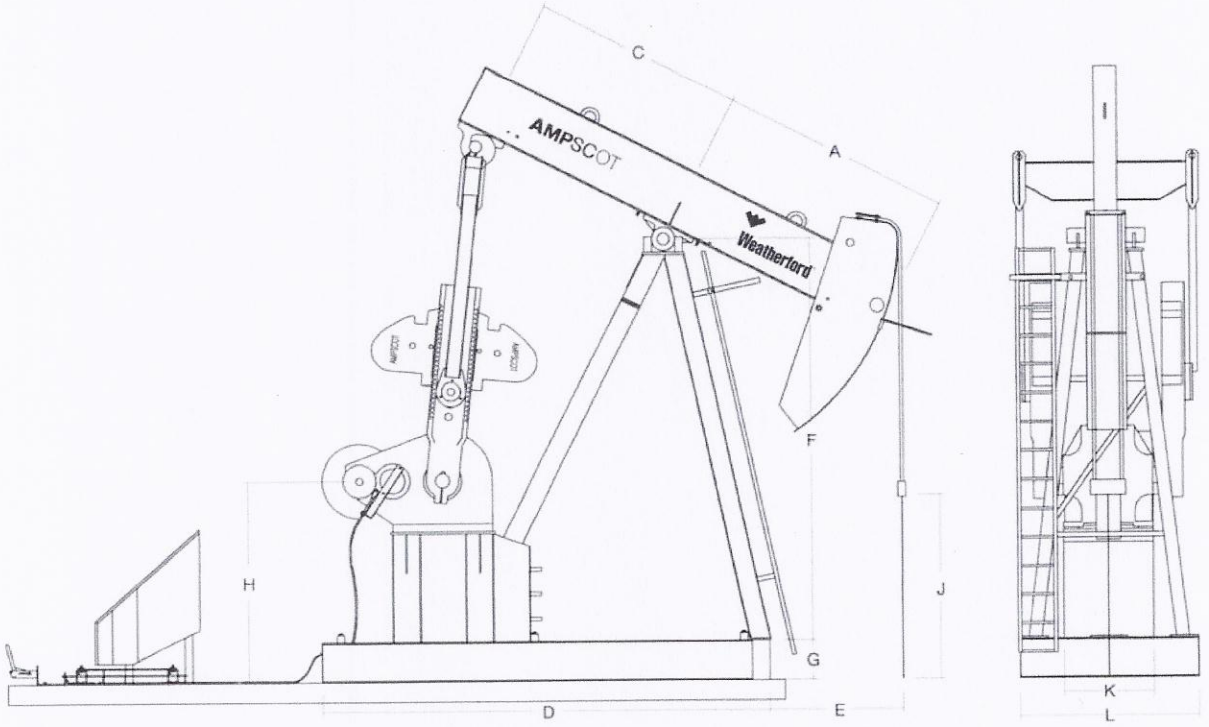
	API SIZE					
	228-200-074	228-173-086	228-213-086	228-246-086	228-213-100 228-173-100	228-213-120
MAX. POLISHED ROD CAPACITY (POUNDS)	20,000	17,300	21,300	24,600	21,300	21,300
STROKES (INCHES)	75, 64, 53	86, 73, 61	85, 72, 60	86, 77, 68	100, 85, 71	120, 107, 94
TORQUE FACTOR AT 90° (INCHES)	36, 31, 26	42, 36, 30	40, 35, 29	41, 37, 33	48, 41, 35	57, 52, 46
WIRELINE SIZE	1" X 22'-10"	1" X 22'-10"	1" X 22'-10"	1 1/8" X 30'	1" X 25'	1 1/8" X 30'
WIRELINE CENTRE	11"	11"	11"	12"	11"	12"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE					
	228-200-074	228-173-086	228-213-086	228-246-086	228-213-100 228-173-100	228-213-120
STRUCTURAL IMBALANCE (POUNDS)	+950	+75	+650	+1675	+200	+450
CRANK NUMBER	A80-36	A80L-36	A80-36	A100-50	A80-36	A100-50
CRANK ONLY	5179	2979	4390	8161	3373	5099
2 - B	6773	4349	5800	9954	4568	6385
4 - B	8367	5719	7209	11746	5764	7670
2 - B, 2 - D	8861	6144	7646	12304	6134	8070
4 - D	9354	6568	8082	12862	6504	8470
2 - D, 2 - F	9929	7062	8590	13540	6936	8956
4 - F	10504	7556	9098	14218	7367	9442
2 - F, 2 - H	11000	7982	9537	14798	7739	9857
4 - H	11496	8409	9976	15378	8111	10273
2 - H, 2 - J	12040	8877	10457	16024	8520	10737
4 - J	12585	9345	10939	16671	8928	11200
2 - J, 2 - L	13210	9882	11492	17407	9397	11728
4 - L	13835	10420	12044	18144	9866	12256
2 - L, 2 - N	14693	11157	12803	19181	10509	13000
4 - N	15550	11894	13561		11152	13743
2 - N, 2 - P		12705	14396		11860	14572
4 - P		13516	15230		12568	15401
2 - P, 2 - R			15739		13000	15877
4 - R			16247		13431	16352
2 - R, 2 - S					15496	
4 - S					17561	

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)					
	320-213-086 (2)	320-246-086 (*3)	320-213-100 (*2)	320-305-100 (3) 320-256-100 (3)	320-305-120 (*3) 320-256-120 (3) 320-213-120 (3)	320-213-144 (*3)
A	95	97 1/2	112	118	136	163
C	84	118	84	118	118	118
D	180	246 3/4	180	246 3/4	246 3/4	246 3/4
E	53 1/2	44 1/4	70 1/2	64 3/4	82 3/4	109 3/4
F	163 1/4	227 1/2	163 1/4	227 1/2	227 1/2	227 1/2
G	16	16	16	16	16	16
H	82	103 1/4	82	103 1/4	103 1/4	103 1/4
J	64	89	56 1/2	85	86	72 3/4
K	36	36	36	36	36	36
L	72	72 3/4	72	72 3/4	72 3/4	72 3/4
L/M V-BELT	C285	C345	C285	C345	C345	C345
H/M V-BELT	C180	C210	C180	C210	C210	C210
L/M BRAKE CABLE	198	240	198	240	240	240
H/M BRAKE CABLE	156	156	156	156	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

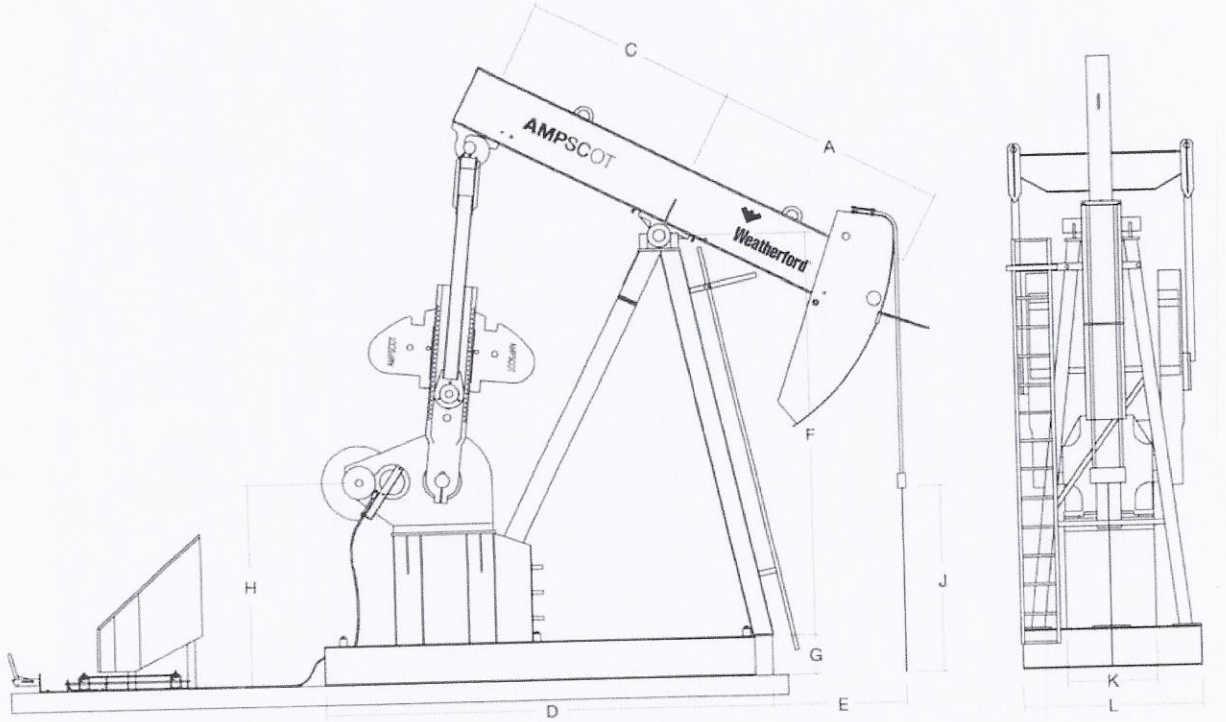
	API SIZE					
	320-213-086	320-246-086	320-213-100	320-305-100 320-256-100	320-305-120 320-256-120 320-213-120	320-213-144
POLISHED ROD CAPACITY (POUNDS)	21,300	24,600	21,300	30,500	30,500	21,300
STROKES (INCHES)	85, 72, 60	86, 77, 68	100, 85, 71	104, 93, 82	120, 107, 94, 82	144, 128, 113, 98
TORQUE FACTOR AT 90° (INCHES)	40, 35, 29	41, 37, 33	48, 41, 35	50, 45, 40	57, 52, 46, 35	68, 62, 55, 48
WIRELINE SIZE	1" X 22'-10"	1 1/8" X 30'	1" X 25'	1 1/8" X 30'	1 1/8" X 30'	1 1/8" X 32'
WIRELINE CENTRE	11"	12"	11"	12"	12"	12"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE					
	320-213-086	320-246-086	320-213-100	320-305-100 320-256-100	320-305-120 320-256-120 320-213-120	320-213-144
STRUCTURAL IMBALANCE (POUNDS)	+650	+1675	+200	+1000	+450	-175
CRANK NUMBER	A80-36	A100-50	A80-36	A100-50	A100-50	A100-50
CRANK ONLY	4390	8161	3373	6359	5099	3704
2 - B	5800	9954	4568	7840	6385	4777
4 - B	7209	11746	5764	9321	7670	5849
2 - B, 2 - D	7646	12304	6134	9782	8070	6183
4 - D	8082	12862	6504	10243	8470	6517
2 - D, 2 - F	8590	13540	6936	10803	8956	6922
4 - F	9098	14218	7367	11363	9442	7328
2 - F, 2 - H	9537	14798	7739	11842	9857	7675
4 - H	9976	15378	8111	12322	10273	8021
2 - H, 2 - J	10457	16024	8520	12856	10737	8408
4 - J	10939	16671	8928	13390	11200	8795
2 - J, 2 - L	11492	17407	9397	13999	11728	9235
4 - L	12044	18144	9866	14607	12256	9676
2 - L, 2 - N	12803	19181	10509	15464	13000	10296
4 - N	13561		11152	16321	13743	10917
2 - N, 2 - P	14396		11860	17277	14572	11609
4 - P	15230		12568	18232	15401	12300
2 - P, 2 - R	15739		13000	18780	15877	12697
4 - R	16247		13431	19328	16352	13094
2 - R, 2 - S			15496	21969	18643	15006
4 - S			17561	24609	20934	16917
2 - S, 2 - X					22038	
4 - X					23141	

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)			
	456-305-120 (3) 456-256-120 (3)	456-365-120 (4)	456-305-144 (4) 456-256-144 (4)	456-305-168 (4)
A	136	127	155	180
C	118	124	124	124
D	246 3/4	267 1/2	267 1/2	267 1/2
E	82 3/4	65 3/4	93 3/4	118 3/4
F	227 1/2	251 3/4	251 3/4	251 3/4
G	16	23 3/4	23 3/4	23 3/4
H	103 1/4	123	123	123
J	86	97 1/2	90	82
K	36	39 1/2	39 1/2	39 1/2
L	72 3/4	76 3/4	76 3/4	76 3/4
L/M V-BELT	C345	C390	C390	C390
H/M V-BELT	C210	C240	C240	C240
L/M BRAKE CABLE	240	264	264	264
H/M BRAKE CABLE	156	156	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

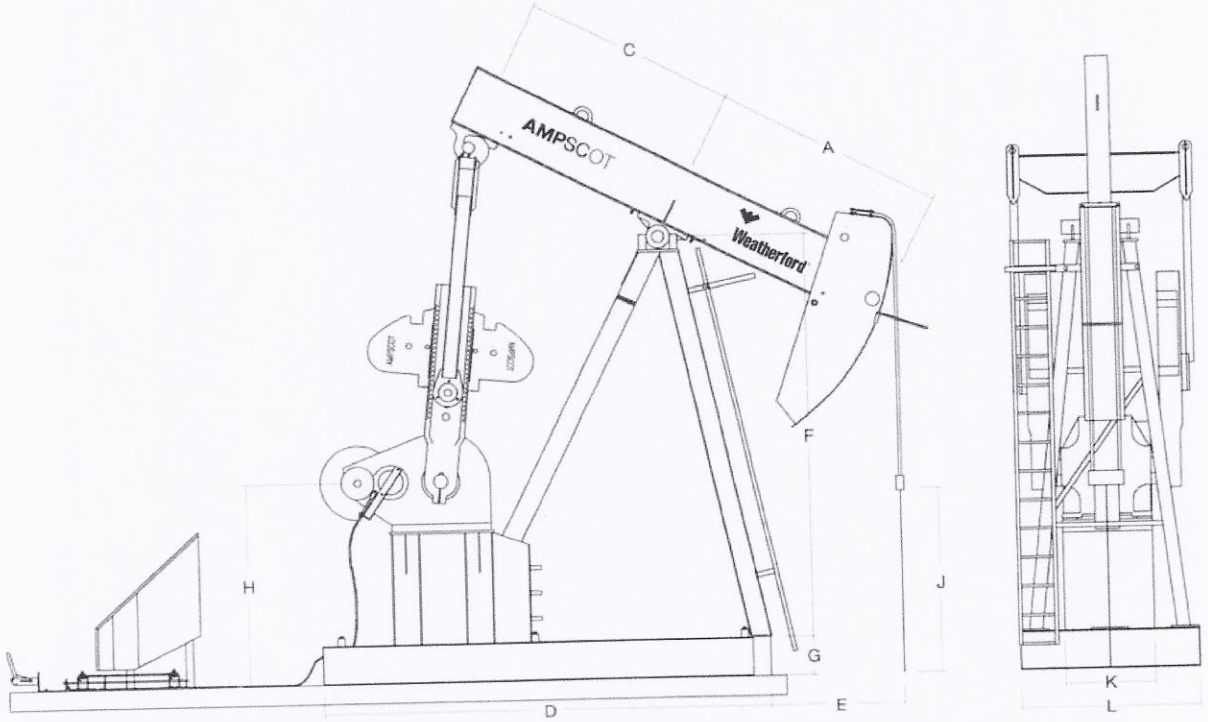
	API SIZE			
	456-305-120 456-256-120	456-365-120	456-305-144 456-256-144	456-305-168
MAX. POLISHED ROD CAPACITY (POUNDS)	30,500	36,500	30,500	30,500
STROKES (INCHES)	120, 107, 94, 82	120, 102, 84, 68	146, 124, 103, 83	170, 144, 120, 96
TORQUE FACTOR AT 90° (INCHES)	57, 52, 46, 35	55, 48, 41, 33	67, 58, 49, 40	78, 68, 57, 47
WIRELINE SIZE	1 1/8" X 30'	1 1/4" X 35'	1 1/4" X 35'	1 1/4" X 38'
WIRELINE CENTRE	12"	16"	16"	16"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE			
	456-305-120 456-256-120	456-365-120	456-305-144 456-256-144	456-305-168
STRUCTURAL IMBALANCE (POUNDS)	+625	+900	+50	-650
CRANK NUMBER	A100-50	A118-55	A118-55	A118-55
CRANK ONLY	5274	9881	7408	5686
2 - B	6560	11486	8723	6819
4 - B	7845	13092	10038	7951
2 - B, 2 - D	8245	13593	10449	8305
4 - D	8645	14094	10860	8658
2 - D, 2 - F	9131	14717	11370	9098
4 - F	9617	15341	11881	9538
2 - F, 2 - H	10032	15871	12316	9912
4 - H	10448	16402	12751	10287
2 - H, 2 - J	10912	16999	13240	10708
4 - J	11375	17595	13729	11129
2 - J, 2 - L	11903	18272	14283	11606
4 - L	12431	18949	14838	12084
2 - L, 2 - N	13175	19916	15630	12766
4 - N	13918	20883	16422	13448
2 - N, 2 - P	14747	21968	17311	14213
4 - P	15576	23053	18200	14979
2 - P, 2 - R	16052	23656	18694	15404
4 - R	16527	24258	19187	15829
2 - R, 2 - S	18818	27172	21574	17885
4 - S	21109	30085	23961	19940
2 - S, 2 - X	22213			20993
4 - X	23316			22045
2 - X, 2 - Y				23889
4 - Y				

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)				
	640-305-120 (3)	640-365-120 (*4)	640-365-144 (4) 640-305-144 (4) 640-256-144 (4)	640-305-168 (4)	640-365-168 (*5)
A	136	127	155	180	178
C	118	124	124	124	122
D	246 3/4	267 1/2	267 1/2	267 1/2	261 1/2
E	82 3/4	65 3/4	93 3/4	118 3/4	116 3/4
F	2271/2	251 3/4	251 3/4	251 3/4	271 1/2
G	16	23 3/4	23 3/4	23 3/4	23 3/4
H	103 1/4	123	123	123	120
J	86	97 1/2	90	82	75
K	36	39 1/2	39 1/2	39 1/2	39 1/2
L	72 3/4	76 3/4	76 3/4	76 3/4	76 3/4
L/M V-BELT	C345	C390	C390	C390	C390
H/M V-BELT	C210	C240	C240	C240	C240
L/M BRAKE CABLE	240	264	264	264	264
H/M BRAKE CABLE	156	156	156	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

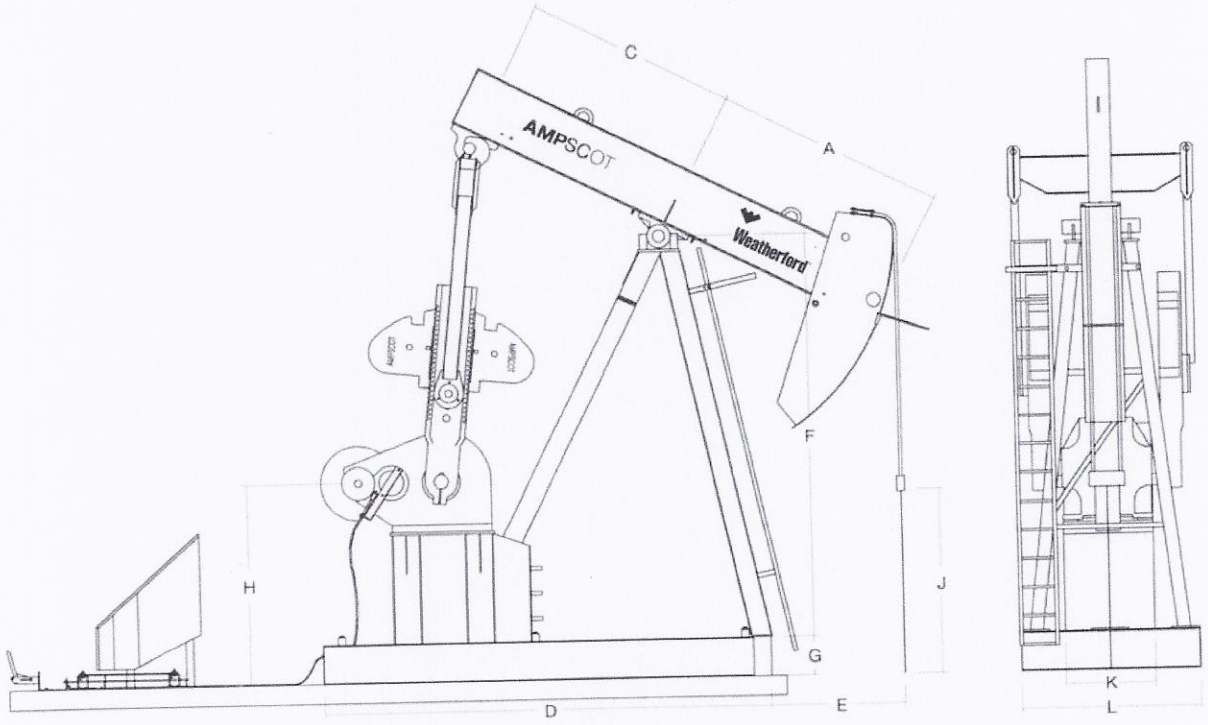
	API SIZE				
	640-305-120	640-365-120	640-365-144 640-305-144 640-256-144	640-305-168	640-365-168
MAX. POLISHED ROD CAPACITY (POUNDS)	30,500	36,500	36,500	30,500	36,500
STROKES (INCHES)	120, 107, 94, 82	120, 102, 84, 68	146, 124, 103, 83	170, 144, 120, 96	168, 143, 119, 96
TORQUE FACTOR AT 90° (INCHES)	57, 52, 46, 35	55, 48, 41, 33	67, 58, 49, 40	78, 68, 57, 47	80, 69, 58, 47
WIRELINE SIZE	1 1/8" X 30'	1 1/4" X 35'	1 1/4" X 35'	1 1/4" X 38'	1 3/8" X 40' LOOP-STYLE
WIRELINE CENTRE	12"	16"	16"	16"	16"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE				
	640-305-120	640-365-120	640-365-144 640-305-144 640-256-144	640-305-168	640-365-168
STRUCTURAL IMBALANCE (POUNDS)	+625	+900	+50	-650	-350
CRANK NUMBER	A100-50	A118-55	A118-55	A118-55	A118-55
CRANK ONLY	5274	9881	7408	5686	5872
2 - B	6560	11486	8723	6819	6979
4 - B	7845	13092	10038	7951	8085
2 - B, 2 - D	8245	13593	10449	8305	8431
4 - D	8645	14094	10860	8658	8776
2 - D, 2 - F	9131	14717	11370	9098	9206
4 - F	9617	15341	11881	9538	9635
2 - F, 2 - H	10032	15871	12316	9912	10001
4 - H	10448	16402	12751	10287	10367
2 - H, 2 - J	10912	16999	13240	10708	10778
4 - J	11375	17595	13729	11129	11190
2 - J, 2 - L	11903	18272	14283	11606	11656
4 - L	12431	18949	14838	12084	12123
2 - L, 2 - N	13175	19916	15630	12766	12789
4 - N	13918	20883	16422	13448	13456
2 - N, 2 - P	14747	21968	17311	14213	14204
4 - P	15576	23053	18200	14979	14951
2 - P, 2 - R	16052	23656	18694	15404	15367
4 - R	16527	24258	19187	15829	15782
2 - R, 2 - S	18818	27172	21574	17885	17791
4 - S	21109	30085	23961	19940	19799
2 - S, 2 - X	22213		25184	20993	20827
4 - X	23316		26406	22045	21855
2 - X, 2 - Y			28547	23889	23657
4 - Y					25458
2 - Y, 2 - Z					27388

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)			
	912-427-144 (5)	912-365-168 (5)	912-427-168 (*5)	912-365-192 (5) 912-305-192 (*5)
A	152 3/8	178	178	203
C	122	122	122	122
D	267 1/2	267 1/2	267 1/2	267 1/2
E	91	116 3/4	116 3/4	141 3/4
F	271 1/2	271 1/2	271 1/2	271 1/2
G	23 3/4	23 3/4	23 3/4	23 3/4
H	120	120	120	120
J	77	75 1/4	75 1/4	74
K	39 1/2	39 1/2	39 1/2	39 1/2
L	76 3/4	76 3/4	76 3/4	76 3/4
L/M V-BELT	C390	C390	C390	C390
H/M V-BELT	C240	C240	C240	C240
L/M BRAKE CABLE	264	264	264	264
H/M BRAKE CABLE	156	156	156	156

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

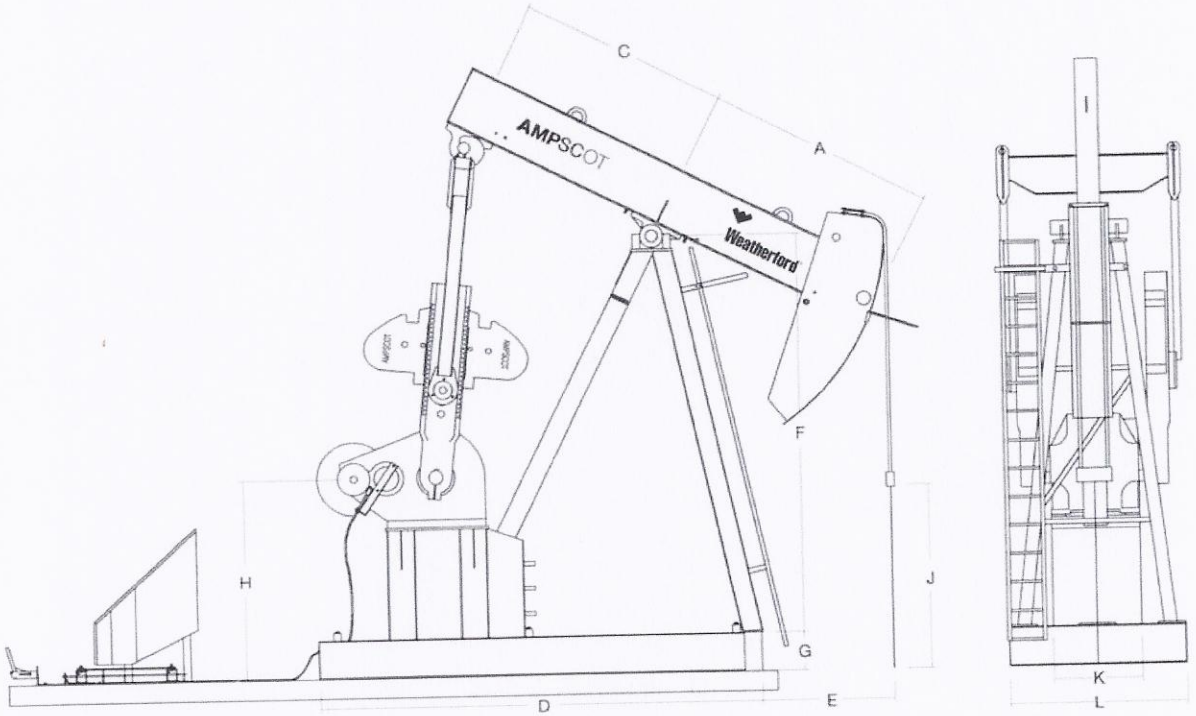
	API SIZE			
	912-427-144	912-365-168	912-427-168	912-365-192 912-305-192
MAX. POLISHED ROD CAPACITY (POUNDS)	42,700	36,500	42,700	36,500
STROKES (INCHES)	144, 123, 102, 82	168, 143, 119, 96	168, 143, 119, 96	192, 163, 136, 110
TORQUE FACTOR AT 90° (INCHES)	68, 59, 50, 41	80, 69, 58, 47	80, 69, 58, 47	91, 79, 67, 54
WIRELINE SIZE	1 3/8" X 40' LOOP-STYLE	1 3/8" X 40' LOOP-STYLE	1 3/8" X 40' LOOP-STYLE	1 3/8" X 40' LOOP-STYLE
WIRELINE CENTRE	16"	16"	16"	16"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE			
	912-427-144	912-365-168	912-427-168	912-365-192 912-305-192
STRUCTURAL IMBALANCE (POUNDS)	+500	-275	-300	-950
CRANK NUMBER	A118-55	A118-55	A118-55	A118-55
CRANK ONLY	7770	5947	5922	4506
2 - B	9063	7054	7029	5476
4 - B	10355	8160	8135	6446
2 - B, 2 - D	10759	8506	8481	6749
4 - D	11163	8851	8826	7052
2 - D, 2 - F	11665	9281	9256	7429
4 - F	12167	9710	9685	7806
2 - F, 2 - H	12594	10076	10051	8126
4 - H	13021	10442	10417	8447
2 - H, 2 - J	13502	10853	10828	8808
4 - J	13983	11265	11240	9168
2 - J, 2 - L	14528	11731	11706	9577
4 - L	15073	12198	12173	9987
2 - L, 2 - N	15852	12864	12839	10571
4 - N	16630	13531	13506	11155
2 - N, 2 - P	17504	14279	14254	11811
4 - P	18378	15026	15001	12467
2 - P, 2 - R	18863	15442	15417	12831
4 - R	19349	15857	15832	13195
2 - R, 2 - S	21695	17866	17841	14956
4 - S	24041	19874	19849	16717
2 - S, 2 - X	25243	20902	20877	17619
4 - X	26444	21930	21905	18520
2 - X, 2 - Y	28549	23732	23707	20100
4 - Y	30654	25533	25508	21679
2 - Y, 2 - Z	32909	27463	27438	23372
4 - Z			29368	25064

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.



DIMENSIONS

	API SIZE (GROUP)		
	1280-427-168 (5) 1280-365-168 (*5)	1280-365-192 (*5) 1280-305-192 (*5)	1280-305-240 (*6)
A	178	203	230
C	122	122	122
D	267 3/8	267 3/8	308 3/8
E	116 3/4	141 3/4	161
F	271 1/2	271 1/2	316 1/4
G	23 3/4	23 3/4	23 3/4
H	120	120	120
J	75 1/4	74	80
K	39 1/2	39 1/2	39 1/2
L	76 3/4	76 3/4	76 3/4
L/M V-BELT	C390	C390	C240
H/M V-BELT	C240	C240	
L/M BRAKE CABLE	264	264	156
H/M BRAKE CABLE	156	156	

(*) denotes a non-API size

Above belts and brake cables listed are typical.

All dimensions are in inches

SPECIFICATIONS

	API SIZE			
	1280-365-168	1280-427-168	1280-365-192 1280-305-192	1280-305-240
MAX. POLISHED ROD CAPACITY (POUNDS)	36,500	42,700	36,500	30,500
STROKES (INCHES)	168, 143, 119, 96	168, 143, 119, 96	192, 163, 136, 110	239, 206, 175
TORQUE FACTOR AT 90° (INCHES)	80, 69, 58, 47	80, 69, 58, 47	91, 79, 67, 54	112, 98, 85
WIRELINE SIZE	1 3/8" X 40' LOOP-STYLE	1 3/8" X 40' LOOP-STYLE	1 3/8" X 40' LOOP-STYLE	1 3/8" X 48'-8" LOOP-STYLE
WIRELINE CENTRE	16"	16"	16"	16"

MAXIMUM EFFECTIVE COUNTERBALANCE

(at the polished rod at maximum stroke, in pounds)

	API SIZE			
	1280-365-168	1280-427-168	1280-365-192 1280-305-192	1280-305-240
STRUCTURAL IMBALANCE (POUNDS)	-225	-250	-900	-2100
CRANK NUMBER	A118-55	A118-55	A118-55	A118-60
CRANK ONLY	5997	5972	4556	2321
2 - B	7104	7079	5526	3107
4 - B	8210	8185	6496	3894
2 - B, 2 - D	8556	8531	6799	4139
4 - D	8901	8876	7102	4385
2 - D, 2 - F	9331	9306	7479	4690
4 - F	9760	9735	7856	4995
2 - F, 2 - H	10126	10101	8176	5255
4 - H	10492	10467	8497	5515
2 - H, 2 - J	10903	10878	8858	5807
4 - J	11315	11290	9218	6100
2 - J, 2 - L	11781	11756	9627	6431
4 - L	12248	12223	10037	6763
2 - L, 2 - N	12914	12889	10621	7236
4 - N	13581	13556	11205	7710
2 - N, 2 - P	14329	14304	11861	8241
4 - P	15076	15051	12517	8773
2 - P, 2 - R	15492	15467	12881	9068
4 - R	15907	15882	13245	9363
2 - R, 2 - S	17916	17891	15006	10790
4 - S	19924	19899	16767	12217
2 - S, 2 - X	20952	20927	17669	12948
4 - X	21980	21955	18570	13678
2 - X, 2 - Y	23782	23757	20150	14958
4 - Y	25583	25558	21729	16238
2 - Y, 2 - Z	27513	27488	23422	17610
4 - Z		29418	25114	18981

When selecting counterweights, the value in the table must be equal to or greater than the required counterbalance.

GEAR REDUCERS

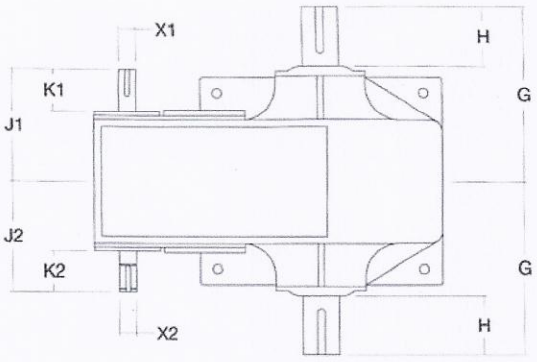
Ampscot™ gear reducers are manufactured to American Petroleum Institute specification 11E. Every effort is made to manufacture a quality product of the strength and reliability demanded within the oil industry. Ampscot gear reducers are designed specifically to handle the high-cyclical loads encountered in oilfield pumping situations. The gearcase is a tub-type molded in one piece from high-strength cast iron. The one-piece design gives the reducer more strength than the common split reducers.

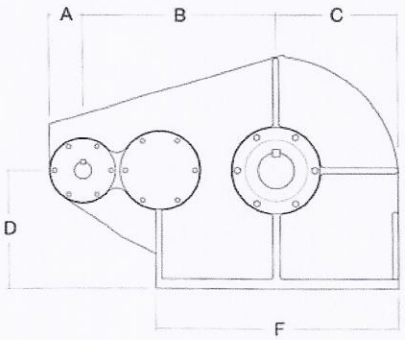
High-speed and intermediate-speed roller bearings are enclosed in separate housings. This provides easy access to the bearings for service or replacement, and more importantly, protects the main gearcase in the event of a bearing failure. Lubricating oil is distributed directly to each bearing by a wiper and gravity feed system. This system provides adequate lubrication on reducers operating at pumping speeds as low as two strokes per minute, assuming that the proper viscosity oil is utilized.

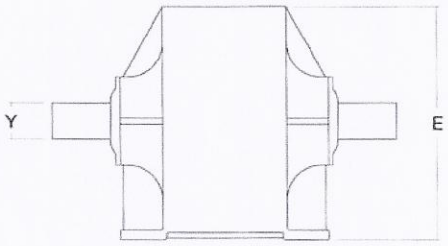
All gears are made of cast ductile iron and have herringbone-type teeth; the strongest gear technology available. The gearing is also designed with a coarse diametric pitch for added protection against shock loads. Pinion shafts are manufactured from top quality 4145 heat treated stress relieved steel to achieve high-tensile strength and maximum durability.

TECHNICAL DATA

MODEL SIZE	TORQUE RATING (IN-LBS)	GEAR RATIO	MAXIMUM SHEAVE SIZE (INCHES)	OIL CAPACITY (LITERS)
D114	114,000	30.88	36(4C)	56
D160	160,000	29.17	36(4C)	56
D228	228,000	30.03	36(4C)	125
D320	320,000	30.03	36(5C)	120
D456	456,000	29.64	50(5C)	240
D640	640,000	29.64	50(5C)	235
D912	912,000	30.29	50(8C)	310
D1280	1,280,000	28.25	50(10C)	305



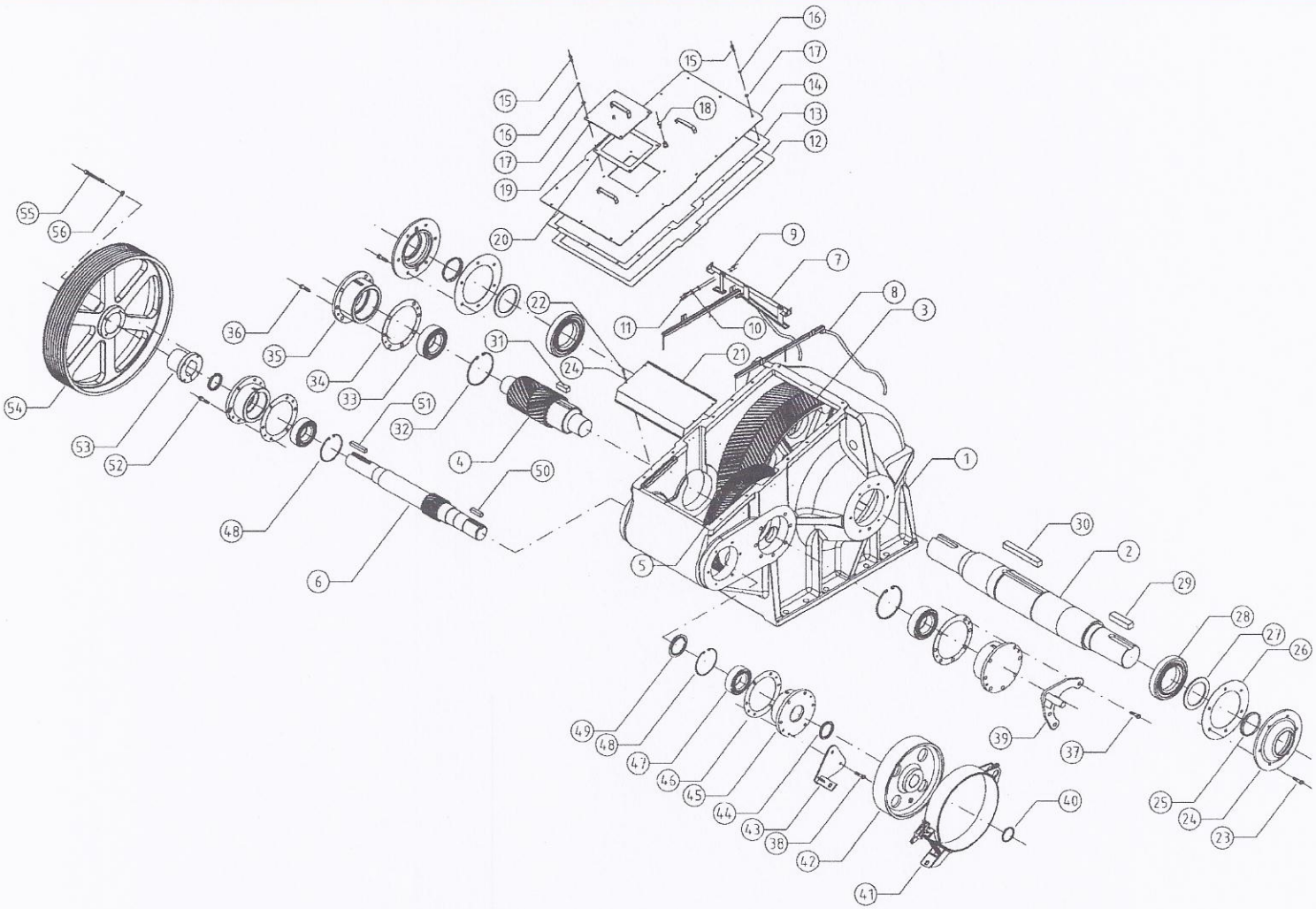




DIMENSIONS

	API SIZE							
	D114	D160	D228	D320	D456	D640	D912	D1280
A	4 7/8	4 3/4	5 3/4	5 3/4	7 3/4	7 3/4	9	9
B	26	26 1/8	33 3/8	33 3/8	41 1/2	41 1/2	49 1/4	50
C	15	15	20 3/8	20 3/8	24 3/4	24 3/4	29	29
D	16 3/4	16 3/4	20 5/8	20 5/8	25 3/4	25 3/4	30 1/8	30 1/8
E	31 1/2	31 1/2	41 5/8	41 5/8	51 3/8	51 3/8	59 1/4	59 1/4
F	28 3/8	28 3/8	40	40	49	49	57 1/2	57 1/4
G	25	25	30	30	35	35	39 1/4	43
H	8 3/4	8 3/4	10 3/8	10 3/8	9	9	10	14 1/8
J1	15 1/4	15 1/4	18 3/4	18 3/4	23 3/8	23 3/8	27	27 3/4
J2	15 1/8	15 1/8	18	18	23	23	25 5/8	26 3/4
K1	5 3/8	5 3/8	6 1/2	6 1/2	8 1/8	8 1/8	9	8 5/8
K2	5 3/4	5 5/8	5 3/4	5 3/4	7 3/4	7 3/4	7 3/4	7 1/2
X1	2 1/4	2 3/4	3	3	4	4	4 1/2	5
X2	2 3/8	2 3/4	3	3	4	4	4 1/2	5
Y	5 1/2	5 1/2	6 1/4	6 1/4	6 3/4	7 1/2	7 1/2	8 5/8

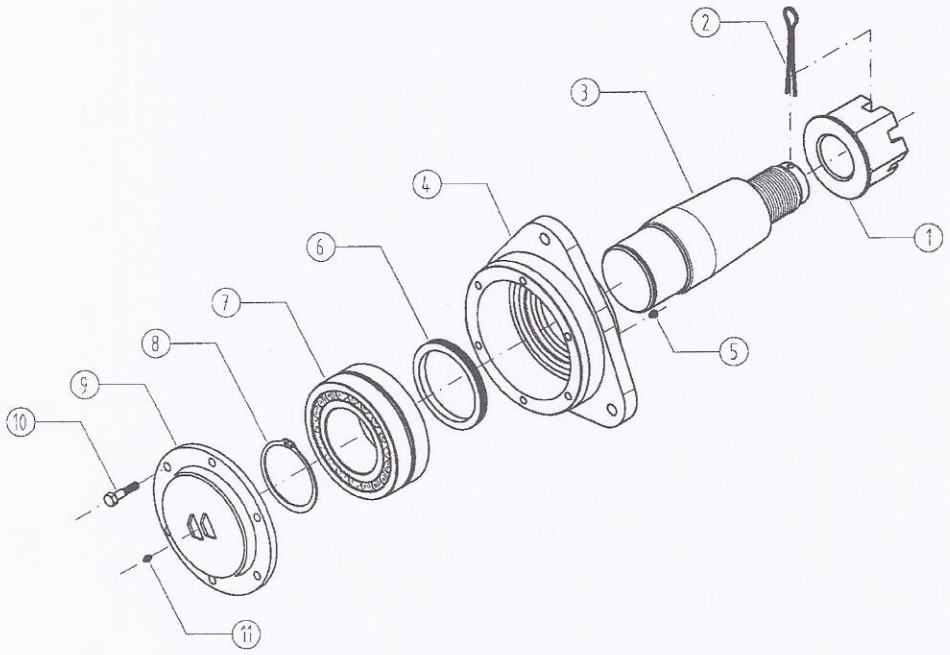
All dimensions are in inches



1	Gearbox	20	Inspection Cover Gasket	39	Intermediate Speed Support Plate
2	Low Speed Shaft	21	Splash Guard	40	Brake Snap Ring
3	Low Speed Gear	22	Splash Guard Bolt	41	Brake Band
4	Low Speed Pinion	23	Low Speed Bolt	42	Brake Wheel
5	High Speed Gear	24	Low Speed Housing	43	High Speed Support Plate
6	High Speed Pinion	25	V-Ring	44	High Speed Seal
7	Oiler Assembly	26	Low Speed Shim	45	High Speed Housing
8	Hose	27	Low Speed Slinger	46	High Speed Gasket
9	Oiler Assembly Nut	28	Low Speed Bearing	47	High Speed Bearing
10	Flat Washer	29	Crank Key	48	High Speed Snap Ring
11	Bolt	30	Low Speed Gear Key	49	High Speed Slinger
12	Polyethylene Gasket	31	High Speed Gear Key	50	Brake Key
13	Gearbox Cover Gasket	32	Intermediate Speed Snap Ring	51	Sheave Key
14	Gearbox Cover	33	Intermediate Speed Bearing	52	High Speed Housing Bolt
15	Gearbox Cover Bolt	34	Intermediate Speed Gasket	53	Bushing
16	Lock Washer	35	Intermediate Speed Housing	54	Reducer Sheave
17	Flat Washer	36	Intermediate Speed Housing Bolt	55	Cap Screw
18	Breather	37	Intermediate Speed Support Plate Bolt	56	Lock Washer
19	Inspection Cover	38	High Speed Support Plate Bolt		

WRIST PIN ASSEMBLY

Wrist pins use the well-proven single taper attachment to the crank. The assembly utilizes conventional self-aligning spherical roller bearings that are easily accessible through an inspection plate.

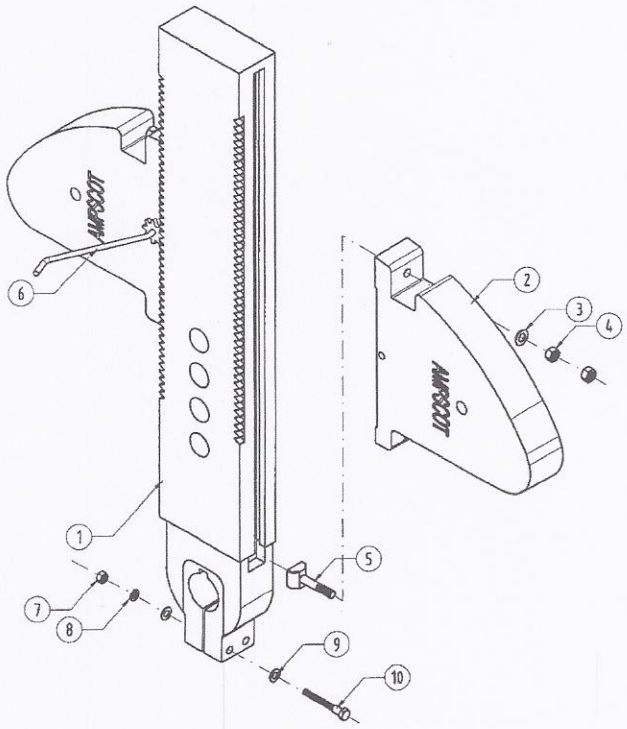


1	Wrist Pin Nut
2	Cotterpin
3	Wrist Pin
4	Wrist Pin Housing
5	Relief Fitting
6	Seal
7	Bearing
8	Snap Ring
9	Wrist Pin Housing Cap
10	Housing Cap Bolt
11	Grease Fitting

CRANK & COUNTERBALANCE

1	Crank
2	Counterweight
3	Washer
4	Nut
5	Counterweight Bolt
6	Weight Adjusting Crank
7	Nut
8	Lock Washer
9	Flat Washer
10	Bolt

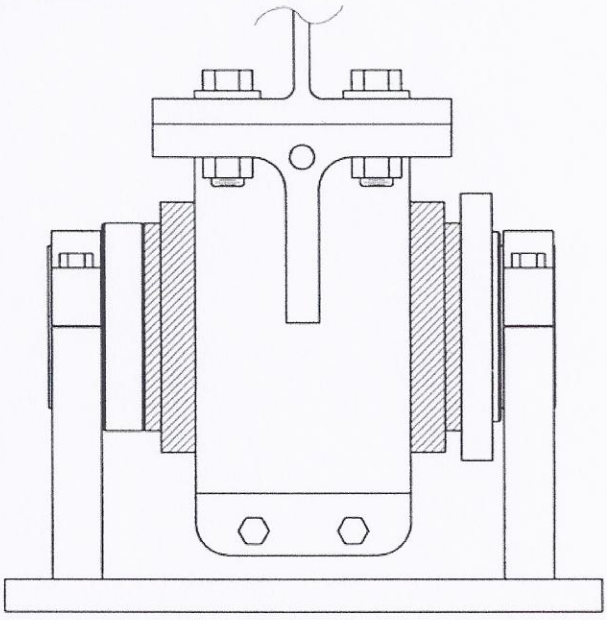
Crank arms are made of Class 30 cast iron. They are designed with a split boss for simple installation and removal. All crank-to-weight surfaces are machined to ensure proper counterbalance retention and permit easy adjustment with our rack-and-pinion method of balancing. The cranks come standard with three machined wrist pin holes. An optional fourth hole in the crank can be ordered for an added stroke length alternative. The Ampscot™ weight bolts are a 1½-inch forged bolt.



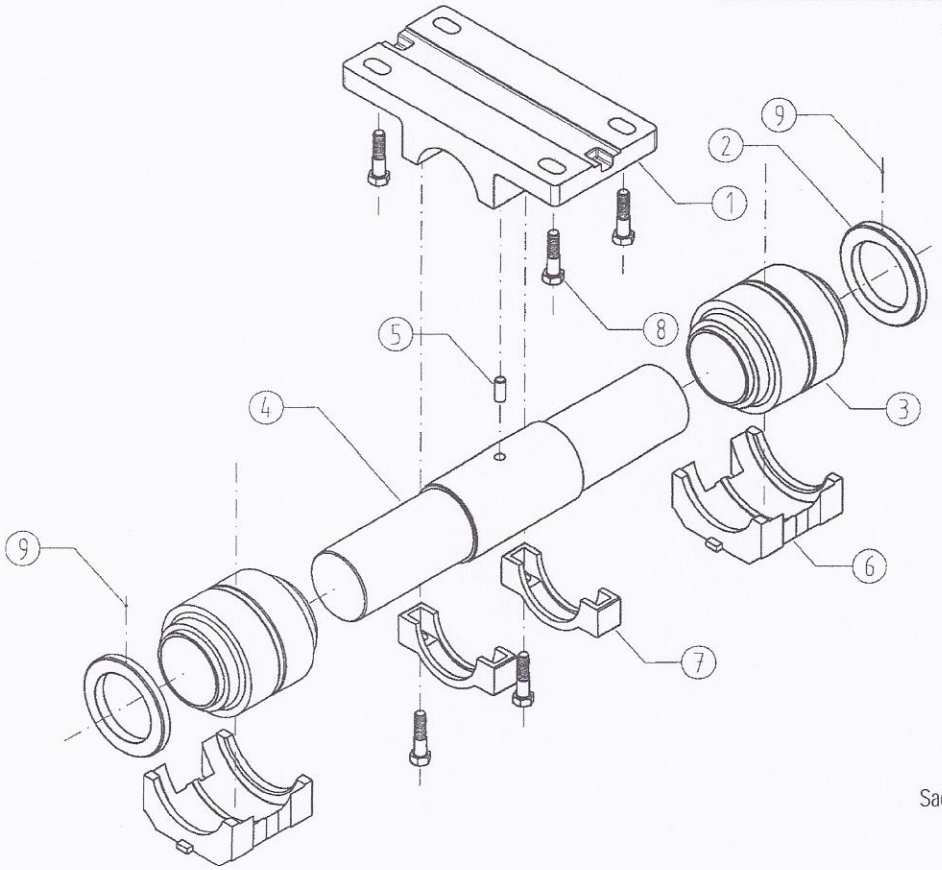
SADDLE BEARING ASSEMBLY

Ampscot™ 114 to 160 pumping units utilize a double tapered roller, which has a large sealed lubricant cavity and is mounted in a split housing.

On units larger than 160, two of these bearings are used, one on each side of the walking beam. These bearings have excellent load carrying capabilities and are readily available. These assemblies can be replaced with no special tools.



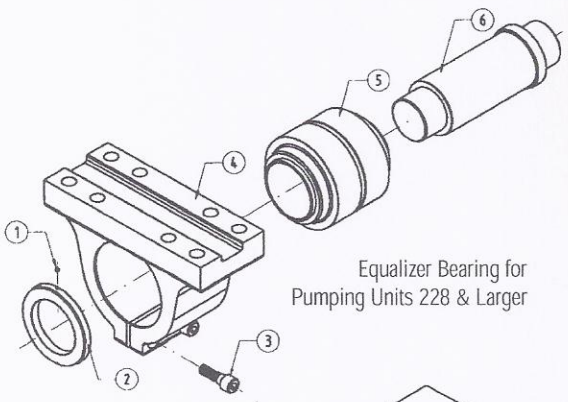
Saddle Bearing for Pumping Units 114 & 160



1	Saddle Trunnion
2	Bearing Retainer Ring
3	Bearing
4	Saddle Shaft
5	Saddle Shaft Pin
6	Bearing Adapter
7	Saddle Trunnion Cap
8	Bolt
9	Grease Fitting

Saddle Bearing for Pumping Units 640 & Larger

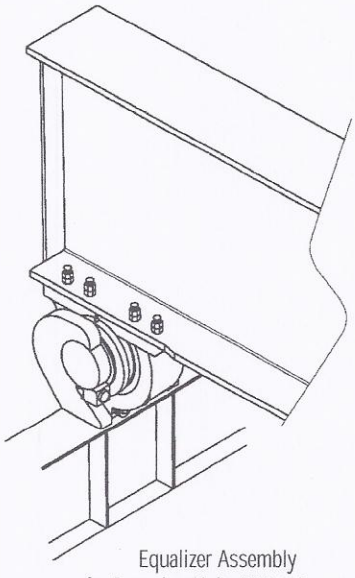
EQUALIZER BEARING ASSEMBLY



Equalizer Bearing for
Pumping Units 228 & Larger

1	Grease Nipple
2	Bearing Retaining Ring
3	Bolt
4	Bearing Housing
5	Bearing
6	Equalizer Shaft

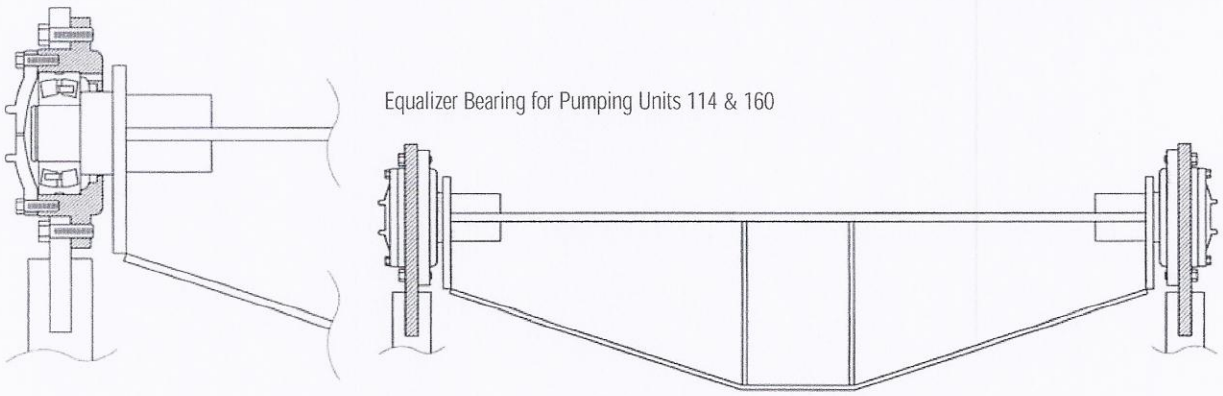
For pumping units size 228 and larger, the double tapered roller bearing is incorporated in a housing that is bolted onto the walking beam. The split housing clamps the bearing into place. Removal of two bolts allows easy removal of the equalizer bearing and pin, which are a complete unit. This system makes it very simple to service the bearing without removing the walking beam.



Equalizer Assembly
for Pumping Units 228 & Larger

The equalizer beam is manufactured using two pre-stressed hooks. When the two wedge bolts are removed the pitman assemblies can be lifted off of the equalizer bearing, allowing the bearing to be serviced or the unit to be easily moved.

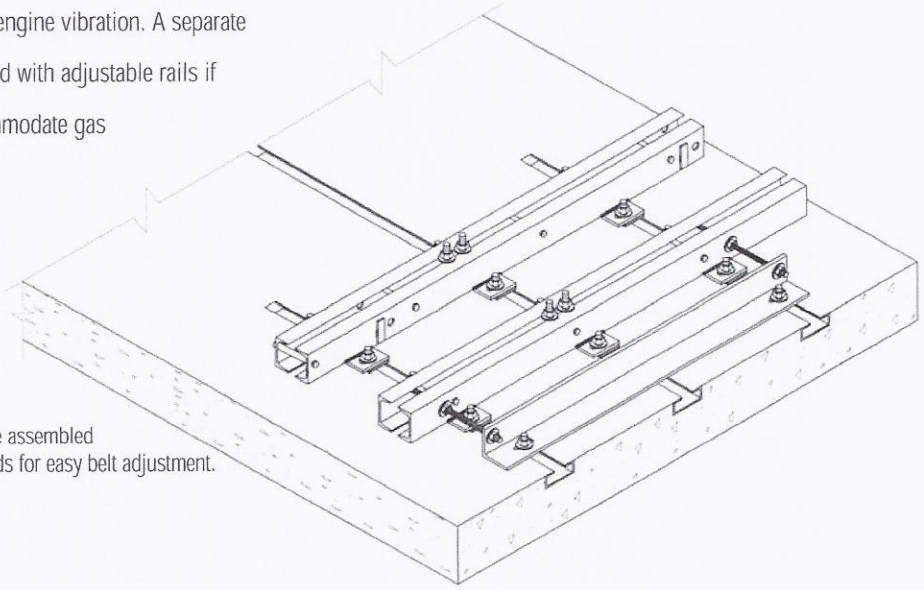
Ampscot™ 114 and 160 pumping units incorporate conventional self-aligning spherical roller bearings mounted in an interchangeable housing with the wrist pin assembly. This design greatly simplifies maintenance procedures by providing easy access to the assembly for parts replacement or servicing. This design also utilizes a minimum number of parts.



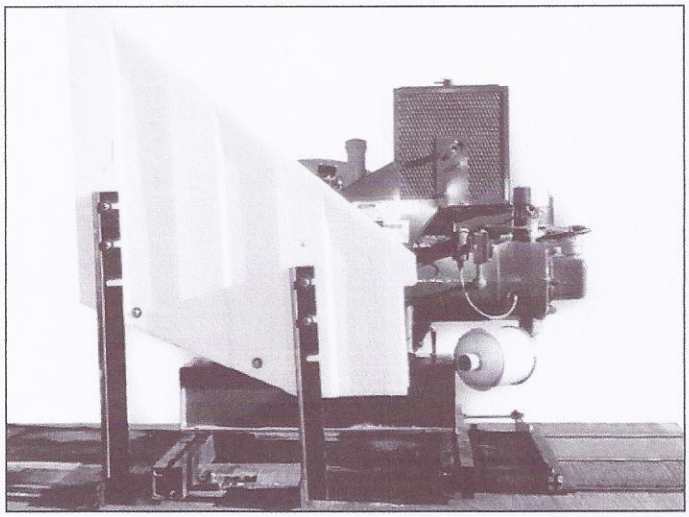
Equalizer Bearing for Pumping Units 114 & 160

DIRECT-MOUNT MOTOR EXTENSION

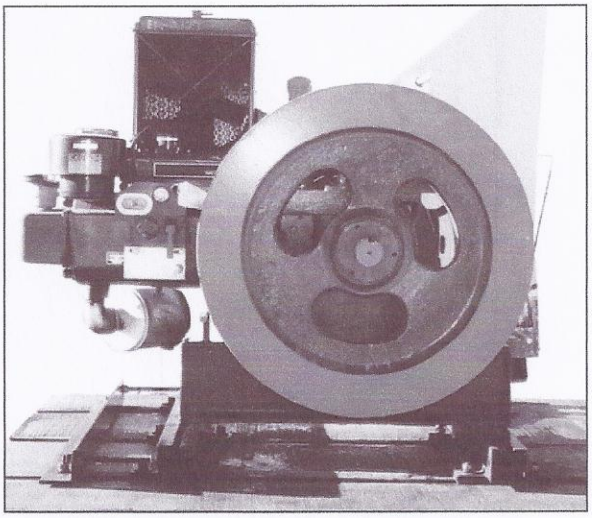
On applications where a concrete base is being utilized, we recommend using direct mount rails to reduce engine vibration. A separate low-mount extension base may be ordered with adjustable rails if desired. Either of these setups will accommodate gas or electric motors.



Direct Mount Motor Rails are assembled with zinc plated adjusting rods for easy belt adjustment.



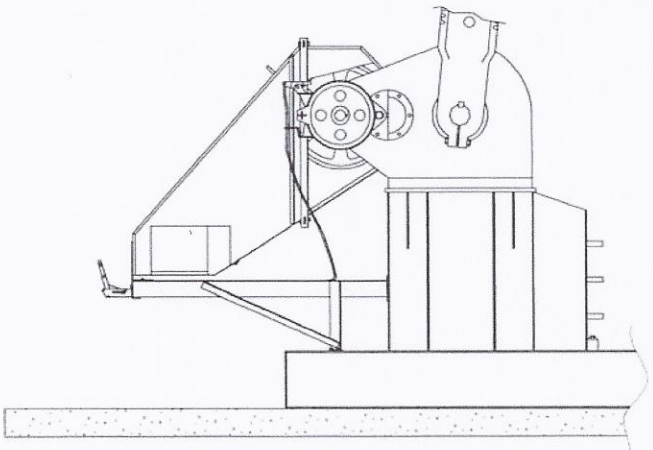
Our direct-mount plastic beltguard is adjustable to three different heights and can be removed by one person for access to the motor sheave. It also provides protection from the engine to the rear crankguard panel.



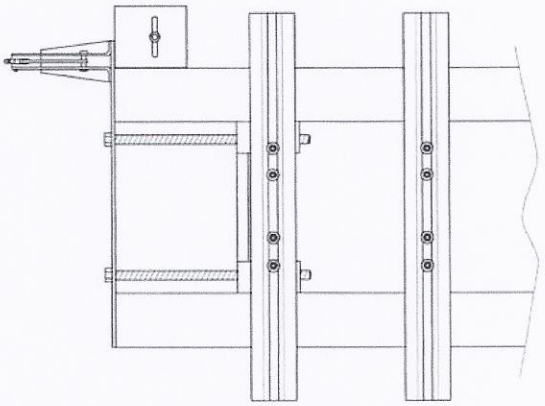
Gas engine mounted on direct-mount rails.

HIGH-MOUNT MOTOR EXTENSION

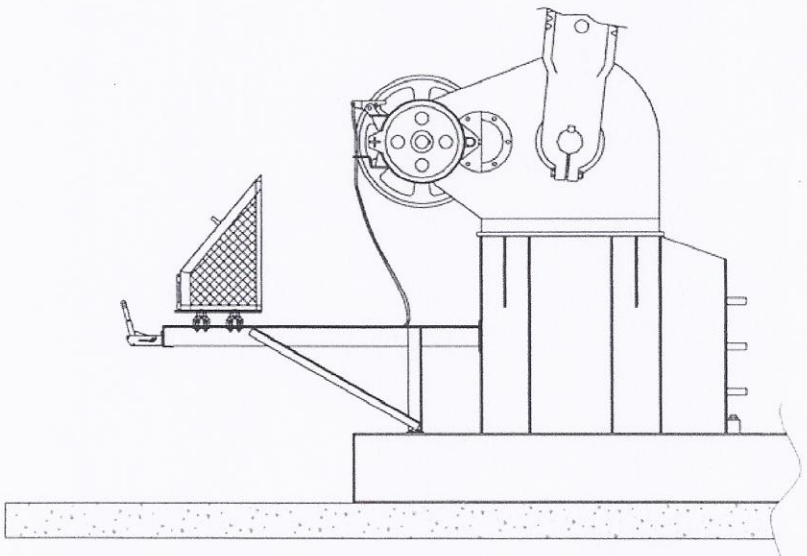
A high-mount extension would be advisable if the pumping unit will be powered by an electric motor. This mount is not only cheaper but helps protect the electric motor from blowing snow and dust which will ultimately reduce the motor life. High-mount motor extensions are assembled with zinc plated adjusting rods for easy belt adjustment. Fully enclosed beltguards are standard equipment with high-mount extensions. A swing away beltguard is available upon request.



High-Mount with Full Beltguard



Plated adjusting rods for easy belt adjustment are standard.

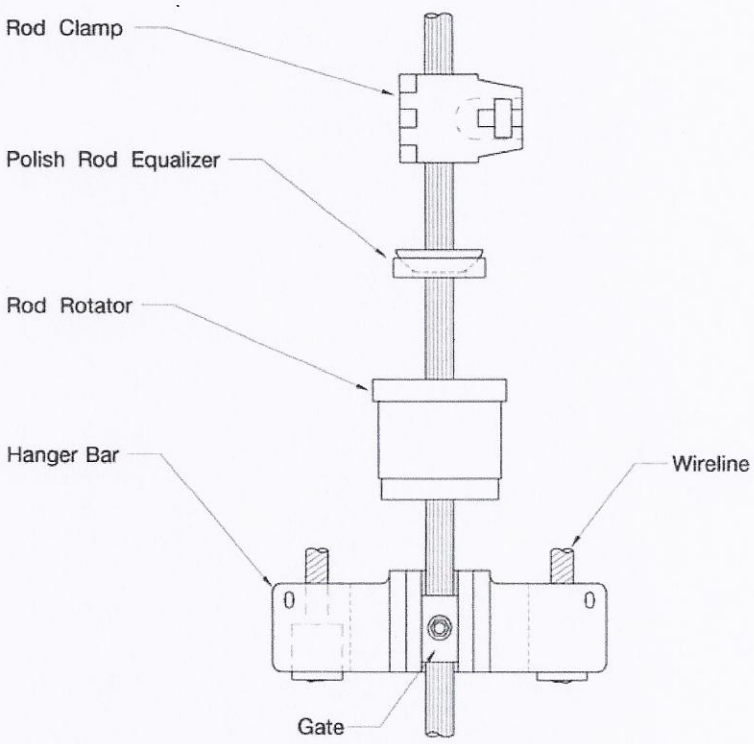


High-Mount with Swing-Away Beltguard

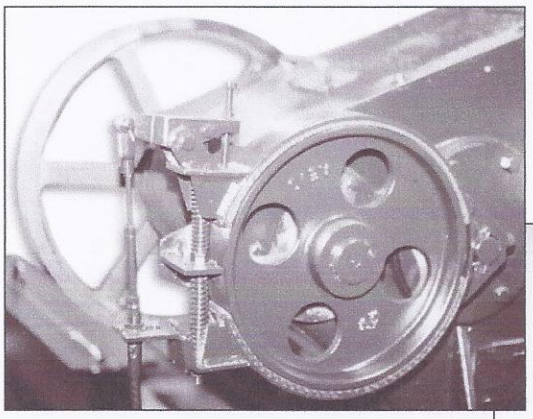
HANGER BAR & POLISH ROD EQUALIZER

Ductile iron hanger bars come complete with ends for easy wireline replacement and adjustment. Positive contact between the hanger bar and the polish rod clamp is achieved by machined surfaces. The use of a sliding gate allows field personnel to detach the polish rod with ease.

The polish rod equalizer is designed to continually adjust for any rod misalignment between the hanger bar, polish rod clamp or rod rotator. The life of the polish rod will be extended significantly by a reduction in bending stresses. In addition, there would be a reduction of wear on the stuffing box and related equipment. The polish rod equalizer can be ordered to fit 1¼-inch or 1½-inch polish rods and only takes a few minutes to install. There is no maintenance or lubrication necessary with this system.

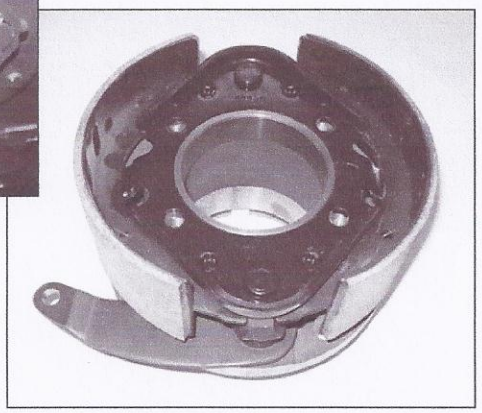


BRAKE ASSEMBLY



18" Brake Band Assembly

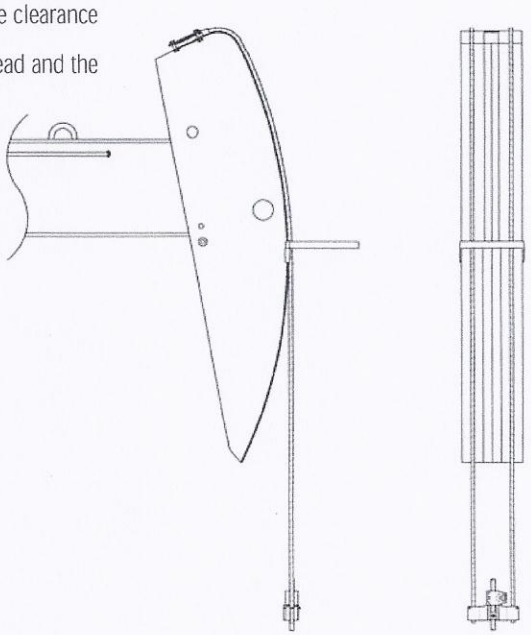
Ampscot™ 114 and 160 pumping units are equipped with a Bendix 3x9-inch internal expanding brake assembly. On the 228 and 320 units, an 18-inch brake band is used, see picture to the left. For the 456 through 1280, a 24-inch brake band is utilized. This is a simple, effective assembly that is easily serviced and adjusted. Standard brake assemblies are operated by an over center Orscheln brake lever and cable assembly.



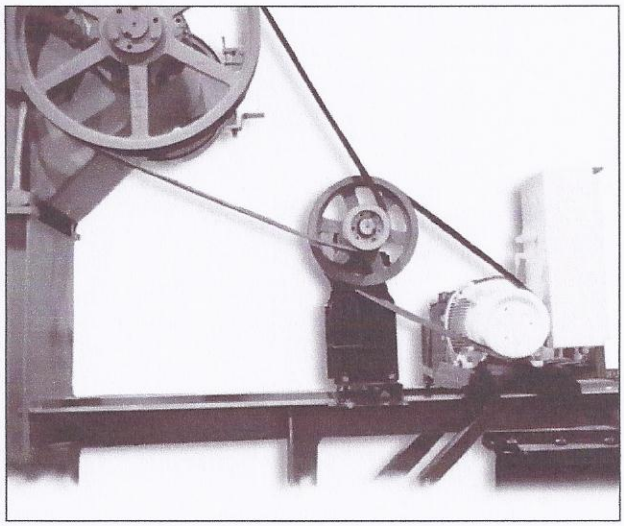
Bendix Brake Assembly

MULEHEAD

The mulehead has been designed for easy removal with ample clearance for well servicing. Adjusting screws on both the mulehead and the saddle trunnion permit lateral and longitudinal adjustments. The mulehead can be positioned precisely over the center of the well. Wireline retaining brackets come standard on all pumping units.



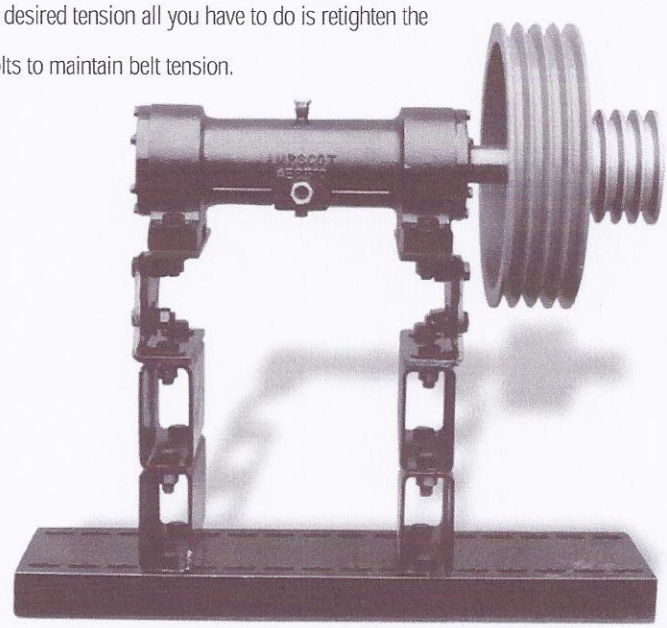
JACKSHAFT ASSEMBLY



The purpose of a jackshaft assembly is to allow the operator to slow down a pumping unit below its capabilities with standard sheaves and belts. Ampscot™ jackshafts are available with either a $2\frac{1}{4}$-inch or $2\frac{7}{8}$-inch single shaft extension manufactured from 4140 annealed steel. The shaft is mounted on roller bearings and is housed and sealed to prevent contamination. Lubrication is supplied by means of an oil bath system.

Ampscot jackshaft assemblies come complete with a universal-type mounting system, which allow an operator to retrofit them onto any type of pumping unit or directly onto the concrete base. The jackshaft is designed to carry sheave sizes up to 24-inch diameter allowing up to a 4 to 1 reduction if necessary.

Another feature of this assembly is our swivel-style, which allows for quick and uniform belt tensioning. This system permits the operator to release two bolts on the jackshaft and have the head swivel back and forth. Both sets of belts can then be adjusted by moving the prime mover. When both sets of belts are at the desired tension all you have to do is retighten the swivel bolts to maintain belt tension.



EFFECTIVE COUNTERBALANCE CHART

CRANK NO.	CBTC (2 Cranks; Inch-pounds)
A55L	62300
A80L	120600
A80	151000
A100	265200
A118, GROUP 4	492700
A118, GROUP 5	495200
A118, GROUP 6	495200

COUNTER WEIGHTS	W (Pounds)	G (Inches)
B	410	10.6
D	540	11
F	720	14
H	870	15.2
J	1045	16.8
L	1240	17.7
N	1535	19.7
P	1875	21.7
R	2040	21.3
S	2850	20.8
X	3375	23.8
Y	4265	26.6
Z	5230	28.8

COUNTER WEIGHTS	G FOR COMBINATION OF WEIGHTS (Inches)
B and D	10.8
D and F	12.7
F and H	14.7
H and J	16
J and L	17.3
L and N	18.8
N and P	20.8
P and R	21.5
R and S	21
S and X	22.4
X and Y	25.4
Y and Z	27.8

CBTC = Counterbalance Torque of Cranks (inch-pounds)
CBTW = Counterbalance Torque of Counterweights (inch-pounds)
ECB = Effective Counterbalance at Polish Rod (pounds)
W = Total Weight of Counterweights used on Two Cranks (pounds)
X = Distance of Counterweights from the End of Crank (inches)
G = Distance of Center of Gravity from Counterweight Bottom (inches)
TF = Torque Factor at 90°, from catalog (inches)
SU = Structural Imbalance at Polish Rod, from catalog (pounds)
C_G = Center of Gravity

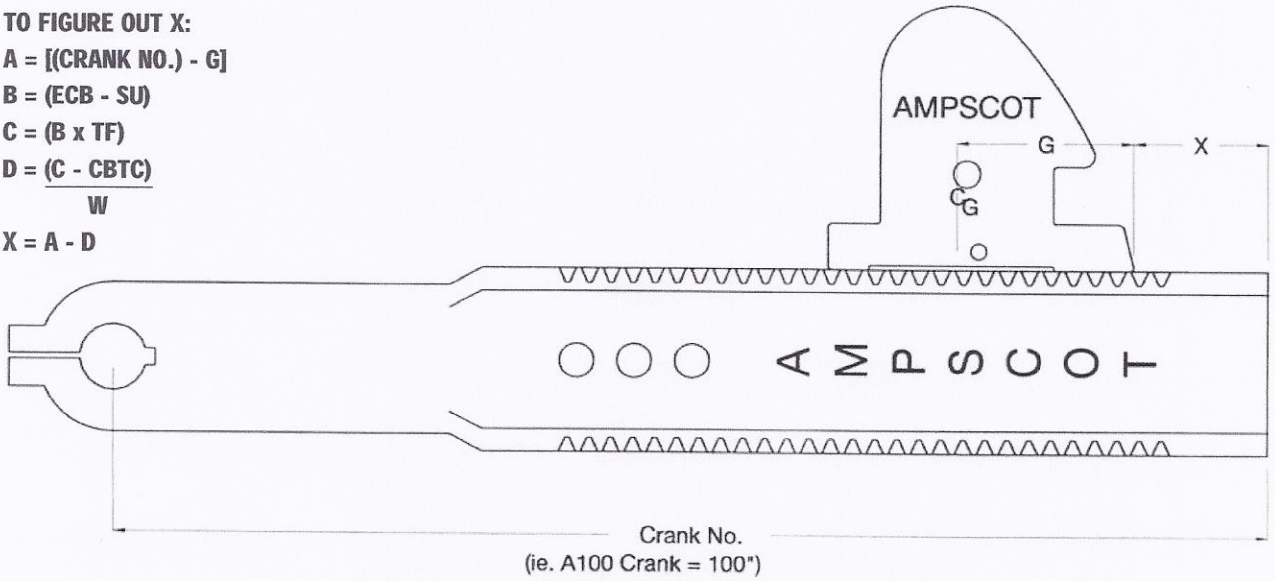
CBTW = [(CRANK NO.) - (X + G)] x W

$$\textbf{ECB} = \frac{\textbf{CBTC} + \textbf{CBTW} + \textbf{SU*}}{\textbf{TF}}$$

where SU* is found in this catalog, and the value is added or substracted depending on sign.

TO FIGURE OUT X:

A = [(CRANK NO.) - G]
B = (ECB - SU)
C = (B x TF)
$$\textbf{D} = \frac{\textbf{(C - CBTC)}}{\textbf{W}}$$
X = A - D



USEFUL FORMULAS

STROKES PER MINUTE

$$SPM = \frac{RPM}{R} \times \frac{d}{D}$$

Example:

R = 30.03 Ratio for 320 Gear Reducer
d = 12" Pitch Diameter of Prime Mover Sheave
D = 36" Pitch Diameter of Gear Reducer Sheave
RPM = 1170 Revolutions Per Minute of Prime Mover

$$SPM = \frac{1170}{30.03} \times \frac{12}{36} = 13$$

PRIME MOVER SHEAVE DIAMETER

$$d = \frac{SPM \times R \times D}{RPM}$$

NOTE: Use the nearest size available depending upon belt section and number of grooves in sheaves.

Example:

R = 30.03 Ratio for 320 Gear Reducer
D = 36" Pitch Diameter of Gear Reducer Sheave
RPM = 1170 Revolutions Per Minute of Prime Mover
SPM = 12 Strokes Per Minute

$$d = \frac{12 \times 30.03 \times 36}{1170} = 11.09 \text{ inches}$$

BELT VELOCITY

$$v = \frac{\pi \times d \times RPM}{12}$$

NOTE: Limit between 2000 and 5000 Feet Per Minute. Belt velocity less than 2000 FPM results in poor belt life. Belt velocity greater than 5000 FPM requires dynamically balanced sheaves.

Example:

d = 14.5" Pitch Diameter of Prime Mover Sheave
RPM = 1170 Revolutions Per Minute of Prime Mover
π = 3.1416

$$v = \frac{3.1416 \times 14.5 \times 1170}{12} = 4441 \text{ FPM}$$

BELT LENGTH

$$BL = 2 \times CD + [1.57 (D + d)]$$

Example:

- **d** = 14.5" Pitch Diameter of Prime Mover Sheave
- **D** = 47" Pitch Diameter of Gear Reducer Sheave
- **CD** = 65.43" Distance from High Speed Pinion Center-to-Prime Mover Shaft Extension Center

$$BL = 2 \times 65.43 + [1.57(47 + 14.5)] = 227.42"$$

Use C225 Belts based on Sheaves selected.

HORSEPOWER OF PRIME MOVER

For High Slip Electric Motors and Slow Speed Engines

$$HP = \frac{BPD \times Depth}{56000}$$

For Normal Slip Electric Motors and Multi-Cylinder Engines

$$HP = \frac{BPD \times Depth}{45000}$$

Example:

- **BPD** = 217 Barrels Per Day at 100% Pump Efficiency
- **Depth** = 5600' Pump Setting
  Assume High Slip (NEMA D) Motor

$$HP = \frac{217 \times 5600}{56000} = 21.7$$

Use 25 HP Motor

Weatherford is the leading single-source provider of artificial lift systems worldwide and the only company to offer a completely integrated suite of products, services and system solutions for virtually every form of lift. Conventional pumping units are an integral part of Weatherford's value-added Rod Lift Systems. Contact us today for an in-depth evaluation of your pumping unit requirements as well as our complete portfolio of artificial lift products, services and systems for optimum production enhancement.

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