

## UNITS

### MODEL C-114-D-143-64

POLISHED ROD CAPACITY: 14,300 lbs.  
POLISHED ROD STROKES: 40", 52", 64"  
PEAK TORQUE RATING: 114,000 in./lb.  
MAXIMUM COUNTERBALANCE EFFECT  
AT POLISHED ROD: 12,800 lbs.  
WEIGHT OF GEAR REDUCER: 4,522 lbs.

### MODEL C-160-D-200-74

POLISHED ROD CAPACITY: 20,000 lbs.  
POLISHED ROD STROKES: 54", 64", 74"  
PEAK TORQUE RATING: 160,000 in./lb.  
MAXIMUM COUNTERBALANCE EFFECT  
AT POLISHED ROD: 16,500 lbs.  
WEIGHT OF GEAR REDUCER: 5,904 lbs.

### MODEL C-228-D-246-86

POLISHED ROD CAPACITY: 24,600 lbs.  
POLISHED ROD STROKES: 62", 74", 86"  
PEAK TORQUE RATING: 228,000 in./lb.  
MAXIMUM COUNTERBALANCE EFFECT  
AT POLISHED ROD: 19,800 lbs.  
WEIGHT OF GEAR REDUCER: 7,220 lbs.

### MODEL C-320-D-305-100

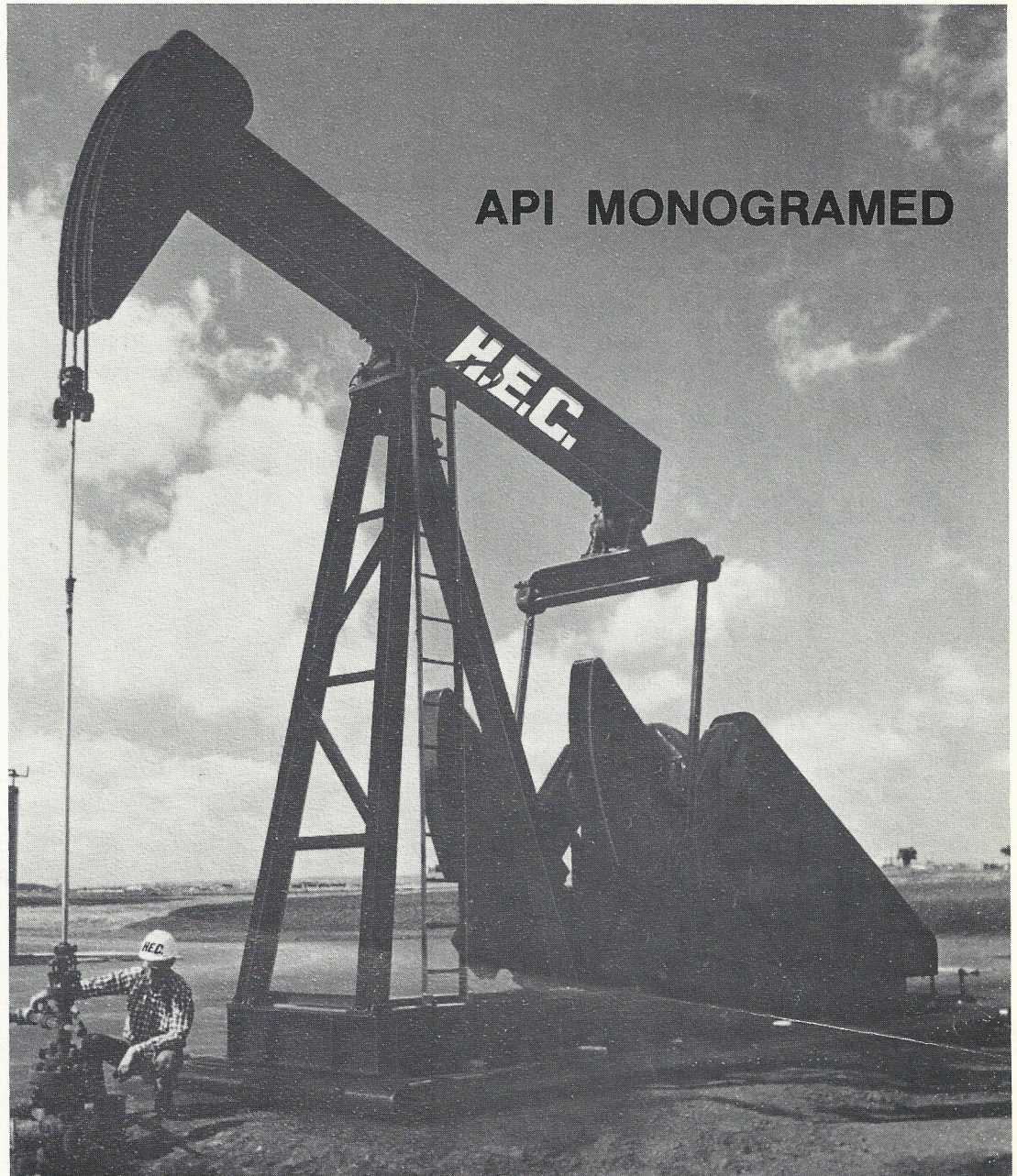
POLISHED ROD CAPACITY: 30,500 lbs.  
POLISHED ROD STROKES: 70", 85", 100"  
PEAK TORQUE RATING: 320,000 in./lb.  
MAXIMUM COUNTERBALANCE EFFECT  
AT POLISHED ROD: 25,500 lbs.  
WEIGHT OF GEAR REDUCER: 8,954 lbs.

### MODEL C-456-D-365-120

POLISHED ROD CAPACITY: 36,500 lbs.  
POLISHED ROD STROKES: 85", 102½", 120"  
PEAK TORQUE RATING: 456,000 in./lb.  
MAXIMUM COUNTERBALANCE EFFECT  
AT POLISHED ROD: 30,800 lbs.  
WEIGHT OF GEAR REDUCER: 12,705 lbs.

### MODEL C-640-D-365-144

POLISHED ROD CAPACITY: 36,500 lbs.  
POLISHED ROD STROKES: 102", 123", 144"  
PEAK TORQUE RATING: 640,000 in./lb.  
MAXIMUM COUNTERBALANCE EFFECT  
AT POLISHED ROD: 33,000 lbs.  
WEIGHT OF GEAR REDUCER: 15,165 lbs.



API MONOGRAMMED

# HEC II

## HEAVY DUTY CONVENTIONAL PUMPING UNITS

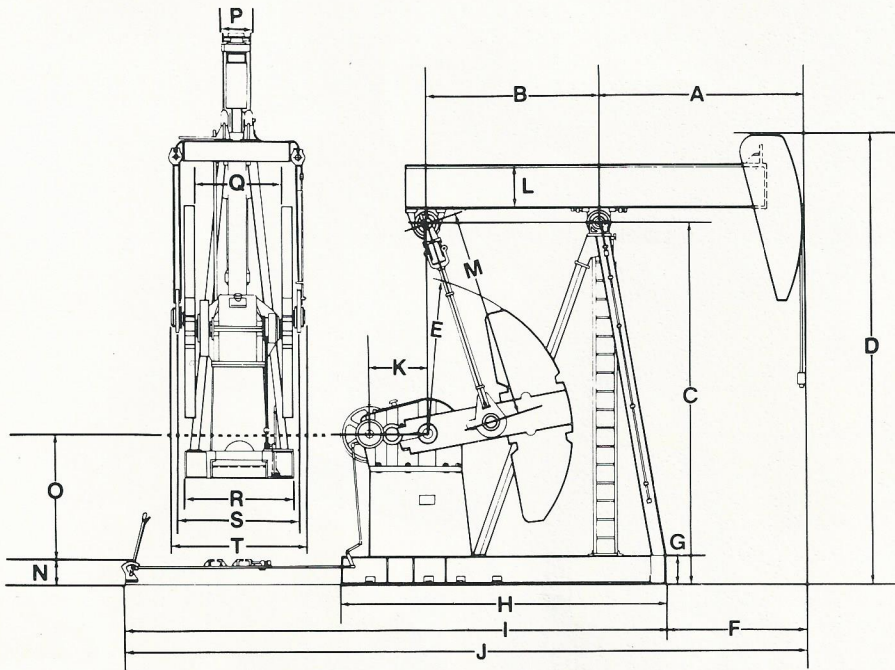
# HERCULES ENERGY MFG. CORPORATION

Post Office Box 754 • Oklahoma City, OK 73101, USA • Telephone (405) 232-3161 • Telex 74-7157

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# GENERAL DIMENSIONS



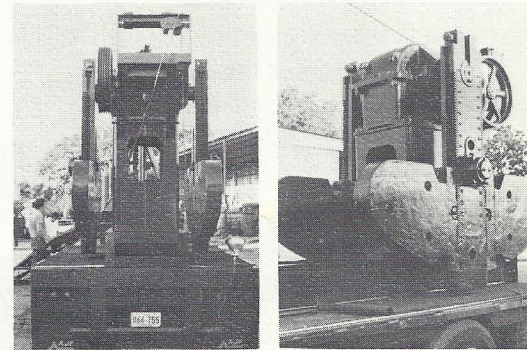
DIMENSIONS SHOWN ARE IN INCHES

	MODEL C-114-C-143-64	MODEL C-160-D-200-74	MODEL C-228-D-246-86	MODEL C-320-D-305-100	MODEL C-456-D-365-120	MODEL C-640-D-365-144
A		96.06"	111.02	129.13	150.98	
B		96.06"	111.02	111.02	120.08	
C		196.25"	194.88	231.50	253.94	
D		240.50"	243.31	287.20	318.70	
E		78.10"	76.38	94.49	102.36	
F		58.66"	71.73	86.61	105.71	
G		14.17"	14.17	15.75	15.75	
H		181.10"	193.31	200.79	222.05	
I		269.68"	291.73	328.35	353.94	
J		328.34"	363.46	414.96	459.64	
K		31.50"	33.46	37.40	42.13	
L		23.18"	27.16	27.16	30.12	
M		116.14"	119.29	133.86	149.61	
N		10.00"	13.38	15.75	15.75	
O		70.00"	64.96	80.71	88.58	
P		15.87"	9.86	13.98	14.96	
Q		47.31"	49.21	59.70	66.70	
R		57.81"	56.69	69.69	75.98	
S		64.31"	71.18	82.68	91.10	
T		73.75"	74.64	89.96	98.98	



## HORSEHEAD

The horsehead is of welded construction, consisting of I section and steel plates. There is a semi-circular grooved segment on the top of the horsehead to fit the wire rope with the attached carrier bar and sucker rod string. The horsehead can be turned upward during servicing of the well. The deviation of the horsehead from the centerline of the walking beam can be adjusted with the two bolts positioned on the sides of the horsehead.



## CRANK ASSEMBLY

The two cranks are symmetrically installed on the ends of the driven shaft of the gear reducer. The counterweights can be moved along the cranks to vary the counterbalance. Starting from the crankshaft hold centerline, there are graduated marks on the outside surfaces of the cranks and racks to facilitate counterbalancing. To move the counterweights, adjust the crank to the position desired, loosen the square head bolts, and insert the pinion crank into the hole to mesh with the rack. The handle can then be turned to move the counterweight to the required position. The square head bolts may now be tightened.

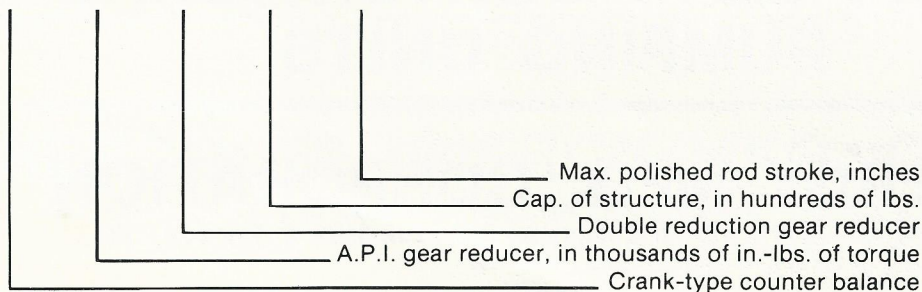


## CENTER BEARINGS

The bearing housing is supported by two extra large self-aligning single row radial roller bearings which are mounted on heavy duty supports at the top of the samson post. Each bearing carries a B-10 rating (100,000 hours of service) under maximum loads assuring long life. All structural bearings are readily available from H.E.M.C. or any local supplier.

## MODEL NUMBERING SYSTEM

C-160-D-200-74

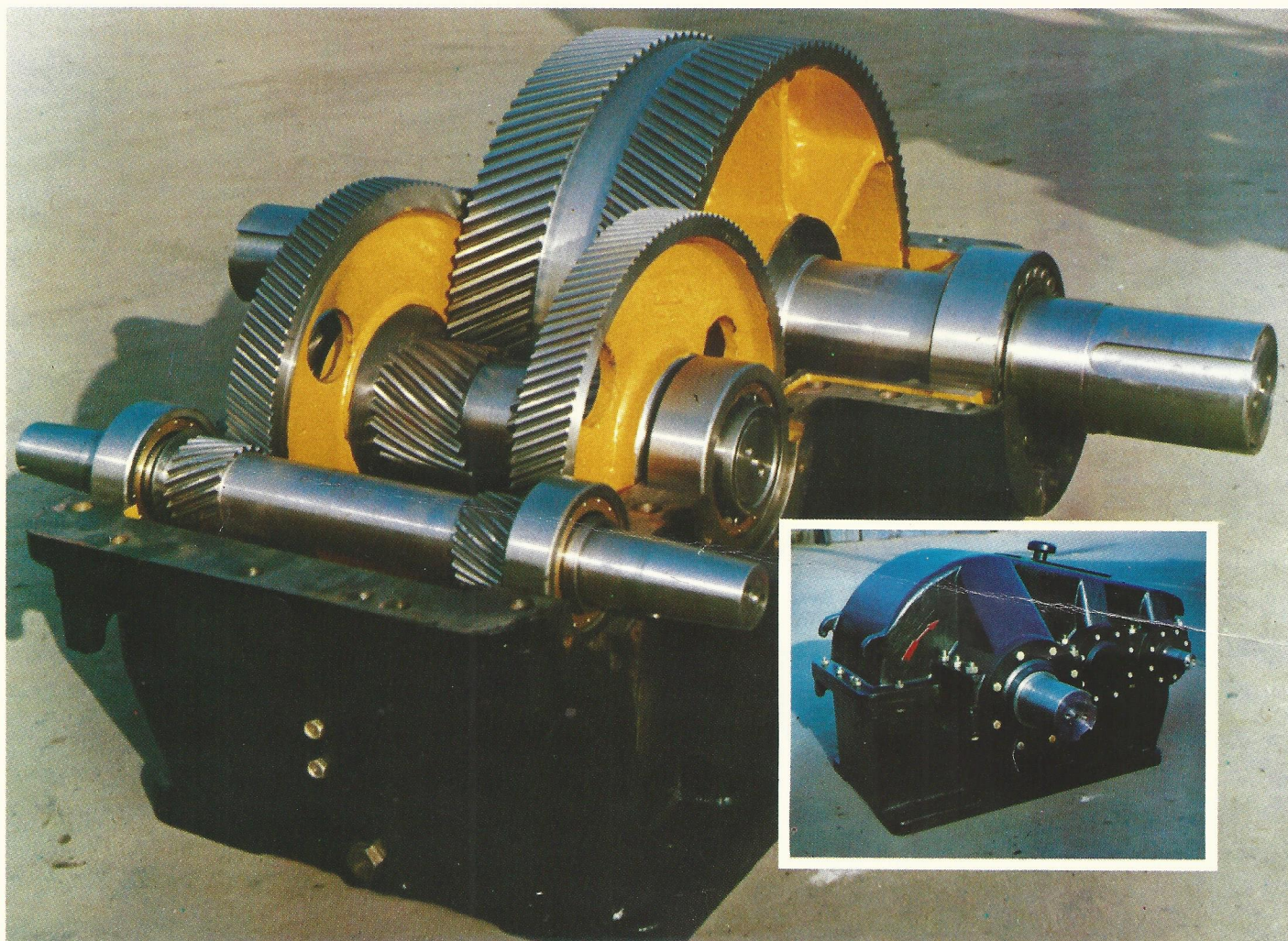




# H.E.M.C.

## HEAVY DUTY DOUBLE REDUCTION GEARBOX — EXTRA WIDE GEAR FACE CONTACT

The H.E.C. Unit gearbox is superior in design, engineering, manufacture, and most of all, performance. Gears of the highest quality metals available, are precision machined to exceedingly fine tolerances in order to ensure an outstanding service life, perhaps the longest in the industry. The gears are symmetrically arranged in a helical double reduction configuration to provide even stress over the working surfaces. The absolute symmetry of this configuration allows smooth operation eliminating overall vibration found in units of lesser



quality. In ten years of actual oilfield testing, no early damage of the tooth surface has ever occurred in the H.E.C. Unit gearbox. After those ten long, grueling years, tests confirmed the tooth surfaces to be in good working condition and could still be used for an extended period of time. In addition, all units are built to API specification 11E, one of the toughest in the industry. Gears and shafts are quenched and tempered under strict control to reach the hardness and mechanical properties so vital to a long, productive life, reaching the class 8, AGMA standard 390.02.

## **HERCULES ENERGY MANUFACTURING CORPORATION**

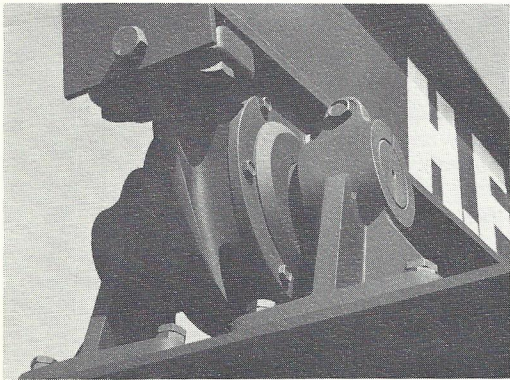
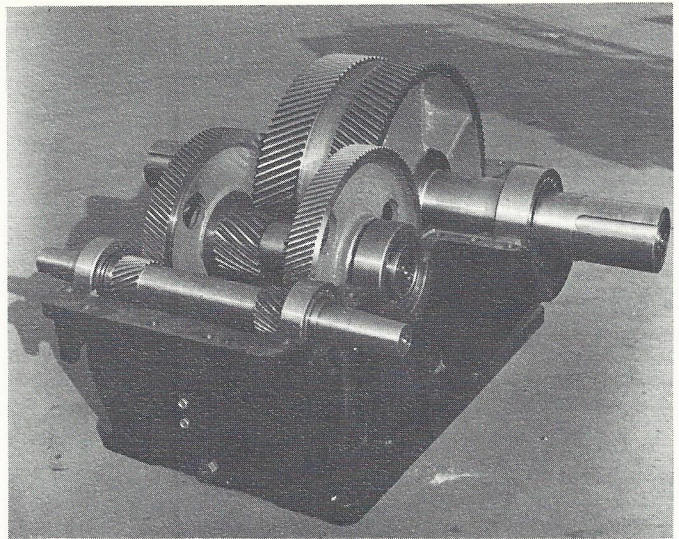
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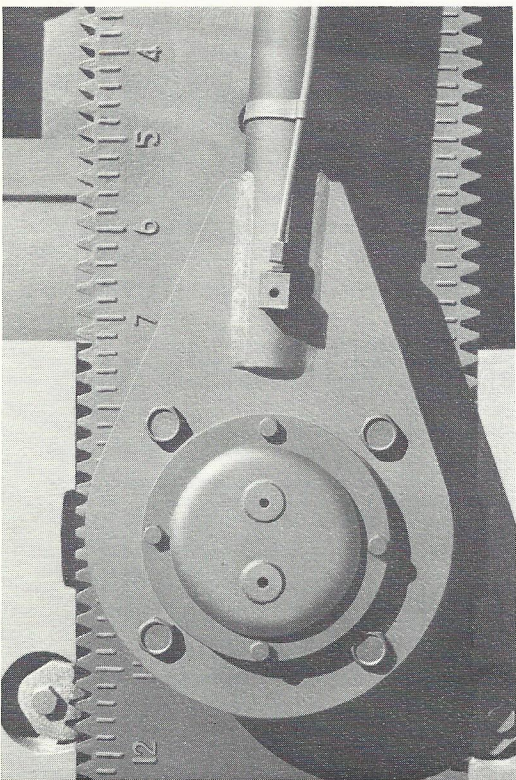
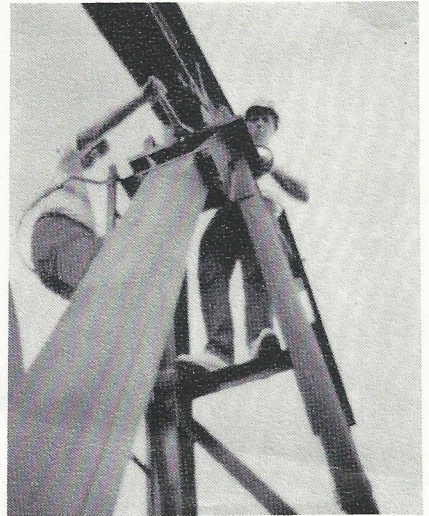
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## EQUALIZER

The equalizer is an I section beam consisting of plate and precision castings welded together for strength and rigidity, ensuring equal sharing of torque loads by both pitman arms. The axle pin support is attached to the equalizer by bolts and is connected to the walking beam through double row self-aligning spherical roller bearings.



## FRAME

The frame is the basic supporting structure for the components of the pumping unit and possess great strength and rigidity. The high box-shaped substructure is used as a platform for the gear reducer. The center bearing and walking beam are held by two supports positioned on top of the samson post which is essentially a tripod composed of the front stanchion and the rear stay.

## CARRIER BAR

The carrier bar is a flexible link connecting the horsehead with the polished rod. It consists mainly of wire rope, support, taper bush and polished rod slip.



## PITMAN ASSEMBLY

The pitman are the important components in the four-bar linkage of the pumping unit. The rotation of the cranks is transformed through the pitman assembly into a reciprocating motion of the walking beam. Since the two pitman are symmetrically mounted, the load on the pumping unit can also be evenly distributed. The crank pin has a double row, self-aligning spherical roller bearing which can compensate for any errors, ensuring smooth running and minimal wear of the components. The pitman arms are made of heavy tubular steel.

## WALKING BEAM

The walking beam is a welded I section which can be moved forward or backward by means of four adjusting screws. The lateral position can be adjusted so that centering of the carrier bar to the well is assured.



# YOU CAN PUT THESE PUMPING UNITS TO WORK TODAY — WITHOUT DELAY!

**FINANCING:** Several easy, monthly “pay as you go” plans allow your equipment to earn its way.

**LEASING:** Avoid depreciation of balance sheet and banker problems with a lease plan tailored to your pocketbook.

**RENTING:** Month to month plans that even allow favorable purchase options.

## Specifications

Model	Polished Rod Capacity	Polished Rod Strokes	Peak Torque Rating	Maximum Counterbalance Effect At Polished Rod	Weight Of Gear Reducer
	LBS.	IN.	IN./LB.	LBS.	LBS.
C-114-D-143-64	14,300	40, 52, 64	114,000	12,800	4,522
C-160-D-200-74	20,000	54, 64, 74	160,000	16,500	5,904
C-228-D-246-86	24,600	62, 74, 86	228,000	19,800	7,220
C-320-D-305-100	30,500	70, 85, 100	320,000	25,500	8,954
C-456-D-365-120	36,500	85, 102½, 120	456,000	30,800	12,705
C-640-D-365-144	36,500	102, 123, 144	640,000	33,000	15,165

### WARRANTY

- A. EXPRESS WARRANTY: Hercules warrants the Equipment (for the purposes of this warranty provision, Equipment shall include only Hercules brand products and not any engine, motor or other accessory used in connection therewith) to be free from defects in material and workmanship for a period of twelve (12) months from the date of delivery to Buyer. **HERCULES MAKES NO OTHER EXPRESS WARRANTY ON THE EQUIPMENT OR ANY OTHER GOODS SOLD BY HERCULES**, and no affirmation by Hercules or its representatives, by word or action, shall constitute a warranty.
- B. IMPLIED WARRANTY: **HERCULES MAKES NO IMPLIED WARRANTIES AND THE EQUIPMENT HEREIN WILL BE PURCHASED BY THE BUYER "AS IS."** HERCULES MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.
- C. WARRANTY VOID: If the Equipment is damaged in freight or is damaged due to collision, overturn, dropping, water damage, or improper maintenance after delivery of such Equipment to Buyer, or if Buyer makes any shop modifications to such Equipment, or if Buyer assembles or installs the Equipment contrary to Hercules' or the manufacturer's instructions, then the above warranty is null and void. The warranty is further void if the Equipment is not used in a normal and proper manner and operated within manufacturer's specifications by Buyer or is sold or transferred by the original Buyer. Any repair work done by Buyer during the warranty period, without the written approval of Hercules, or any default by Buyer of its obligations relating to the purchase of the Equipment shall void Hercules' warranty and Hercules shall have no liability or responsibility to Buyer thereafter.
- D. LIMITATION OF WARRANTY AND LIABILITY: In the event of a breach of the above warranty or negligence on the part of Hercules, Hercules shall only be obligated to either repair or replace, at Hercules' option, the Equipment, and such repair or replacement shall be Buyer's exclusive remedy under this warranty or due to the negligence of Hercules. **HERCULES SHALL NOT IN ANY MANNER WHATSOEVER BE LIABLE FOR ANY LOSS, DAMAGE OR EXPENSE, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL, INCLUDING BUT NOT LIMITED TO LOSS OF USE, INCOME, PROFIT OR PRODUCTION, OR INCREASED COST OF OPERATION, OR SPOILAGE OR DAMAGE TO MATERIAL, ARISING IN CONNECTION WITH THE SALE, INSTALLATION, USE OF, INABILITY TO USE, OR THE REPAIR OR REPLACEMENT OF, THE EQUIPMENT.** Any defective parts that come within Hercules' warranty shall be returned to Hercules at its plant in Oklahoma City, Oklahoma at Buyer's expense; and Hercules shall, when such part has been either replaced or repaired, return such to Buyer, F.O.B., Hercules' plant, Oklahoma City, Oklahoma.

Hercules reserves the right to make changes in Equipment at any time deemed necessary without obligation to previously sold Equipment.

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