



# **Model HD-750 HEDCO Underhood Air Compressor**

**IOWA MOLD TOOLING CO., INC.**  
500 HWY 18 WEST, GARNER, IOWA 50438  
515 - 923 - 3711

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# Section 1. SPECIFICATIONS

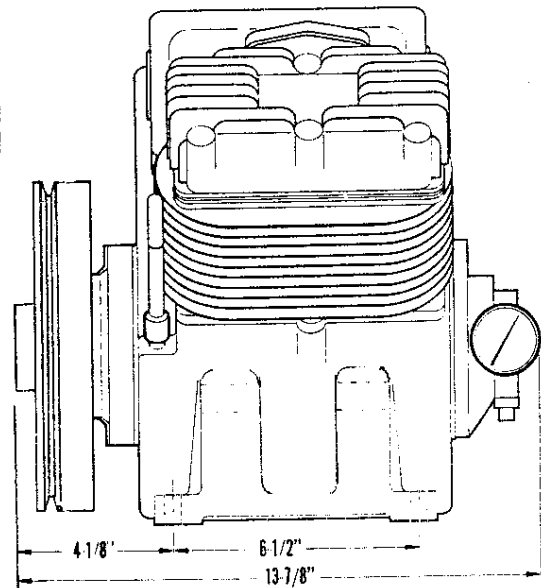
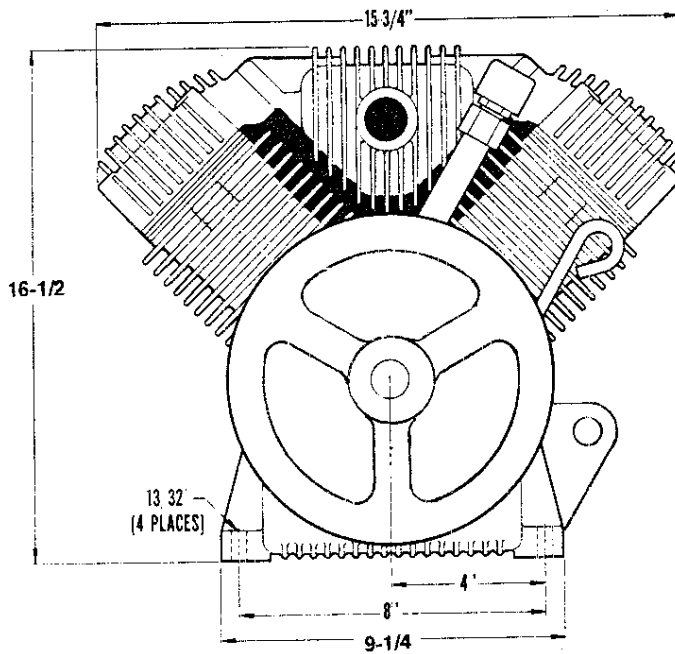
## 1-1. GENERAL

The IMT HD-750 HEDCO air compressor is a single stage, air cooled, 4-cylinder, pressure lubricated unit, with a delivery rate of 25 CFM at 1400 RPM.

The compressor is belt driven and designed to operate between 120 and 150 PSI.

## 1-2. SPECIFICATIONS

Bore	2-5/8"
Stroke	2"
Cylinder Configuration	V4
Displacement	37-1/2 CFM*
Delivery	25 CFM* @ 1400 RPM
Lubrication	Oil Pump
Cooling	Air
Height	16-1/2"
Width	15-3/4"
Length	13-7/8"
Material	Aluminum Alloy Heads Cast Iron Crankcase
Weight	88 lbs



## Section 2. OPERATION

### 2-1 GENERAL

Each compressor is bench tested under load at the factory to ensure proper break-in and operation. While it is not necessary to follow any break-in procedure, the following checks should be made before putting the unit into service, as well as, periodically during use.

#### 1. Before start-up:

A. Check the oil level in the compressor crankcase with the dipstick on the unit. If oil is needed, use only IMT's synthetic compressor oil.

B. Check the air intake filter pads on each head to make certain that they are clean and unobstructed. Dirty filters are a possible cause of reduced air output.

#### 2. With the compressor engaged:

Check the engine RPM for proper setting (1400 RPM max.) under compressor load.

## Section 3. MAINTENANCE

### 3-1. GENERAL

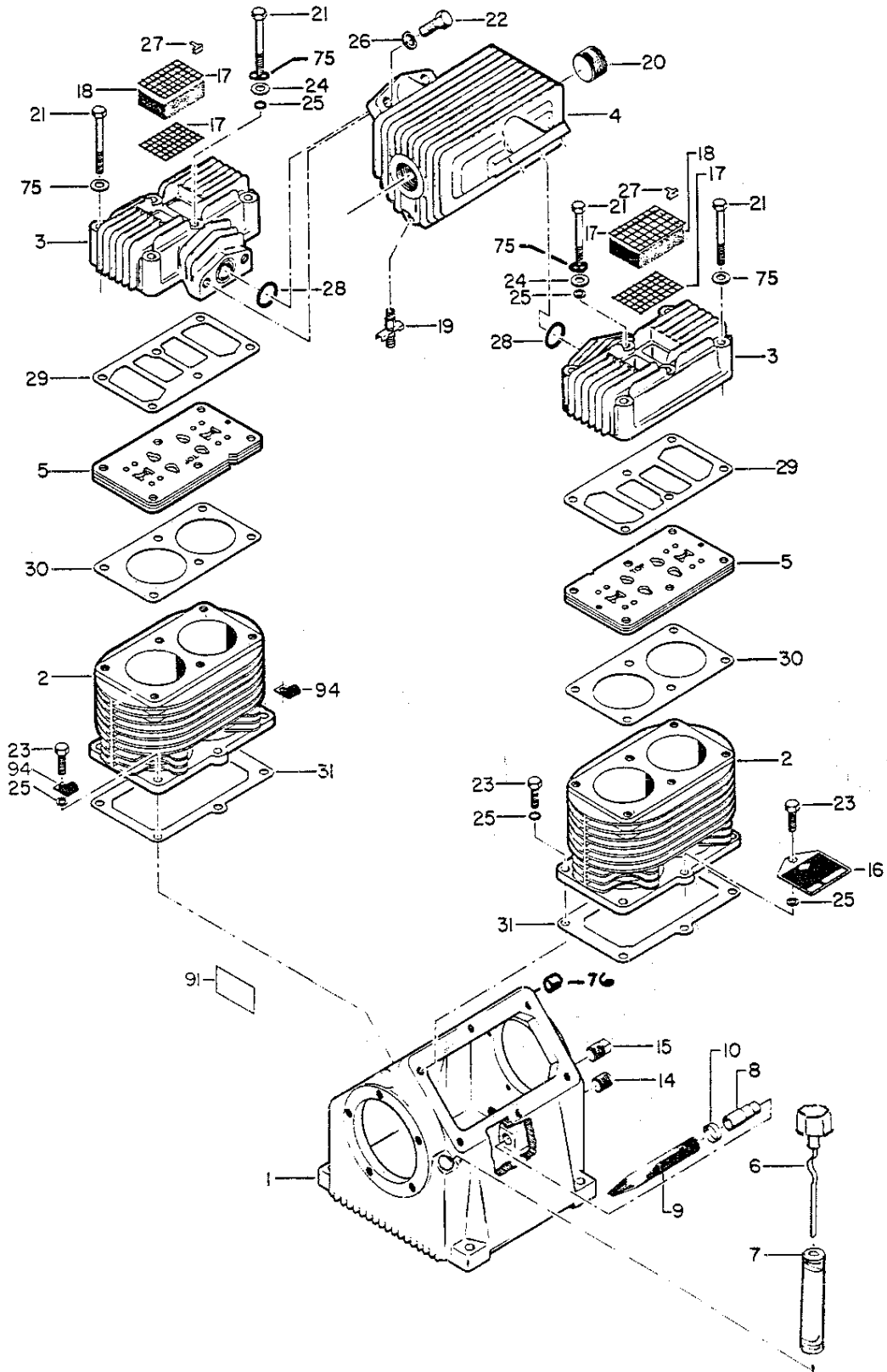
The following table is a list of routine maintenance items, including service intervals. It also includes a parts list and assembly drawing of the compressor.

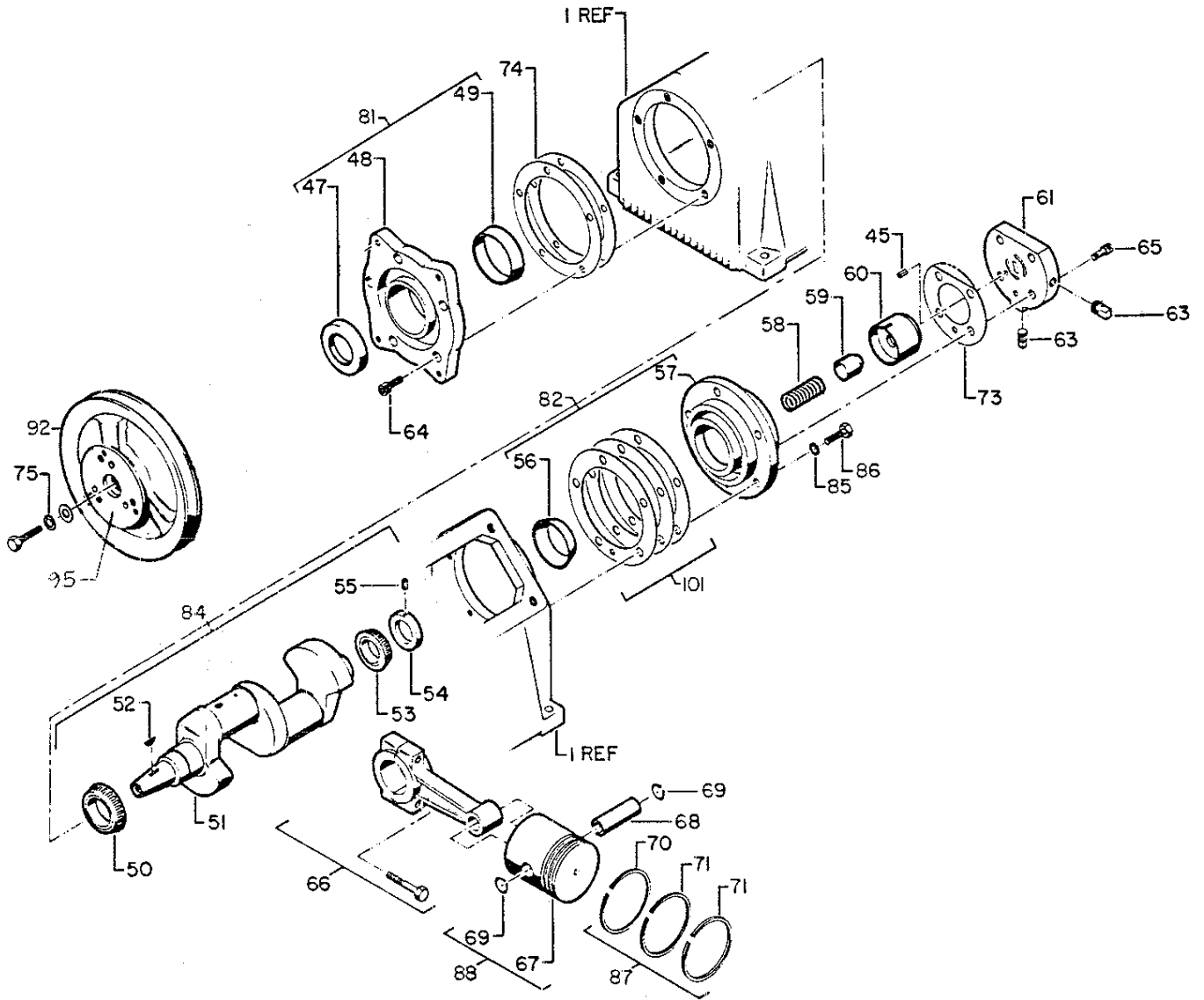
### ROUTINE MAINTENANCE CHECK LIST

Maintenance Operation	Service Intervals			
	Daily	Weekly	250/3	500/6
Air intake - inspect and clean				
Crankcase oil level - check, add if needed				
Crankcase oil quality - check, change if necessary		SEE NOTE 1.		
Compressor valves - inspect and clean				
Cooling vanes (fins) - clean				
Safety valves - check operation				
Safety valves - clean				
Belt tension - check				
Air receiver - drain condensation				
Receiver safety valves - check operation				
Check fittings and air lines for leaks				
<p>Service intervals are listed as hours/months, whichever occurs first.</p> <p>Use only IMT's synthetic compressor oil. The use of any other oil causes excessive carbon buildup, and will void the warranty on the compressor.</p> <p>NOTE 1. Under normal operating conditions, oil changes are required every 12 months. It is advisable to check the oil quality at least every 6 months, especially when operating in a dirty environment. Change the oil more frequently as your particular operating conditions dictate.</p>				

HD750 HEDCO UNDERHOOD AIR COMPRESSOR ASSEMBLY  
PART NO. 51710542

ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART	DESCRIPTION	QTY
1.	60115343	CRANKCASE	1	56.	70055010	BEARING, RR. CUP (PART OF 82)	1
2.	60025279	CYLINDER BLOCK	2	57.	60025005	HOUSING, RR BRG (PART OF 82)	1
3.	60025008	CYLINDER HEAD	2	58.	70014583	COIL SPRING	1
4.	60025009	PULSATION TANK	1	59.	60101505	SLEEVE	1
5.	70073031	VALVE PLATE	2	60.	70051006	OIL PUMP	1
6.	52701827	DIPSTICK	1	61.	60025006	PUMP COVER	1
7.	60103685	TUBE, DIPSTICK	1	63.	72053411	PLUG 1/8NPT	2
8.	60101270	OIL SCREEN TUBE (PART OF 83)	1	64.	72060731	SCREW 5/16X3/4 (PART OF 83)	5
9.	70014610	OIL SCREEN (PART OF 83)	1	65.	72060846	SCREW 5/16X5/8 SH	4
10.	72066008	OIL SCR N CLAMP (PART OF 83)	1	66.	51029296	CONNECTING ROD	4
14.	72053403	PLUG 3/8NPT (PART OF 83)	1	67.	70029062	PISTON (PART OF 88)	4
15.	72053413	PLUG 3/8NPT (PART OF 83)	1	68.	70014627	PISTON PIN (PART OF 88)	4
16.	70039300	IDENTIFICATION PLATE	1	69.	72066018	RETAINING RING (PART OF 88)	8
17.	60101272	AIR INTAKE SCREEN	4	70.	70014600	OIL RING (PART OF 87)	4
18.	76039141	AIR INTAKE FILTER	2	71.	70014599	COMPRESSION RING (PART OF 87)	8
19.	73054026	DRAIN COCK	1	73.	76039093	PUMP COVER GASKET	1
20.	72053406	PLUG 1NPT	1	74.	76039112	GASKET, FRT. HSG. (PART OF 83)	2
21.	72060032	SCREW 5/16X2 3/4	12	75.	72063050	WASHER 5/16 LOCK	13
22.	72060062	SCREW 7/16X1	4	76.	72053404	PLUG 1/2NPT	1
23.	72060025	SCREW, 5/16 X 1	12	81.	51705709	KIT, FRT BRG HSG (PART OF 83)	1
24.	72063001	WASHER 1/4	4	82.	51705710	KIT, RR BRG HSG (PART OF 83)	1
25.	70024122	WASHER 5/16 FLAT COPPER	14	84.	51704321	KIT, CRANKSHAFT (PART OF 83)	1
26.	72063052	WASHER 7/16 LOCK	4	85.	72063050	WASHER 5/16 LOCK	5
27.	70014626	AIR FILTER CLIP	8	86.	72060025	SCREW 5/16X1 (PART OF 83)	5
28.	70072212	O-RING	2	87.	51014947	RING SET	1
29.	76039113	HEAD GASKET	2	88.	51029285	PISTON ASSEMBLY	4
30.	76039114	GASKET, CYL. BLK.-VALVE PLT.	2	91.	70039124	DECAL-OIL FILL	1
31.	76039111	GASKET, CRANKCASE-CYL. BLK.	2	92.	60115344	PULLEY	1
45.	72066307	DRIVE PIN	1	94.	72066537	CLIP	2
47.	76039119	SEAL (PART OF 81)	1	95.	71056454	HUB	1
48.	60025007	HOUSING, FRT. BRG. (PART OF 81)	1	99.	89034048	SPIRAL WRAP 1/4 (NOT SHOWN)	7"
49.	70055011	BEARING, FRT. CUP (PART OF 81)	1	101.	76039092	GASKET, .006	AR
50.	70055012	BEARING, FRT. CONE (PART OF 84)	1		76039094	GASKET, .010	AR
51.	60101271	CRANKSHAFT (PART OF 84)	1		76039143	GASKET, .015	AR
52.	72066267	WOODRUFF KEY #6	1		76039144	GASKET, .020	AR
53.	70055009	BEARING, RR. CONE (PART OF 84)	1	51039013	GASKET SET (INCLUDES ITEMS 28, 29, 30, 31, 47, 73, 74 AND 101)		REF
54.	60101269	OIL PUMP COLLAR (PART OF 84)	1				
55.	72066307	DRIVE PIN (PART OF 84)	1				







## Section 4. REPAIR

### 4-1. GENERAL

This section describes the disassembly and assembly procedures for the underhood air compressor. In all cases, remove the compressor from the vehicle before proceeding with disassembly. Refer to the parts drawing in section 3 of this manual for parts locations.

### 4-2. PISTON RING REPLACEMENT

1. Remove the pulsation tank.
2. Unscrew the head bolts and remove the heads.

#### NOTE

A rubber faced mallet will help when removing the head. Tap the sides of the head carefully until the head is loose. Lift off the heads.

3. Remove the cylinder bolts. Tap the sides of the cylinder several times to break it loose from the gasket. Rock the cylinder back and forth and lift until it is free. Lift it off the pistons.
4. Use a single edged razor blade, or sharp putty knife, to remove the old gasket material.

#### CAUTION

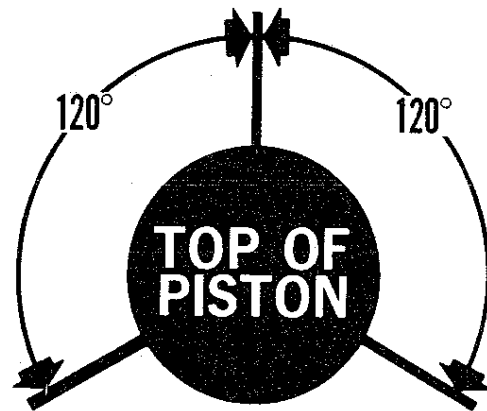
Do not allow the gasket material to fall into the crankcase. Do not nick the head, cylinder, or crankcase mating faces while removing the old gasket. Remove all of the old gasket material to provide a smooth, clean surface for the new gasket. Failure to follow this procedure may result in the need to reseal the unit later.

5. Hone the cylinder to break the glaze and to remove the buildup at the top of the cylinders.
6. Measure the inside diameter of the cylinder for roundness and excessive wear. The bore should be 2.625" (0.0025" tolerance). If the bore is oversized, the cylinder must be replaced.

7. With a ring expander, remove the compression and oil rings.
8. With the ring expander, install the new ring kit. Make certain that the oil ring is on the bottom and the beveled inside edge of the compression ring is toward the top of the piston.
9. Position the cylinder base gasket on the crankcase. Use a few drops of oil to hold it in position. Install the cylinder block spacer and gasket on the crankcase.
10. Rotate the rings so that the gaps of the three rings are 120 degrees apart. Lightly lubricate the inside of the cylinder. Rotate the crankshaft so that a piston is at the top of the stroke. Compress the rings with a ring compressor, and slide the cylinder over the piston. Repeat for the other piston.

#### CAUTION

Do not lubricate the rings. Use a light lubricant, such as WD-40 only, on the cylinder walls. Oiling the rings will prevent them from seating and cause excessive oil consumption.



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11. Slide the cylinder down until it mates with the crankcase. Start all cylinder mounting bolts, until they are snug. Torque the bolts to 180 inch pounds in the sequence shown. Do not torque to the full 180 inch pounds all at once. Torque in 25 - 50 pound increments.
12. Position the gaskets and valve plate on top of the cylinder. Position the head on the cylinder and turn all of the bolts finger tight. Torque in the same manner described in step 11.

**NOTE**

Install the valve plate with the marked surface facing up.

13. Install the pulsation tank, and torque to 180 inch pounds.
14. Install the compressor, connect the wiring and the air lines. Test the unit.

**NOTE**

If pressure fails to build and the compressor is excessively noisy, check the valve plate. It may have been installed upside down.

**4-3. OIL PUMP REPLACEMENT**

1. Remove the bolts and lift off the pump cover.
2. With a single edged razor blade, or sharp putty knife, remove the old gasket material. Take care not to damage the machined surfaces.
3. Lift the pump out of the cavity.
4. Position a new gasket on the rear bearing housing.
5. Insert the pump into the cavity. Position the pump slightly to one side, using a common screwdriver. Wedge the pump into position so that it partially compresses the spring.
6. Place the pump cover into position and start two bolts (bolts must be diagonally opposed). Strike the pump cover with a rubber faced mallet to jar the pump loose. When the tension spring can be felt against the pump cover, the pump is loose.
7. Insert the two remaining bolts and torque to 180 inch pounds. The bolts should be torqued in a diagonal pattern.

8. Install the air compressor in the vehicle. Connect the air lines and wiring.

**4-4. CRANKSHAFT AND BEARING REPLACEMENT**

If it is necessary to replace the crankshaft, related components must also be replaced. Replace both bearings, both races, the key, pump collar and pump drive pin.

**NOTE**

Depending on the condition of the crankshaft, bearing may be replaced without replacing the crankshaft. Replace the bearing races whenever the bearings are replaced.

1. Remove the pulsation tank, both heads, cylinders, and pistons. Refer to the instructions.
2. Remove the bolts on the connecting rods, and lift them out. Reassemble the connecting rods to be certain that the matched parts remain together.
3. Remove the pump cover, oil pump, sleeve, spring, and rear bearing housing.
4. Remove the clutch and pulley assembly, and the front bearing housing.
5. Pull the crankshaft from the crankcase.
6. Remove all gasket material with a single edged razor blade, or sharp putty knife.

**CAUTION**

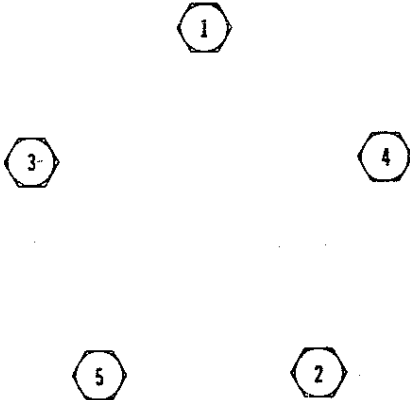
Do not gouge the machined surfaces when removing the gaskets. This may cause leaks.

7. Press the bearing races out of the bearing housing.
8. Press the tapered roller bearings off of the crankshaft if only the bearings are being replaced. If the crankshaft is to be replaced, discard the entire assembly.
9. Press the new bearings into position.

**NOTE**

The crankshaft should have new bearings installed. If not, press the new bearings into position on the crankshaft.

10. Generously oil the front bearing race and install the front bearing housing with gasket. Torque the bolts to 180 inch pounds. Torque the bolts as shown in the pattern below.

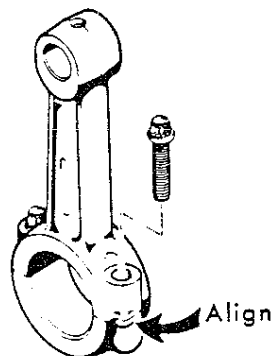


11. Slide the crankshaft into the crankcase. Generously lubricate the bearing race and install the rear bearing housing and gaskets.

**NOTE**

Gasket kits are supplied with two (2) each of .006, .010, .015, and .020 gaskets. Use these rear bearing gaskets in any combination and quantity to limit all play front to rear, but still allow the crankshaft to turn freely.

12. Install the oil pump.
13. Install the connecting rods. Thoroughly oil the crankshaft and rods before installing them. When installing the rods, make certain that the tabs are aligned on the same side of the rod as shown below.
14. Install the pistons, rings, heads and pulsation tank



## 4-5. TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE
Low oil pressure	Low oil level
	Loose pipe plug on oil pump cover
	Worn or defective oil pump
	Crack or scratch on oil pump cover
No oil pressure	Defective oil pump
	Blocked oil passage
	Damaged oil pump drive pin
Compressor will not engage	Vehicle hood closed
	Blown fuse
	Defective clutch
	Defective pressure switch or underhood switch
Compressor engages but will not pressurize air tank	Air leak in plumbing
	Worn piston piston rings or valve plates
	Defective check valve/valves
Compressor does not recover pressure as fast as it should	Defective check valve/valves
	Dirty filters
	Loose fan belt
	Air leak in plumbing
	Worn valve plates or piston rings

The information within this manual has been compiled and checked but errors do occur. To provide our customers with a method of communicating those errors we have provided the Manual Change Request form below. In addition to error reporting, you are encouraged to suggest changes or additions to the manual which would be of benefit to you. We cannot guarantee that these additions will be made but we do promise to consider them. When completing the form, please write or print clearly. Submit a copy of the completed form to the address listed below.

## MANUAL CHANGE REQUEST

DATE	PRODUCT MANUAL	HD-750 HEDCO	MANUAL PART NO.	99900630-11/91
SUBMITTED BY				
COMPANY				
ADDRESS				
CITY, STATE, ZIP				
TELEPHONE				

ERROR FOUND

LOCATION OF ERROR (page no.): \_\_\_\_\_

DESCRIPTION OF ERROR: \_\_\_\_\_

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REQUEST FOR ADDITION TO MANUAL

DESCRIPTION OF ADDITION: \_\_\_\_\_

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REASON FOR ADDITION: \_\_\_\_\_

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MAIL TO: IOWA MOLD TOOLING Co., Inc.  
Box 189,  
Garner IA 50438  
ATTN: Technical Publications

## MANUFACTURER'S LIMITED WARRANTY

**WARRANTY COVERAGE** - Products manufactured by Iowa Mold Tooling Co., Inc. (IMT) are warranted to be free from defects in material and workmanship, under proper use, application and maintenance in accordance with IMT's written recommendations, instructions and specifications as follows:

1. Ninety (90) days; labor on IMT workmanship from the date of delivery to the end user.
2. One (1) year; original IMT parts from the date of delivery to the end user.

IMT's obligation under this warranty is limited to, and the sole remedy for any such defect shall be the repair or replacement (at IMT's option) of unaltered parts returned to IMT, freight prepaid, provided such defect occurs within the above stated warranty period and is reported within fourteen (14) days of its occurrence

**IMPLIED WARRANTY EXCLUDED** - This is the only authorized IMT warranty and is in lieu of all other express or implied warranties or representations, including any implied warranties of merchantability or fitness for any particular purpose or of any other obligations on the part of IMT

**ITEMS EXCLUDED** - The manufacturer gives no warranty on any components or parts purchased by the manufacturer, and such components as are covered only by the warranties of their respective manufacturers

**WARRANTY CLAIMS** - Warranty claims must be submitted and shall be processed in accordance with IMT's established warranty claim procedure

**WARRANTY SERVICE** - Warranty service will be performed by any IMT distributor authorized to sell new IMT products of the type involved or by any IMT Service Center authorized to service the type of product involved or by IMT in the event of direct sales made by IMT. At the time of requesting warranty service, the purchaser must present evidence of the date of delivery of the product. The purchaser shall pay any premium for overtime labor requested by the purchaser, any charge for making service calls and for transporting the equipment to the place where warranty work is performed

**WARRANTY VOIDED** - All obligations of IMT under this warranty shall be terminated: (1) if service other than normal maintenance or normal replacement of service items is performed by someone other than an authorized IMT dealer, (2) if product is modified or altered in ways not approved by IMT.

**PURCHASER'S RESPONSIBILITY** - This warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper protection in storage, or improper use. The purchaser has the obligation of performing the care and maintenance duties discussed in IMT's written recommendations, instructions and specifications. Any damage which results because of purchaser's failure to perform such duties shall not be covered by this warranty. The cost of normal maintenance and normal replacement of service items such as filters, belts, etc. shall be paid by the purchaser

**CONSEQUENTIAL DAMAGES** - The only remedies the purchaser has in connection with the breach or performance of any warranty on IMT products are those set forth above. In no event will the dealer, IMT or any company affiliated with IMT, be liable for business interruptions, loss of sales and/or profits, rental or substitute equipment, costs of delay or for any other special, indirect, incidental or consequential losses, costs or damages.

**REPRESENTATIONS EXCLUDED** - IMT products are subject to no expressed, implied or statutory warranty other than herein set forth, and no agent, representative or distributor of the manufacturer has any authority to alter the terms of this warranty in any way whatsoever or to make any representations or promises, express or implied as to the quality or performance of IMT products other than those set forth above

**CHANGE IN DESIGN** - IMT reserves the right to make changes in design or improvements upon its products without imposing any obligation upon itself to install the same upon its products theretofore manufactured.

Effective January, 1984

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**IOWA MOLD TOOLING Co., Inc.**

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