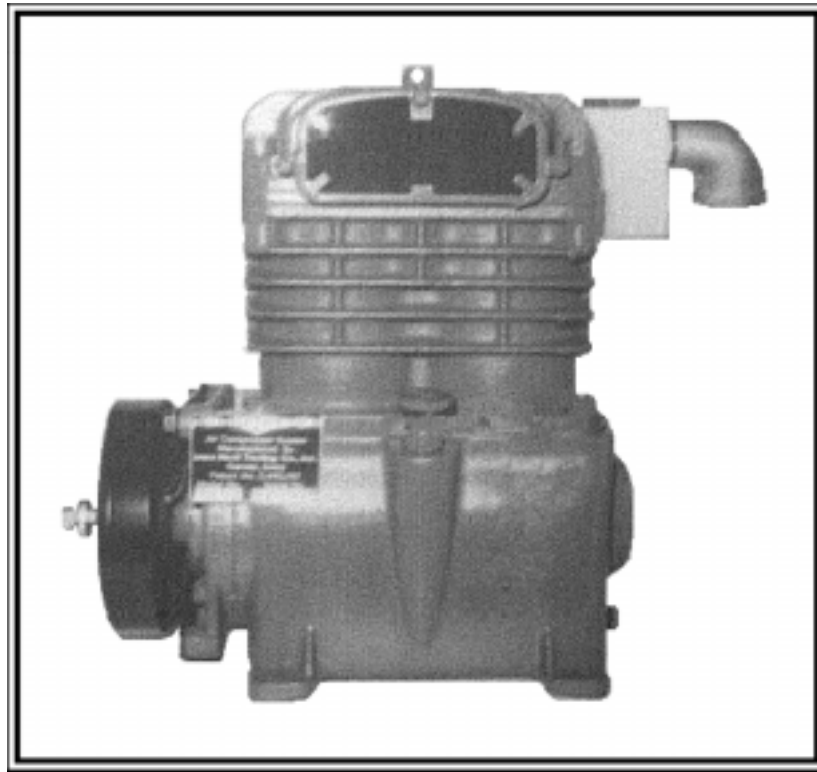


DA212EA: 99900702: 19950522



Model DA212EA
Underhood Air Compressor
(Replaces Model HD300)



IOWA MOLD TOOLING CO., INC.
BOX 189, 500 HWY 18 WEST, GARNER, IA 50438
TEL: 515-923-3711
TECHNICAL SUPPORT FAX: 515-923-2424
MANUAL PART NUMBER 99900702

PRECAUTIONS

Read before operating your compressor!



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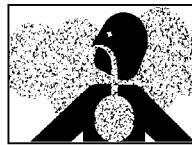

DANGER

EXPLODING TANK WILL CAUSE DEATH, SERIOUS INJURY OR PROPERTY DAMAGE

- Drain air tank after each use to prevent moisture build-up and corrosion which leads to tank failure.
- Assure that tank and compressor relief valves work properly, and are at correct pressure settings.
- **DO NOT** modify or repair air tank.
- **NEVER** drive vehicle with pressure in air tank.



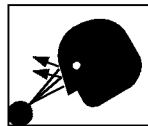
Failure to follow operating and maintenance procedures as outlined in this manual could result in equipment damage, personal injury or death. Follow all maintenance procedures and intervals.



Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury or death if used for breathing or food processing.



Maintenance must be performed only by trained and qualified personnel, using correct tools, specified torques and approved replacement parts.



Hot oil under pressure can cause severe injury or death. Shut down, let cool and relieve pressure in compressor before servicing.



All electrical components and cable wiring must be installed and grounded in accordance with NFPA, national electrical codes and applicable state and local codes.



Do not overfill the compressor with oil. Use correct quantity of manufacturer's lubricant. Repair leaks and clean spills immediately.



Before removing guards or servicing the compressor, disconnect all power supplies. Display warning signs and lock out electrical circuits.



Compressors generate high temperatures. Do not touch or otherwise come in contact with hot surfaces. Doing so can cause severe personal injury.



All guards must be in position and secure before and during operation.

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DA212EA: 99900702: 19950131

iv

BLANK

SECTION 1. SPECIFICATIONS

1-1. GENERAL

The IMT DA212EA air compressor is an underhood, engine mounted, single stage, air cooled, 2-cylinder, splash lubricated unit, with a delivery rate of 12 CFM at 1200 RPM.

The compressor is belt driven from the engine crankshaft, through a magnetic clutch. It is engaged and disengaged by use of an air pressure sensing, electric switch. The pressure switch is preset on factory installed units at approximately 120 PSI to engage, and 150 PSI to disengage.

1-2. SPECIFICATIONS

Bore	2-5/8"
Stroke	2"
Cylinder Configuration	Vertical
Displacement	15 CFM*
Delivery	12 CFM*
Lubrication	Splash
Cooling	Air
Height	12-1/2"
Width	7-1/2"
Length	13"
Material	Cast Alloy
Weight	45 lbs.

* @ 1200 RPM - 100 PSI

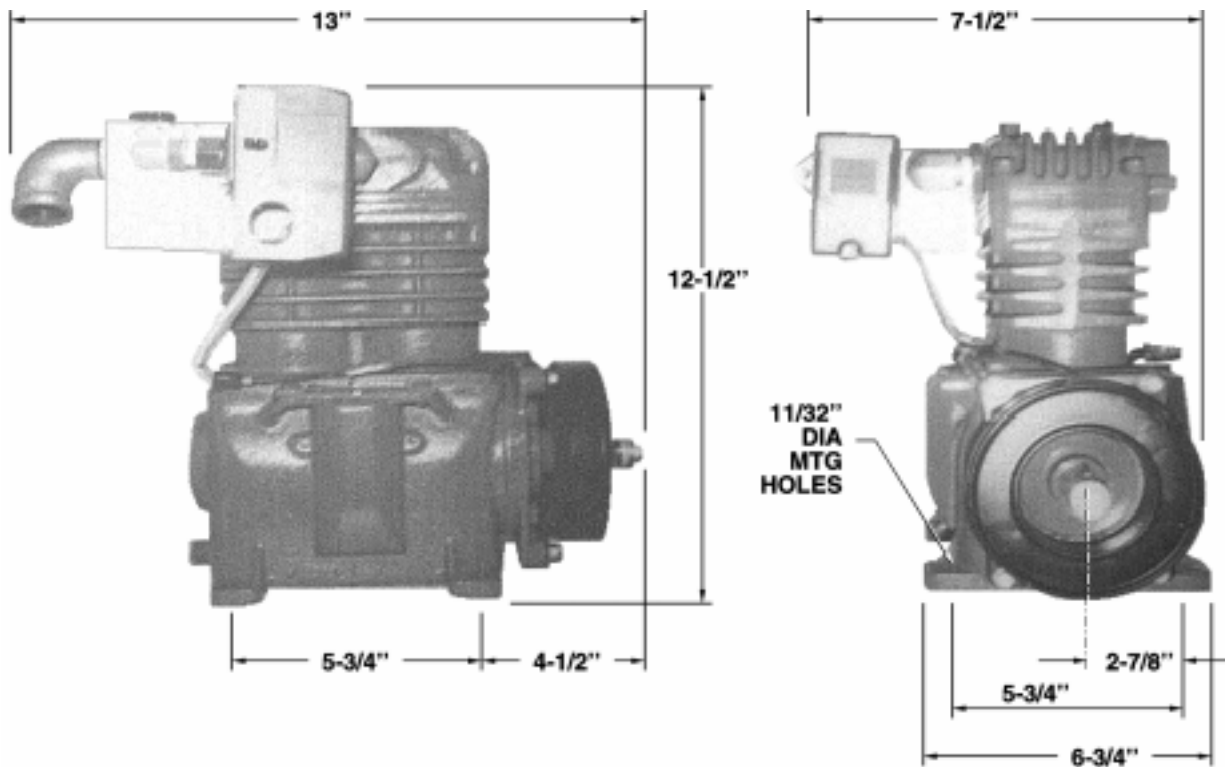


FIGURE A-1. OUTSIDE DIMENSIONS

SECTION 2. INSTALLATION

2-1. GENERAL

This section pertains to the installation of the IMT DA212EA compressor and related components. Because installations will vary somewhat, dependent on the chassis, it will describe the installation in general terms only.

2-2. AIR COMPRESSOR

Each installation will differ depending on the chassis make, model, year of manufacture, and optional equipment. Refer to the mounting kit for specific information relating to your application.

2-3. UNDERDASH SWITCH

The installation kit will include the correct bracket for the installation of the compressor, power switch and the engine speed control. The bracket may house switches for other functions, depending on the total system.

1. Drill mounting holes in the underside of the dash. It may be possible to utilize existing holes.
2. Install the switch, or switches, needed for your installation.
3. Route the needed wiring harness to the rear of the bracket and connect to the proper switches.
4. Securely fasten the assembled switch bracket to the dash with bolts, nuts, and washers provided.

NOTE

IF THE DASHBOARD IS PLASTIC, THE GROUND WIRE MUST BE CONNECTED TO CHASSIS GROUND. THE PLASTIC DASHBOARD IS NOT CONDUCTIVE AND WILL NOT PROVIDE A GROUND.

5. Connect the positive side of the compressor switch to the power switch. Connect the other side of the switch to the underhood safety switch and the indicator lamp.

2-4. UNDERHOOD SWITCH

The purpose of the underhood switch is to prevent the compressor from running unless the vehicle's hood is raised. This will ensure sufficient air flow to the compressor during operation.

1. Select a location for the mercury switch that will provide protection for the glass envelope and keep the switch contacts open when the hood is closed. The mercury should not be in contact with the contacts to accomplish this.
2. Drill a 1/16 inch hole in the desired location and install the switch bracket. Install the switch in the bracket. Connect one lead to the underdash switch, the other to the compressor pressure switch. When wired properly, the switch in the cab must be "ON" and the hood must be raised in order for the compressor to operate.

CAUTION

WARRANTY ON THE COMPRESSOR WILL BE VOID IF THE UNDERHOOD SAFETY SWITCH IS NOT USED. FAILURE TO USE THIS SWITCH WILL ALLOW THE COMPRESSOR TO OPERATE WITH THE HOOD CLOSED AND WILL CAUSE OVERHEATING.

2-5. ELECTRIC SPEED CONTROL

An optional electric engine speed control may be used in lieu of the manual speed control. On units equipped with an electric speed control, the engine speed will automatically increase when the clutch is engaged, and decrease when the clutch is disengaged.

CAUTION

MAXIMUM PRESSURE IS 100 PSI CONTINUOUS, 150 PSI INTERMITTENT.

CAUTION

COMPRESSOR RPM SHOULD NOT EXCEED 1000-1200 WITHOUT CONSULTING THE FACTORY.

WARNING

ANY PART OF THE COMPRESSOR, MOTOR, ENGINE OR DISCHARGE LINE, AFTER OPERATING, MAY BE HOT ENOUGH TO CAUSE INJURY IF TOUCHED.

SECTION 3. OPERATION

3-1. GENERAL

The following checks should be made before putting the unit into service, as well as, periodically during use.

1. Before start-up:

A. Insure that the compressor is in a level position. 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 pad on the 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:

On units having the automatic speed control option, check the engine RPM for proper setting (1200 RPM max.) under compressor load. If adjustment is required, loosen the jam nut as shown in Figure C-1, and make the necessary adjustment. Retighten the jam nut.

3-2. OPERATION

To use the compressor, raise the hood to provide adequate ventilation, start the vehicle engine, and engage the compressor by operating the compressor switch in the cab. On systems without automatic engine speed control, adjust the engine RPM with the manual throttle cable to maintain the proper RPM setting while the compressor is pumping.

The system will now function automatically. It will engage the compressor clutch when the air pressure is below 120 psi, and disengage when the air pressure reaches 150 psi.

NOTE

ON UNITS WITH MANUAL ENGINE SPEED CONTROL, THE ENGINE RPM WILL INCREASE WHEN THE COMPRESSOR CLUTCH DISENGAGES.

CAUTION

THIS UNIT IS EQUIPPED WITH AN UNDERHOOD SAFETY SWITCH WHICH REQUIRES THAT THE HOOD BE RAISED WHILE THE COMPRESSOR IS IN OPERATION. THIS IS INSTALLED TO ENSURE THAT THE UNIT HAS ADEQUATE VENTILATION, AND THAT THE UNIT IS NOT INADVERTANTLY LEFT ON WHEN NOT IN USE AND THE VEHICLE IS IN MOTION. BYPASSING THIS SAFETY DEVICE, OR OPERATING THIS UNIT IN EXCESS OF 1200 RPM, WILL VOID THE WARRANTY, AND WILL SHORTEN THE NORMAL SERVICE LIFE OF THE COMPRESSOR.

CAUTION

NEVER INSTALL A SHUT OFF VALVE BETWEEN THE COMPRESSOR AND THE AIR RECEIVER.

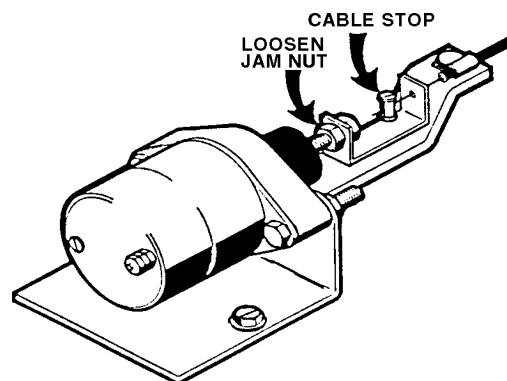


FIGURE C-1. AUTOMATIC SPEED CONTROL OPTION

Section 4. MAINTENANCE & PARTS

4-1. GENERAL

This section includes a Routine Maintenance Checklist, parts ordering information and parts lists and assembly drawings of the compressor.

Order replacement parts by contacting:

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TELEPHONE: 515-923-3711
FAX: 515-923-3674

4-2. ORDERING REPAIR PARTS

When ordering repair parts, furnish product support with the following information:

or Contact your local distributor.

- COMPRESSOR MODEL NUMBER**
- COMPRESSOR SERIAL NUMBER**
- PART NUMBER (IF KNOWN)**
- PART DESCRIPTION**
- QUANTITY REQUIRED**

MAINTENANCE OPERATION	SERVICE INTERVALS			
	DAILY	WEEKLY	250/3	500/6
AIR INTAKE - INSPECT AND CLEAN				
CRANKCASE OIL LEVEL - CHECK, ADD IF NEEDED				
CRANKCASE OIL - CHANGE	SEE NOTE 1.			
COMPRESSOR VALVES - INSPECT AND CLEAN				
COOLING VANES (FINS) - CLEAN				
SAFETY VALVES - CHECK OPERATION				
SAFETY VALVES - CLEAN				
BELT TENSION - CHECK				
ELECTRIC CLUTCH - CHECK OPERATION				
AIR RECEIVER - DRAIN CONDENSATION				
*RECEIVER SAFETY VALVES - CHECK OPERATION				
TIGHTEN AND CHECK ALL VALVES				
CHECK ALL ELECTRICAL CONNECTIONS				
CHECK FITTINGS AND AIR LINES FOR LEAKS				
INSPECT CHECK VALVES FOR PROPER OPERATION				
INSPECT CHECK VALVES FOR CARBON BUILDUP				

* Setting should be 175 PSI ± 10.

Service intervals are listed as hours/months, whichever occurs first.

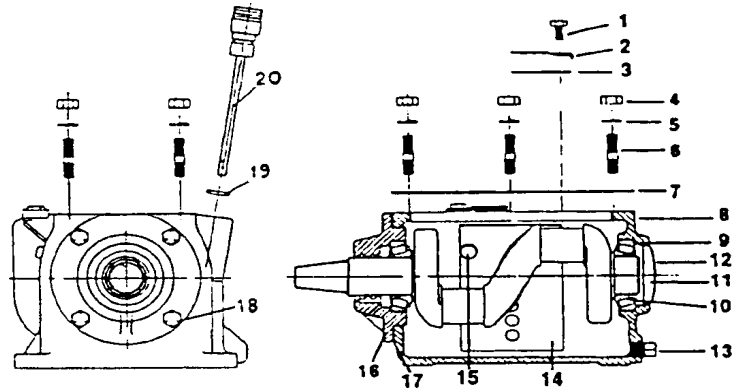
Use only IMT's synthetic compressor oil. The use of any other oil causes excessive carbon buildup, and will void the warranty on the compressor.

NOTE 1. Under normal operating conditions, oil changes are required every 100 hours of operation. When operating in a dirty environment, change the oil more frequently as your particular operating conditions dictate.

FIGURE D-1. ROUTINE MAINTENANCE CHECKLIST

FIGURE D-2. CRANKCASE GROUP

ITEM	PART NO.	DESCRIPTION	QTY
1.	72060841	CAP SCR 1/4-20 HH	2
2.	76392129	BREATHER VALVE BUMPER	2
3.	70142414	BREATHER VALVE	2
4.	72062036	NUT 5/16-24 HEX	6
5.	72063050	WASHER 5/16 LOCK	6
6.	72601055	STUD 5/16 X 1-1/4	6
7.	76039399	CYLINDER GASKET	2
8.	70014934	CRANKCASE	1
9.	70731952	BEARING CUP	2
10.	70055012	BEARING CONE	2
11.	70141625	CRANKSHAFT	1
12.	70143970	BEARING HOLE PLUG	1
13.	72053245	OIL DRAIN PLUG	1
14.	70143969	BAFFLE PLATE	1
15.	72060841	CAP SCR 1/4X1/2 HH	2
16.	70143968	BEARING CARRIER	1
17.	76393435	BEARING PLATE GASKET	1
18.	72060023	CAP SCR 5/16X3/4 HH	4
19.	7Q072112	O-RING	1
20.	70143971	DIPSTICK (INCL:19)	1
21.	72066268	PULLEY KEY	1
22.	77044419	CLUTCH-FIELD (LESS PULLEY)	1
23.	70732444	CLUTCH-FIELD HARDWARE	1



NOTE: ITEMS 21, 22 AND 23 NOT SHOWN.

FIGURE D-3. CYLINDER GROUP

ITEM	PART NO.	DESCRIPTION	QTY
1.	76039417	BOTTOM GASKET	1
2.	70014885	CYLINDER	1
3.	70014886	COMPRESSION RING (INSIDE BEVEL EDGE UP)	4
4.	70014887	COMPRESSION RING (SQUARE GROOVE DOWN)	2
5.	70014888	OIL RING	2
6.	70014890	PISTON RING	2
7.	70143975	SNAP RING	4
8.	70029133	PISTON	2
9.	70029137	CONNECTING ROD	2
10.	70014930	CONNECTING ROD BOLT	4
	51014938	COMPLETE SET OF RINGS	1
	70143972	PISTON WITH PIN & RINGS	2
	51392125	COMPLETE COMPRESSOR GASKET SET	1

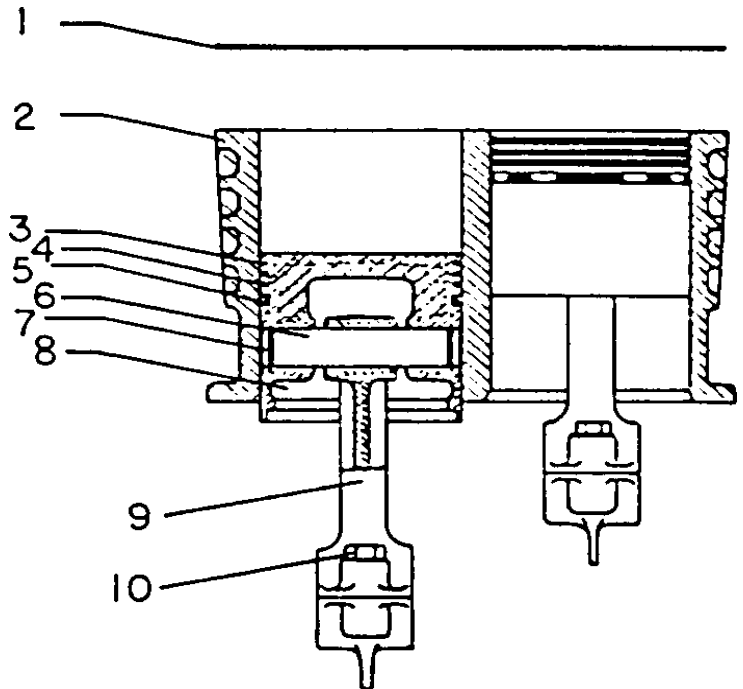


FIGURE D-4. HEAD GROUP

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	70141632	FILTER RETAINER	1	13.		REED VALVE ONLY (INTAKE)	2REF
2.	72061089	FILTER RETAINER SCREW	3	14.		REED VALVE SCREW	8REF
3.	70052023	INNER FILTER ELEMENT	1	15.		GASKET (VALVE PLATE/CYL)	1REF
4.	70052022	OUTER FILTER ELEMENT	1	16.		REED VALVE ONLY (DISCHARGE)	2REF
5.	70141907	FILTER SCREEN	1	17.		BOTTOM VALVE PLATE ONLY (DISCHARGE)	1REF
6.	72060757	LONG HEAD BOLT	2	18.		GASKET (VALVE PLATE/CYL)	1REF
7.	72063103	WASHER FOR LONG BOLT	1	19.		TOP VALVE PLATE W/REED VALVE ASSEMBLED	1REF
8.	72060753	SHORT HEAD BOLT	4	20.		BOTTOM VALVE PLATE W/REED VALVE ASSEMBLED	1REF
9A.	70141631	HEAD ONLY EMBEDDED FILTER (NOT DRILLED FOR UNLOADER) (DRILLED FOR UNLOADER)	1	21.	70054606	SET OF INTAKE/DISCHARGE VALVE PLATES ASSEMBLED (WITH TOP & BOTTOM GASKETS)	1
10.	76391363	GASKET (HEAD/TOP VALVE PLATE)	1REF	22.	70731022	EMBEDDED HEAD ASM, GASKETS, VALVES, BOLTS & COMP. FILTER	1
11.		TOP VALVE PLATE ONLY (INTAKE)	1REF				
12.		SPIRAL PIN	2REF				

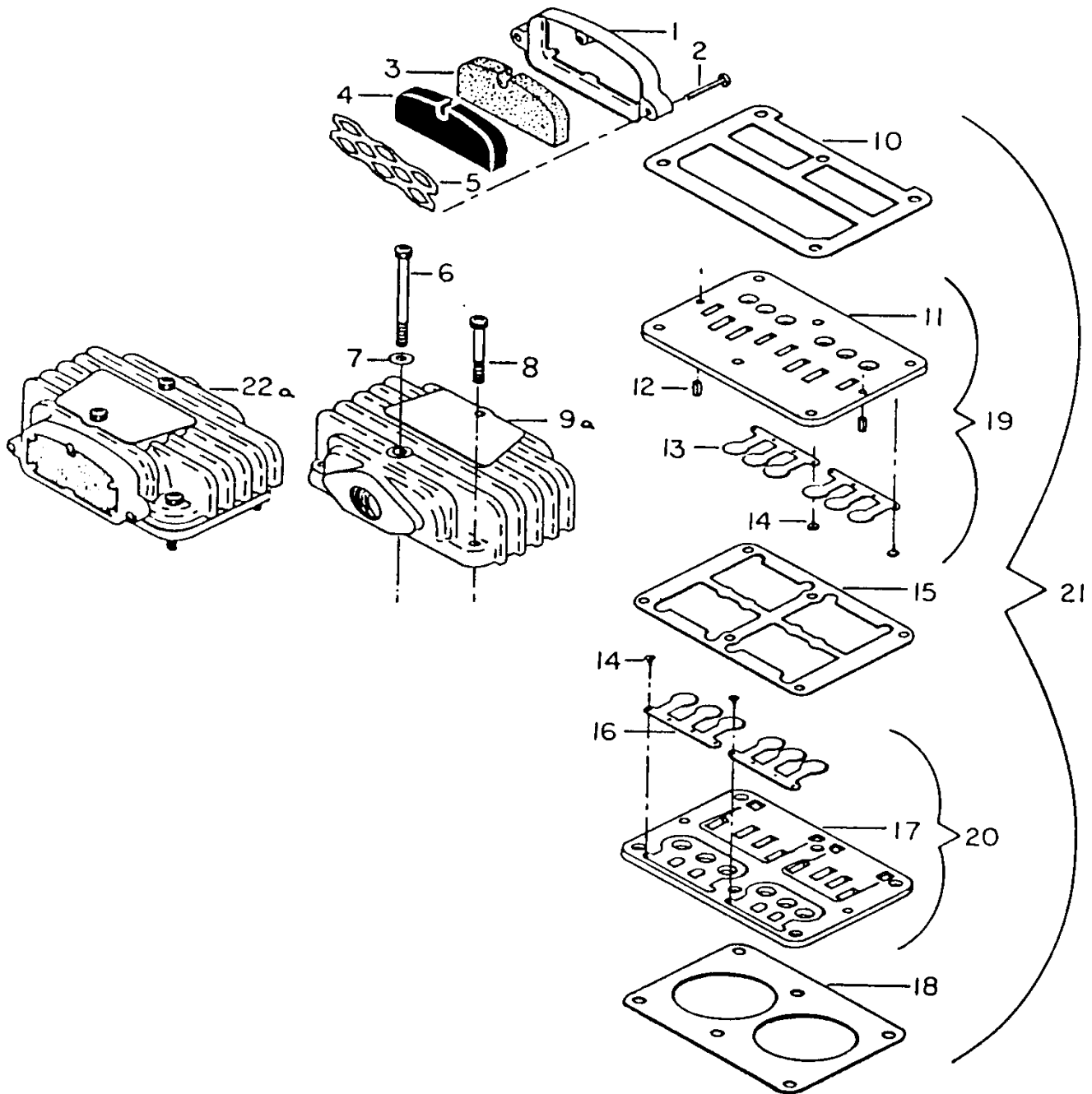


FIGURE D-5. REMOTE PRESSURE SWITCH KIT (51710224)

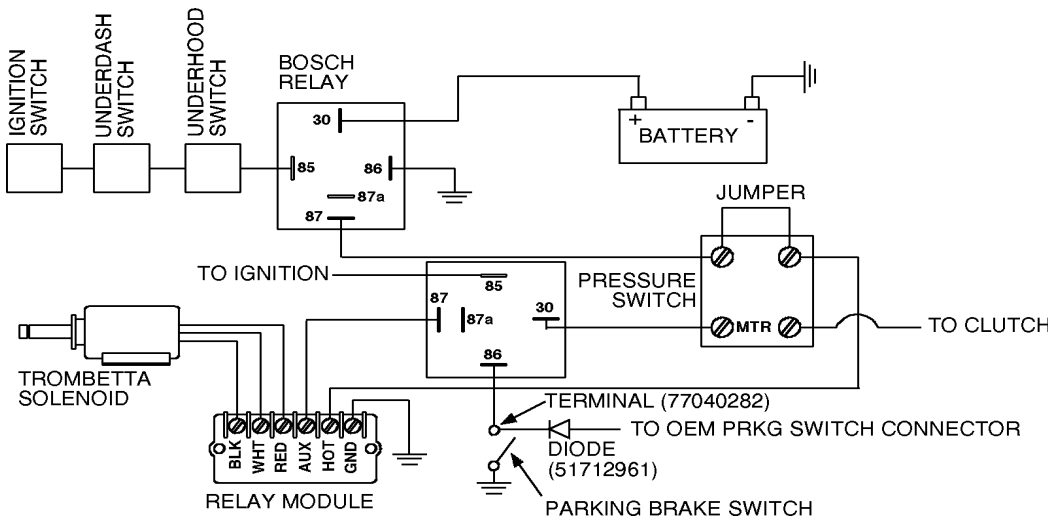
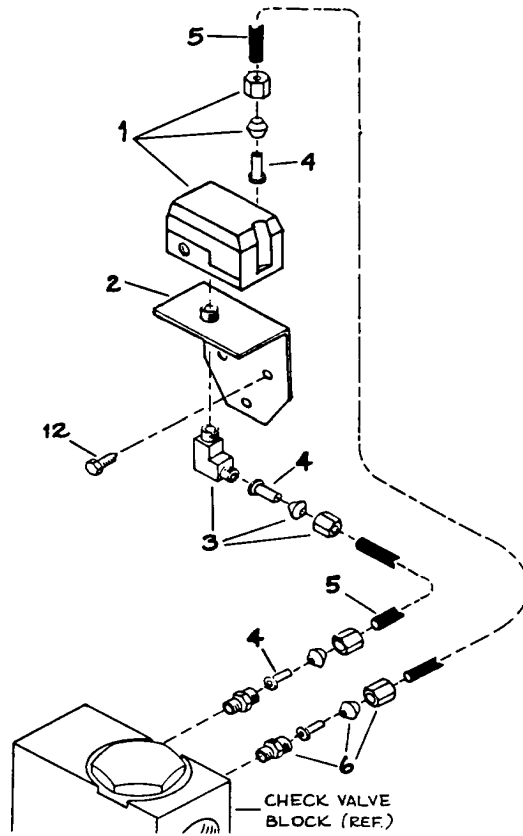
ITEM	PART NO.	DESCRIPTION	QTY
1.	77041369	PRESSURE SWITCH	1
2.	52710222	MOUNTING BRACKET	1
3.	72531042	ELBOW 1/8 1/4 90°	1
4.	72532952	BRASS INSERT	4
5.	89034176	AIR LINE 1/4"	10FT
6.	72053832	ADAPTER 1/8 1/4	2
7.	89044274	WIRE 14GA BLK	4FT
8.	89044271	WIRE 14GA BLU	4FT
9.	89044234	WIRE 14GA YEL	4FT
10.	77040048	BUTT CONNECTOR 16-14GA	3
11.	77040051	TERMINAL SPADE 16-14GA	3
12.	72061004	SHT MTL SCR #14X3/4	3
13.	89034048	SPIRAL WRAP	7"

REMOTE MOUNTED PRESSURE SWITCH INSTALLATION INSTRUCTIONS

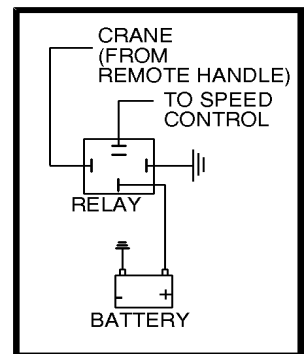
NOTE

IF YOU ARE USING THIS KIT AS A REPLACEMENT OR CONVERSION, IN LIEU OF YOUR EXISTING PRESSURE SWITCH, YOU MUST REMOVE THE PRESENT ASSEMBLY AS WELL AS THE WIRING.

1. Locate pressure switch mounting bracket (52710222) to the firewall or fender well of truck. Use the predrilled holes on the mounting bracket as a pattern to drill holes when mounting.
2. Assemble pressure switch to the mounting bracket. Attach a 90° brass elbow to the bottom side of the pressure switch mounting bracket.
3. Mount the pressure switch mounting bracket to the truck. Use the three (3) sheet metal screws provided in the kit.
4. Insert brass adapters (72053832) into the check valve block.
5. Continue assembly as shown on the installation assembly drawing. Route air lines and cut to length.
6. See wiring diagram for hook-up information.



FOR CRANE INSTALLATIONS ONLY



SECTION 5. REPAIR

5-1. CLUTCH INSTALLATION

1. Position the magnetic coil assembly over the front bearing housing and secure the assembly with the 1/4-20 cap screws. Torque to 85-120 inch-lbs.
2. Insert the Woodruff key into the crankshaft slot.
3. Slide the pulley, spacer, and lock washer onto the end of crankshaft. Be certain that the pulley slot aligns with the 5/16-18 cap screws.
4. Rotate the pulley assembly manually to check for interference between the pulley and the coil. If there is interference, disassemble the clutch and repeat the procedure.
5. Install and tighten the drive belts.
6. Connect the coil wire to the air pressure switch.
7. Move the compressor switch in the cab to the "ON" position to activate the clutch. Tighten the center bolt in the pulley.
8. Test the unit for proper operation.

5-2. REED VALVE INSTALLATION

1. Make sure parts are assembled as shown in exploded views (especially the valve plates).
2. The "TOP" plate is the intake. The bottom valve plate is the discharge. The top valve plate is stamped "THIS SIDE UP".
3. If you attach the reed valves, be sure to use the correct reeds. The intake reed is .010" thick and the discharge reed is .015" thick.
4. Make sure gaskets are all in good condition and properly assembled.
5. Make sure the six head bolts are tightened properly. First tighten all head bolts with light tension, then tighten with final tension. It is best to tighten the two long bolts before the four short bolts. Recommended torque is 400 inch-lbs.
6. Retorque all head bolts after 5 hours of compressor use. Check torque on a regular basis.

5-3. TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE
COMPRESSOR WILL NOT ENGAGE	VEHICLE HOOD CLOSED
	BLOWN FUSE
	DEFECTIVE CLUTCH/BELT
	DEFECTIVE PRESSURE SWITCH OR UNDERHOOD SWITCH
COMPRESSOR ENGAGES BUT WILL NOT PRESSURIZE TANK	AIR LEAK IN PLUMBING
	WORN 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 COMPRESSOR BELT
	AIR LEAK IN PLUMBING
	WORN VALVE PLATES OR PISTON RINGS

FIGURE E-1. TROUBLESHOOTING CHART

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 shipment to the end user.
2. One (1) year; original IMT parts from the date of shipment 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, and proven to have such defect, 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 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, 1985

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