



COMPRESSOR

IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189
CUSTOMER SERVICE TEL: 1-800-554-4421

MANUAL PART NO: 99904281

Iowa Mold Tooling Co., Inc. is an Oshkosh Corporation company.

SERIAL NUMBERS PRED021074 TO PRESENT.

REVISIONS LIST

DATE	LOCATION	DESCRIPTION OF CHANGE
20070802	ALL	MANUAL RELEASE. REMOVED COMPRESSOR FROM PREDATOR MANUAL 99903299
20080103	3-36	ECN 10636 - CHANGED PTO IN FORD MANUAL TRANSMISSIONS.
20090723	1-4	ECN 11023 - CHANGED COMPRESSOR INPUT SPEED RPM
20101206	11-14	ADDED SPARE PARTS LIST
20110620	13-14	ADDED REPL PART NUMBERS

PARTS ORDERING INFORMATION

Before placing an order, take the time to record the following information. This information should then be given to an IMT representative when placing your order.

BODY MODEL NUMBER:

BODY SERIAL NUMBER:

PART NUMBER, DESCRIPTION AND QUANTITY REQUIRED:

If left or right side is applicable, please specify.

Contact IMT at the following address:

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SPECIFICATIONS

IMT PREDATOR PTO AIR COMPRESSOR

DELIVERY @ 150 PSIG	45 CFM @ 110 PSI TO 150 PSI
INPUT SPEED RPM TO COMPRESSOR PUMP	2250 RPM (NON-GEARED) 1300 RPM (GEARED)
FLUID CAPACITY	11 QUARTS
COMPRESSOR / AIR INLET	9"W X 10.5"H X 13.25"L
RECIEVER / SUMP	10" X 18" VERTICAL
SPIN-ON COALESCER FILTER	5" DIA
COOLER / FAN ASSEMBLY	12.00" X 16.60" X 2.63"
OIL COOLER/AFTER COOLER FAN	12VDC, 22 AMP, 500 CFM @ 1/2" H2O
AIRTANK	20 GALLONS
OIL FILTER	15 MICRONS ABSOLUTE

Specifications subject to change without prior notice

CRITICAL WEAR PARTS AVAILABILITY

Your Predator Compressor has designated critical maintenance and repair parts that can be shipped from IMT on the next business day or sooner. Listed below are the designated parts. When ordering these as needed please advise the customer service representative that you need these shipped the next day or sooner.

NOTE: These critical wear parts are used on units with serial numbers PRED021074 to present.

COMPRESSOR ITEMS

P/N	DESCRIPTION	P/N	DESCRIPTION
70048217	Air filter element	70149781	U-joint
73052128	Air/hydraulic cooler	73511011	Pump
70733695	Fan assembly	94534345	Shaft seal kit-B101 (Super Duty, other manual transmissions)
73540113	Thermal valve	94744113	Shaft seal kit - B101G (Allison automatic transmissions)
70048214	Oil filter element	94744114	Bearing kit - B101G (Allison automatics)
70048224	Temperature gauge switch	90488228	Inlet valve repair kit
77041638	N/C pressure switch - 5 lb	90488229	Regulator repair kit
77041639	N/O pressure switch - 20 lb	89086192	IMT brand compressor oil - quart 89086201
73054032	Relief valve		IMT brand compressor oil - gallon
73540109	Regulator	77041647	Switch - High Temperature
73540110	Valve, blowdown	77041645	Switch - Fan
60124690	Cap, fill tube		
60124515	Coalescer head		
73733692	Coalescer element		

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR PANEL ASM (51717794-1)

1.	60124194	ELBOW, MOD TEMP SWITCH	1
2.	60127900	BRACKET-OIL FILTER (WAS 60124195)	1
3.	60124200	SHROUD-FAN	1
4.	60124204	BRACKET-COALESCE	1
5.	60124207	PANEL-COMPRESSOR MOUNT	1
6.	60124515	HEAD-COALESCE REWORK	1
7.	60124689	PLUG-BLOWDOWN	1
8.	60124691	BRACKET-CONTROL COMPRS.	1
9.	60124692	FILL PIPE-COMPRS. PANEL	1
10.	60124201	BRACKET-OIL FILL TUBE	1
11.	70048214	ELEMENT-OIL FILTER	1
12.	70048224	TEMP SENDER	1
13.	70146475	TUBE-COALESCE TO SUMP 1"	1
14.	70148455	TUBE ASM-COOLER TO TEE	1
15.	70148456	TUBE ASM-THRM VLV TO COOL	1
16.	70142021	TUBE ASM-COALS TO PRES VLV	1
17.	70148458	TUBE ASM-AFT-COOL TO TANK	1
18.	70148459	TUBE ASM-OIL FILT. -THERM VLV	1
19.	70733690	TANK SUMP 10X18	1
20.	70733695	FAN ASSEMBLY	1
21.	70733696	AIR TANK, 20-GAL	1
22.	72053013	NIPPLE-PIPE BLK 1/4XCLOSE	1
23.	72053141	NIPPLE-PIPE BLK 3/4XCLOSE (WAS 4, 2)	1
24.	72053145	NIPPLE-PIPE BLK 3/4X4.00	1
25.	72053286	ELBOW-STR BLK 1 X 90°	1
26.	72053287	ELBOW-STR BLK 1-1/4 X 90°	2
27.	72531826	RED BUSH STL 1/4-1/8 (WAS 72053371)	2
28.	72053392	PLUG-PIPE SOC HD 1/4	5
29.	72053458	NIPPLE-BARB BRS 3/4MPT 3/4	2
30.	72053555	TEE-STL 3/4	1
31.	72053556	ELBOW-STREET STL 3/4 X 90°	3
32.	72053676	ADPTR-MPT/MJIC 3/4-12	1
33.	72053679	ADPTR-MPT-MJIC 3/4-16	5
34.	72053680	ADPTR-MPT-MJIC 1.00-16 (WAS 1)	2
35.	72053682	ADPTR-MPT-MJIC 1.25-20	1
36.	72053522	ELBOW-STREET STL 1/2 X 45°	1
37.	72063005	WASHER 1/2 FLAT	2
38.	72531430	ELBOW MPT/MJIC 1.00-16 90° (WAS 5)	4
39.	72531833	RED BUSHING-STL 3/4-1/2	2
40.			
41.	72531837	RED BUSHING-STL 1-1/4 - 1.00 (WAS 1)	2
42.	72533726	TEE-MPIPE/FPIPE MALE RUN 1/4	4
43.	72534344	CROSS-PIPE 3/4" STEEL	1
44.	72534336	TEE-RED 3/4 X 1/2 X 3/4 BLACK	1
45.	72534419	ELBOW-NPT/90/PUSHLOK 6 2 (WAS 72534338)	1
46.	72534339	ELBOW-PRESTOLOK	4
47.	73540113	VALVE-THERMAL	1
48.	72534341	ELL-MPT/JIC 1.00-16 45° 16VTX-S	1
49.	72053376	RED BUSHING BLK 1.00 - 3/4	1

CONTINUED ON FOLLOWING PAGE

50.	73029602	HEAD-OIL FILTER	1
51.	73052128	COOLER	1
52.	73054032	VALVE-PRESS RLF 1/4 200 PSI	2
53.	73540109	VALVE-REGULATOR 1/4"	1
54.	73540110	VALVE-BLOWDOWN	1
55.	73540111	VALVE-MIN PRESSURE 3/4	1
56.	73540114	VALVE-DRAIN COCK 1/2"	1
57.	73733692	FILTER-COALESCE	1
58.	77041647	SWITCH-TEMP 3/8" 240 R NC	1
59.	77041638	SWITCH-PRESS 5 LB 1/8" N/C	1
60.	77041639	SWITCH-PRESS 20 LB 1/8" N/O	1
61.	77041645	SWITCH-TEMP 1/2" 180R NO	1
62.	72533235	ADPTR-FPT/MJIC 1.00-16	1
63.	60124690	CAP-VENTED 1"	1
64.	60124197	BRACKET-UPPER COOLER	1
65.	60124198	BRACKET-LOWER COOLER	1
66.	60124199	PANEL-SIDE COOLER	1
67.	72060046	CAP SCR 3/8-16 X 1.00 HH GR5Z (WAS 14)	8
68.	72062103	NUT 3/8-16 HEX NYLOC (WAS 32)	27
69.	72063003	WASHER 3/8 FLAT (WAS 29)	24
70.	77045896	HARNESS-AIR SYSTEM	1
71.	77041655	RELAY MODULE-AIR SYSTEM	1
72.	72053243	PLUG-PIPE SH HEX BLK 1/2	1
73.	72060023	CAP SCR 5/16-18 X 3/4 HH GR5	2
74.	72063050	WASHER 5/16 LOCK	2
75.	72063002	WASHER 5/16 FLAT (WAS 2)	6
76.	72062104	NUT 1/4-20 HEX NYLOC	6
77.	72060002	CAP SCR 1/4-20 X 3/4 HH GR5	6
78.	72060012	CAP SCR 1/4-20 C 3.00 HH GR5	2
79.	72063049	WASHER 1/4 LOCK	2
80.	72063001	WASHER 1/4 FLAT	6
81.	72661312	CLAMP-1/2 LOOP CUSHIONED	2
82.	72066581	CLAMP (WAS 5)	4
83.	72533756	FITTING-COMP 1/4MPT X 3/8TUBE	2
84.	72533747	TUBE-TEFLON P TFE 3/8OD HC NAT	9"
85.	72063000	WASHER 3/16 FLAT (WAS 4)	6
86.	70034472	TUBE NYLON 3/8 OD X .225 ID	38"
87.	72060636	SCR MACH 10-24 X 3/4 RDH Z	2
88.	72062106	NUT #10-24 HEX NYLOC ZINC	2
89.	72060047	CAP SCR 3/8-16X1.25 HHGR5Z (WAS 18)	20
90.	72053143	NIPPLE-PIPE BLK 3/4X2 (WAS 1)	2
91.	77045887	TERM-WP 14-16GA MALE	2
92.	70394069	SEAL WP/MP 16GA GREEN	2
93.	77044573	CONNECTOR WP 2CAV MALE/SH	1
94.	72053584	ELB 3/4MPT 3/4FPT 45DEG SWIV	1
95.	72053727	ADPTR 1MPT 3/4MPT HEX	1

NOTE: Items 13-18 can be replaced with Parker series 206 hose.

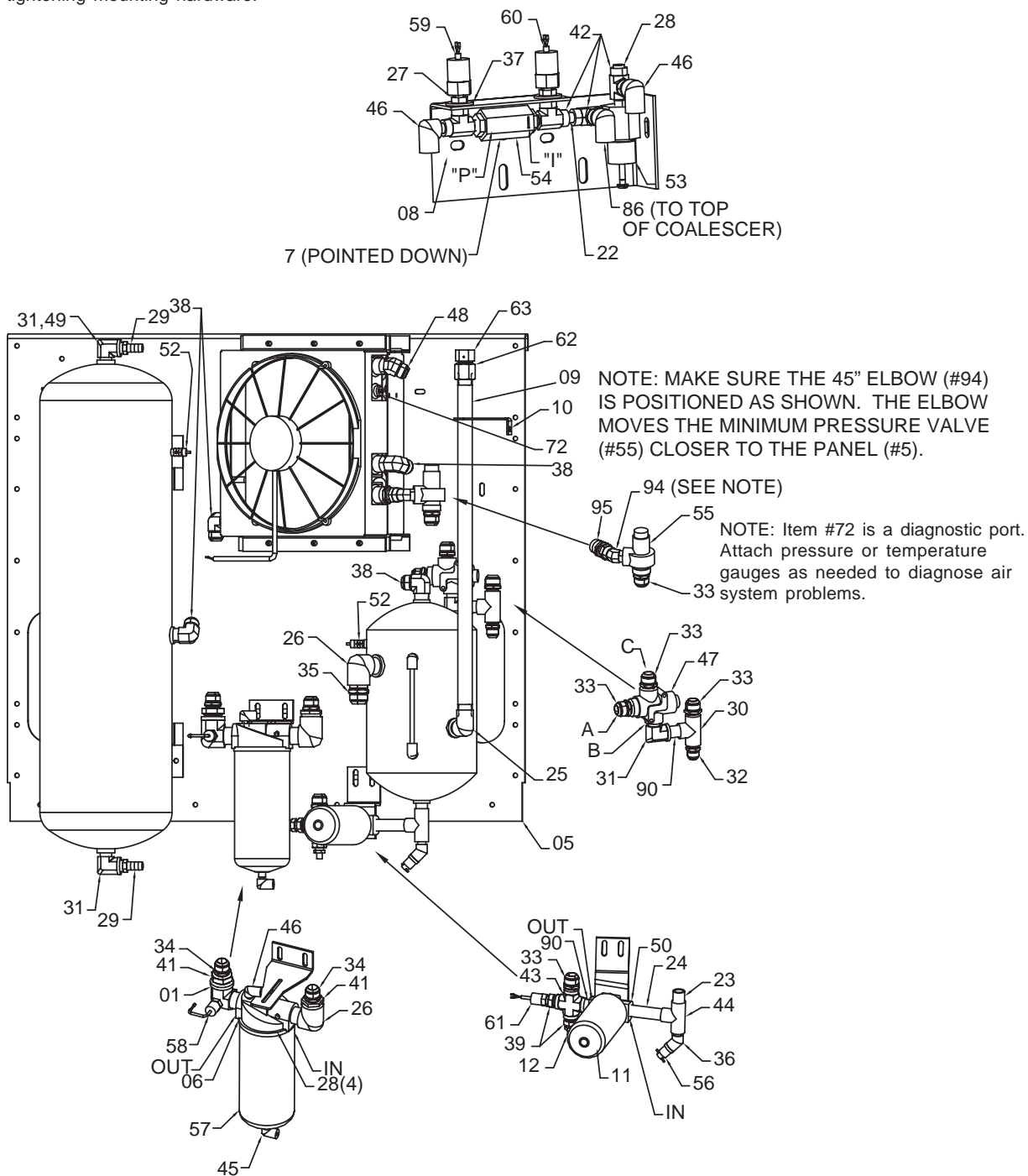
SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR PANEL ASM (51717794-2)

ASSEMBLY NOTES:

1. Subassembly groups as shown.
2. Loosely mount components as shown on page 3.
3. Install tubing.
4. Make final connections and adjustments.
5. Finish tightening mounting hardware.

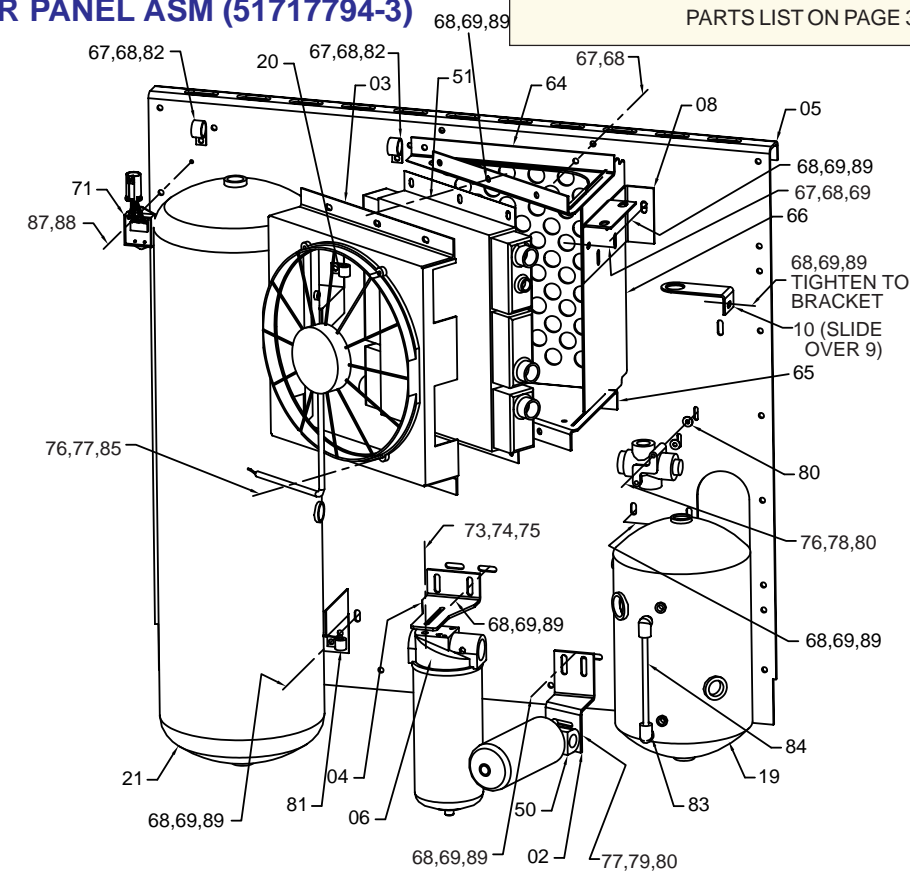
PARTS LIST ON PREVIOUS PAGE.
DRAWINGS CONTINUED ON FOLLOWING PAGE



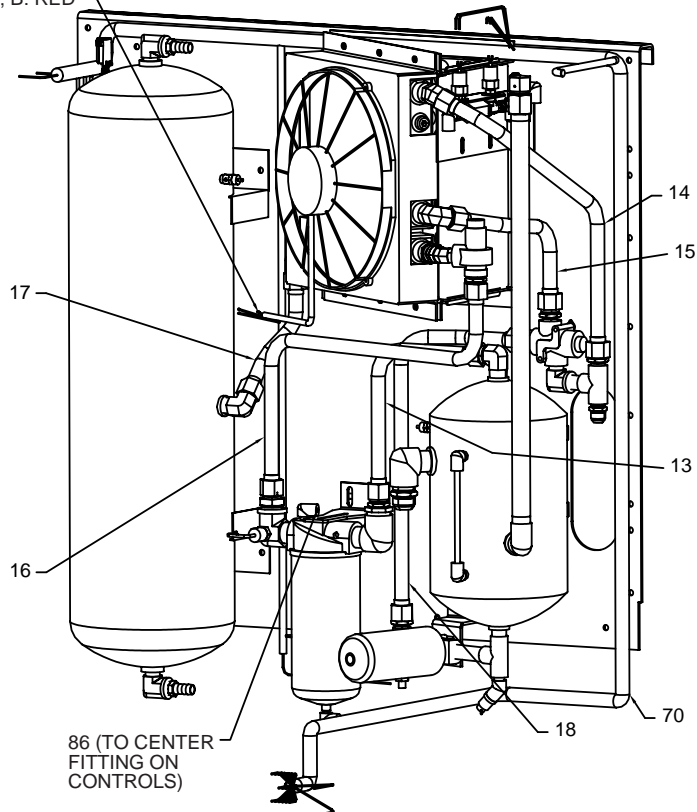
SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR PANEL ASM (51717794-3)

PARTS LIST ON PAGE 3A-3.



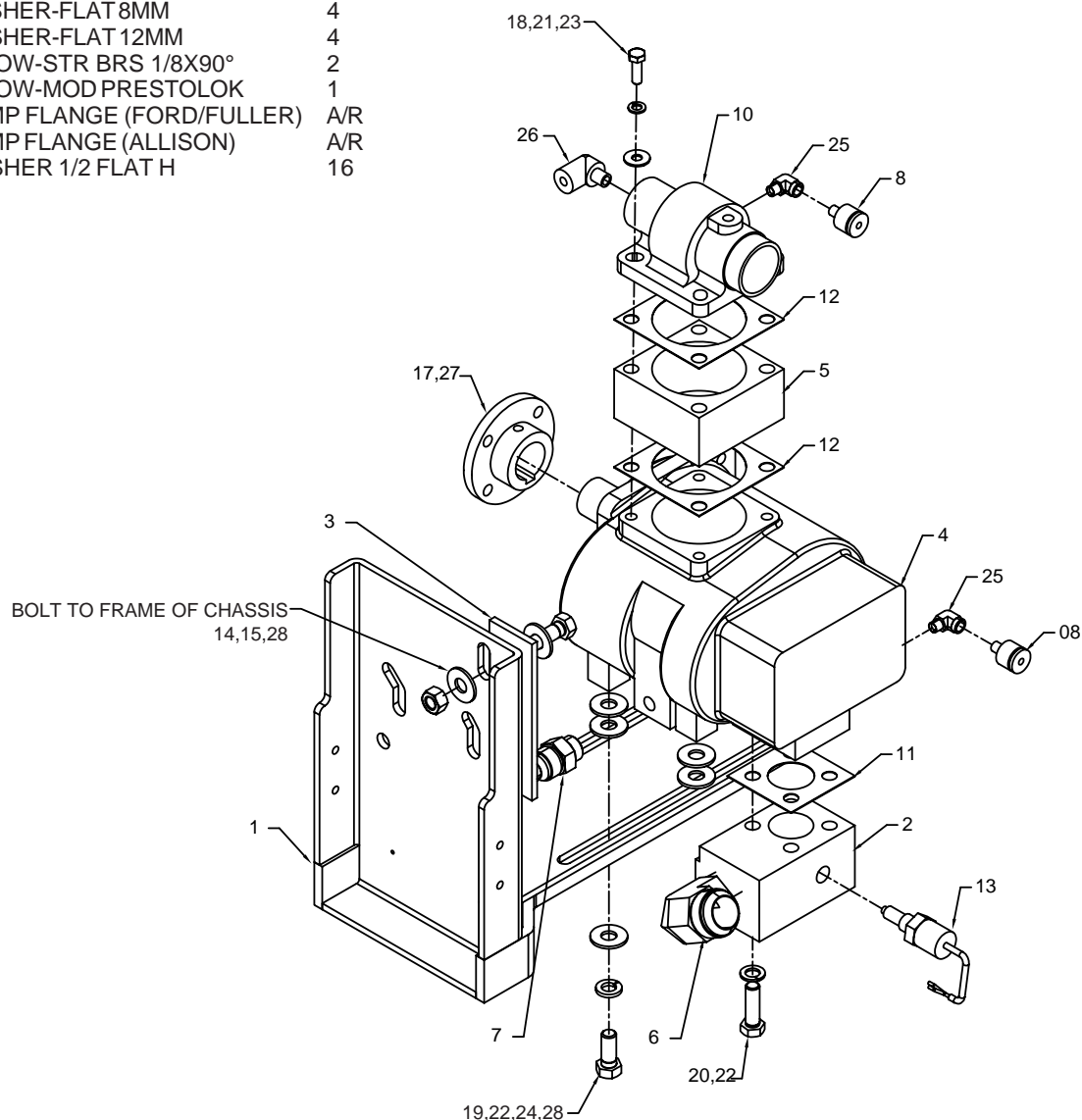
TERMINATE FAN WIRING
WITH #91 (2), #92 (2) AND #93 (1)
A: BLACK; B: RED



SERIAL NUMBERS PRED021074 TO PRESENT.

AIR END ASSEMBLY (99903452)

1.	52717346	COMP MTG FOOT-NON-G B101	A/R
	52717347	COMP MTG FOOT-NON FORD	A/R
2.	60124893	BLOCK-DISCH B101 W/PROBE	1
3.	60124694	SPACER COMP FT (FORD ONLY)	A/R
4.	70733693	AIR END B101 (FORD/FULLER)	A/R
	70733760	AIR END B101G-H (ALLISON)	A/R
5.	60125045	SPACER-AIR INTAKE B101	A/R
6.	72534343	ELBOW MPT/JIC 1.25-20 90°	1
7.	72533656	ADPTR #8MBSPP #12MJIC	1
8.	72534338	ADPTR-PRESTOLOK	2
10.	73540112	INLET VALVE	1
11.	76396253	DISCHARGE BLOCK GASKET	1
12.	76396269	INLET GASKET	A/R
13.	77041647	TEMP SWITCH 3/8" 240R	1
14.	72060118	CAP SCR 1/2-313 X 2.00 HHGR5	4
15.	72062232	NUT 1/2-13 HEX TOP LOCK GR8	4
17.	72060579	SET SCR 3/8-16 X 1/2 SH PL	1
18.	72601677	CAP SCR-MET 8-1.25 X 25 H10.9	A/R
	72601809	CAP SCR-MET 8-1.25X70 HHZ	A/R
	(WAS 72601263)		
19.	72601394	CAP SCR-MET 12-1.25 X 30 HHZ	4
20.	72601496	CAP SCR-MET 12-1.75 X 80 HHZ	4
21.	72601797	WASHER-LOCK 8MM	4
22.	72601798	WASHER-LOCK 12MM	8
23.	72601799	WASHER-FLAT 8MM	4
24.	72601800	WASHER-FLAT 12MM	4
25.	72053589	ELBOW-STR BRS 1/8X90°	2
26.	60124756	ELBOW-MOD PRESTOLOK	1
27.	70580156	COMP FLANGE (FORD/FULLER)	A/R
	70580167	COMP FLANGE (ALLISON)	A/R
28.	72063132	WASHER 1/2 FLAT H	16

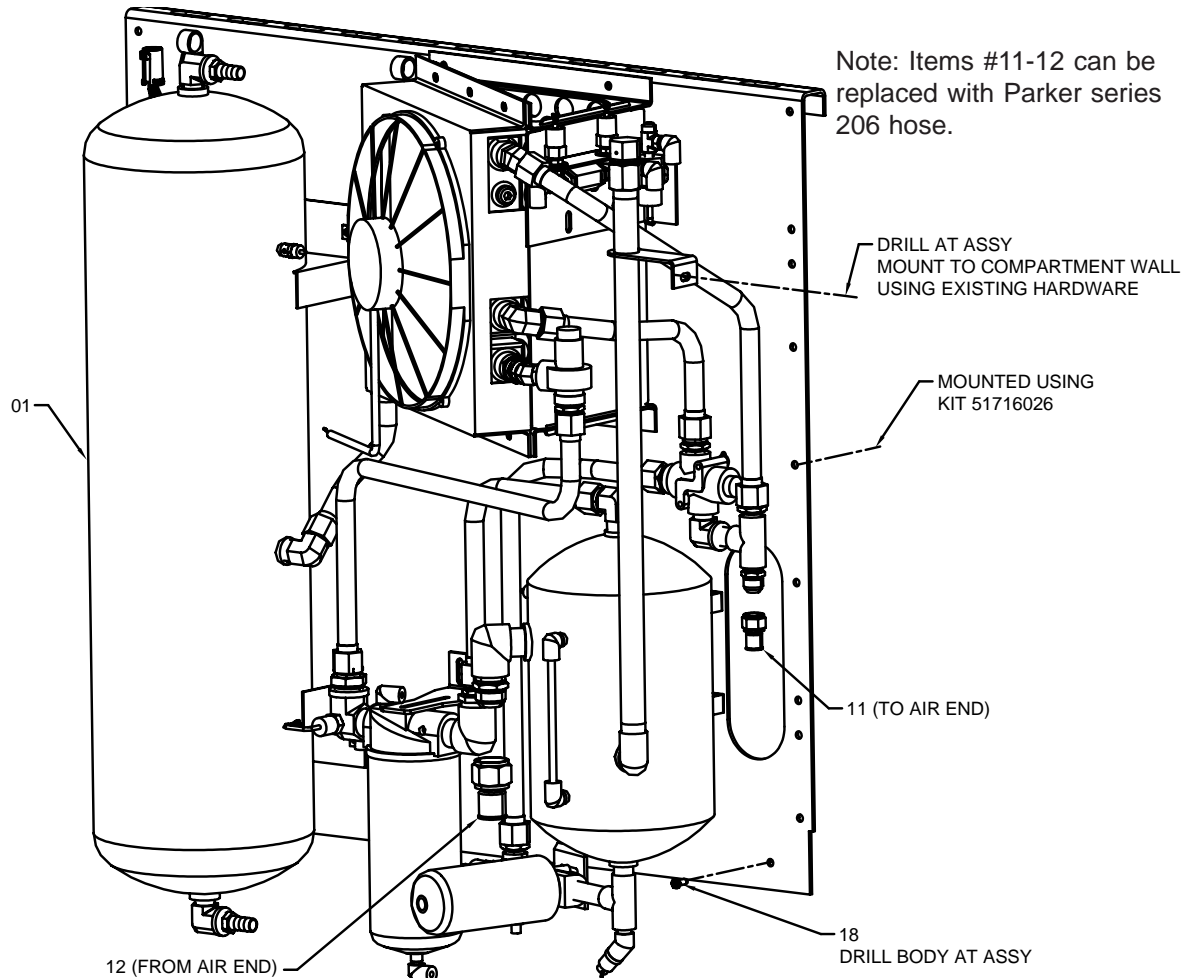


SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR INSTALLATION (99903453-1)

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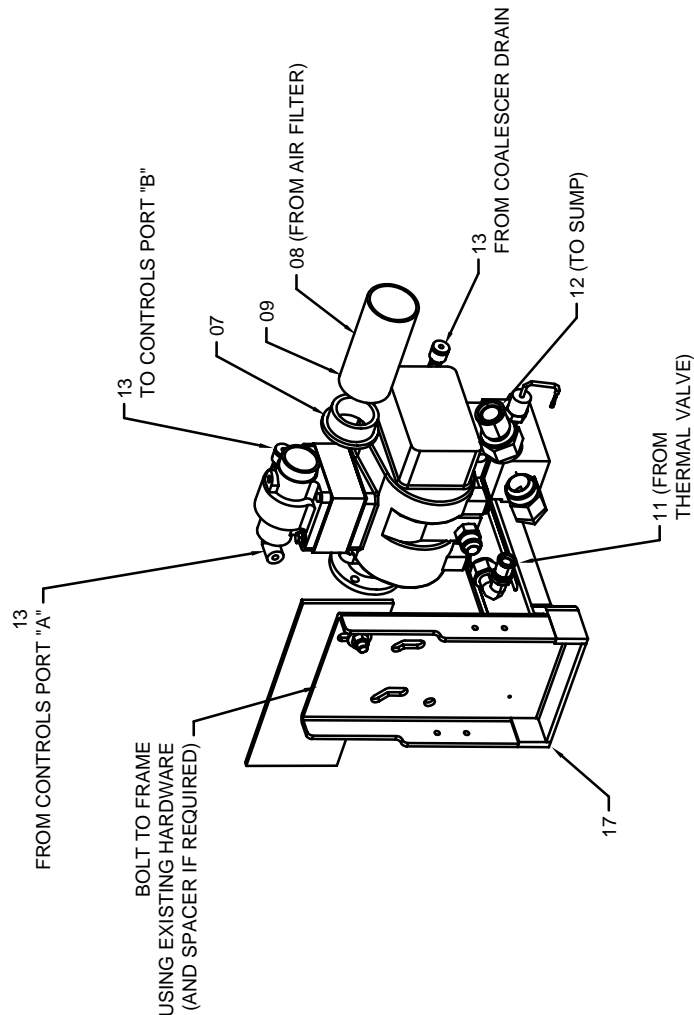
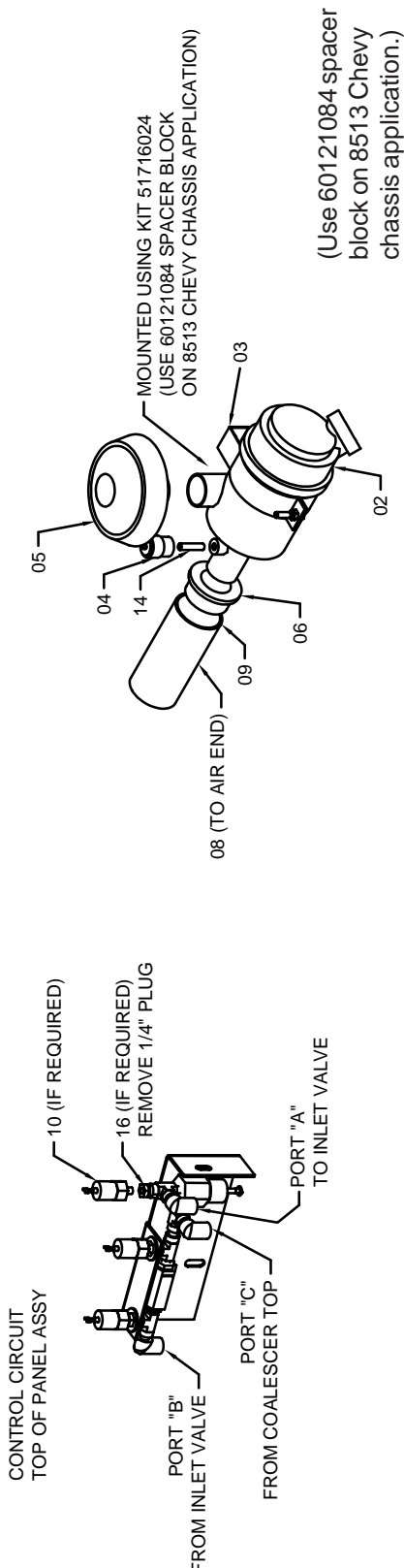
1.	51717794	PANEL ASM	REF
2.	70048215	AIR FILTER ASM	1
3.	70048216	AIR FILTER BAND 4.8	1
4.	70048222	AIR FILTER INDICATOR	1
5.	70048223	AIR FILTER CAP 4.8	1
6.	76396153	RUBBER INSERT 2.5 X 1.75	1
7.	76396154	INSERT-INLET 2.5 X 2	1
8.	70396152	HOSE-2.5 ID GT	10'
9.	72661549	CLAMP INLET 2.5	2
10.	77041638	PRESS SWITCH 5# 1/8" N/C	A/R
11.	51396272	HOSE FJ 3/4X56.0 OAL (W/O CRANE)	A/R
	51396264	HOSE-FJ 3/4X80 OAL (W/CRANE)	A/R
12.	51396273	HOSE-FF 1.25X41.0 OAL (W/O CRANE)	A/R
	51396265	HOSE-FF 1.25X65.0 OAL (W/CR)	A/R
13.	70034472	TUBE-NYLON .375 OD X .225 ID	23'
14.	72053001	NIPPLE-1/8 X 1.50	1
15.	89086192	IMT COMPOIL-QT	10
16.	72053371	RED BUSHING 1/4-1/8	A/R
17.	99903452	AIR END ASM DRAWING	REF
18.	72060833	SCR THD CUT 5/16-18X3/4 HWH	4



SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR INSTALLATION (99903453-2)

PARTS LIST ON PAGE 3A-8.



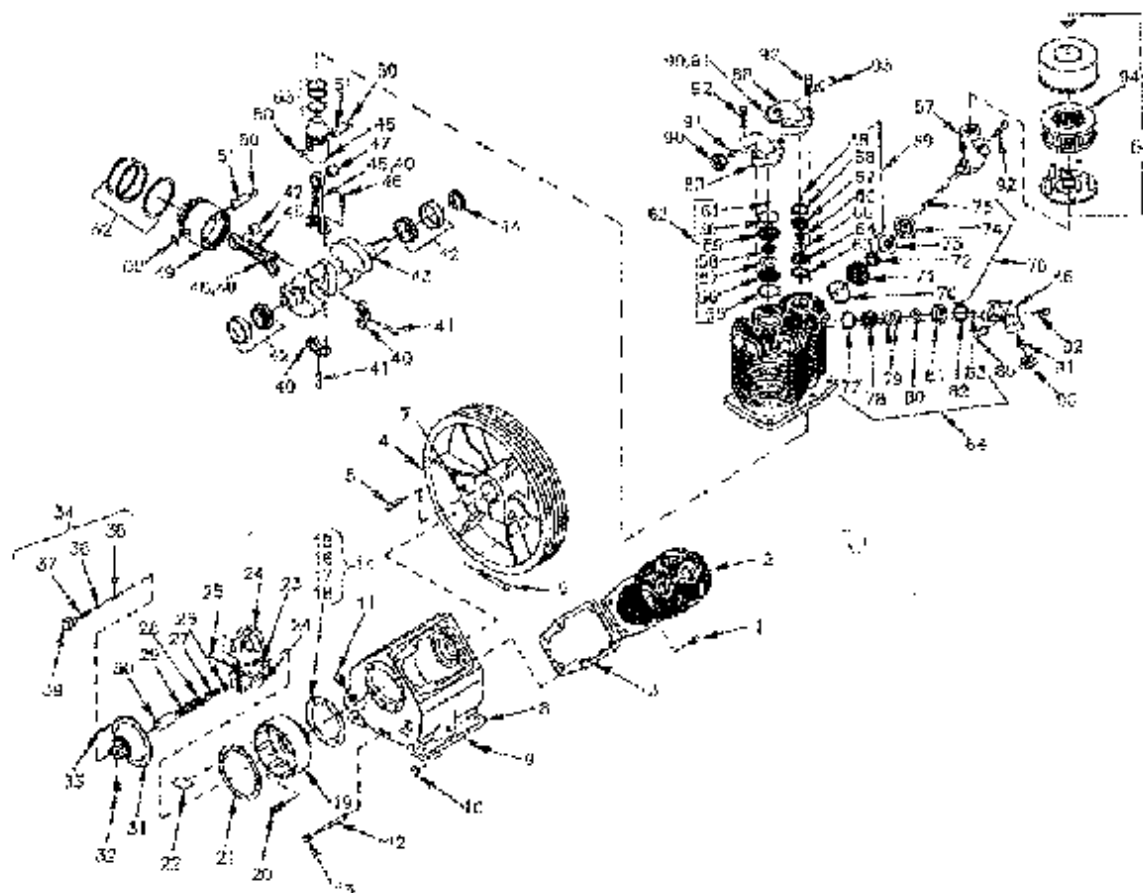
Control Hose Port Call Outs (REF)

- LINE "A" Air signal from regulator outlet to compressor inlet valve regulating port. Air signal modulates air opening from open to close when there is no demand for air. Maximum pressure in this line is 50 psig.
- LINE "B" Air signal supply from side of inlet valve at shutdown to exhaust air from compressor system.
- LINE "C" System air pressure signal port air to air pressure regulator inlet. Air pressure is present anytime there is air pressure in the system.

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR ASSEMBLY (70073051)

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ITEM	DESCRIPTION	QUANTITY	ITEM	DESCRIPTION	QUANTITY
1.	CAPSCREW, HH	12	28.	WASHER, FLAT	1
2.	CYLINDER	2	29.	GOVERNOR SPRING	1
3.	GASKET, CYL FLANGE	2	30.	SLEEVE, SPRING	1
4.	FLYWHEEL	1	31.	COVER, GOV HOUSING	1
5.	KEY	1	32.	MUFFLER ASM	1
6.	CAPSCREW, HH	1	33.	SCREW, MACHINE HH	6
7.	NUT, HEX	1	34.	RELEASE VALVE ASM	1
8.	CRANKCASE	1	35.	PLUNGER, REL. VALVE	1
9.	PIPE PLUG	1	36.	REL. BALL VALVE	1
10.	OIL LEVEL GAUGE	1	37.	SPRING, REL VALVE	1
11.	PIPE PLUG	1	38.	MACHINE SCREW, HH	2
12.	PIPE NIPPLE	1	39.	RELEASE VALVE BODY	1
13.	PIPE CAP	1	40.	CONN. ROD ASM (41,45-47)	4
14.	GASKET SET, GOVERNOR HOUSING (INCL 15-18)	1	41.	OIL DIPPER	4
15.	GOV. HOUSING GASKET (.032" THK)	1	42.	MAIN BEARING	2
16.	GOV. HOUSING GASKET (.005" THK)	1	43.	CRANKSHAFT	1
17.	GOV. HOUSING GASKET (.010" THK)	1	44.	OIL SEAL	1
18.	GOV. HOUSING GASKET (.015" THK)	1	45.	CONNECTING ROD (NOT SOLD SEP)	--
19.	GOVERNOR HOUSING	1	46.	CONN. ROD BOLT	8
20.	CAPSCREW, HH	4	47.	BEARING, PISTON PIN	4
21.	GASKET, GOV HOUSING COVER	1	48.	HIGH PRESSURE PISTON PIN (INCL. 50-51)	2
22.	BAFFLE PLATE	1	49.	LOW PRESSURE PISTON PIN (INCL. 50-51)	2
23.	SPINDLE, GOV WEIGHT	1	50.	PISTON PIN RETAINING PIN	8
24.	WEIGHT, GOVERNOR	2	51.	PISTON PIN	4
25.	PIN, GOVERNOR WEIGHT	2	52.	LOW PRESS PISTON RING SET	2
26.	WASHER, LOCK	1	53.	HIGH PRESS PISTON RING SET	2
27.	CAPSCREW, HH	1			

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR ASSEMBLY (70073051)

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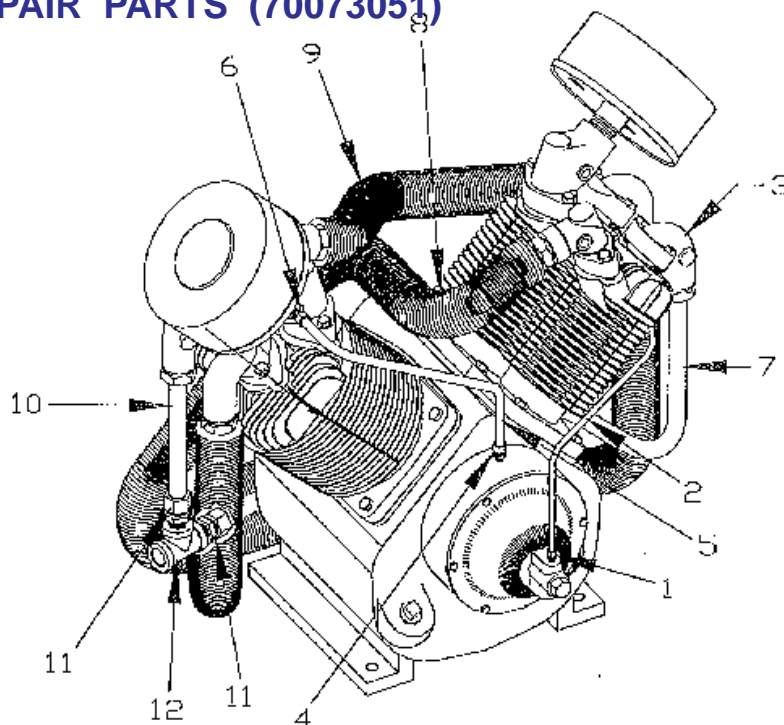
ITEM	DESCRIPTION	QUANTITY
54.	INTAKE FILTER	2
55.	VALVE GASKET	2
56.	DISCHARGE VALVE SEAT	2
57.	VALVE DISC	2
58.	VALVE SPRING	2
59.	DISCHARGE VALVE CAGE	2
60.	VALVE GASKET	2
61.	MACHINE SCREW, HH	2
62.	LOW PRESS DISCHARGE VALVE ASM	2
63.	VALVE GASKET	2
64.	DISCHARGE VALVE SEAT	2
65.	VALVE DISC	2
66.	VALVE SPRING	2
67.	DISCHARGE VALVE CAGE	2
68.	GASKET, VALVE R10-30	2
69.	HIGH PRESS DISCHARGE VALVE ASM	2
70.	GASKET, VALVE, LPIN	2
71.	CAGE, INTAKE VALVE	2
72.	VALVE SPRING	2
73.	VALVE DISC	2
74.	VALVE SEAT, INTAKE	2
75.	MACHINE SCREW, HH	2
76.	LOW PRESS INTAKE VALVE ASM	2
77.	VALVE GASKET	2
78.	INTAKE VALVE CAGE	2
79.	VALVE SPRING	4
80.	VALVE DISC	2
81.	INTAKE VALVE SEAT	2
82.	GASKET, VALVE, HPIN R10-30	2
83.	HEX HEAD MACHINE SCREW	2
84.	HIGH PRESS INTAKE VALVE ASM	2
85.	INTERSTAGE PRESS REL. VALVE	2
86.	HIGH PRESS INTAKE MANIFOLD	2
87.	LOW PRESS INTAKE MANIFOLD	2
88.	HIGH PRESS INTAKE MANIFOLD	2
89.	LOW PRESS INTAKE MANIFOLD	2
90.	COMPRESSION NUT	6
91.	FERRULE	6
92.	HEX HEAD CAP SCREW	16
93.	PRESSURE RELIEF VALVE	1
94.	INTAKE FILTER ELEMENT	2

COMPLETE COMPRESSOR GASKET SET (QTY 1) (INCL 3,11,21)
 LOW PRESSURE PISTON KIT (QTY 2) (INCL. 49,52)
 HIGH PRESSURE PISTON KIT (QTY 2) (INCL. 48,53)
 COMPLETE COMPR. PUMP RING SET (QTY 1) (INCL 52,53)

COMPLETE VALVE SET WITH GASKETS (QTY 1)
 COMPLETE VALVE GASKETS SET (QTY 1)

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR REPAIR PARTS (70073051)

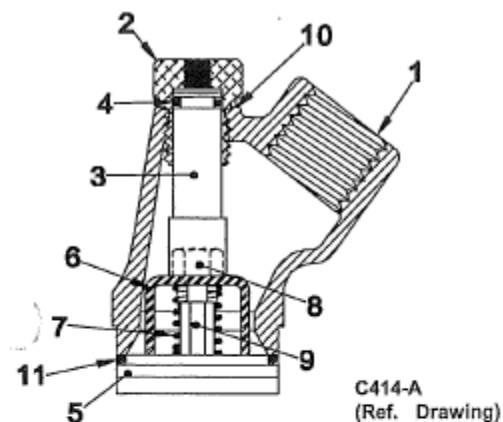


ITEM	PART #	DESCRIPTION	QUANTITY
1.		TUBE FITTING	1
2.		RELEASE VALVE TUBE W/FITTINGS (INCL 1,3)	1
3.		TUBE FITTING	1
4.		TUBE FITTING	1
5.		BREATHER TUBE W/FITTING (INCL. 4,6)	1
6.		TUBE FITTING	1
7.	70734604	TUBE, DISCHARGE	1
8.	70734554	RH INTERCOOLER TUBE W/FITTINGS	1
9.	70734531	LH INTERCOOLER TUBE W/FITTINGS	1
10.	70145396	TUBE, DISCHARGE	1
11.		TUBE FITTING	2
12.		PIPE TEE	1

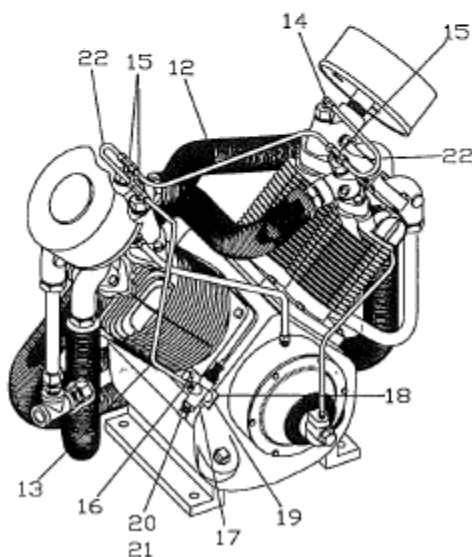
SERIAL NUMBERS PRED021074 TO PRESENT.

REPAIR PARTS FOR CONSTANT SPEED HEAD UNLOADER (OPTION)

NOTE: THIS IS OPTIONAL EQUIPMENT AND MAY NOT BE INCLUDED ON YOUR UNIT. CONSTANT SPEED UNLOADING PROVIDES A MEANS OF STOPPING OR STARTING THE COMPRESSION OF AIR BY THE COMPRESSOR WITHOUT STOPPING OR STARTING THE ELECTRIC MOTOR OR GASOLINE ENGINE AFTER EACH CYCLE.



TYPICAL MANIFOLD ASSEMBLY



LOWPRESSURE

ITEM	DESCRIPTION	QUANTITY
95724182	LP INTAKE MANIFOLD GROUP (INCL 1-4)	2
1.	LP INTAKE MANIFOLD	2
2.	CYLINDER	2
3.	UNLOADER PISTON	2
4.	O-RING	2
5. 73540031	LP VALVE ASSEMBLY (INCL 6-9)	2
6.	UNLOADER FINGER	2
7.	UNLOADER SPRING	2
8.	LOCKNUT	2
9.	GUIDE STEM	2

HIGHPRESSURE

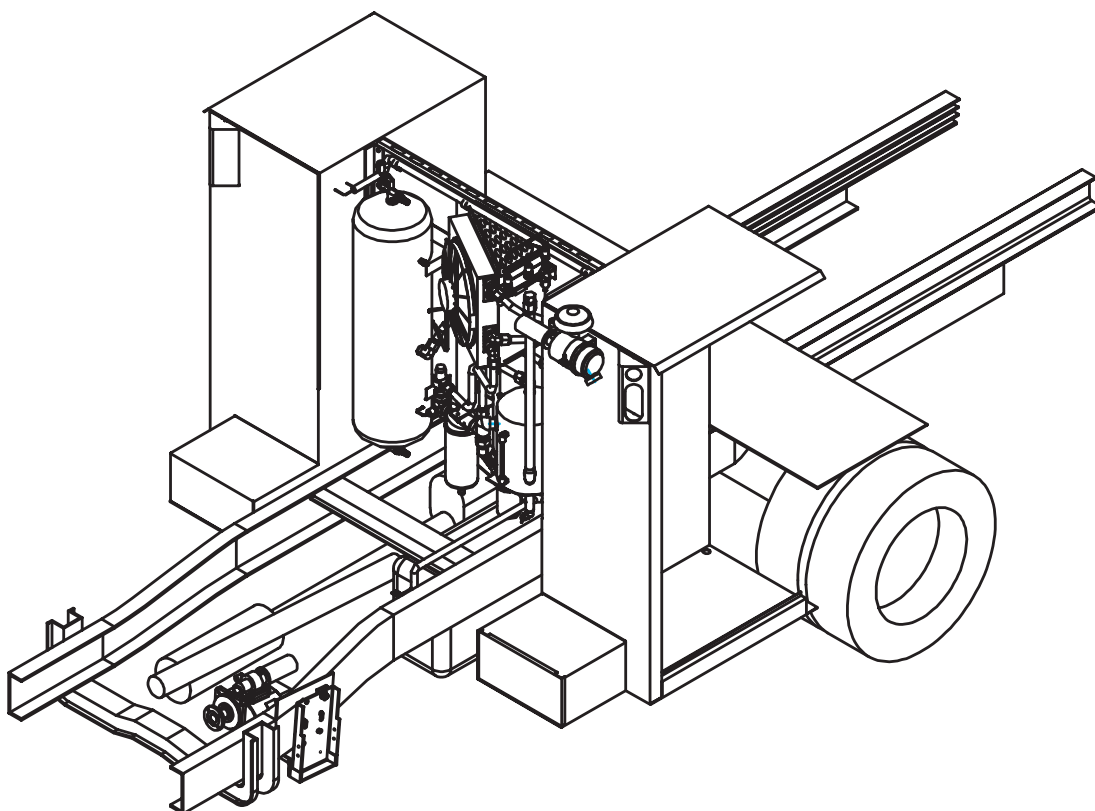
ITEM	DESCRIPTION	QUANTITY
95724183	HP INTAKE MANIFOLD GROUP (INCL 1-4, 10)	2
1.	HP INTAKE MANIFOLD	2
2.	CYLINDER	2
3.	UNLOADER PISTON	2
4.	O-RING	2
5. 70733204	HP VALVE ASM (INCL 6-9, 11)	2
6.	UNLOADER FINGER	2
7.	UNLOADER SPRING	2
8.	LOCKNUT	2
9.	GUIDE SYSTEM	2
10.	CYLINDER GASKET	2
11.	VALVE GASKET (NOT INCL.)	2

LOW & HIGH PRESSURE

ITEM	DESCRIPTION	QUANTITY
12.	INTERMEDIATE TUBE	1
13.	ACTUATING TUBE	1
14.	COMPRESSION FITTING	1
15.	COMPRESSION FITTING	3
16.	COMPRESSION FITTING	1
17.	PILOT VALVE	1
18.	MOUNTING BRACKET	1
19.	SCREW, HEX HEAD CAP	1
20.	COMPRESSION FITTING	1
21.	SENSING TUBING 1/4" OD (SPECIFY LENGTH)	REF
22.	MANIFOLD TUBE	2
---	NEEDLE VALVE (DUAL CNTRL) (NOT SHOWN)	1
---	CONSTANT SPEED HEAD UNLOADER KIT (INCL ALL)	1

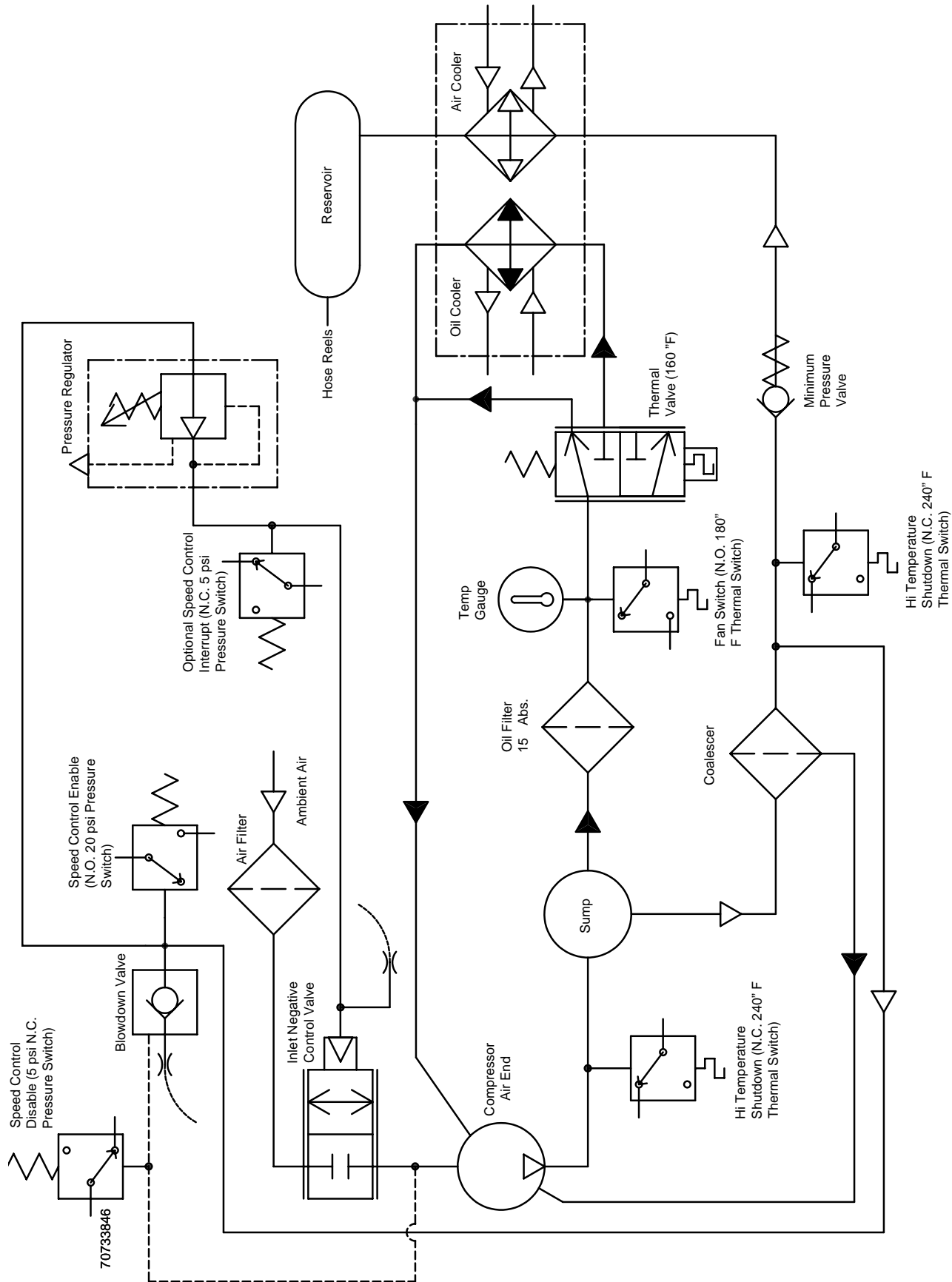
SERIAL NUMBERS PRED021074 TO PRESENT.

TYPICAL INSTALLATION



SERIAL NUMBERS PRED021074 TO PRESENT.

HYDRAULIC SCHEMATIC (99903411)



SERIAL NUMBERS PRED021074 TO PRESENT.

CONTINUED

SAFETY INFORMATION

WARNING

All units are shipped with a detailed operators and parts manual. This manual contains vital information for the safe use and efficient operation of the unit. Carefully read the operators manual before starting the unit. Failure to adhere to the instructions could result in serious bodily injury or property damage.

AIR COMPRESSOR SAFETY PRECAUTIONS

Safety is basically common sense. While there are standard safety rules, each situation has its own peculiarities that cannot always be covered by rules. There fore with your experience and common sense, you are in a position to ensure your safety. Lack of attention to safety can result in: accidents, personal injury, reduction of efficiency and worst of all - Loss of Life. Watch for safety hazards. Correct them promptly. Use the following safety precautions as a general guide to safe operation:

Do not attempt to remove any compressor parts without first relieving the entire system of pressure.

DANGER

This compressor system is equipped with an air storage tank that remains pressurized even when the compressor is off. Relieve air storage tank pressure when servicing compressor or when not in use (i.e. during vehicle travel).

Do not attempt to service any part while machine is operating.

DANGER

Check the compressor sump oil level after each use. Turn off the compressor and relieve system pressure completely before adding or draining oil. To relieve system air pressure, open the service valve. Failure to comply with this warning may cause property damage and serious bodily harm.

Do not operate the compressor at pressure or speed in excess of its rating as indicated in "Compressor Specifications"

Periodically check all safety devices for proper operation.

Do not play with compressed air. Pressurized air can cause serious injury to personnel.

Exercise cleanliness during maintenance and when making repairs. Keep dirt away from parts by covering parts and exposed openings.

Do not install a shut-off valve between the compressor and compressor oil sump.

DANGER

Do not use IMT compressor systems to provide breathing air. Such usage, whether supplied immediately from the compressor source, or supplied to breathing tanks for subsequent use, can cause serious bodily injury.

IMT disclaims any and all liabilities for damage for loss due to personal injuries, including death, and/or property damage including consequential damages arising out of any IMT compressor used to supply breathing air.

Do not disconnect or bypass safety circuit system.

Do not install safety devices other than authorized IMT replacement devices.

Close all openings and replace all covers and guards before operating compressor unit.

Tools, rags, or loose parts must not be left on the compressor drive parts.

Do not use flammable solvents for cleaning parts.

Keep combustibles out of and away from the Compressor and any associated enclosures.

CONTINUED ON NEXT PAGE

SERIAL NUMBERS PRED021074 TO PRESENT.

SUB-ZERO TEMPERATURE OPERATION INSTRUCTIONS

CAUTION

READ AND UNDERSTAND THE SUB-ZERO TEMPERATURE OPERATION INSTRUCTIONS BELOW. DO NOT OPERATE COMPRESSOR WITH THE OIL TEMPERATURE BELOW 0° F.

Sub-Zero Operation

For IMT rotary screw compressors (both shaft driven and hydraulically driven) sub-zero temperature operation is defined as operation of the compressor when the oil temperature is below 0° F. It is possible to operate an IMT rotary screw compressor when the **ambient** temperature is below 0° F, but only by adhering to the following guidelines:

Maintenance Requirements

If the IMT rotary screw compressor is expected to operate at temperatures below 0° F, the oil filter, coalescer, air filter, and oil should be changed before the compressor is ran in sub-zero temperatures (ex: late fall, but this may vary by location and environment). Performing this maintenance will improve the performance of the system during sub-zero temperature operation. Use only IMT approved rotary screw compressor oils and filters.

Storage Requirements

The IMT rotary screw compressor should be stored at or above 0° F. If the ambient temperature is below 0° F the vehicle should be stored inside, preferably in a heated environment. After moving the vehicle from the heated environment, the compressor system should be operated for 15 minutes before proceeding to a job site. During this time, the service valve must be slightly ajar, such that the pressure gauge reads between 100 and 140 psi. This ensures that the oil temperature has had adequate time to come up to operating temperature, and that most of the water in the system has been removed. This will allow for approximately one hour of travel time before the oil cools to ambient temperature. If an extended driving time is expected, the operator may need to stop driving and run the system for 15 minutes every hour to ensure that the oil temperature does not cool to below 0° F. The operator should use his/her judgment when deciding what interval is needed between running the compressor to warm the oil. Lower ambient temperature will require more frequent warming of the compressor oil.

Failure to Follow Maintenance & Storage Requirements

At temperatures below 0° F, failure to follow the above guidelines may result overheating of the compressor due to the oil's inability to circulate through the compressor system. The lack of circulation leads to rapid warming of the compressor air end, and eventually the compressor air end will exceed the maximum operating temperature. If the system shuts down due to high temperature during sub-zero temperature operation, the oil will need to be warmed before restarting. This may require moving the vehicle to a heated location or waiting for the ambient temperature (and therefore the oil temperature) to exceed 0° F.

CAUTION

FAILURE TO ADHERE TO THESE GUIDELINES, AND REPEATED RUNNING OF THE COMPRESSOR TO HIGH TEMPERATURE SHUTDOWN, MAY RESULT IN PERMANENT DAMAGE TO THE AIR END.

CONTINUED

AIR COMPRESSOR SAFETY PRECAUTIONS

The owner, lessor, or operator of the Compressor are hereby notified and forewarned that any failure to observe these safety precautions may result in damage or injury.

IMT expressly disclaims responsibility or liability for any injury or damage caused by failure to observe these specified precautions or by failure to exercise that ordinary caution and due care required when operating or handling the Compressor, even though not expressly specified above.

SAFETY INFORMATION

A compliment of warning decals is supplied with each unit. These decals must be affixed to the vehicle after it has been painted, trimmed, and undercoat, etc. and prior to being put into service. The decals shall be placed so as to be clearly visible to the user and service personnel.

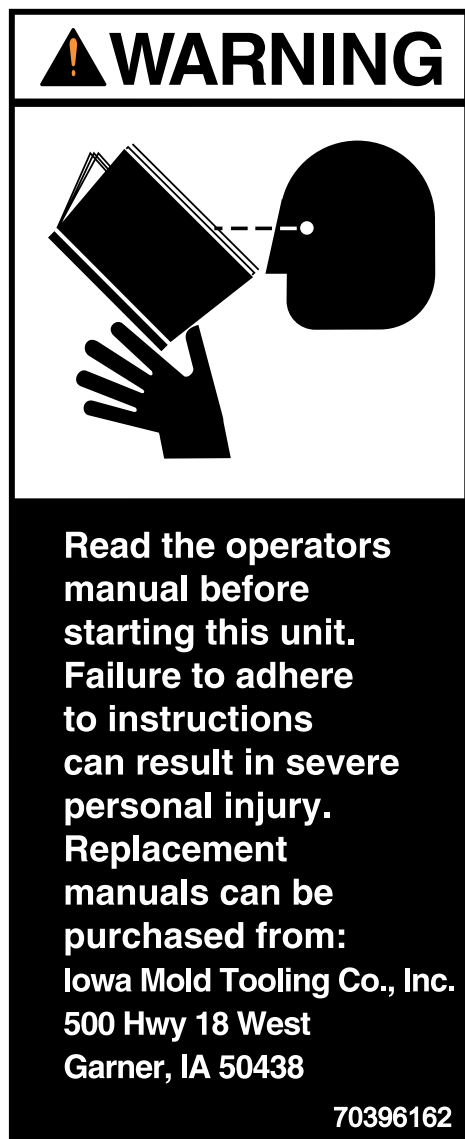


Figure 1. To be placed on visor or dash near start-up procedure decal.



Figure 2. To be placed on body near oil sump filler cap.

SAFETY INFORMATION

CONTINUED



Figure 3. To be placed on body near air service valve.

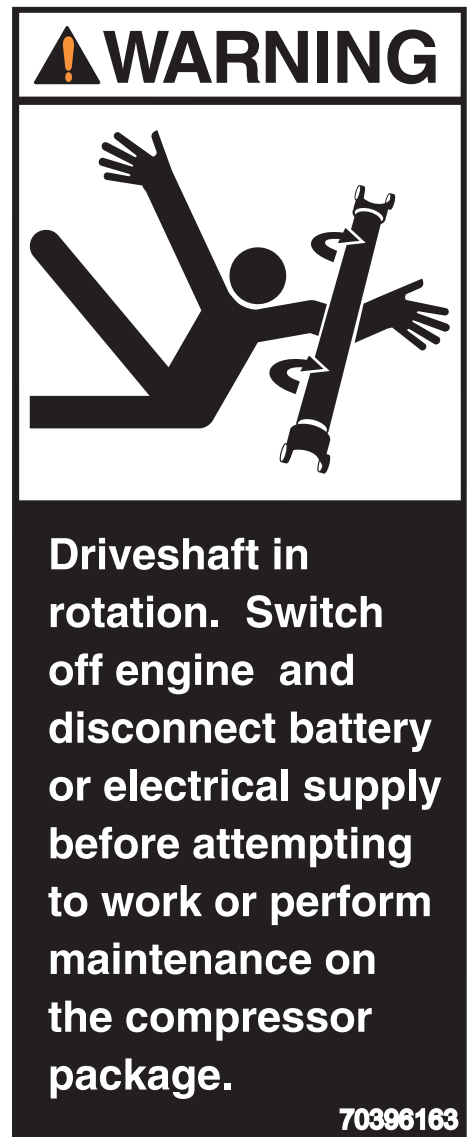


Figure 4. To be placed on body near compressor mounting foot.

SAFETY INFORMATION

COMPRESSOR FLUID

USE IMT ROTARY SCREW COMPRESSOR
FLUID ONLY.

1. CHECK FLUID LEVEL WITH TRUCK OFF
AND PARKED ON LEVEL GROUND. FLUID
SHOULD BE WARM.
2. ADD FLUID IF NONE IS SHOWING IN
SIGHTGLASS.
3. DO NOT FILL ABOVE LINE ON
SIGHTGLASS.

70396161



Air Compressor Operating Instructions

- Set the parking brake.
- Close air tank drain.
- Engage the PTO.
- Operate the air compressor at least 15 minutes each time the compressor is started. This will reduce moisture build-up and winter freeze-ups.
- After disengaging the compressor, relieve system pressure and check oil level.
- Wait at least two minutes between compressor shutdown and startup to allow the blow-down cycle to complete.
- See the manual for complete operating instructions.

70396168

CAUTION

DO NOT OVERFILL.
Check warm oil with
engine off.
If oil is not visible,
add oil until oil
is visible in tube.

70395793

MAX OIL FILL
CHECK HOT

TANK

DIRECTION OF ROTATION



70396167

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR TERMINOLOGY

ATF

Automatic transmission fluid.

AIR/OIL COALESCER

Performs second stage separation of oil from compressed air feeding air tools. Sometimes referred to as the separator element.

CFM

Refers to the volume of compressed air being produced expressed as cubic feet of air per minute.

IMT SPEED CONTROL

Sometimes referred to as the engine speed control.

OIL SUMP

The first stage of oil separation from compressed air. Also serves as reservoir area for compressor lubricant and sometimes referred to as the receiver tank.

PSI

Refers to the operating pressure the system is set up at, expressed as pounds per square inch.

SAFETY VALVE

A valve located on the oil sump which opens in case of excessive pressure. Sometimes referred to as the pop-off or pressure relief valve.

SHUTDOWN SWITCH

Works in conjunction with a power relay, sending a signal to stop the compressor power source in cases of high temperature. Power relay incorporates an additional wire for remote engine/speed control kill.

SIDE MOUNT PTO

Power take off gearbox that bolts to the side of the transmission. The PTO input gear meshes with one of the gears in the vehicle's transmission. The rotation developed by the engine drives the transmission which turns the PTO gear box and rotates the PTO output shaft.

DESCRIPTION OF COMPONENTS

CONTINUED

COMPRESSOR ASSEMBLY

The IMT PTO compressor assembly is a positive displacement, oil flooded, rotary screw type unit employing one stage of compression to achieve the desired pressure. Components include a housing (stator), two screws (rotors), bearings, and bearing supports. Power from the engine is transferred to the male rotor through a drive shaft and gears in the gear housing. The female rotor is driven by the male rotor. There are four lobes on the male rotor while the female rotor has five roots.

PRINCIPLES OF OPERATION

In operation, two helical grooved rotors mesh to compress air. Inlet air is trapped as the male lobes roll down the female grooves, pushing trapped air along, compressing it until it reaches the discharge port in the end of the stator and delivers smooth-flowing, pulse-free air to the receiver.

During the compression cycle, oil is injected into the compressor and serves these purposes:

1. Lubricates the rotating parts and bearings.
2. Serves as a cooling agent for the compressed air.
3. Seals the running clearances.

LUBRICATION SYSTEM

Oil from the compressor oil sump, at compressor discharge pressure, is directed through the oil filter, cooling system, and to the side of the compressor stator, where it is injected into the compressor. At the same time oil is directed internally to the bearings and shaft seal of the compressor. The oil-laden air is then discharged back into the sump.

OIL SUMP

Compressed, oil-laden air enters the sump from the compressor. As the oil-laden air enters the sump, most of the oil is separated from the air as it passes through a series of baffles and de-fusion plates. The oil accumulates at the bottom of the sump for recirculation. However, some small droplets of oil remain suspended in the air and are passed on to the coalescer.

RELIEF VALVE

The pop relief valve is set at 200 PSI and is located at the top of the air/oil sump. This valve acts as a backup to protect the system from excessive pressure that might result from a malfunction.

AIR/OIL COALESCER

The coalescer is self-contained within a spin-on housing and is independent of the sump. When air is demanded at the service line, it passes through the coalescer which efficiently provides the final stage of oil separation.

OIL RETURN LINE

The oil that is removed by the coalescer accumulates at the bottom of the canister and is returned through an oil return line to the compressor. The oil return line is 1/4" and goes to an elbow hose fitting which is located at the compressor.

MINIMUM PRESSURE VALVE

The minimum pressure valve is located at the outlet of the coalescer head and serves to maintain a minimum discharge pressure of 65 PSIG in operation, which is required to assure adequate compressor lubrication pressure.

OIL FILTER

The compressor oil filter is the full-flow replaceable element type and has a safety bypass built into it.

SERIAL NUMBERS PRED021074 TO PRESENT.

DESCRIPTION OF COMPONENTS

COMPRESSOR COOLING SYSTEM

The compressor cooling system consists of a remote mounted oil/air cooler with an electric fan. The fan is activated through a latching relay, so it will not turn off until the compressor is disengaged and the system pressure is fully relieved, or when the engine is turned off. The thermal valve will divert oil to the oil cooler at 160°F.

ELECTRICAL AND SAFETY CIRCUIT SYSTEM

The IMT PTO unit is supplied with an hourmeter, wire harness and shutdown. Engine shutdown occurs in the event of high compressor temperature.

AUTOMATIC BLOW DOWN VALVE

There is one blow down valve in the compressor system. It is located at the top of the panel on the cooler side, and will automatically bleed the sump to atmospheric pressure when the compressor is disengaged. Blow down time interval takes between 30 to 60 seconds

CONTROL SYSTEM

The prime component of the compressor control system is the compressor inlet valve. The control system is designed to match air supply to air demand and to prevent excessive discharge pressure when compressor is at idle. Control of air delivery is accomplished by the inlet valve regulation and modulation as directed by the discharge pressure regulator.

DISCHARGE PRESSURE REGULATOR VALVE

This valve, located on the top of the panel near the oil fill pipe, is used to set the desired discharge pressure within the operating pressure range. Turning the regulator screw clockwise increased the working pressure, a counterclockwise movement of the screw reduces the working pressure. This system has a maximum operating pressure of 150 psi.

NOTE

Most air tools operating pressure range is between 90 and 125 psi. Operating above the tools recommended pressure will decrease the life of the tool. Higher operating pressure can also over torque nut and bolts fatiguing the fastener and mating parts. Strictly adhere to tool operating pressures and torque standards set forth by the tool manufacturer and the specifications of the equipment that work is being performed on.

INLET VALVE

The compressor inlet valve is a piston operated disc valve that regulates the inlet opening to control capacity and serving as a check valve at shutdown.

AIR AFTERCOOLER

The Air Aftercooler is a second chamber of the oil cooler. Air leaving the compressor enters the aftercooler. Temperature of the air is reduced to approximately 4-7°F above ambient temperature. Condensation is directed to the air tank, where it is collected.

CONTROL SYSTEM OPERATION

The following discussion explains the operation of the control system from a condition of "no load" to a condition of "full capacity" at working pressure. For the working pressure range of your machine, refer to applicable data in "Specifications".

The pressure regulator, mounted at the top of the panel near the oil fill pipe, operates as follows:

1. As the demand for air decreases, the receiver pressure rises. When this pressure exceeds the set point of the pressure regulator, the regulator opens sending a secondary pressure signal to the inlet valve. The poppet valve moves towards the valve inlet against the force of the modulating spring inside the valve. This regulates the opening area of the inlet valve.
2. If the air demand goes to zero, (service valve closed or air dead headed at tool) the inlet valve will close completely.
3. As the demand for air increases, the secondary pressure signal to the inlet valve is removed and the inlet valve poppet modulates to full open.

SERIAL NUMBERS PRED021074 TO PRESENT.

INSPECTION, LUBRICATION, AND MAINTENANCE

This section contains instructions for performing the inspection, lubrication, and maintenance procedures required to maintain the compressor in proper operating condition. The importance of performing the maintenance described herein cannot be over emphasized.

The periodic maintenance procedures to be performed on the equipment covered by this manual are listed below. It should be understood that the intervals between inspections specified are maximum interval. More frequent inspections should be made if the unit is operating in a dusty environment, in high ambient temperature, or in other unusual conditions. A planned program of periodic inspection and maintenance will help avoid premature failure and costly repairs. Daily visual inspections should become a routine.

The LUBRICATION AND MAINTENANCE CHART lists serviceable items on this compressor package. The items are listed according to their frequency of maintenance, followed by those items which need only "As Required" maintenance.

The maintenance time intervals are expressed in hours. The hourmeter shows the total number of hours your compressor has run. Use the hourmeter readings for determining your maintenance schedules. Perform the maintenance at multiple intervals of the hours shown. For example, when the hourmeter shows "100" on the dial, all items listed under "EVERY 10 HOURS" should be serviced for the tenth time, and all items under "EVERY 50 HOURS" should be serviced for the second time, and so on.

DANGER

Compressor must be shut down and completely relieved of pressure prior to checking fluid levels. Open service valve to ensure relief of system air pressure. Failure to comply with this warning may cause damage to property and serious bodily harm.

LUBRICATION AND MAINTENANCE CHART

INTERVAL	ACTION
PERIODICALLY DURING OPERATION	1. Observe all gauge reading. Note any change from the normal reading and determine the cause. Repair as necessary. Notes: "Normal" is the usual gauge reading when operating at similar conditions on a day-to-day operation.
EVERY 10 HRS (DAILY)	1. Check compressor oil level. 2. Check air filter. Pressure drop indicator while compressor is operating. 3. Check for oil and air leaks. 4. Check safety circuit switches.
EVERY 25 HRS (MONTHLY)	1. Drain water from compressor oil.
EVERY 100 HRS	1. Grease compressor drive shaft.
EVERY 500 HRS (6 MONTHS)	1. Change compressor oil and oil filter. 2. Check compressor shaft seal for leakage. 3. Check air filter piping, fittings and clamps. 4. Check compressor supports. 5. Install new air filter element. Shorter interval may be necessary under dusty conditions. 6. Check sump safety valve.
EVERY 1000 HRS (1 YEAR)	1. Change coalescer element.
PERIODICALLY (AS REQD)	1. Inspect and clean air filter element. 2. Inspect and replace spin-on coalescer element if necessary. 3. Inspect and clean oil cooler fans.

NOTE

Compressor oil and filter is to be changed after the first 50 hours of operation. After this, normal intervals are to be followed.

LUBRICANT RECOMMENDATIONS

WARNING

It is important that the compressor oil be of a recommended type and that this oil, as well as the air filter, oil filter, and coalescer elements be inspected and replaced as stated in this manual.

The combination of a coalescer element loaded with dirt and oxidized oil products together with increased air velocity as a result of this clogged condition may produce a critical point while the machine is in operation where ignition can take place and could cause a fire in the oil sump.

Failure to comply with this warning may cause damage to property and serious bodily harm.

The following are general characteristics for IMT rotary screw lubricant. Due to the impossibility of establishing limits on all physical and chemical properties of lubricants which can affect their performance in the compressor over a broad range of environmental influences, the responsibility for recommending and consistently furnishing a suitable heavy duty lubricant must rest with the individual supplier if they choose not to use the recommended IMT rotary screw lubricant. The lubricant supplier's recommendation must, therefore, be based upon not only the following general characteristics, but also upon his own knowledge of the suitability of the recommended lubricant in PTO helical screw type air compressors operating in the particular environment involved. The owner of this equipment should contact the factory if IMT rotary screw lubricant is not used as supplied with this equipment.

CAUTION

Mixing different types or brands of lubricants is not recommended due to the possibility of a dilution of the additives or reaction between additives of different types.

IMT specified rotary screw lubricant shipped with your kit contains additives for rust, corrosion and anti-wear inhibitors. Use of any other lubricant is not recommended.

LUBRICANT CHARACTERISTICS

1. Flash point 450°F minimum
2. Pour point -55°F.
3. Contains rust and corrosion inhibitors.
4. Contains foam suppressors.
5. Contains oxidation stabilizer.

NOTE

Due to environmental factors, the useful life of all 'Extended Life' lubricants may be shorter than quoted by the lubricant supplier. IMT encourages the user to closely monitor the lubricant condition and to participate in an oil analysis program with the supplier.

NOTE

No lubricant, however good and/or expensive, can replace proper maintenance and attention. Select and use lubricant wisely.

MAINTENANCE

If some of the maintenance intervals in the schedule outlined in this manual seem to be rather short, it should be considered that one hour's operation of a compressor is equal to about 40 road miles on an engine. Thus, eight hours operation is equal to 320 road miles, 250 hours is equal to 10,000 road miles, etc.

COMPRESSOR OIL SUMP FILL, LEVEL, AND DRAIN

Before adding or changing compressor oil make sure that the system is completely relieved of pressure. Oil is added at the fill cap located at the top of the compressor panel next to the air/oil cooler assembly. A drain valve is provided at the bottom of the sump. The proper oil level when the system pressure is relieved and the compressor is warm from running is at the midpoint of the oil sightglass. The truck must be level when checking the oil. **DO NOT OVERFILL.** The oil sump capacity is given in "Compressor Specifications".

DANGER

Do not attempt to draw in condensate, remove the oil level fill plug, or break any connection in the air or oil system without first shutting off compressor and manually relieving pressure from the sump and air storage tank. Failure to comply with this warning may cause damage to property and seriously bodily harm.

AIR INTAKE FILTER

The air intake filter is a heavy-duty two-stage dry type high efficiency filter designed to protect the compressor from dust and foreign objects.

The filter is equipped with an evacuator cup for continuous dust ejection while operating and when stopped.

Frequency of maintenance of the filter depends on dust conditions at the operating site. The filter element must be serviced when clogged (maximum pressure drop for proper operation is 15" H₂O). The filter is equipped with a pressure drop indicator, and the element should be changed based on it's reading first and then by the maintenance intervals outlined.

AIR/OIL COALESCER

The air/oil coalescer employs an element permanently housed within a spin-on canister. This is a single piece unit that requires replacement when it fails to remove the oil from the discharge air, or pressure drop across it exceeds 15 PSI. Dirty oil clogs the element and increases the pressure drop across it.

To replace element proceed as follows:

1. Shutdown compressor and wait for complete blow down (zero pressure).
2. Disconnect drain line and fitting.
3. Turn element counterclockwise for removal (viewing element from bottom).
4. Install new rubber seal in head and supply a film of fluid directly to seal.
5. Rotate element clockwise by hand until element contacts seal (viewing element from bottom).
6. Rotate element approximately one more turn clockwise with band wrench near the top of element.
7. Reconnect drain line and fitting.
8. Run system and check for leaks.

NOTE

When connecting drain line, make sure tubing is fully inserted into fitting.

WARNING

Do not substitute element. Use only a genuine IMT replacement element. This element is rated at 200 psi working pressure. Use of any other element may be hazardous and could impair the performance and reliability of the compressor, possibly voiding the warranty and/or resulting in damage to property and serious bodily harm.

MAINTENANCE

OIL RETURN LINE

This line originates at the bottom of the air/oil coalescer and flows through a 1/4" Prestolok fitting located at the air-end.

OIL FILTER

The compressor oil filter is a spin-on, throw away type.

To replace filter proceed as follows:

1. Make sure system pressure is relieved.
2. Remove filter by unscrewing from filter head (turn counterclockwise by hand viewing from bottom) and discard.
3. Install a new filter by applying a little oil to the seal and then screw the filter on by hand (turning it clockwise until hand tight, plus one - third turn viewing from bottom). Do not use tools to tighten the filter.
4. Check for leaks in operation.

WARNING

Do not substitute element. Use only a genuine IMT replacement element. This element is rated at 200 psi working pressure. Use of any other element may be hazardous and could impair the performance and reliability of the compressor, possibly voiding the warranty and/or resulting in damage to property and serious bodily harm.

OIL COOLER

The interior of the oil cooler should be cleaned when the pressure drop across it at full flow exceeds 25 PSI.

The following procedure has been recommended by the vendor who supplies the cooler:

1. Remove cooler.
2. Circulate a suitable solvent to dissolve and remove varnish and sludge.
3. Flush generously with IMT compressor lubricant.
4. After cooler is reinstalled and compressor is filled with fresh oil, change compressor oil after 50 hours of normal operation.

PTO SHAFT SEAL INSTALLATION INSTRUCTIONS

1. Remove pto drive shaft, companion flange and key.
2. Remove (4) socket head metric bolts on cover and slide cover off shaft.
3. Pull seal wear sleeve off shaft with puller, adding heat to one area only on wear sleeve will help enlarge and aid in it's removal.
4. Clean shaft and surface of bearing remove all burrs from shaft where the wear sleeve gets installed.
5. Press new wear sleeve on to shaft. Oil heating new wear sleeve to 212°F approximately aids in the installation of this ring.
6. Press old shaft seal out of cover and clean cover for assembly of new seal.
7. Press new seal into cover (included in repair kit).
8. Apply silicone to outside diameter of assembly tool and slide assembly onto drive shaft until it touches the wear sleeve (tool and silicone included in repair kit).
9. Install cover, new o-ring, new seal assembly, over shaft and assembly tool. Note: Assembly tool is slip fit on shaft and allows new seal in cover to slide on to wear sleeve without cutting the lip of shaft seal. One new cover is on the assembly tool.
10. Bolt cover on squarely and slide off assembly tool.
11. Reinstall drive line assembly.

NOTE

The seal cover is installed using an o-ring gasket. Care should be taken to not pinch the o-ring out of it's groove upon reinstallation.

MAINTENANCE

PTO

The PTO should be serviced in accordance with the PTO manual. The SAE side-mount type of PTO is lubricated by the transmission oil and thus requires little maintenance. It is strongly recommended that you periodically torque the fasteners in accordance with the PTO manual.

HYDRAULIC PUMP OPTION (Model 8511 on Ford 450-550 & model 8513 on Ford 350-450 Auto-Trans ONLY)

The single cog belt arrangement is sized for an average life of 1000 hours. This time frame can be increased or decreased depending on the end users periodic maintenance schedule. Drive belt tension should be checked for adjustment every 100 hours there after. Belt deflection is to be checked at midpoint between both pulleys. Belt deflection is to be 1/8" at 3.5 lbs. Minimum to 5.0 lbs. Maximum.

BELT TENSION - Belt tension is accomplished as follows:

1. Loosen the 3/8" bolts that attach the hydraulic pump to mounting plate. Pump should now pivot free on bottom mounting bolt.
2. Pivot hydraulic pump until the correct deflection is accomplished. Hold pump in the position until the two 3/8" bolts are retightened.

NOTE

Over-tensing belt can damage compressor and hydraulic pump. When tensing belt all hardware should be broken loose only to the point in which the hydraulic pump can pivot.



COMPRESSOR TROUBLESHOOTING GUIDE

Your IMT Predator compressor is equipped with a lighted relay module which will help you diagnose problems with your compressor. Use the lights on the module to assist you in troubleshooting. If the compressor unexpectedly shuts down, restart the engine and watch the lights on the relay module. The relay module is located on the compressor panel assembly on the left side of the air tank.

1) Cooler Fan Light:

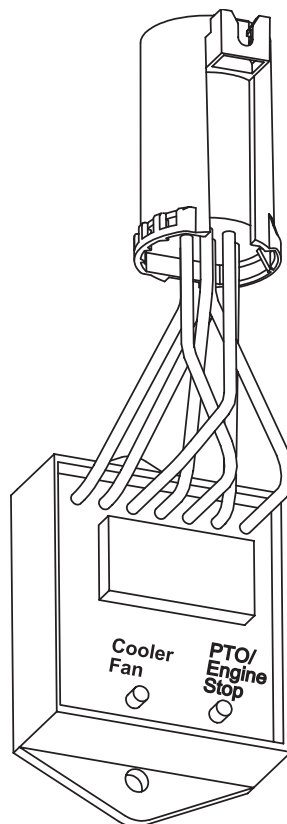
The compressor cooler fan should turn on when the compressor temperature exceeds 180°F. The fan will remain on until the compressor is disengaged and the system pressure is fully relieved (or when the engine is turned off).

2) Engine Stop Light:

- If the engine stop light is on, the truck engine should shut down. This may indicate that the compressor is over temperature or that an electrical component has been damaged or failed. Check the temperature gauge and/or electrical components.

- If the engine stop light is on and the truck engine does not shut down, there may be a wiring problem. Check the wiring to the module.

- **For Ford Super Duty Chassis with automatic transmissions:** The engine stop light will only be active for a few seconds after engine shutdown mode is invoked. This occurs because the relay module loses power when the engine is killed. The PTO will be disengaged and the engine may kill.



Compressor Relay Module

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR TROUBLESHOOTING GUIDE

TROUBLE	CAUSE	WHAT TO DO
Compressor does not make air.	Air tank drain open. Blow down valve stuck. PTO not engaged.	- Close tank drain valve. - Remove blow-down valve, clean out, reassemble. - Engage PTO per instructions.
Compressor/truck shuts down. Note: Check the light module as described on the previous page to begin troubleshooting when the compressor / truck shuts down.	High air end temperature. - Check oil temperature using temperature gauge. Fan not operating. Air flow. Leaks. Safety system failure. Thermal valve failure. Oil flow restricted.	- Check oil level. Add as required per filling instructions. Do not overfill. - Wait for the compressor to cool down. Restart the truck and compressor. If the truck shuts down again, continue with trouble shooting below. - Insure that cooling fan is operating. If not, check fuse in harness next to fan and fan relay. See also speed control below. - Insure that cooler does not have any obstruction to airflow. - Check air cooler core. Clean as necessary. - High ambient air temperature. Contact IMT Technical Support. - Check for air leaking from tank or blow down fittings. - Check high temperature shut down circuitry for proper operation. - Check needle position on temperature gauge when compressor is cool. If the needle is not all the way to the left, replace the gauge. - Check thermal valve for proper operation. Bypass valve if in doubt to verify failure. - Check oil filter head for blockage (ex: bypass valve in filter head). - Remove hoses and check for blockage.
Low system pressure	Air tank drain open. Dirty air filter. Air leak. Pressure control valve stuck. Inlet valve not fully open. System demands exceed compressor delivery.	- Close tank drain valve. - Check filter condition. Replace as required. - Check air system fittings. - Remove, disassemble, clean. Reassemble and install. - Inspect and repair. Check control system operation. - Reduce air demand and/or consumption. Do not operate multiple tools at a time.
Coalescer filter plugging	Excessive water in system. Foreign material entering compressor inlet.	- Reduce short run (i.e.: less than 15 minute) times. Run compressor for at least 15-20 minutes each time it is started. - Drain water from sump-tank monthly, more if in humid conditions. - Check air inlet hose from the air filter. Replace if damaged.

COMPRESSOR TROUBLESHOOTING GUIDE

TROUBLE	CAUSE	WHAT TO DO
High oil consumption/oil in air system.	Excessive oil level. Plugged coalescer filter. Compressor operating at low pressure (60 psi or below). Compressor oil leak. Leaking oil lines or oil cooler. Leaking compressor shaft seal. Plugged coalescer return line.	- Check level per filling instructions. Drain excessive oil if necessary. - Replace coalescer filter. - Operate at rated pressure. - Reduce system load. - Inspect and repair leaks. - Inspect and repair all oil lines and/or cooler. - Replace seal. - Inspect and clean hose and connections between coalescer filter and air end.
Water in air system.	Defective moisture separator/drain trap. Air cooler core dirty. Air tank not drained. Excessive moisture in compressor oil.	- Inspect and clean if required. Replace separator/trap if required. - Inspect and clean. - Open tank drain. (This should be done each time the compressor is run, prior to driving the truck.) - Let truck sit overnight. Open petcock/drain valve on compressor sump tank until oil starts to drain. Close valve and check oil level per filling instructions.
Excessive noise level.	Incorrect engine speed. Low oil level.	- Check engine speed and speed control operation. Check per specified speed. If speed control is not working properly, contact IMT Technical Support. - Check oil level per filling instructions. Fill as required.
Excessive vibration.	Loose components. Compressor bearing failure. Incorrect driveshaft angle. Drive shaft u-joint failure.	- Inspect and tighten. - Contact authorized Distributor or IMT immediately, do not operate unit. - Check driveshaft angle per installation manual or contact IMT. - Inspect and repair as needed. Do not operate unit until repairs have been made. Damage to the chassis or compressor and/or serious injury could occur if driveshaft or u-joint breaks.
Shaft seal leak.	Defective Seal.	- Replace per service manual or contact authorized Distributor or contact IMT Technical Support.
Pressure relief valve opens.	Compressor operating over pressure. Defective valve. Coalescer filter plugged up.	- Inspect and verify pressure control valve and control circuitry. - Remove, disassemble, and clean pressure control valve. Reassemble and reinstall. - Replace valve. - Replace filter.
Sump pressure does not blow down.	Automatic blow down valve may be inoperative at coalescer head.	- Inspect and repair/replace blow down valve. - Remove, disassemble, and clean blow down valve. Reassemble and reinstall.

COMPRESSOR TROUBLESHOOTING GUIDE

TROUBLE	CAUSE	WHAT TO DO
Speed control does not come up.	Parking brake is not set. Blown fuse. Compressor is not making air. No signal to speed control module from compressor.	- Engage parking brake. - Check and replace 5 amp fuse located behind panel in right front compartment. - Insure that PTO is engaged and that the pto shaft is turning. - With compressor running, check for 12 volts across 20lb pressure switch (N.O.). If switch is not closing, replace switch. - With the compressor off, check for 12 volts across 5lb pressure switch (N.C.). If switch does not close, replace switch.
Speed control comes on when engaging the parking brake with the pto off.	20lb pressure switch.	- With the compressor off, check for 12 volts across 20lb pressure switch (N.O.). If switch is not open, replace switch.
Compressor has experienced a "flash".	Low oil level, high operating temperature, or oil starvation.	- See above for "What to Do". - Check oil level per filling instructions. Fill as required. - See Flash Recovery Procedure in manual.
Excessive blowdown time.	Blowdown valve stuck. Min. pressure valve stuck open.	- Replace blowdown valve. - Replace valve.
Air tank empties upon	Min. pressure valve stuck open.	- Replace valve.
Oil discharges from blowdown	Bad seal in blowdown valve. Improper blowdown valve installation	- Replace seal. - Remove and reinstall per parts manual.

FLASH RECOVERY PROCEDURE FOR 45 CFM ROTARY COMPRESSOR

The following highlights the steps required to flush system when it has flashed.

1. Flush air compressor and check for rotor grinding.
 - (a) Remove 2½" inlet hose from inlet valve and remove the driveshaft.
 - (b) Drain sump tank.
 - (c) Remove 1-1/4" hose from side of oil sump tank.
 - (d) Place the 1-1/4" hose at same height of inlet valve and fill inlet of compressor with clean IMT specified oil. Once full, lower hose into bucket and rotate compressor by hand to evacuate any remaining oil. Repeat until oil is clean. Make sure the compressor turns freely by hand and that there is no grinding present.
 - (e) Reinstall drive shaft.
2. Flush oil sump tank
 - (a) Leave the 1-1/4" hose from the compressor flush procedure off. Loosen tank-mounting bands, disconnect and mark all hoses and remove oil tank. Remove tank.
 - (b) Fill tank with IMT specified oil, until about half full. Slosh oil from end to end, then drain out oil at drain plug in bottom of tank. Check drain-plug and tee for any restrictions, (i.e. chunks of hose).
 - (c) Reinstall tank and install the filler tube.
3. Flush oil cooler
 - (a) Replace both tubes from cooler to thermal valve.
 - (b) Inspect that the plastic shroud and fan blades are intact. Put power direct to red lead (ground black lead) at fan motor to verify that motor works. Do not run the motor outside of the shroud. Leave package as-sembled. Fan is a puller style, verify that air from fan blows out towards cab of truck.
 - (c) Replace 1-1/4" hose from compressor to oil sump tank.
 - (d) Replace all filters, air, oil and coalescer.
 - (e) Re-connect all hoses and add IMT specified oil to proper level in tank.
4. Test safety circuit
 - (a) Start truck. Disconnect temperature switch underneath the truck at the air end discharge. Attempt to start the truck with the PTO engaged. The truck should NOT start. If it does, DO NOT PROCEED! Contact IMT Technical Support. If the truck does not start, reconnect the temperature switch.
 - (b) You should be ready to start air compressor for testing. Start truck; engage PTO, run compressor for five minutes. Drain oil, change oil filter, fill oil to proper level, and finish testing.

COMPRESSOR OPERATION

CONTINUED

STARTING/STOPPING

An operating procedure decal is furnished with every PTO Compressor. The decal should be attached to the dashboard or visor of the truck where it will be visible to the driver. Cable shift PTO's require the use of decal 70396160. Hot shift PTO's are to use decal 70396166. Both decals are supplied with your kit. Install the appropriate decal based on the type of PTO used.

The following decals are samples.

THIS TRUCK IS EQUIPPED WITH A



PTO COMPRESSOR PACKAGE

START UP PROCEDURE

1. SET BRAKES PER COMPANY PROCEDURES AND CHOCK WHEELS.
2. DEPRESS CLUTCH. ENGAGE PTO.
3. PUT TRANSMISSION IN NEUTRAL.
4. LET OUT CLUTCH. DEPRESS FUEL PEDAL MOMENTARILY.

SHUTDOWN PROCEDURE

1. CLOSE SERVICE VALVE.
2. DEPRESS CLUTCH AND HOLD FOR COMPRESSOR BLOWDOWN.
3. DISENGAGE P.T.O.

70396160

THIS TRUCK IS EQUIPPED WITH A



PTO COMPRESSOR PACKAGE

START UP PROCEDURE

1. STOP VEHICLE AND ENGAGE PARKING BRAKES.
2. SHIFT TRANSMISSION TO PARK. ENGAGE PTO.
3. ENGAGEMENT WILL BE COMPLETE WHEN RED INDICATOR LIGHT COMES ON.

SHUTDOWN PROCEDURE

1. CLOSE SERVICE VALVE.
2. DISENGAGE PTO.

70396166

SERIAL NUMBERS PRED021074 TO PRESENT.

COMPRESSOR OPERATION

Before starting the PTO/compressor, read this section thoroughly. Familiarize yourself with the controls and indicators, their purpose, location, and use.

CONTROL OR INDICATOR	PURPOSE
HOURLMETER	Indicates accumulated hours of actual compressor operation.
FLUID LEVEL SIGHT TUBE	Indicates fluid level in the sump. Proper level should be between indicator marks on tube. Check this level when the compressor is disengaged and the vehicle is parked on level ground.
PRESSURE RELIEF VALVE	Vents sump pressure to the atmosphere if the pressure inside the sump exceeds 200 psi.
COMPRESSOR INLET CONTROL VALVE	Regulates the amount of air intake in accordance with the amount of compressed air being used. Isolates fluid in compressor unit on shutdown.
PRESSURE REGULATING VALVE	Senses air pressure from sump to provide automatic regulation of the compressor inlet control valve and load controller
BLOW DOWN VALVE	Coalescer head blow down valve vents the sump pressure to the atmosphere at shut down.
MINIMUM PRESSURE VALVE	Restricts air flow to balance sump and service air pressure. Assures a minimum of 65 psi to maintain compressor lubrication.
RELAY MODULE:	Activates / regulates fan operation and engine kill. Also indicates with LED's when fan operation and/or engine kill are active.

COMPRESSOR OPERATION-FORD F-SERIES W/AT

OPERATING INSTRUCTIONS

Air Compressor When Mounted on Ford F-Series with 5-Speed Automatic Transmission

TO OPERATE:

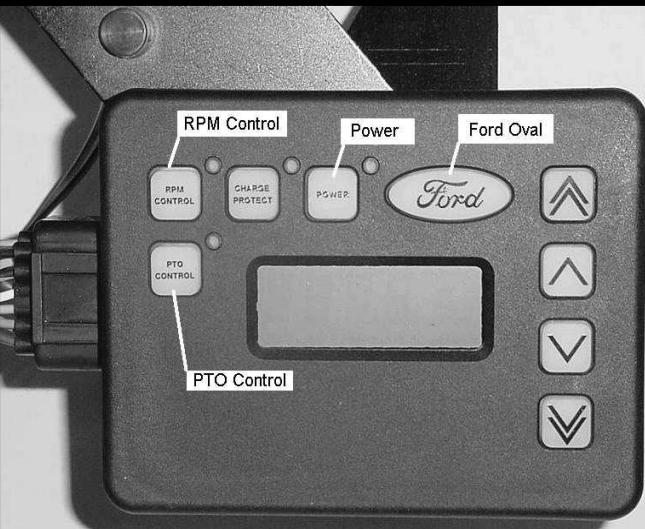
1. With transmission in "Park", set the parking brake.
2. Press **POWER** button on control module.
3. Press **RPM CONTROL**.
4. Press **FORD** oval to activate PTO.
5. PTO is now operational.

TO SHUT DOWN:

1. Press **RPM CONTROL** or **PTO CONTROL** button.
2. Press **POWER** button.
3. PTO and Control Module are now disengaged.
4. Parking brake may now be released.

70396381

AUXILIARY POWER CONTROL MODULE



OPERATING CONDITIONS

The following conditions should exist for maximum performance of the PTO/compressor. The truck should be as close to level as possible when operating. The compressor will operate on a 15 degree sideward and length wise tilt without any adverse problems.

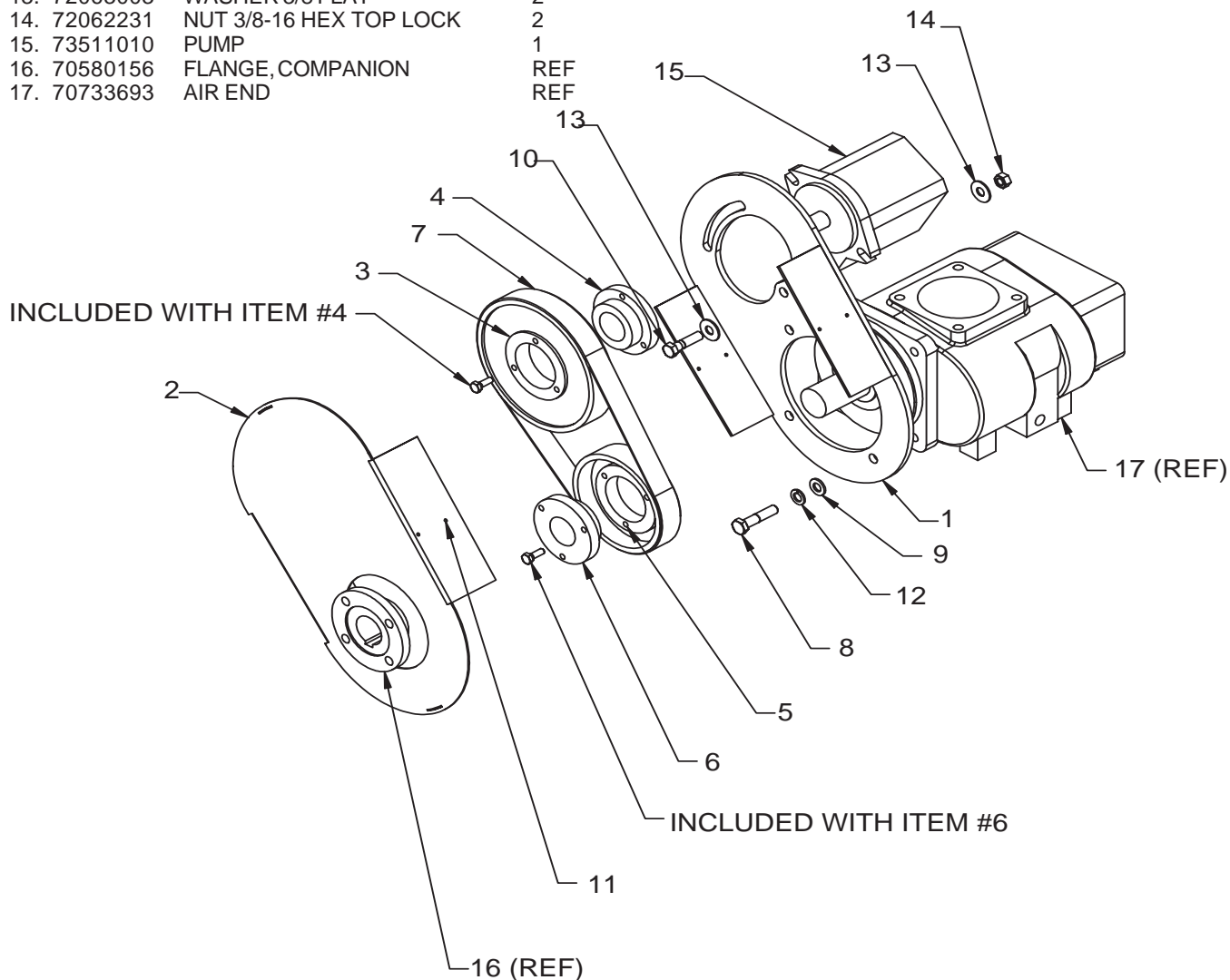
NOTE

The compressor service valve should be relocated to the hose reel inlet or be the customer's air connection port when a hose reel is not used. Typical plumbing from minimum pressure valve should flow in the following order:

1. Minimum pressure valve.
2. Air tank.
3. Service valve.
4. Moisture trap/gauge/oiler combination
5. Hose reel.

PTO AND DRIVELINE SYSTEM - FORD AUTOMATIC TRANSMISSION W/ CRANE (51717828)

1.	52717348	BRACKET-PUMP FORD AUTO	1
2.	60124205	COVER-PULLEY	1
3.	71056584	PULLEY-PUMP	1
4.	71056585	FLANGE	1
5.	71056586	PULLEY - DRIVESHAFT	1
6.	71056587	FLANGE-DRIVESHAFT	1
7.	70580157	BELT	1
8.	72601518	CAP SCR MET 10-1.50 X 30 HH	4
9.	72063226	WASHER - 10 MM FLAT	4
10.	72060870	CAP SCR 3/8-16 X 1.50 HHGR8	2
11.	72601803	SCR-SELF TAP 8-18 X 1/2 HH	4
12.	72063227	WASHER - 10 MM LOCK	4
13.	72063003	WASHER 3/8 FLAT	2
14.	72062231	NUT 3/8-16 HEX TOP LOCK	2
15.	73511010	PUMP	1
16.	70580156	FLANGE, COMPANION	REF
17.	70733693	AIR END	REF

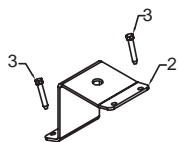


WARNING

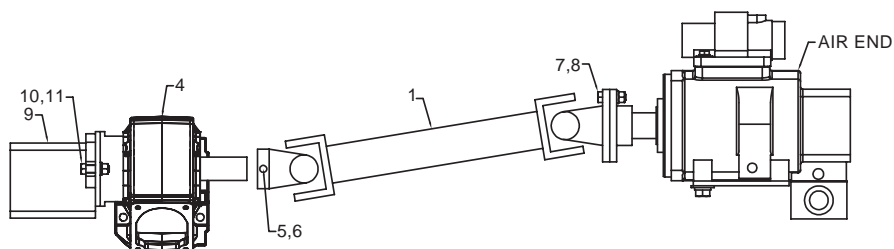
THE INSTALLER OF THE DRIVELINE MUST INSPECT THE FINAL POSITION OF THE DRIVELINE TO DETERMINE WHETHER ITS LOCATION PROVIDES SUFFICIENT PROTECTION TO AN OPERATOR, OR OTHER PERSONNEL, FROM HAZARDS ASSOCIATED WITH A ROTATING DRIVELINE. IF PROTECTION IS INSUFFICIENT, THE INSTALLATION OF A GUARD IS REQUIRED. IF YOU ARE UNSURE OF METHODS TO GUARD A ROTATING DRIVELINE, CALL IOWA MOLD TOOLING CO., INC. FOR INSTRUCTIONS. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

SERIAL NUMBERS PRED021074 TO PRESENT.

PTO DRIVELINE INSTALLATION



ON FLOOR OF CAB
FOR MOUNTING PTO SHIFT CABLE



			Ford 6-Speed Manual w/Crane (51717827)	Ford 7.3L Auto w/Crane (51717828)	Ford 6.0L Auto w/Crane (51718034)	Ford 6-Speed Manual - No Crane (51717829)	Ford 7.3L Auto - No Crane (51717830)	Ford 6.0L Auto - No Crane (51718035)	Allison (51717846)	Fuller FS-5406A & FS-6406A (51717866)	Fuller FSO-6406A (51717886)	GMC 4500/5500 w/Allison 1000 (51718358)	Freightliner M2 with Allison 1000 (51718525)	Chevy 4500/5500 with Duramax (51718597)
1.	70580153	DRIVELINE	1	X	X	X	X	X	X	X	X	X	X	X
	70580154	DRIVELINE												
	70580166	DRIVELINE												
	70580169	DRIVELINE			X			X						
	70580174	DRIVELINE										X	X	
	70580175	DRIVELINE												X
2.	60124767	BRACKET	1	X		X				X	X			
3.	72617557	SCR-SELF TAP 1/8X1.50 HH	4	X		X				X	X			
4.	70570882	PTO (WAS 70570680)	1	X										
	70570576	PTO	1		X		X							
	70570884	PTO (WAS 70570681)	1			X								
	70570743	PTO	1						X					
	(WAS 70570682 ON ALLISON ENGINES THROUGH 9/2/03)													
	70570742	PTO	1										X	
	70570746	PTO	1									X		X
	70570592	PTO	1							REF				
	70570634	PTO	1								REF			
	70570714	PTO	1		X			X						
5.	72060860	SET SCR 3/8-16X3/4 SQHD	1	X	X	X	X	X	X	X	X	X	X	X
6.	70058882	WIRE-MECH 18 GA	1'	X	X	X	X	X	X	X	X	X	X	X
7.	72601802	CAP SCR 3/8-24X1.25 HHGR8	4	X	X	X	X	X	X	X	X	X	X	X
8.	72062300	NUT 3/8-24 NYLOC	4	X	X	X	X	X	X	X	X	X	X	X
9.	73511011	PUMP	1	X										
10.	72060116	CAP SCR 3/8-16X1.24 HHGR8	2	X										
11.	72063225	WASHER 3/8 LOCK	2	X										
	51717931	HOSE KIT	1						REF			REF	REF	REF
	70146436	FITTING-ALLISON SAE #2	1						X			X	X	X

SERIAL NUMBERS PRED021074 TO PRESENT.

RECOMMENDED SPARE PARTS LIST

VP8500 (FOR UNITS WITH CRANES)

PART NUMBER	DESCRIPTION	QUANTITY
70048214	OIL FILTER	2
70048209	ELEMENT AIR FILTER (FLR)	2
73052006	ELEMENT HYD FILTER	2
89086201	COMPRESSOR OIL - GALLON	6
73733692	COALESCER	1
70048217	AIR FILTER	2
89086159	GREASE TUBE	1

VP8501 (FOR UNITS WITHOUT CRANES)

PART NUMBER	DESCRIPTION	QUANTITY
70048214	OIL FILTER	2
70048209	ELEMENT AIR FILTER (FLR)	2
89086201	COMPRESSOR OIL - GALLON	6
73733692	COALESCER	1
70048217	AIR FILTER	2