
INGERSOLL-RAND®

OPERATING, MAINTENANCE, PARTS MANUAL

COMPRESSOR MODEL

HP375WJD
XP375WJD

Code:



This manual contains important safety information.

Do not destroy this manual.

This manual must be available to the personnel who operate and maintain this machine.

INGERSOLL-RAND®

AIR COMPRESSORS

Portable Air Compressor Division
P.O. Box 868 - 501 Sanford Ave
Mocksville, N.C. 27028

Doosan purchased Bobcat Company from Ingersoll-Rand Company in 2007. Any reference to Ingersoll-Rand Company or use of trademarks, service marks, logos, or other proprietary identifying marks belonging to Ingersoll-Rand Company in this manual is historical or nominative in nature, and is not meant to suggest a current affiliation between Ingersoll-Rand Company and Doosan Company or the products of either.

QUALITY POLICY

We will supply products and services that consistently meet the requirements of our customers and each other.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Foreword

Machine models represented in this manual may be used in various locations worldwide. Machines sold and shipped into European common market countries requires that the machine display the EC Mark and conform to various directives. In such cases, the design specification of this machine has been certified as complying with EC directives. Any modification to any part is absolutely prohibited and would result in the CE certification and marking being rendered invalid. A declaration of that conformity follows:

Declaration of Conformity

WITH EC DIRECTIVE

98/37/EC

**Ingersoll-Rand Company
Portable Compressor Division
P.O. Box 868
501 Sanford Avenue
Mocksville, North Carolina 27028**

**We
Represented In EC By:**

**Ingersoll-Rand Company Limited
Standard Products Division
Swan Lane
Hindley Green
Wigan WN2 4EZ
United Kingdom**

Declare that, under our sole responsibility for manufacture and supply, the product(s)

HP1300WCU	VHP825WCU	XHP900WCAT	VHP750WCAT	XHP1070CAT
XP1400WCU	HP935WCU	XHP650WCAT	VHP850WCAT	NXP1300WCU
P1600WCU	XP1050WCU	XHP750WCAT	HP900WCAT	HP375WJD
XP900WCU	HP825WCU	XHP825WCAT	XP1000WCAT	

To which this declaration relates, is (are) in conformity with the provisions of the above directives using the following principal standards

**EN1012-1, EN29001, EN202, EN60204-1
PN8NTC2, EN 50081, EN50082**

Issued at Mocksville on 1-1-95



**Ric Lunsford
Manager of Quality Control**

Issued at Hindley Green on 1-1-95



H. Seddon, Q.A. Manager

Nothing contained in this document is intended to extend any promise, warranty or representation, expressed or implied, regarding the Ingersoll-Rand products described herein. Any such warranties or other terms and conditions of sale of products shall be in accordance with the standard terms and conditions of sale for such products, which are available upon request.

This manual contains instructions and technical data to cover all routine operation and scheduled maintenance tasks by operation and maintenance staff. Major overhauls are outside the scope of this manual and should be referred to an authorized Ingersoll-Rand service department.

All components, accessories, pipes and connectors added to the compressed air system should be:

- of good quality, procured from a reputable manufacturer and, wherever possible, be of a type approved by Ingersoll-Rand.
- clearly rated for a pressure at least equal to the machine maximum allowable working pressure.
- compatible with the compressor lubricant/coolant.
- accompanied with instructions for safe installation, operation and maintenance.

Details of approved equipment are available from Ingersoll-Rand Service departments.

The use of repair parts other than those included within the Ingersoll-Rand approved parts list may create hazardous conditions over which Ingersoll-Rand has no control. Therefore, Ingersoll-Rand cannot be held responsible for equipment in which non-approved repair parts are installed.

Ingersoll-Rand reserves the right to make changes and improvements to products without notice and without incurring any obligation to make such changes or add such improvements to products sold previously.

The intended uses of this machine are outlined below and examples of unapproved usage are also given. However, Ingersoll-Rand cannot anticipate every application or work situation that may arise. **If in doubt, consult supervision.**

This machine has been designed and supplied for above ground operation to be used for compression of normal ambient air containing no additional gases, vapors or particles within the ambient temperature range specified in the general data section of this manual.

This machine should not be used:

- A. For direct or indirect human consumption of the compressed air.
- B. Outside the ambient temperature range specified in the general data section of this manual.
- C. When an actual or foreseeable risk of hazardous levels of flammable gases or vapors exists.
- D. With other than Ingersoll-Rand approved components.
- E. With guards, or controls or switches missing or disabled.
- F. For storage or transportation of materials inside or on the enclosure.

This company accepts no responsibility for errors in translation of this manual from the original English version.

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SECTION 1- SAFETY

SAFETY PRECAUTIONS

General Information

Ensure that the operator reads and understands the decals and consults the manuals before maintenance or operation.

Ensure that the Operation and Maintenance manual, and the manual holder if equipped, are not removed permanently from the machine.

Ensure that maintenance personnel are adequately trained, competent and have read the manuals.

Make sure that all protective covers are in place and that the canopy/doors are closed during operation.

The specification of this machine is such that the machine is not suitable for use in flammable gas risk areas. If such an application is required then all local regulations, codes of practice and site rules must be observed. To ensure that the machine can operate in a safe and reliable manner, additional equipment such as gas detection, exhaust spark arrestors, and intake (shut-off) valves may be required, dependent on local regulations or the degree of risk involved.

Air discharged from this machine may contain carbon monoxide or other contaminants which will cause serious injury or death. Do not breathe this air.

Compressed air can be dangerous if incorrectly handled. Before doing any work on the unit, ensure that all pressure is vented from the system and that the machine cannot be started accidentally.

Ensure that the machine is operating at the rated pressure and that the rated pressure is known to all relevant personnel.

All air pressure equipment installed in or connected to the machine must have safe working pressure ratings of at least the machine safety valve rating.

If more than one compressor is connected to one common downstream plant, effective check valves and isolation valves must be fitted and controlled by work procedures, so that one machine cannot accidentally be pressurized or over pressurized by another.

Compressed air must not be used for a feed to any form of breathing apparatus or mask.

The discharged air contains a very small percentage of compressor lubricating oil and care should be taken to ensure that downstream equipment is compatible.

If the discharged air is to be ultimately released into a confined space, adequate ventilation must be provided.

When using compressed air, always use appropriate personal protective equipment.

All pressure containing parts, especially flexible hoses and their couplings, must be regularly inspected, be free from defects and be replaced according to the Manual instructions.

Avoid bodily contact with compressed air.

Never operate unit without first observing all safety warnings and carefully reading the operation and maintenance manual shipped from the factory with this machine.

Never operate the engine of this machine inside a building without adequate ventilation. Avoid breathing exhaust fumes when working on or near the machine. Do not alter or modify this machine.

A battery contains sulfuric acid and can give off gases which are corrosive and potentially explosive. Avoid contact with skin, eyes and clothing. In case of contact, flush area immediately with water.

Exercise extreme caution when using booster battery. To jump battery, connect ends of one booster cable to the positive (+) terminal of each battery. Connect one end of other cable to the negative (-) terminal of the booster battery and other end to a ground connection away from dead battery (to avoid a spark occurring near any explosive gases that may be present). After starting unit, always disconnect cables in reverse order.

Never operate unit without first observing all safety warnings and carefully reading the operation and maintenance manual shipped from the factory with this machine.

This machine may include such materials as oil, diesel fuel, antifreeze, brake fluid, oil/air filters and batteries which may require proper disposal when performing maintenance and service tasks. Contact local authorities for proper disposal of these materials.

High Pressure Air can cause serious injury or death. Relieve pressure before removing filler plugs/caps, fittings or covers.

Air pressure can remain trapped in air supply line which can result in serious injury or death. Always carefully vent air supply line at tool or vent valve before performing any service.

This machine produces loud noise with the doors open or service valve vented. Extended exposure to loud noise can cause hearing loss. Always wear hearing protection when doors are open or service valve is vented.

Never inspect or service unit without first disconnecting battery cable(s) to prevent accidental starting.

Do not remove the pressure cap from a HOT radiator. Allow radiator to cool down before removing pressure cap.

Do not use petroleum products (solvents or fuels) under high pressure as this can penetrate the skin and result in serious illness. wear eye protection while cleaning unit with compressed air to prevent debris from injuring eye(s).

Disconnected air hoses whip and can cause serious injury or death. Always attach a safety flow restrictor to each hose at the source of supply or branch line in accordance with OSHA Regulation 29CFR Section 1926.302(b).

Hot pressurized fluid can cause serious burns. Do not open radiator while hot.

Rotating fan blade can cause serious injury. Do not operate without guard in place.

Use care to avoid contacting hot surfaces (engine exhaust manifold and piping, air receiver and air discharge piping, etc.).

Ether is an extremely volatile, highly flammable gas. USE SPARINGLY! Do NOT use ETHER if unit has GLOW Plug starting aid. Engine damage will result.

Never allow the unit to sit stopped with pressure in the receiver-separator system. As a precaution, open the manual blowdown valve.

Never operate unit with guards, covers or screens removed. Keep hands, hair, clothing, tools, blow gun tips, etc. well away from moving parts.

Make sure wheels, tires and tow bar connectors are in safe operating condition and tow bar is properly connected before towing.

Whenever the machine is stopped, air will flow back into the compressor system from devices or systems downstream of the machine unless the service valve is closed. Install a check valve at the machine service valve to prevent reverse flow in the event of an unexpected shutdown when the service valve is open.

Hazardous Substance Precaution

The following substances are used in the manufacture of this machine and may be hazardous to health if used incorrectly.

Precaution: Avoid ingestion, skin contact and breathing fumes for the following substances: Antifreeze, Compressor Oil, Engine Lubricating Oil, Preservative Grease, Rust Preventative, Diesel Fuel and Battery Electrolyte.

The following substances may be produced during the operation of this machine and may be hazardous to health:

Avoid build-up of Engine Exhaust Fumes in confined spaces.

Avoid breathing Exhaust Fumes.

Avoid breathing Brake Lining Dust during maintenance.

SAFETY LABELS

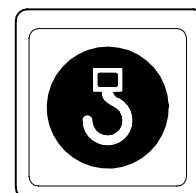
Look for these signs on machines shipped to international markets outside North America, which point out potential hazards to the safety of you and others. Read and understand thoroughly. Heed warnings and follow instructions. If you do not understand, inform you supervisor.



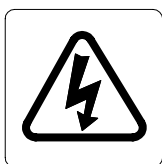
Corrosion risk



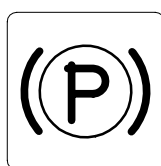
Hot Surface



Lifting point



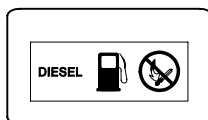
WARNING: Electrical shock risk.



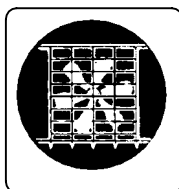
Parking Brake



No open flame



**Diesel Fuel.
No open flame.**



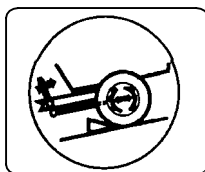
**Do not operate the machine
without guard being fitted.**



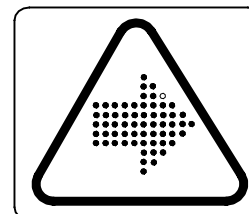
Lifting point



WARNING - Flammable liquid.



**When parking use prop stand,
handbrake and wheel chocks.**



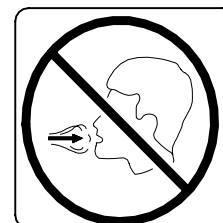
Air/gas flow or Air discharge.



WARNING - Hot and harmful exhaust gas.



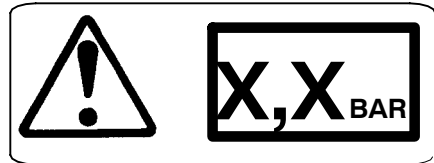
Tie down point



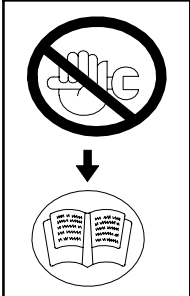
**Do not breathe the compressed
air from this machine.**



Read the Operation and Maintenance manual before operation or maintenance of this machine is undertaken.



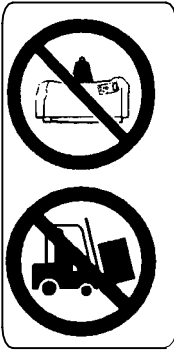
WARNING - Maintain correct tire pressure. (Refer to the *GENERAL INFORMATION* section of this manual).



WARNING: Consult the operation and maintenance manual before performing any maintenance.

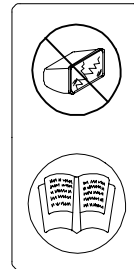


**Rough Service Designation
Wet Location Operation**



Do not stack

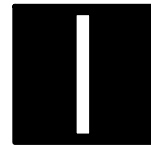
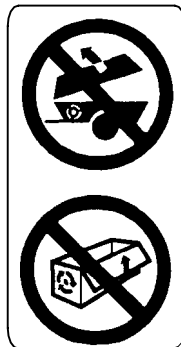
Do not use fork lift truck from this side



Replace any cracked protective shield.



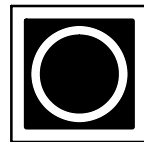
Do not operate with the doors or enclosure open.



On (power).

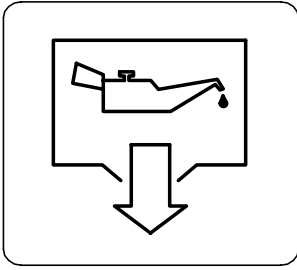


Off (power).

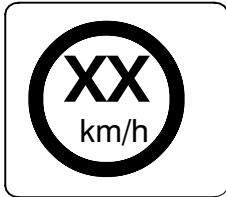


Emergency stop.

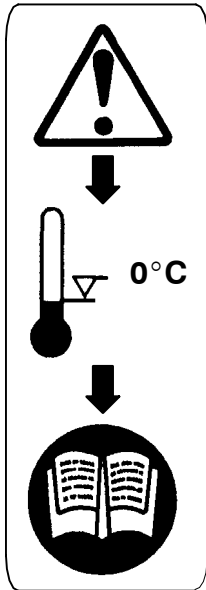
WARNING - Before connecting the tow bar or when preparing to tow, consult the operation and maintenance manual.



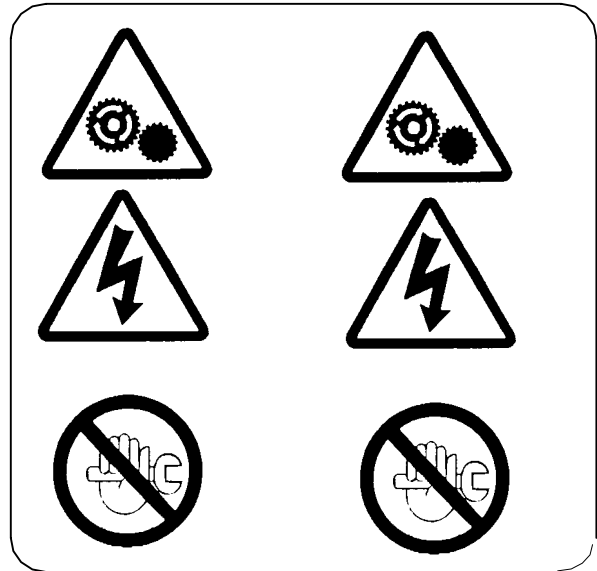
Oil Drain



Do not exceed the speed limit.



WARNING - For operating temperature below 0°C, consult the operation and maintenance manual.



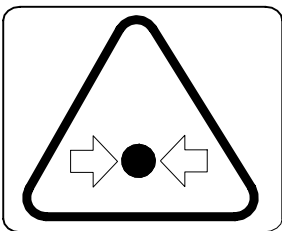
WARNING - Do not undertake any maintenance on this machine until the electrical supply is disconnected and the air pressure is totally relieved.



Read the Operation and Maintenance manual before operation or maintenance of this machine is undertaken



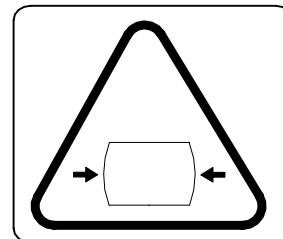
Do not remove the Operating and Maintenance manual and manual holder from this machine.



Pressurized vessel.



Use fork lift truck from this side only.



Pressurized component or system.

Look for these signs on machines shipped to markets in North America, which point out potential hazards to the safety of you and others. Read and understand thoroughly. Heed warnings and follow instructions. If you do not understand, inform you supervisor.



(Red Background)

Indicates the presence of a hazard which WILL cause serious injury, death or property damage, if ignored.



(Orange Background)

Indicates the presence of a hazard which CAN cause serious injury, death or property damage, if ignored.



(Yellow Background)

Indicates the presence of a hazard which WILL or can cause injury or property damage, if ignored.



(Blue Background)

Indicates important set-up, operating or maintenance information.

DANGER
<p>Discharged air can contain carbon monoxide or other contaminants. Will cause serious injury or death. Do not breathe this air.</p>

WARNING	
<p>Trapped air pressure. Can cause serious injury or death.</p> <p>Close service valve and operate tool to vent trapped air before performing any service.</p>	

WARNING		
<p>Hot pressurized fluid. Can cause serious burns.</p> <p>Do not open radiator while hot.</p>		

WARNING	
<p>High pressure air. Can cause serious injury or death.</p> <p>Relieve pressure before removing filler plugs/caps, fittings or covers.</p>	



⚠ WARNING

**Improper operation of this equipment.
Can cause serious injury or death.**

Read Operator's Manual supplied with this machine before operation or servicing.

**Modification or alteration of this machine.
Can cause serious injury or death.**

Do not alter or modify this machine without the express written consent of the manufacturer.



⚠ WARNING

**Collapsing jackstand.
Can cause serious injury.**

Insert locking pin completely.



**Excessive towing speed.
Can cause serious injury or death.**

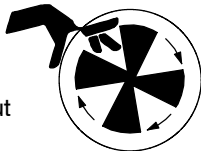
Do NOT exceed 65 mph (105 km/hr.)



⚠ WARNING

**Rotating fan blade.
Can cause serious injury.**

Do not operate without guard in place.



⚠ WARNING

Falling off machine.

Can cause serious injury or death.

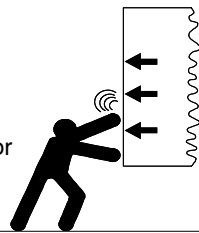
Access lifting bail from inside machine.



⚠ WARNING

**Door under pressure.
Can cause serious injury.**

Use both hands to open door when machine is running.

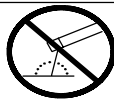


⚠ WARNING

Disconnected air hoses whip.

Can cause serious injury or death.

When using air tools attach safety device (OSHA Valve) at source of air supply for each tool.



CAUTION

**DO NOT WELD.
ELECTRONIC DAMAGE
WILL OCCUR.**

This engine is equipped with an electronic engine controller and other electronic components.



⚠ WARNING

Combustible gas.

**Can cause serious burns,
blindness or death.**

Keep sparks and open flames away from batteries.



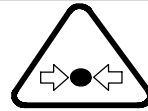


CAUTION

DO NOT USE ETHER.

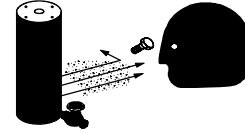
ENGINE DAMAGE WILL OCCUR.

This engine is equipped with an electric heater starting aid.



WARNING

**High pressure air.
Can cause serious
injury or death.**



Relieve pressure before removing filler plugs/caps, fittings or covers.



USE DIESEL FUEL ONLY



NOTICE

COOLANT FILL INSTRUCTIONS

Adding:

Do NOT remove radiator cap. Top off at overflow reservoir. Use same anti-freeze mixture as in radiator.

Replacing:

With system cool, remove radiator cap. Drain coolant and close drain. At radiator, refill system. Replace radiator cap. At reservoir, fill to "Hot" level. Run for 30 minutes. Stop and allow to cool. At reservoir, add coolant as necessary to reach "Cold" level.

FREE SAFETY DECALS!

To promote communication of Safety Warnings on products manufactured by the Portable Compressor Division in Mocksville, N.C., Safety Decals are available **free** of charge. Safety decals are identified by the decal heading: **DANGER, WARNING or CAUTION.**

Decal part numbers are on the bottom of each decal and are also listed in the compressor's parts manual. Submit orders for Safety Decals to the Mocksville Parts Service Department. The no charge order should contain only Safety Decals. Help promote product safety! Assure that decals are present on the machines. Replace decals that are not readable.

SECTION 2 - Warranty

Ingersoll-Rand, through its distributor, warrants that each item of equipment manufactured by it and delivered hereunder to the initial user will be free of defects in material and workmanship for a period of three (3) months from initial operation or six (6) months from the date of shipment to the initial user, whichever occurs first.

With respect to the following types of equipment, the warranty period enumerated below will apply in lieu of the foregoing warranty period.

- A. **Aftercoolers** - The earlier of nine (9) months from date of shipment to or six (6) months from start up by initial user.
- B. **Portable Compressors, Portable Generator Sets (GENSET) 8KW, 11KW, 20KVA thru 575KVA, Portable Light Towers and Air Dryers** - The earlier of twelve (12) months from shipment to or the accumulation of 2,000 hours of service by the initial user.
3.5KW thru 7.0KW and 10KW - The earlier of twelve (12) months from shipment to or the accumulation of 2,000 hours of service by the initial user, whichever occurs first. Ingersoll-Rand will provide a new part or repaired part, at its election, in place of any part which is found to be defective in material or workmanship during the period described above. Labor cost to replace the part is the responsibility of the user.
- C. **Portable Compressor Air Ends** - The earlier of twenty-four (24) months from shipment to or the accumulation of 4,000 hours of service by the initial user. For Air Ends, the warranty against defects will include replacement of the complete Air End, provided the original Air End is returned assembled and unopened.
- C.1 **Portable Compressor Airend Limited Optional Warranty** - The earlier of sixty (60) months from shipment to or the accumulation of 10,000 hours of service. The optional warranty is limited to defects in rotors, housings, bearings and gears and provided all the following conditions are met:
 - 1. The original air end is returned assembled and unopened.
 - 2. Continued use of genuine Ingersoll-Rand parts, fluids, oil and filters.
 - 3. Maintenance is performed at prescribed intervals.**Oil-Free airends are fee-based and may require a maintenance agreement. Formal enrollment is required.**
- D. **Genset Generators 8KW, 11KW, 20KVA thru 575KVA** - The earlier of twenty-four (24) months from shipment to or the accumulation of 4,000 hours of service by the initial user.
3.5KW thru 7.0KW and 10KW - The earlier of twelve (12) months from shipment to or the accumulation of 2,000 hours of service.
- E. **Portable Light Tower Generators**- The earlier of twelve (12) months from shipment to or the accumulation of 2,000 hours of service by the initial user. Light Source model only, the earlier of twenty-four (24) months from shipment to or the accumulation of 4,000 hours of service.
- F. **Ingersoll-Rand Engines** - The earlier of twenty-four (24) months from shipment to or the accumulation of 4,000 hours of service.

G. **Ingersoll-Rand Platinum Drive Train Warranty (Optional)** – Platinum drive train pertains to the Ingersoll-Rand Engine and Airend combination. The earlier of sixty (60) months from shipment to, or the accumulation of 10,000 hours of service. The starter, alternator, fuel injection system and all electrical components are excluded from the extended warranty. The airend seal and drive coupling are included in the warranty (airend drive belts are not included). The optional warranty is automatically available when meeting the following conditions:

1. The original airend is returned assembled and unopened.
2. Continued use of genuine Ingersoll-Rand parts, fluids, oil and filters.
3. Maintenance is performed at prescribed intervals.

It is the obligation of the user to provide verification that these conditions have been satisfied when submitting warranty claims.

F. **Spare Parts**– Six (6) months from date of shipment.

Ingersoll-Rand will provide a new part or repaired part, at its election, in place of any part which is found upon its inspection to be defective in material and workmanship during the period prescribed above. Such part will be repaired or replaced without charge to the initial user during normal working hours at the place of business of an Ingersoll-Rand distributor authorized to sell the type of equipment involved or other establishment authorized by Ingersoll-Rand. User must present proof of purchase at the time of exercising warranty.

The above warranties do not apply to failures occurring as a result of abuse; misuse, negligent repairs, corrosion, erosion and normal wear and tear, alterations or modifications made to the product without express written consent of Ingersoll-Rand; or failure to follow the recommended operating practices and maintenance procedures as provided in the product's operating and maintenance publications.

Accessories or equipment furnished by Ingersoll-Rand, but manufactured by others, including, but not limited to, engines, tires, batteries, engine electrical equipment, hydraulic transmissions, carriers, shall carry whatever warranty the manufacturers have conveyed to Ingersoll-Rand and which can be passed on to the initial user.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, (EXCEPT THAT OF TITLE), AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

GENERAL WARRANTY INFORMATION

GENERAL WARRANTY			Extended Coverage
Portable Compressor	Package	1 year/2000 hours	
	Airend	2 years/4000 hours	5 years/10,000 hours Limited warranty, major components (refer to operator's manual).

Portable Genset 8KW, 11KW, 20KVA thru 575KVA	Package	1 year/2000 hours	None
	Generator	2 years/4000 hours	None

Portable Genset 3.5KW thru 7.0KW and 10KW	Package	1 year/2000 hours PARTS ONLY	None
	Generator	1 year/2000 hours PARTS ONLY	None

Light Tower	Package	1 year/2000 hours	
	Generator	1 year/2000 hours	2 years/4000 hours, for Lightsource introduced 8/16/99.

ENGINES			
	Months	Hours	Extended Coverage
Caterpillar	12	No Limit	Available at dealer
Cummins	24	2000	Major components 3 yrs/10,000 hours - available at dealer
John Deere (IN COMPRESSORS)	24	2000	5 yrs/5000 hours using OEM fluids & filters with \$250 deductible. 2 yrs/4000 hours using IR fluids & filters
(IN GENERATORS AS OF 1/1/01)	24	2000	
Deutz	24	2000	Available at dealer
Ingersoll-Rand	24	4000	5 years/10,000 hours when using genuine Ingersoll-Rand fluids and parts. Refer to operator's manual.
Kubota (North America Only)	24	2000	Major components 36 months/3000 hrs - parts only
(Western Europe & Oceania)	24	2000	None
(Central & South America, Asia, Middle East & Africa)	12	1000	None
Mitsubishi	24	2000	2 years/4000 hours using IR fluids and filters
Volvo	24	2000	2 years/4000 hours using IR fluids and filters
Honda	12	unlimited	None
Vanguard	24	unlimited	None

PARTS			
	Months	Hours	Coverage
Ingersoll-Rand	6	No Limit	Parts Only

AIREND EXCHANGE			
	Months	Hours	Extended Coverage
Airend	12	2000 hours	2 years/4000 hours - available from IR.

Note: Actual warranty times may change. Consult the manufacturer's warranty policy as shipped with each new product.

Extended Limited Airend Warranty

Ingersoll-Rand Portable Compressor Division is pleased to announce the availability of extended limited airend warranty. Announcement of the extended warranty coincides with the introduction of PRO•TEC™ Compressor Fluid. PRO•TEC™ Compressor Fluid is an amber colored fluid specially formulated for Portable Compressors and is being provided as the factory filled fluid for all machines except 1 XHP650/900/1070 models.

All machines have the standard airend warranty - *The earlier of 24 months from shipment to, or the accumulation of 4000 hours of service.*

The warranty against defects will include replacement of the complete airend, provided the original airend is returned assembled and unopened.

The optional limited warranty is the earlier of 60 months from shipment to, or the accumulation of 10,000 hours of service. The optional warranty is limited to defects in major components (rotors, housings, gears, bearings), and is automatically available when the following three conditions are met:

1. The original airend is returned assembled and unopened.
2. Submissions of proof that Ingersoll-Rand fluid, filters and separators have been used. Refer to the Operation and Parts manual for the correct fluids, filters and separator elements required.
3. Submission of proof that maintenance intervals have been followed.

WARRANTY	TIME	*BARE AIREND	** AIREND COMPONENTS
STANDARD	2 yrs/4000 hrs	100% parts and labor	100% parts and labor
OPTIONAL	5 yrs/10,000 hrs	100% parts and labor	0%

* Bare Airend - pertains to major airend parts (rotors, housings, gears and bearings).

** Airend Components - pertains to auxiliary attachments to the bare airend (drive coupling, seals, pumps, valves, tubes, hoses, fittings and filter housing).

PRO•TEC™ and XHP505 Compressor Fluids are available from the Mocksville Product Support department by calling 1-800-633-5206.

¹ XHP650/900/1070 will continue to use XHP505 and will have the extended warranty when above conditions are met.

WARRANTY REGISTRATION

Complete Machine Registration

Machines shipped to locations within the United States do not require a warranty registration unless the machine status changes (i.e. change of ownership).

Machines shipped outside the United States require notification be made to initiate the machine warranty.



Fill out the Warranty Registration Form in this section, keep a copy for your records and mail form to:

Ingersoll-Rand Company
Portable Compressor Division
P.O. Box 868
Mocksville, North Carolina 27028
Attn: Warranty Department

Note: Completion of this form validates the warranty.

<u>Selling Distributor</u>	<u>Servicing Distributor</u>	WARRANTY REGISTRATION
Name _____	Name _____	Owner/User Name _____
Address _____	Address _____	Address _____
City _____	City _____	City _____
County _____	County _____	County _____
State _____	State _____	State _____
Zip Code _____	Zip Code _____	Zip Code _____
Telephone _____	Telephone _____	Telephone _____

Complete the Applicable Blocks
Owner/User Type of Business (check one only)

<input type="checkbox"/> Construction-Heavy (highway, excavation, etc.)	<input type="checkbox"/> Asphalt Contractor	<input type="checkbox"/> Coal Mining	<input type="checkbox"/> Other Mining
<input type="checkbox"/> Construction-Light (carpentry, plumbing, pools, mason, etc.)	<input type="checkbox"/> Government (municipal, state, county, etc.)	<input type="checkbox"/> Quarry	<input type="checkbox"/> Shallow Oil & Gas
<input type="checkbox"/> Rental (rental center, rental fleet, etc.)	<input type="checkbox"/> Building Contractor	<input type="checkbox"/> Waterwell	<input type="checkbox"/> Utility Company (gas, electric, water, etc.)
<input type="checkbox"/> Industrial (plant use)	<input type="checkbox"/> Other specify _____	<input type="checkbox"/> Exploration	<input type="checkbox"/> Utility Contractor

Model	Unit S/N	Engine S/N	Date Delivered
Unit-Hours	Airend S/N	Truck S/N	Truck Engine S/N

SERVICING DISTRIBUTOR/USER ACKNOWLEDGEMENT

1. The Purchaser has been instructed and/or has read the manual and understands proper preventative maintenance, general operation and safety precautions.
2. The warranty and limitation of liability has been reviewed and understood by the owner/user.
3. In the event that this unit is to be used within a nuclear facility, the owner/user shall notify Ingersoll-Rand of such use so that Ingersoll-Rand may arrange for appropriate nuclear liability protection from the owner-licensee of the facility.
4. Ingersoll-Rand reserves the right to make design changes or modifications of Ingersoll-Rand products at anytime without incurring any obligation to make similar changes or modifications on previously sold units.

Attention: Warranty Department

*Ingersoll-Rand Company
Portable Compressor Division
P.O. Box 868
Mocksville, North Carolina 27028*

fold

SECTION 3 - NOISE EMISSION

This section pertains only to machines distributed within the United States.

WARNING

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Federal law prohibits the following acts or the causing thereof:

(1) The removal or rendering inoperative by any persons, other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new compressor for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; or (2) the use of the compressor after such device or element of design has been removed or rendered inoperative by any person.

Among those acts included in the prohibition against tampering are these:

4. Removal or rendering inoperative any of the following:
 - a. the engine exhaust system or parts thereof
 - b. the air intake system or parts thereof
 - c. enclosure or parts thereof
5. Removal of any of the following:
 - a. fan shroud
 - b. vibration mounts
 - c. sound absorption material
6. Operation of the compressor with any of the enclosure doors open.

Compressor Noise Emission Control Information

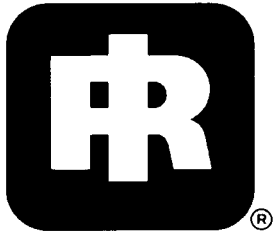
A. The removal or rendering inoperative, other than for the purpose of maintenance, repair, or replacement of any noise control device or element of design incorporated into this compressor in compliance with the noise control act;

B. The use of this compressor after such device or element of design has been removed or rendered inoperative.

Note: the above information applies only to units that are built in compliance with the U.S. Environmental Protection Agency.

Ingersoll-Rand Company reserves the right to make changes or add improvements without notice and without incurring any obligation to make such changes or add such improvements to products sold previously.

The Purchaser is urged to include the above provisions in any agreement for any resale of this compressor.



NOISE EMISSION CONTROL MAINTENANCE LOG

COMPRESSOR MODEL _____
SERIAL NO. _____
USER UNIT NO. _____

UNIT IDENTIFICATION Engine Make & Model: _____ Serial No.: _____ Purchaser or Owner: _____ Address: _____	DEALER OR DISTRIBUTOR FROM WHOM PURCHASED: _____ _____ Date Purchased: _____
--	--

The Noise Control Act of 1972 (86 Stat. 1234) prohibits tampering with the noise control system of any compressor manufactured and sold under the above regulations, specifically the following acts or the causing thereof:

(1) the removal or rendering inoperative by any persons, other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into new compressor for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; or (2) the use of the compressor after such device or element of design has been removed or rendered inoperative by any person.

NOISE EMISSION WARRANTY

The manufacturer warrants to the ultimate purchaser and each subsequent purchaser that this air compressor was designed, built and equipped to conform at the time of sale to the first retail purchaser, with all applicable U.S. EPA Noise Control Regulations.

This warranty is not limited to any particular part, component, or system of the air compressor. Defects in the design, assembly or in any part, component, or system of the compressor which, at the time of sale to the first retail purchaser, caused noise emissions to exceed Federal Standards are covered by this warranty for the life of the air compressor.

INTRODUCTION

The unit for which this Maintenance Log is provided conforms to U.S. E.P.A. Regulations for Noise Emissions, applicable to Portable Air Compressors.

The purpose of this book is to provide (1) the Maintenance Performance Schedule for all required noise emission controls and (2) space so that the purchaser or owner can record what maintenance was done, by whom, where and when. The Maintenance Schedule and detailed instructions on the maintenance items are given on following page.

MAINTENANCE SCHEDULE

ITEM	AREA	PERIOD
A.	Compressed Air Leaks	As Detected
B.	Safety and Control Systems	As Detected
C.	Acoustic Materials	Daily
D.	Fasteners	100 hours
E.	Enclosure Panels	100 hours
F.	Air Intake & Engine Exhaust	100 hours
G.	Cooling Systems	250 hours
H.	Isolation Mounts	250 hours
I.	Engine Operation	See Operator's Manual
J.	Fuels & Lubricants	See Operator's Manual

A. Compressed Air Leaks

Correct all compressed air leaks during the first shut-down period after discovery. If severe enough to cause serious noise problems and efficiency loss, shut down immediately and correct the leak(s).

B. Safety and Control Systems

Repair or replace all safety and control systems or circuits as malfunction occurs. No compressor should be operated with either system bypassed, disabled, or nonfunctional.

C. Acoustic Materials

In daily inspections, observe these materials. Maintain all acoustic material as nearly as possible in its original condition. Repair or replace all sections that have: 1) sustained damage, 2) have partially separated from panels to which they were attached, 3) are missing, or have otherwise deteriorated due to severe operating or storage conditions.

D. Fasteners

All fasteners such as hinges, nuts, bolts, clamps, screws, rivets, and latches should be inspected for looseness after each 100 hours of operation. They should be retightened, repaired, or if missing, replaced immediately to prevent subsequent damage and noise emission increase.

E. Enclosure Panels

Enclosure panels should also be inspected at 100 hour operational intervals. All panels that are warped, punctured, torn, or otherwise deformed, such that their noise containment function is reduced, should be repaired or replaced before the next operation interval. Doors, access panels, and hatch closures especially, should be checked and adjusted at this time to insure continuous seating between gasket or acoustic material and the mating frame.

F. Air Intake and Engine Exhaust

Engine and compressor air intake and engine exhaust systems should be inspected after each 100 hours of operation for loose, damaged, or deteriorated components. Repairs or replacements should be made before the next period of use.

G. Cooling Systems

All components of the cooling system for engine water and compressor oil should be inspected every 250 hours of use. Any discrepancies found should be corrected before placing the unit back in operation. Unrestricted airflow over the radiator and oil cooler must be maintained at all times during operation.

H. Isolation Mounts

Engine/airend isolation mounts should be inspected after each 250 hours of operation. Those mounts with cracks or splits in the molded rubber, or with bent or broken bolts due to operation or storage in severe environments, all should be replaced with equivalent parts.

I. Engine Operation

Inspect and maintain engine condition and operation as recommended in the manuals supplied by the engine manufacturer.

J. Fuels and Lubricants

Use only the types and grades of fuels and lubricants recommended in the Ingersoll-Rand Company and Engine Manufacturer's Operator and Maintenance Manuals.

MAINTENANCE RECORD FOR NOISE EMISSION CONTROL AND EXTENDED WARRANTY

ITEM NO.	DESCRIPTION OF WORK	HOURMETER READING	MAINT/ INSPECT DATE	LOCATION CITY/ STATE	WORK DONE BY (NAME)

SECTION 4- GENERAL DATA

UNIT MODEL XP375WJD HP375WJD

Air Delivery - cfm (litres/sec) 375 (177) 375 (177)

COMPRESSOR

Rated Operating Pressure - psi (kPa) 125 (861) 150 (1034)

ENGINE (Diesel)

Manufacturer John Deere

Model 4045T-250

Rated Horsepower at 2400 rpm 125

Electrical System 12 V

Full Load Speed - rpm 2400

No Load Speed - rpm 1400

FLUID CAPACITIES - U.S. Gallons (litres)

Compressor Lubricant 9.5 (36.0)

Engine Lube (including filter) 3.5 (13.2)

Engine Coolant (Radiator) 5.5 (20.8)

Fuel Tank (Clean DIESEL fuel) 58 (219.5)

UNITS MEASUREMENTS/WEIGHTS - inches (mm)

Overall Length 149 (3807)

Overall Height 68 (1727)

Overall Width 78.1 (1984)

Unit Weight - pounds 4444

RUNNING GEAR

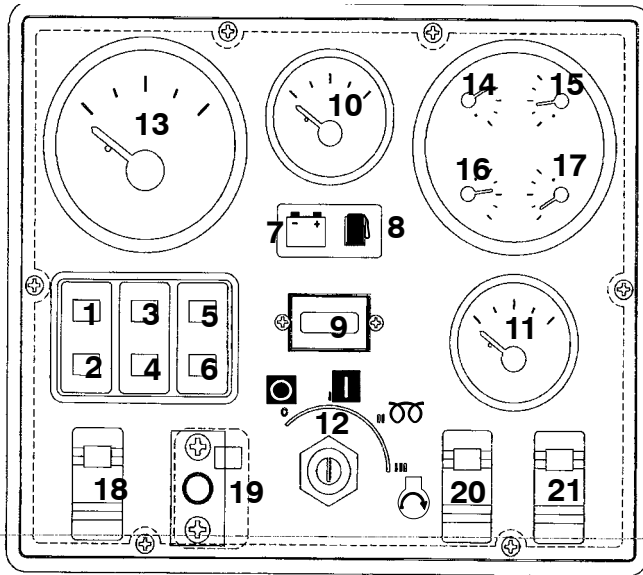
Tire Size . (Load Range) ST225/75 R15 (D)

Towing Speed (Maximum) mph 65 mph (105 km/hr)

Inflation Pressure 65 psi (448 kPa)

CAUTION: Any departure from the specifications may make this equipment unsafe.

CONTROL PANEL



Diagnostic/Auto Shutdown (Optional)

1. **High Engine Temperature** -
Coolant above 220°F (104°C) or more.
2. **Low Engine Oil Pressure** - 12 psi or less
3. **High Compressor Temperature** -
248°F (120°C)
4. **Air Filters Restricted** - Needs Servicing.
5. Spare
6. Spare

Diagnostic/Auto Shutdown (Standard)

7. **Alternator Not Charging** - needs attention.
8. **Low Fuel Level** - Must add fuel to operate.
9. **Hourmeter** - Records running time for maintenance.
10. **Compressor Discharge Pressure Gauge** -
Indicates pressure in receiver tank, psi (kPa).
11. **Fuel Level Gauge** - Indicates amount of fuel in tank.

Controls (Standard)

12. **Power Switch** -

Rotate "ON" to activate systems prior to Starting. Rotate "Off" to stop engine.

19. **Service Air Button** - After warm-up, PUSH. Provides full air pressure at the service outlet.

Optional Controls

13. **Engine Speed Gauge** -

Indicates engine speed.

14. **Discharge Air Temp. Gauge** -

Indicates in °F and °C. Normal operating range: 185°F/85° to 248°F/120°C.

15. **Engine Oil Pressure Gauge** -

Indicates engine oil pressure (psi (kPa)).

16. **Engine Water Temp. Gauge** -

Indicates coolant temperature, with normal operating range from 180°F (82°C) to 210°F (99°C).

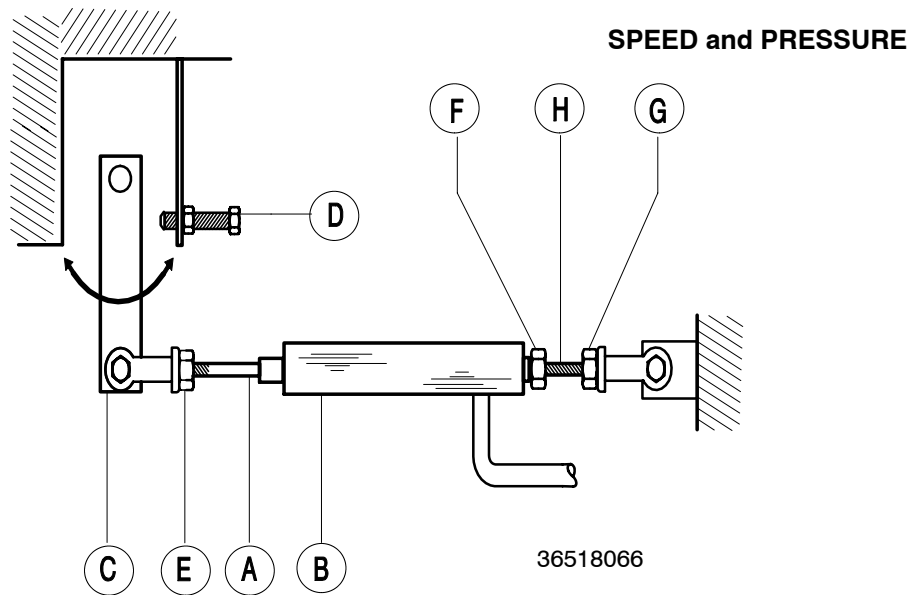
17. **Voltmeter** - Indicates battery condition.

18. **Ether Inject Button** - Injects a measured shot. USE SPARINGLY. (Not on WIR Models).

20. **Spare**

21. **Spare**

Begin with Serial Number 326650



Normally, regulation requires no adjusting, but if proper adjustment is lost, proceed as follows:

Note: Refer to general data for machine rated speeds and pressure.

Before Starting Unit:

1. Atop separator tank cover at pressure valve, loosen locknut counterclockwise. Turn adjustment screw and locknut counterclockwise until no tension is felt at the screw. turn screw clockwise one full revolution.

After Starting Unit:

2. Allow unit to warm up. Then at control panel, push "Service Air" Button, if equipped.

3. Open and adjust service valve (on outside of the unit) to obtain the rated operating pressure on the discharge pressure gauge.

Note: If the rated operating pressure cannot be maintained with engine at full load speed and rod (A) of air cylinder (B) fully retracted, turn regulator adjustment screw clockwise until throttle arm (C) moves against full speed governor stop (D).

4. Insure that pressure is maintained at rated pressure, then turn regulator adjustment screw counterclockwise until throttle arm (C) just begins to move.

Note: Turning regulator adjustment screw clockwise will raise pressure at full speed.

5. Close service valve (engine will slow to idle speed). Loosen jam nut (E) on rod (A). Rotate rod (A) to adjust speed to obtain idle rpm.

6. If necessary, repeat steps 3 and 4.

7. At pressure regulator, tighten lock nut.

8. Limit full load engine speed by loosening jam nut (F) and (G) and rotating rod (H). When proper speed is reached, tighten jam nuts.

9. To obtain maximum CFM at any pressure between 80 PSI (550kPa) and the rated operating pressure, turn adjustment screw of pressure regulator to obtain desired discharge pressure at full load engine speed. Always lock pressure setting of adjusting screw.

BEFORE TOWING

WARNING

Failure to follow these instructions can cause severe injury or death.

CAUTION

- Position the tow vehicle to align its hitch with the pintle eye or coupler of the compressor.
- Engage the parking brake and chock the wheels of the tow vehicle.
- Stand to the side and ensure pin is FULLY inserted (secure) in tube of jack. Crank jack to seat pintle eye or coupler onto hitch. Latch and lock hitch. Cross safety chain(s) under drawbar. Attach to vehicle.
- Crank jack to raise pad off the ground. Pull pin from tube of jack. Fold jack handle down and forward. Swing up jack tube and FULLY insert pin in tube.

Units equipped with hydraulic brakes:

- Check brake fluid level. Top off as required with DOT 3 brake fluid.
- Check condition of brake lines, hoses and cables. Repair or replace damaged parts.
- Attach brake actuator break-a-way chain above hitch or towing vehicle.

SETTING - UP

• Place the unit in an open, well-ventilated area. Position as level as possible. The design of these units permits a 15 degree limit on out-of-level operation.

•When the unit is to be operated out-of-level , it is important: (1) to keep the engine crankcase oil level near the high level mark (with the unit level), and (2) to have the compressor oil level gauge show no more than mid-scale (with the unit running at full load). Do not overfill either the engine crankcase or the compressor lubricating oil system.

COMPRESSOR MOUNTING

Portable compressors, which are modified to remove the running gear and mount the machine direct to trailers, truck beds or frames, etc. may experience failure of the enclosure, frame, and/or other components. It is necessary to isolate the compressor package from the carrier base with a flexible mounting system.

Such a system must also prevent detachment of the package from the carrier base in the event the isolators fail. Contact Ingersoll-Rand representative for flexible mounting kits.

Warranty does not cover failures attributable to mounting of the compressor package to the carrier base unless it is an Ingersoll-Rand provided system.

TOWING

WARNING

Failure to follow these instructions can cause severe injury or death.

- Ensure that tires, wheels and running gear are in good condition and secure.
- Ensure that tires are inflated to 75 psi (520kPa).
- Do not tow this unit in excess of 50 mph (80 km/hr).
- Use a tow vehicle whose towing capacity is greater than the gross weight of this unit.

DISCONNECT

- Set the vehicle parking brake. Chock wheels of unit.
- Standing to the side, remove pin from tube of jack. As jack tube swings down, FULLY insert pin in the tube.
- Disconnect safety chains. Crank jack to raise eye or coupler from hitch. Tow vehicle can be moved.

BEFORE STARTING

CAUTION

Do not connect the air discharge on this unit into a common header with any other unit of any description, or any other source of compressed air, without first making sure a check valve is used between the header and the unit. If this unit is connected in parallel with another unit of higher discharge pressure and capacity, a safety hazard could occur in a back-flow condition.

WARNING

Unrestricted air flow from a hose will result in a whipping motion of the hose which can cause severe injury or death. A safety device must be attached to the hose at the source of supply to reduce pressure in case of hose failure or other sudden pressure release. Reference: OSHA regulation 29 CFR Section 1926.302 (b).

- Open manual blowdown valve to ensure pressure is relieved in receiver-separator system. Close valve in order to build up full air pressure and ensure proper oil circulation.

- Check battery for proper connections and condition.

- Check the compressor lubricating oil level. The proper oil level is mid-way on the sight gauge. Add oil if the level falls to the bottom of the sight gauge. Do not overfill.

- Check the engine lubricating oil level. Add oil if low on dipstick.

WARNING

Do not remove the cap from a HOT engine radiator. The sudden release of pressure from a heated cooling system can cause severe injury or death.

CAUTION

The use of water alone in this engine can result in major engine failure.

- **At overflow reservoir (plastic bottle) check coolant level and, if necessary, top off to "cold" mark.**

- **Roof access door has retaining pins on each side. After servicing cooling system, pins must be replaced for proper operation.**

- **Check the fuel level. Add only CLEAN DIESEL fuel for maximum service from the engine.**

Note: To minimize condensation (water) in the fuel tank, fill the tank at the end of each day.

WARNING

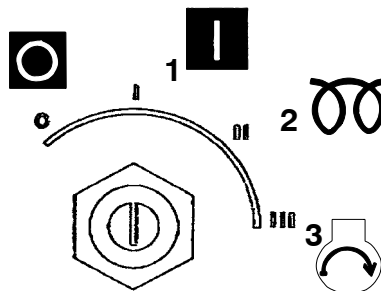
This machine produces loud noise with doors open. Extended exposure to loud noise can cause hearing loss. Wear hearing protection when doors or valve (s) are open.

Close the side doors to maintain a cooling air path and to avoid recirculation of hot air. This will maximize the life of the engine and compressor and protect the hearing of surrounding personnel. Be sure no one is IN or ON the compressor unit.

STARTING

WARNING

Under no circumstances should volatile liquids such as ETHER be used for starting this machine.



All normal starting functions are incorporated in the key operated switch.

- Turn the key switch to position 2 and hold for 5 seconds to allow the glow plugs to reach working temperature.

- Turn the key switch to position 3 (engine start position) and hold until engine starts.

- Release to position 1 after the engine starts.

At temperatures below 0°C or if there is difficulty starting first time:

- Open the service valve fully, with no hose connected.

- Complete starting sequence above.

- Close service valve as soon as engine runs freely.

- Do not allow machine to run for long periods with service valve open.

- Allow the engine to reach operating temperature.

- At this point in the operation of the machine it is safe to apply full load to the engine.

NOTE: Wear hearing protection at all times when the engine is started with the service valve open and air is flowing from the valve.

PUSH AFTER WARM UP

NOTE: In order to allow the machine to start at a reduced load, a valve, which is operated by a button located on the instrument panel, is incorporated in the regulation system. (The valve automatically returns to the start position when the machine is switched off and air pressure relieved from the system).

. Allow the engine to reach its operating temperature – then press the button (A).

. At this point in the operation of the machine it is safe to apply *full load* to the engine.

DUAL PRESSURE WHEN FITTED

Machines which operate in excess of 7 bar (100 psi) can optionally be fitted with a dual pressure switch (B). This switch selects between 7 bar (100 psi) and the machine rated pressure, cfm remains nominally constant.

Starting and stopping are unaffected by the selection and during normal running the selector switch may be safely operated. Precaution must be taken to ensure that downstream equipment is rated to suit the available pressure.

The pressure gauge indicates which setting has been selected.

STOPPING THE MACHINE

. Close the service valve.

. Allow the machine to run unloaded for a short period of time to reduce the engine temperature.

. Turn the start switch to the 0 (off) position.

NOTE: As soon as the engine stops, the automatic blowdown valve will relieve all pressure from the system.

If the automatic blowdown valve fails to operate, then pressure must be relieved from the system by means of the service valve(s).

CAUTION: *Never allow the machine to stand idle with pressure in the system.*

EMERGENCY STOPPING

In the event that the unit has to be stopped in an emergency, **TURN THE KEY SWITCH LOCATED ON THE INSTRUMENT PANEL TO THE 0 (OFF) POSITION.**

RE-STARTING AFTER AN EMERGENCY

If the machine has been switched off because of a machine malfunction, then identify and correct the fault before attempting to re-start.

If the machine has been switched off for reasons of safety, then ensure that the machine can be operated safely before re-starting.

Refer to the *PRIOR TO STARTING* and *STARTING THE UNIT* instructions earlier in this section before re-starting the machine.

MONITORING DURING OPERATION

Should any of the safety shut-down conditions occur, the unit will stop. These are:

- . Low engine oil pressure
- . High air discharge temperature
- . High engine water temperature

CAUTION: *To ensure an adequate flow of oil to the compressor at low temperature, never allow the discharge pressure to fall below 3,5 bar (50 psi)*

DECOMMISSIONING

When the machine is to be permanently decommissioned or dismantled, it is important to ensure that all hazard risks are either eliminated or notified to the recipient of the machine. In particular:-

. Do not destroy batteries or components containing asbestos without containing the materials safely.

. Do not dispose of any pressure vessel that is not clearly marked with its relevant data plate information or rendered unusable by drilling, cutting etc.

. Do not allow lubricants or coolants to be released into land surfaces or drains.

. Do not dispose of a complete machine without documentation relating to instructions for its use.

SECTION 6 - MAINTENANCE

GENERAL

In addition to periodic inspections, many of the components in these units require periodic servicing to provide maximum output and performance. Servicing may consist of pre-operation and post-operation procedures to be performed by the operating or maintenance personnel. The primary function of preventive maintenance is to prevent failure, and consequently, the need for repair. Preventive maintenance is the easiest and the least expensive type of maintenance. Maintaining your unit and keeping it clean at all times will facilitate servicing.

Correct engine speed is critical to the operation of this machine. Check the idle and full load rpm every three months and adjust in accordance with the speed and pressure adjustment instructions in this manual and included on a decal on the machine. Correct speeds are on the general data decal.

SCHEDULED MAINTENANCE

The maintenance schedule is based on normal operation of the unit. This page can be reproduced and used as a checklist by the service personnel. In the event

unusual environmental operating conditions exist, the schedule should be adjusted accordingly.

COMPRESSOR OIL LEVEL

The oil level is most consistent when the unit is RUNNING AT FULL LOAD and should be checked at this time. The optimum operating level is midway of the sight tube on the side of the receiver tank. See the decal beside the sight tube. If the oil level is not in the "OK" range, make appropriate corrections (Add or Drain). A totally filled sight tube in which the level is not visible indicates an over-full condition and requires that oil be drained.

Compressor Oil

This machine was factory filled with Ingersoll-Rand Pro Tec® Compressor Fluid (Ingersoll-Rand XHP505 for XHP900 models).

By continued use of Ingersoll-Rand compressor fluids and filters, optional warranty will be extended for the base airend (rotors, housings, gears and bearings) when substantiated with proof of conformance to recommended maintenance intervals and purchase of OEM Ingersoll-Rand filters and fluids.

Optional Warranty - The earlier of 60 months from shipment to, or the accumulation of 10,000 hours of service by the initial user. The optional warranty is limited to defects in major components (rotors, housings and bearings), and is automatically available to the original user when he meets the following three conditions:

2. Submissions of proof that Ingersoll-Rand fluid, filters and separators have been used. Refer to the Operation and Parts manual for the correct fluids, filters and separator elements required.
3. Submission of proof that maintenance intervals have been followed.

WARRANTY	TIME	*BARE AIREND	** AIREND COMPONENTS
STANDARD	2 yrs/4000 hrs	100% parts and labor	100% parts and labor
	3 yrs/5000 hrs (100-185 CFM only)	100% parts and labor	100% parts and labor
OPTIONAL	5 yrs/10,000 hrs	100% parts and labor	0%

* Bare Airend – Pertains to major airend parts (rotors, housings, and bearings).

** Airend Components – Pertains to auxiliary attachments to the bare airend (drive coupling, seals, pumps, valves, tubes, hoses, fittings and filter housing)

The compressor oil must be replaced every 500 hours of operation or six (6) months, whichever comes first for models HP600 – P1600.

Refer to the fluids and lubricants chart for ambient temperature ranges and specifications, in the lubrication section of this manual.

The compressor oil must be replaced every 500 hours of operation or six (6) months, whichever comes first for models P100–P600. The compressor oil must be replaced every 1000 hours of operation or six (6) months, whichever comes first for models HP600–P1600.

Refer to the fluids and lubricants chart for ambient temperature ranges and specifications in the lubrication section of this manual.

AIR CLEANER

This unit is equipped with an AIR FILTERS RESTRICTED lamp on the instrument panel, covering both the engine and the compressor.

This should be checked daily during operation. If the lamp glows (red) with the unit operating at full speed, servicing of the cleaner element is necessary.

Also weekly squeeze the rubber valve (precleaner dirt dump) on each air cleaner housing to ensure that they are not clogged. NOTICE: Holes or cracks downstream of the air cleaner housing will cause the restriction indicators to be ineffective.

The air filters restricted sensor will automatically reset after the main power switch is flipped to “OFF.”

To service the air cleaners on all units proceed as follows:

1. Loosen outer wing nut and remove with outer element. Inspect red window on special inner wing nut to find small dot. If dot is not visible, remove cotter pin and special wing nut and inner (safety) element.
2. Inspect air cleaner housing for any condition that might cause a leak and correct as necessary.

3. Wipe inside of air cleaner housing with a clean, damp cloth to remove any dirt accumulation, especially in the area where the element seals against the housing.
4. Inspect element by placing a bright light inside and rotating slowly. If any holes or tears are found in the paper, discard this element. If no ruptures are found, the element can be cleaned by one of the following procedures.
5. If a new air filter element is to be used check it closely for shipping damage. To reset the signal indicator in the special wing nut, apply suction to the red window.
6. Install cleaned or new elements in the reverse order to the above. Tighten wing nuts firmly and replace cotter pin.
7. Inspect to ensure that the end cap seals tightly 360 degrees around the air cleaner body.

In the event the element is contaminated with dry dirt, oil or greasy dirt deposits, and a new element is not available, cleaning can be accomplished by washing, using the air cleaner element manufacturer's recommendations.

NOTICE

To prevent damage to the element, never exceed a maximum air pressure of 100 psi (700 kPa).

NOTICE

It is highly recommended that new replacement elements be installed in the unit immediately in order that the unit be returned to service in the shortest possible time. In this manner, the elements just removed for cleaning can be washed and stored as future replacement elements.

In addition, the air cleaner system (housing and piping) should be inspected every month for any leakage paths or inlet obstructions. Make sure the air cleaner mounting bolts and clamps are tight. Check the air cleaner housing for dents or damage which could lead to a leak. Inspect the air transfer tubing from the air cleaner to the compressor and the engine for holes. Make sure that all clamps and flange joints are tight.

GAUGES

The instruments or gauges are essential for safety, maximum productivity and long service life of the machine. Inspect the gauges and test any diagnostic lamps prior to start-up. During operation observe the gauges and any lamps for proper functioning. Refer to Operating Controls, for the normal readings.

FUEL TANK

This unit is equipped with dual tanks that can be filled from either side. Using clean fuel in the fuel tanks is vitally important and every precaution should be taken to ensure that only clean fuel is either poured or pumped into the tank. When filling the fuel tank on this unit, by methods other than a pump and hose, use a CLEAN non-metallic funnel.

Every six months the drain plugs should be removed from the tanks so that any sediment or accumulated condensate may be drained. When replacing the drain plugs, make sure they are tightened securely.

BATTERY

Heavy-duty, diesel cranking type batteries were installed at the factory and these should be inspected weekly. Keep the battery posts-to-cable connections clean, tight and lightly coated with a grease. Also the electrolyte level in each cell should cover the top of the plates. If necessary, top-up with clean distilled water.

TIRES

A weekly inspection is recommended. The proper inflation pressure for the tires is listed on General Data. Tires that have cuts or cracks or little tread should be repaired or replaced. Monthly check the wheel lug nuts for tightness.

AUTOMATIC SHUTDOWN SYSTEM

The high discharge air temperature switches will require approximately 248°F (120°C) to actuate. The engine coolant temperature switch will require approximately 220° F (104° C) to actuate. Replace any defective switch before continuing to operate the unit.

A low oil pressure switch may be tested by removing it and connecting it to a source of controlled pressure while monitoring an ohmmeter connected to the switch terminals. As pressure is applied slowly from the controlled source, the switch should close at 12 psi (.84 kgf per cm²) and show continuity through the contacts. As the pressure is slowly decreased to 8 psi (0.56 kgf per cm²) the contacts should open and the ohmmeter should show lack of continuity (infinite ohms) through the contacts. Replace a defective switch before continuing to operate the unit.

COMPRESSOR OIL COOLER

The compressor lubricating and cooling oil is cooled by means of the fin and tube-type oil cooler, located beside the radiator. The lubricating and cooling oil, flowing internally through the core section, is cooled by the air stream from the cooling fan flowing past the core section. When grease, oil and dirt accumulate on the exterior surfaces of the oil cooler, its efficiency is impaired.

Each month it is recommended that the oil cooler be cleaned by directing compressed air which contains a nonflammable safety solvent through the core of the oil cooler. This should remove the accumulation of grease, oil and dirt from the exterior surfaces of the oil cooler core so that the entire cooling area can transmit the heat of the lubricating and cooling oil to the air stream.

In the event foreign deposits, such as sludge and lacquer, accumulate in the oil cooler to the extent that its cooling efficiency is impaired, a resulting high discharge air temperature is likely to occur, causing shut down of the unit.

To correct this situation it will be necessary to clean it using a cleaning compound in accordance with the manufacturer's recommendations. Use only a dependable cleaning compound. This is of prime importance because different cleaners vary in concentration and chemical composition. After completing the cleaning procedure, the oil cooler must be flushed before returning to service.

RADIATOR

WARNING

Do not remove the cap from a HOT engine radiator. The sudden release of pressure from a heated cooling system can result in a loss of coolant and possible severe personal injury.

The engine cooling system is filled at the factory with a 50/50 mixture of water and ethylene glycol. This permanent type antifreeze contains rust inhibitors and provides protection to -35° F (-37°C).

The use of such a mixture is recommended for both summer and winter operation. When using water alone, be sure to add a reputable brand of rust inhibitor to prevent internal corrosion.

It is recommended to test the freezing protection of the coolant every six months or prior to freezing temperatures. Replenish with a fresh mixture every twelve months. A drain for the system is located in the bottom radiator tank. An alternate method would be to disconnect a bottom radiator hose.

Each month, inspect the radiator exterior for obstructions (dirt, bugs, etc.). If present, blow water or compressed air containing a nonflammable solvent between the fins in a direction opposite the normal air flow. Should the radiator be clogged internally, standard automotive practices should be followed.

HOSES

Each month it is recommended that all of the intake lines to and from the air cleaners, the engine cooling system hoses and all of the flexible hoses used for air, oil, and fuel be inspected.

To ensure freedom from air leaks, all rubber hose joints and the screw-type hose clamps must be absolutely tight. Regular inspection of these connections for wear or deterioration is a definite "must" if regulator servicing of the air cleaners is not to prove futile.

Premature wear of both the engine and compressor is ASSURED whenever dust-laden air is permitted to enter the engine's combustion chamber or the compressor intake practically unfiltered.

The flexible hoses used in the fuel, oil and air lines on these units are primarily used for their ability to accommodate relative movement between components. It is extremely important they be periodically inspected for wear and deterioration. Clamps are used to prevent hose cover abrasion through vibration. This abrasion may occur when two hose lines cross, or when a hose line rubs against a fixed point; therefore, it is necessary that all clamps be replaced if missing. It is also important the operator does not use the hoses as convenient hand hold or steps. Such use can cause early cover wear and hose failure.

NOTICE

Piping systems operating at less than 150 psi (1050 kPa) may use a special nylon tubing. The associated fittings are also of a special “push-in” design. If so, features are as follows:

Pulling on the tubing will cause the inner sleeve to withdraw and compress, thus tightening the connection. The tubing can be withdrawn only while holding the sleeve against the fitting. The tubing can be removed and replaced numerous times without losing its sealing ability.

To install the nylon tubing, make a mark (with tape or grease pencil) approximately 7/8 inch from the end of the tubing. Insert the tubing into the sleeve and “push-in” past the first resistance to the bottom. The mark should be approximately 1/16 inch from the sleeve, for the 3/8 inch O.D. tubing; 1/8 inch for the 0.25 inch O.D. tubing. This will ensure that the tubing is fully engaged in the sealing mechanism.

COMPRESSOR OIL FILTERS

The compressor lubrication and cooling oil system includes dual spin-on, throw away type oil filters, each with an internal bypass valve. With a clean, new filter element, all of the oil flows through the full element area, from the outside/inside. As each element becomes contaminated with dirt, a pressure differential is created in the filter housing between the oil inlet and outlet ports. As this differential approaches 25 psi (175 kPa), the bypass valve starts to open, thus permitting a small quantity of oil to bypass the filter. As the contaminants continue to build up, more and more of the oil bypasses the filter media itself.

This bypass does not provide any filtration but does allow a maximum flow of compressor lubricating and cooling oil to preclude any possible damage from loss of oil. Also the design of the filter prevents any washing-off of any dirt during oil bypassing.

The oil filter must be replaced every 500 hours of operation. On new or overhauled units, replace the element after the first 50 and 150 hours of operation; thereafter, service the oil filter every 500 hours.

To service the oil filters it will first be necessary to shut the unit down. Wipe off any external dirt and oil from the exterior of the filter to minimize any contamination from entering the lubrication system. Proceed as follows:

WARNING

High pressure air can cause severe injury or death from hot oil and flying parts. Always relieve pressure before removing caps, plugs, covers or other parts from pressurized air system.

1. Open the service air valve(s) to ensure that system is relieved of all pressure. Close the valve(s).
2. Turn the spin-on filter element counterclockwise to remove it from the filter housing. Inspect the filter element and then discard.

Note: If there is any indication of formation of varnishes, shellacs or lacquers on the oil filter element, it is a warning the compressor lubricating oil has improper characteristics and should be immediately changed.

3. Inspect the oil filter head to be sure the gasket was removed with the oil filter element. Clean the gasket seal area on the oil filter head.

Installing a new oil filter element when the old gasket remains on the oil filter head will cause an oil leak and can cause property damage.

4. Lubricate the new filter gasket with the same oil being used in the machine.
5. Install new filter by turning element clockwise until gasket makes initial contact. Tighten an additional 1/2 to 3/4 turn.
6. Start unit and allow to build up to rated pressure. Check for leaks before placing unit back into service.

NOTICE

FASTENERS

Visually check entire unit in regard to bolts, nuts and screws being properly secured. Spot check several capscrews and nuts for proper torque. If any are found loose, a more thorough inspection must be made. Take corrective action.

COMPRESSOR OIL

The lubricating and cooling oil must be replaced every 1000 hours of operation or six (6) months, whichever comes first.

RUNNING GEAR

Every month or 500 miles, tighten the wheel lug nuts to 85 - 95 lbs.-ft. Every six months the wheel bearings, grease seals and axle spindles should be inspected for damage (corrosion, etc.) or excessive wear. Replace any damaged or worn parts. Repack wheel bearings. Use a wheel bearing grease conforming to specification MIL-G-10924 and suitable for all ambient temperatures.

Grease can be replaced in a wheel bearing using a special fixture or by hand as follows.

Place a spoonful of grease in the palm of one hand and take the bearing in the other hand. Push a segment of the wider end of the bearing down into the outer edge of the grease pile closest to the thumb. Keep lifting and pushing the bearing down into the edge of the grease pile until grease oozes out both from the top and from between the rollers. Then rotate the bearing to repeat this operation on the next segment. Keep doing this until you have the entire bearing completely filled with grease.

Before installing bearing, place a light coat of grease on the bearing cups which are pressed in the hub.

Excessive grease in the hub or grease cap serves no purpose due to the fact that there is no way to force the grease into the bearing. The manufacturer's standard procedure is to thoroughly pack the inner and outer bearing with grease and then to apply only a very small amount of grease into the grease cap.

If bearing adjustment is required or the hub has been removed for any reason, the following procedure must be followed to ensure a correct bearing adjustment of 0.001 to .012 free play.

1. While rotating hub slowly to seat the bearings, tighten spindle nut to approximately 15 lbs.-ft. Grasp the tire at the top and bottom and rock, in and out. There should be no evidence of looseness (free play) at the bearing.
2. Loosen nut to remove preload torque. Do not rotate hub.
3. Finger tighten nut until just snug. Loosen nut until the first nut castellation lines up with cotter pin hole in spindle. Insert cotter pin.
4. Ensure a definite but minimal amount of free play by rocking the tire.
5. Bend over cotter pin legs to secure nut and clear grease cap.
6. Nut should be free to move with only restraint being the cotter pin.

RECEIVER-SEPARATOR SYSTEMS

WARNING

High pressure air can cause severe injury or death from hot oil and flying parts. Always relieve pressure before removing caps, plugs, covers or other parts from pressurized air system.

*** Open service valve at end of machine.**

*** Ensure pressure is relieved, with BOTH:**

- Discharge air pressure gauge reads zero (0).
- No air discharging from service valve.

* When draining oil, remove and replace (make tight) plug at bottom of separator tank.

* When adding oil, remove and replace (make tight) plug on side of separator tank.

In the compressor lubricating and cooling system, separation of the oil from the compressed air takes place in the receiver-separator tank. As the compressed air enters the tank, the change in velocity and direction drop out most of the oil from the air.

Additional separation takes place in the oil separator element which is located in the top of the tank.

Any oil accumulation in this separator element is continuously drained off by means of a scavenge tube which returns the accumulated oil to the system.

SCAVENGE LINE

WARNING

High pressure air can cause severe injury or death from hot oil and flying parts. Always relieve pressure before removing caps, plugs, covers or other parts from pressurized air system.

The scavenge line originates at the receiver-separator tank cover and terminates at the compressor air-end through an orifice (.063 inch/1.6 mm). Once a year or every 2000 hours of operation, whichever comes first, remove this line and any orifice, thoroughly clean, then reassemble.

NOTICE

Excessive oil carry-over may be caused by an oil-logged separator element. Do not replace element without first performing the following maintenance procedure:

1. Check oil level. Maintain as indicated earlier in this section.
2. Thoroughly clean scavenge line, any orifice and check valve.
3. Assure minimum pressure valve (if so equipped) has proper setting.
4. Run unit at rated operating pressure for 30 to 40 minutes to permit element to clear itself.

COOLING FAN DRIVE

The heat exchanger or cooling fan is driven by a multiple V-belt arrangement from the engine. Inspect the cooling fan belts weekly or at 50 hour intervals. These V-belts should be maintained at the proper tension. Fan belts that are too tight impose an undue load on the fan shaft bearings and shorten the life of the belts. Fan belts that are too loose allow slippage and lower the fan speed, cause excessive belt wear, and can lead to overheating of the cooling systems.

BRAKE SYSTEMS

This compressor may be equipped with mechanical parking brakes or electric brakes. The maintenance of these brake systems is required to ensure safe operation of this compressor.

Parking Brakes:

Every six months check the brake shoes for proper operation and deterioration. The common automotive standards and procedures would apply in replacing the brake shoes.

When replacing brake cables it is necessary to adjust the brake shoes before adjusting the parking brake system. To adjust the shoes, remove the rubber hole plug in the brake backing plate and rotate the star adjusting nut until you cannot rotate the wheel by hand. Then back off the adjustment ten to twelve (10-12) notches. Note: always rotate wheel in direction of forward travel only. Replace hole plug and proceed to next wheel and repeat procedure.

Adjust parking brakes after all brake shoes have been adjusted by:

1. Turning knob on brake lever until lever is perpendicular to bracket when in "OFF" position. Wheels should turn freely.
2. With lever in "OFF" position, adjust brake cables until each has approximately the same tension. Wheels should turn freely.
3. Move lever to "ON" position. Check each wheel to see that it will not rotate. If all wheels will rotate, adjust knob on lever until brakes are fully applied. If one or two wheels will still rotate, adjust the cables for those wheels and recheck.
4. After brakes are adjusted, move lever to "ON" position and apply grease to cable strands from conduit six inches toward lever. This is to prevent dirt from getting into the conduit.

NOTE: New cables will stretch and therefore should be readjusted after the first week of use.

Every six months, apply a multi-purpose grease to the fittings on the brake actuator.

Electric Brake Adjustment:

Brakes should be adjusted (1) after the first 200 miles of operation when the brake shoes and drums have "seated", (2) at 3000 mile intervals, (3) or as use and performance requires. The brakes should be adjusted in the following manner:

1. Jack up trailer and secure on adequate capacity jack stands. Check that the wheel and drum rotate freely.
2. Remove the adjusting hole cover from the adjusting slot on the bottom of the brake backing plate.
3. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn.
4. Then rotate the starwheel in the opposite direction until the wheel turns freely with a slight lining drag.
5. Replace the adjusting hole cover and lower the wheel to the ground.
6. Repeat above procedures on all brakes.

OIL SEPARATOR ELEMENT

The life of the oil separator element is dependent upon the operating environment (soot, dust, etc.) and should be replaced every twelve months or 2000 hours. To replace the element proceed as follows:

- * Ensure the tank pressure is zero.
- * Disconnect the hose from the scavenge tube.
- * Disconnect service line from cover.
- * Remove (8) cover mounting screws.
- * Remove cover, element and inner shell.
- * Remove any gasket material left on cover or tank.
- * Install new gasket, inner shell and new element.

*Place a straightedge across top of element and measure from bottom of straightedge to bottom of element (See Fig. 4.1).

*Reposition cover (use care not to damage gaskets).

*Replace cover mounting screws: tighten in a criss-cross pattern to 180–190 lbs.-ft.

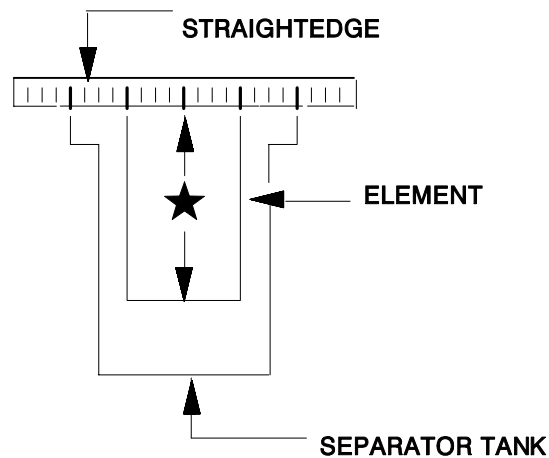
*Reconnect service line. Reconnect hose.

*Close service valve. Start unit and look for leaks.

When replacing the element, the scavenge lines, orifice, filter, and check valve should be thoroughly cleaned and the oil changed.

Note: Do not remove staples from the element/gasket connection.

Figure No. 4.1 Element Measurement



EXTERIOR FINISH CARE

This unit was painted and heat cured at the factory with a high quality, thermoset polyester powder coating. The following care will ensure the longest possible life from this finish.

1. **If necessary to remove dust, pollen, etc. from housing, wash with water and soap or dish washing liquid detergent. Do not scrub with a rough cloth, pad, etc.**
2. **If grease removal is needed, a fast evaporating alcohol or chlorinated solvent can be used. Note: This may cause some dulling of the paint finish.**
3. **If the paint has faded or chalked, the use of a commercial grade, non-abrasive car wax may partially restore the color and gloss.**

Field Repair of Texture Paint

1. **The sheet metal should be washed and clean of foreign material and then thoroughly dried.**
2. **Clean and remove all grease and wax from the area to be painted using Duponts 3900S Cleaner prior to sanding.**
3. **Use 320 grit sanding paper to repair any scratches or defects necessary.**
4. **Scuff sand the entire area to be painted with a red scotch brite pad.**
5. **Wipe the area clean using Duponts 3900S.**
6. **Blow and tack the area to be painted.**
7. **Apply a smooth coat of Duponts 1854S Tuffcoat Primer to all bare metal areas and allow to dry.**
8. **Apply 2 medium - wet coats of Duponts 222S Adhesion Promoter over the entire area to be painted, with a 5 minute flash in between coats.**

9. **To apply the texture coat, use Duponts 1854S Tuffcoat Primer. The proper technique to do this is to spray the Tuffcoat Primer using a pressure pot and use about 2-5 pounds of air pressure. This will allow the primer to splatter causing the textured look. Note: you must be careful not to put too much primer on at one time, this will effect the amount of texture that you are trying to achieve. Allow the texture coat to flash for 20 minutes or until dry to touch.**
10. **Apply any of Duponts Topcoat Finishes such as Imron™ or Centari™ according to the label instructions.**

Note: To re-topcoat the textured surfaces when sheet metal repairs are not necessary, follow steps 1, 2, 4, 5, 6, 8 and 10.

CAUTION

- Any unauthorized modification or failure to maintain this equipment may make it unsafe and out of factory warranty.
 - If performing more than visual inspections, disconnect battery cables and open manual blowdown valve.
 - Use extreme care to avoid contacting hot surfaces (engine exhaust manifold and piping, air receiver and air discharge piping, etc.).
 - Never operate this machine with any guards removed.
 - Inch and metric hardware was used in the design and assembly of this unit. Consult the parts manual for clarification of usage.
- Notice: Disregard any maintenance pertaining to components not provided on your machine.

MAINTENANCE SCHEDULE

These time periods should be reduced if operating in extreme conditions (very hot, cold, dusty or wet).

	Daily	Weekly	Monthly	3 MOS .	6 MOS.	12 MOS.
SMALL UNITS (P100-P600)				250 hours	500 hours	1000 hours
LARGE UNITS (HP600-P1600)				500 hours	1000 hours	2000 hours
**Hydraulic Oil Level		C			R	
Compressor Oil Level	C					
Engine Oil Level	C					
**Radiator Coolant Level	C					
Gauges/Lamps	C					
Air Cleaner Service Indicators	C					
Fuel Tank (fill at end of day)	C				DRAIN	
**Fuel/Water Separator	DRAIN C					
Air Cleaner Precleaner Dumps		C				
Fan/Alternator Belts		C				
Battery Connections/Electrolyte		C				
**Tire Pressure and Surface		C				
**Wheel Lug Nuts			C			
Hoses (oil, air, intake, etc.)			C			
Automatic Shutdown System	Test		C			
Air Cleaner System	Visual		C			
Compressor Oil Cooler	Exterior		C	CLEAN		
**Engine Radiator	Exterior		C	CLEAN		
Fasteners, Guards				C		
Air Cleaner Elements				WI		
** Fuel/Water Separator Element					R	
*Compressor Oil Filter Element				B	A	
*Compressor Oil					R	
**Wheels (bearings, seals, etc)					C	C
Engine Coolant	Test				C	R
Shutdown Switch Settings	Test					C
Scavenge Orifice & related parts						CLEAN
Oil Separator Element						R
**Lights (running, brake, & turn)	CBT					
**Pintle Eye Bolts	CBT					
Engine (oil changes, oil & fuel filters, etc)				R		

**Disregard if not appropriate for this particular machine.

*NXP Units - consult manual

R=replace, C=check (adjust if necessary), WI=OR when indicated, CBT = check before towing.

A = Small Units

B = Large Units

Refer to specific sections of the operator's manual for more information.

SECTION 7 - LUBRICATION

GENERAL INFORMATION

Lubrication is an essential part of preventive maintenance, affecting to a great extent the useful life of the unit. Different lubricants are needed and some components in the unit require more frequent lubrication than others. Therefore, it is important that the instructions regarding types of lubricants and the frequency of their application be explicitly followed. Periodic lubrication of the moving parts reduces to a minimum the possibility of mechanical failures.

The Preventive Maintenance Schedule shows those items requiring regular service and the interval in which they should be performed. A regular service program should be developed to include all items and fluids. These intervals are based on average operating conditions. In the event of extremely severe (hot, cold, dusty or wet) operating conditions, more frequent lubrication than specified may be necessary. Details concerning lubrication of the running gear are in Maintenance Section.

All filters and filter elements for air and compressor lubricant must be obtained through Ingersoll-Rand to assure the proper size and filtration for the compressor.

COMPRESSOR OIL CHANGE

These units are normally furnished with an initial supply of oil sufficient to allow operation of the unit for approximately 6 months or 1000 hours, whichever comes first. If a unit has been completely drained of all oil, it must be refilled with new oil before it is placed in operation. Refer to specifications in Lubrication Table.

NOTICE

Some oil types are incompatible when mixed and result in the formation of varnishes, shellacs, or lacquers which may be insoluble. Such deposits can cause serious troubles including clogging of the filters. Where possible, do NOT mix oils of different types and avoid mixing different brands. A type or brand change is best made at the time of a complete oil drain and refill.

If the unit has been operated for the time/ hours mentioned above, it should be completely drained of oil. If the unit has been operated under adverse conditions, or after long periods in storage, an earlier change period may be necessary as oil deteriorates with time as well as by operating conditions.

WARNING

High pressure air can cause severe injury or death from hot oil and flying parts. Always relieve pressure before removing caps, plugs, covers or other parts from pressurized air system. Ensure the following conditions are met:

- Discharge air pressure gauge reads zero (0).
- No air discharging from an "open" manual blow-down valve.

An oil change is good insurance against the accumulation of dirt, sludge, or oxidized oil products.

Completely drain the receiver- separator, piping, and oil cooler. If the oil is drained immediately after the unit has been run for some time, most of the sediment will be in suspension and, therefore, will drain more readily. However, the fluid will be hot and care must be taken to avoid contact with the skin or eyes.

After the unit has been completely drained of all old oil, close the drain valve. Add oil in the specified quantity at the filler plug. Tighten the filler plug and run the machine to circulate the oil. Check the oil level WHEN RUNNING AT FULL LOAD. If not near the middle of the sight tube, stop the unit and make corrections. DO NOT OVERFILL.

NOTICE

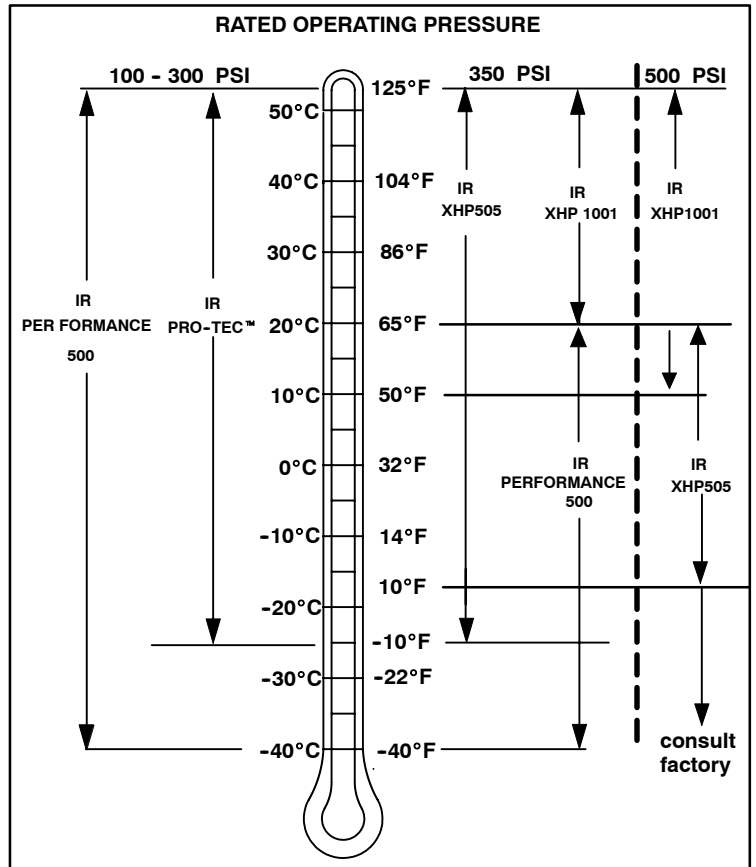
Ingersoll-Rand provides compressor oil specifically formulated for Portable Compressors and requires the use of these fluids in order to obtain extended limited airtend warranty.

SECTION 7 - COMPRESSOR LUBRICATION

Portable Compressor Fluid Chart

Refer to these charts for correct compressor fluid required. Note that the selection of fluid is dependent on the design operating pressure of the machine and the ambient temperature expected to be encountered before the next oil change.

Design Operating Pressure	Ambient Temperature	Specification
100 psi to 300 psi	-10°F to 125°F (-23°C to 52°C)	IR Pro-Tec™ Mil-PRF 2104G SAE 10W
100 psi to 300 psi	-40°F to 125°F (-40°C to 52°C)	IR Performance 500 Mil-L-46167
350 psi	-10°F to 125°F (-23°C to 52°C)	IR XHP 505
	65°F to 125°F (18°C to 52°C)	IR XHP1001
	-40°F to 65°F (-40°C to 18°C)	IR Performance 500 Mil-L-46167
500 psi	50°F to 125°F (10°C to 52°C)	IR XHP1001
	10°F to 65°F (-12°C to 18°C)	IR XHP 505
	below 10°F (-12°C)	Consult Factory



Recommended Ingersoll-Rand Fluids - Use of these fluids with original I-R filters can extend airend warranty. Refer to operator's manual warranty section for details or contact your I-R representative.

Recommended Fluid	1 Gal. (3.8 Litre)	5 Gal. (19.0 Litre)	55 Gal. (208.2 Litre)
IR Pro-Tec™	36899698	36899706	36899714
IR XHP 505		35365188	35365170
IR Performance 500	35382928	35382936	35382944
IR XHP1001		35612738	35300516

SECTION 8 - Trouble Shooting

INTRODUCTION

Trouble shooting for a portable air compressor is an organized study of a particular problem or series of problems and a planned method of procedure for investigation and correction. The trouble shooting chart that follows includes some of the problems that an operator may encounter during the operation of a portable compressor.

The chart does not attempt to list all of the troubles that may occur, nor does it attempt to give all of the answers for correction of the problems. The chart does give those problems that are most apt to occur. To use the trouble shooting chart:

- A. Find the "complaint" depicted as a bold heading.
- B. Follow down that column to find the potential cause or causes. The causes are listed in order (1,2,3 etc.) to suggest an order to follow in trouble shooting.

ACTION PLAN

A. Think Before Acting

Study the problem thoroughly and ask yourself these questions:

- (1) What were the warning signals that preceded the trouble?
- (2) Has a similar trouble occurred before?
- (3) What previous maintenance work has been done?
- (4) If the compressor will still operate, is it safe to continue operating it to make further checks?

B. Do The Simplest Things First

Most troubles are simple and easily corrected. For example, most complaints are "low capacity" which may be caused by too low an engine speed or "compressor over- heats" which may be caused by low oil level.

Always check the easiest and most obvious things first; following this simple rule will save time and trouble.

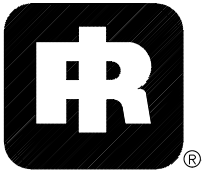
Note: For trouble shooting electrical problems, refer to the Wiring Diagram Schematic found in Parts List Section.

C. Double Check Before Disassembly

The source of most compressor troubles can be traced not to one component alone, but to the relationship of one component with another. Too often, a compressor can be partially disassembled in search of the cause of a certain trouble and all evidence is destroyed during disassembly. Check again to be sure an easy solution to the problem has not been overlooked.

D. Find And Correct Basic Cause

After a mechanical failure has been corrected, be sure to locate and correct the cause of the trouble so the same failure will not be repeated. A complaint of "premature breakdown" may be corrected by repairing any improper wiring connections, but something caused the defective wiring. The cause may be excessive vibration.



TROUBLE SHOOTING CHART

Bold Headings depict the COMPLAINT - Subheadings suggest the CAUSE

Note: Subheadings suggest sequence to follow troubleshooting.

1. Unit Shutdown:

	<u>Corrective Action</u>
Out of Fuel	Add CLEAN diesel Fuel
Compressor Oil Temp. Too High	See Complaint 10
Engine Water Temp. Too High	Check coolant level. If necessary, Add.
Engine Oil Pressure Too Low	See Complaint 3 and Complaint 4.
Broken Engine Fan Belt	Replace fan belt.
Loose Wire Connection	Wiggle wires at switches & connector blocks. Make repairs.
Low Fuel Level Shutdown Switch	Replace switch.
Defective Discharge Air Temp. Switch	Replace switch.
Defective Engine Oil Pressure Switch	Replace switch.
Defective Shutdown Solenoid	Replace solenoid.
Malfunctioning Relay	Replace relay.
* < 16 Volts at Shutdown Solenoid	Check battery and alternator. Make repairs.
Blown Fuse	Replace fuse.
Engine Malfunctioning	See Trouble Shooting in Engine Manual.
Airend Malfunctioning	See Complaint 10.

2. Won't Start/Run:

Low Battery Voltage	Check electrolyte level. Check connections.
* <16 Volts at Shutdown Solenoid	Charge battery and alternator. Make repairs.
Blown Fuse	Replace fuse.
Malfunctioning Start Switch	Replace switch.
Defective Safety Bypass Switch	Replace switch.
Clogged Fuel Filters	Service filters. See Engine Operator's Manual.
Out of Fuel	Add CLEAN fuel.
Compressor Oil Temp. Too High	See Complaint 10.
Engine Water Temp. Too High	Check fluid level. If necessary, Add.
Engine Oil Pressure Too Low	See Complaint 3 and Complaint 4.
Loose Wire Connection	Repair or replace connection.
Defective Discharge Air Temp. Switch	Replace switch.
Defective Engine Oil Pressure Switch	Replace switch.
Defective Shutdown Solenoid	Replace solenoid.
Malfunctioning Relay	Replace relay.
Engine Malfunctioning	See Trouble Shooting in Engine Manual.
Airend Malfunctioning	See Complaint 10.

3. Engine Temperature Lamps Stays On:

Broken Engine Fan Belt	Replace fan belt set.
Malfunctioning Circuit Board	Replace circuit board.
* Ambient Temp. >125°F (52°C)	Above spec limit.
Dirty Operating Conditions	Move unit to cleaner environment.
Dirty Cooler	Clean exterior of cooler.
* Out of Level >15 degrees	Relocate or reposition unit.
Operating Pressure Too High	Reduce pressure to spec.
Recirculation of Cooling Air	Close side doors.
Loose Wire Connection	Repair or replace.
Malfunctioning circuit board.	Replace circuit board.

* : > = greater than, < = less than

4. Engine Oil Pressure Lamp Stays On:

Low Oil Level
Out of Level >15 degrees
Wrong Lube Oil
Clogged Oil Filter Element(s)
Engine Malfunctioning
Loose Wire Connection.
Malfunctioning circuit board

Corrective Action

Add oil.
Relocate or reposition.
See Engine Oil Spec. Change oil.
Replace element(s).
See Trouble Shooting in Engine Manual.
Repair or replace.
Replace circuit.

5. Engine Temperature Lamps Stays Off:

Bulb Burned Out
Malfunctioning circuit board

Replace circuit board.
Replace circuit board.

6. Engine Oil Pressure Lamp Stays Off:

Bulb Burned Out
Malfunctioning circuit board

Replace circuit board.
Replace circuit board.

7. Alternator Lamp Stays On:

Loose or Broken Belts
Loose Wire Connection
Low Battery Voltage

Malfunctioning Alternator
Malfunctioning circuit board

Tighten or replace belt set.
Repair or replace connection.
Check electrolyte level. Add if necessary.
Check connectors. Clean & tighten.
Recharge battery.
Repair or replace alternator.
Replace circuit board.

8. Alternator Lamp Stays Off:

Bulb Burned Out
Loose Wire Connection
Malfunctioning circuit board

Replace circuit board.
Repair or replace connector.
Replace circuit board.

9. Unit Fails To Shutdown:

Defective Low Fuel Shutdown Switch
Defective Discharge Air Temperature Switch
Defective Engine Oil Pressure Switch
Defective Shutdown Solenoid
Malfunctioning Relay
Defective Safety Bypass Switch

Pull wire off shutdown solenoid. Replace switch.
Pull wire off. Replace switch.
Pull wire off. Replace switch.
Carefully block air inlet to stop engine.
Replace solenoid.
Pull wire off shutdown solenoid. Replace relay.
Pull wire off shutdown solenoid. Replace defective item.

10. Excessive Compressor Oil Temperature:

Ambient Temp. > 125°F (52°C)
Out of Level > 15 degrees
Low Oil Level
Wrong Lube Oil
Dirty Cooler
Dirty Operating Conditions
Clogged Oil Filter Elements
Loose or Broken Belts
Operating Pressure Too High
Recirculation Of Cooling Air
Malfunctioning Thermostat
Malfunctioning Fan
Defective Oil Cooler Relief Valve
Defective Minimum Pressure Valve
Blocked or Restricted Oil Lines
Airend Malfunctioning

Corrective Action

Above spec limit.
Relocate or reposition unit.
Add oil. Look for any leaks.
Check spec in this manual.
Clean exterior surfaces.
Move unit to cleaner environment.
Replace elements. Change oil.
Tighten or replace belt set.
Reduce pressure to spec.
Close side doors. Replace belly pan.
Replace thermostat in bypass valve.
Check fan belt tension. Tighten or replace belt set.
Replace valve.
Repair or replace valve.
Clean by flushing or replace.
See Complaint 11, 12, 13, 15, 16 or 18.

11. Engine RPM Down:

Clogged Fuel Filter

Operating Pressure Too High
Incorrect Pressure Regulator Adjustment
Malfunctioning Pressure Regulator
Incorrect Linkage Adjustment
Dirty Air Filter
Malfunctioning Air Cylinder
Wrong Air Filter Element
Defective Separator Element
Engine Malfunctioning
Airend Malfunctioning

Clean primary filter. Replace final filter. Drain tanks.
Add CLEAN fuel.
Reduce pressure to spec limit.
See Section 6 in this manual.
Replace regulator.
See Section 6 in this manual.
Clean or replace elements.
Replace air cylinder and adjust per Section 6.
Install correct element.
Install new element per page 21.
See Trouble Shooting in Engine Manual.
Refer to Airend Rebuild Manual.

12. Excessive Vibration:

Rubber Mounts, Loose or Damaged
Defective Fan
Drive Coupling Defective
Engine Malfunctioning
Airend Malfunctioning
Anti-rumble valve not working.
Engine idle speed too low.

Tighten or replace.
Replace fan.
Replace coupling.
See Trouble Shooting in Engine Manual.
See Complaint 15 and 17.
Repair or Replace.
Raise "No Load" speed per Section 6.

13. Low CFM:

Dirty Air Filter
Incorrect Linkage Adjustment
Incorrect Pressure Regulator Adjustment
Malfunctioning Pressure Regulator
Malfunctioning Inlet Unloader/Butterfly Valve
Malfunctioning Air Cylinder
Defective Minimum Pressure Valve
Defective Separator Element
Wrong Air Filter Element

Clean or replace elements.
See Section 6 in this manual.
See Section 6 in this manual.
Replace regulator.
Inspect valve. Make adjustment per Section 6.
Replace air cylinder.
Repair or replace valve.
Install new element per Page 21.
Install correct element.

14. Short Air Cleaner Life:

Dirty Operating Conditions
Inadequate Element Cleaning
Incorrect Stopping Procedure
Wrong Air Filter Element
Oil Pump Drive Coupling

Corrective Action

Move unit to cleaner environment.
Install new element.
Read Page 13 in this manual.
Install proper element.
Inspect coupling. If necessary, replace coupling.

15. Excessive Oil In Air:

High Oil Level
Out of Level > 15 degrees
Clogged Scavenge Orifice
Scavenge Tube Blocked
Defective Scavenge Check Valve
Sep. Tank Blow Down Too Quickly
Defective Minimum Pressure Valve

Read Page 15 in this manual.
Relocate or reposition unit.
Remove scavenge orifice. Clean and Replace.
Remove scavenge tube. Clean and Replace.
Remove check valve. Replace with new valve.
Allow unit to blow down automatically.
Remove valve. Repair valve and replace.

16. Oil Seal Leak:

Contaminated Lube Oil
Blocked or Restricted Oil Line(s)
Malfunctioning Seal
Scored Shaft

Drain and flush system. Add new CLEAN oil per Page 24.
Remove, clean and replace line(s).
Refer to Airedred Rebuild Manual.
See instructions in new seal kit.

17. Will Not Unload:

Leak in Regulator Piping
Incorrect Pressure Regulator Adjustment
Malfunctioning Pressure Regulator
Malfunctioning Inlet Butterfly Valve
Ice in Regulation Lines/Orifice

Find and repair leak(s).
Refer to Section 6 in this manual.
Replace regulator.
Inspect valve fit. Readjust per Section 6.
Apply heat to line(s) and or orifice.

18. Oil In Air Cleaner:

Incorrect Stopping Procedure
Oil Pump Drive Coupling
Discharge Check Valve Faulty

Read Page 15 in this manual.
Inspect coupling. Replace if necessary.
Replace.

19. Safety Valve Relieves:

Operating Pressure Too High
Leak In Regulator Piping
Incorrect Pressure Regulator Adjustment
Malfunctioning Pressure Regulator
Malfunctioning Inlet Unloader/Butterfly Valve
Defective Safety Valve
Defective Separator Element
Ice in Regulation Lines/Orifice

Reduce pressure to spec limit.
Repair leak(s).
Refer to Section 6 in this manual.
Replace regulator.
Inspect valve fit. Readjust per Section 6.
Replace safety valve.
Remove element. Install new.
Apply heat to lines and/or orifice.

SECTION 9 - PARTS ORDERING

GENERAL

This publication, which contains an illustrated parts breakdown, has been prepared as an aid in locating those parts which may be required in the maintenance of the unit. All of the compressor parts, listed in the parts breakdown, are manufactured with the same precision as the original equipment. For the greatest protection always insist on genuine Ingersoll-Rand Company parts for your compressor.

NOTICE

Ingersoll-Rand Company can bear no responsibility for injury or damages resulting directly from the use of non-approved repair parts.

Ingersoll-Rand Company service facilities and parts are available worldwide. There are Ingersoll-Rand Company Construction Equipment Group Sales Offices and authorized distributors located in the principal cities of the United States. In Canada our customers are serviced by the Canadian Ingersoll-Rand Company, Limited. There are also Ingersoll-Rand International autonomous companies and authorized distributors located in the principal cities throughout the free world.

Special order parts may not be included in this manual. Contact the Mocksville Parts Department with the unit serial number for assistance with these special parts.

DESCRIPTION

The illustrated parts breakdown illustrates and lists the various assemblies, subassemblies and detailed parts which make up this particular machine. This covers the standard models and the more popular options that are available.

A series of illustrations show each part distinctly and in

location relative to the other parts in the assembly. The part number, the description of the part and the quantity of parts required are shown on each illustration or on adjacent page. The quantities specified are the number of parts used per one assembly and are not necessarily the total number of parts used in the machine. Where no quantity is specified the quantity is assumed to be one.

Each description of a part is based upon the "noun first" method, i.e., the identifying noun or item name is always the first part of the description. The noun name is generally followed by a single descriptive modifier. The descriptive modifier may be followed by words or abbreviations such as upper, lower, inner, outer, front, rear, RH, LH, etc. when they are essential.

In referring to the rear, the front or to either side of the unit, always consider the **drawbar end** of the unit as the **front**. Standing at the rear of the unit facing the drawbar (front) will determine the right and left sides.

FASTENERS

Both SAE/inch and ISO/metric hardware have been used in the design and assembly of these units. In the disassembly and reassembly of parts, extreme care must be taken to avoid damaging threads by the use of wrong fasteners. In order to clarify the proper usage and for exact replacement parts, all standard fasteners have been identified by part number, size and description. This will enable a customer to obtain fasteners locally rather than ordering from the factory. These parts are identified in tables that will be found at the rear of the parts illustrations. Any fastener that has not been identified by both part number and size is a specially engineered part that must be ordered by part number to obtain the exact replacement part.

MARKINGS AND DECALS

NOTICE

Do not paint over safety warnings or instructional decals. If safety warning decals become illegible, immediately order replacements from the factory.

Part numbers for original individual decals and their mounting locations are shown within Parts List Section. These are available as long as a particular model is in production.

Afterwards, service sets of exterior decals and current production safety warning decals are available. Contact the Product Support Group at Mocksville for your particular needs and availability.

HOW TO USE PARTS LIST

- a. Turn to Parts List.
- b. Locate the area or system of the compressor in which the desired part is used and find illustration page number.
- c. Locate the desired part on the illustration by visual identification and make note of part number and description.

HOW TO ORDER

The satisfactory ordering of parts by a purchaser is greatly dependent upon the proper use of all available information. By supplying your nearest sales office, autonomous company or authorized distributor, with complete information, you will enable them to fill your order correctly and to avoid any unnecessary delays.

In order that all avoidable errors may be eliminated, the following instructions are offered as a guide to the purchaser when ordering replacement parts:

- a. Always specify the model number of the unit as shown on the general data decal attached to the unit.
- b. Always specify the serial number of the unit. **THIS IS IMPORTANT.** The serial number of the unit will be found stamped on a plate attached to the unit. (The serial number on the unit is also permanently stamped in the metal of the frame side rail.)

- c. Always specify the number of the parts list publication.
- d. Always specify the quantity of parts required.
- e. Always specify the part number, as well as the description of the part, or parts, exactly as it is given on the parts list illustration.

In the event parts are being returned to your nearest sales office, autonomous company or authorized distributor, for inspection or repair, it is important to include the serial number of the unit from which the parts were removed.

TERMS AND CONDITIONS ON PARTS ORDERS

Acceptance: Acceptance of an offer is expressly limited to the exact terms contained herein. If purchaser's order form is used for acceptance of an offer, it is expressly understood and agreed that the terms and conditions of such order form shall not apply unless expressly agreed to by Ingersoll-Rand Company ("Company") in writing. No additional or contrary terms will be binding upon the Company unless expressly agreed to in writing.

Taxes: Any tax or other governmental charge now or hereafter levied upon the production, sale, use or shipment of material and equipment ordered or sold is not included in the Company's price and will be charged to and paid for by the Purchaser.

Shipping dates shall be extended for delays due to acts of God, acts of Purchaser, acts of Government, fires, floods, strikes, riot, war, embargo, transportation shortages, delay or default on the part of the Company's vendors, or any other cause beyond the Company's reasonable control.

Should Purchaser request special shipping instruction, such as exclusive use of shipping facilities, including air freight when common carrier has been quoted and before change order to purchase order can be received by the Company, the additional charges will be honored by the Purchaser.

Warranty: The Company warrants that parts manufactured by it will be as specified and will be free from defects in materials and workmanship. The Company's liability under this warranty shall be limited to the repair or replacement of any part which was defective at the time of shipment provided Purchaser notifies the Company of any such defect promptly upon discovery, but in no event later than three (3) months from the date of shipment of such part by the Company. The only exception to the previous statement is the extended warranty as it applies to the special airend exchange program.

Repairs and replacements shall be made by the Company F.O.B. point of shipment. The Company shall not be responsible for costs of transportation, removal or installation. Warranties applicable to material and equipment supplied by the Company but wholly manufactured by others shall be limited to the warranties extended to the Company by the manufacturer which are able to be conveyed to the Purchaser.

Delivery: Shipping dates are approximate. The Company will use best efforts to ship by the dates specified; however, the Company shall not be liable for any delay or failure in the estimated delivery or shipment of material and equipment or for any damages suffered by reason thereof.

The company makes no other warranty or representation of any kind whatsoever, expressed or implied, except that of title, and all implied warranties, including any warranty of merchantability and fitness for a particular purpose, are hereby disclaimed.

Limitation of Liability:

The remedies of the Purchaser set forth herein are exclusive, and the total liability of the Company with respect to this order whether based on contract, warranty, negligence, indemnity, strict liability or otherwise, shall not exceed the purchase price of the part upon which such liability is based. The Company shall in no event be liable to the Purchaser, any successors in interest or any beneficiary of this order for any consequential, incidental, indirect, special or punitive damages arising out of this order or any breach thereof, or

any defect in, or failure of, or malfunction of the parts hereunder, whether based upon loss of use, lost profits or revenue, interest, lost goodwill, work stoppage, impairment of other goods, loss by reason of shut-down or non-operation, increased expenses of operation or claims of customers of Purchaser for service interruption whether or not such loss or damage is based on contract, warranty, negligence, indemnity, strict liability or otherwise.

AIREND EXCHANGE PROGRAM

Your Ingersoll-Rand Company Construction Equipment Group Sales Offices and authorized distributors as well as Ingersoll-Rand International autonomous companies and authorized distributors now have an airend exchange program to benefit portable compressor users.

On the airend exchange program the exchange price is determined by the age and condition of the airend and may be classified by one of the following categories.

Category "A": The airend must not be over two years old and must have reusable rotor housing(s) and rotor(s).

Category "B": The airend must be between two and five years old and returned with two or more reusable major castings.

Category "C": The airend must be over five years old.

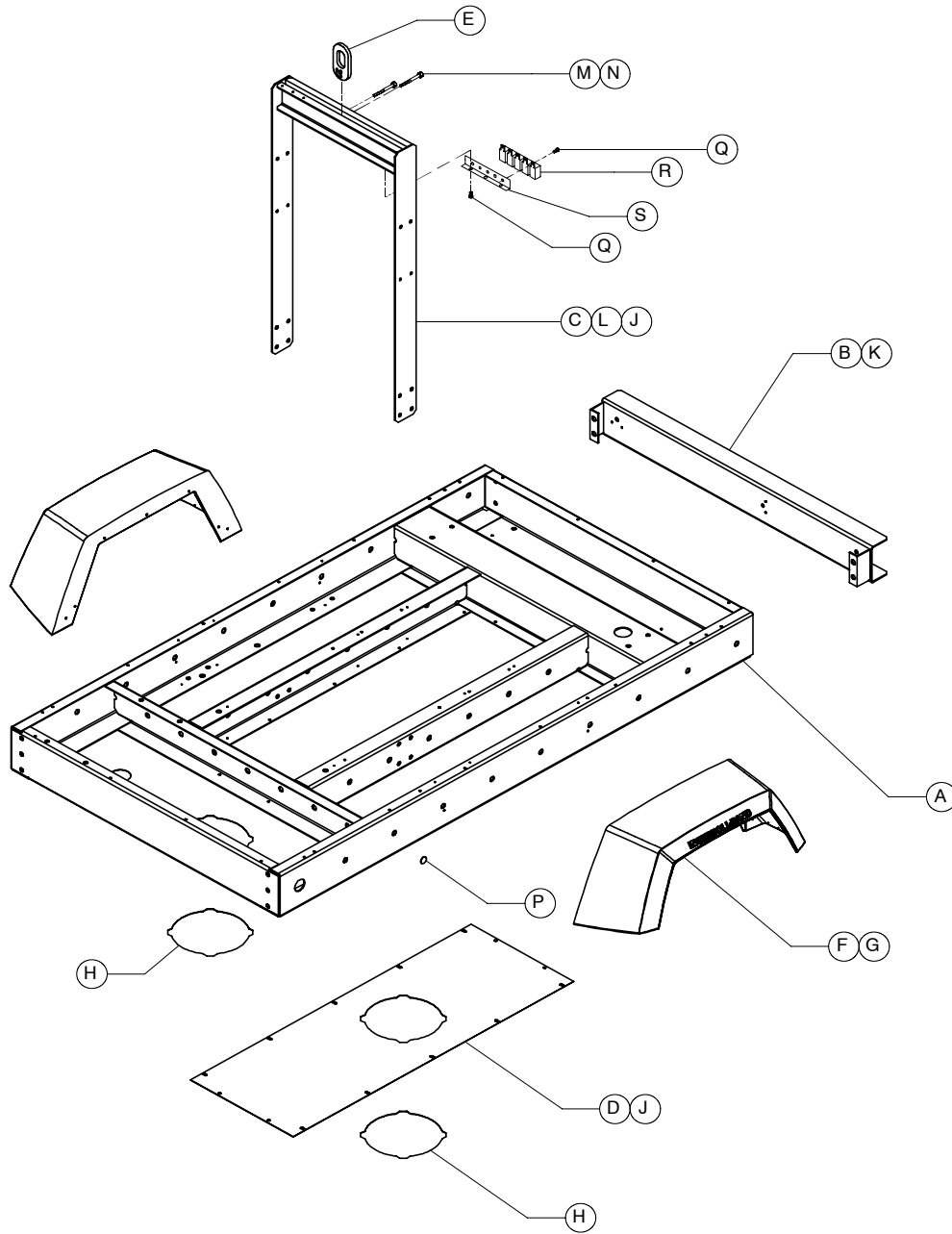
Your nearest sales office, autonomous company or authorized distributor must first contact the Parts Service Department at the factory at which your portable air compressor was manufactured for an airend exchange number. The airend must be tagged with this preassigned number and returned to the factory prepaid. The airend must be intact, with no excluded parts, otherwise the exchange agreement may be cancelled. The warranty on an exchange or factory rebuilt airend is 365 days.

Airends being returned to the factory in connection with a WARRANTY CLAIM must be processed through the Customer Service Department. If returned without a Warranty MRR (Material Return Request) Number, no warranty claim will be considered.

CONTENTS

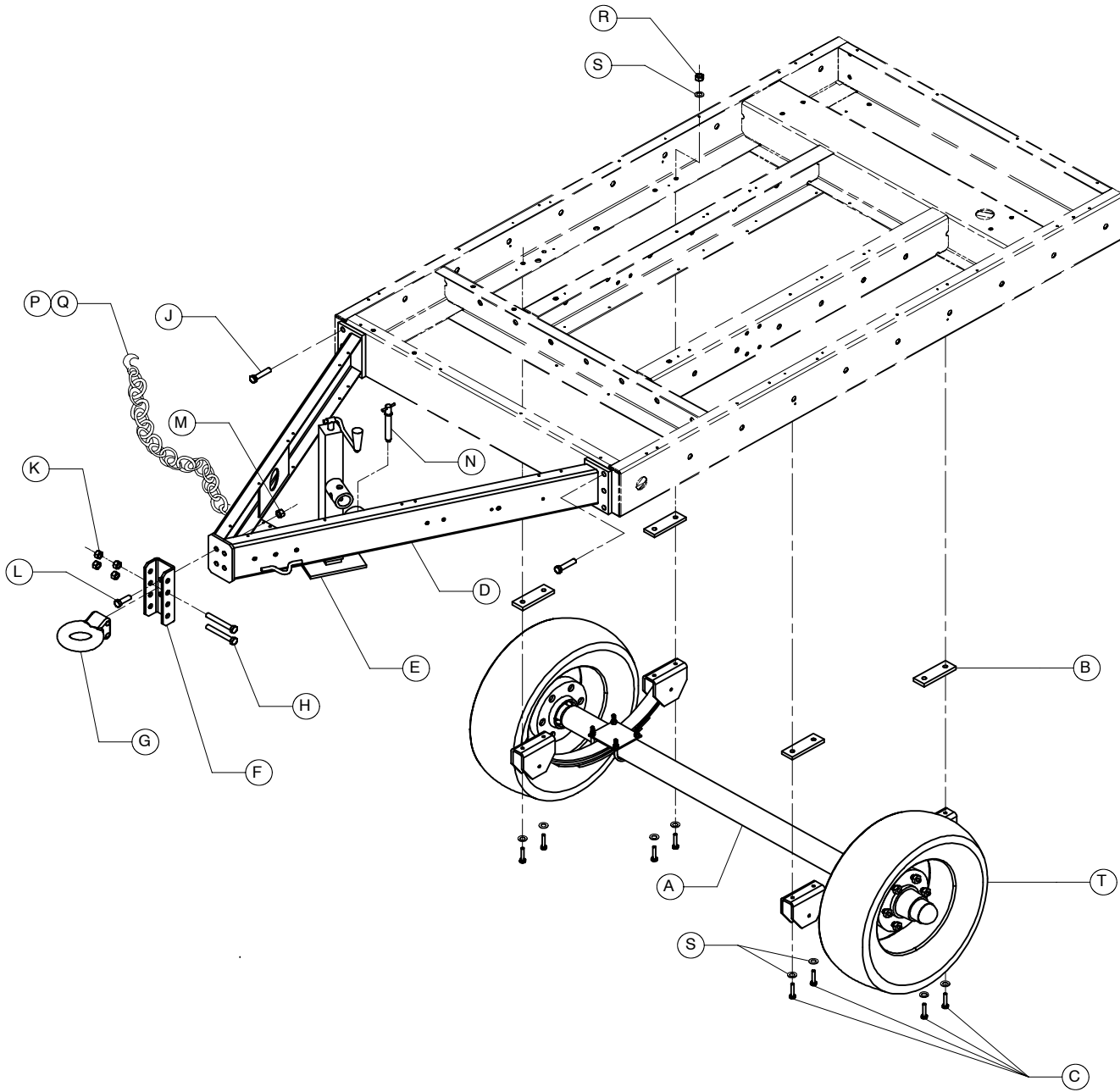
Frame
Drawbar & Running Gear
Running Gear Complete
Electric Brake Wiring
Electric Brake Shoes
15" Tire & Wheel Assembly
Engine Complete
Exhaust Complete
Cooling Complete
Airend Complete
Airend Assembly
Unloader Valve
Oil Temperature Bypass Valve
OTBV / Oil Filter Mounting
Minimum Pressure Valve
Service Air
Seperator Tank
Fuel Tank Complete
Air Cleaner Assembly
Air Intake Complete
Battery Assembly
Standard Wiring
Trailer Wiring
Inst/Control Panel
Standard Enclosure Complete
Galvanneal Enclosure Complete
Foam Insulation Complete
Decal Location

DRAWBAR END



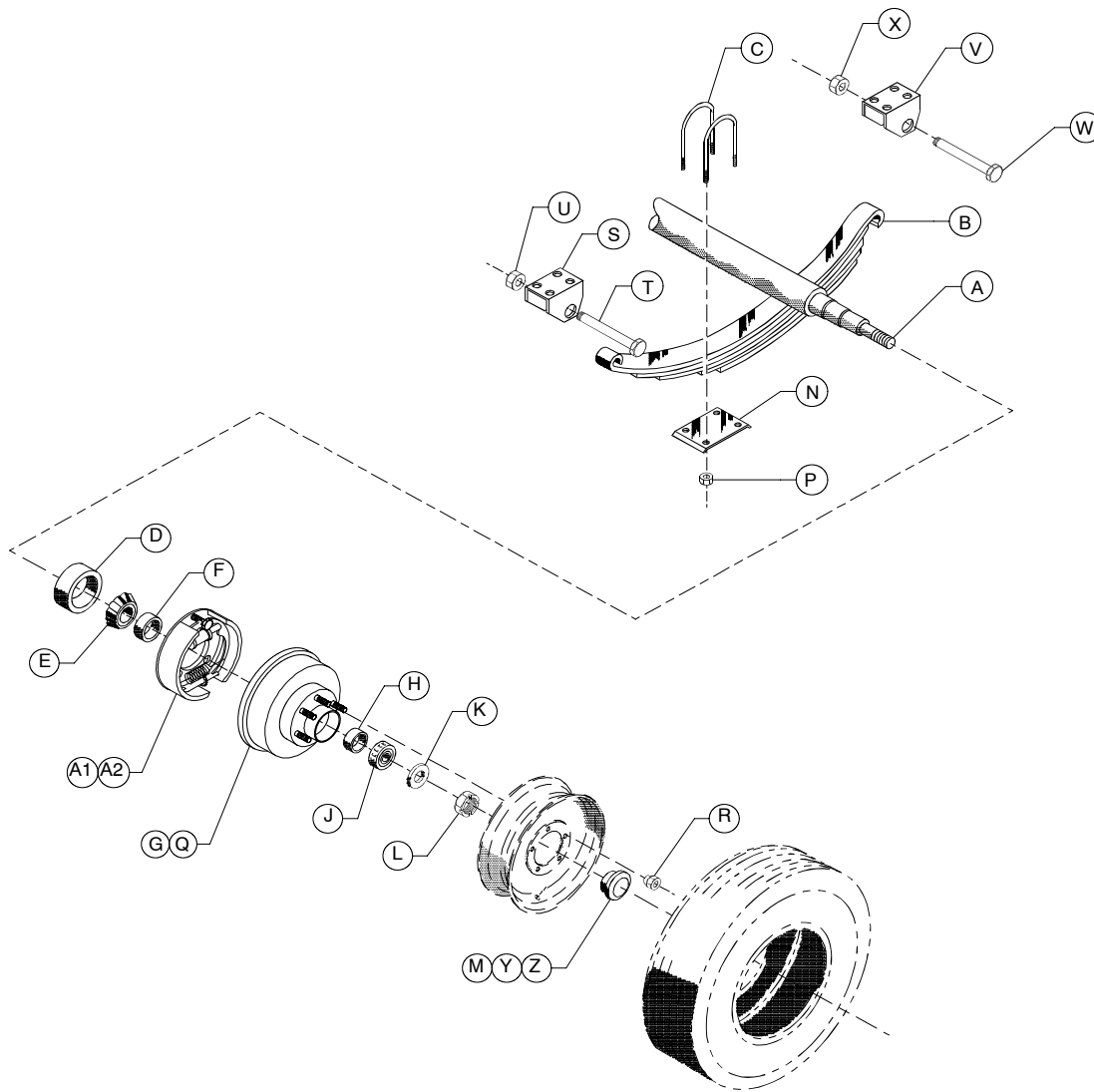
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A	54615208	1	FRAME ASSEMBLY	K	36888055	4	SCREW, HEX FLANGE M12-1.75 X 30
B	54667902	1	BUMPER	L	36879492	8	SCREW, HEX FLANGE M12-1.75 X 25
C	54742010	1	LIFTING BAIL	M	96700893	2	SCREW, HEX M16-2.0 X 60
D	54641840	1	PAN, MIDDLE BELLY	N	96704630	2	NUT, NYLOC M16
E	54759113	1	EYE, LIFTING BAIL	P	54772041	12	PLUG, SNAP-IN HOLE
F	36877579	2	FENDER	Q	92368687	8	SCREW, TAPPING M06-1.0 X 12
G	36797652	10	SCREW, TAPPING M06-1.0 X 12	R	54368048	5	RELAY
H	36880623	2	COVER, FLEXIBLE	S	54756200	1	BRACKET, RELAY MOUNTING
J	35279025	18	SCREW, TAPPING M08-1.25 X 20				

DRAWBAR END



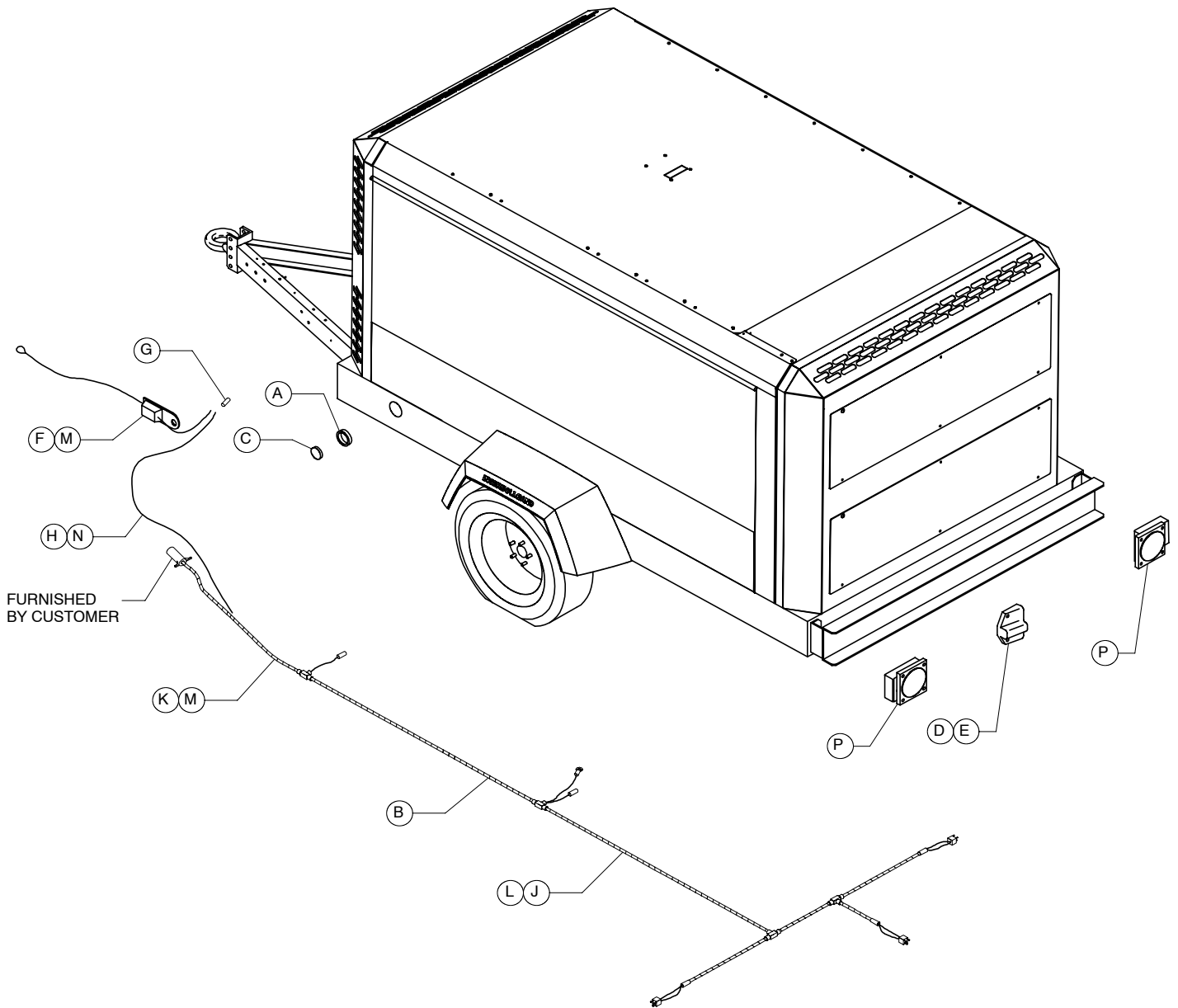
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54625322	1	RUNNING GEAR	K	96701750	4	NUT HEX M16-2.0
B	36880599	4	SPACER, RUNNING GEAR	L	39179072	4	BOLT, M16-2.0 X 50
C	96730395	8	SCREW, HEX M12-1.75 X 50	M	36879211	4	NUT, HEX FLANGE M16-2.0
D	36876621	1	DRAWBAR	N	35609544	1	PIN, QUICK RELEASE
E	54443577	1	JACK, SCREW	P	35610377	2	CHAIN ASSEMBLY
F	36757284	1	CHANNEL, PINTEL MTG 3-POSITION	Q	35372432	2	LOCK, COUPLING
G	35605187	1	PINTEL EYE 3"	R	35304047	8	NUT, NYLOC M12-1.75
H	35376094	2	SCREW, HEX M16-2.0 X 12	S	95935003	16	WASHER, FLAT
J	36879302	6	SCREW, HEX FLANGE M16-2.0 X 50	T	36026268	2	TIRE ASSEMBLY

RUNNING GEAR COMPLETE



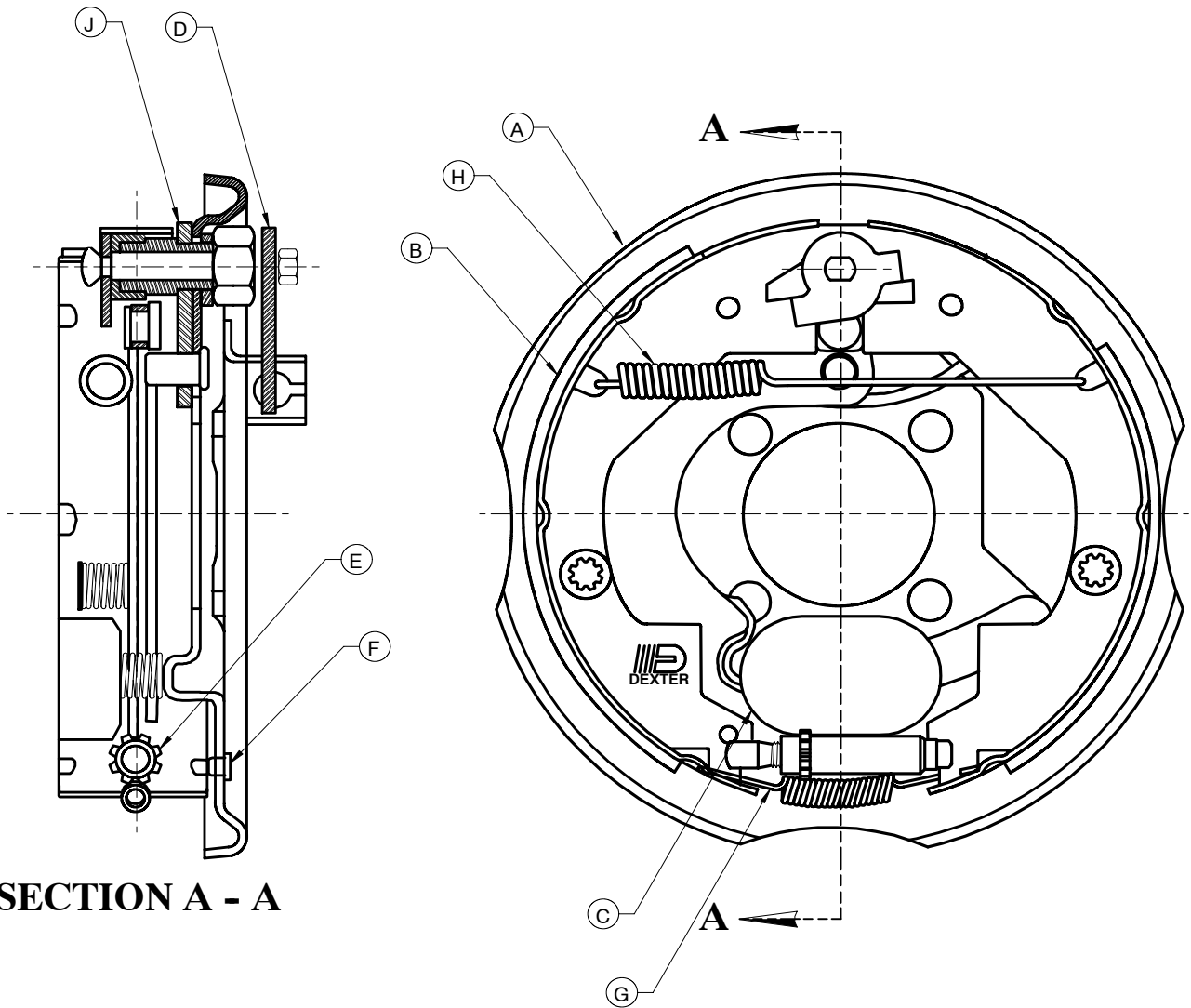
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54750997	1	BEAM, AXLE	Q	35361898	12	STUD
B	35315126	2	SPRING, SLIPPER	R	35315274	12	NUT, WHEEL
C	35360734	4	U-BOLT	S	35326958	2	HANGER, FRONT
D	35316868	2	SEAL, GREASE	T	35315340	2	BOLT, SHACKLE
E	35316876	2	CONE, INNER BEARING	U	35315357	2	NUT, TOP LOCK
F	35316884	2	CUP, INNER BEARING	V	35326966	2	HANGER, REAR
G	35390459	2	HUB, STUDDER	W	35315365	2	BOLT, KEEPER
H	35318831	2	CUP, OUTER BEARING	X	35315373	2	NUT, KEEPER
J	35318849	2	CONE, OUTER BEARING	Y	35379387	2	PLUG, GREASE CAP
K	35315209	2	WASHER, SPINDLE	Z	35390012	2	WASHER, TANG
L	35315217	2	NUT, SPINDLE	A1	35390814	1	BRAKE ASM., LH ELECTRIC
M	35379395	2	CAP, GREASE DUST	A2	35390822	1	BRAKE ASM., RH ELECTRIC
N	35315241	2	PLATE, TIE				
P	35315258	4	NUT, U-BOLT				

MANUAL NO. - ILLUSTR. NO. 54722160-004
 DATE/REV: 07/01 A



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	36893634	2	GROMMET, SIDE LIGHT	H	35346337	1	LUG, TERMINAL
B	54761101	1	HARNES, LIGHTING	J	35253038	4	CLAMP, 3/8
C	35367051	2	LIGHT, YELLOW CLEARANCE	K	37001252	1	CLAMP, SUPPORT
D	36895860	1	LIGHT, LICENSE	L	92368687	5	SCREW, TAPPING M06-1.0 X 14
E	36782837	2	SCREW, HEX SHEETMETAL #10 X 1.0	M	36797652	2	SCREW, TAPPING M06-1.0 X 12
F	35315944	1	SWITCH, BREAKAWAY	N	35120005	40"	WIRE, 14 GA BLACK
G	37140365	1	SPLICE, INSULATED	P	54671557	2	LIGHT, STOP/TAI/TURN

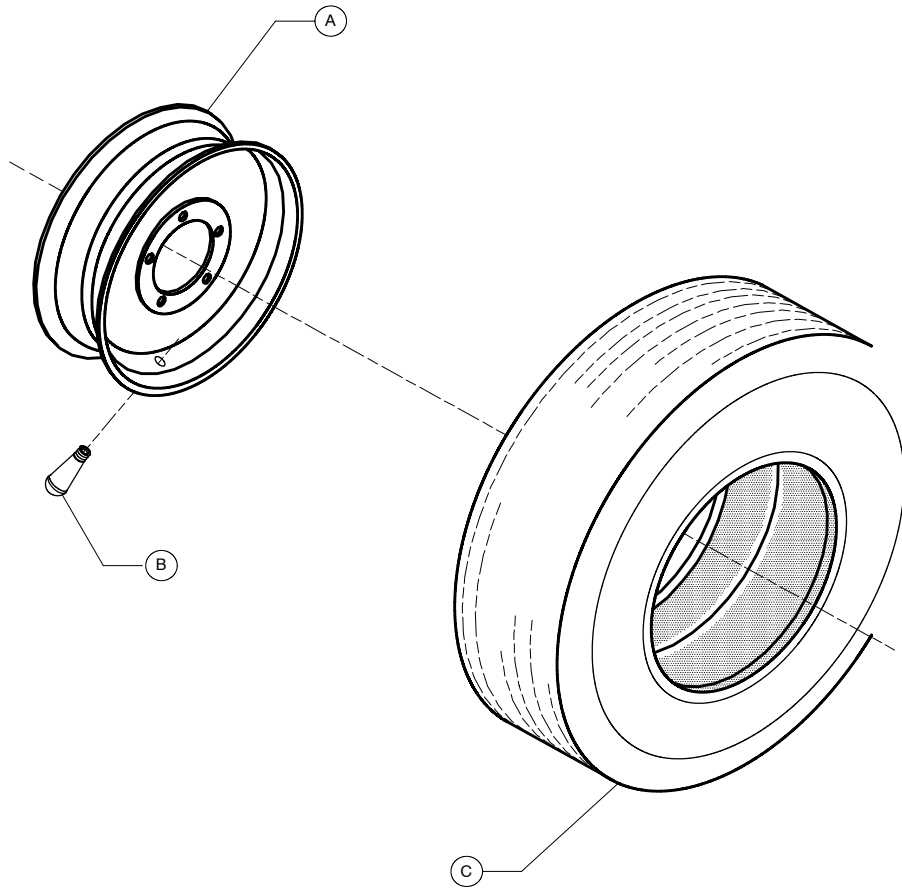
ELECTRIC BRAKE SHOE



SECTION A - A

Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35390830	1	PLATE ASM., LH BACKING	F	35391069	2	PLUG, ADJUSTING SLOT
	35390848	1	PLATE ASM., RH BACKING	G	35393727	2	SPRING KIT, ADJ. SCREW &
B	36895803	1	SHOE KIT, BRAKE	H	35391002	2	SPRING, RETRACTOR
C	36895811	2	MAGNET KIT	J	36895829	1	LEVER KIT, LH ACTUATING
D	35390913	2	LEVER, PARKING BRAKE		36895837	1	LEVER KIT, RH ACTUATING
E	35391010	2	SCREW ASM., ADJUSTING				

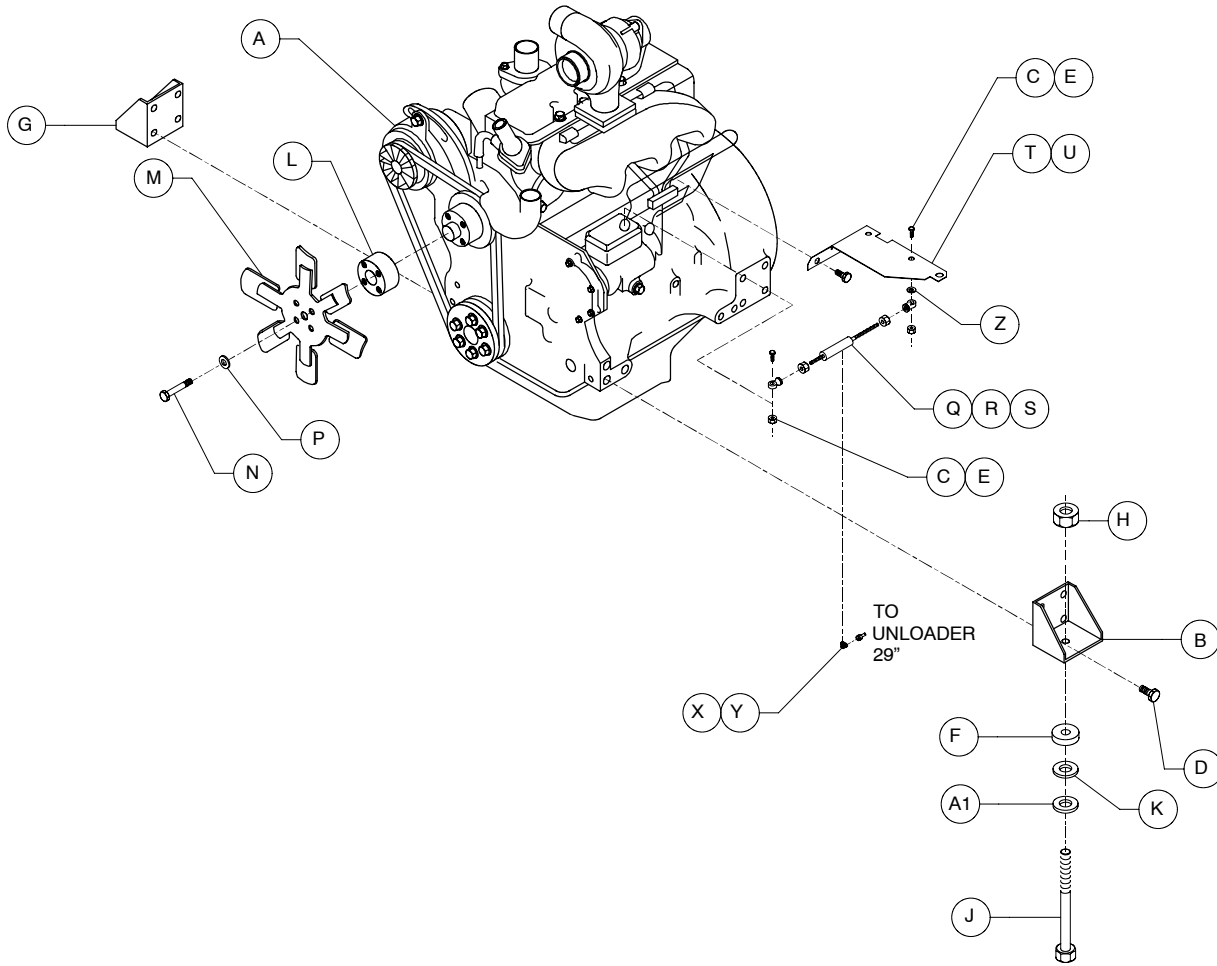
TIRE & WHEEL ASSEMBLY



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35318757	1	WHEEL, 15 X 6				
B	35282565	1	VALVE STEM				
C	36846319	1	TIRE, ST225/75R15D				

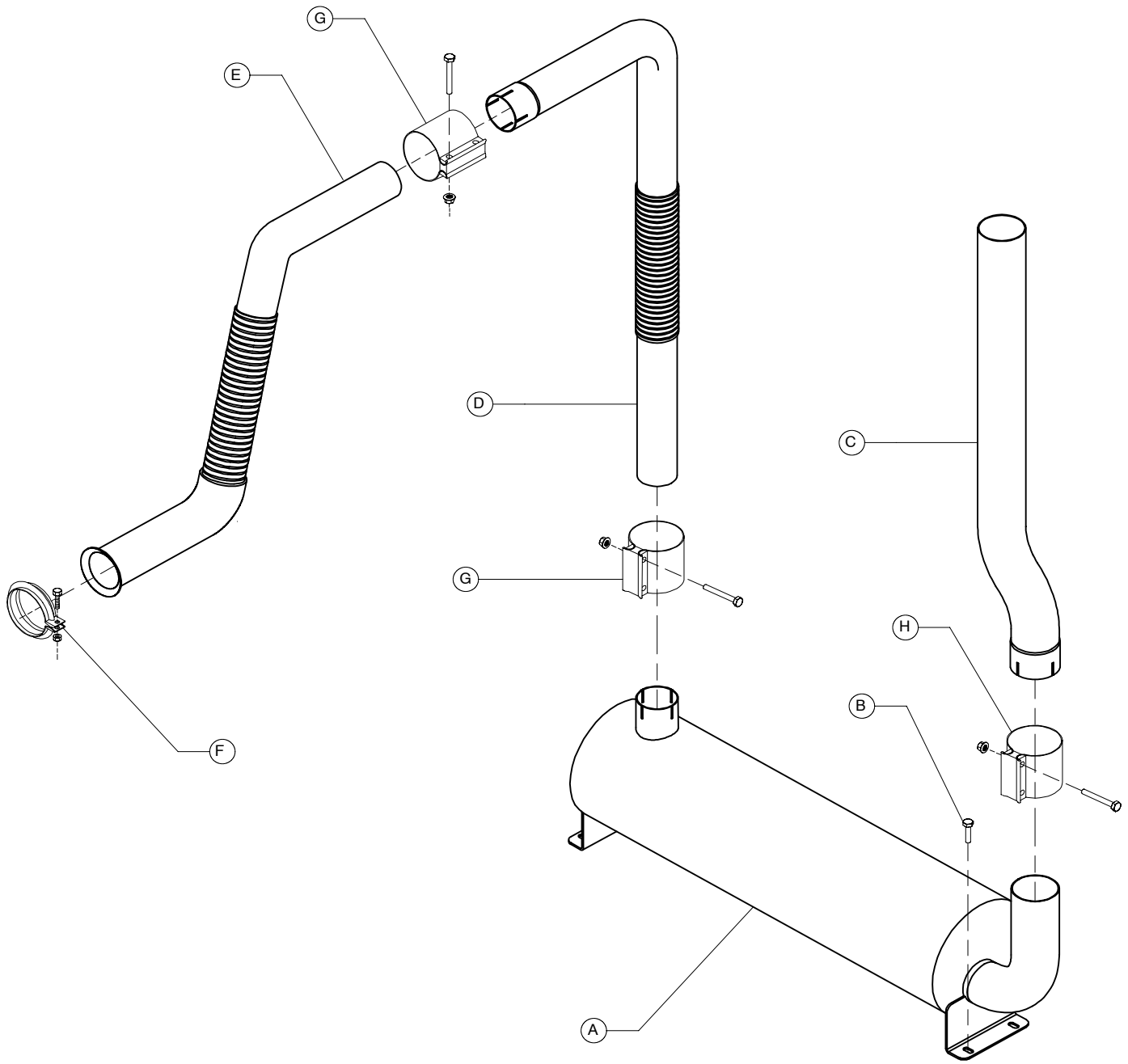
MANUAL NO. - ILLUSTR. NO. 54722160-007 DATE/REV: 07/01 A

DRAWBAR END ←



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54757869	1	ENGINE	L	54749056	1	SPACER, FAN
B	54756739	1	BRACKET, STSD ENGINE	M	54731468	1	FAN
C	96701461	2	SCREW, HEX M06-1.0 X 25	N	96726435	4	SCREW, HEX M08-1.25 X 20
D	36888055	6	SCREW, HEX FLANGE M12-1.75 X 30	P	96701396	4	WASHER, FLT
E	36769032	2	NUT, HEX LOCK M06-1.0	Q	35592435	1	CYLINDER, PNEUMATIC
F	54756697	2	ISOLATOR, CENTER BOND	R	35328467	2	BEARING, ROD END
G	54756507	1	BRACKET, CRBSD ENGINE	S	95923074	2	NUT, JAM 5/16-24
H	35304047	2	NUT, NYLOC M12-1.75	T	36877223	1	BRACKET, AIR CYLINDER
			PRIOR TO SN 329523	U	96701479	2	SCREW, HEX M10-1.5 X 16
	96704630	2	NUT, NYLOC M16-2.0	V	95934857	2	SCREW, HEX .25-20 X 1.25
			BEGIN WITH SN 329523	W	95923298	2	NUT, HEX.25-20
J	96739958	2	SCREW, HEX M12-1.75 X 70	X	35370386	1	ELBOW, MALE 1/8NPT X 3/8 TUBE
			PRIOR TO SN 329523	Y	35356484	*	TUBING, 3/8 SYNDFLEX
	96701503	2	SCREW, HEX M16-2.0 X 90	Z	95935029	1	WASHER, FLAT
			BEGIN WITH SN 329523	A1	95935052	2	WASHER, FLAT
K	54429295	2	WASHER, SNUBBING				BEGIN WITH SN 329523
	35327212	2	WASHER, SNUBBING		36881696	AR	FILTER, ENGINE OIL
			BEGIN WITH SN 329523		36534659	AR	FILTER, ENG FUEL WATER SEP

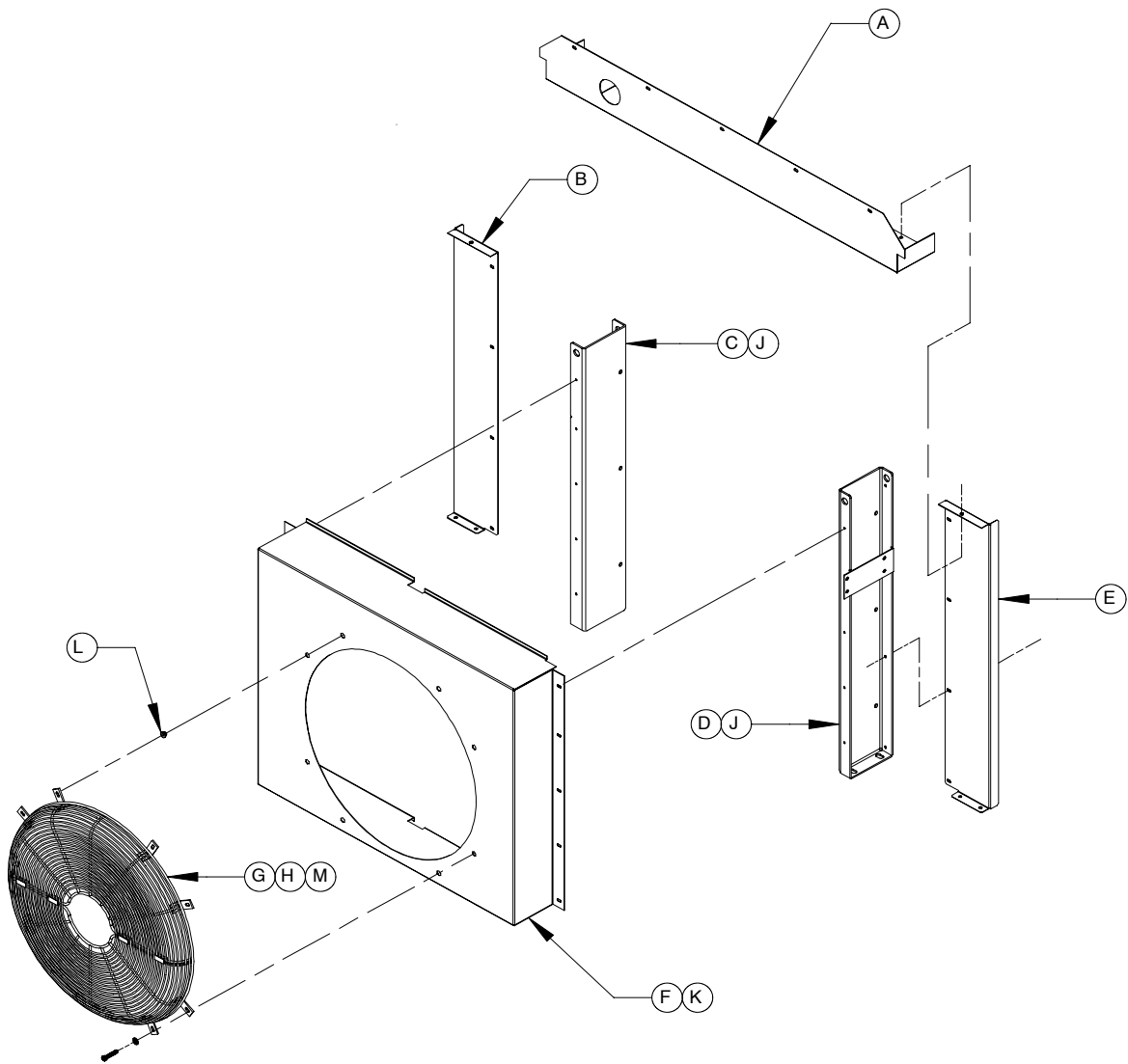
EXHAUST COMPLETE



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	22058259	1	MUFFLER				
B	35279025	4	SCREW, TAPPING M08-1.25 X 20				
C	54738760	1	PIPE, EXHAUST				
D	22058275	1	TUBE, EXHAUST				
E	22058267	1	EXHAUST PIPE ASM.				
F	36881175	1	CLAMP, EXHAUST				
G	35293059	2	CLAMP, EXHAUST SEAL				
H	35293059	3	CLAMP, EXHAUST SEAL				

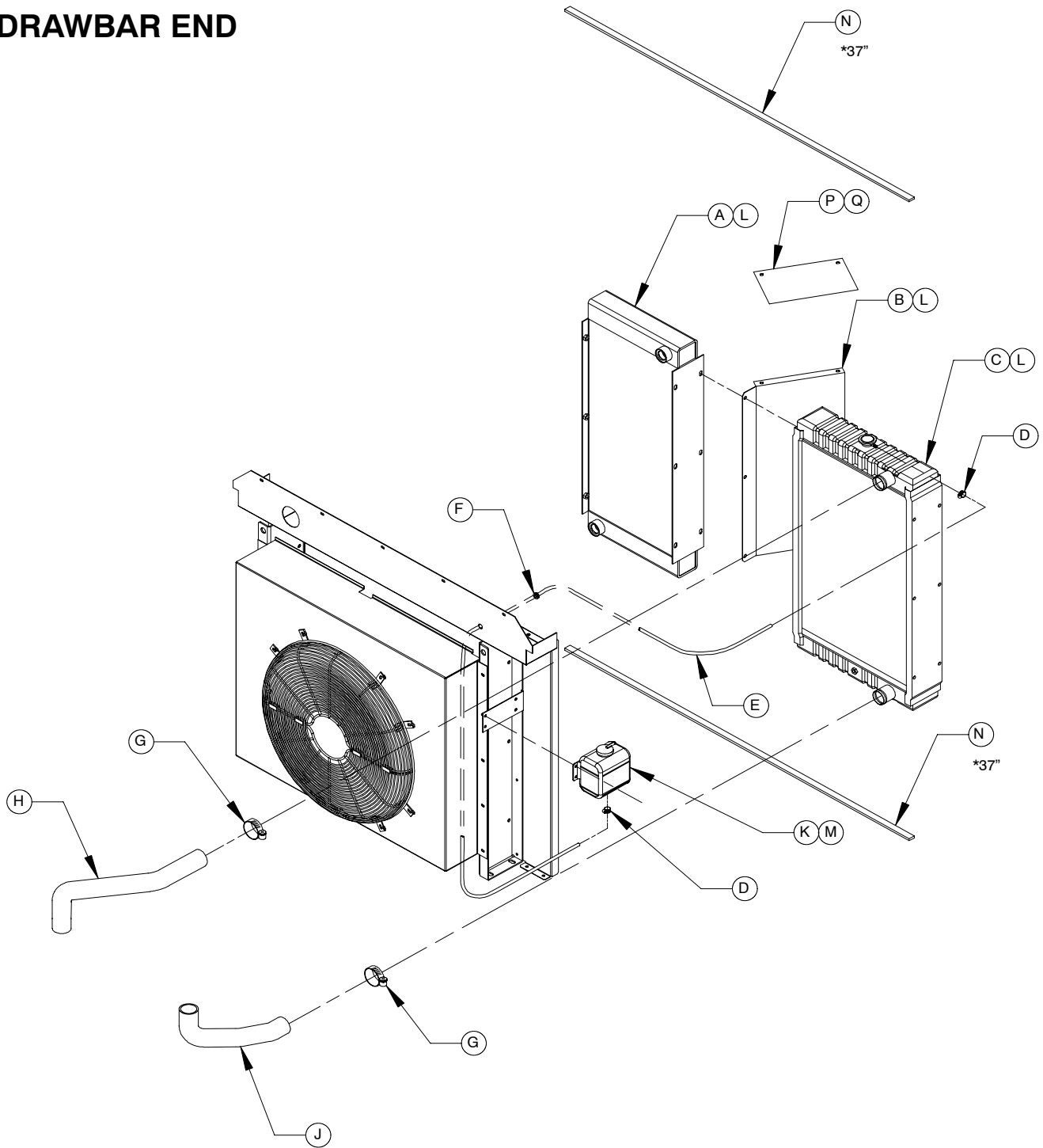
MANUAL NO. - ILLUSTR. NO.
54722160-009
DATE REV: 10/01 B

➤ DRAWBAR END



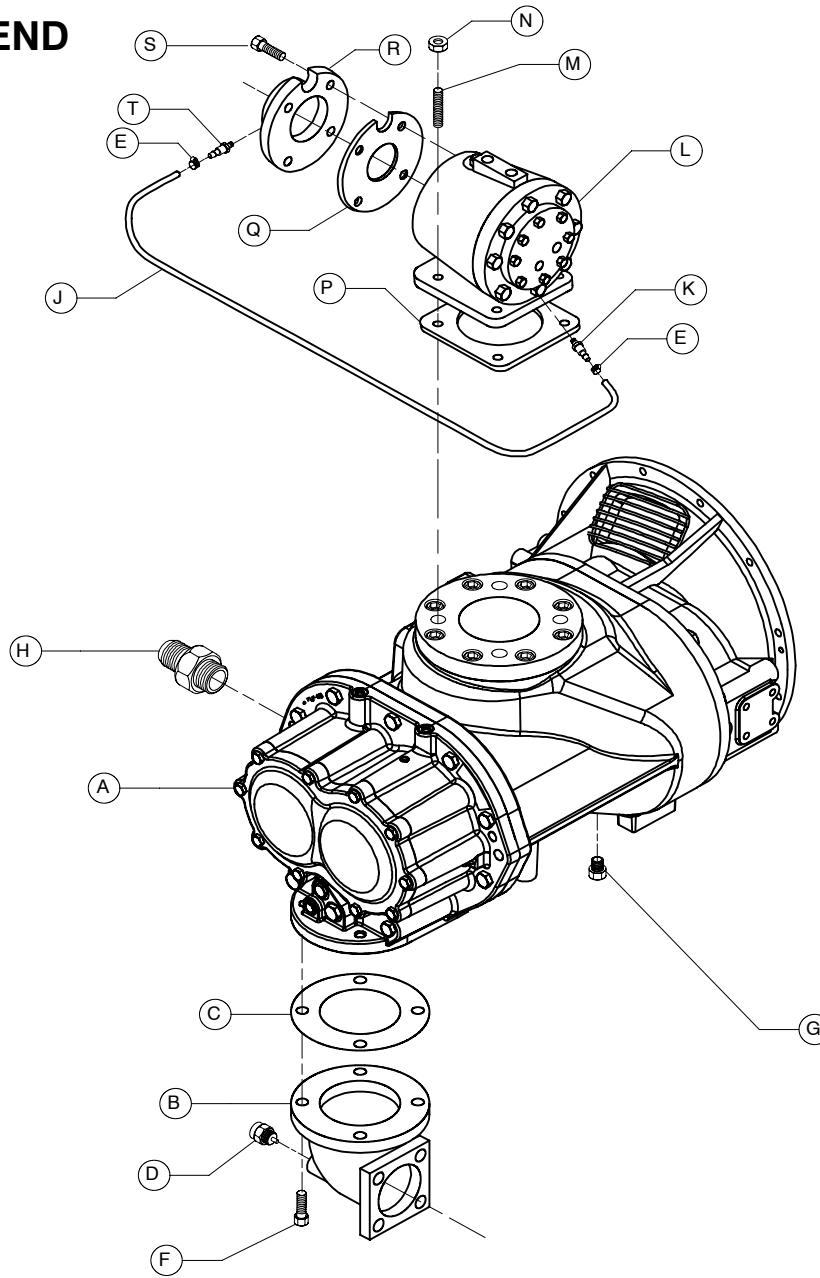
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54656749	1	BAFFLE, TOP	H	95934998	8	WASHER, FLAT
B	54703566	1	BAFFLE, RH COOLER	J	36879492	4	SCREW, HEX FLANGE M12-1.75 X 25
C	54637111	1	SUPPORT, OIL COOLER	K	36797652	10	SCREW, TAPPING M06-1.0 X 12
D	54637103	1	SUPPORT, RADIATOR	L	36895746	8	NUTSERT, M08
E	54703558	1	BAFFLE, LH COOLER	M	96702055	8	SCREW, HEX M08-1.25 X 20
F	54665781	1	SHROUD, FAN				
G	36878262	1	GUARD, FAN				

➤ DRAWBAR END



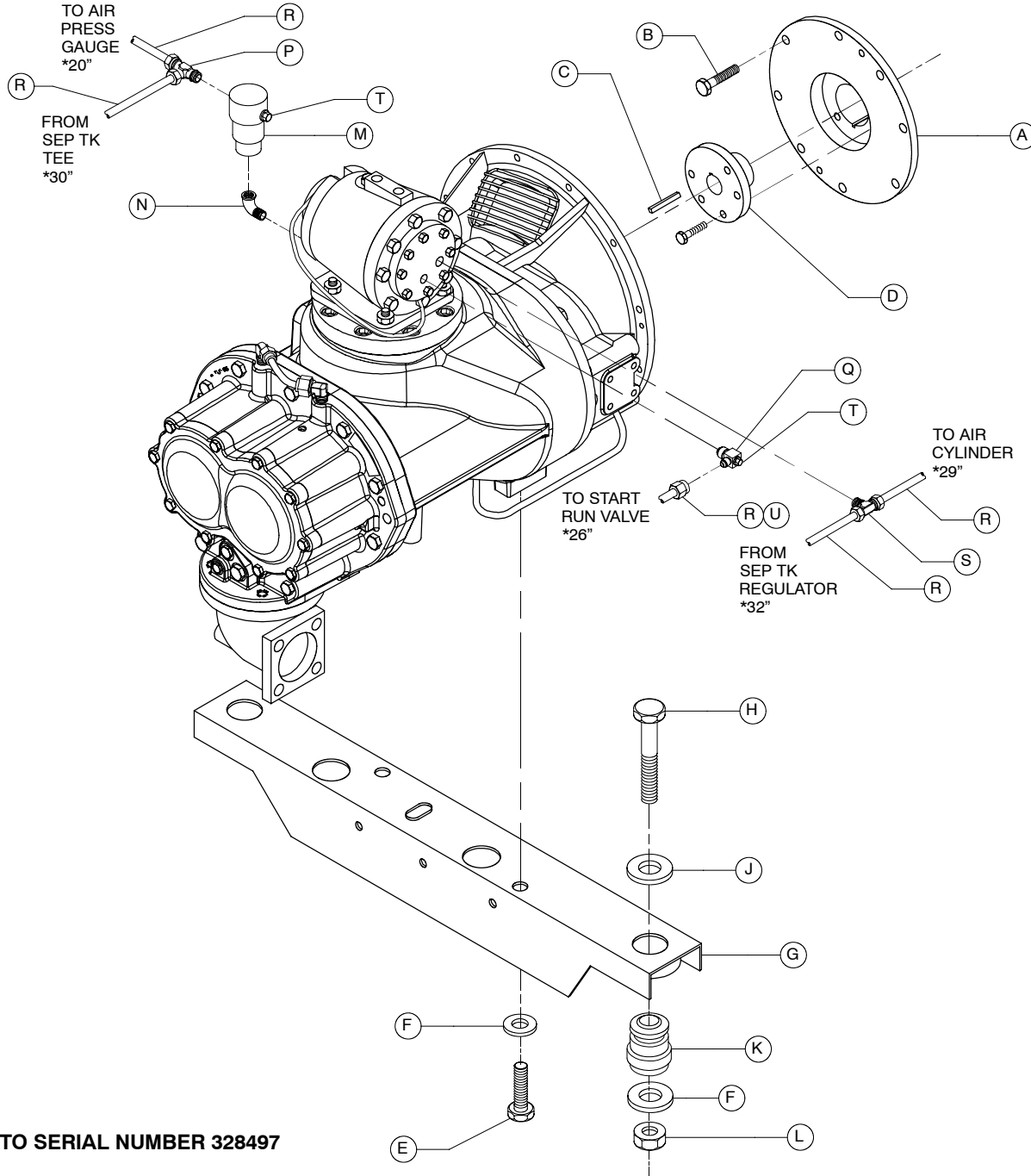
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54738893	1	OIL COOLER	J	54666342	1	HOSE, BOTTOM RADIATOR
B	54738737	1	BAFFLE, SPLITTER	K	36884948	1	BOTTLE, COOLANT RECOVERY
C	22056386	1	RADIATOR	L	96702279	18	SCREW, HEX M10-1.50 X 20
D	35296342	2	CLAMP, WORM GEAR	M	92368687	4	SCREW, TAPPING M06-1.0 X 12
E	35360775	42"	TUBING, 5/16"	N	35140409	*	FOAM
F	35285162	1	GROMMET	P	22060503	1	PLATE, BAFFLE
G	35221639	4	CLAMP, HOSE	Q	36797652	2	SCREW, TAPPING M06-1.0 X 12
H	54666334	1	HOSE, TOP RADIATOR				

DRAWBAR END



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	42514505	1	AIREND ASM.	K	54642921	1	ADAPTER, UNLOADER
B	35842160	1	ELBOW, DISCHARGE	L	35060631	1	VALVE, UNLOADER
C	35575570	1	GASKET, AIREND DISCHARGE	M	35323450	4	STUD, M16-2.0 X 55
D	54764964	1	SWITCH, ALARM	N	96701750	4	NUT, HEX M16-2.0
E	35377621	2	CLAMP, SPRING	P	35589589	1	GASKET, UNLOADER / A-E
F	35375385	4	SCREW, HEX M16-2.0 X 40	Q	35588318	1	GASKET, UNLOADER INLET
G	54636584	1	ORIFICE INJECTION	R	35843168	1	FLANGE, UNLOADER INLET
H	95955993	1	CONNECTOR, 1.31 SAE X -16 JIC	S	96702048	4	SCREW, HEX M08-1.25 X 16
J	35282292	14"	TUBING, TYGON	T	35316587	1	ADAPTER, BARBED 1/8 X 1/8 NPT

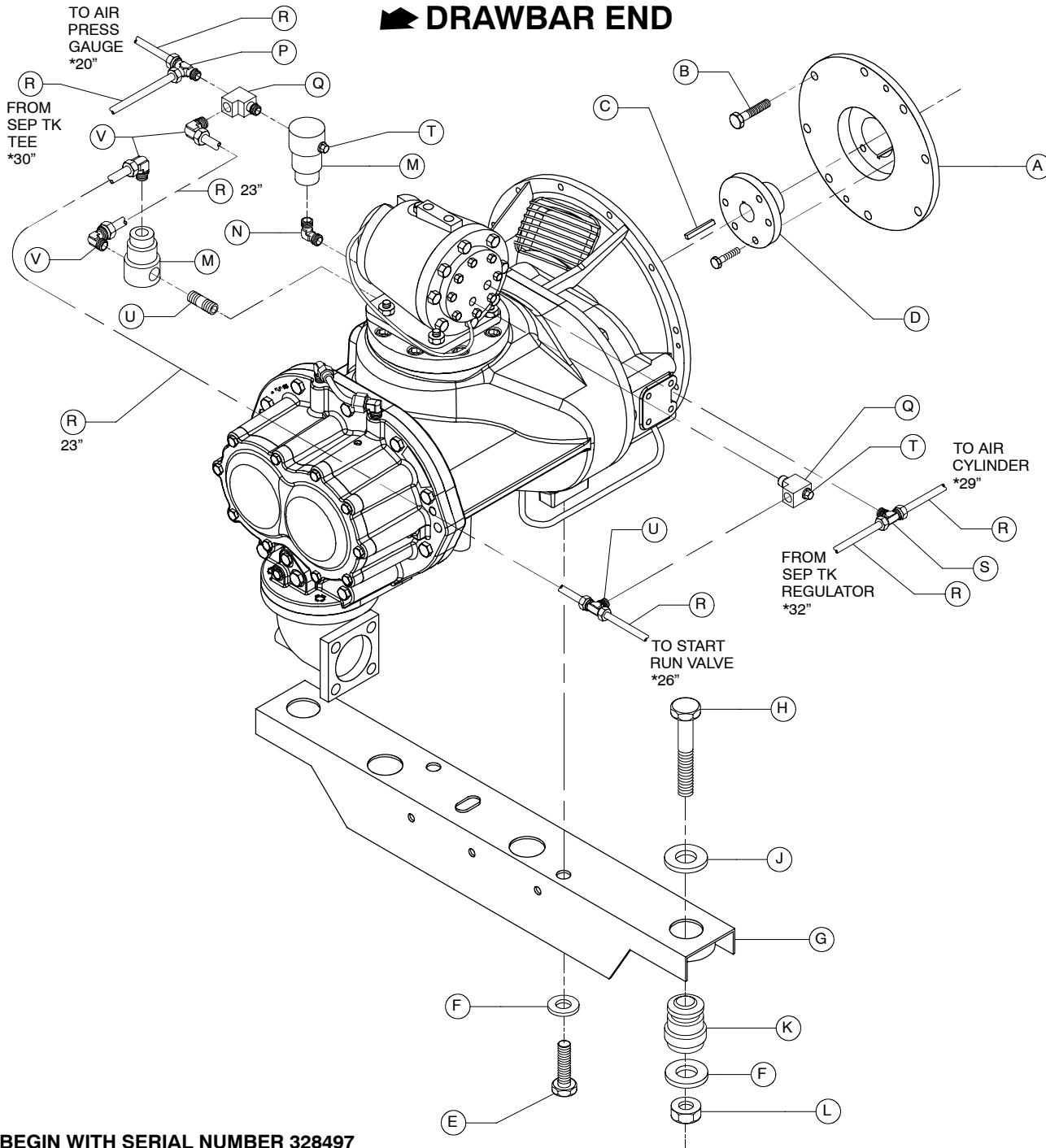
DRAWBAR END



PRIOR TO SERIAL NUMBER 328497

Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35834779	1	COUPLING, CLUTCH	L	96704630	2	NUT, NYLOC M16-2.0
B	95220604	8	SCREW, SOCKET HEAD 3/8-16 X .75	M	35322379	1	VALVE, BLOWDOWN
C	35321421	1	KEY, 3/8 SQ X 2.75	N	95364469	1	ELBOW, 1/4
D	35589621	1	BUSHING, CLUTCH	P	35369503	1	TEE, 1/4NPT X 3/8 TUBE
E	35375591	2	SCREW, HEX M16-2.0 30	Q	35114545	1	TEE, STREET 1/4NPT
F	95935052	4	WASHER, FLAT	R	35356484	*	TUBING, 3/8 SYNDFLEX
G	43208511	1	SUPPORT, AIREND	S	35373976	1	TEE, 1/4 NPT X 3/8 TUBE
H	96701503	2	SCREW, HEX M16-2.0 X 90	T	36766756	2	ORIFACE, MUFFLER .140
J	35327212	2	WASHER, SNUBBER	U	35369347	1	CONN, MALE 1/4NPT X 3/8 TUBE
K	35318229	2	ISOLATOR, CENTER BOND MOUNT				

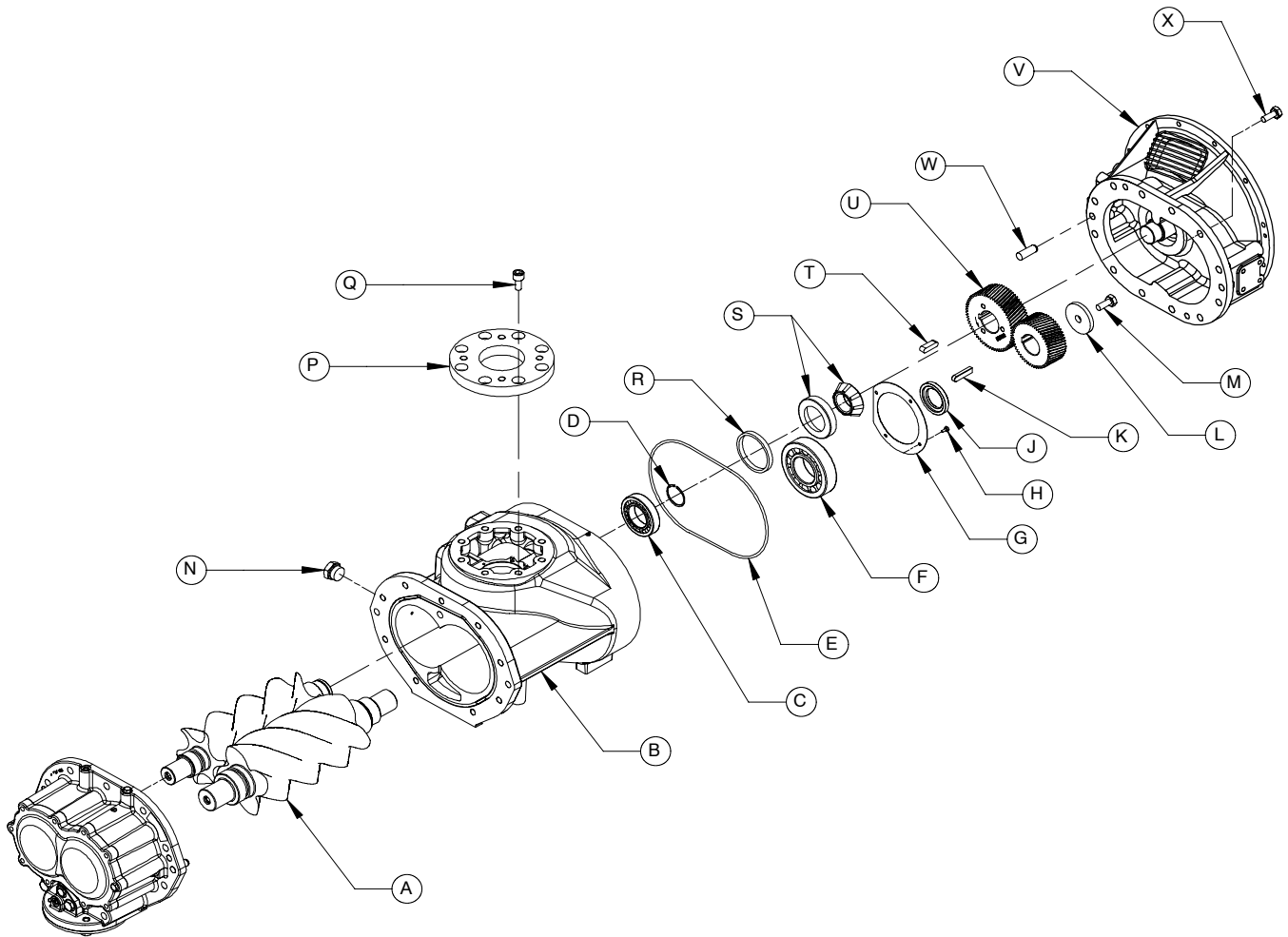
➡ DRAWBAR END



BEGIN WITH SERIAL NUMBER 328497

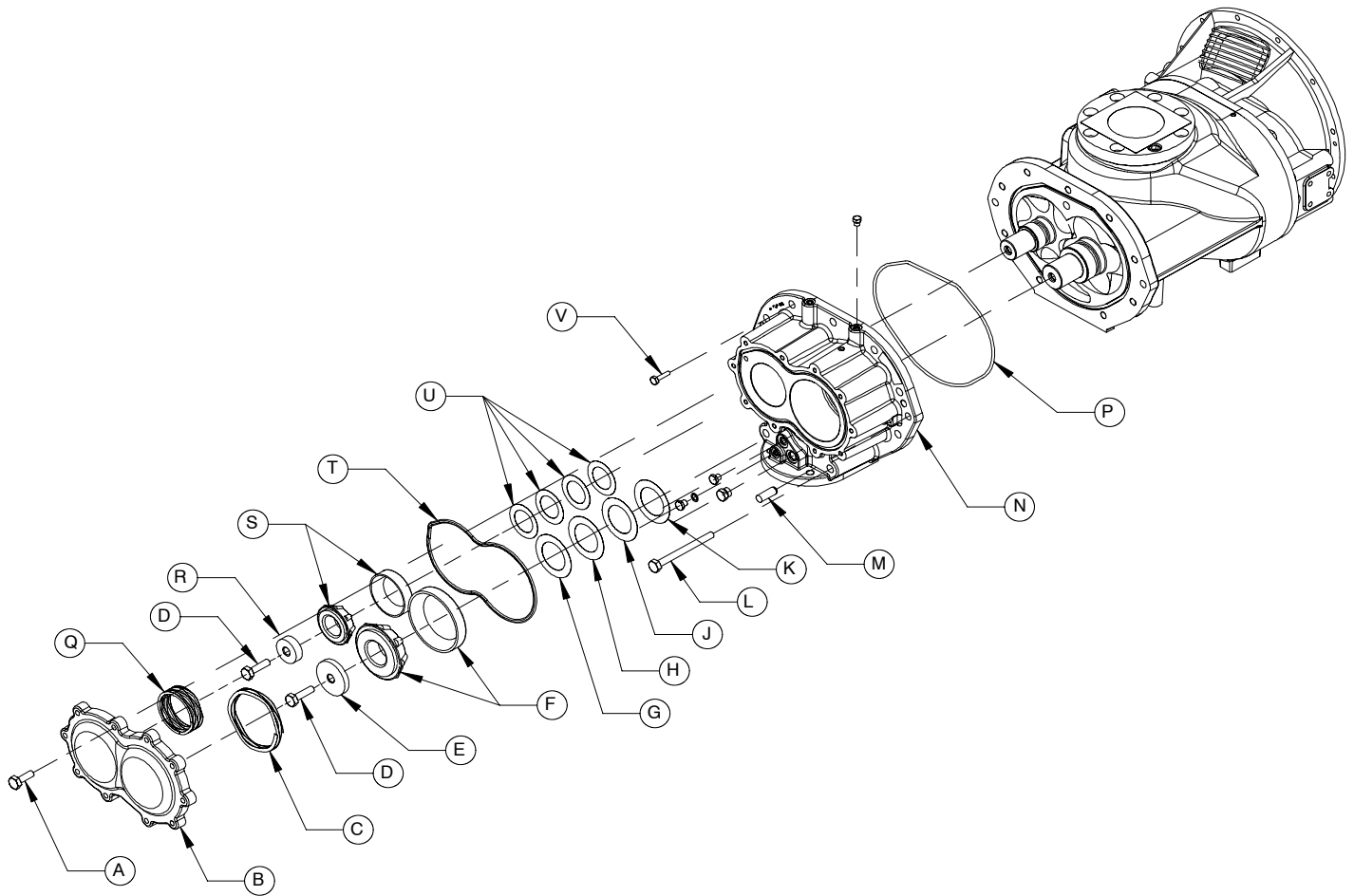
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35834779	1	COUPLING, CLUTCH	L	96704630	2	NUT, NYLOC M16-2.0
B	95220604	8	SCREW, SOCKET HEAD 3/8-16 X .75	M	35322379	2	VALVE, BLOWDOWN
C	35321421	1	KEY, 3/8 SQ X 2.75	N	95364469	1	ELBOW, 1/4
D	35589621	1	BUSHING, CLUTCH	P	35369503	1	TEE, 1/4NPT X 3/8 TUBE
E	35375591	2	SCREW, HEX M16-2.0 30	Q	35114545	2	TEE, STREET 1/4NPT
F	95935052	4	WASHER, FLAT	R	35356484	*	TUBING, 3/8 SYNDFLEX
G	43208511	1	SUPPORT, AIREND	S	35373976	2	TEE, 1/4 NPT X 3/8 TUBE
H	96701503	2	SCREW, HEX M16-2.0 X 90	T	36766756	2	ORIFACE, MUFFLER .140
J	35327212	2	WASHER, SNUBBER	U	95944573	1	NIPPLE, 1/4NPT X 7/8"
K	35318229	2	ISOLATOR, CENTER BOND MOUNT	V	35369354	3	ELBOW, MALE 1/4 X 3/8 TUBE

DRAWBAR END



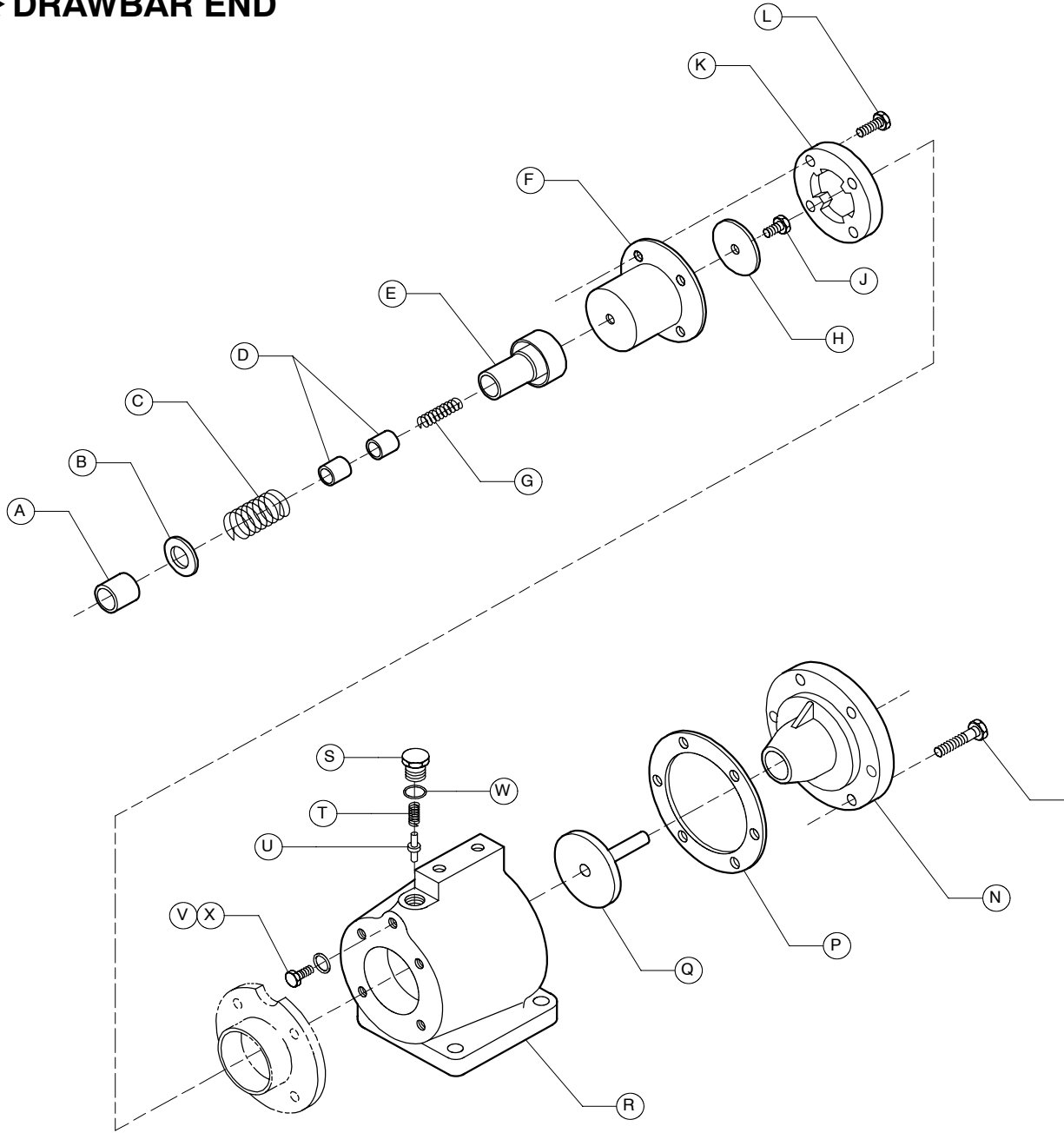
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	42495101	1	SET, ROTOR JACKSHAFT	M	96706254	1	SCREW, HEX HD M16 X 35
B	54509187	1	HOUSING, ROTOR	N	95939856	1	PLUG, HEX 1 5/16"
C	35609361	1	BEARING, CYLINDRICAL	P	54642921	1	ADAPTER, INLET
D	95223806	1	RING, EXTERNAL RETAINING	Q	35358274	8	SCREW, SOC HD M16-2.0 X 25
E	54680939	1	O-RING, ROTOR HOUSING INLET END	R	54643432	1	SPACER
F	35313550	1	BEARING, CYLINDRICAL	S	54469242	1	BEARING, TAPER ROLLER
G	54654819	1	RETAINER, BEARING MR INLET	T	95688289	1	KEY, SQUARE FR
H	96716105	4	SCREW, HEX HD M6 X 12	U	54610779	1	SET, GEAR
J	54686936	1	SPACER, GEAR MR	V	54611918	1	GEARCASE
K	96741459	1	KEY, MR RECTANGULAR	W	35295336	2	PIN, DOWEL M16 X 40
L	35255819	1	CLAMP, PLATE	X	96706262	8	SCREW, HEX HD M16 X 45

DRAWBAR END



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	96705983	10	SCREW, HEX HD M10 X 35	L	96707377	2	SCREW, HEX HD M16 X 150
B	54523980	1	COVER, REAR BEARING	M	35295336	2	PIN, DOWEL M16 X 40
C	54643895	1	SPRING, WAVE	N	54509203	1	HOUSING, REAR BEARING
D	96710553	2	SCREW, HEX HD M16 X 50	P	54680921	1	O-RING, RH TO BH
E	54635644	1	RETAINER, MR BEARING	Q	54643903	1	SPRING, WAVE
F	39309117	2	BEARING, TAPER ROLLER	R	54635651	1	RETAINER, FR BEARING
G	39312079	1	SHIM, ROTOR END CLEARANCE .05	S	35600113	2	BEARING, TAPER ROLLER
H	39312293	1	SHIM, ROTOR END CLEARANCE .25	T	95643383	1	O-RING, BEARING CVR TO BH
J	39312301	1	SHIM, ROTOR END CLEARANCE .50	U	35355874	1	SET, DISCHG END CLEAR SHIM
K	39312319	1	SHIM, ROTOR END CLEARANCE 1.01	V	96716162	7	SCREW, HEX HD M16 X 45

DRAWBAR END

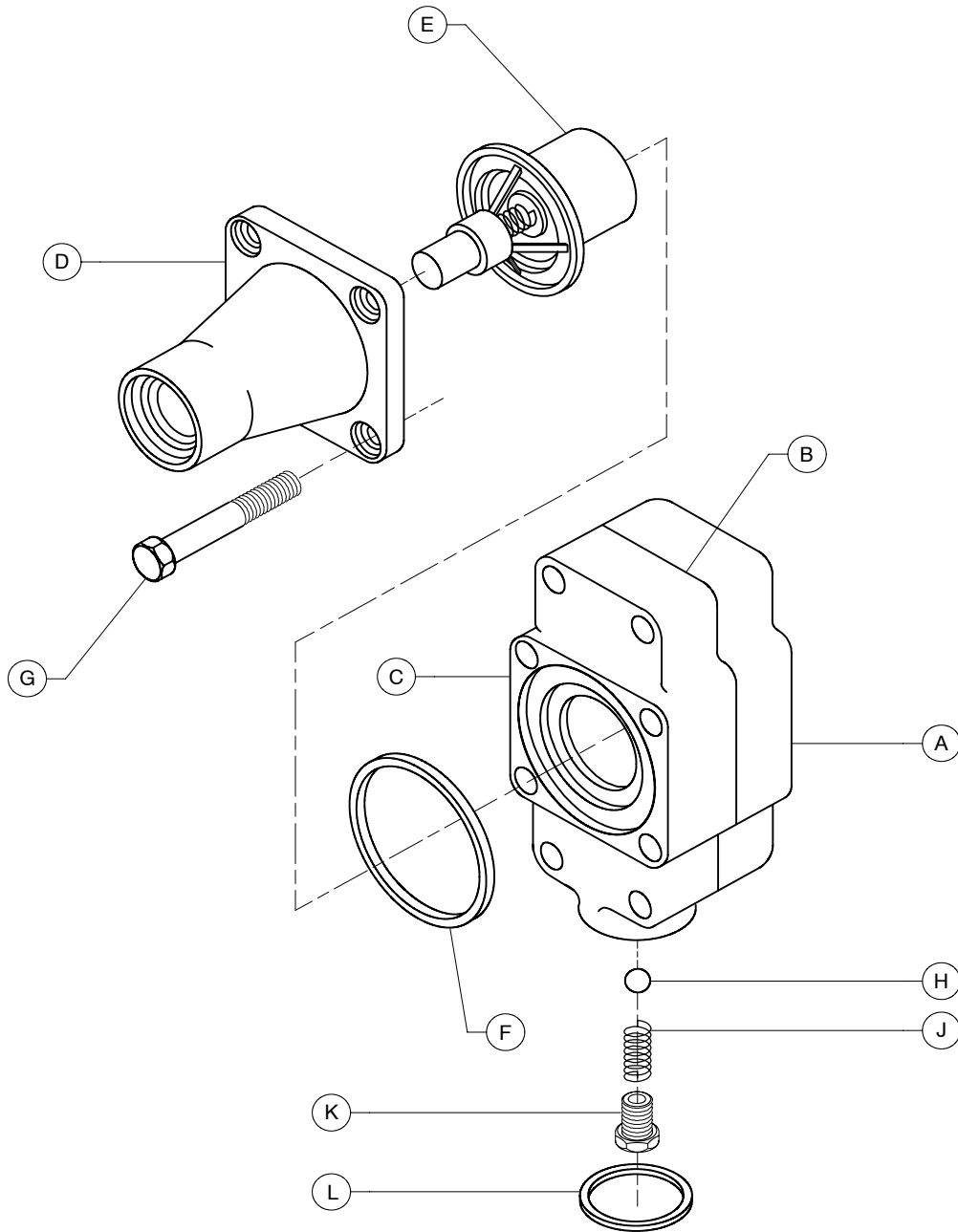


Item	CPN	Qty	Description	Item	CPN	Qty	Description
A *	35318013	1	BUSHING, HOUSING	N	35833227	1	HOUSING, PISTON
B *	35317205	1	WASHER	P *	35588300	1	GASKET, PISTON
C *	35322767	1	PIOSTON, SPRING	Q	35591122	1	PLATE, VALVE
D *	35318005	2	BUSHING, PISTON	R	36718427	1	BODY, UNLOADER
E	35588193	1	PISTON, UNLOADER	S *	35278555	1	PLUG
F *	35317197	1	DIAPHRAGM	T *	35318914	1	SPRING, PIN
G *	35321603	1	SPRING	U *	35317213	1	PIN, UNLOADER
H *	35317239	1	WASHER, PISTON	V	35289057	1	PLUG
J *	35321595	1	SCREW, CAP	W	35278589	1	O-RING
K	35836949	1	COVER, PISTON	X	35279959	1	O-RING
L	35271162	4	SCREW				
M	96702287	6	SCREW				

* ITEMS INCLUDED IN REPAIR KIT 35088798

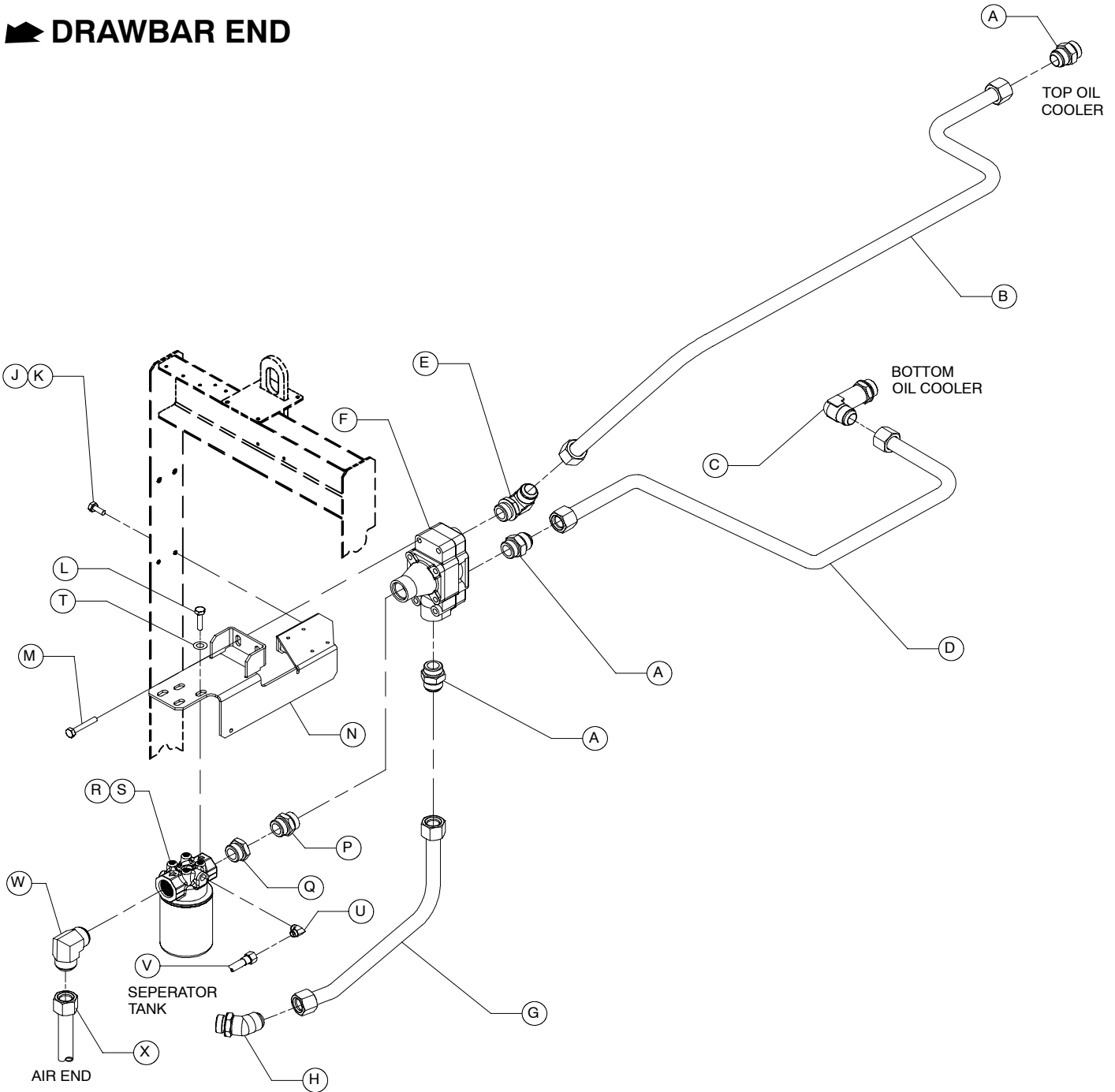
OIL TEMPERATURE BYPASS VALVE

DRAWBAR END



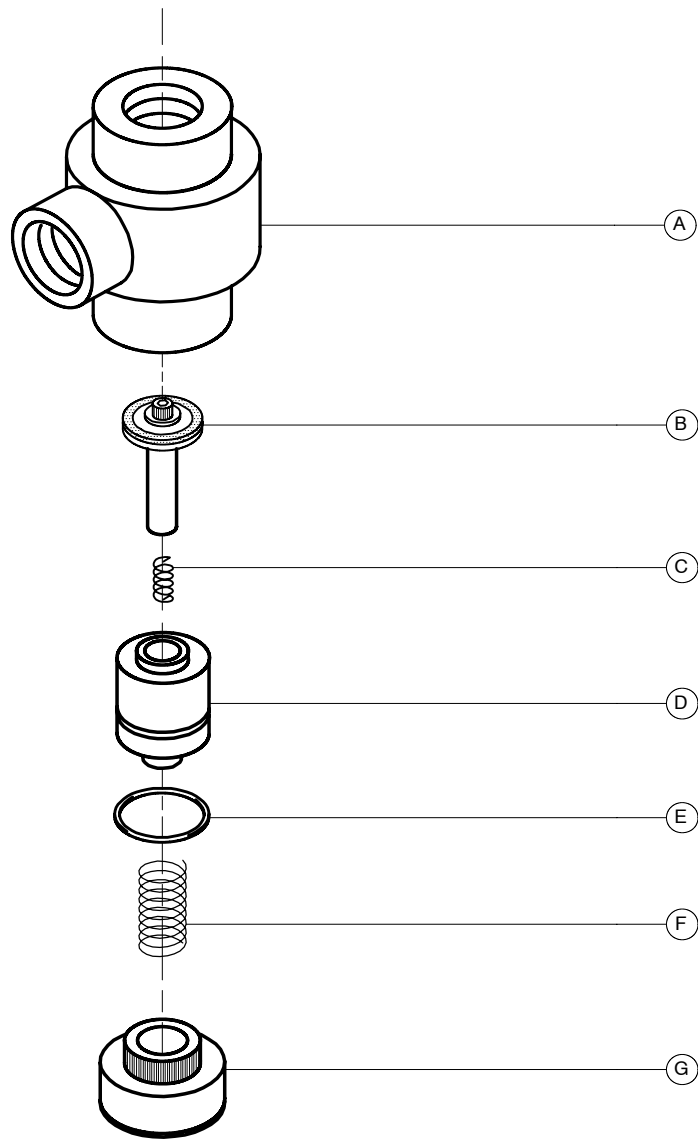
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	36876753	1	BODY	G	36786382	8	SCREW
B	35584242	1	GASKET	H	35288448	1	BALL
C	36876761	1	BODY	J	35379940	1	SPRING
D	36876779	1	COVER	K	36788164	1	PLUG
E	36782019	1	ELEMENT	L	36788172	1	SEAL
F	95022307	1	O-RING				

DRAWBAR END



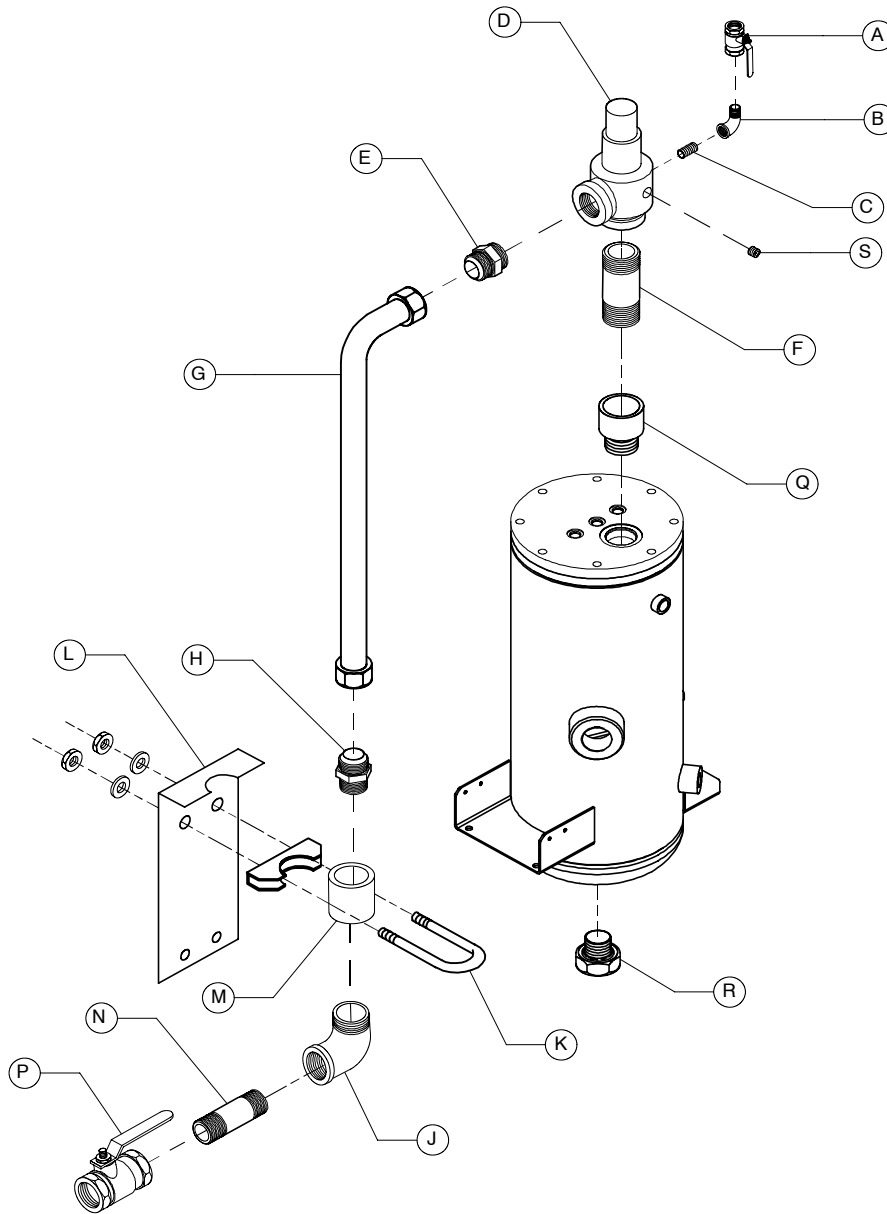
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	95955993	3	CONNECTOR, 1.31 SAE	M	36786382	2	SCREW, M08-1.25 X 70
B	54679998	1	TUBE, OIL COOLER TOP	N	36880367	1	SUPPORT, OIL FILTER
C	95992848	1	ELBOW, 90 DEGREE	P	95954921	1	UNION, 1.31 SAE
D	54755731	1	TUBE, OTBV TO OIL COOLER	Q	95954913	1	REDUCER, 1.62 SAE X 1.31FEM SAE
E	95938171	1	ELBOW, 90 1.31 SAE	R	36897437	1	HEAD, SINGLE FILTER
F	36876787	1	OTBV, 1.31 SAE	S	36897346	1	ELEMENT, OIL FILTER
G	35227919	1	HOSE, -16 X 25"	T	95935037	2	WASHER, FLAT
H	95992632	1	ELBOW, 45 1.31 SAE	U	95365094	1	ELBOW, 9/16 X -4 JIC
J	35279025	2	SCREW, TAPPING M08-1.25 X 20	V	35227909	1	HOSE
K	36881886	2	NUT, HEX FLANGE M08-1.25	W	95376133	1	ELBOW, 1.63-12
L	35252493	2	SCREW, LOCKING 3/8-16 X 3/4	X	35324177	1	HOSE ASM.

MINIMUM PRESSURE VALVE



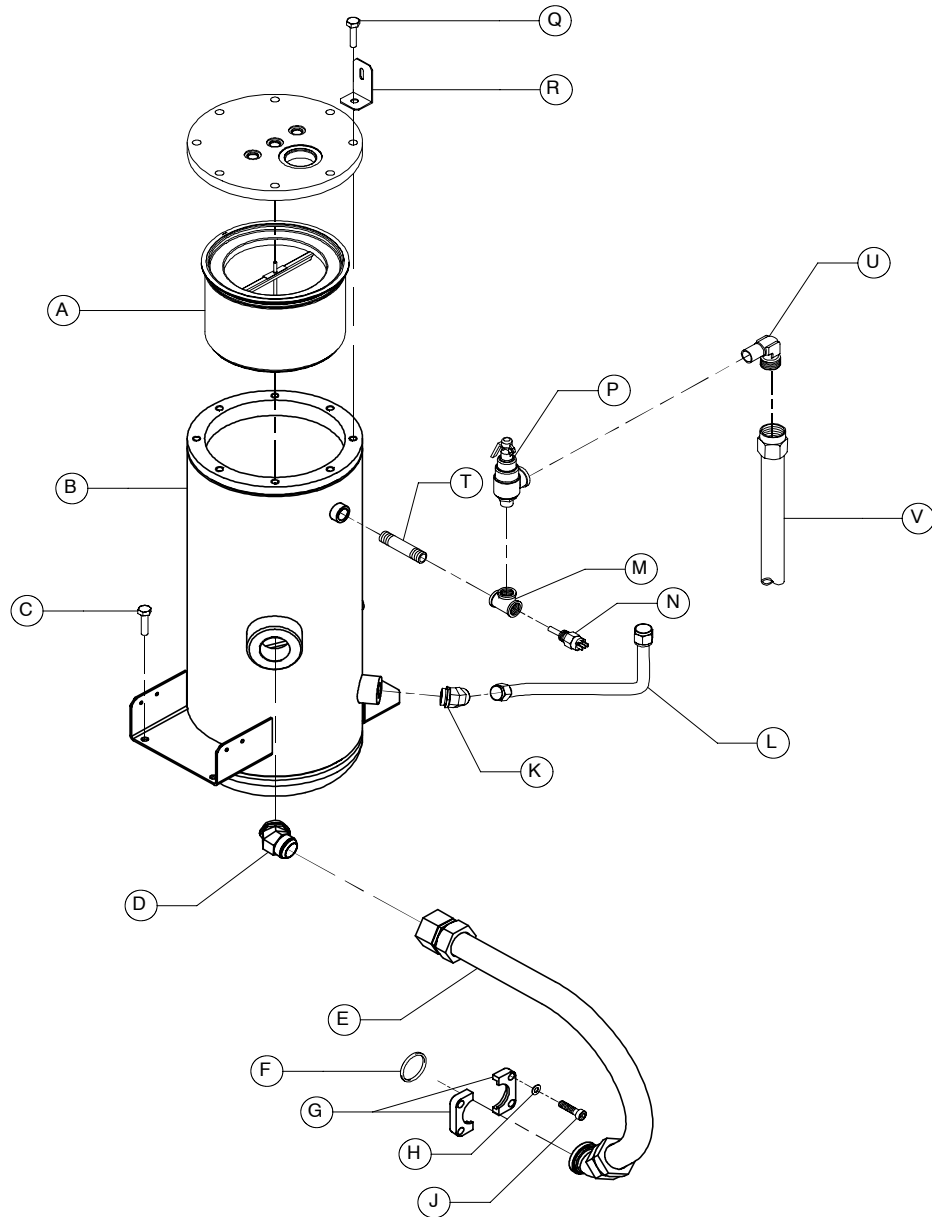
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35379973	1	BODY, MIN PRESS VALVE				
B	35380708	1	CV ASSEMBLY				
C	35380732	1	SPRING				
D	35380716	1	PISTON				
E	35380724	1	O-RING				
F	35380740	1	SPRING				
G	35380757	1	CAP				
	36789550		MIN PRESS VALVE ASM.				

DRAWBAR END



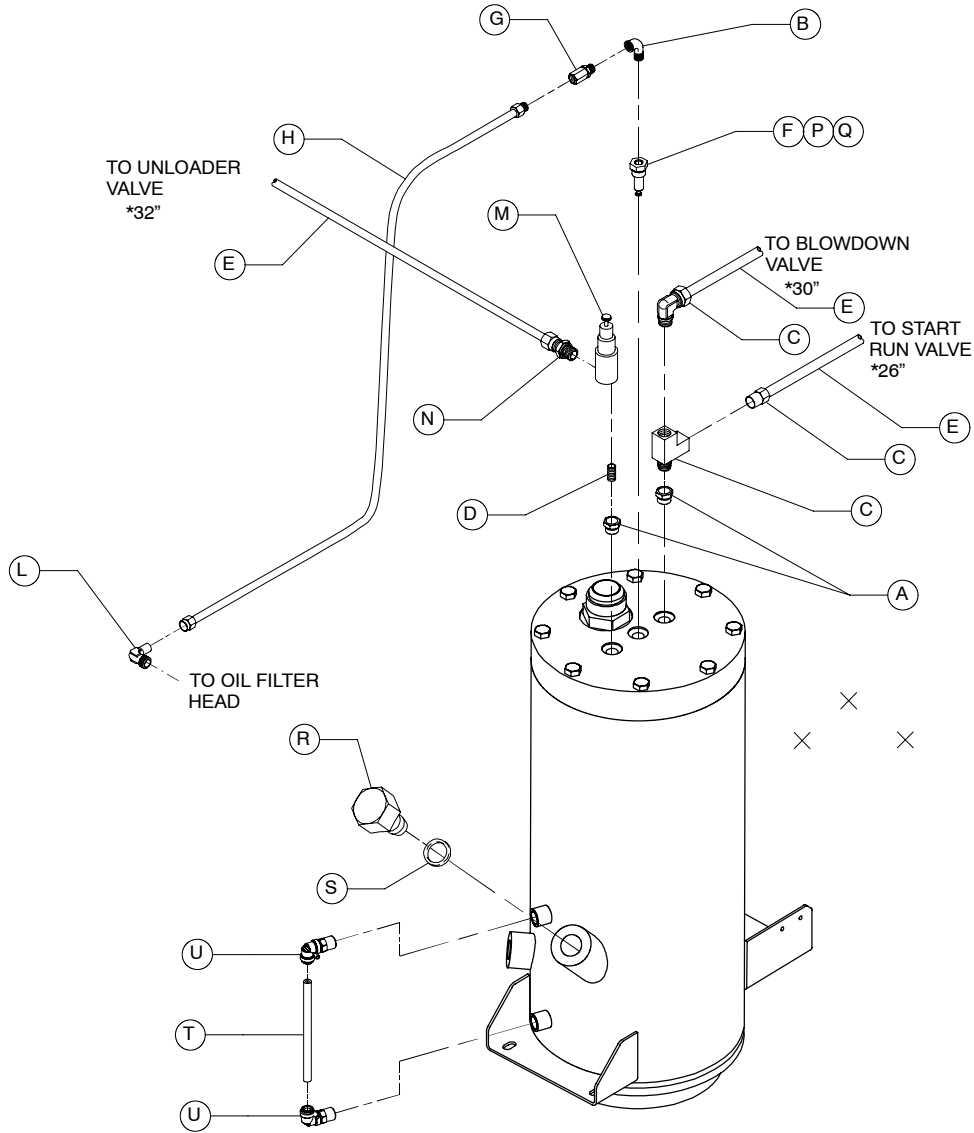
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35576115	1	VALVE, 3/4 NPT BALL	K	35192178	1	CLAMP, SADDLE
B	95928172	1	ELBOW, STREET 3/4 NPT	L	54698667	1	SUPPORT, SERVICE PIPE
C	95928040	1	NIPPLE, CLOSED 3/4NPT	M	95953451	1	COUPLING, 1.25 NPT
D	36789550	1	VALVE, MINIMUM PRESSURE	N	95950275	1	NIPPLE, PIPE 1.25 NPT X 4.0
E	95208682	1	ADAPTER, 1.50 NPT X 1.50	P	35612126	1	VALVE, BALL 1.25 NPT
F	95242996	1	NIPPLE, CLOSE PRIOR TO SN 327384	Q	95741088	1	ADAPTER, FEMALE
	95928032	1	NIPPLE, CLOSE BEGIN WITH SN 327384	R	95280541	1	PLUG, HEX O-RING 1.06-12
G	54698659	1	TUBE, SERVICE	S	95928230	1	PLUG, HEX SOCKET 1/4 NPT
H	95279345	1	CONNECTOR,1.25 NPT				
J	95944104	1	ELBOW, STREET 1.25 NPT				

SEPARATOR TANK COMPLETE



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54721345	1	ELEMENT, SEPARATOR	M	95954210	1	TEE, 3/4 NPT
B	54620604	1	TANK, SEPARATOR	N	54764956	1	SWITCH, ALARM
C	36888055	4	SCREW, HEX FLANGE M12-1.75 X 30	P	54731443	1	VLAVE, SAFETY 200PSI
D	95944732	1	ELBOW, 45 2.50 SAE	Q	96727557	8	SCREW, HEX FLANGE M16 X 60
E	54688015	1	HOSE, DISCHARGE	R	36785012	2	BRACKET, SEPERATOR TANK LIFT
F	95357976	1	O-RING	S	95049359	1	PLUG, 1/8 NPT
G	35295143	2	FLANGE, HALF	T	95928040	1	NIPPLE, 3/4 NPT CLOSED
H	95934683	4	WASHER, LOCK	U	95219853	1	ELBOW, 1.0 NPT X -16 JIC
J	96719810	4	SCREW, HEX M14-2.0 X 40	V	22060073	1	TUBE, DISCHARGE
K	95992632	1	ELBOW, 45 1.31SAE				
L	54680012	1	TUBE, OTBV TO SEPTK				
			PRIOR TO S/N 320451				
	35227909	1	TUBE, OTBV TO SEPTK				
			BEGIN WITH S/N 320451				

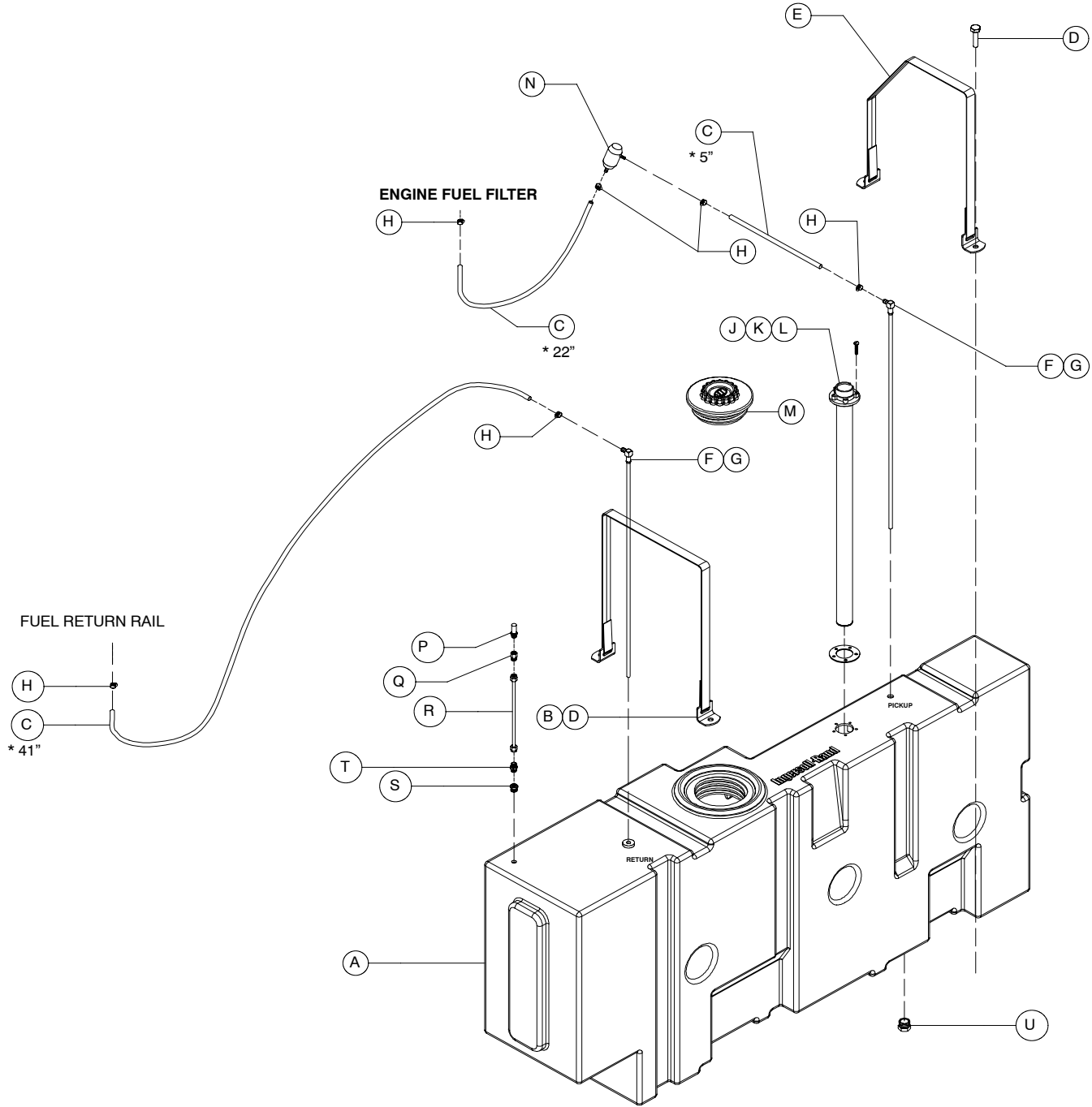
SEPARATOR TANK COMPLETE



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	95773032	2	ADAPTER, .88 SAE	L	95365094	1	ELBOW, 9/16 X -4 JIC
B	35283464	1	ELBOW, 1/4 NPT X -4 JIC	M	36896892	1	VLV, PRESS REG 200PSI (HP375)
C	35373976	1	TEE, 1/4 NPT PRIOR TO SN 324651		36854149	1	VLV, PRESS REG 100PSI (XP375)
	35114545	1	TEE, 1/4 NPT BEGIN WITH SN 324651	N	35369347	1	CONN, MALE 1/4 NPT X 3/8 TUBE
D	95944575	1	NIPPLE, CLOSED 1/4 NPT	P	92877620	1	O-RING
E	35356484	*	TUBING, 3/8" SYN FLEX	Q	95973228	1	O-RING
F	54721337	1	ADAPTER, OIL SCVANGE TUBE	R	35579630	1	PLUG, 1.62"
G	36840411	1	VALVE, CHECK	S	35279942	1	O-RING
H	35282920	1	HOSE, -4 JIC X 30"	T	54629464	1	TUBE, SIGHT
J	35369347	1	CONNECTOR, MALE 1/4 NPT X 3/8 TUBE	U	54627799	2	ELBOW, SIGHT TUBE
K	35369354	1	ELBOW MALE 1/4 NPT X 3/8 TUBE				

MANUAL NO. - ILLUSTR. NO. 54722160-023 DATE/REV: 5/02 D

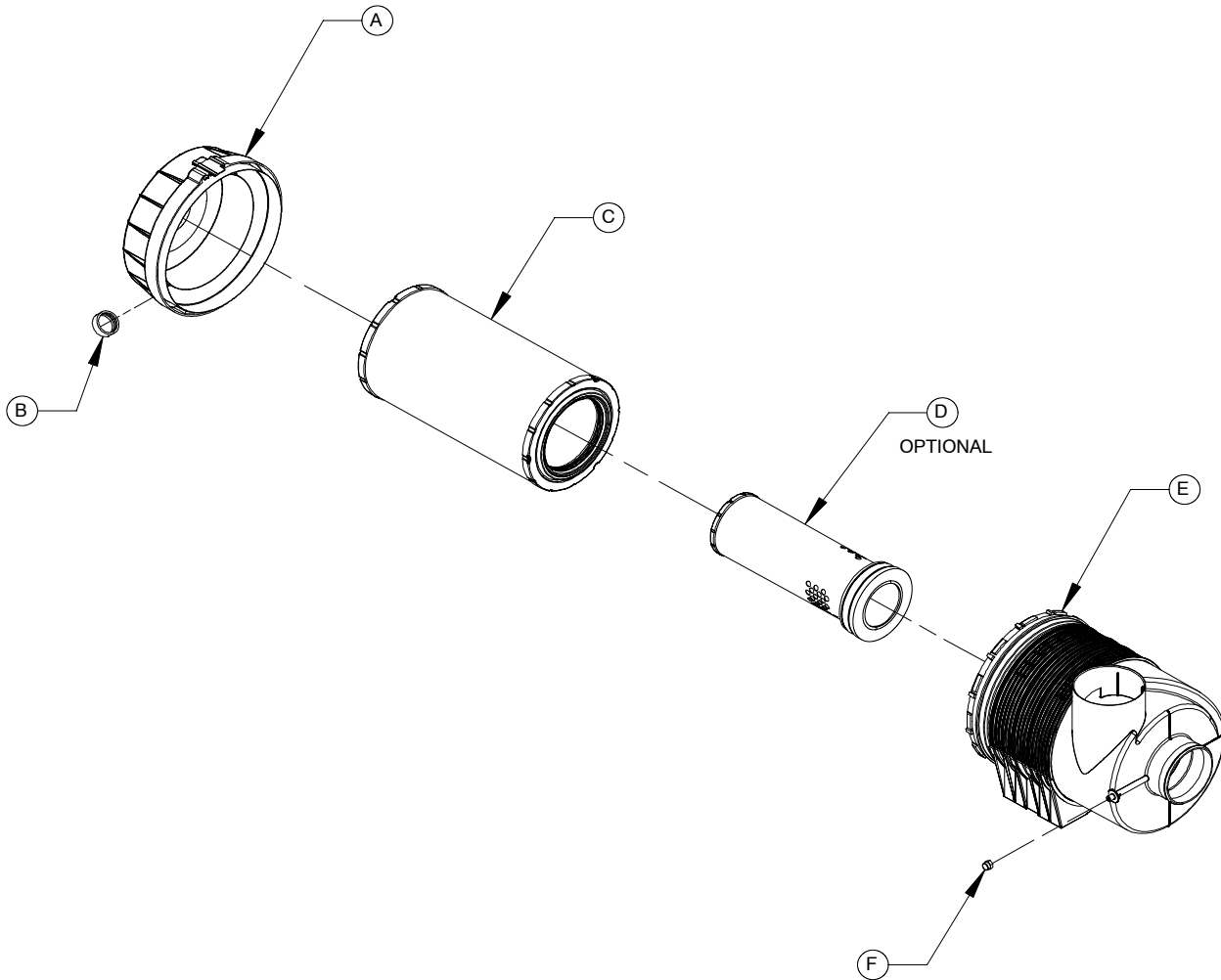
FUEL TANK COMPLETE



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54633938	1	TANK, FUEL	L	95916532	5	SCREW, FILLISTER HEAD 10-32 X .50
B	54720727	1	STRAP, FUEL TANK	M	54660089	1	CAP, FUEL
C	35363498	*	HOSE, .31 FUEL	N	36845493	1	FILTER, IN-LINE FUEL
D	35279025	4	SCREW, TAPPING M08-1.25 X 20	P	35322395	1	SILENCER, PNEUMATIC 1/4 NPT
E	54721170	1	STRAP, FUEL TANK	Q	35369339	1	CONN, FEMALE 1/4 NPT X 3/8 TUBE
F	54675863	2	STANDPIPE ASM.	R	35356484	8.5	TUBING, 3/8 SYNDFLEX
G	35384577	2	BUSHING, NITRILE	S	95940748	1	BUSHING, REDUCING 3/8 NPT X 1/4
H	35296342	6	CLAMP, WORMGEAR M06 - 16	T	35369347	1	CONN, MALE 1/4 NPT X 3/8 TUBE
J	54731427	1	SENDER, FUEL LEVEL	U	95280541	1	PLUG, HEX 1.06-16 SAE
K	35361849	1	GASKET, FUEL SENDER				

MANUAL NO. - ILLUSTR. NO. 54722160-024
DATE/REV: 10/01 B

AIR CLEANER ASSEMBLY

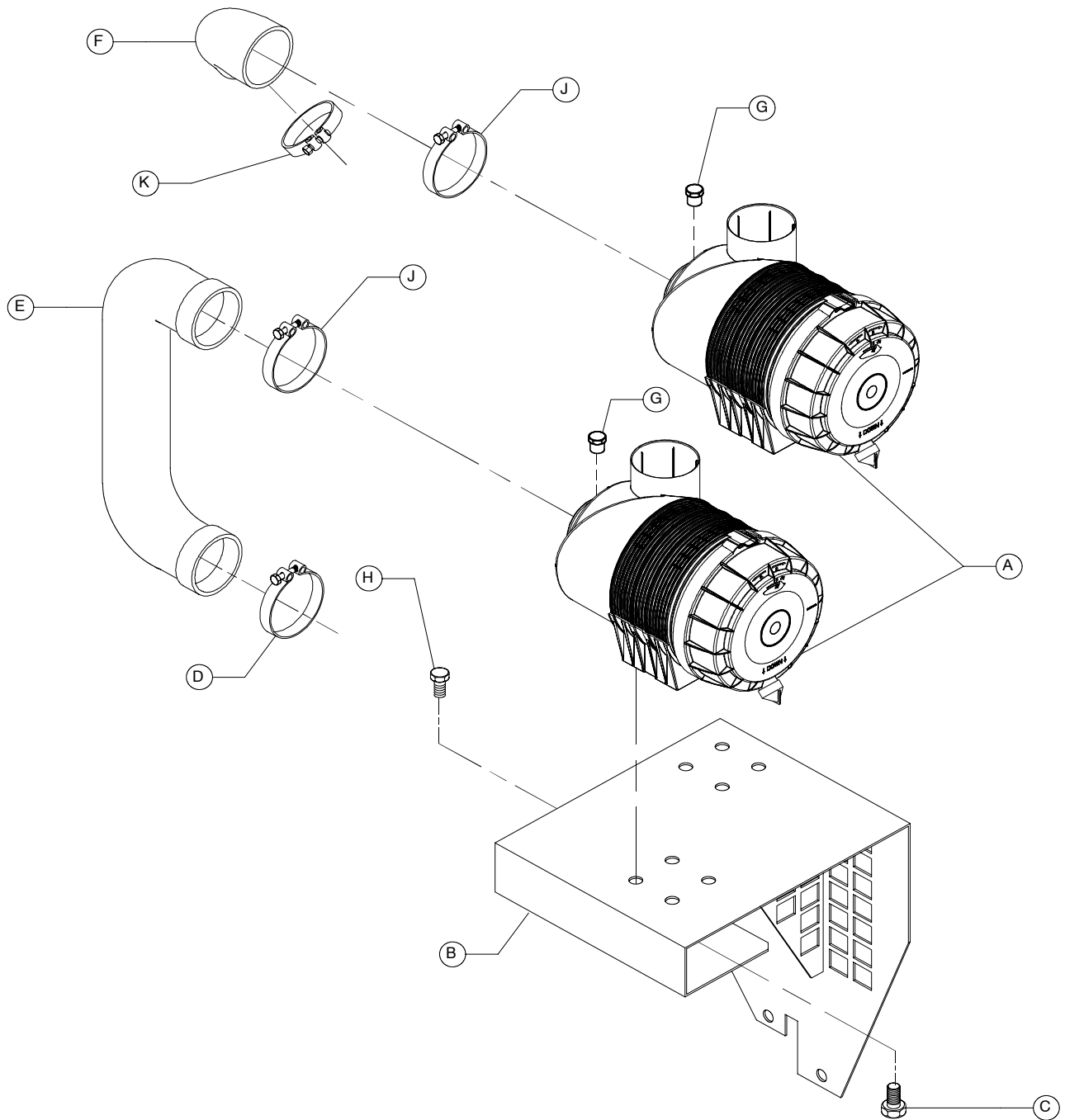


Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54692975	1	COVER, AIR CLEANER	D	54717152	1	ELEMENT, SAFETY (OPTIONAL)
B	35393677	1	VALVE, DUST EJECTOR	E	54692967	1	BODY, AIR CLEANER
C	54717145	1	ELEMENT, PRIMARY	F	35393719	1	CAP, PLUG

MANUAL NO. - ILLUSTR. NO.
54722160-025

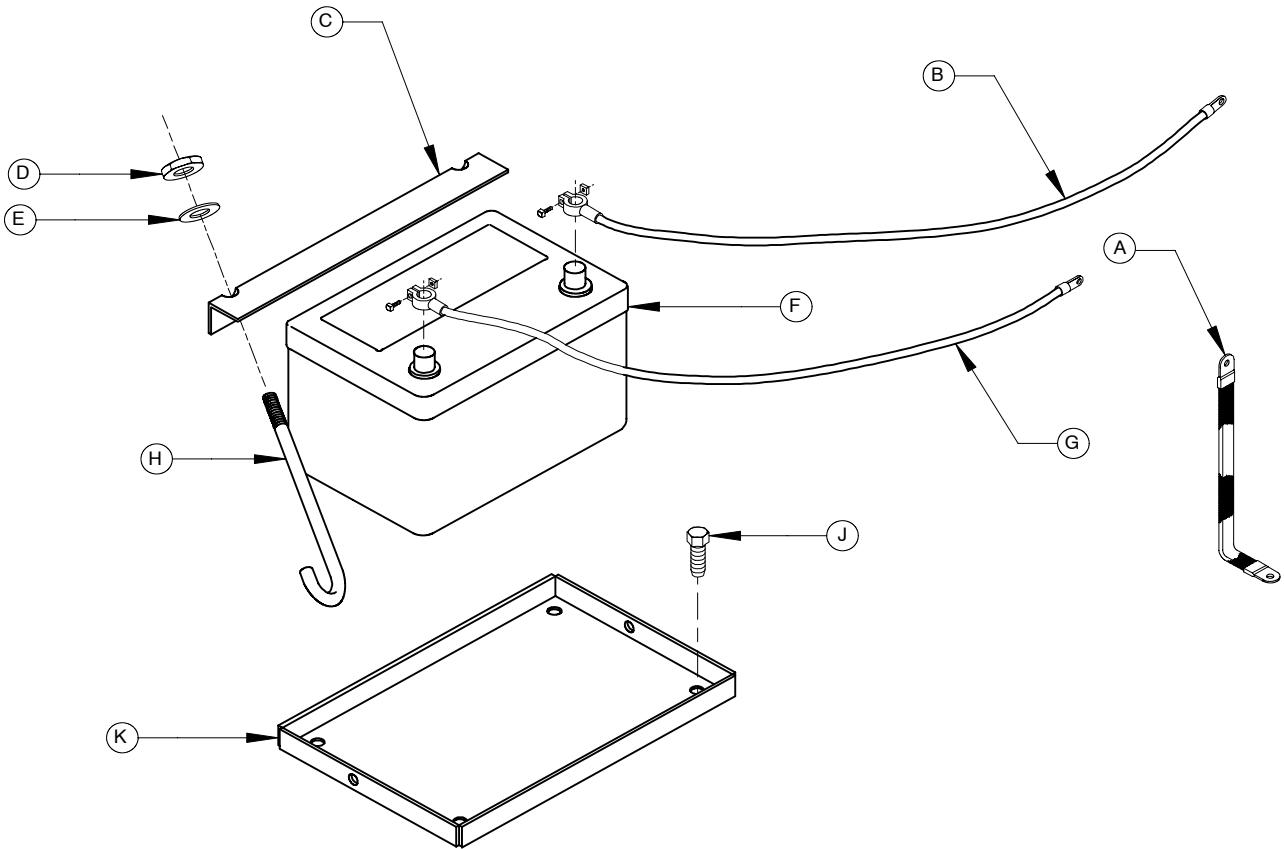
DATE/REV:
07/01 A

DRAWBAR END



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54661889	2	AIR CLEANER ASM.	F	54667084	1	HOSE, ENGINE AIR INTAKE
B	54747977	1	SUPPORT, AIR CLEANER	G	35314939	2	INDICATOR, RESTRICTION
C	96702048	8	SCREW, HEX M08-1.25 X 16	H	96719851	2	SCREW, HEX M12-1.75 X 16
D	36897668	1	CLAMP, T-BOLT	J	35365477	2	CLAMP, T-BOLT
E	54756044	1	HOSE, AIR INTAKE	K	35374073	1	CLAMP, T-BOLT

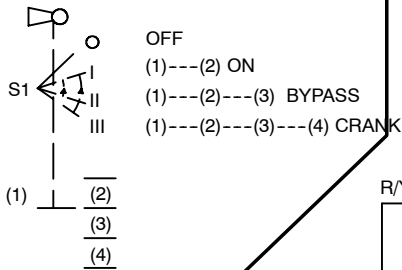
DRAWBAR END



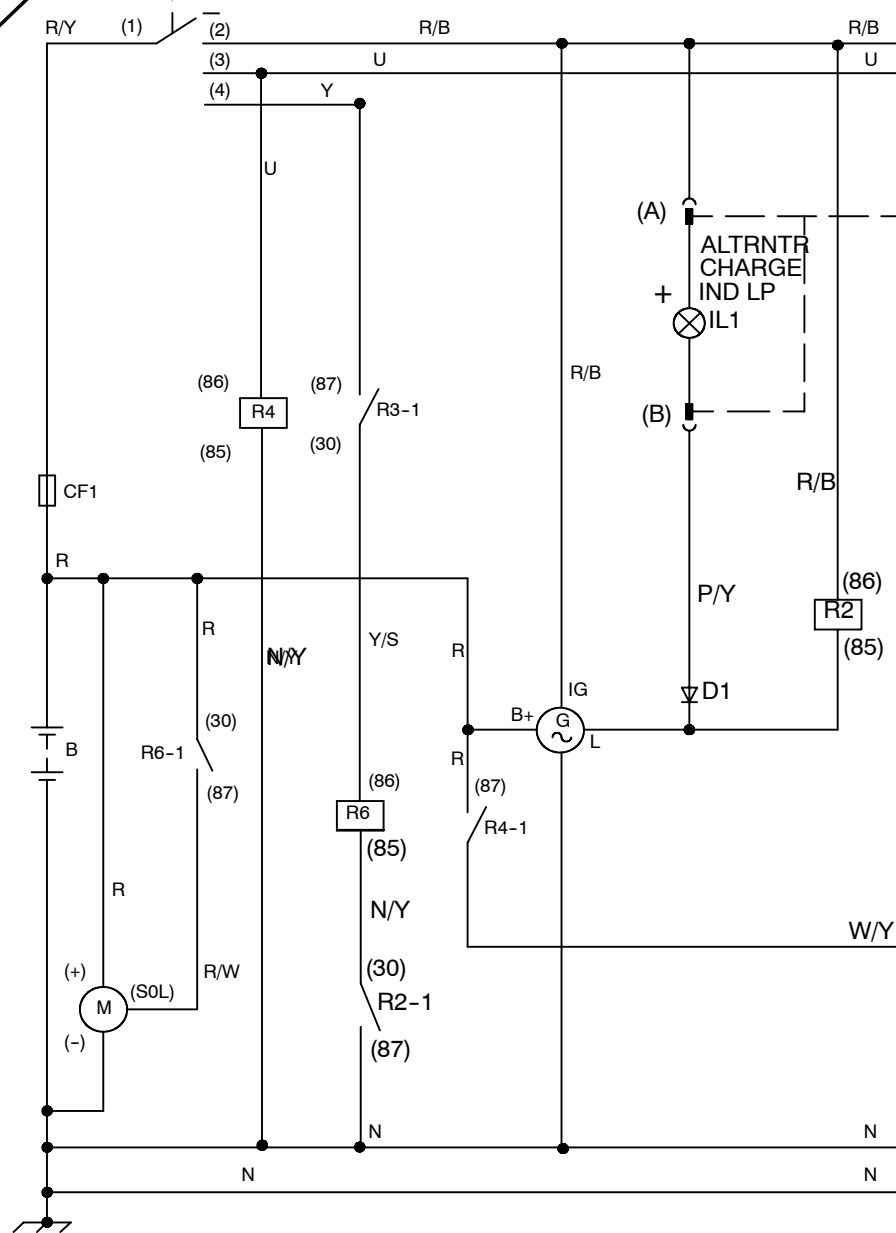
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	35284801	1	CABLE, GROUND	F	36844264	1	BATTERY 12 V
B	35516582	1	CABLE, POSITIVE BATTERY	G	35610856	1	CABLE, NEGATIVE BATTERY
C	36853257	1	ANGLE	H	36860005	2	BOLT, J
D	95923298	2	NUT, HEX LOCK .25-20	J	92368687	4	SCREW, TAPPING M06-1.0 X 12
E	36853265	2	WASHER, PLASTIC	K	36853232	1	TRAY, BATTERY

STANDARD WIRING

S1 KEYSWITCH OPERATION SEQUENCE



ITEM	COLOR
B	BLACK
U	BLUE
N	BROWN
G	GREEN
S	GREY
LG	LIGHT GREEN
O	ORANGE
K	PINK
P	PURPLE
R	RED
W	WHITE
Y	YELLOW



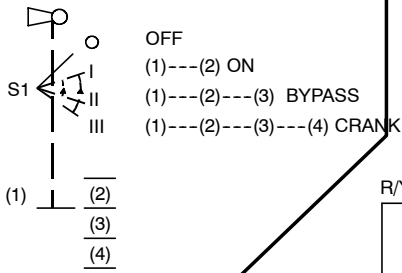
CONTINUE
NEXT PAGE

Item	CPN	Qty	Description	Item	CPN	Qty	Description
B	36782456	1	BATTERY	R2	54368048	1	RELAY, START PROTECT
CF1	36782456	1	FUSE, 10A	R3	54368048	1	RELAY, START INHIBIT
D1	35676169	1	DIODE	R4	54368048	1	RELAY, FUEL SOLENOID
G	*	1	ALTERNATOR	R6	54368048	1	RELAY, CRANK
IL1	54774112	1	LAMP, ALTERNATOR CHARGE	S1	36884211	1	SWITCH, KEY
M	*	1	STARTER	W1	54758008	1	HARNES, ENGINE CONTROL

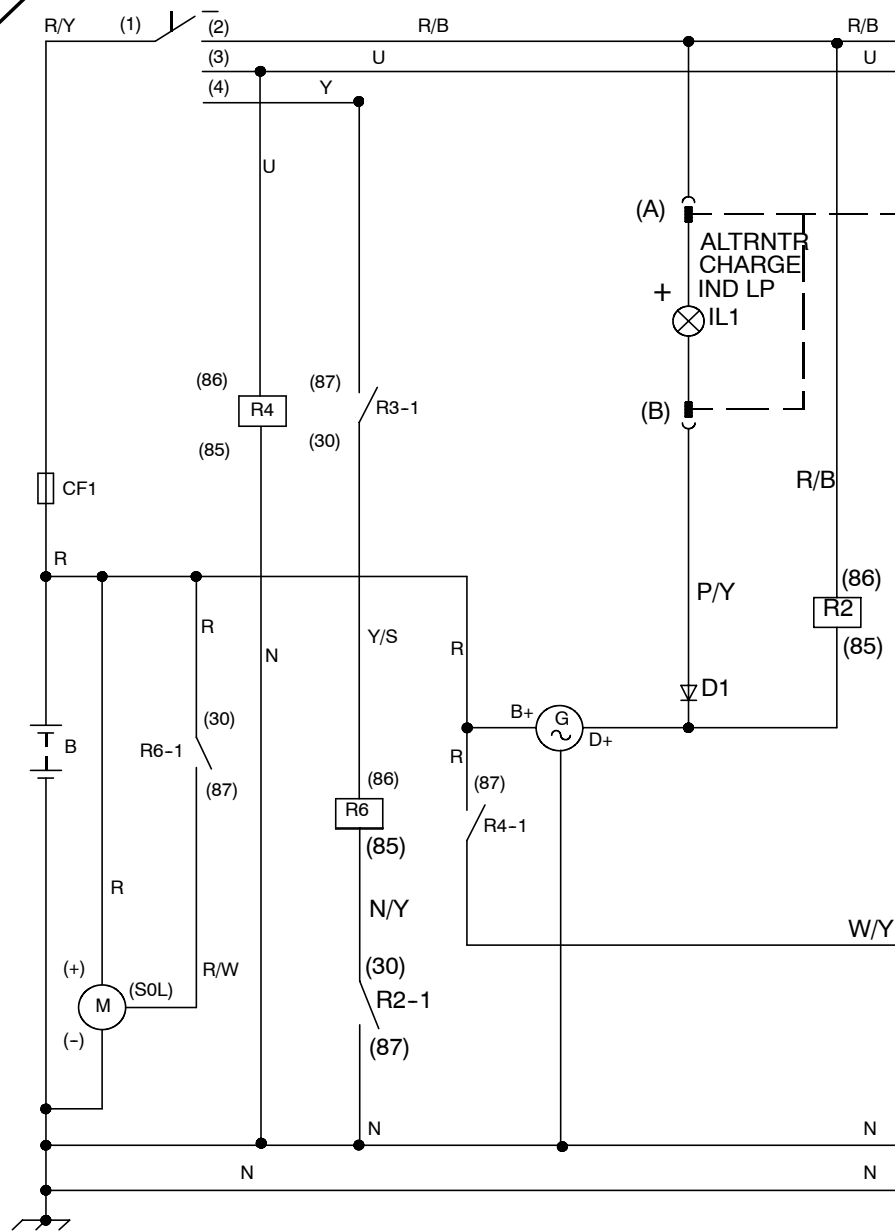
* CONTACT INGERSOLL- RAND MOCKSVILLE, NC

STANDARD WIRING

S1 KEYSWITCH OPERATION SEQUENCE



ITEM	COLOR
B	BLACK
U	BLUE
N	BROWN
G	GREEN
S	GREY
LG	LIGHT GREEN
O	ORANGE
K	PINK
P	PURPLE
R	RED
W	WHITE
Y	YELLOW



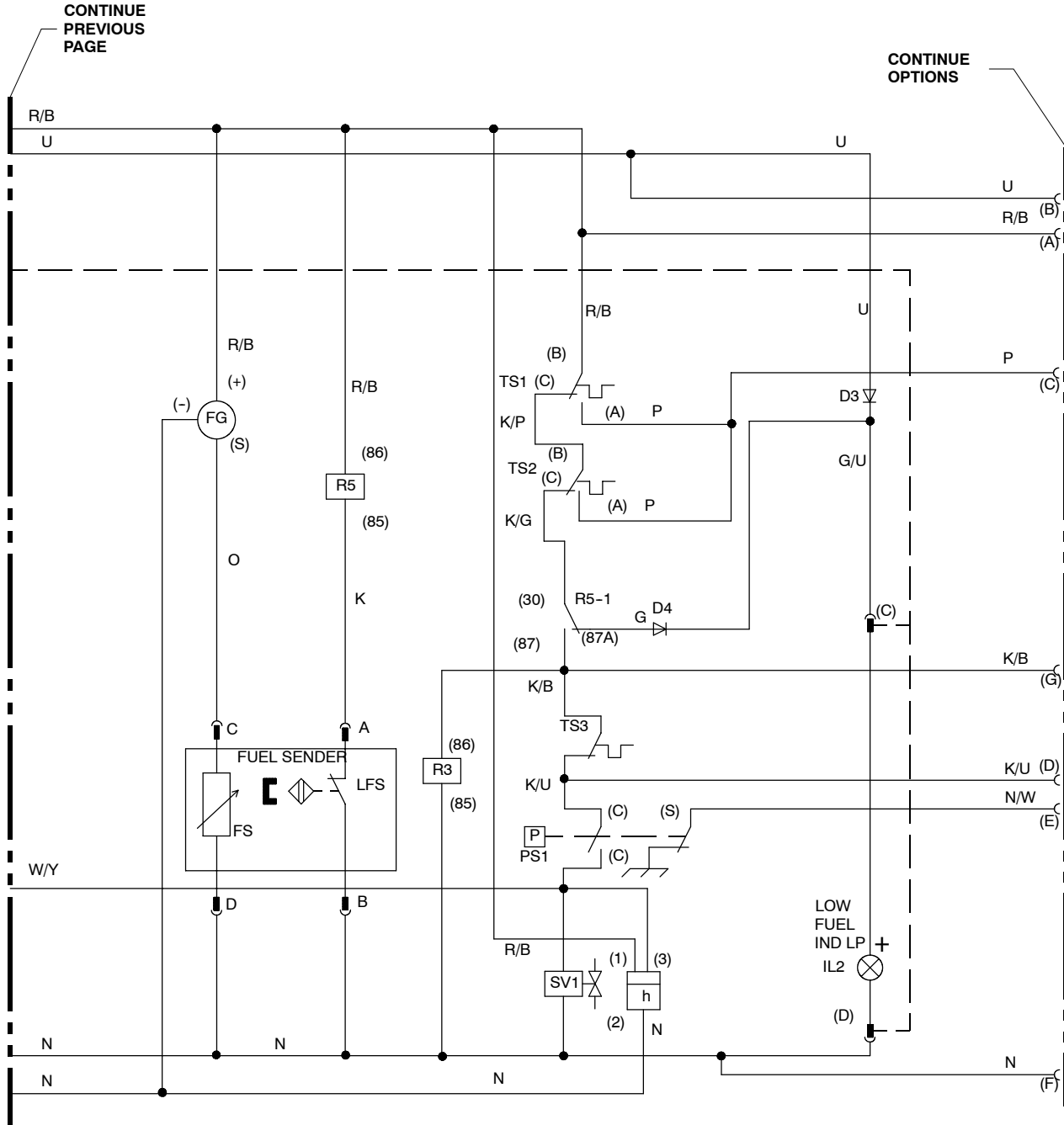
CONTINUE
NEXT PAGE

Item	CPN	Qty	Description	Item	CPN	Qty	Description
B	36884264	1	BATTERY	R2	54368048	1	RELAY, START PROTECT
CF1	36782456	1	FUSE, 10A	R3	54368048	1	RELAY, START INHIBIT
D1	35676169	1	DIODE	R4	54368048	1	RELAY, FUEL SOLENOID
G	*	1	ALTERNATOR	R6	54368048	1	RELAY, CRANK
IL1	54774112	1	LAMP, ALTERNATOR CHARGE	S1	92086719	1	SWITCH, KEY
M	*	1	STARTER	W1	54758008	1	HARNESS, ENGINE CONTROL

* CONTACT INGERSOLL- RAND MOCKSVILLE, NC

STANDARD WIRING (continued)

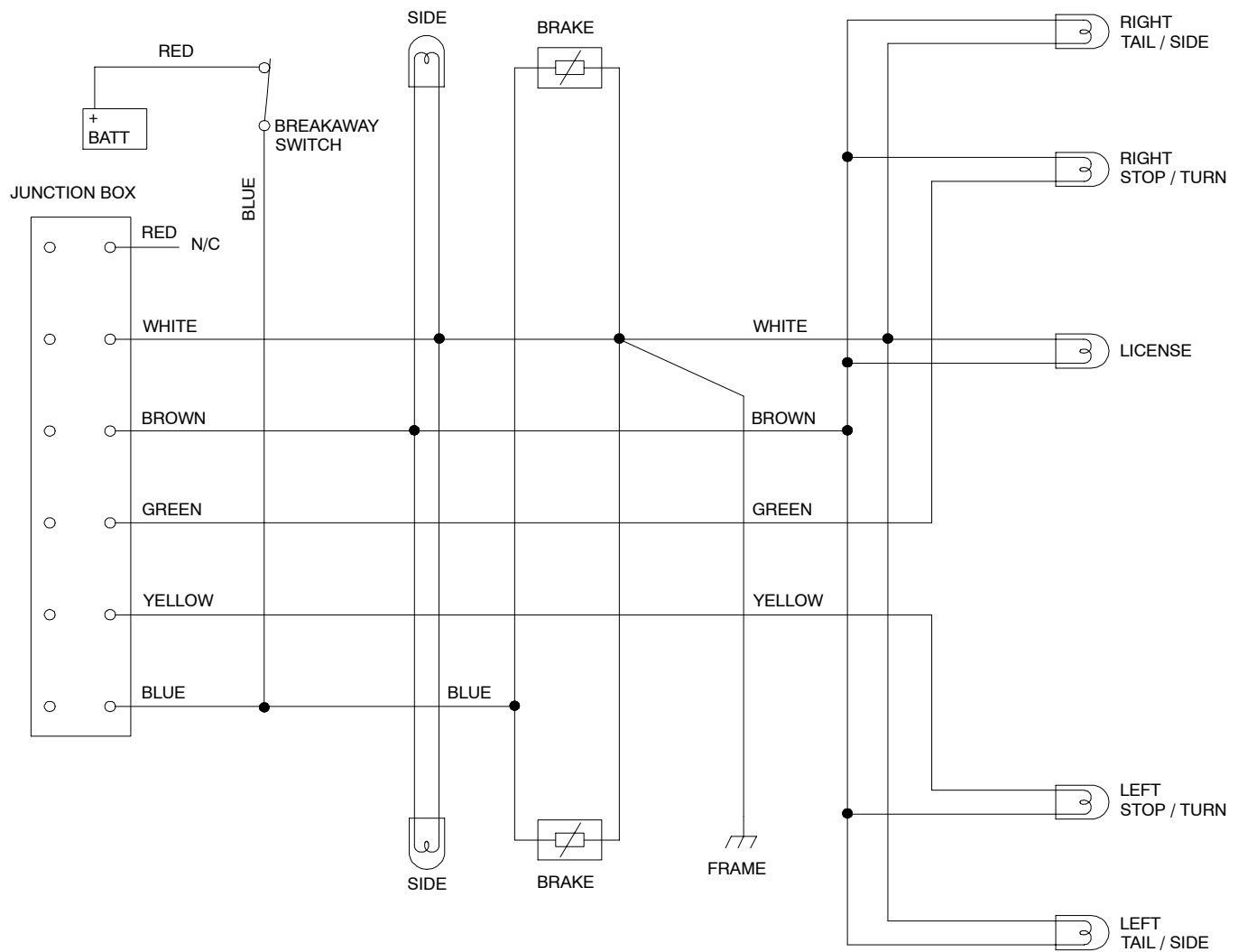
ITEM	B	U	N	G	S	LG	O	K	P	R	W	Y
COLOR	BLK	BLU	BRN	GRN	GRY	LT GRN	ORNG	PNK	PUR	RED	WHT	YEL



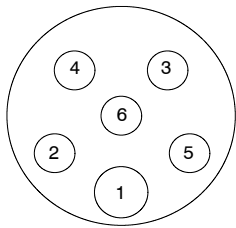
Item	CPN	Qty	Description	Item	CPN	Qty	Description
D3	35676169	1	DIODE	R3	54368048	1	RELAY, START INHIBIT
D4	35676169	1	DIODE	R5	54368048	1	RELAY, LOW FUEL SHUTDOWN
FG	54774096	1	GAUGE, FUEL	SV1	*	1	SOLENOID, FUEL
FS	54731427	1	SENDER, FUEL	TS1	54764964	1	SWITCH, A/E HIGH AIR TEMP
H	54766704	1	HOURMETER	TS2	54764956	1	SWITCH, DISCRG HIGH AIR TEMP
IL2	54774112	1	LAMP, LOW FUEL	TS3	36893055	1	SWITCH, HIGH ENGINE TEMP
PS1	54757935	1	SWITCH, ENGINE OIL PRESSURE	W1	54758008	1	HARNES, ENGINE CONTROL

* CONTACT INGERSOLL-RAND MOCKSVILLE, NC

TRAILER WIRING



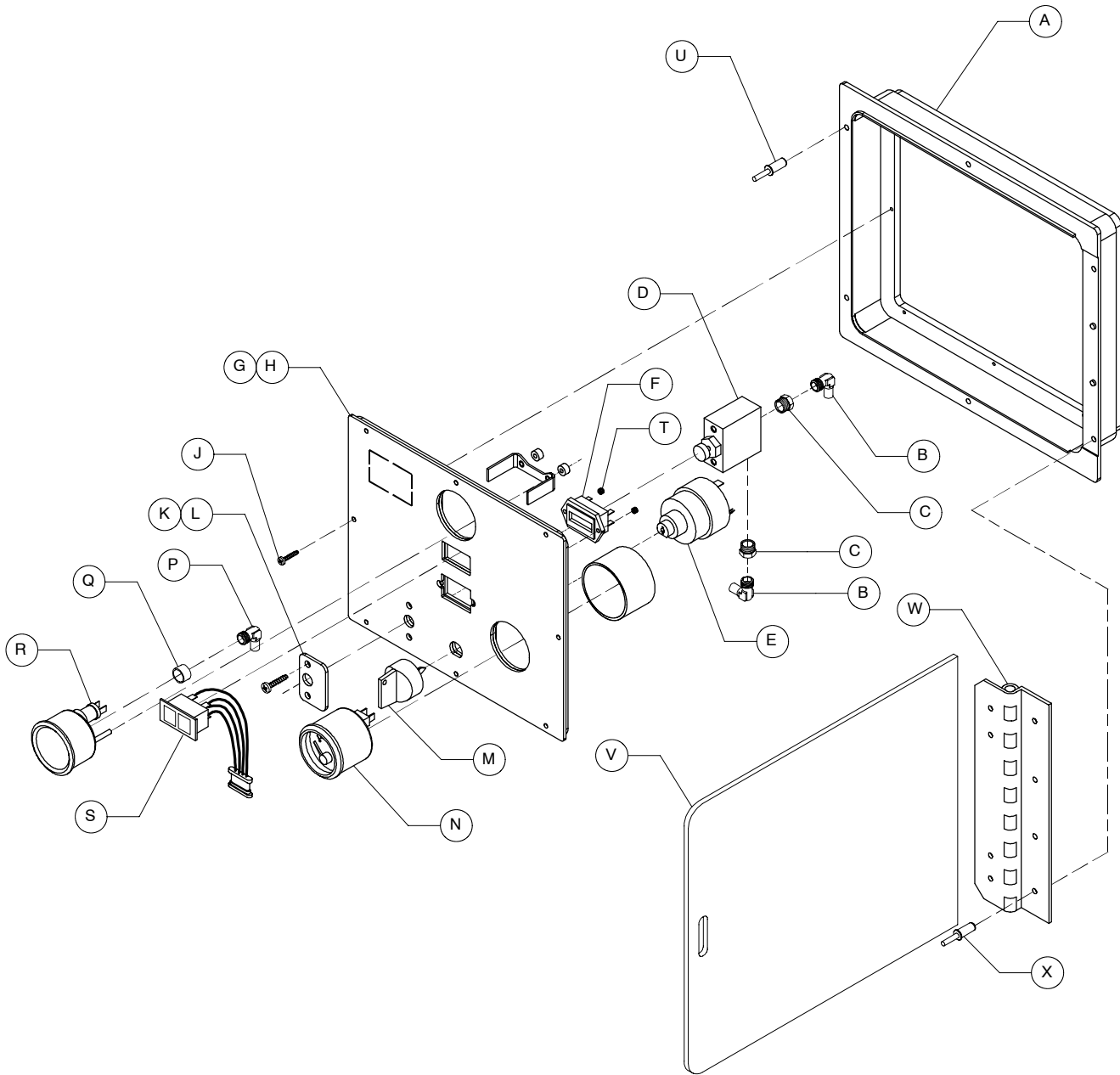
PLUG / SOCKET WIRING CONNECTIONS



- 1 WHITE - GROUND
- 2 YELLOW - LEFT STOP/TURN SIGNAL
- 3
- 4 GREEN - RIGHT STOP/TURN SIGNAL
- 5 BROWN - TAIL / CLEARANCE LIGHTS
- 6 BLUE - ELECTRIC BRAKES

Item	CPN	Qty
BATT	36844264	1
BRAKEAWAY SW.	35315944	1
LICENSE	35676169	1
BULB	35676169	1
SIDE	35367051	2
BULB	35676169	2
TAIL / STOP	54671557	2
BULB	35676169	2
BULB	35676169	2

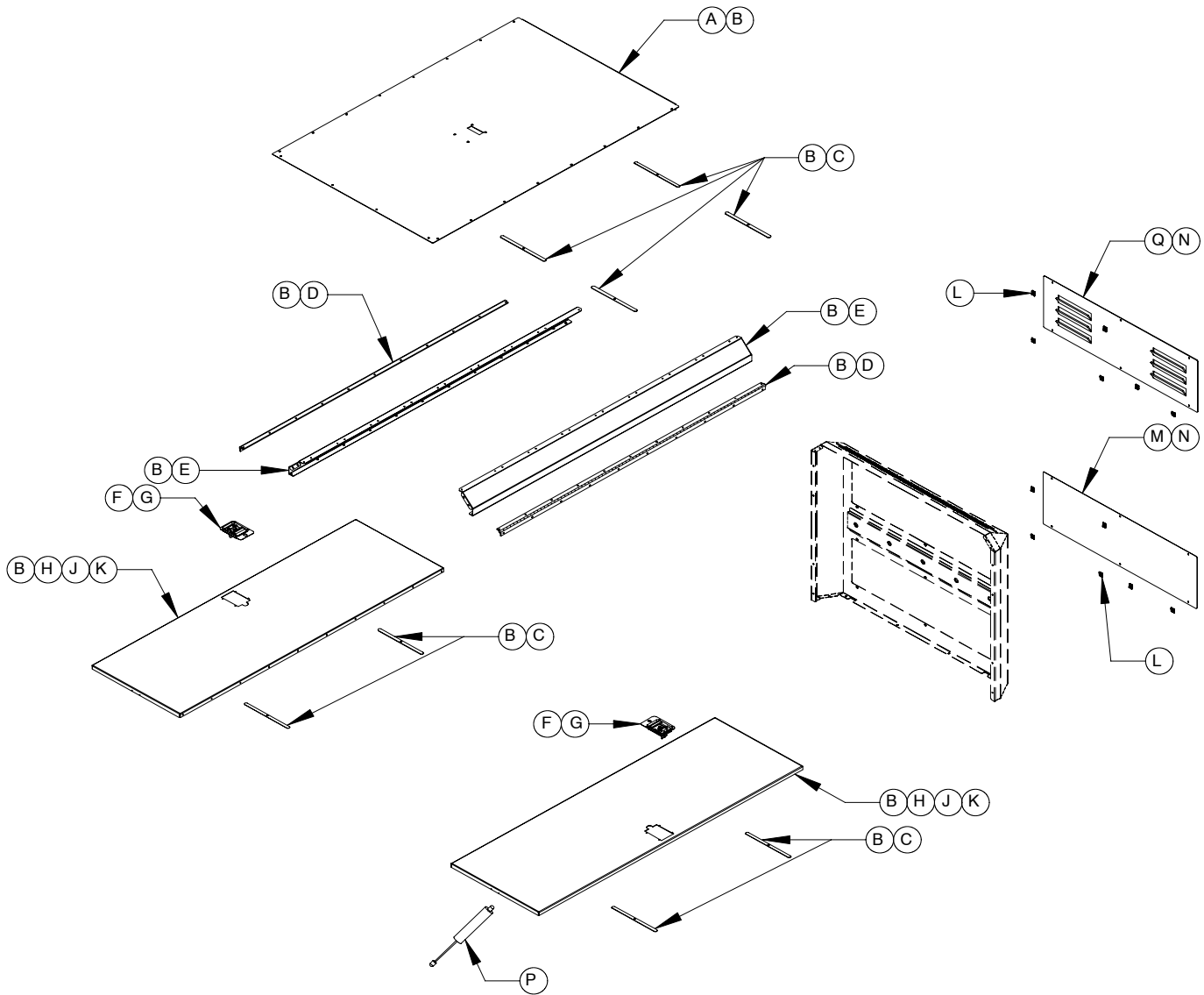
INSTRUMENT PANEL ASSEMBLY



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54749601	1	FRAME, WW INST PANEL	P	35370386	1	ELBOW, MALE 1/8 NPT X 3/8 TUBE
B	35369354	2	ELBOW, MALE 1/4 NPT X 3/8 TUBE	Q	95935599	1	COUPLING, 18 NPT X 3/4
C	35302314	2	ADAPTER	R	36882207	1	GAUGE, PRESSURE 150 PSI
D	36783439	1	VALVE, 2-WAY START-RUN		36891216	1	GAUGE, PRESSURE 250 PSI
E	92086719	1	SWITCH, KEY	S	54774112	1	MODULE, 2-LIGHT WARNING
F	54766704	1	HOURMATER	T	22054159	2	NUT, 4-40 PLASTIC
G	54749619	1	PANEL, INSTRUMENT	U	36920486	4	RIVET, SS .19 DIA
H	54746845	1	DECAL, WW INST PANEL	V	54743265	1	DOOR, CONTROL PANEL
J	22070494	8	SCREW, PLASTIC TAPPING	W	36890085	1	HINGE, CONTROL PANEL
K	54774146	1	DECAL, PUSH AFTER WARM-UP				PRIOR TO S/N 329284
L	36882207	1	SCREW, PAN HEAD M6-1.0 X 20		22107478	1	HINGE, SPRING CONT PNL
M	54774104	1	KNOB, NON-REMOVABLE KEY				BEGIN WITH S/N 329284
N	54774096	1	GAUGE, FUEL LEVEL	X	36877587	4	RIVET, .19 DIA

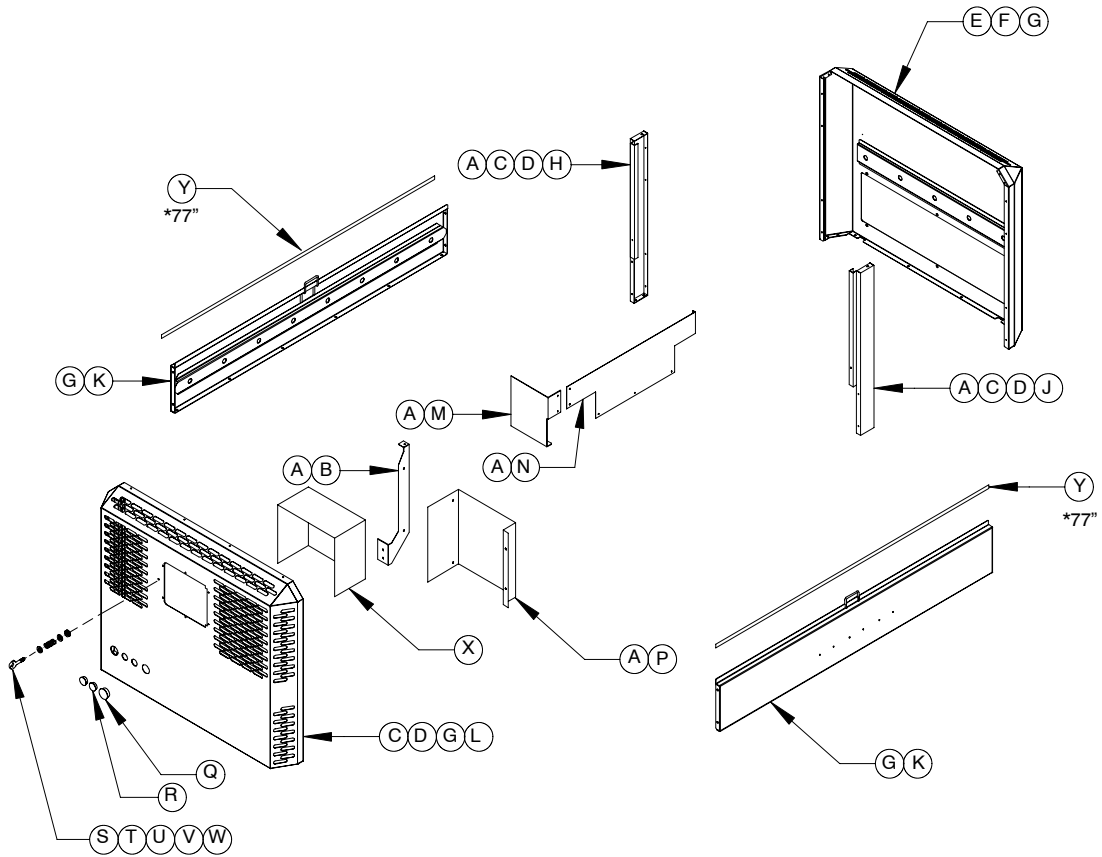
MANUAL NO. - ILLUSTR. NO. DATE/REV:
54722160-031 4/02 C

DRAWBAR END



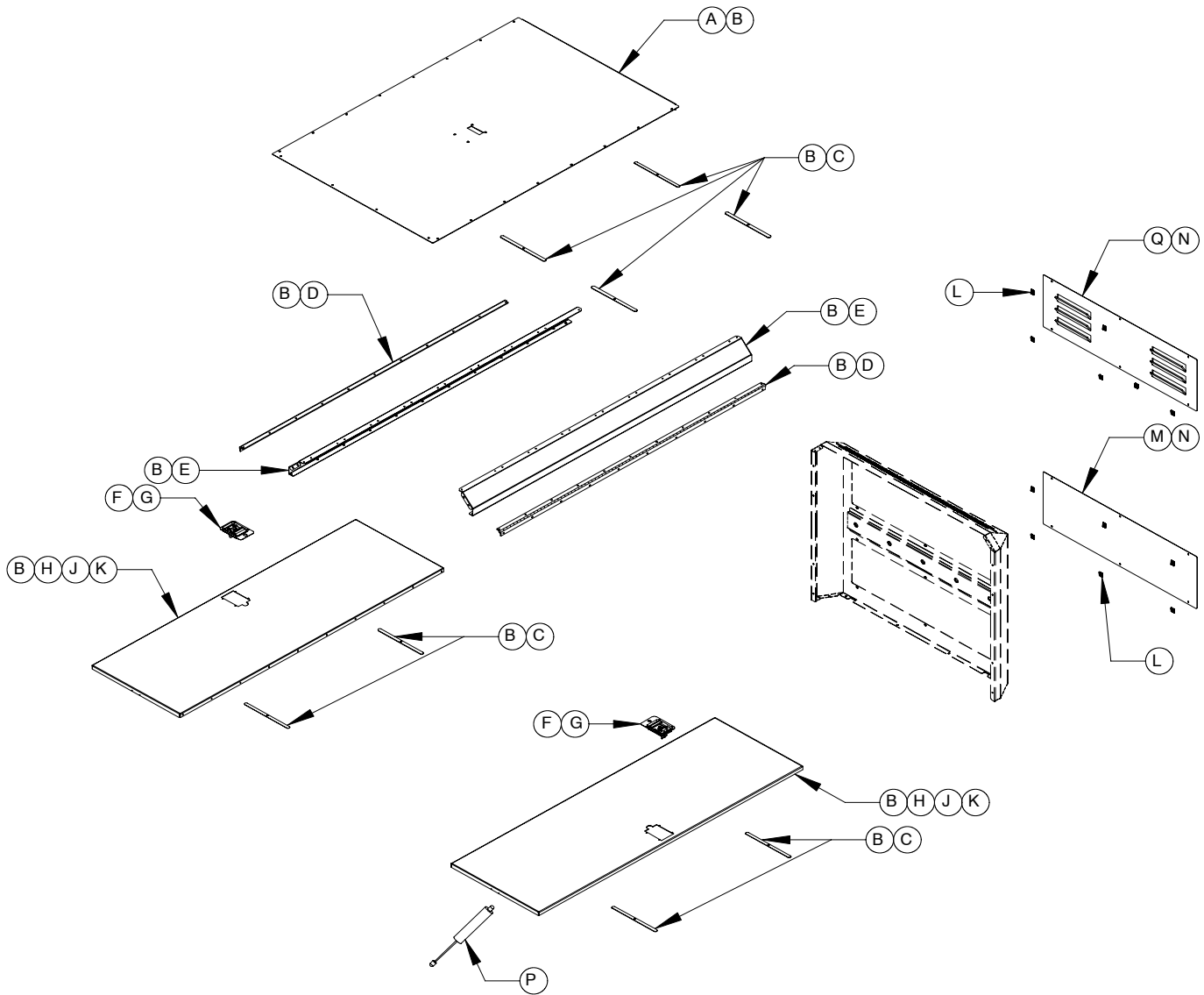
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54642905	1	ROOF	J	35337328	8	STUD, BALL
B	36797652	101	SCREW, TAPPING M06-1.0 X 12	K	36881886	8	NUT, HEX FLANGE M08-1.25
C	54718184	8	STRAP, FOAM RETAINING	L	35256445	12	RETAINER, PUSHON 1/4 TURN
D	54639174	2	HINGE, SIDE DOOR	M	54694831	1	PANEL, REAR ACCESS
E	54697495	2	RAIL, LH TOP	N	35256429	12	STUD, 1/4 TURN
F	36793602	2	LATCH, SLAM DOOR	P	35600261	4	SPRING, GAS
G	36794816	8	RIVET, 3/16	Q	54760483	1	PANEL, REAR TOP ACCESS
H	54629993	2	DOOR, SIDE				

➤ DRAWBAR END



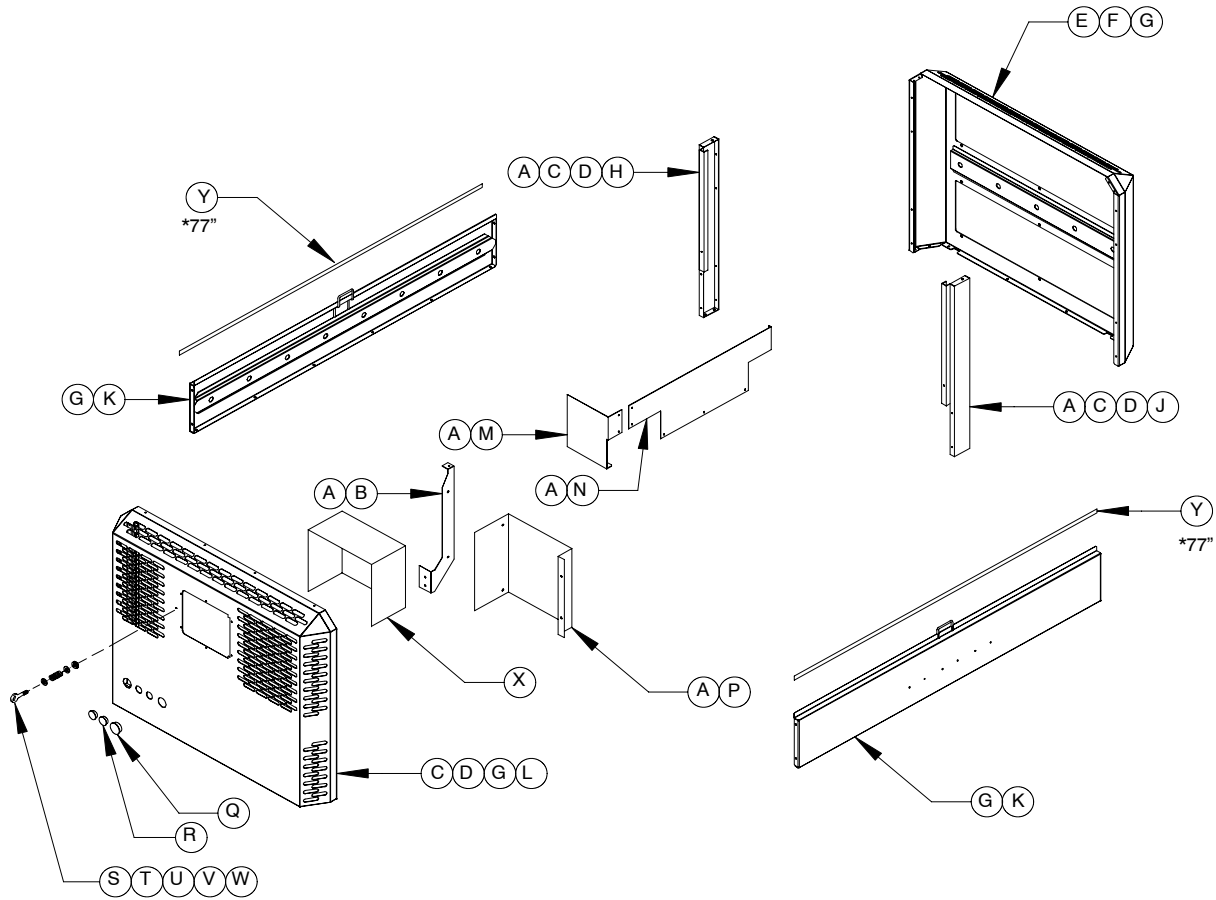
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	36797652	101	SCREW, TAPPING M06-1.0 X 12	N	54767488	1	PANEL, TOOLBOX
B	54737622	1	BRACKET, FRONT INTAKE	P	54720834	1	BAFFLE, FRONT INTAKE
C	35337328	8	STUD, BALL	Q	35310622	1	PLUG, 2.0 DIA HOLE
D	36881886	8	NUT, HEX FLANGE M08-1.25	R	35285543	2	PLUG, 1.5 DIA HOLE
E	54688254	1	PANEL, REAR END CAP	S	35607829	1	EYEBOLT
F	35256452	12	RECEPTACLE, 1/4 TURN	T	36772028	1	WASHER, NYLON
G	35279025	28	SCREW, TAPPING M08-1.25 X 20	U	35607837	1	SPRING
H	54686167	1	PANEL, RH SIDE	V	95935029	1	WASHER, FLAT
J	54692751	1	PANEL, LH SIDE	W	95923298	1	NUT, 1/4-20 HEX LOCK
K	54694823	2	PANEL, LOWER SIDE	X	22058325	1	COVER, REAR INST. PANEL
L	54686209	1	PANEL, FRONT END CAP	Y	22068373	*	SEAL, DOOR
M	54767223	1	PANEL, SMALL TOOLBOX				

DRAWBAR END



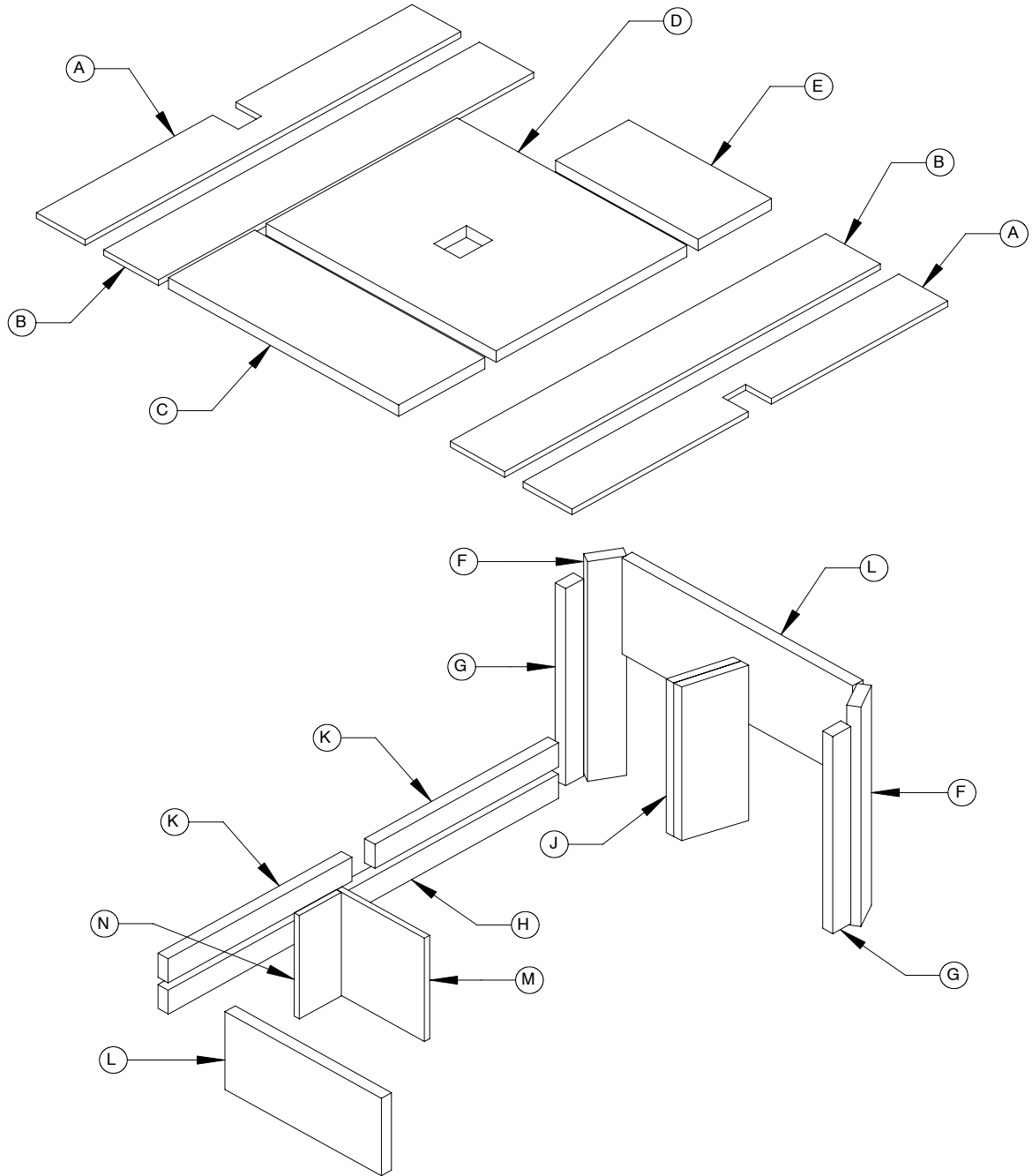
Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54743240	1	ROOF	J	35337328	8	STUD, BALL
B	36797652	101	SCREW, TAPPING M06-1.0 X 12	K	36881886	8	NUT, HEX FLANGE M08-1.25
C	54718184	8	STRAP, FOAM RETAINING	L	35256445	12	RETAINER, PUSHON 1/4 TURN
D	54639174	2	HINGE, SIDE DOOR	M	54694831	2	PANEL, REAR ACCESS
E	54743273	2	RAIL, LH TOP	N	35256429	12	STUD, 1/4 TURN
F	36793602	2	LATCH, SLAM DOOR	P	35600261	4	SPRING, GAS
G	36794816	8	RIVET, 3/16	Q	54760483	1	PANEL, REAR TOP ACCESS
H	54743257	2	DOOR, SIDE				

DRAWBAR END



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	36797652	101	SCREW, TAPPING M06-1.0 X 12	N	54767488	1	PANEL, TOOLBOX
B	54737622	1	BRACKET, FRONT INTAKE	P	54720834	1	BAFFLE, FRONT INTAKE
C	35337328	8	STUD, BALL	Q	35310622	1	PLUG, 2.0 DIA HOLE
D	36881886	8	NUT, HEX FLANGE M08-1.25	R	35285543	2	PLUG, 1.5 DIA HOLE
E	54688254	1	PANEL, REAR END CAP	S	35607829	1	EYEBOLT
F	35256452	12	RECEPTACLE, 1/4 TURN	T	36772028	1	WASHER, NYLON
G	35279025	28	SCREW, TAPPING M08-1.25 X 20	U	35607837	1	SPRING
H	54756515	1	PANEL, RH SIDE	V	95935029	1	WASHER, FLAT
J	54756523	1	PANEL, LH SIDE	W	95923298	1	NUT, 1/4-20 HEX LOCK
K	54743232	2	PANEL, LOWER SIDE	X	22058325	1	COVER, REAR INST. PANEL
L	54686209	1	PANEL, FRONT END CAP	Y	22068373	*	SEAL, DOOR
M	54767223	1	PANEL, SMALL TOOLBOX				

FOAM INSULATION COMPLETE



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54675020	2	PANEL, LOWER DOOR ACOUSTIC	H	54770524	1	PANEL, LWR SIDE ACOUSTIC
B	54675046	2	PANEL, UPPER DOOR ACOUSTIC	J	54745518	2	PANEL, REAR SPLITTER ACOUSTIC
C	54675053	1	PANEL, FRONT ROOF ACOUSTIC	K	54770490	2	PANEL, TOP LWR SIDE ACOUSTIC
D	54675079	1	PANEL, MIDDLE ROOF ACOUSTIC	L	54674916	1	PANEL, FRONT END CAP ACOUSTIC
E	54675061	1	PANEL, REAR ROOF ACOUSTIC	M	54744826	1	PANEL, INTR BAFFLE FRONT ACOUSTIC
F	54674973	2	PANEL, REAR CORNER ACOUSTIC	N	54744818	1	PANEL, INTR BAFFLE SIDE ACOUSTIC
G	54746516	2	PANEL, REAR SIDE ACOUSTIC				

MANUAL NO. - ILLUSTR. NO. DATE/REV:
54722160-034 10/01 B

DECAL LOCATION

DANGER	WARNING	WARNING
<p>Discharged air can contain carbon monoxide or other contaminants. Will cause serious injury or death. Do not breathe this air.</p>	<p>Trapped air pressure. Can cause serious injury or death.</p> <p>Close service valve and operate tool to vent trapped air before performing any service.</p>	<p>Disconnected air hoses whip. Can cause serious injury or death.</p> <p>When using air tools attach safety device (OSHA Valve) at source of air supply for each tool.</p>

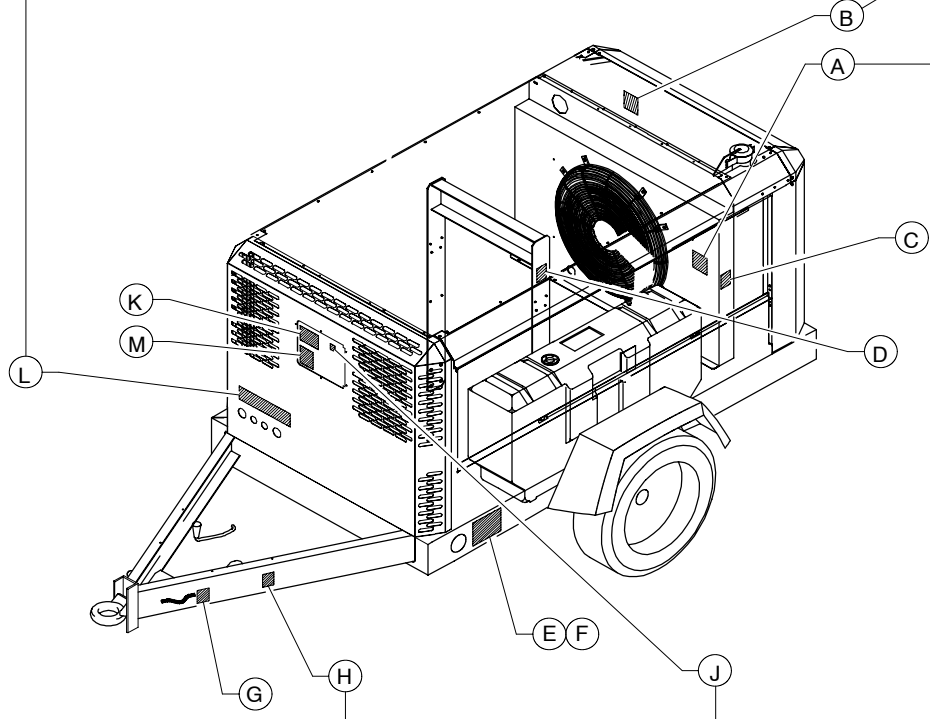
54629902 REV. A

WARNING	
<p>Hot pressurized fluid. Can cause serious burns.</p> <p>Do not open radiator while hot.</p>	

54568761 REV. A

WARNING
<p>Rotating fan blade. Can cause serious injury.</p> <p>Do not operate without guard in place.</p>

54568779 REV. A



105 km/h
WARNING
<p>Collapsing jackstand. Can cause serious injury.</p> <p>Insert locking pin completely.</p>
<p>Excessive towing speed. Can cause serious injury or death.</p> <p>Do NOT exceed 65 mph (105 km/hr.)</p>

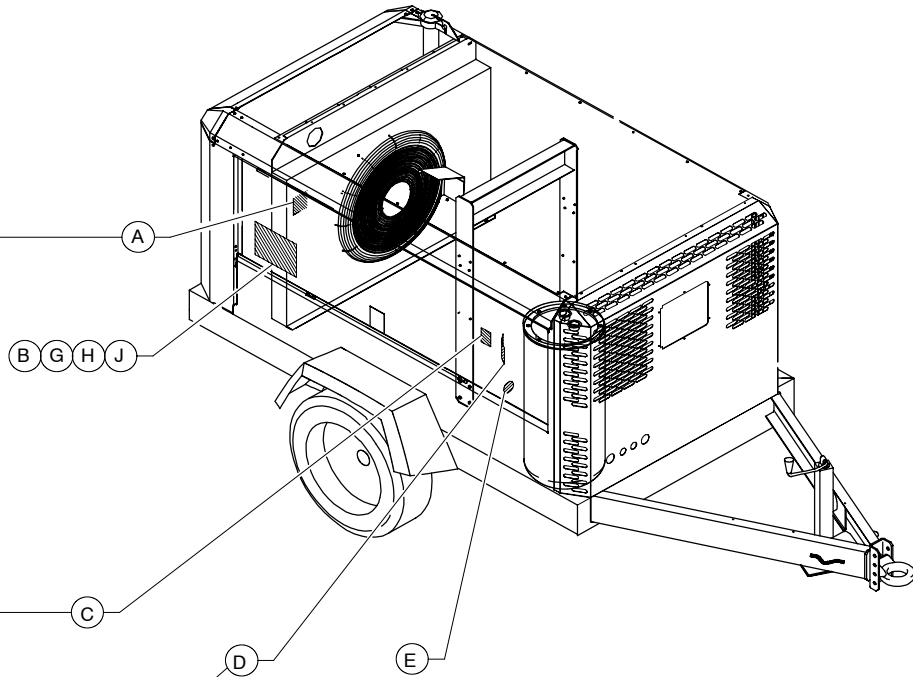
54568803 REV. A

WARNING
<p>Improper operation of this equipment. Can cause serious injury or death.</p> <p>Read Operator's Manual supplied with this machine before operation or servicing.</p> <p>Modification or alteration of this machine. Can cause serious injury or death.</p> <p>Do not alter or modify this machine without the express written consent of the manufacturer.</p>

54568787 REV. A

Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54568779	2	WARNING, ROTATING FAN	H	54568803	1	WARNING, TOWING
B	54568761	1	WARNING, HOT FLUIDS	J	54568787	1	WARNING, IMPROPER OPERATION
C	54604962	1	NOTICE, RADIATOR FILL	K	22053276	1	DECAL, OPERATING INSTRUCTIONS
D	54625207	1	DECAL, DIESEL FUEL	L	54629902	1	DANGER/WARNING, 3-PART COMBO
E	36531176	1	DECAL, V.I.N.	M	54761572	1	DECAL, SYMBOL INTERPERTATION
F	36533081	1	OVERLAY, V.I.N.				
G	54604921	1	NOTICE, TOW CHAINS				

DECAL LOCATION



Item	CPN	Qty	Description	Item	CPN	Qty	Description
A	54568779	1	WARNING, ROTATING FAN	E	54604970	1	DECAL, OIL FILL
B	54761556	1	LAMINATE, WJD STD WIRING DIAGRAM	F	22068282	2	SCREW
C	54568753	1	WARNING, BATTERY	G	54767900	1	LAMINATE, TRAILER WIRING
D	54568795	1	WARNING, HIGH PRESSURE	H	36788982	1	BINDER, 3-RING