OPERATING, MAINTENANCE & PARTS MANUAL

MODELS HP-1000A, XP-1200A, P-1300A-W-CU, HP-1300, XP-1400, P-1600-W-CU

SEPTEMBER, 1990

COMPRESSOR SERIAL NUMBER RANGE

Revised (09-12)

⚠ DANGER

STATEMENT CONCERNING THE USE OF THIS EQUIPMENT FOR BREATHING AIR AND/OR AQUA LUNG SERVICE

If the model number on this air compressor contains the letters "BAP", the compressor is suitable for use in breathing air services. In the absence of such a designation, the compressor is not considered as capable of producing air of breathing quality. For a compressor to be capable of use in breathing air services, it must be fitted with additional specialized equipment to properly filter and/or purify the air to meet all applicable federal, state and local laws, rules, regulations and codes, such as, but not limited to, OSHA 29 CFR 1910.134, Compressed Gas Association Commodity Specification G-7.1-1966, Grade D Breathing Air, and/or Canadian Standards Association. Should the Purchaser and/or User fail to add such specialized equipment and proceed to use the compressor for breathing air service, the Purchaser/User assumes all liability resulting therefrom without any responsibility or liability being assumed by Ingersoll-Rand Company.

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

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36380096 V.1

Manual 35380096

* * * * * * WARNING * * * * * *

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.

THIS MACHINE CONTAINS HIGH PRESSURE AIR WHICH CAN CAUSE SEVERE INJURY OR DEATH FROM HOT OIL AND FLYING PARTS. ALWAYS RELIEVE PRESSURE BEFORE REMOVING CAPS, PLUGS, COVERS OR OTHER PARTS FROM THE PRESSURIZED AIR SYSTEM.

AIR PRESSURE CAN REMAIN TRAPPED IN AN AIR SUPPLY LINE WHICH CAN RESULT IN SERIOUS INJURY OR DEATH. ALWAYS VENT AIR SUPPLY LINE AT TOOL OR VENT VALVE BEFORE PERFORMING ANY SERVICE.

UNRESTRICTED AIR FLOW THROUGH A HOSE END WILL RESULT IN A WHIPPING ACTION WHICH CAN CAUSE SEVERE INJURY OR DEATH. ALWAYS ATTACH A SAFETY FLOW RESTRICTOR TO EACH HOSE "AT THE SOURCE OF SUPPLY OR BRANCH LINE" IN ACCORDANCE WITH OSHA REG. 29CFR SECT. 1926.302(b).

NEVER INSPECT OR SERVICE UNIT WITHOUT FIRST DISCONNECTING BATTERY CABLE(S) TO PREVENT ACCIDENTAL STARTING.

USE EXTREME CARE WHEN REMOVING A PRESSURE CAP FROM A LIQUID COOLING SYSTEM FOR THE ENGINE. THE SUDDEN RELEASE OF PRESSURE FROM A HEATED COOLING SYSTEM CAN RESULT IN A LOSS OF COOLANT AND SEVERE PERSONAL INJURY.

TOWING THIS VEHICLE AT EXCESSIVE SPEEDS OR WITH UNDERRATED TOW VEHICLE CAN RESULT IN LOSS OF DRIVING CONTROL AND GREATER STOPPING DISTANCES. ALWAYS DETERMINE THE MAXIMUM SAFE TOWING SPEED AND TOW VEHICLE RATING BEFORE TOWING. SEE GENERAL DATA DECAL LOCATED ON MACHINE OR SPECIFICATIONS IN THIS MANUAL - SECTION 2 FOR MAXIMUM SPEED AND GROSS WEIGHT FOR COMPARISON.

DO NOT STORE OR TRANSPORT MATERIAL OR EQUIPMENT IN OR ON THE UNIT.

NEVER RUN UNIT WITH GUARDS, COVERS OR SCREENS REMOVED. KEEP HANDS, HAIR, CLOTHING, TOOLS, BLOW GUN TIPS, ETC. WELL AWAY FROM MOVING PARTS.

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).

ALWAYS MAKE SURE WHEELS, TIRES AND TOW BAR CONNECTORS ARE IN SAFE OPERATING CONDITION AND TOW BAR IS PROPERLY CONNECTED BEFORE TOWING.

* * * * * * CAUTION * * * * * *

USE EXTREME CARE TO AVOID CONTACTING HOT SURFACES (ENGINE EXHAUST MANIFOLD AND PIPING, AIR RECEIVER AND AIR DISCHARGE PIPING, ETC.)

DO NOT CONNECT THE AIR DISCHARGE ON THIS UNIT ONTO 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.

ETHER IS AN EXTREMELY VOLATILE, HIGHLY FLAMMABLE GAS. USE SPARINGLY! IF TOO MUCH IS INJECTED, THE UNCONTROLLED EXPLOSION MAY RESULT IN COSTLY DAMAGE TO THE ENGINE.

NEVER ALLOW THE UNIT TO SIT STOPPED WITH PRESSURE IN THE RECEIVER-SEPARATOR SYSTEM. AS A PRECAUTION, OPEN THE SERVICE VALVE.

ANY UNAUTHORIZED MODIFICATION OR FAILURE TO MAINTAIN THIS EQUIPMENT MAY MAKE IT UNSAFE AND OUT OF WARRANTY.

WHEN LIFTING OR LOWERING DRAWBAR ALWAYS GRASP DRAWBAR FIRMLY AND STAND TO ONE SIDE.

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LOOK FOR THESE SIGNS 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 YOUR SUPERVISOR.

(Red background)

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

(Orange background)

Indicates the presence of a hazard which CAN cause severe 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.

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FOREWORD

During the preparation of this manual every effort was made to ensure the adequacy and accuracy of the contents. Only in this manner can the owner be provided with a tool that will aid him in obtaining maximum performance and trouble-free service from the compressor. Since all classes of equipment require a certain amount of attention, the purpose of this manual is to acquaint an operator with the functions, operation and lubrication of the compressor. This manual also provides the owner with the maintenance requirements applicable to the various components designed or selected for incorporation into this unit. Special attention has been given in an effort to make sure that only components built with the very best materials and the finest workmanship have been used, thus reducing the maintenance requirement to a bare minimum.

Before starting the compressor, the instructions should be carefully read to obtain a thorough knowledge of the duties to be performed. Take pride in the compressor, keep it clean, and in good mechanical condition.

For complete protection and minimum down-time to facilitate the maintenance effort that is required, it is suggested that a complete set of recommended spares be kept on hand during and after the first few months of operation. For recommended spares, replacement parts or information regarding the condition or operation of your unit or for major servicing not covered in this manual, consult your nearest sales office, autonomous company or authorized distributor. Be sure to specify the model and serial number of the compressor during any correspondence with a company representative.

In addition to preventive maintenance, the compressor airend may require overhauling to maintain maximum output and performance of the unit. 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 a compressor airend exchange program, therefore we do not recommend overhaul of the airend by the customer. However, we do recognize the fact that circumstances may warrant field overhaul of the airend. Prior to any disassembly or reassembly of the airend we strongly suggest the owner contact the Customer Service Department, Ingersoll-Rand Company, Mocksville, North Carolina, 27028 for their advice and suggestions.

NOTE

For the purpose of encouraging proper maintenance, Ingersoll-Rand Company is providing a Maintenance Log Book (Form PCD 685) with each compressor shipped from the factory. This Log Book contains a performance schedule for all required noise emission control maintenance. Space is provided in this log book so that the owner of this compressor can note what maintenance was done, by whom, where and when.

SECTION 2 - GENERAL DATA

SPECIFICATIONS

Model: ( )-W-CU	HP-1000A	XP-1200A	P-1300A	HP-1300	XP-1400	P-1600
Rated Delivery - cfm	1000	1200	1300	1300	1400	1600
- (litres/sec)	(470)	(570)	(615)	(615)	(660)	(755)
Rated Pressure - psi	150	125	100	150	125	100
- (kPa)	(1050)	(875)	(700)	(1050)	(875)	(700)
Engine Model - NTA 855 C( )	360	360	360	450	450	450

ENGINE - CUMMINS (DIESEL)

Full Load Speed - rpm 1800
No Load Speed - rpm 1200
Electrical System - volt 24

WEIGHT

Net Weight (less fuel) ..... 14500 pounds (6600 kilograms)
Gross Weight (all fluids) .....15800 pounds (7200 kilograms)

FLUID CAPACITIES

Compressor Lubricant ..... 55 U.S. gallons (208 litres)
Fuel Tank (Use clean DIESEL fuel) ..... 180 U.S. gallons (680 litres)
Engine Crankcase Lubricant ..... 10.5 U.S. gallons (40 litres)
Engine Coolant (Radiator) ..... 16 U.S. gallons (61 litres)

UNIT MEASUREMENTS

Overall Length, With Drawbar Up .....15.9 feet (4.84 meters)
Overall Height ..... 8.46 feet (2.58 meters)
Overall Width ..... 7.38 feet (2.25 meters)

RUNNING GEAR

Tire Size ..... 8.25 x 15 TR load range "F"
Inflation Pressure (Cold) ..... 105 psi (720 kPa)
Towing Speed (Maximum) ..... 20 mph (32 km/hr)

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

EXPENDABLE SERVICE PARTS

Compressor Oil Filter Element (2) ..... Part No. 36758613
Compressor Oil Separator Element ..... Part No. 36754406
Compressor Air Cleaner Element (16 inch),Inner..... Part No. 35123520
Outer ..... Part No. 35123512
Engine Air Cleaner Element (14 inch),Inner ..... Part No. 35355353
Outer..... Part No. 35355395

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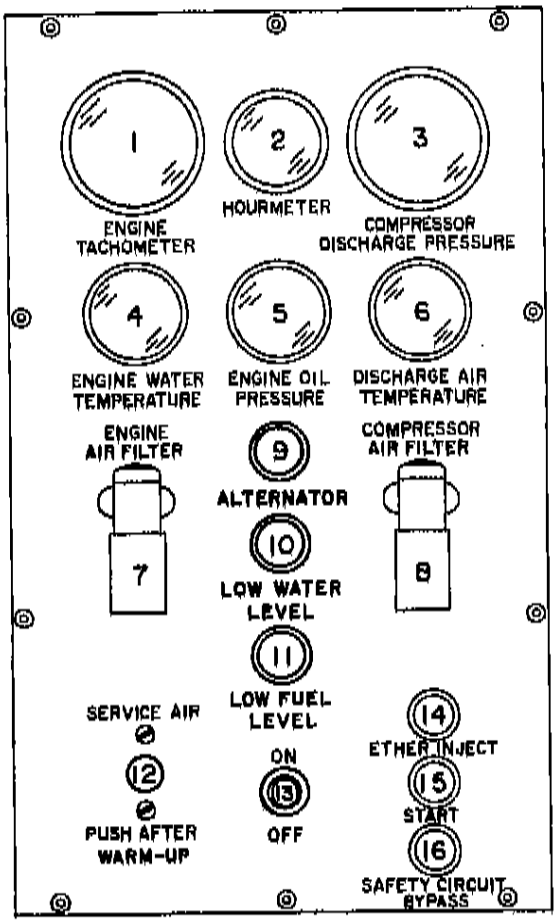
OPERATING CONTROLS AND INSTRUMENTS - Standard



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1. **Engine Tachometer** - - - Indicates engine speed in RPM from 0 when stopped to 1800 at full load.

2. **Hourmeter** - Records running time in hours for maintenance purposes.

3. **Compressor Discharge Pressure Gauge** - - Indicates pressure in receiver tank, normally from 0 psi/kPa to the rated pressure of the unit.

4. **Engine Water Temperature Gauge** - - - Indicates coolant temperature, with normal operating range from 180°F (82°C) to 200°F(93°C).

5. **Engine Oil Pressure Gauge** - Indicates lubricating oil pressure. See engine Manual for normal range.

6. **Discharge Air Temperature Gauge** - Indicates in °F and °C. Normal operating range:185°F/85°Cto230°F/110°C.

7-8 **Air Filter Service Indicators** -Indicates acceptable (green flag) or excessive (red flag) restriction within engine and compressor air cleaners.

9. **Alternator Lamp** - Glows when master switch is "ON" and alternator is not charging.

10. **Low Water Level Lamp** - Glows when level drops excessively.

11. **Low Fuel Level Lamp** - Glows when about to run out.

12. **Service Air Button**- A two-way valve that must be tripped (pushed) after engine is warmed up to obtain full air pressure at the outlet.

13. **Toggle Switch**- A master D.C. power switch. Flip "ON" to operate and "OFF" to stop.

14. **Ether Inject Button** - A switch for injecting a measured shot of ether into the engine while the Start button is also depressed.

15. **Start Button** -- Switch that activates the engine starter. Do not crank for more than 10 seconds without allowing to cool for one (1) minute.

16. **Safety Circuit Bypass Button** Switch that bypasses the shut-down system during start-up.

X. **Cold Weather Pre-start Button** (On Receiver Tank) - Below 32°F/0°C, prior to cranking, push Button for 10 seconds.

SECTION 3 - OPERATING INSTRUCTIONS

BEFORE MOVING/MOVING

WARNING

Failure to follow these instructions could result in serious injury or death.

* Do not climb on top of unit. The lifting eye can be reached through the roof door ONLY from INSIDE of the unit.

* When lifting or lowering drawbar, always grasp drawbar firmly and stand to one side.

* Ensure that the tires, wheels and running gear are in good condition and secure.

* Ensure that the tires are inflated to 105 psi (720 kPa).

* Do not tow this unit in excess of 20 mph (32 km/hr).

* Use a tow vehicle whose towing capacity is greater than the gross weight of this unit.

SETTING-UP

ALL UNITS

* Place the unit in a position as level as possible. The design of these units permits a 15 degree lengthwise and 15 degree sidewise 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 level). Do not overfill either the engine crankcase or the compressor lubricating oil system.

* Chock the wheels or otherwise restrain the unit from moving.

* When putting drawbar in upright position, insure that latch is SECURELY engaged.

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).

BEFORE STARTING

* Open service valve(s) to ensure pressure is relieved in receiver-separator system. Close valve(s) in order to build up full air pressure and ensure proper oil circulation.

* Check battery for proper connections and condition.

WARNING

Exercise extreme caution when using a booster battery to start. To jump-start, connect the ends of one booster cable to the positive (+) terminals of each battery. Then connect one end of the other cable to the negative (-) terminal of the booster battery and the other end to the engine block (NOT TO THE NEGATIVE (-) TERMINAL OF THE WEAK BATTERY). After starting:

a. Reduce engine speed to idle.
b. Disconnect negative (-) cable from engine block; then from booster battery.
c. Disconnect positive (+) cable from both batteries.

* 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 when the unit is running. Do not overfill. If necessary, refer to Section 5 - Lubrication for recommended lubricant.

* Check the engine lubricating oil level. Add oil if low on dip-stick. Refer to the engine Operator's Manual for recommended lubricant.

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.

* Check the engine coolant level by looking for a liquid in the sight bubble at the top front of the radiator. If not visible in the sight bubble, look in the filler neck. Add coolant to bring the level above the sight bubble.

NOTICE

If the appropriate mixture of antifreeze is not used (during freezing temperatures), failure to drain the engine may cause costly damage. If water only is used, a corrosion inhibitor should be included.

CAUTION

No smoking, sparks, or open flame near fuel.

* Check the fuel level. Add only CLEAN DIESEL fuel for maximum service from the engine. Refer to the engine Operator's Manual for fuel specifications.

NOTICE

To minimize condensation (water) in the fuel tank, it is recommended to 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.

* Check the air cleaner service indicators of both engine and compressor. If the flag in either indicator shows red, refer to Section 4 - Maintenance for service instructions.

STARTING

* The SERVICE-AIR button (2-way or run-start valve) should be extended.

* Be sure no one is IN or ON the compressor unit.

NOTICE - COLD WEATHER
When the ambient temperature is below 32°F/0°C, push the Button on top of the receiver/separator tank for ten (10) seconds. This operates the 12 volt compressor unit which pressurizes the unloader and thus keeps the inlet valve closed for easier start up.

* Flip the toggle switch to the "ON" position. The following lamps on the control panel should light:

  Alternator - This lamp indicates whenever the alternator is not charging and should go "off" once the engine starts.

  Low Water Level - This lamp should light for four (4) seconds and then go off. If the light stays on, the coolant level is low and should be corrected. If the light doesn't come on, the light bulb and the sensor should be checked and corrected.

CAUTION
Ether is an extremely volatile, highly flammable gas. Use sparingly! If too much is injected, the uncontrolled explosion may result in costly damage to the engine.

* In cold weather, as required, press the ETHER INJECT button while the engine is cranking. This injects a measured amount of ether to the engine and will operate only while the SAFETY CIRCUIT BYPASS button is pressed.

* Press the START button and the SAFETY CIRCUIT BYPASS button at the same time.

NOTE
Do not operate the starter motor for more than 10 seconds without allowing at least one minute cooling time between start attempts.

* Release the START button when the engine starts and sustains running. If the engine does not start after a couple of attempts, refer to Section 7 - Trouble Shooting.

* Release SAFETY CIRCUIT BYPASS button when the engine oil pressure exceeds 20 psi (140 kPa).

— If the engine oil pressure does not rise within five (5) seconds, stop the unit and refer to Section 7 - Trouble Shooting and the engine Operator's manual.

— The ALTERNATOR and the LOW WATER LEVEL lamps should both be off.

* Watch the gauges while the unit warms up for five (5) to ten (10) minutes or until the coolant temperature reaches 140 °F (60°C).

* Push the SERVICE AIR button. The engine should go to full speed and the discharge pressure rise to slightly over rated pressure. If there is no air being consumed the compressor will unload (intake be throttled or closed) and the engine speed drop to the no load speed.

* Compressor is now ready to furnish air when the service valve is opened.

STOPPING

* Close air service valve(s).

* Allow the unit to run at "no load" for 3 to 5 minutes to reduce the engine temperatures.

* Flip the toggle switch to "OFF".

NOTICE

Once the engine stops, the automatic blowdown valve will begin to relieve all pressure from the receiver-separator system.

CAUTION

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

DANGER

Even after pressure is relieved from the receiver-separator system, any air supply line from the compressor to a tool or machine could remain under pressure and cause very serious personal injury or death. After the compressor stops, carefully open a valve at any tool or machine to exhaust the pressure in any line prior to removal or servicing.

AUTOMATIC SHUTDOWN

NOTICE

Do NOT wire around or bypass a shutdown sensor or switch.

All units in this family of machines are protected by six (6) sensors or switches at the following locations:

(1)-High engine COOLANT temperature in the engine.

(2)-Low engine oil pressure, in the engine.

(3)-Low Fuel Level. (First, the light on the control panel will come on as a warning.)

-High discharge AIR temperature,

(4) at the airend outlet.

(5) in the top cover of the separator tank.

(6) in the service pipe.

UNITS RATED BELOW 200 PSI(1400kPa)

These units include an additional low oil pressure switch in the supply line to the airend bearings.

ALL UNITS

Should any of these problem situations occur, the unit will shutdown and stop. Before restarting the unit, check the above areas for low fluid level and/or evidence of excessive heat.

The first four sensors, and additional low oil pressure switch (mentioned above) will automatically reset when the problem condition is corrected. The latter two sensors (5 and 6) employ a fusible material that melts at approximately 280°F (138°C). These fusible sensors must be replaced if activated. This would indicate a serious airend system problem that must be thoroughly investigated and corrected before returning the unit to operation.

Other possible causes for an unexpected shutdown are listed on the Trouble Shooting chart in Section 7.

SECTION 4 - PREVENTIVE 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.

Refer to the engine Operator's Manual furnished with the unit for the specific requirements on preventive maintenance for the engine.

SCHEDULED MAINTENANCE

The schedule on page 4-10 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 you are operating in extreme environments (very hot, cold, dusty or wet), the schedule should be adjusted accordingly.

COMPRESSOR OIL LEVEL

The oil level is most consistent when the unit is RUNNING 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.

AIR CLEANER

This unit is equipped with restriction or service indicators for both the engine and the compressor. These should be checked daily before starting and during operation. If the window shows red with the unit operating at full speed, and remains red after the unit is shut down, 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.

After servicing, the restriction indicator should be reset by pressing down on the indicator's flexible top.

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 cleaner 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 of the outer element seals tightly 360 degrees around the air cleaner housing.

In the event that the cleaner element must be put back into use immediately, compressed air cleaning (as follows) is recommended since the element must be thoroughly dry.

Direct compressed air through the element in the direction opposite to the normal air flow through the element. Move the nozzle up and down while rotating the element. Be sure to keep the nozzle at least one inch (25.4 mm) from the pleated paper.

NOTICE

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

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

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 obtructions. 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 page 2-2, Operating Controls, for the normal readings. To test the diagnostic lamps, refer to Section 3 - Starting, page 3-3.

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 **nonmetallic** 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 in Section 2 - Specifications. 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

NOTICE
Do NOT wire around or bypass a shutdown sensor or switch.
Do NOT short circuit fuses.

The operation of the automatic shutdown system should be checked every month, or whenever it appears not to be operating properly. The six or seven switches in this system are listed in Section 3 on page 3-4. The operation of these switches is extremely important in order to protect the engine and the compressor airend. The engine oil pressure switch prevents the engine from being damaged due to oil starvation. Four switches help protect the engine and compressor from high temperatures.

Once a month remove a wire from the engine oil pressure switch to check the shutdown solenoid for proper operation.

Once a year, the temperature switches should be tested by removing from the unit. The two "fusible"(non-resettable) switches can be checked visually or with an ohmmeter (0 ohms = good). The other two "resettable" switches must be tested with an ohmmeter. There should be 0 ohms between the wire terminals. When the switch is placed in the heated oil bath and its contact open, the ohmmeter should indicate infinite ohms.

The high discharge air temperature switch will require approximately 248°F (120°C) to actuate. The engine coolant temperature switch will require approximately 210°F (99°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 cm^2) and show continuity through the contacts. As the pressure is slowly decreased to 8 psi (0.56 kgf per cm^2) 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.

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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 regular 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 holds 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 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.

NOTICE

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.

NOTICE

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. See Section 5 - Lubrication.

3. Inspect filter gasket contact area for cleanliness and damage. Clean or repair as necessary.

4. Install new filter by turning element clockwise until gasket makes initial contact. Tighten an additional 1/2 to 3/4 turn.

5. Start unit and allow to build up to rated pressure. Check for leaks before placing unit back into service.

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. Refer to Section 5 - Lubrication for detailed instructions and specifications.

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.

NOTE

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 SYSTEM

WARNING

High preasure 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.

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.
* Remove scavenge tube from tank cover.
* Disconnect service line from cover.
* Remove (16) 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.

NOTICE
Do not remove staples from the element/gasket connection.

* Place a straightedge across top of element and measure from bottom of straightedge to bottom of element (see Fig. 4.1).
* Replace scavenge tube in cover (cover is still off of tank).
* Measure from bottom of cover to end of scavenge tube (see Fig. 4.2). Measurement should be from 1/8" to 1/4" less than the element measurement. If not, cut to size.

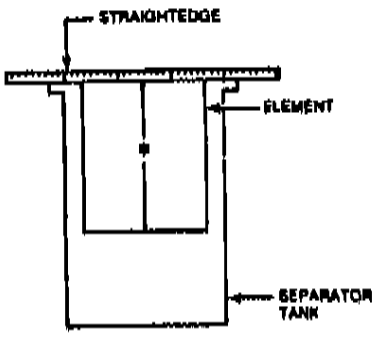

Figure No. 4.1
*Element Measurement

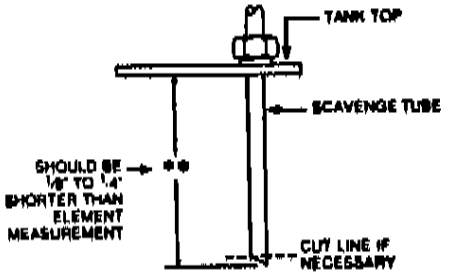

Figure No. 4.2
**Tube Measurement

* Remove scavenge tube.

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

* Replace cover mounting screws; tighten in a crisscross pattern to 150 lbs.-ft.

* Reconnect service line. Replace scavenge tube. 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.

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 through an orifice (.063 inch/1.6 mm). Once a year or every 2000 hours of operation, whichever comes first, remove this line and orifice, thoroughly clean, then reassemble.

NOTE

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, orifice and check valve.
3. Assure minimum pressure valve has proper setting.
4. Run unit at rated operating pressure for 30 to 40 minutes to permit element to clear itself.

EXTERIOR FINISH CARE

This unit was painted at the factory with a high quality acrylic modified alkyd enamel. The following care will ensure the longest possible life from this finish.

1. Allow 30 days, if possible, before washing with anything but clean water. If necessary to remove dust, pollen, etc. from housing, rinse off with only a hose. Do not scrub with a rough cloth, pad, etc.

2. Do not use strong solvents or harsh abrasive cleaners to remove road film or tar. Use only mild tar removers or mild household detergents or detergents especially for automotive finishes.

3. If necessary to remove oxidized pigment and restore the gloss, do not use coarse rubbing compound. Use any automotive polish or wax.

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.

PREVENTIVE MAINTENANCE SCHEDULE

UNIT _____ DATE _____
HOURS _____ SERVICEMAN _____

4

PREVENTIVE MAINTENANCE SCHEDULE

If operating in extreme environments (very hot, cold, dusty or wet), these time periods should be reduced.

	DAILY	WKLY	MO.	3 MO. 500 HRS	6 MO. 1000 HRS	12 MO. 2000 HRS
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			
SAFETY SHUTDOWN SYSTEM ..... TEST	.....	.....	C			
AIR CLEANER SYSTEM ..... VISUAL	.....	.....	C			
COMPRESSOR OIL COOLER ..... EXTERIOR	.....	.....	C	CLEAN		
*ENGINE RADIATOR ..... EXTERIOR	.....	.....	C	CLEAN		
FASTENERS	.....	.....	.....	C		
AIR CLEANER ELEMENTS	.....	.....	.....	WI		
*FUEL/WATER SEPARATOR ELEMENT	.....	.....	.....	.....	R	
COMPRESSOR OIL FILTER ELEMENT	.....	.....	.....	R		
COMPRESSOR OIL	.....	.....	.....	.....	R	
*WHEELS (BEARINGS, SEALS, ETC.)	.....	.....	.....	.....	C	
*ENGINE COOLANT ..... TEST	.....	.....	.....	.....	C	R
SHUTDOWN SWITCH SETTINGS ..... TEST	.....	.....	.....	.....	.....	C
SCAVENGER ORIFICE & RELATED PARTS	.....	.....	.....	.....	.....	Clean
OIL SEPARATOR ELEMENT	.....	.....	.....	.....	.....	R
ENGINE (OIL CHANGES, FILTERS, ETC.)	REFER TO ENGINE OPERATOR'S MANUAL					

*DISREGARD IF NOT APPROPRIATE FOR THIS PARTICULAR MACHINE. R = REPLACE.
C = CHECK (AND ADJUST OR REPLACE IF NECESSARY). WI = OR WHEN INDICATED.

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SECTION 5 - LUBRICATION

Contents

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 lubrication chart on page 5-2 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 Section 4 - Maintenance.

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 1000 hours; however, 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 table on page 5-2.

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 1000 hours, 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.

Complete replacement of the old oil with clean new oil every 1000 operating hours (or every six months, whichever comes first), depending upon operating conditions, is not only desirable, but is good insurance against the accumulation of dirt, sludge, or oxidized oil products.

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 manual blowdown valve.**

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. If not within the "OK" range, stop the unit and make corrections. DO NOT OVERFILL OR OPERATE IN THE "ADD" RANGE.

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FLUIDS AND LUBRICANTS TABLE

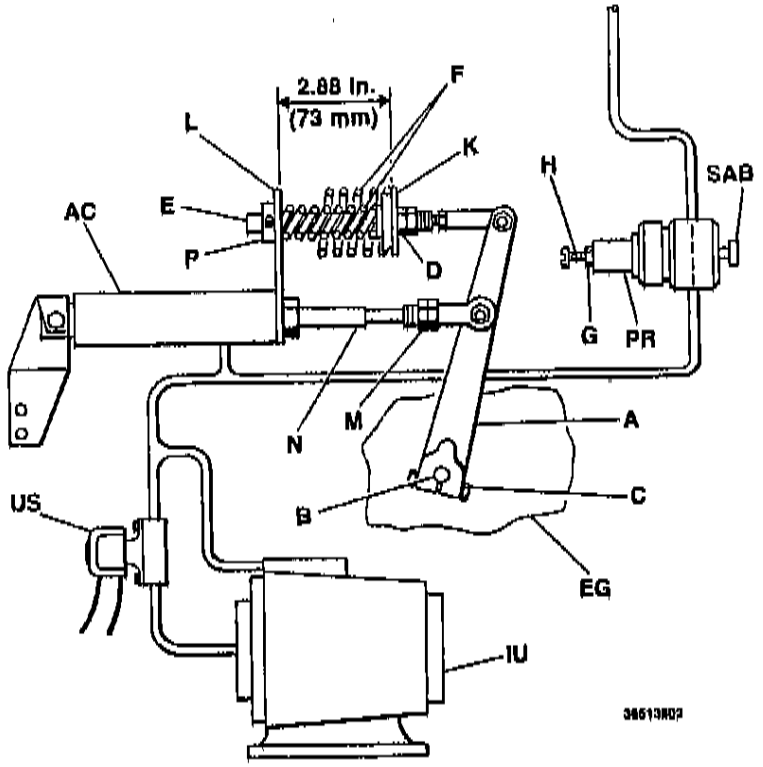
ITEM	FLUID	AMBIENT TEMP.	SPECIFICATION	INTERVAL
Compressor	Lubricant	125°F to −10°F (52°C to −23°C)	• DEXRON® or DEXRON® II ATF	1000 hours*
			• MIL-L-46152 SAE 10W, API CC	1000 hours*
			• MIL-L-2104B SAE 10W	1000 hours*
			• MIL-L-23699B Synthetic	2500 hours or two years
		−10°F to −50°F (−23°C to −46°C)	• MIL-L-23699B Synthetic	1000 hours
			• MIL-L-46167 Sub-Zero Arctic	1000 hours
Engine	• Oil • Coolant • Fuel	Refer to Engine Operator's Manual or Manufacturer's Representative		
Running Gear • Wheel Bearings	Grease	All	MIL-G-10924	6 months
• Other	Grease	All	Multi-Purpose	6 months

DEXRON® — Reg. T.M. of General Motors Corp.

*Or every six months, whichever comes first.

SECTION 6

SPEED AND PRESSURE REGULATOR ADJUSTING INSTRUCTIONS



AC = Air Cylinder
US = Unloader Solenoid
IU = Inlet Unloader
EG = Engine Governor
PR = Pressure Regulator
SAB = Service Air Button

NORMALLY, REGULATION REQUIRES NO ADJUSTING, BUT IF PROPER ADJUSTMENT IS LOST, PROCEED AS FOLLOWS:

BEFORE STARTING UNIT

1. At engine governor, (EG), check the position of throttle arm (A) on governor shaft (B). This is done by loosening nut (C) that clamps the throttle arm (A) to the shaft (B). Rotate shaft (B) counterclockwise as far as possible. Rotate throttle arm until it is vertical. Tighten nut (C).

2. Adjust jam nut (D) on throttle spring rod (E) to fully relieve tension on two compression springs (F).

3. Behind instrument panel at pressure regulator (PR), loosen jam nut (G) on adjustment screw (H). Turn screw counterclockwise until no tension is felt on screw. Now turn screw clockwise one full turn.

AFTER STARTING UNIT

4. Allow unit to warm up, then push "Service Air" button (SAB) on control panel (At start-run valve).

5. Open and adjust service valve on outside of unit to obtain the rated operating pressure* on the discharge pressure gauge.

6

NOTICE: If the rated operating pressure* cannot be maintained with engine at full load speed* and rod (N) fully extended, adjust regulator screw (H) clockwise until throttle arm (A) just begins to move.

6. Insure that pressure is maintainted at rated pressure*, then adjust regulator screw (H) until throttle arm (A) just begins to move.

NOTE: Adjusting regulator screw (H) clockwise will raise pressure at full speed.

7. Adjust jam nut (D) on throttle spring rod (E) until distance between spring mount (K) and rod guide (L) is 2.88 in. (73 mm).

8. Close service valve (engine will slow to no load or idle speed*). Loosen jam nut (M) at air cylinder (AC). Rotate air cylinder shaft (N) to adjust speed to no load rpm. If unable to obtain no load rpm, loosen nut (C) and rotate throttle arm (A) as required. Moving throttle arm (A) clockwise increases idle speed. Tighten nut (C) and, if necessary, finely adjust idle speed by rotating air cylinder shaft (N). Then tighten jam nut (M).

9. If necessary, repeat steps 5 and 6.

10. At pressure regulator (PR) tighten jam nut (G).

11. Limit full load engine speed* by adjusting the collar (P) on the end of the throttle spring rod (E).

12. To obtain maximum CFM at any pressure between 80 PSI (550 kPa) and the rated operating pressure*, change adjustment of screw (H) to obtain desired discharge pressure at full load engine speed. Always lock and protect pressure setting of adjusting screw (H) with jam nut(G)

13. Insure that unloader solenoid (US) acts to hold pressure in inlet unloader (IU) after shutdown. After start-up a pressure switch will open unloader solenoid (US).

* Refer to General Data (Section 2)

SECTION 7 - TROUBLE SHOOTING

Contents

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" in the top horizontal line.

B. Follow down that column to find the potential cause or causes. The numbers (1,2,3 etc.) suggest an order to follow in trouble shooting.

C. A reference for most causes is indicated in the extreme right column and the footnotes. For example, "M" stands for Maintenance - Section 4 in this manual.

For trouble shooting electrical problems refer to the Wiring Diagram Schematic found in the Section 9 - Parts List.

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 overheats" 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.

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 I-R PORTABLE COMPRESSOR

CAUSE \ COMPLAINT	Sched Air Cleaner Life	Excessive Oil In Air	Oil Seal Leak	Oil In Air Cleaner	Excessive Comp. Oil Temperature	Engine RPM Down	Will Not Unload	Safety Valve Relieves	Low CFM	Unit Shutdown	Unit Fails To Shutdown	Excessive Vibration	Won't Start/Run	Alternator Lamp Stays On	Alternator Lamp Stays Off	Engine Temp. Lamp Stays On	Engine Temp. Lamp Stays Off	Engine Oil Press. Lamp Stays On	Engine Oil Press. Lamp Stays On	REFER TO: SECTION
Dirty Operating Conditions	1		1		6				3							5				M
Wrong Air Filter Element	6					8			13											P
Defective Service Indicator	3																			P
Inadequate Element Cleaning	2								4											M
High Oil Level		1																		M
Out Of Level > 15°		2			2											7			3	Q
Clogged Scavenge Orifice		3																		M
Defective Separator Element		8				9		7	12											P
Scavenge Tube Blocked		4																		M
Defective Scavenge Check Valve		5																		M
Defective Minimum Pressure Valve		7			14				11											P
Contaminated Lube Oil			2																	M
Malfunctioning Seal			6																	P
Scored Shaft			7																	P
Malfunctioning Inlet Unloader	5			3			5	6	9											P
Incorrect Stopping Procedure	4			1																O
Dirty Cooler					5											6				M
Low Oil Level					3														2	M
Clogged Oil Filter Elements					7														5	M
Wrong Lube Oil			3		4														4	L
Malfunctioning Thermostat					12															P
Defective Oil Cooler Relief Valve					13															P
Recirculation Of Cooling Air					10											11				RA
Operating Pressure Too High			5		9	2		1	8							9				O/A
Loose Or Broken Belts					8							1		1		8				M/P
Blocked Or Restricted Oil Lines			4		15														6	—
Incorrect Linkage Adjustment						5			5											A
Clogged Fuel Filters						1							6							EM
Incorrect Pressure Regulator Adjustment						3	3	3	6											A
Ruptured Inlet Unloader Diaphragm				2			2	6												P
Defective Discharge Air Temp Switch										7	1		11							P/M
Defective Engine Belt Break Switch										8	2		12			3	4			P/M
Defective Engine Oil Pressure Switch										9	3		13					3		P/M
Defective Shutdown Solenoid										10	4		14							P/M
Malfunctioning Relay										11	5		15							P/M
Loose Wire Connection										6			10	2	2		2			W/P
Blown Fuse										1			3							P
Low Battery Voltage													2	3						—
Malfunctioning Start Switch													4							P
Defective Safety Bypass Switch											6		16							P
< 9 Volts At Shutdown Solenoid										12			1							—
Malfunctioning Alternator														4						P
Bulb Burnt Out															1		1	1		P
Broken Engine Fan Belt										4			8			1				M
Malfunctioning Circuit Board														5	3	2	3	2		P
Ambient Temp >125°F (52°C)					1											4				RA
Ice In Regulation Lines/Orifice						10	6	8	14											RA
Sep Tank Blown Down Too Quickly		6																		O
Dirty Air Filter						6			1											M
Malfunctioning Pressure Regulator						4	4	4	7											P
Malfunctioning Air Cylinder						7			10											P
Leaks In Regulator Piping							1	2	2											—
Compressor Oil Temp Too High										3			7							TC
Engine Water Temp Too High										4			8							TC
Engine Oil Pressure Too Low										5			9							TC
Out Of Fuel										2			6							—
Malfunctioning Fan					12							3						9		P
Rubber Mounts Damaged												2								P
Engine Malfunctioning						11				14		5	18					12	7	EM
Drive Coupling Defective												4								P
Airend Malfunctioning					17	12						6	19							P
Defective Safety Valve								9												P

Numbers (1, 2, 3, Etc.) Suggest Order To Follow In Cause Trouble Shooting

*M – Maintenance (5)
P – Parts (10)
O – Operating (4)
L – Lubrication (6)
RA – Review Application
A – Adjustments (7)
EM – Engine Manual
W – Wiring Diagram (10)
TC – Trouble Complaint

SECTION 8 - PARTS ORDERING INFORMATION

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.

NOTE

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.

All parts orders pertaining to your engine should be referred to your particular engine manufacturer's authorized distributor or dealer.

DESCRIPTION

The illustrated parts breakdown illustrates and lists the various assemblies, subassemblies and detailed parts which make up this particular air compressor. This includes the standard unit along with some of the options that are available. A series of illustrations show each part clearly and in its correct location relative to the other parts in the illustration. The part number, the description of the part, the quantity of parts required, and the part number of the next higher assembly in which a particular part is used are shown on each illustration. The quantities specified are the number of parts used per one assembly and are not necessarily the total number of parts used in the overall unit. 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. In the event the item is an assembly or subassembly, the abbreviation "assy" or "subassy" follows the noun name. If the previous conditions do not exist, the noun name is 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 required to modify the part noun.

In referring to the rear, the front or to either side of the unit, always consider the flywheel end of the engine as the rear of the unit. Standing at the rear of the unit facing the flywheel end of the engine, 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. Refer to Section 10 - Common Fasteners.

MARKINGS AND DECALS

NOTE

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

Part numbers for sets of original-type exterior markings (IR logotype etc.) and warnings/instructional decals are listed on the index page of Section 9 - Parts List. Individual decals 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 Section 9 - 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.

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. 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.

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 shutdown 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.

8

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.

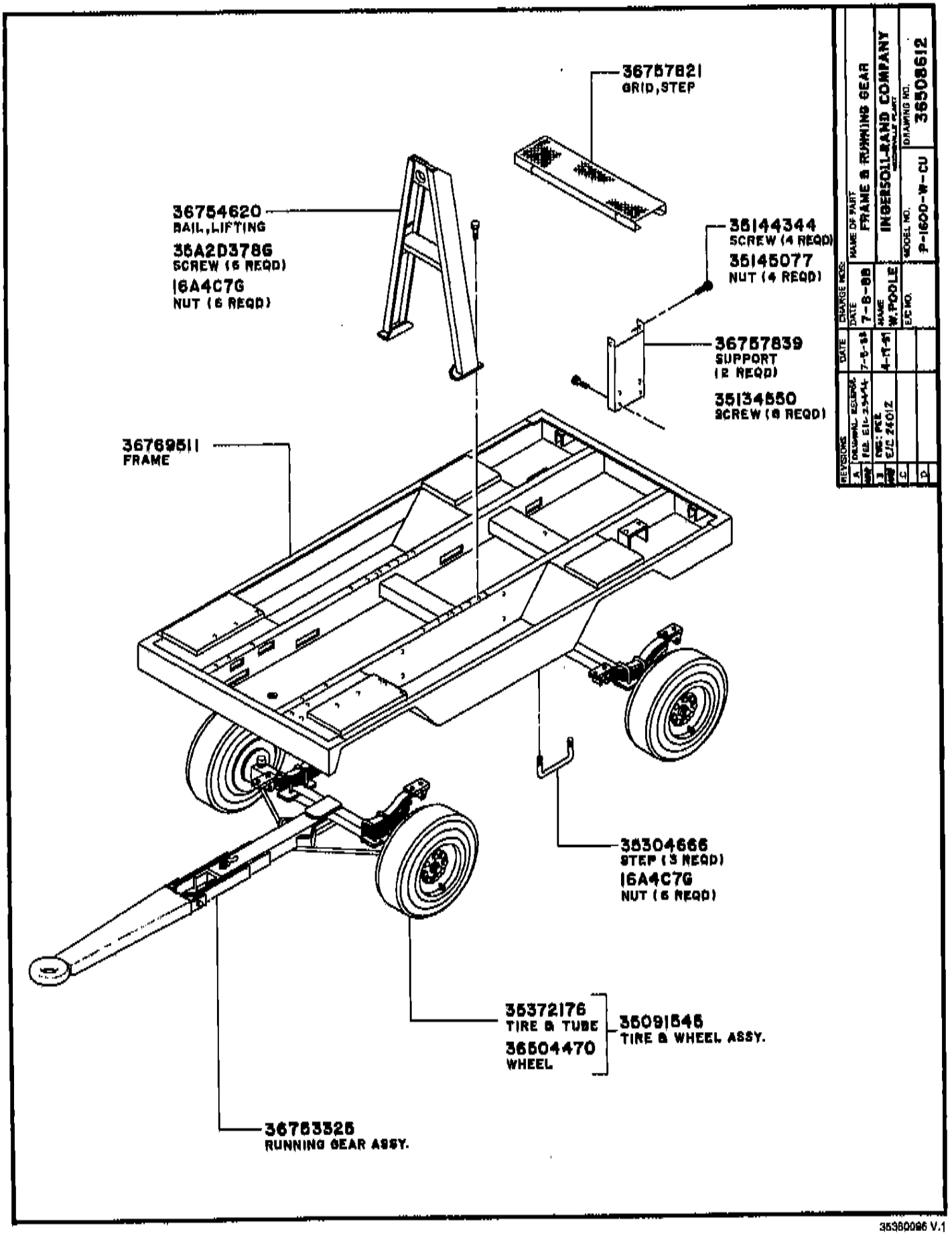
NOTE

Airends being returned to the factory in connection with a warranty claim must be processed through the Customer Service Department. **If returned as an exchange airend, no warranty claim will be considered.**

SECTION 9 — PARTS LIST

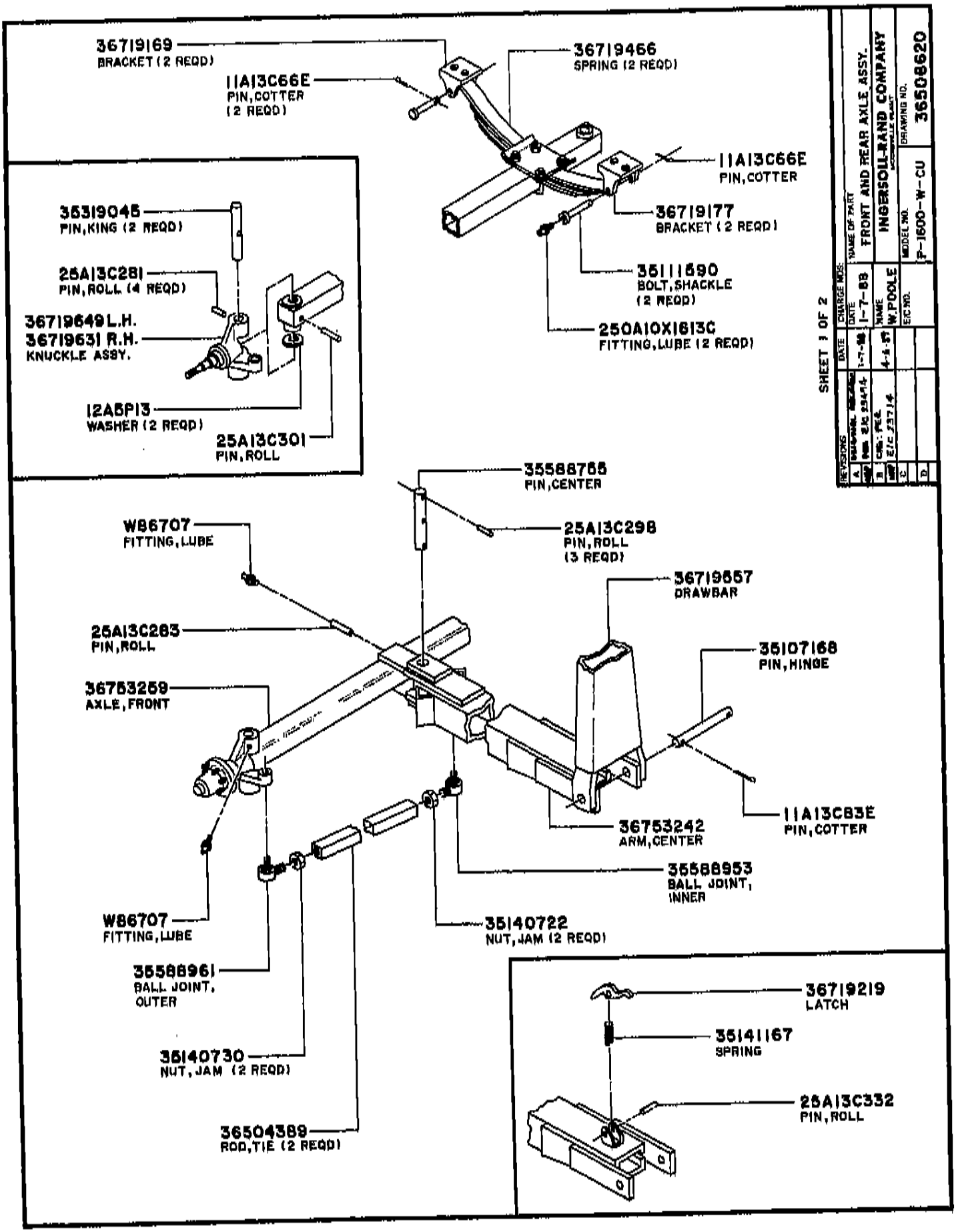
MODEL	EXTERIOR MARKING SET	DECAL SET
HP-1000A-W-CU	35099316	36003440
XP-1200A-W-CU	35098177	36003457
P-1300A-W-CU	35095652	36003465

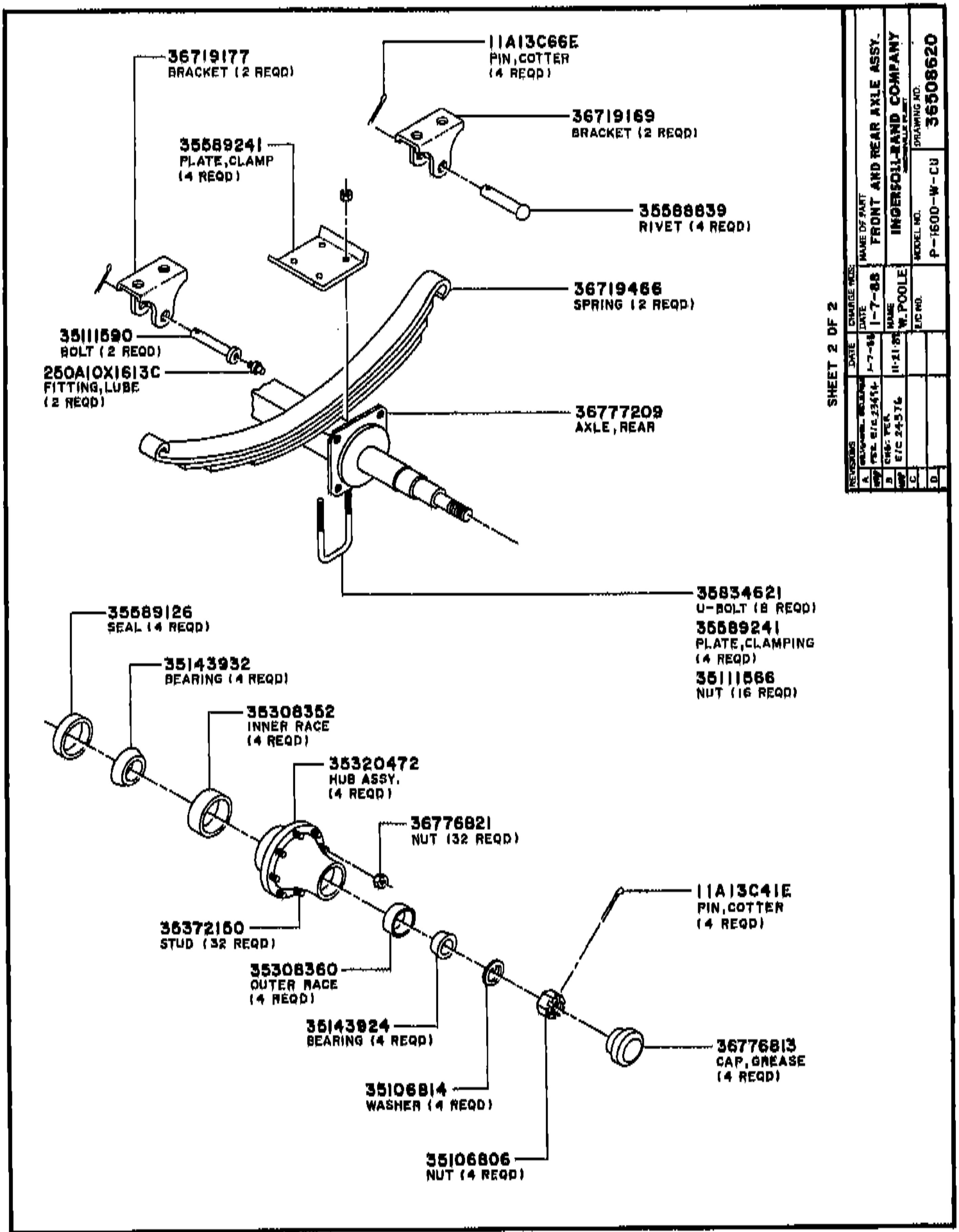
MODEL	EXTERIOR MARKING SET	DECAL SET
HP-1300-W-CU	35095652	35096585
XP-1400-W-CU	35095645	35096593
P-1600-W-CU	35095637	35096148



35380096 V.1

9

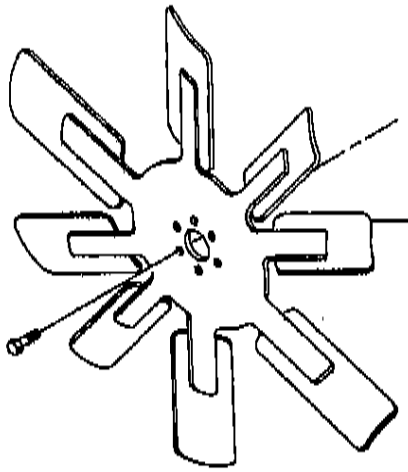

36719169
BRACKET (2 REQD)
11A13C66E
PIN,COTTER
(2 REQD)
36719466
SPRING (2 REQD)
11A13C66E
PIN,COTTER
36719177
BRACKET (2 REQD)
35111590
BOLT,SHACKLE
(2 REQD)
250A10X1613C
FITTING,LUBE (2 REQD)
35319045
PIN,KING (2 REQD)
25A13C281
PIN,ROLL (4 REQD)
36719649 L.H.
36719631 R.H.
KNUCKLE ASSY.
12A5P13
WASHER (2 REQD)
25A13C301
PIN,ROLL
35588755
PIN,CENTER
25A13C298
PIN,ROLL
(3 REQD)
W86707
FITTING,LUBE
36719657
DRAWBAR
25A13C283
PIN,ROLL
35107168
PIN,HINGE
36753259
AXLE,FRONT
11A13C83E
PIN,COTTER
36753242
ARM,CENTER
35588953
BALL JOINT,
INNER
W86707
FITTING,LUBE
35140722
NUT,JAM (2 REQD)
35588961
BALL JOINT,
OUTER
35140730
NUT,JAM (2 REQD)
36504389
ROD,TIE (2 REQD)
36719219
LATCH
35141167
SPRING
25A13C332
PIN,ROLL
SHEET 1 OF 2
REVISIONS
DATE
CHARGE NOS.
NAME OF PART
FRONT AND REAR AXLE ASSY.
INGERSOLL-RAND COMPANY
DRAWING NO.
36508620
MODEL NO.
P-1600-W-CU
ETC NO.
NAME
W.POOLE
DATE
1-7-88
4-6-87


11A13C66E
PIN, COTTER
(4 REQD)
36719177
BRACKET (2 REQD)
36719169
BRACKET (2 REQD)
35589241
PLATE, CLAMP
(4 REQD)
35588839
RIVET (4 REQD)
36719466
SPRING (2 REQD)
35111590
BOLT (2 REQD)
250A10X1613C
FITTING, LUBE
(2 REQD)
36777209
AXLE, REAR
35834621
U-BOLT (8 REQD)
35589241
PLATE, CLAMPING
(4 REQD)
35111566
NUT (16 REQD)
35589126
SEAL (4 REQD)
35143932
BEARING (4 REQD)
35308352
INNER RACE
(4 REQD)
35320472
HUB ASSY.
(4 REQD)
36776821
NUT (32 REQD)
11A13C41E
PIN, COTTER
(4 REQD)
35372150
STUD (32 REQD)
35308360
OUTER RACE
(4 REQD)
35143924
BEARING (4 REQD)
36776813
CAP, GREASE
(4 REQD)
35106814
WASHER (4 REQD)
35106806
NUT (4 REQD)
SHEET 2 OF 2
FRONT AND REAR AXLE ASSY.
INGERSOLL-RAND COMPANY
W. POOLE
P-1600-W-CU
36508620

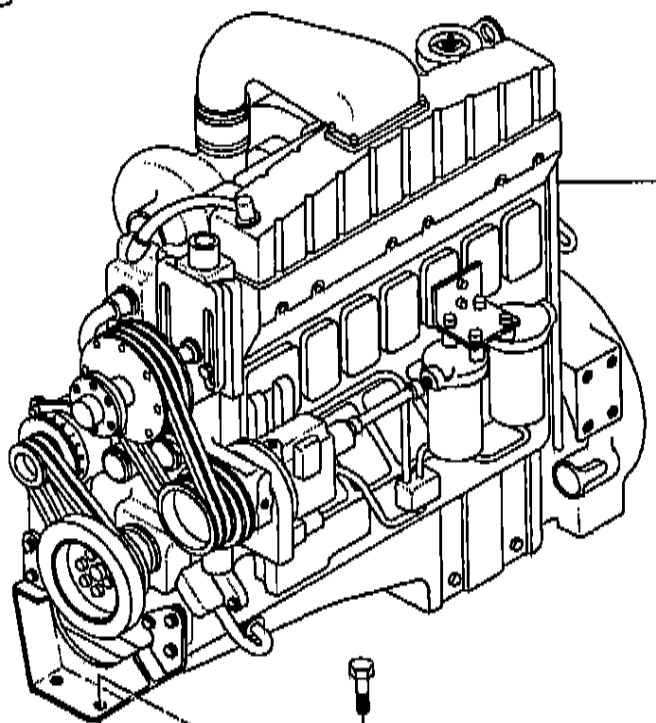
9

REPLACEMENT ELEMENTS

FUEL FILTER ——— 35357268
COOLANT FILTER ——— 35375914
Lube Element 35357243
Lube Bypass 35357250



36758704
FAN
35A2D223G
SCREW (6 REQD)



36786275
ENGINE (1000/1200/P-1300)
36372424
ENGINE (1300/1400/1600)
36759512
ALTERNATOR

35A2D386G
SCREW
35101468
WASHER

36769313
BRACKET, MOUNTING
35A2D379G
SCREW (2 REQD)
11A5G9
WASHER (4 REQD)
68A4C8G
NUT (2 REQD)

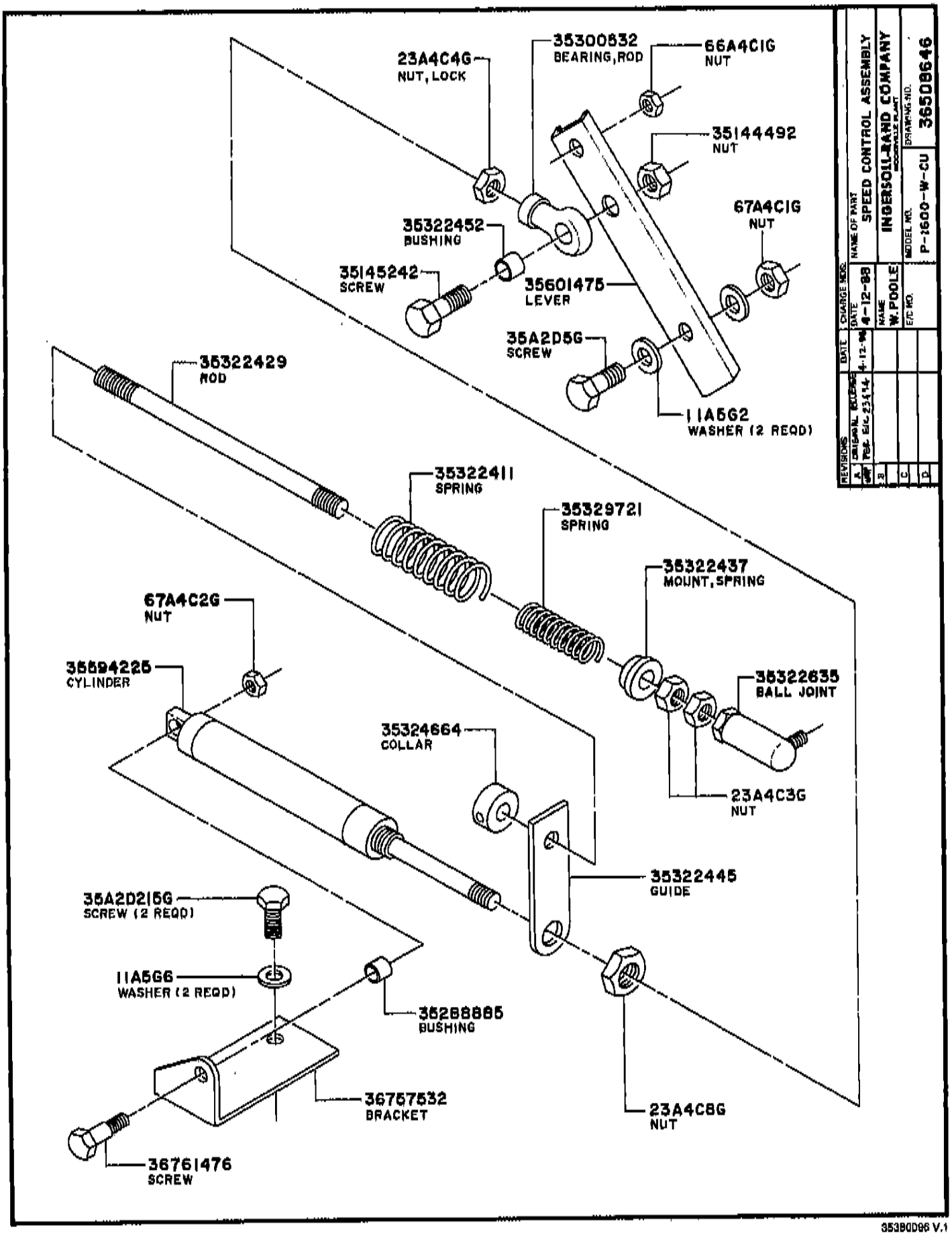
35306133
MOUNT, RUBBER

11A5G9
WASHER

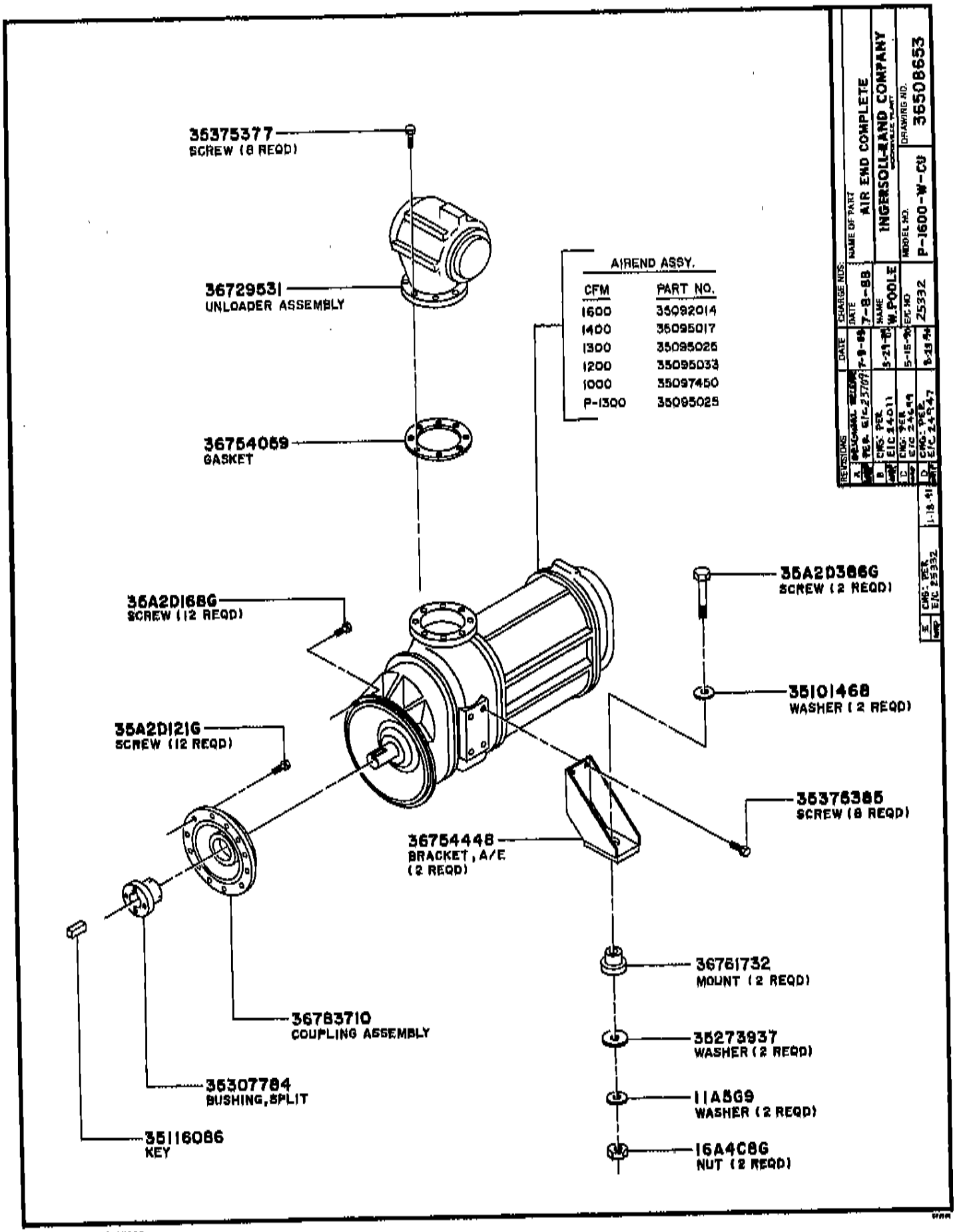
16A4C8G
NUT

REVISIONS		DATE	CHARGE NOS:	DATE	NAME OF PART	ENGINE ASSEMBLY	
A	Material Changes Per E&E 23494	9-16-86		3-28-88			
B	CHG: PER E/C 24012	4-8-88	NAME	W. POOLE	INGERSOLL-RAND COMPANY		
C	CHG: PER E/C 24947	8-24-90	E/C NO.	25338	MODEL NO.	P-1600-W-CU	DRAWING NO. 36508638
D	CHG: PER E/C 25335	1-8-91					

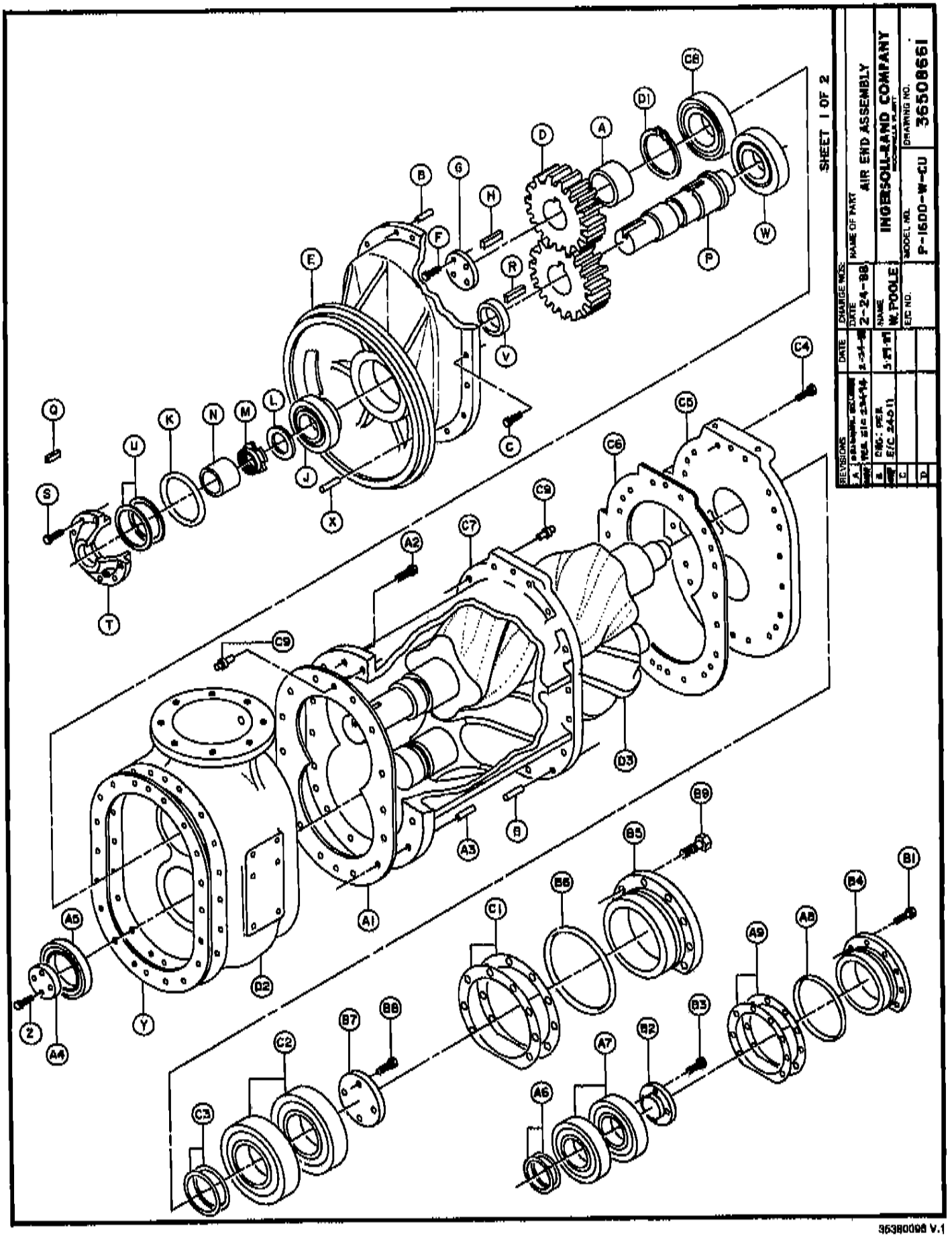
REVISIONS		DATE
E	CHG: OIL FILTER NUMBER	4-15-91
F		
G		
H		


23A4C4G
NUT, LOCK
35300832
BEARING, ROD
66A4C1G
NUT
35144492
NUT
67A4C1G
NUT
35322452
BUSHING
35145242
SCREW
35601475
LEVER
35A2D5G
SCREW
11A5G2
WASHER (2 REQD)
35322429
ROD
35322411
SPRING
35329721
SPRING
35322437
MOUNT, SPRING
67A4C2G
NUT
35694225
CYLINDER
35322635
BALL JOINT
35324664
COLLAR
23A4C3G
NUT
35322445
GUIDE
35A2D215G
SCREW (2 REQD)
11A5G6
WASHER (2 REQD)
35288885
BUSHING
36767532
BRACKET
23A4C8G
NUT
36761476
SCREW
REVISIONS
A ORIGINAL RELEASE
DATE 4-12-88
CHANGE NOS.
DATE 4-12-88
NAME W. POOLE
E/C NO.
NAME OF PART SPEED CONTROL ASSEMBLY
INGERSOLL-RAND COMPANY
MODEL NO. P-1600-W-CU
DRAWING NO. 36508646

353B0D96 V.1



95360086 V.2 E/C 25332



36380098 V.1

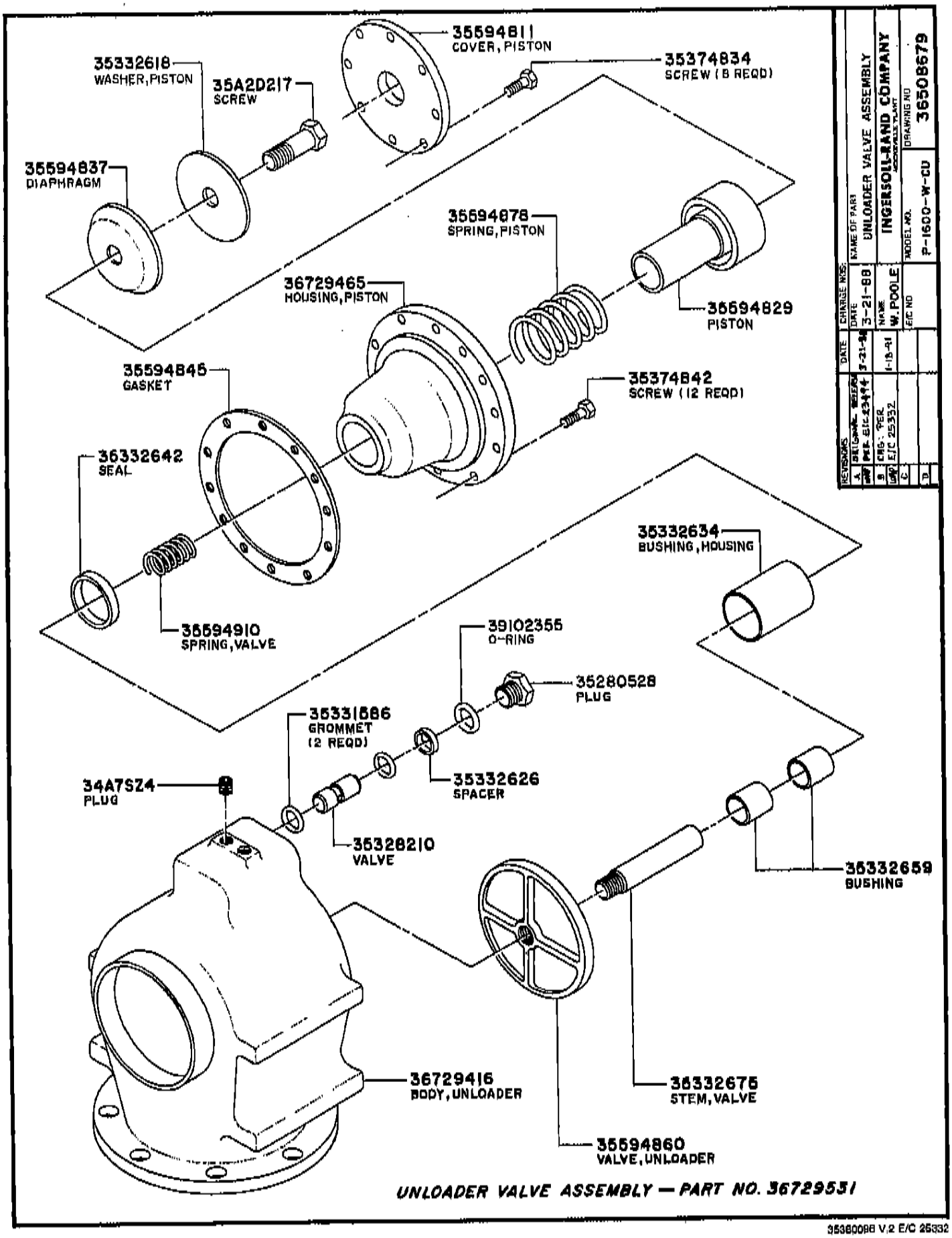
9

Item	Part No.	Description
A	35610286	SPACER
B	35295336	DOWEL
C	35295344	SCREW
D	36765238	GEAR SET — HP-1000-W-CU
	35298488	GEAR SET — XP-1200-W-CU
	35298470	GEAR SET — P/HP-1300-W-CU
	36745800	GEAR SET — XP-1400-W-CU
	36758142	GEAR SET — P-1600-W-CU
E	36711083	GEAR CASE
F	35299569	SCREW
G	35300177	PLATE CLAMP
H	35300144	KEY
J	35299379	BEARING
K	20A11C2M258	O-RING
L	35300227	SPACER
M	35299775	LOCKNUT
N	35596626	SEAL
P	35851195	SHAFT
Q	35367069	KEY
R	35300136	KEY
S	35271139	SCREW
T	35849348	COVER
U	35299536	SHIM
V	35300227	SPACER
W	35299379	BEARING
X	35365261	PIN
Y	35820646	GASKET
Z	35293869	SCREW
A1	35820653	GASKET
A2	35272533	SCREW
A3	35305325	DOWEL
A4	35373877	PLATE CLAMP
A5	35610609	BEARING
A6	35299528	SHIM
A7	35299429	BEARING
A8	20A11C2M365	O-RING
A9	35373133	SHIM
B1	35321520	SCREW
B2	35606920	PLATE CLAMP
B3	35299569	SCREW
B4	36504355	CAP
B5	36504330	CAP
B6	20A11C2M372	O-RING
B7	35610278	PLATE CLAMP
B8	35299569	SCREW
B9	35321520	SCREW
C1	35373141	SHIM
C2	35299403	BEARING
C3	35299510	SHIM
C4	39101472	SCREW
C5	36760890	REAR BEARING HOUSING
C6	35820661	GASKET
C7	36711109	ROTOR HOUSING
C8	35610591	BEARING
C9	35365279	PIN
D1	161A13S750	RETAINING RING
D2	36754141	FRONT BEARING HOUSING
D3	35092246	ROTOR SET

SHEET 2 OF 2

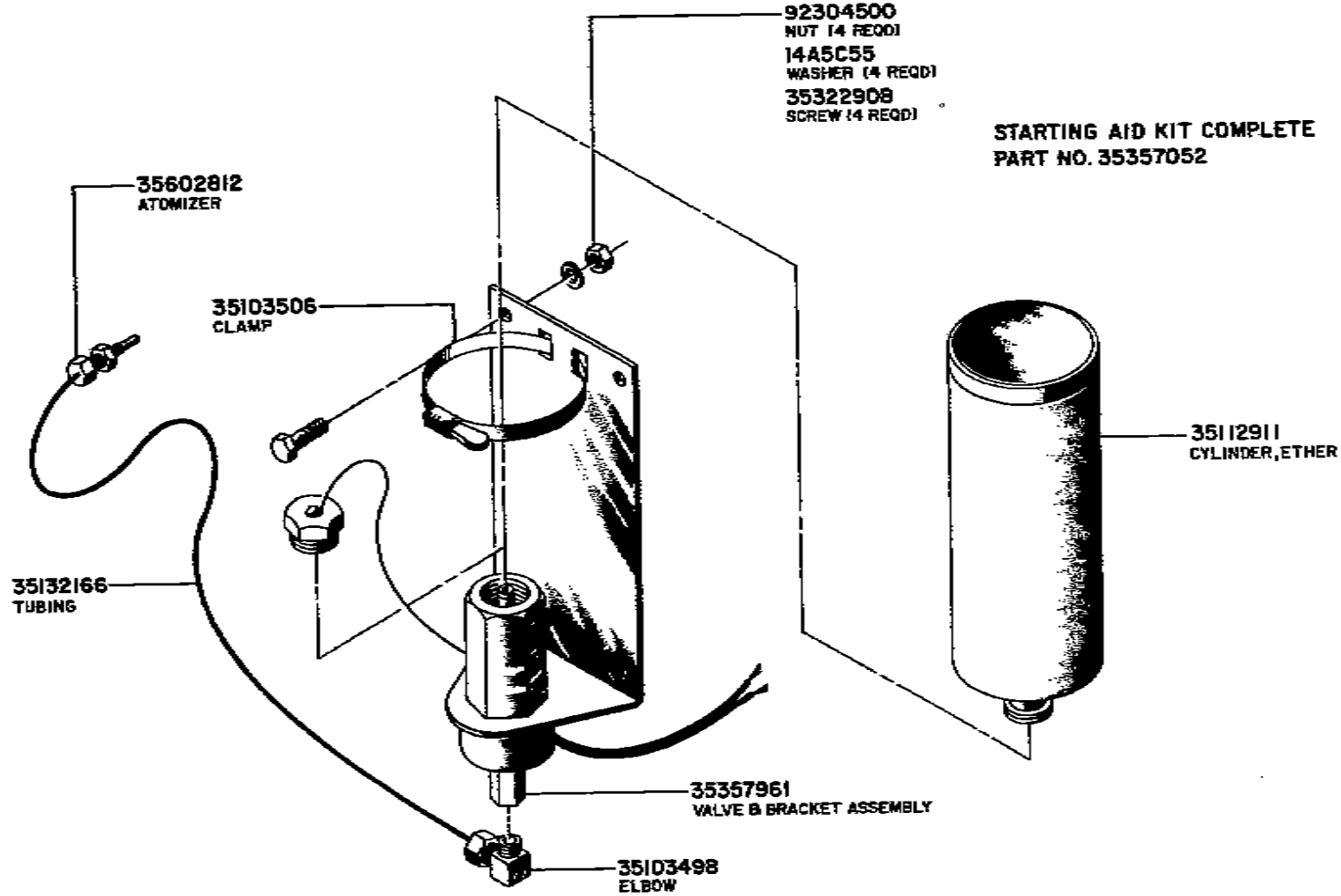
NAME OF PART: AIR END ASSEMBLY
INGERSOLL-RAND COMPANY
DATE: 2-24-88
NAME: W.POOLE
E/C NO: 25572
MODEL NO.: P-1600-W-CU
DRAWING NO.: 36508661

35380096 V.2 E/C 25572



UNLOADER VALVE ASSEMBLY — PART NO. 36729531

35360098 V.2 E/C 25332



REVISIONS		DATE	E/C NO.
A	[illegible] RELEASE	9-23-85	
B	UPDATE TO REFLECT [illegible]	11-22-88	
C	ETHER CYLINDER NO. [illegible] PART NO.	1-5-89	
D			

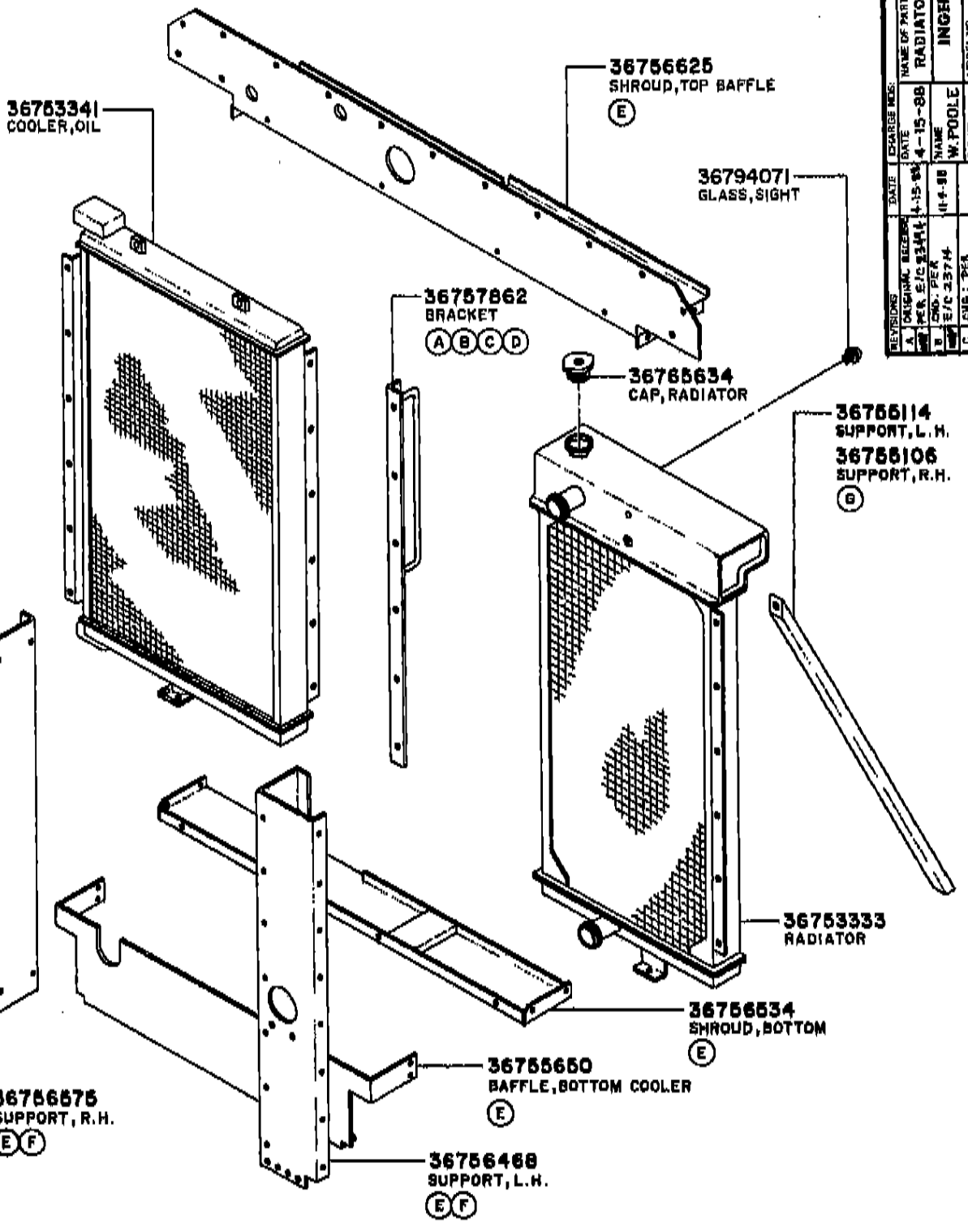
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

CHANGE NOS:

DESCRIPTION: STARTING AID COMPLETE

MODEL NO.	ILLUSTRATION NO.	SHEET NO.	E/C NO.
P-750-WCU	35860345	1 OF 1	

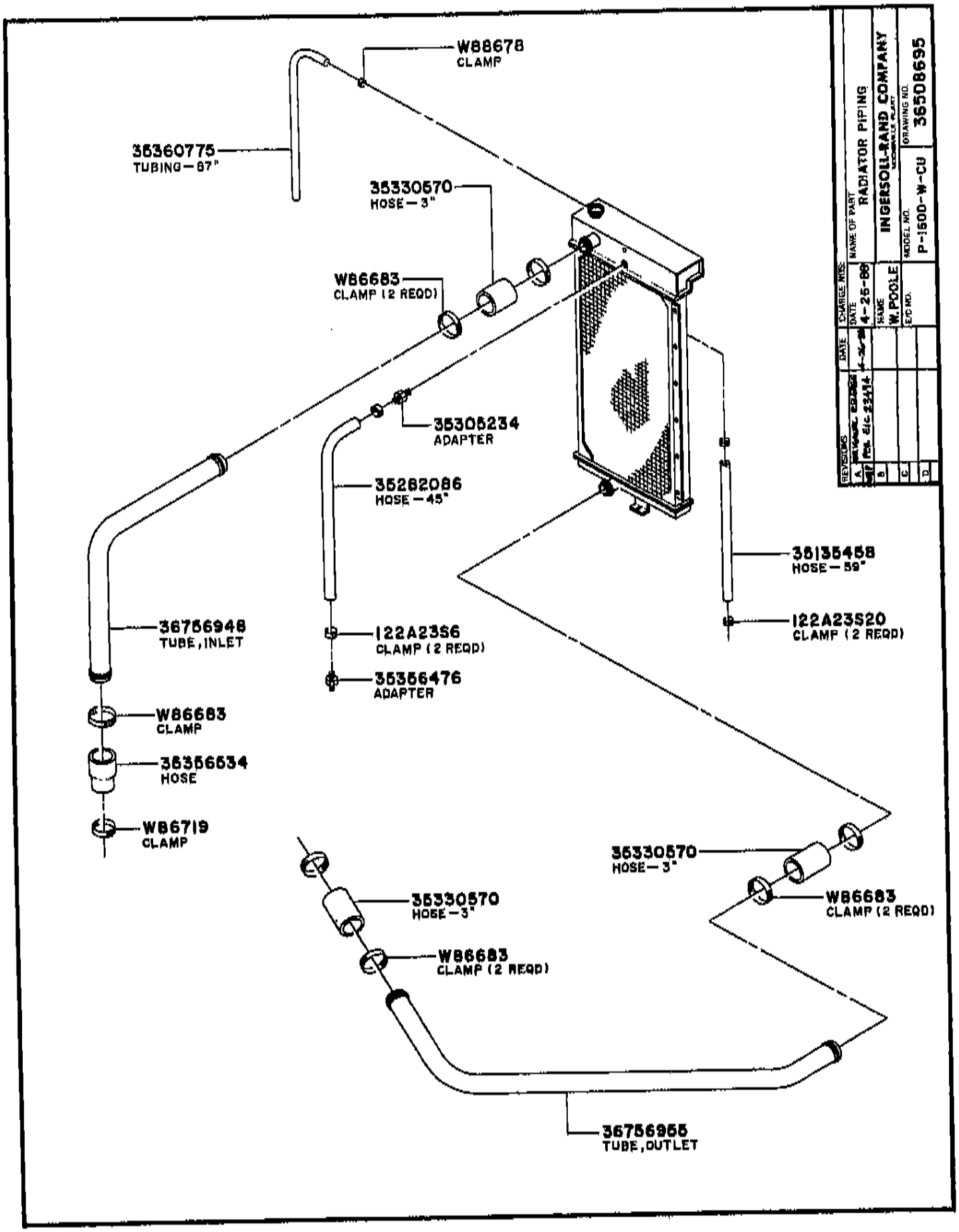
(A)	35144344	SCREW	(F)	35138171	SCREW
(B)	35145077	NUT	(G)	35134550	SCREW
(C)	35252725	SCREW			
(D)	35146259	SCREW			
(E)	92368687	SCREW			



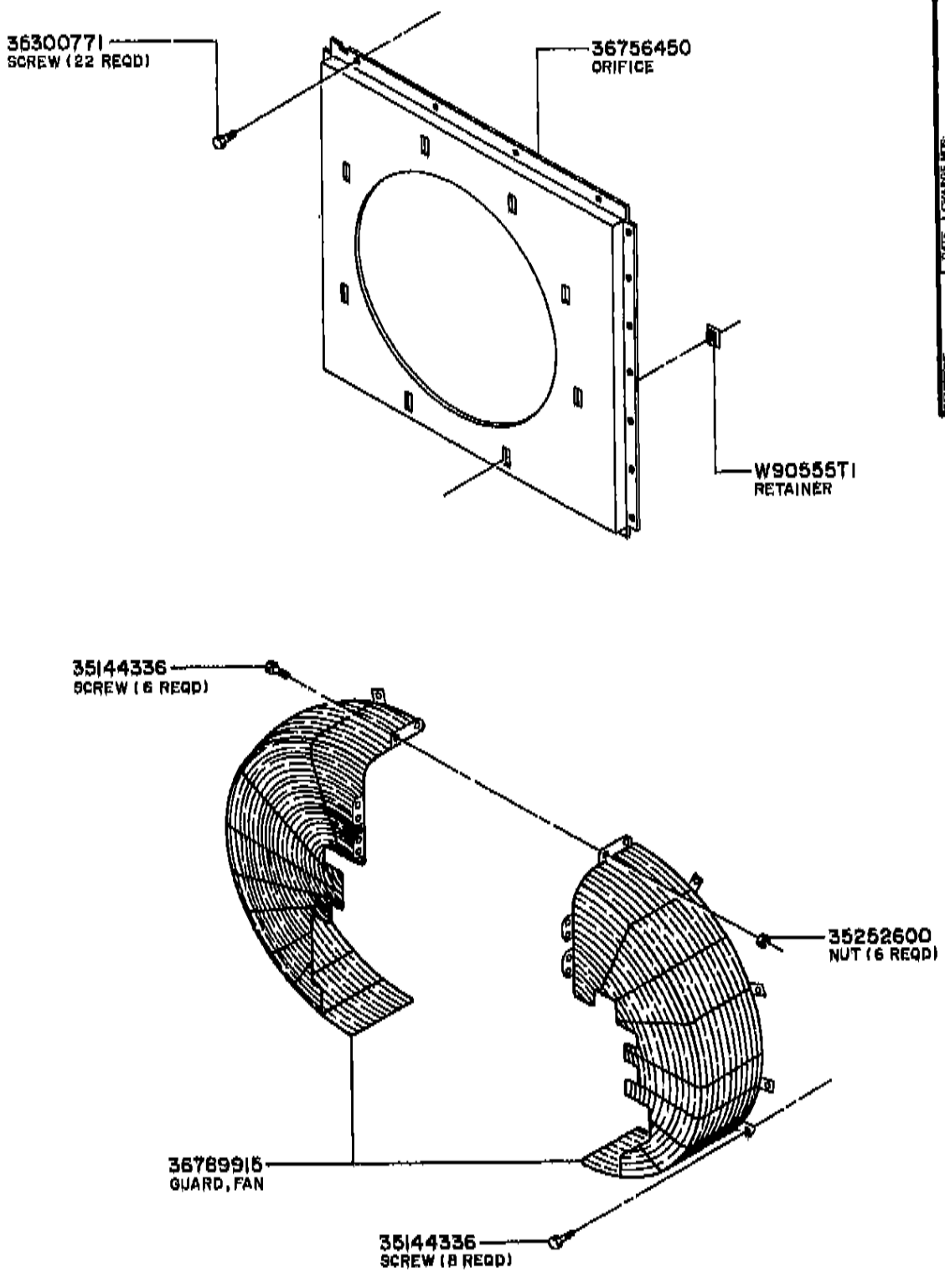
REVISIONS		DATE	DRAWING MDS:
A	ORIGINAL RELEASE PER E/C 13441	4-15-88	
B	CHG: PER E/C 23714	11-4-88	
C	CHG: PER E/C 25356	1-18-91	
D			

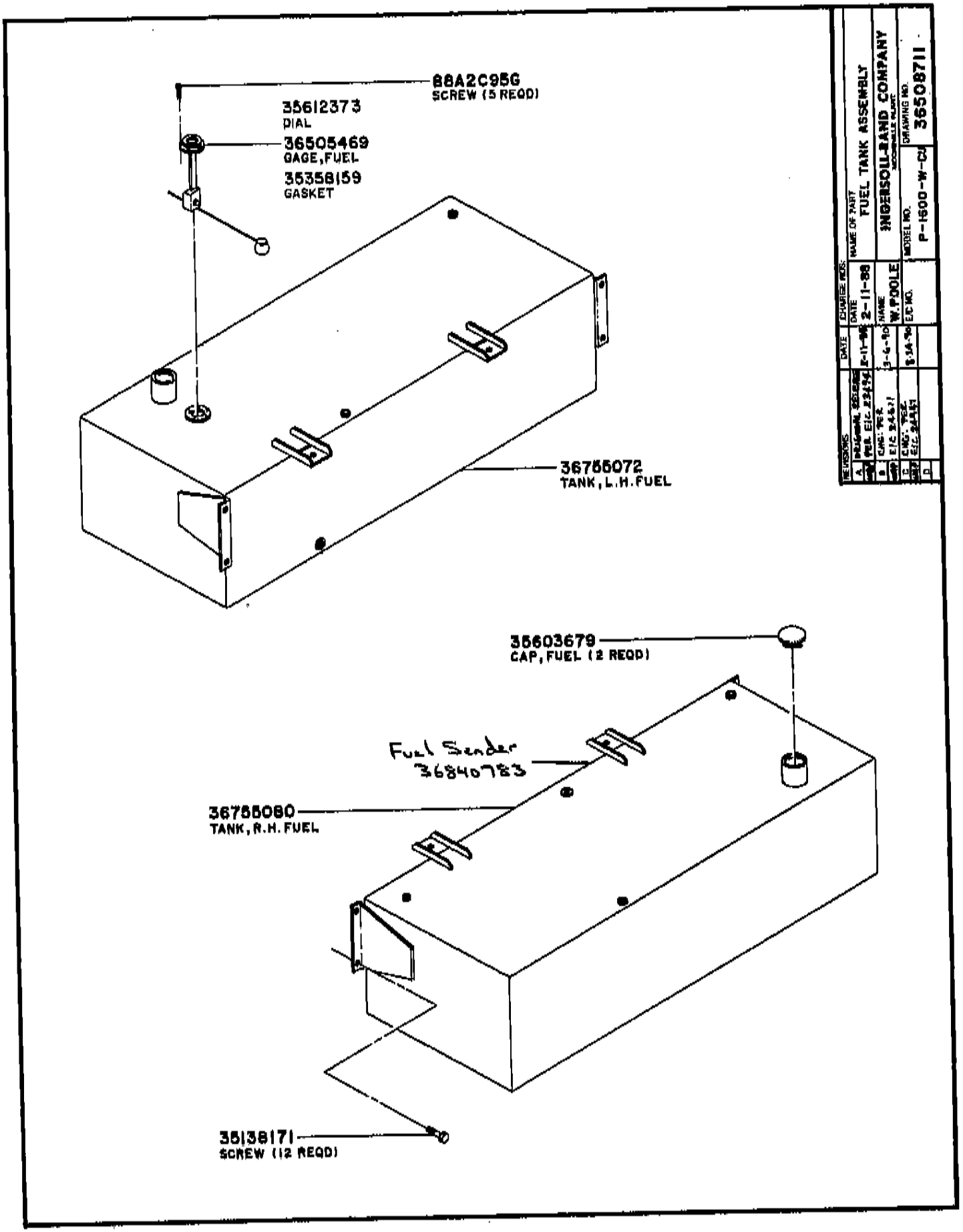
NAME OF PART	RADIATOR,OIL COOLER & MOUNTS
	INGERSOLL-RAND COMPANY
MODEL NO.	P-1500-W-CU
DRAWING NO.	36508687
NAME	W.POOLE
E/C NO.	25300

353A0096 V.2 E/C 25300

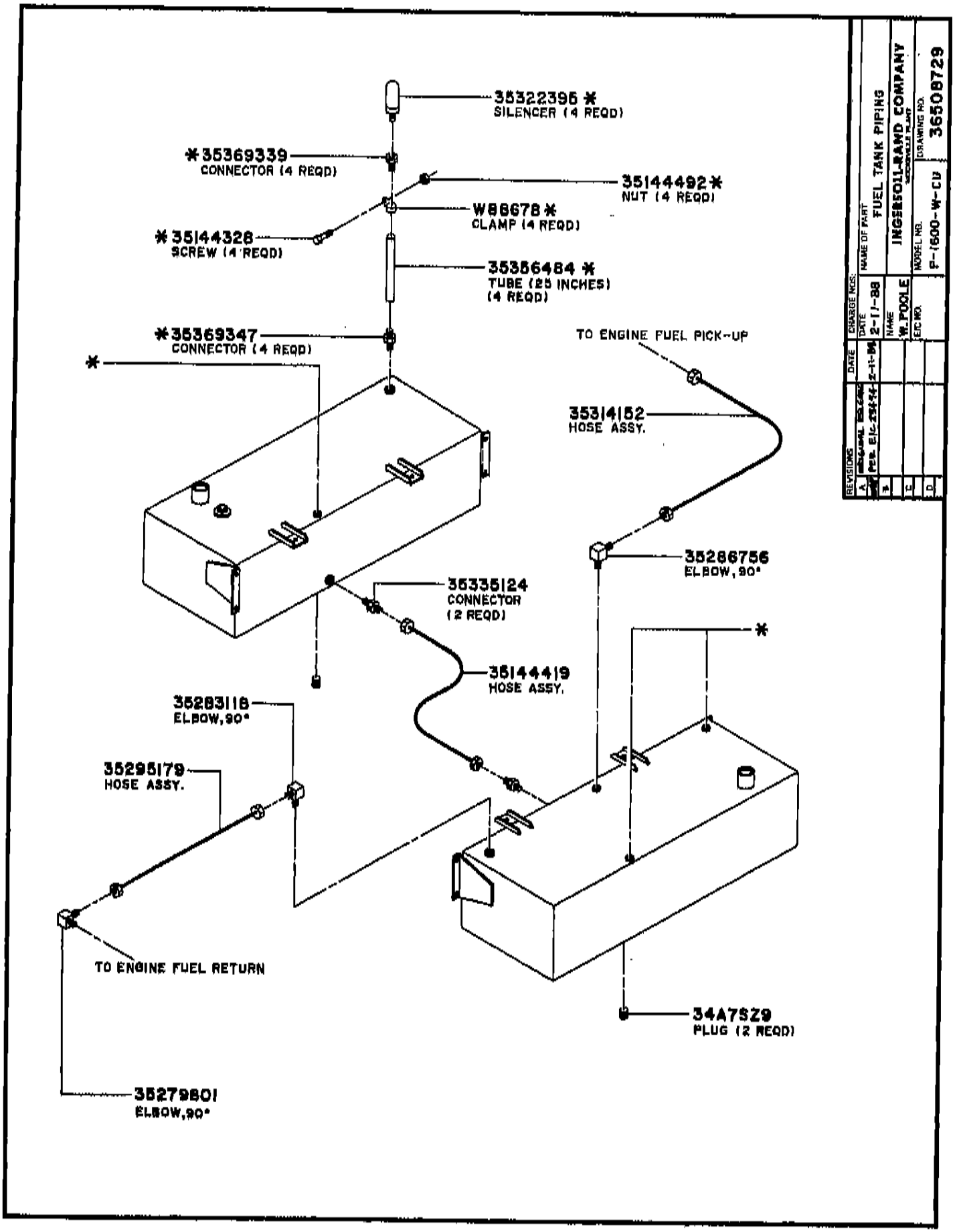

W88678
CLAMP
35360775
TUBING—87"
35330570
HOSE—3"
W86683
CLAMP (2 REQD)
35305234
ADAPTER
35262086
HOSE—45°
36135468
HOSE—59"
122A2320
CLAMP (2 REQD)
36756948
TUBE, INLET
122A2356
CLAMP (2 REQD)
35356476
ADAPTER
W86683
CLAMP
35356634
HOSE
W86719
CLAMP
35330570
HOSE—3"
W86683
CLAMP (2 REQD)
35330570
HOSE—3"
W86683
CLAMP (2 REQD)
36756955
TUBE, OUTLET
REVISIONS
CHARGE NO.
DATE
NAME OF PART
RADIATOR PIPING
INGERSOLL-RAND COMPANY
MODEL NO.
P-1500-W-CU
DRAWING NO.
36508695
W. POOLE
ECO NO.

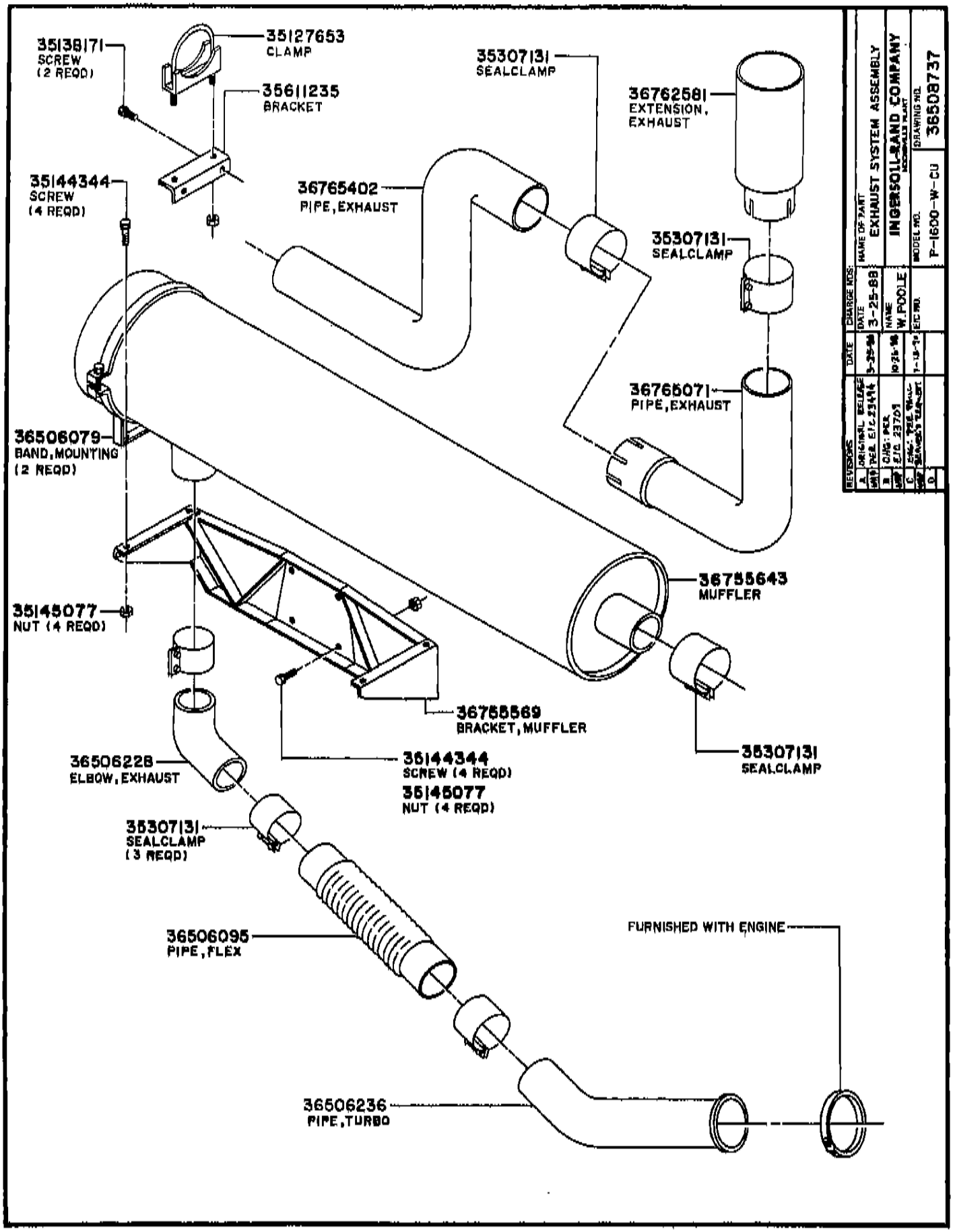
35360096 V.1


36300771
SCREW (22 REQD)
36756450
ORIFICE
W90555T1
RETAINER
35144336
SCREW (6 REQD)
35252600
NUT (6 REQD)
36789915
GUARD, FAN
35144336
SCREW (8 REQD)
NAME OF PART
FAN GUARDS & ORIFICE
INGERSOLL-RAND COMPANY
MODEL NO.
P-1600-W-CU
DRAWING NO.
36508703
E/C NO.
25006
DRAWN
W.POOLE
DATE
4-20-98

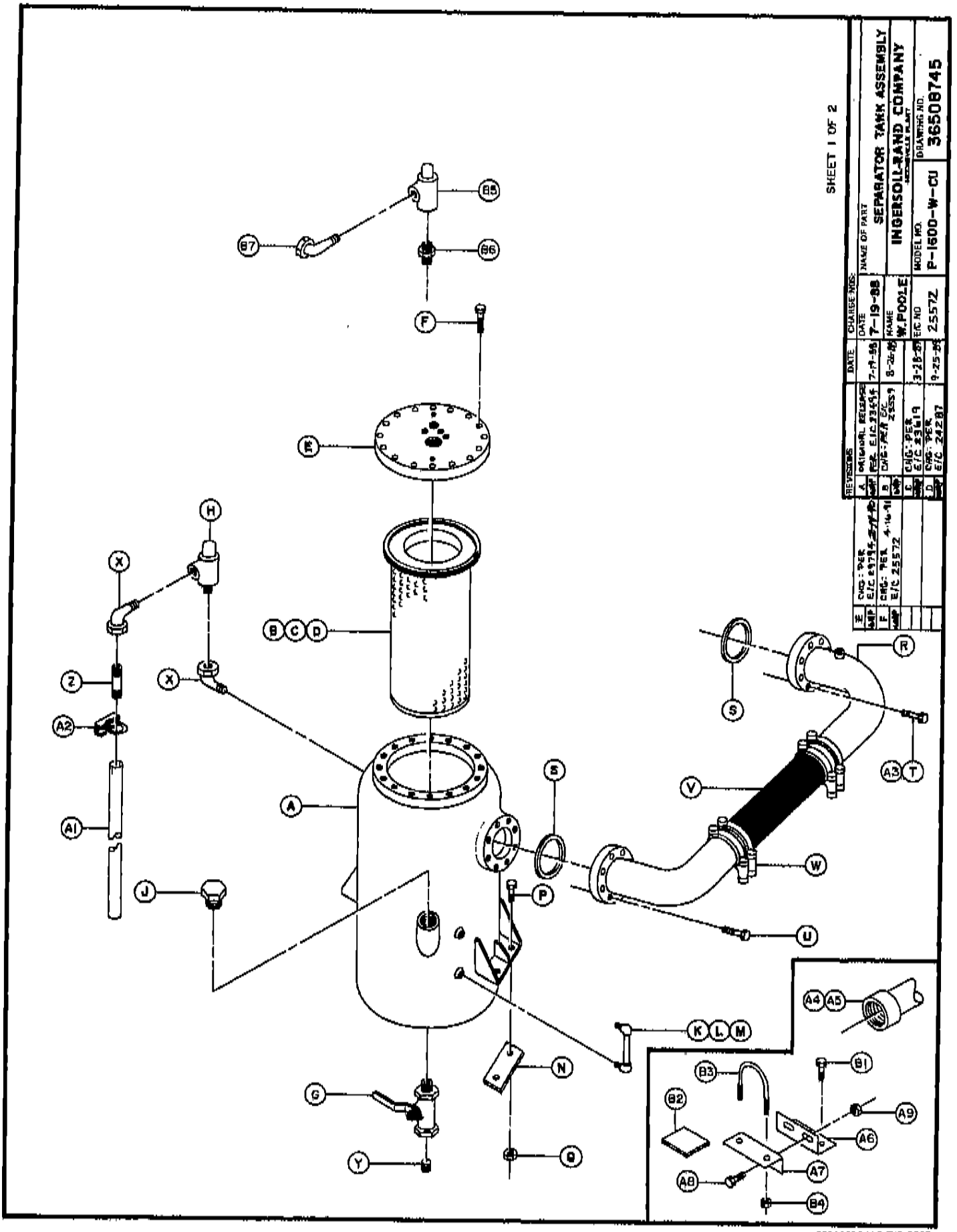

88A2C95G
SCREW (5 REQD)
35612373
DIAL
36505469
GAGE, FUEL
35358159
GASKET
36755072
TANK, L.H. FUEL
35603679
CAP, FUEL (2 REQD)
Fuel Sender
36840783
36755080
TANK, R.H. FUEL
35138171
SCREW (12 REQD)
NAME OF PART
FUEL TANK ASSEMBLY
INGERSOLL-RAND COMPANY
MODEL NO.
P-1600-W-CU
DRAWING NO.
36508711

35380096 V.1


35322396 *
SILENCER (4 REQD)
*35369339
CONNECTOR (4 REQD)
35144492*
NUT (4 REQD)
W86678*
CLAMP (4 REQD)
*35144328
SCREW (4 REQD)
35356484 *
TUBE (25 INCHES)
(4 REQD)
*35369347
CONNECTOR (4 REQD)
*
TO ENGINE FUEL PICK-UP
35314152
HOSE ASSY.
35286756
ELBOW, 90°
35335124
CONNECTOR
(2 REQD)
*
35144419
HOSE ASSY.
35283118
ELBOW, 90°
35295179
HOSE ASSY.
TO ENGINE FUEL RETURN
34A7SZ9
PLUG (2 REQD)
35279801
ELBOW, 90°
REVISIONS
DATE
CHARGE NOS:
DATE 2-11-88
NAME W. POOLE
ETC NO.
NAME OF PART FUEL TANK PIPING
INGERSOLL-RAND COMPANY
MODEL NO. P-1600-W-CU
DRAWING NO. 35508729
35380096 V.1


35138171
SCREW
(2 REQD)
35127653
CLAMP
35611235
BRACKET
35144344
SCREW
(4 REQD)
35307131
SEALCLAMP
36762581
EXTENSION,
EXHAUST
36765402
PIPE,EXHAUST
35307131
SEALCLAMP
36765071
PIPE,EXHAUST
36506079
BAND,MOUNTING
(2 REQD)
35145077
NUT (4 REQD)
36755643
MUFFLER
36755569
BRACKET,MUFFLER
35144344
SCREW (4 REQD)
35145077
NUT (4 REQD)
35307131
SEALCLAMP
36506228
ELBOW,EXHAUST
35307131
SEALCLAMP
(3 REQD)
36506095
PIPE,FLEX
FURNISHED WITH ENGINE
36506236
PIPE,TURBO
REVISIONS
DATE
CHARGE NOS:
NAME OF PART
EXHAUST SYSTEM ASSEMBLY
INGERSOLL-RAND COMPANY
MODEL NO.
P-1600-W-CU
DRAWING NO.
36508737
DATE
3-25-88
NAME
W.POOLE

35380096 V.1

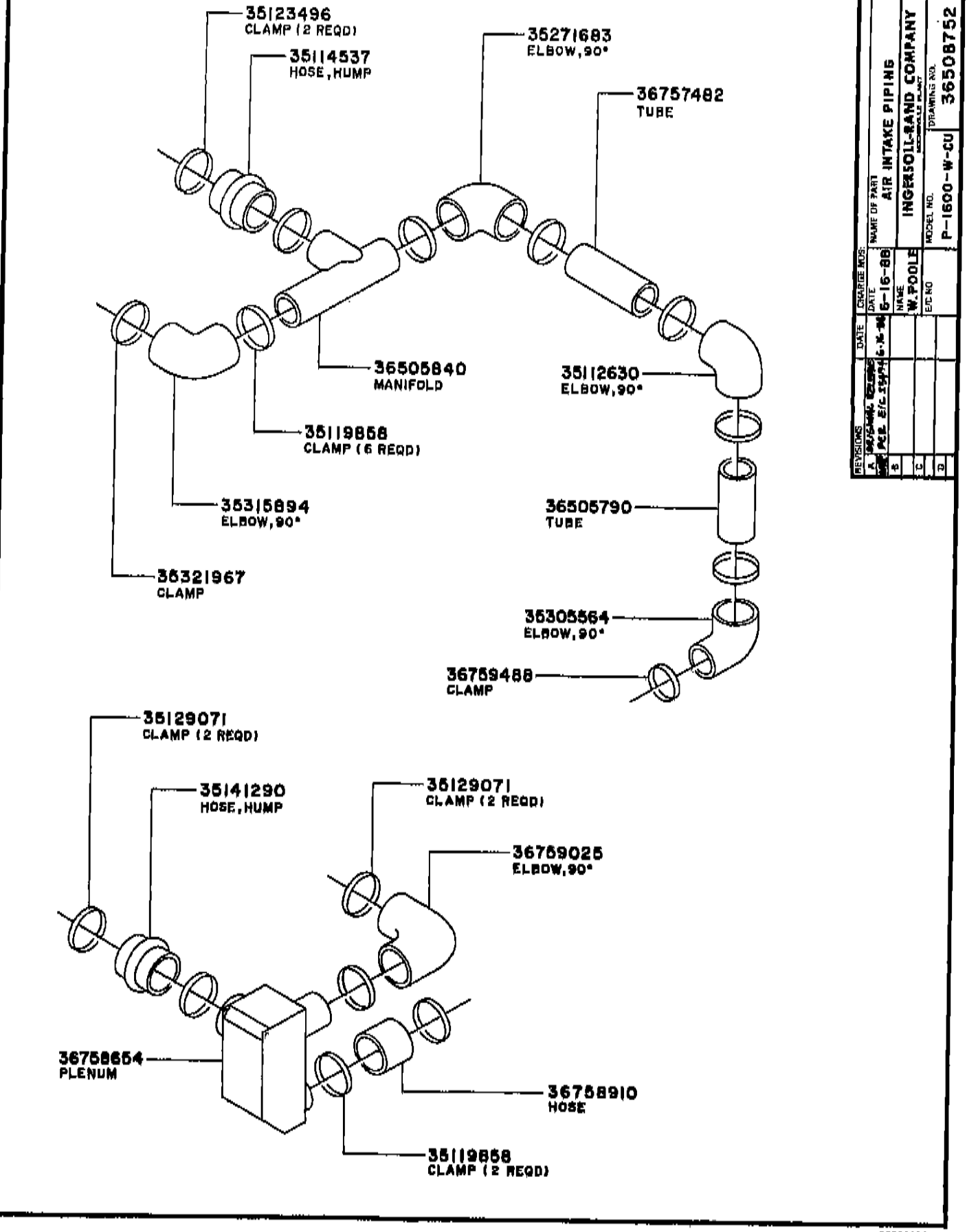

SHEET 1 OF 2
REVISIONS
DATE
CHARGE NOS:
NAME OF PART
SEPARATOR TANK ASSEMBLY
INGERSOLL-RAND COMPANY
MODEL NO.
P-1600-W-CU
DRAWING NO.
36508745
7-19-95
25572
B5
B7
B6
F
E
H
X
B C D
Z
A2
A1
J
A
S
R
T
V
W
U
P
K L M
N
G
Y
Q
A4 A5
B3
B1
B2
A9
A6
A7
A8
B4
9
36980096 V.2 E/C 26572

NOTE: SOME ASSOCIATED PARTS FOR SEPARATOR TANK MAY BE FOUND ON AIR PIPING DRAWING (NO. 36760148).

(A)	36754000	TANK, SEPARATOR
(B)	35610617	GASKET
(C)	36754414	SHELL, INNER
(D)	36754406	ELEMENT, SEPARATOR
(E)	36796811	COVER, SEPARATOR TANK
(F)	35A2D331G	SCREW
(G)	36795680	VALVE, BALL
(H)	36764371	VALVE, SAFETY (WET SIDE)
(J)	35802933	PLUG, OIL FILLER
(K)	35323955	FITTINGS, SIGHT TUBE
(L)	35324649	GASKET
(M)	92121632	TUBE, SIGHT
(N)	36762565	PAD, MOUNTING
(P)	35252568	SCREW
(Q)	35252616	NUT
(R)	36761849	PIPE, DISCHARGE
(S)	36762961	GASKET
(T)	36374958	SCREW
(U)	35A2D379G	SCREW
(V)	35092923	HOSE ASSEMBLY
(W)	35092931	CLAMP ASSEMBLY
(X)	67A7MZ8	ELBOW
(Y)	34A7S6	PLUG
(Z)	36764389	NIPPLE
(A1)	36764884	PIPE, DISCHARGE
(A2)	W48119	CLAMP
(A3)	36765121	SCREW
(A4)	36774735	PIPE, SERVICE
(A5)	35A2D327G	SCREW
(A6)	36765055	BRACKET
(A7)	36765048	BRACKET
(A8)	35144944	SCREW
(A9)	36145077	NUT
(B1)	35138171	SCREW
(B2)	36762573	PAD
(B3)	35586288	U-BOLT
(B4)	16A4C5G	NUT
(B5)	36764363	VALVE, SAFETY (DRY SIDE)
(B6)	36796829	CONNECTOR
(B7)	68A7MZ5	ELBOW

SHEET 2 OF 2

REVISIONS		DATE	CHARGE NOS:		NAME OF PART		
A	ORIGINAL RELEASE PER E/C 25572	4-14-91	DATE 4-16-91		SEPARATOR TANK ASSEMBLY		
B			NAME W.POOLE		INGERSOLL-RAND COMPANY		
C			E/C NO. 25572		MODEL NO. P-1600-W-CU	DRAWING NO. 36508745	
D							



35380096 V.1

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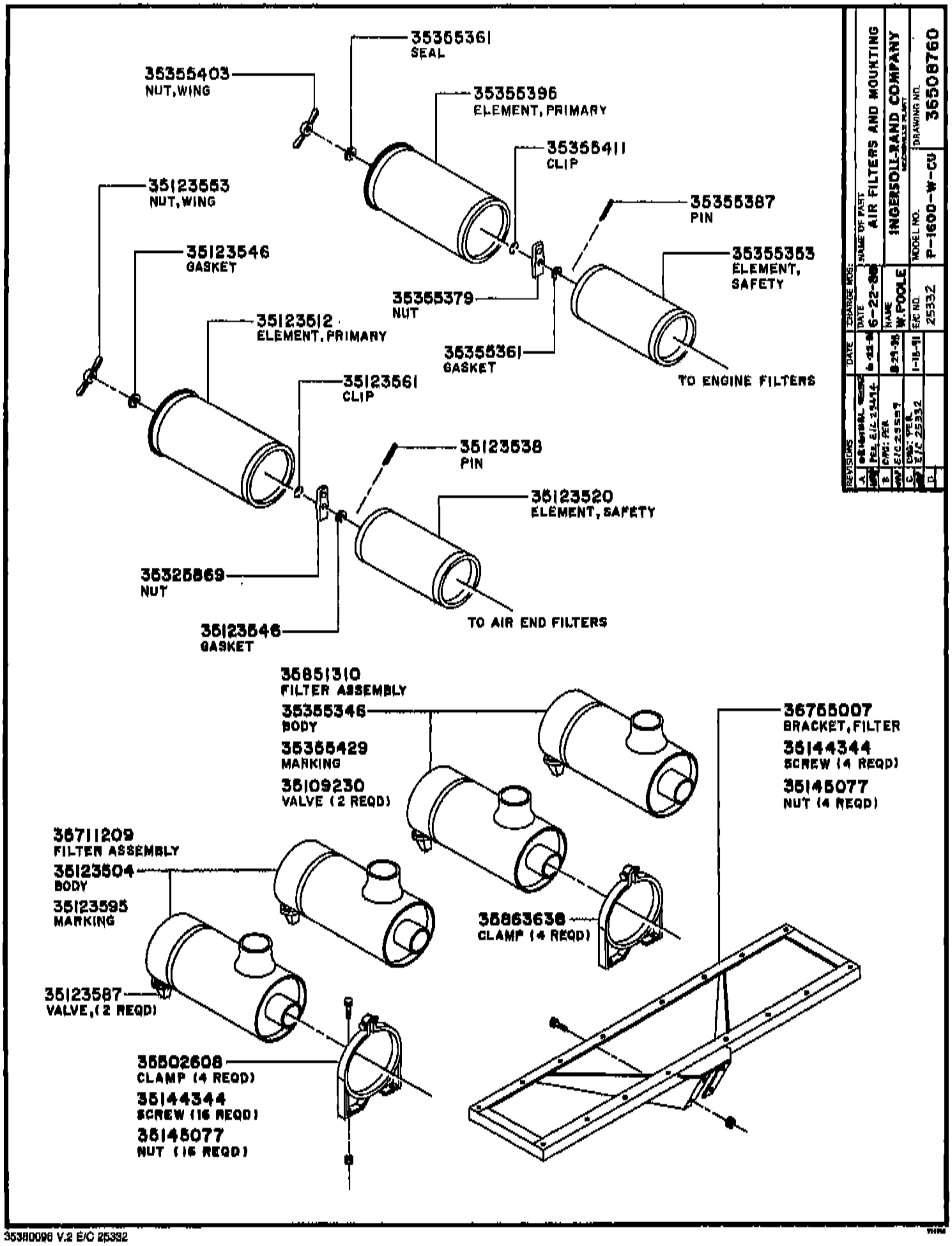
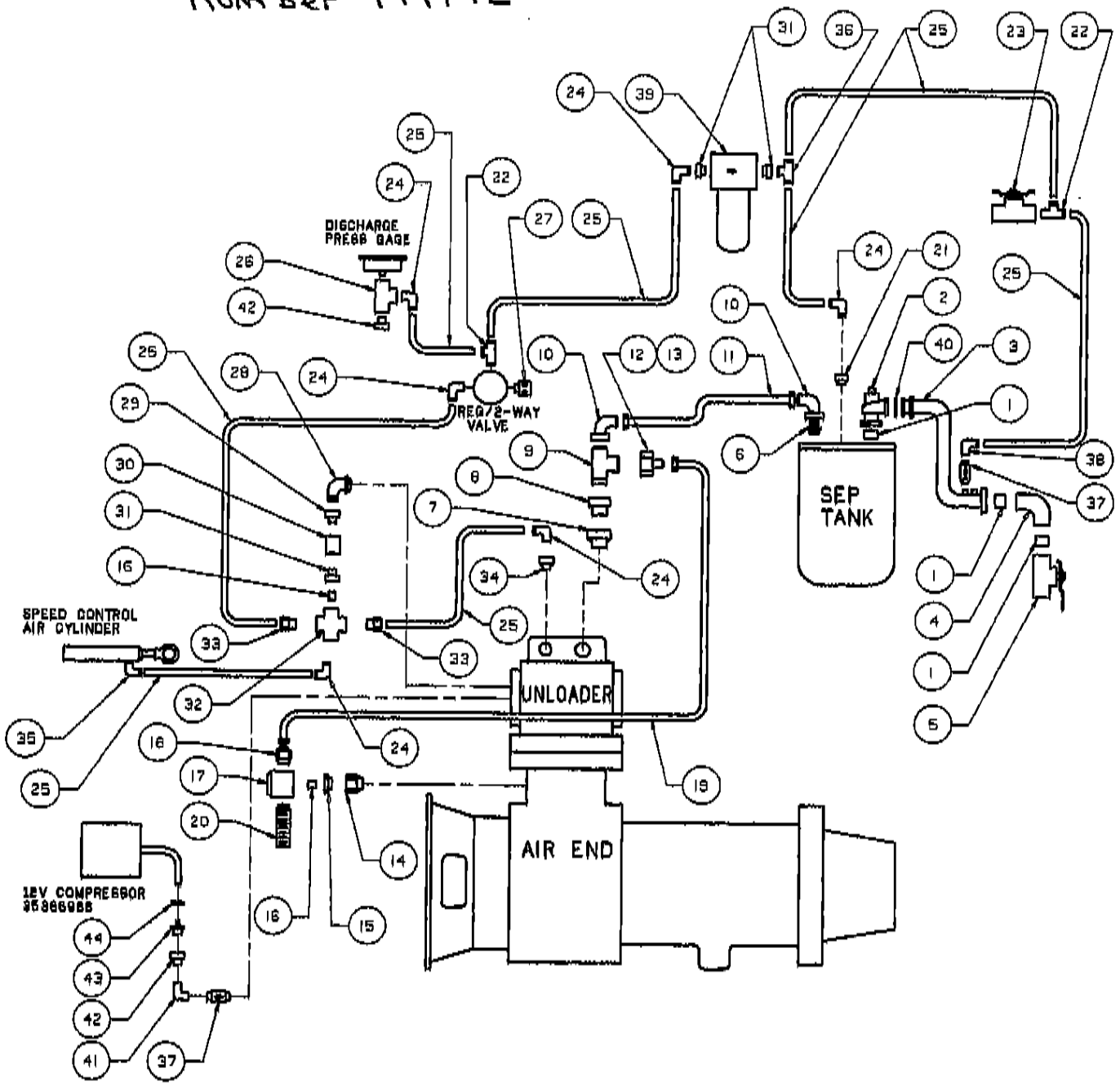

35355361
SEAL
35355403
NUT,WING
35355396
ELEMENT, PRIMARY
35355411
CLIP
35123553
NUT,WING
35355387
PIN
35123546
GASKET
35355353
ELEMENT,
SAFETY
35355379
NUT
35123512
ELEMENT, PRIMARY
35355361
GASKET
TO ENGINE FILTERS
35123561
CLIP
35123538
PIN
35123520
ELEMENT, SAFETY
35325869
NUT
35123546
GASKET
TO AIR END FILTERS
35851310
FILTER ASSEMBLY
35355346
BODY
35355429
MARKING
35109230
VALVE (2 REQD)
36755007
BRACKET, FILTER
35144344
SCREW (4 REQD)
35145077
NUT (4 REQD)
36711209
FILTER ASSEMBLY
35123504
BODY
35123595
MARKING
35863636
CLAMP (4 REQD)
35123587
VALVE,(2 REQD)
35502608
CLAMP (4 REQD)
35144344
SCREW (16 REQD)
35145077
NUT (16 REQD)
AIR FILTERS AND MOUNTING
INGERSOLL-RAND COMPANY
W.POOLE
25332
P-1600-W-CU
35508760

REVISIONS					
ZONE	REV.	DESCRIPTION	DATE	APVD	E/C
-	A	ORIGINAL RELEASE	5-27-98	PAC	23614
-	B	ADD SCRV PIPE BLOWDOWN	11-18-98	PAC	23799
-	C	ITEM 27 WAS 36367000	04-01-99	WAD	23029
-	D	ADD KIL-FROST SYS ITEM 38	08-23-99	PAC	24166
-	E	ADD 12V COMPR; REV ITEM 3,26,41-44	11-16-01	DAC	25102

For units thru serial number 194192



P-160D-W-CU	INGERSOLL-RAND COMPANY	
JPW 6-23-98	TITLE AIR PIPING	
PAC 6-27-98	SIZE D	PART NO. 36760148
GEM 7-7-98	REV N/A	DWG NO. 25182

36360096 V.2 E/C 25332

9

For units above serial number 194192

PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION
1	19A7JZ11	NIP CLNPT300X262
2	36755155	V 3.0 MIN PRESS CHK
3	20A11C2M237	ORING
4	36797694	PIPE SERV
5	19A7JZZ9	NIP SHTNPT300X300
6	65A7MZ11	ELL NPT300X90
7	36755718	V 3.0 BALL
8	108A29S120	ADPTR3/4PX3/4JIC
9	35287739	RUN TEE -12JIC
10	35321165	REDUCER TUBE
11	35324987	NUT TUBE -12
12	35280510	ADPT. 1 NPT / SAE
13	23A7SZ11	BSHG RDCNPT100X075
14	35330117	TEE,MALE RUN -12
15	35301506	ELL 90 SWIV NUT -12
16	35376110	HOSE -12 X 54.00
17	35365774	REDUCER TUBE 12-8
18	35333517	ELBOW 45 DEG SWIV -8
19	35279116	ADPT. 3/4NPT/SAE
20	23A7SZ9	BSHG RDCNPT075X025
21	19A7JZ2	NIP CLNPT025X088
22 *	35335017	VALVE BLOWDOWN
23	35283126	CONN,3/8 NPT X -8JIC
24	35288512	HOSE ASST -8X30
25	36762623	SILENCER .38NPT
26	35283068	ELL,90,SWV NUT,-6JIC
27	35324039	VALVE BALL 1/4 NPT
28	35283050	TEE,RUN 1/4NPT -8JIC
29	35283027	HOSE,JIC -6 X 56.5
30	35283084	TEE,RN,SWV NUT -6JIC
31	35280098	L,90,1/4NPT FEM,6JIC
32	35268042	HOSE,JIC-6X27
33	35248145	VALVE 1/4 CHECK
34	71A7MZ2	T NPT 025
35	23A7SZ1	BSHG RDCNPT025X012
36	35279934	ELL,90,1/4NPT,-6JIC
37	35282953	HOSE,JIC -6 X 11
38	23A7SZ8	BSHG RDCNPT075X038
39	35290147	CONN 3/8 NPT -6 JIC
40	35368927	3/8NPT X -6 FNL SWL
41	36840841	V SOL 24V .375NPT
42	35294743	ELBOW 45
43	35283092	TEE,BR,SWV NUT,-6JIC
44	23A7SZ5	BSHG RDCNPT050X025
45	36841518	V PRESS RLF 100-150
46	35282946	HOSE,JIC -6 X 9.5
47	35366269	CV/ORF .04 9/16-18
48	35294459	ELL 90 1/4NPT-6 SWIV
49	23A7SZ2	BSHG RDCNPT038X025
50	35279835	ELL,45,9/16-18X-6JIC
51	36841815	TUBE -6 UNLOADER
52	35283290	HOSE,JIC -6 X 62
53	72A7MZ2	T STNPT025
54	35322346	CONN, .156 ORIFICE
55	35301126	ELL 90 1/8NPT X -6
56	65A7MZ2	ELL .25 NPT
57	35318587	ADPTR BARB012X012NPT
58	35296342	CLP WNGRN006-16
*	35378056	KIT BLWDN V DIAPH

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REVISIONS					
ZONE	REV.	DESCRIPTION	DATE	APVD	E/C
-	A	ORIGINAL RELEASE	6-22-98	PAC	23514
-	B	ADD SERV PIPE BLOWDOWN	11-18-98	PAC	23739
-	C	ITEM 27 WAS 35357088	04-06-99	WAB	23829
-	D	ADD KILFROST SYS ITEM 39	06-27-99	PAC	24166
-	E	ADD 12V COMPR; REV ITEM 3,26,41-44	1-10-01	PAC	25182

For units thru
Serial number 194192

NOTES:

1. PARTS LIST:

ITEM	PART NO.	DESCRIPTION
1	19A7JZ29	NIP CL 3.0NPT X 3.0
2	36755155	V 3.0 MIN PRESS CHK
3	36774735	PIPE SERV
4	65A7MZ11	ELB 3.00NPT X 90°
5	36755718	V 3.00 BALL
6	108A23S12D	ADPTR 3/4NPTX-12JIC
7	35280510	ADPT 1 NPT/SAE
8	23A7SZ11	BSHG RDC 1.00 X .75NPT
9	35330117	TEE MALE RUN -12
10	35301506	ELB 90 SWIV NUT -12
11	36376110	HOSE ASSY -12 X 54
12	35365774	REDUCER TUBE 12-8
13	35324987	NUT TUBE -12
14	35279116	ADPT 3/4NPT/SAE
15	23A7SZ9	BSHG RDC .75 X .25NPT
16	19A7JZ2	NIP CL .25NPTX0.88
* 17	35335017	VALVE BLOWDOWN
18	35283126	CONN 3/8NPT X -8
19	35314145	HOSE JIC -8 X 36
20	36762623	SILENCER .38NPT
21	23A7SZ5	BSHG RDC .50X.25NPT
22	35369503	TEE ML R 1/4NPTX3/8T
23	35324839	VALVE BALL 1/4 NPT
24	35369354	ELB ML 1/4NPTX3/8T
25	35356484	TBG .38 OD SYNFLEX
26	71A7MZ2	TEE NPT .25
27	36766731	ORF MUF .156
28	35279827	ELL 90 9/16-18X-6
29	35368927	3/8NPT X -6 FML SWIV
30	35366970	SOLV 24VDC 3/8NPT
31	23A7SZ2	BSHG RDC .38 X .25NPT
32	73A7MZ2	CROSS NPT .25
33	35369347	CONN 1/4NPT X 3/8T
34	353023I4	ADAPTER
35	35370386	ELB ML 1/8NPTX3/8T
36	35373976	TEE ML B 1/4 NPT X 3/8T
37	35248145	VALVE 1/4 CHECK
38	35377035	ELB TBG 3/8 X 1/4 NPTF
39	36772010	KILFROST LUBRICATOR
40	20A11C2M237	O-RING
41	65A7MZ2	ELB .25 NPT X 90°
42	23A7SZ1	BSHG RDC .25 X .12 NPT
43	35316587	ADPTR BARB 012 X 012 NPT
44	35296342	CLAMP WMGR
*	35379056	KIT BLWDN V DIAPH

P-1600-W-CU	INGERSOLL-RAND COMPANY	
	CONSTRUCTION EQUIPMENT PORTABLE OPERATIONS	
JPW 6-22-98	TITLE: AIR PIPING	
PAC 6-27-99	SIZE D	PART NO. 36760148
GEM 7-7-99	SHEET N/A	DWG NO. 25182

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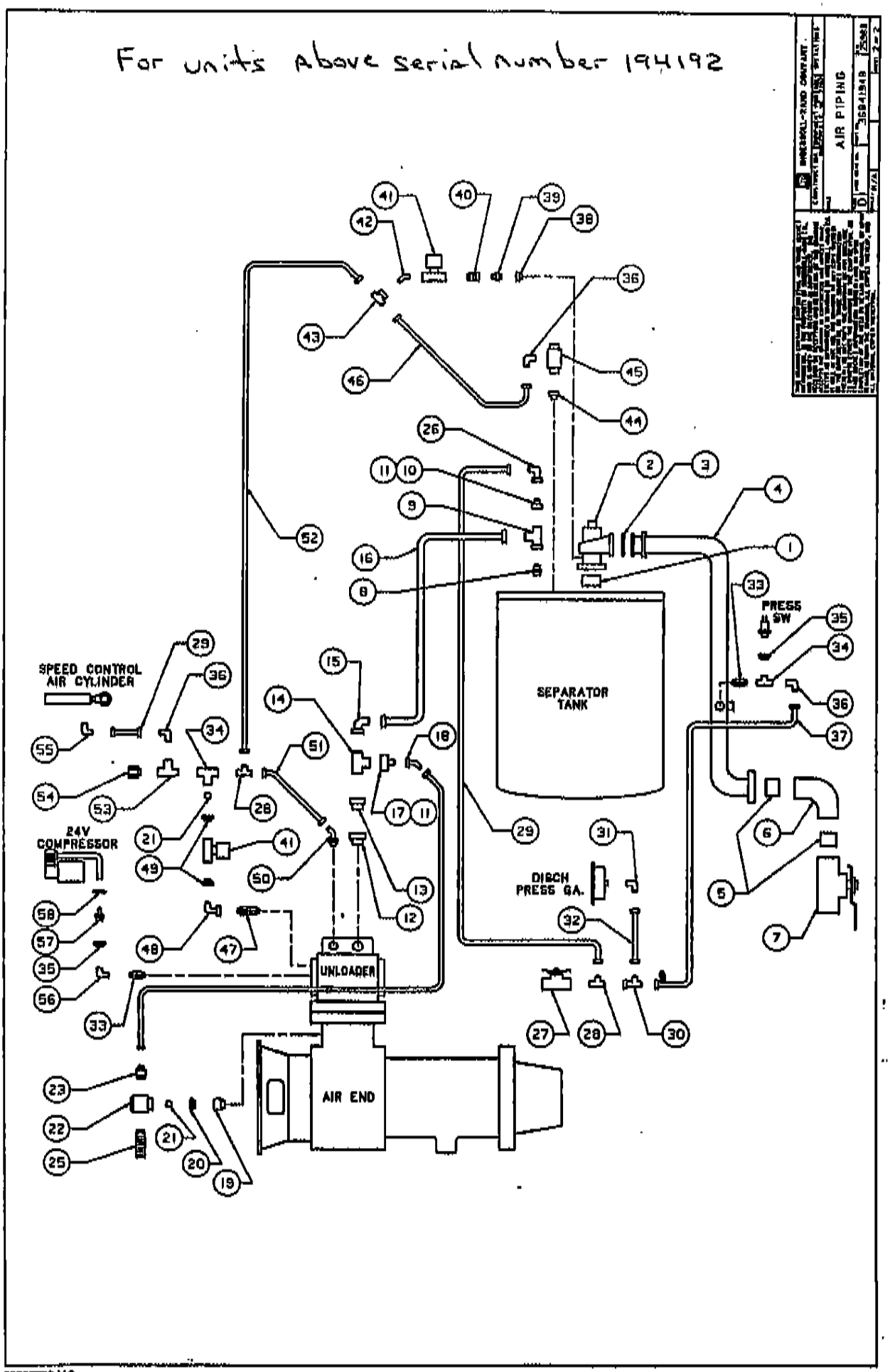
For units above serial number 194192



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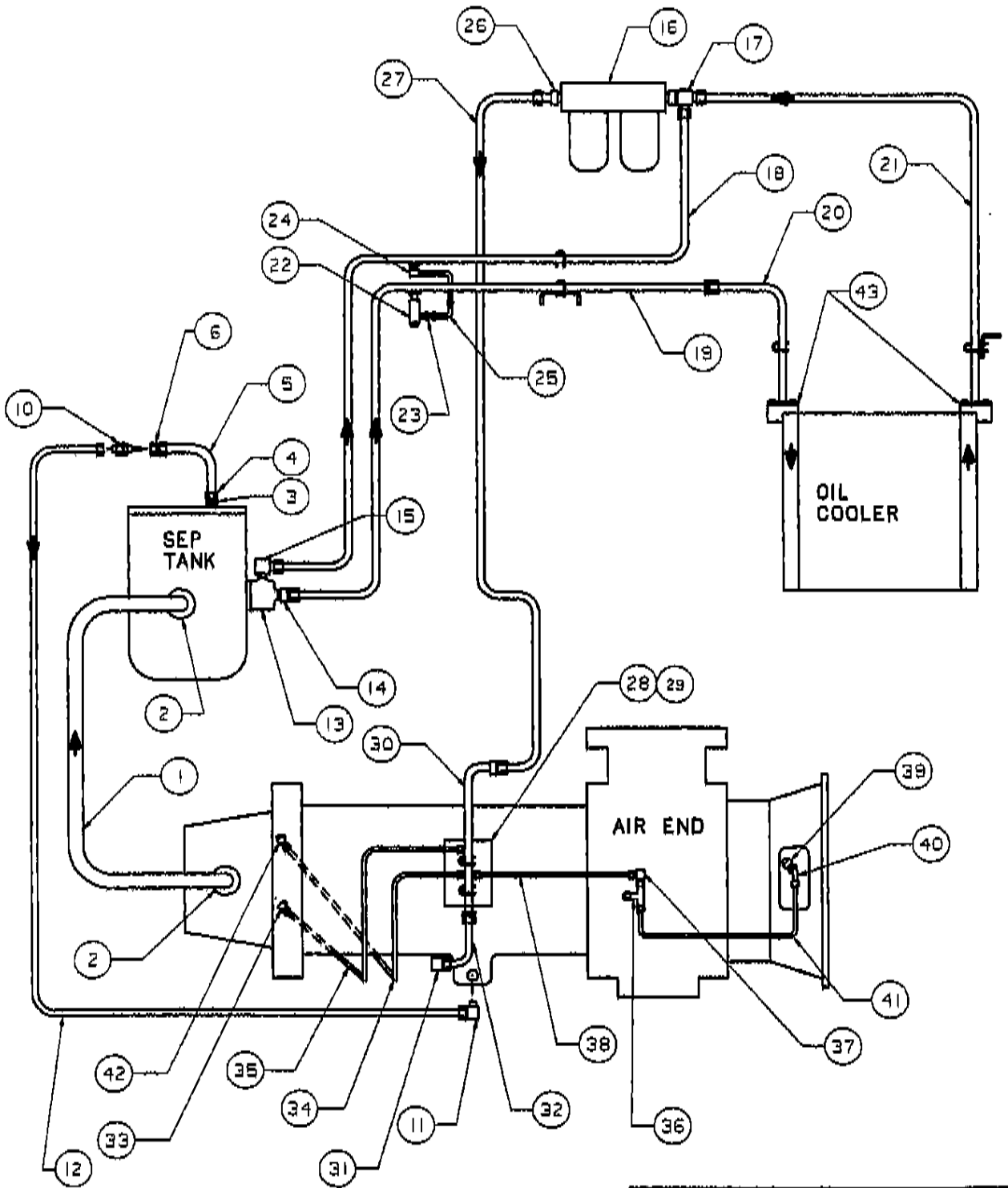
REVISIONS					
ZONE	REV.	DESCRIPTION	DATE	APVD	E/C
	A	ORIGINAL RELEASE	5-18	PAC	23514
-	B	ADD TEF RP BRG & -6 TBG FR SEAL	9-12-99	PAC	24092
C6 C7	C	ITEM 4 WAS 36505022 ITEM 10 WAS 36326727 REMOVED ITEMS 7,8,9			25332



P-1600-W-CU	INGERSOLL-RAND COMPANY CONSTRUCTION EQUIPMENT DIVISION OPERATIONS	
IPW 5-23-88 PAC 5-23-88 DEM 5-23-88	OIL PIPING ARRANGEMENT	
	6 — 36762649	25332
	MAT'L N/A	SHT 1 of 1

38380096 V.2 E/C 25332

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REVISIONS					
ZONE	REV.	DESCRIPTION	DATE	APVD	E/C
	A	ORIGINAL RELEASE	5-3-88	PAC	23514
-	B	ADD TEE RR BRG & -6 TBG FR SEAL	05-2-89	PAC	24092
C6 C7	C	ITEM 5 WAS 36505022 ITEM 10 WAS 35326727 REMOVED ITEMS 7,8,9		-	25332

NOTES:

1. PARTS LIST

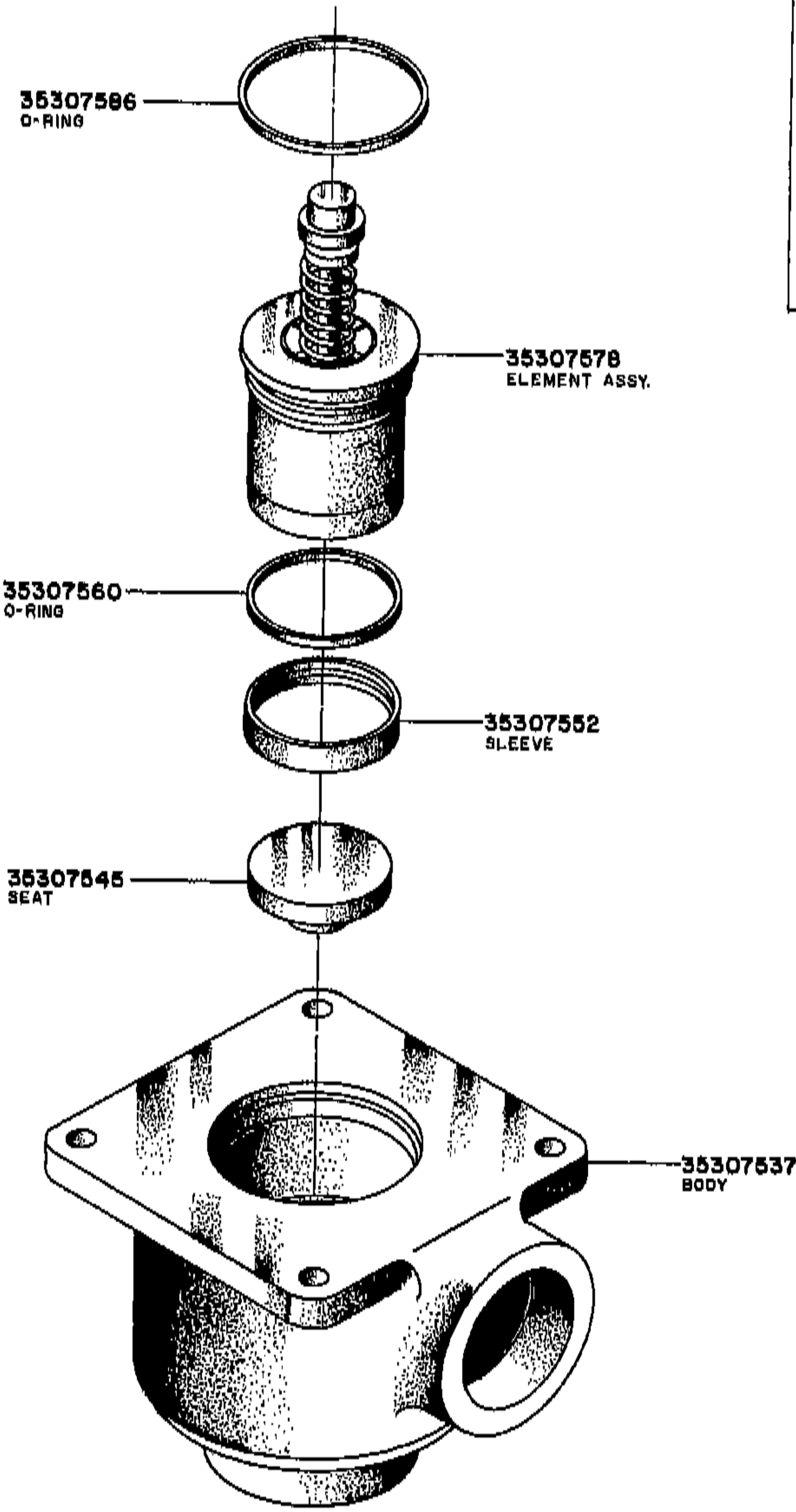
1	36761849	DISCHARGE PIPE
2	36762961	GSKT 6 IN FLG. 150 LBS.
3	23A7SZ18	BSHG RDC 1.25 X .25 NPT
4	35610674	FTG SCAV TUBE
5	36794303	TUBE SCAV
6	23A7SZ2	BSHG RDC .38 X .25 NPT
7		
8		
9		
10	36785624	CK VLV/ORIF .062
11	144A23S15	ELB 90° 9/16 X -4JIC
12	35322494	HOSE ASSY -4 X 67
13	35825595	VALVE, TEMP, AMOT
14	108A23S32	ADPTR 2P X 2JIC
15	109A23S32	ELBOW, TUBE JIC
16	36756120	FILTR OIL DUAL SPINON
17	36756906	TEE STR THD RUN -32
18	36756757	TUBE -32 BYP TO FLTR
19	36756765	TUBE -32 BYP TO OCLR
20	36756609	TUBE -32 OCLR INL
21	36756591	TUBE -32 OCLR OUT
22	35260439	VALVE PRESS RELIEF
23	108A23S12D	ADPTR 3/4 P X 3/4 JIC
24	35294735	ELB 3/4 NPT X -12JIC

25	36756740	TUBE -12 PRESS RLF
26	35296409	CONN 1-7/8-12 X -245
27	35142116	HOSE -24 X 47.00 LG
28	36756252	COV A/E CUSP INJ
29	35304021	GASKET, OIL INLET
30	36756211	MANF OIL A/E 285
31	36762698	ELB ORF .625 1.31 X -16
32	36758191	TUBE OIL -12 A/E 285
33	35287937	ELL,90,9/16-18X-8
34	36758175	TUBE OIL -8 A/E 285
35	36758183	TUBE-OIL -8 A/E 285
36	35279843	TEE,BR,9/16-18X-6JIC
37	35283068	ELBOW 90 SWIV NUT -6
38	36758217	TUBE OIL -6 A/E 285
39	35287945	EXPANDER, 7/16-20 X 9/16-18
40	35279835	ELB 45 9/16-18X-6JIC
41	36771731	TUBE OIL - 6 A/E 285
42	36769701	TEE MANF 9/16X-8X1/8P
43	20A11C2M228	ORING

UNIT P-1600-W-CU	INGERSOLL-RAND COMPANY CONSTRUCTION EQUIPMENT MAINTANCE OPERATIONS MOCKSVILLE, NC 27028
DRAWN JPW 5-3-88	TITLE OIL PIPING ARRANGEMENT
CHECKED PAC 5-23-88	
APPROVED GEM 5-23-88	SIZE D, CAGE MFGT NO., PART NO. 36762649, E/C 25332
RELEASED TO	SCALE N/A, SHEET 1 of 1

OIL TEMPERATURE BYPASS VALVE
ASSEMBLY PART NO. **35825595**

INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION	
DESCRIPTION: OIL TEMPERATURE BYPASS VALVE	
REFER TO PARTS LIST NO. 35055292	
DATE: 11-5-80	ILLUSTRATION NO. 35830207
SHEET NO. 1 OF 1	E/C



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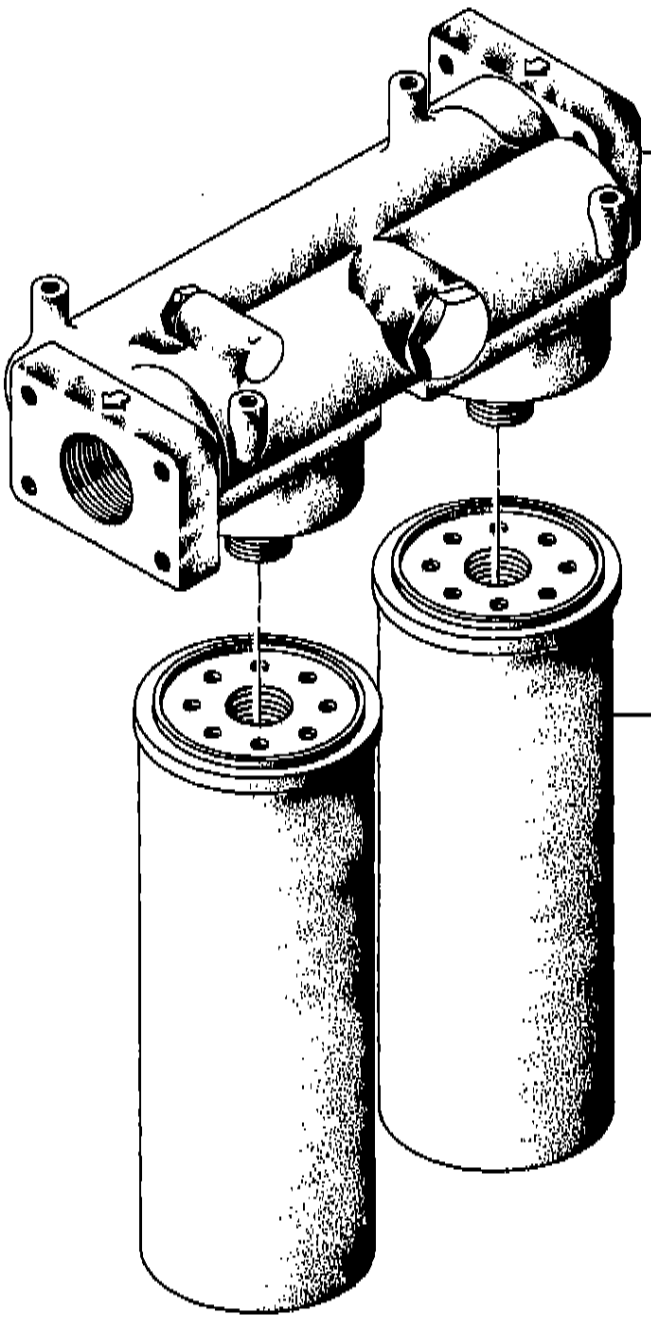


REVISIONS	DATE	CHANGE NOS:
A Revised ECN# Per E/C #2344	8-44-88	DATE 3-14-88
B		NAME W.POOLE
C		E/C NO. 23344
D		

NAME OF PART: COMPRESSOR OIL FILTER ASSY.

INGERSOLL-RAND COMPANY
MODEL NO. P-1600-W-CU XHP-750-S-CAT
DRAWING NO. 36507846

35380098 V.1

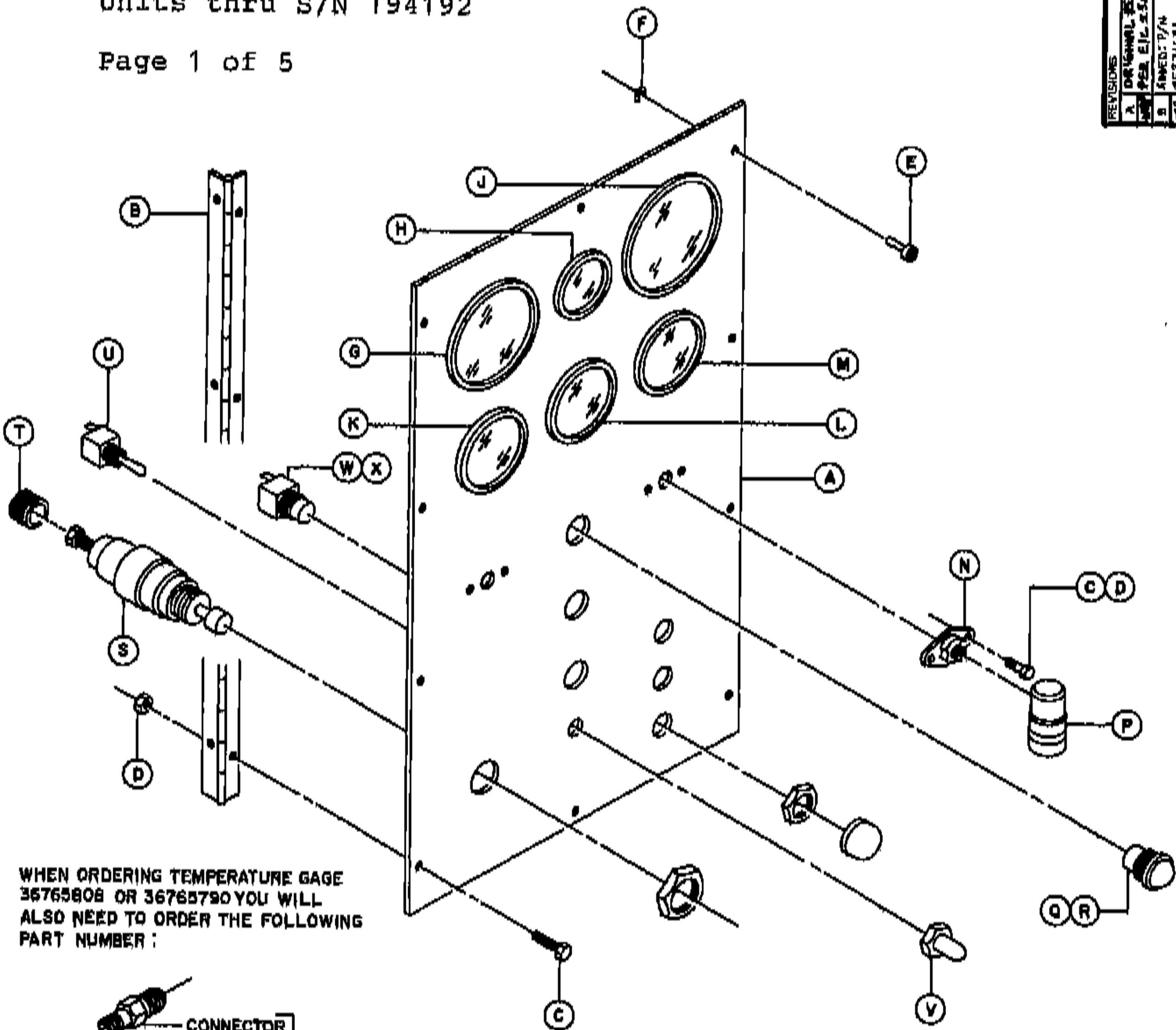
(A)	36759595	PANEL, INSTRUMENT/CONTROL	(M)	36765790	GAGE, DISCHARGE AIR TEMP.
(B)	36750420	HINGE	(N)	35107408	FLANGE, RESTRICTOR INDICATOR
(C)	35144328	SCREW	(P)	35261122	INDICATOR, RESTRICTOR
(D)	35144492	NUT	(Q)	35290097	LIGHT, INDICATOR
(E)	36761906	STUD	(R)	35290089	BULB
(F)	35369180	RETAINER	(S)	36509446	VALVE, REGULATOR
(G)	36762185	TACHOMETER	(T)	35326065	KNOB
(H)	35602788	HOURMETER	(U)	35337435	SWITCH, POWER
(J)	35863281	GAGE, DISCHARGE PRESSURE	(V)	39104765	BOOT, RUBBER
(K)	36765808	GAGE, ENGINE WATER TEMP.	(W)	35255553	SWITCH, START & ETHER INJ.
(L)	35863265	GAGE, ENGINE OIL PRESSURE	(X)	35255561	SWITCH, BYPASS

REVISIONS	DATE	CHANGE NOS.
A ORIGINAL RELEASE PER E/C 25414	6-24-88	
B ADDED: P/N 35371681	11-29-88	
C CHG: PER E/C 29110	10-18-89	
D CHG: PER E/C 24447	3-28-94	

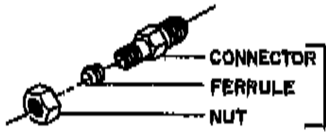
DATE	6-24-88
NAME	W. POOLE
E/C NO.	
NAME OF PART	INSTRUMENT & CONTROL PANEL
	INGERSOLL-RAND COMPANY
MODEL NO.	P-1600-W-CU
DRAWING NO.	36508778

Electrical System for
Units thru S/N 194192

Page 1 of 5



WHEN ORDERING TEMPERATURE GAGE 36765808 OR 36765790 YOU WILL ALSO NEED TO ORDER THE FOLLOWING PART NUMBER:



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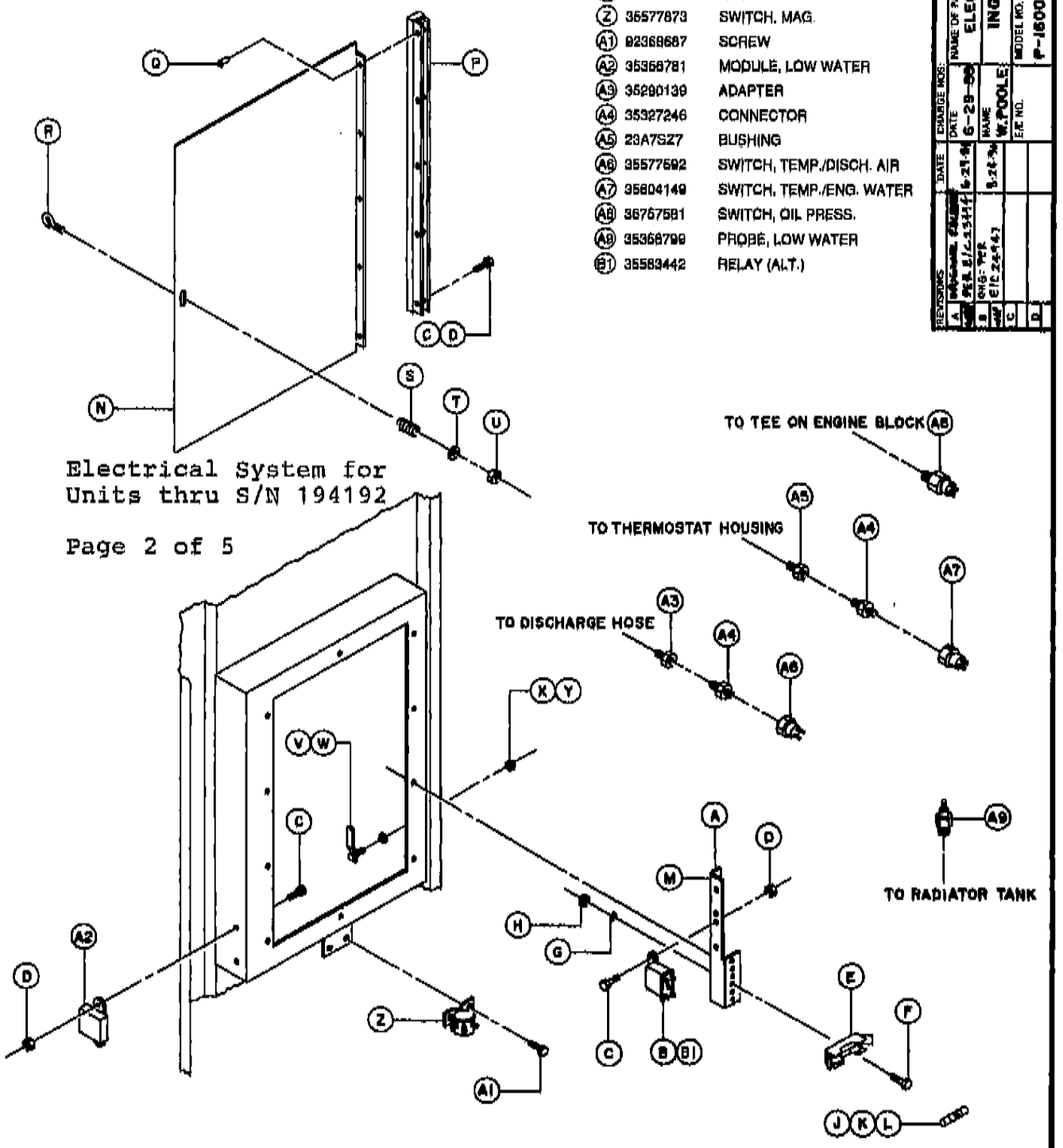
A	36762193	BRACKET, RELAY/FUSE	H	35368919	NUT
B	35586130	RELAY (SHUTDOWN)	J	36762383	FUSE, 7 AMP
C	35144328	SCREW	K	36762375	FUSE, 4 AMP
D	35144492	NUT	L	36762391	FUSE, 15 AMP
E	36762300	BLOCK, FUSE	M	35314682	RECEPTACLE
F	35368803	SCREW	N	36738565	DOOR, CONTROL PANEL
G	36368901	WASHER	P	36740405	HINGE, DOOR

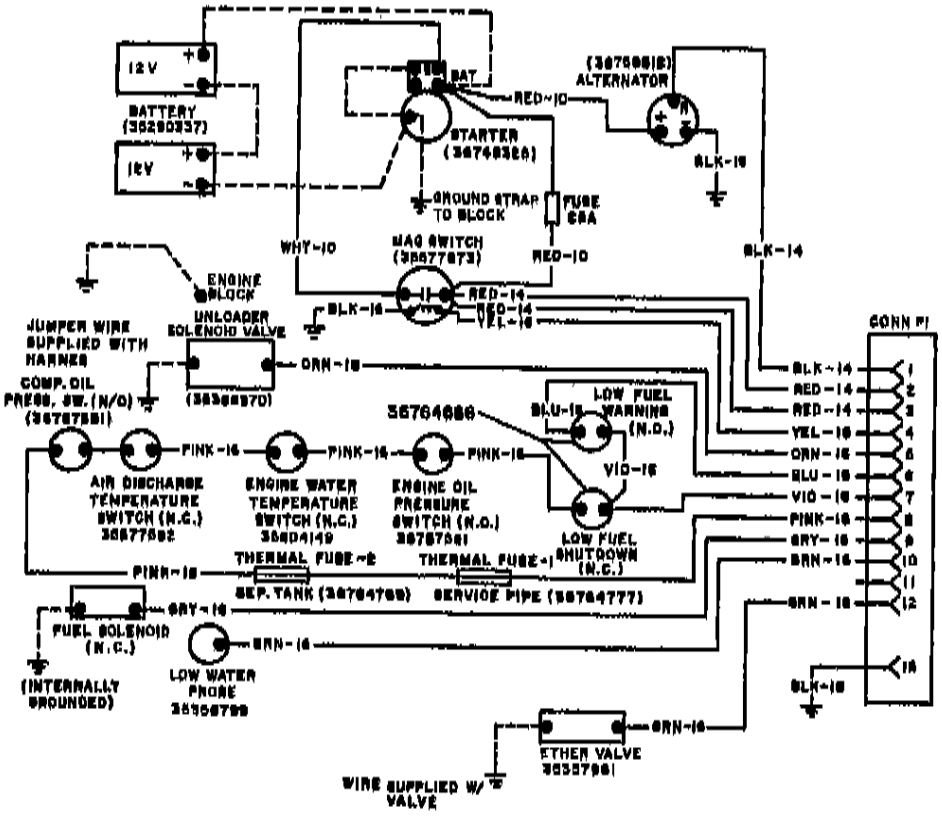
Q	35356617	RIVET	
R	35327303	EYEBOLT	
S	35327311	SPRING	
T	11A5G3	WASHER	
U	67A4C2G	NUT	
V	35603349	HOLDER, DOOR	
W	35357895	STUD	
X	11A5G4	WASHER	
Y	36273366	NUT	
Z	36577873	SWITCH, MAG.	
A1	92368687	SCREW	
A2	35356781	MODULE, LOW WATER	
A3	35290139	ADAPTER	
A4	35327246	CONNECTOR	
A5	23A7SZ7	BUSHING	
A6	35577592	SWITCH, TEMP./DISCH. AIR	
A7	35604149	SWITCH, TEMP./ENG. WATER	
A8	36757581	SWITCH, OIL PRESS.	
A9	35368799	PROBE, LOW WATER	
B1	35583442	RELAY (ALT.)	

REVISIONS		DATE	CHARGE NOS:	DATE	NAME OF PART	DRAWING NO.
A	Moved, Added	6-21-96		6-28-96	ELECTRICAL SWITCHES & FUSES	36508786
B	ENG: YER ECN 24447	8-28-96		NAME W.POOLE	INGERSOLL-RAND COMPANY	MODEL NO. P-1600-W-CU
C				E/E NO.		
D						

Electrical System for
Units thru S/N 194192

Page 2 of 5





ENGINE WIRING HARNESS 36771616 / INSTRUMENT PANEL HARNESS 36761534

Electrical System for
Units thru S/N 194192

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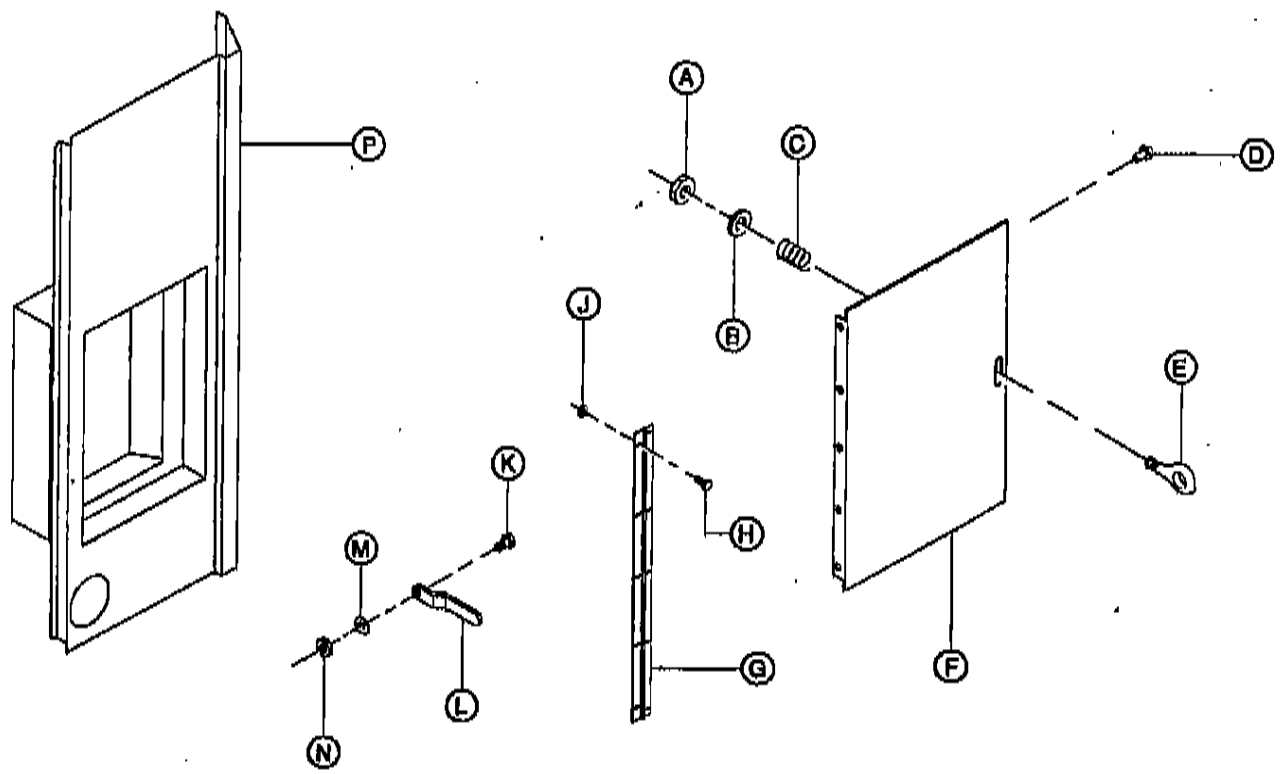
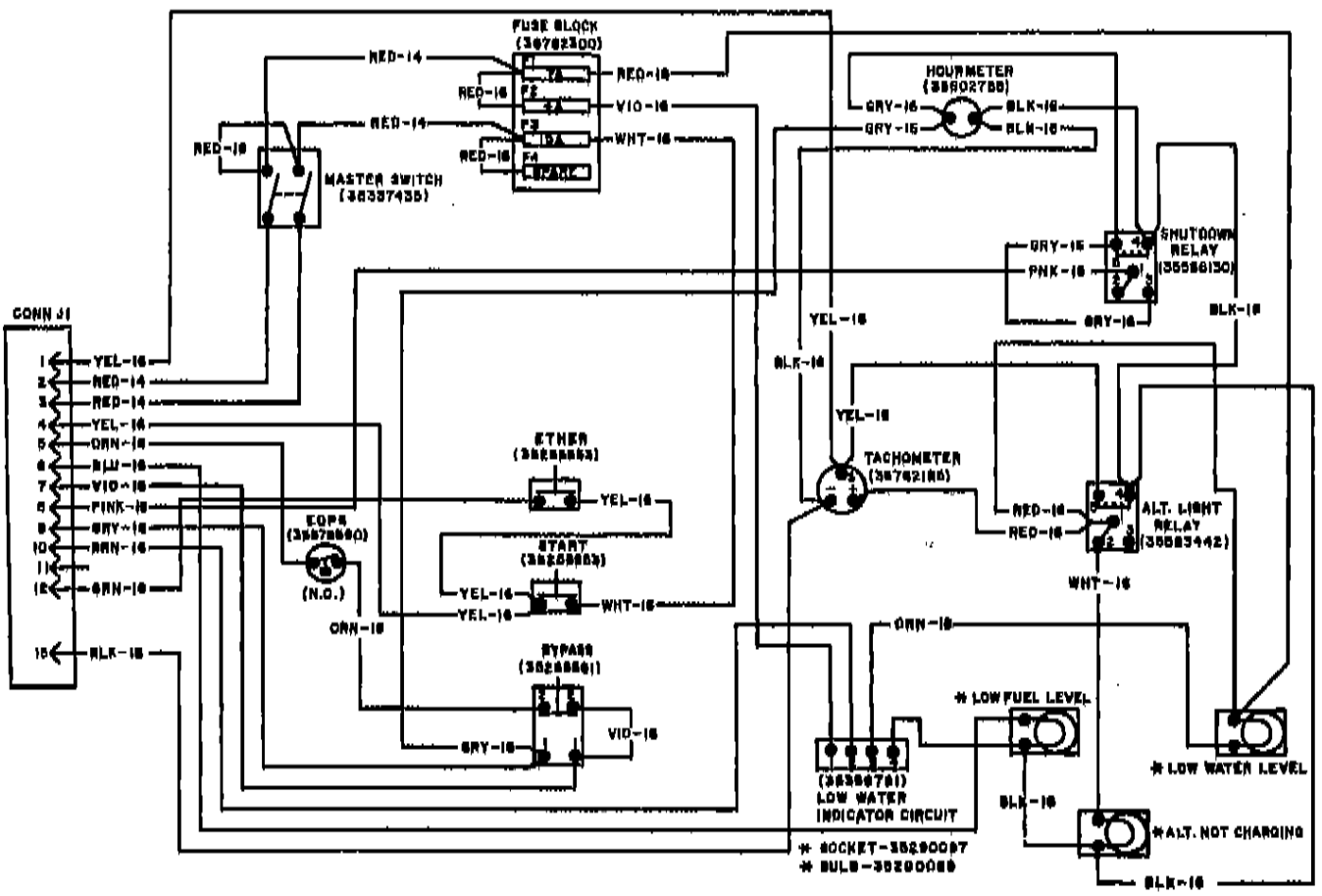
Parts List – 9-31A



A	67A4C2G	NUT	J	35144492	NUT (4 REQD)
B	11A5G3	WASHER	K	35357995	STUD
C	35327311	SPRING	L	35603349	HOLDER , DOOR
D	35356617	RIVET (5 REQD)	M	11A5G4	WASHER
E	35327303	EYEBOLT	N	35273366	NUT
F	36738565	DOOR , CONTROL PANEL	P	36840940	PANEL , L.F. VERT COR.
G	36740405	HINGE , CONTROL DOOR			
H	35144328	SCREW (4 REQD)			

INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION				REV.	DESCRIPTION	DATE
DESCRIPTION INSTR./CONTROL PANEL MOUNTING				A	ORIGINAL RELEASE PER E/C 25996 WAP	6-14-01
				B		
				C		
MODEL NO. P-1600	ILLUSTRATION NO. 36516672	SHEET NO. 1 OF 1	E/C 25996	D		

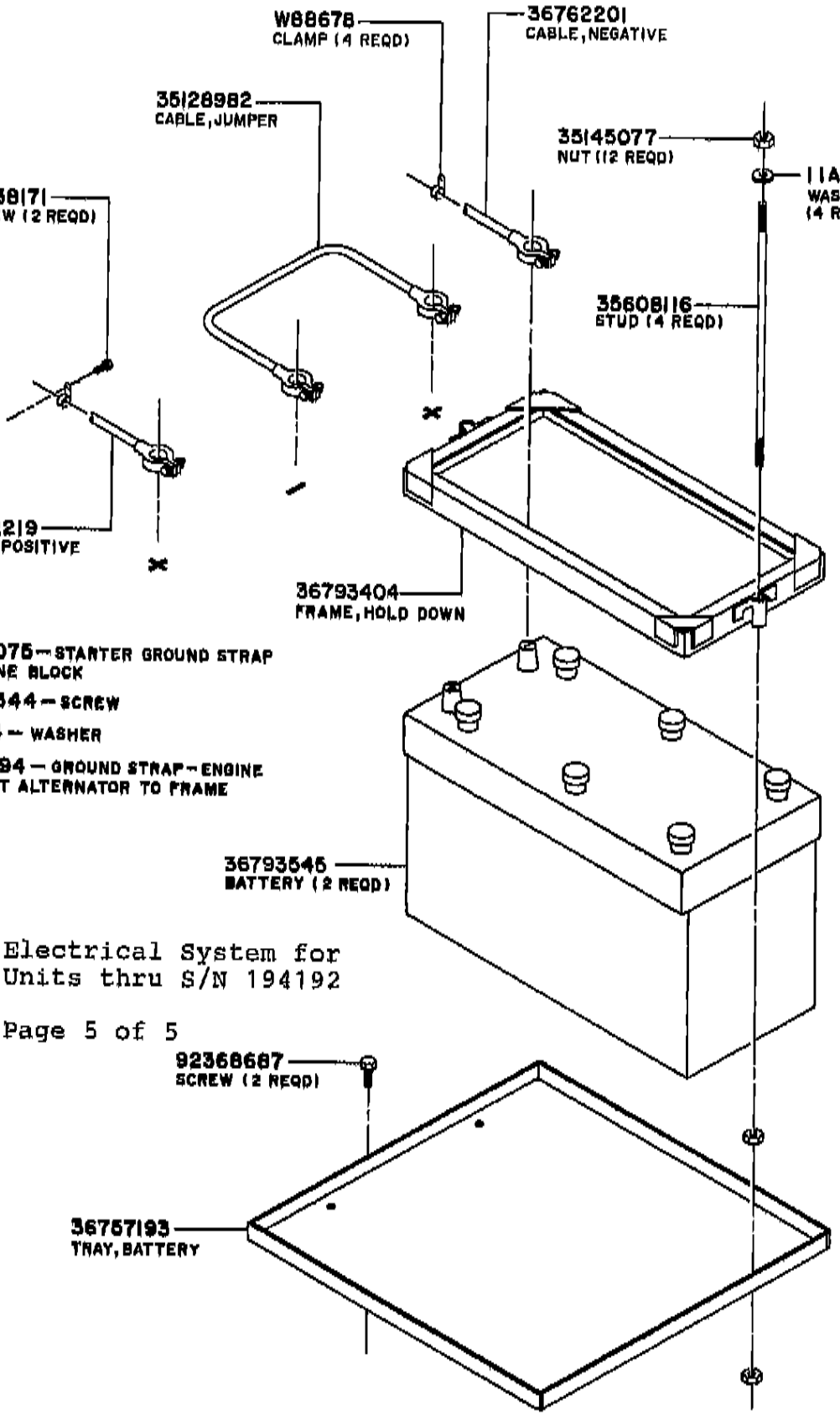
35360096 V.1



Electrical System for
Units thru S/N 194192

Page 4 of 5

REVISIONS		DATE	CHARGE NOS:		
A	ORIGINAL RELEASE PER E/C 24429	5-19-88	DATE 5-18-88	NAME OF PART WIRING DIAGRAM	
B	CHG: PER E/C 24491	7-8-88	NAME W.POOLE	INGERSOLL-RAND COMPANY MOCKSVILLE PLANT	
C	CHG: PER E/C 24095	6-15-89	E/C NO. 24151	MODEL NO. P-1600-W-CU	DRAWING NO. 36513919
D	CHG: PER E/C 24947	8-24-90			

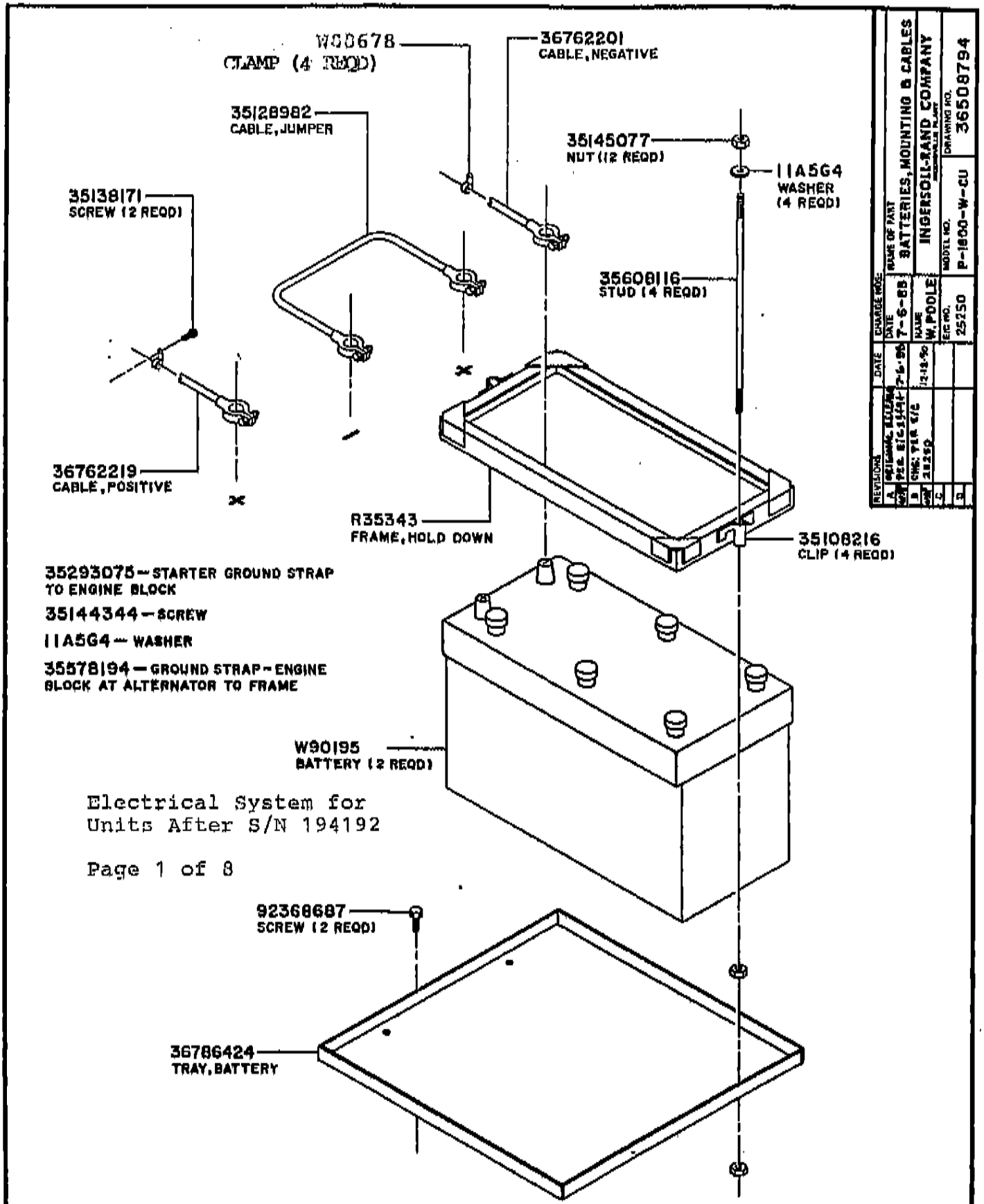


REVISIONS	DATE	CHARGE NOS.	NAME OF PART	DRAWING NO.
A ORIGINAL RELEASE PER EIC 23441	7-6-88	DATE 7-5-88	BATTERIES, MOUNTING & CABLES	36508794
B ENG: PER E/C 23250	12-19-90	NAME W. POOLE	INGERSOLL-RAND COMPANY ASHEVILLE PLANT	
C		E/C NO. 25250	MODEL NO. P-1500-W-CU	
D				

Electrical System for
Units thru S/N 194192

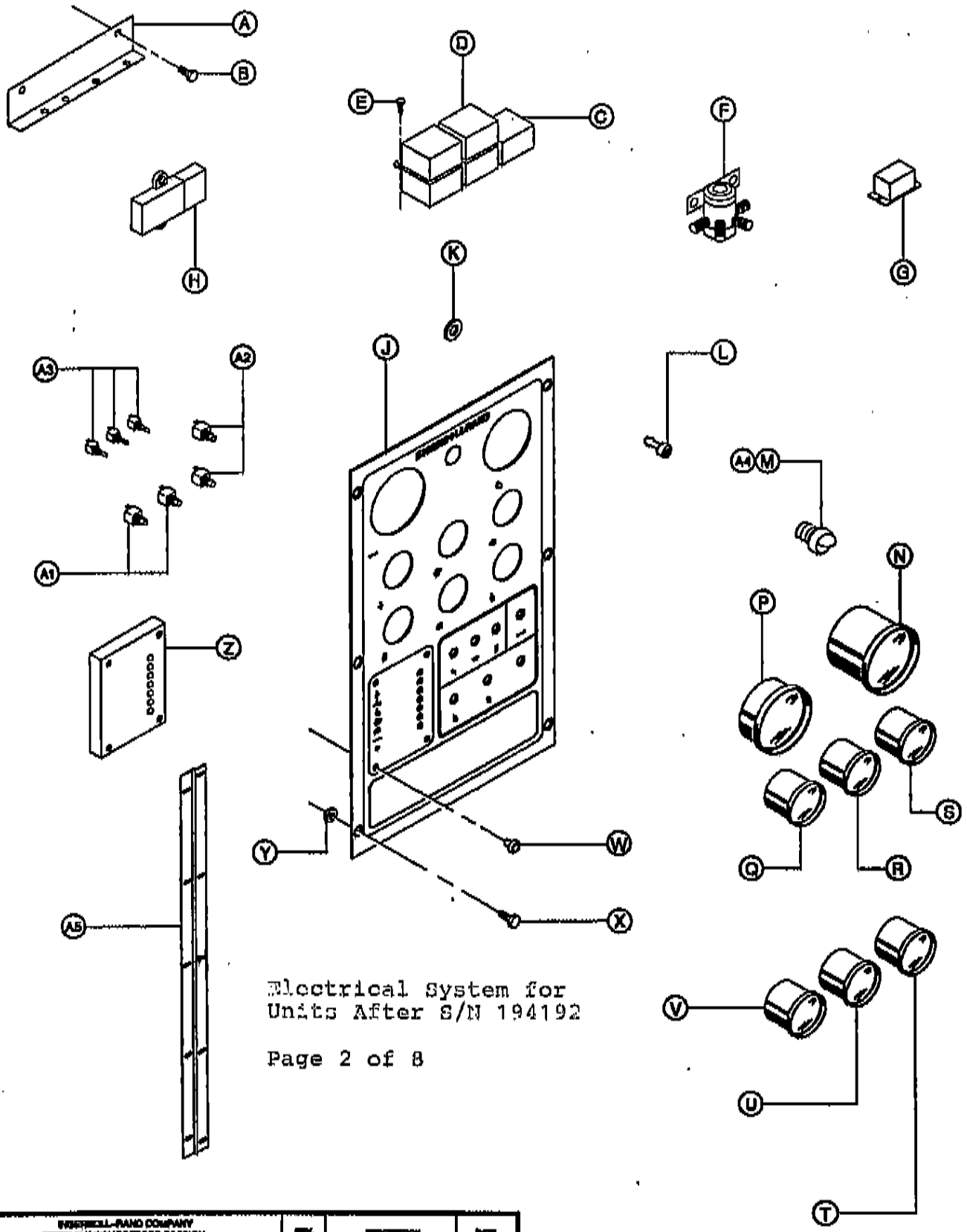
Page 5 of 5

9



Electrical System for
Units After S/N 194192

Page 1 of 8



Electrical System for
Units After S/N 194192

Page 2 of 8

INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION		REV.	DESCRIPTION	DATE
DESCRIPTION: INSTR / CONTROL PANEL		A	ORIGINAL RELEASE PER E/C 26929 WAP	8-15-01
		B		
		C		
MODEL NO. P-1600	ILLUSTRATION NO. 36516656	SHEET NO. 1 OF 2	SIZE 25996	D

A	36840924	BRACKET , RELAY	S	35373729	GAGE , ENG. OIL PRESS.
B	92368687	SCREW (2 REQD)	T	35604115	GAGE , WATER TEMP.
C	35583442	RELAY , POWER SUPPLY	U	36841153	GAGE , VOLTMETER
D	35586130	RELAY (4 REQD)	V	36841245	GAGE , HOURMETER
E	92368687	SCREW (2 REQD)	W	36775484	RIVET (4 REQD)
F	35577873	SWITCH , SOLENOID	X	35144328	SCREW (3 REQD)
G	36779742	RELAY , TIMER	Y	35144492	NUT (3 REQD)
H	35356761	MODULE , LOW WATER	Z	36771434	MODULE , DIAGNOSTIC
J	36840239	PANEL , INSTR/CONTROL	A1	35255553	SWITCH , ETHER/START
K	35369180	RETAINER (3 REQD)	A2	35255561	SWITCH , BYPASS/AIR
L	36761906	STUD (3 REQD)	A3	35337435	SWITCH , TOGGLE
M	36841252	LIGHT , INDICATOR	A4	35290089	BULB , LIGHT
N	36799989	TACHOMETER	A5	36750420	HINGE , INSTR. PANEL
P	36840767	GAGE , DISCH. PRESS.			
Q	35604115	GAGE , AIR TEMP.			
R	35604099	GAGE , FUEL LEVEL			

Electrical System for
Units After S/N 194192

Page 3 of 8

INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION				REV.	DESCRIPTION	DATE
DESCRIPTION INSTR / CONTROL PANEL				A	ORIGINAL RELEASE PER E/C 25998 WAS	6-18-01
				B		
				C		
MODEL NO. P-1600	ILLUSTRATION NO. 36518658	SHEET NO. 2 OF 2	E/C 25998	D		

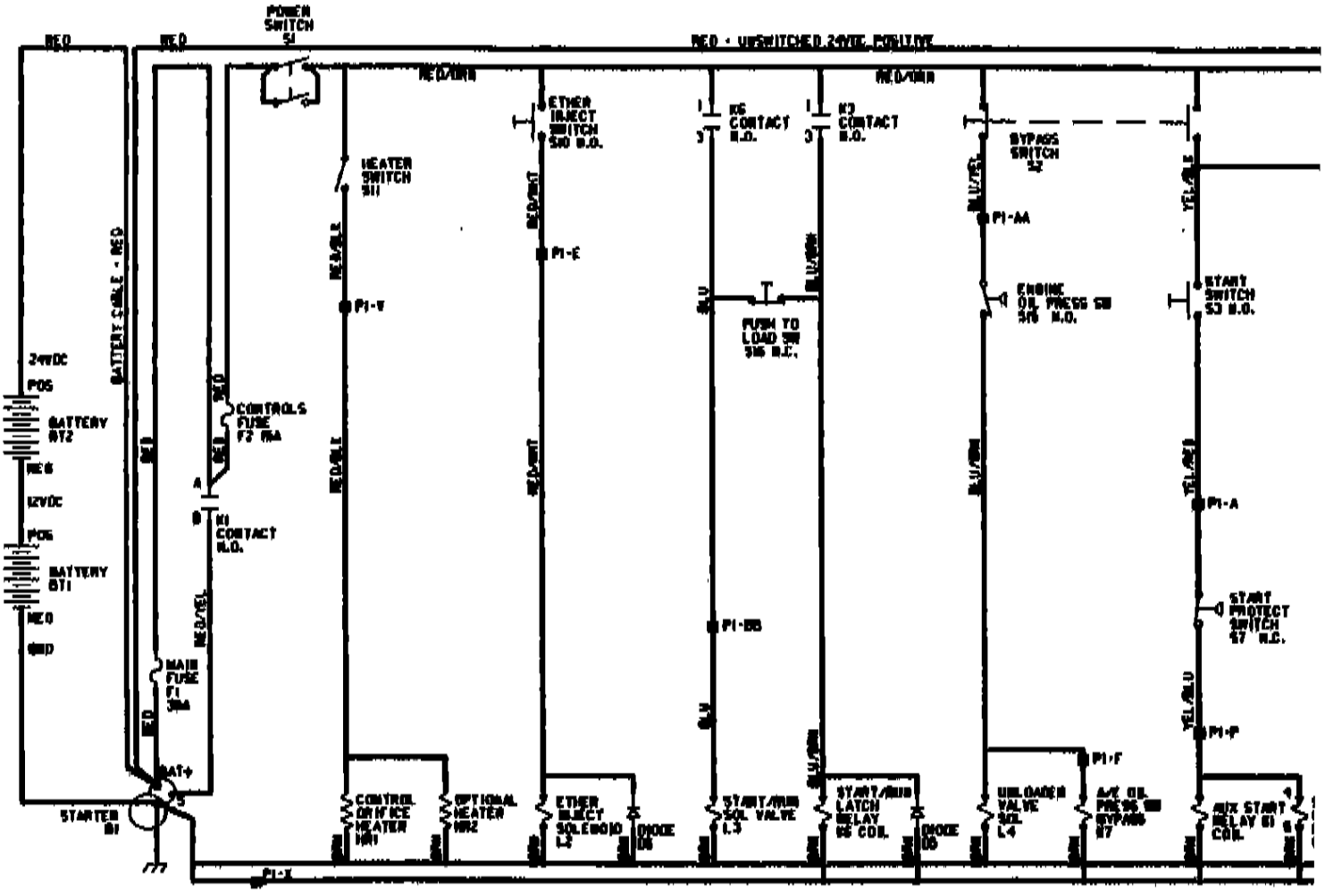
WIRING DIAGRAM PARTS LIST

Electrical System for Units After S/N 1941

Designator	Part No.	Description
B2	36840734	Compr. Motor
BT1	W90195	Battery
BT2	W90195	Battery
D1	35376191	Diode
D2	35376169	Diode
D3	35376169	Diode
D4	35376169	Diode
D5	35376169	Diode
D6	35376169	Diode
DS1	35290089	Panel Lamp
DS2	36842128	Gage Lamp
DS3	36842128	Gage Lamp
DS4	36842128	Gage Lamp
DS5	36842128	Gage Lamp
DS6	36842128	Gage Lamp
DS7	36842128	Gage Lamp
F1	36786259	Fuse 30A
F2	36782464	Fuse 15A
F3	35363472	Fuse 4A
G1	36759512	Alternator
HR1	36841526	Heater
K1	35577873	Relay
K2	35381630	Relay
K3	35381630	Relay
K4	35381630	Relay
K5	35583442	Relay
K6	35586130	Relay
K7	36779742	Relay TD
L2	35357052	Ether Valve Sol.
L3	36840841	Start/Run Valve Sol.
L4	36840841	Unloader Valve Sol.
M2	35373729	Eng. Oil Press. Gage
M3	35604099	Fuel Gage
M4	35604115	Eng. Temp Gage
M5	36841245	Hourmeter
M6	36799689	Tachometer
M7	36841153	Voltmeter
M8	35604115	Compr. Temp Gage
PB1	35356799	Coolant Probe
R1	36842136	Gage Resistor
R2	36842136	Gage Resistor
R3	36842136	Gage Resistor
R4	36842136	Gage Resistor
RP1	35373737	Eng. Oil Press. Sndr.
RT1	36841138	Compr. Temp. Sndr.
RT2	36841120	Eng. Temp. Sndr.
S1	35337435	Power Switch
S2	35255561	Bypass Switch
S3	35255553	Start Switch
S4	35577592	Air Disch. Temp. Sw.
S5	36757581	Eng. Oil Press. Sw.
S6	35604149	Coolant Temp. Sw.
S7	36757573	Start Protect Sw.
S8	35368992	Filter Restrict Sw.
S9	35368992	Filter Restrict, Sw.
S10	35255553	Ether Inject Sw.
S11	35337435	Heater Switch
S12	35337435	Panel Light Sw.
S14	36757581	A/E Oil Press. Sw.
S15	35578590	Eng. Oil Press. Sw.
S16	35255561	Service Air Sw.
TS1	36764777	Thermal Sensor
TS2	36764769	Thermal Sensor
U1	36771434	Diagnostic Module
U2	36840783	Fuel Level Module
U3	35356781	Cool. Level Module
W1	36841849	Chassis Harness
W2	36841831	Control Panel Harness
	36841930	Card, Wiring, Set
	36842037	Card, Elec. Location
	36842045	Card, Elec. Parts
	36788992	Ring Binder

Part Number: 36842045

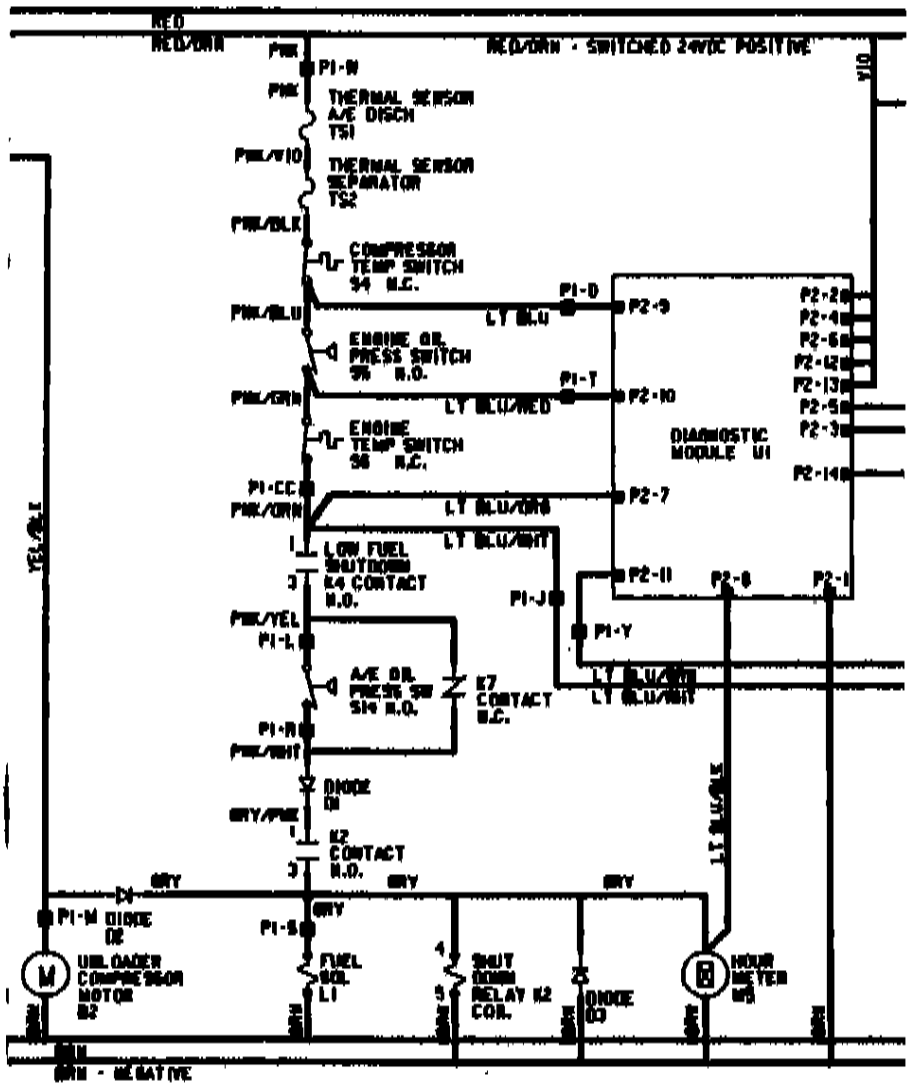
Parts List — 9-32-e



ELECTRICAL DIAGRAM : XP1200/P-1600-W-CU 36841930

INGERSOLL-RAND COMPANY CONSTRUCTION EQUIPMENT PORTABLE OPERATIONS MOCKSVILLE, NC 27028			
TITLE CARD ASSY ELEC DIAGRAM			
SIZE D	CODE IDENT NO.	PART NO. 36841930	CAGE 25988
SCALE: 1:1	P-1600-W-CU	SHEET 2 OF 2	

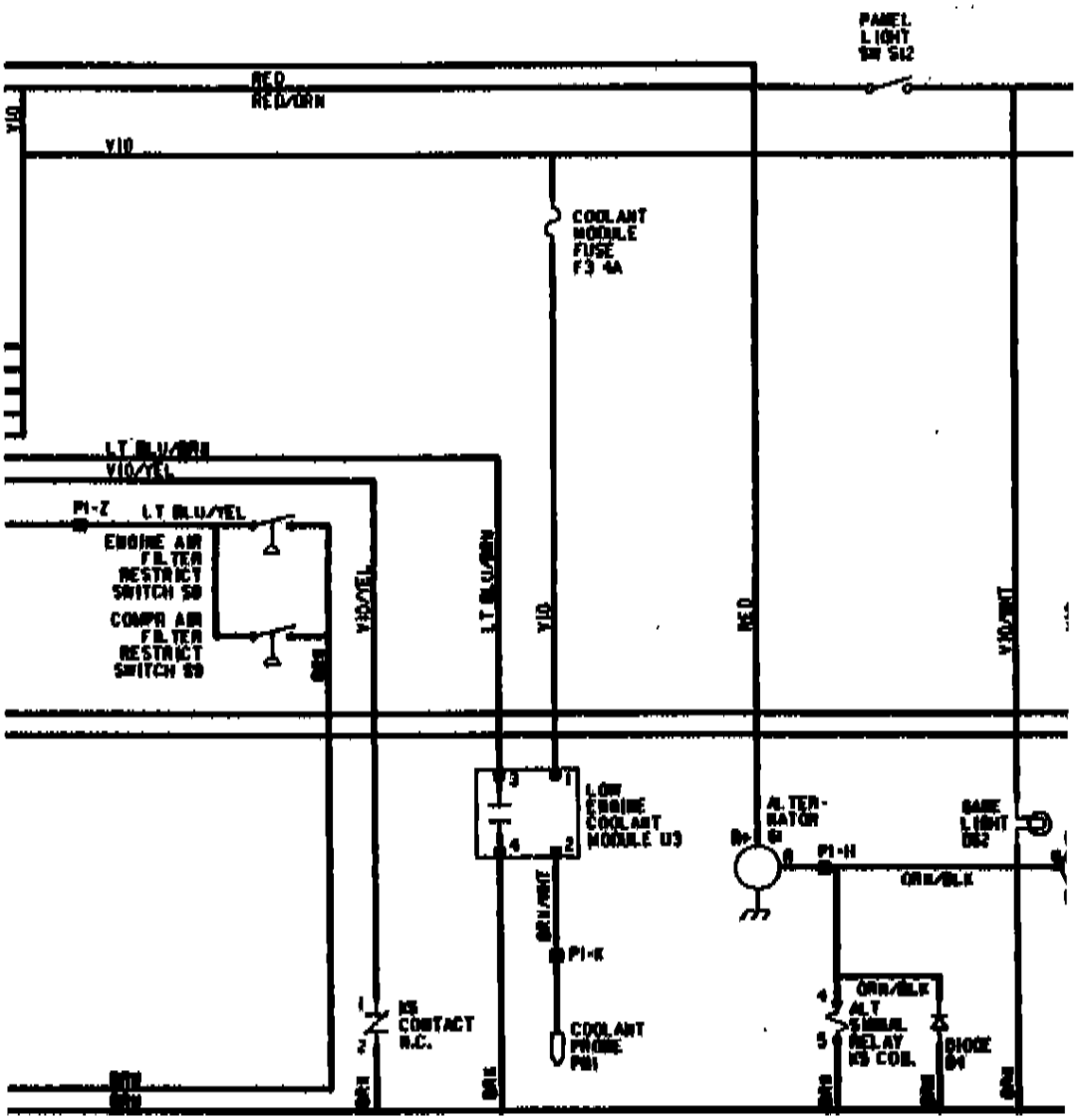
Electrical System for
Units After S/N 194192



Electrical System for
Units After S/N 194192

Page 6 of 8

Parts List — 9-32 G



Electrical System for
Units After S/N 194192

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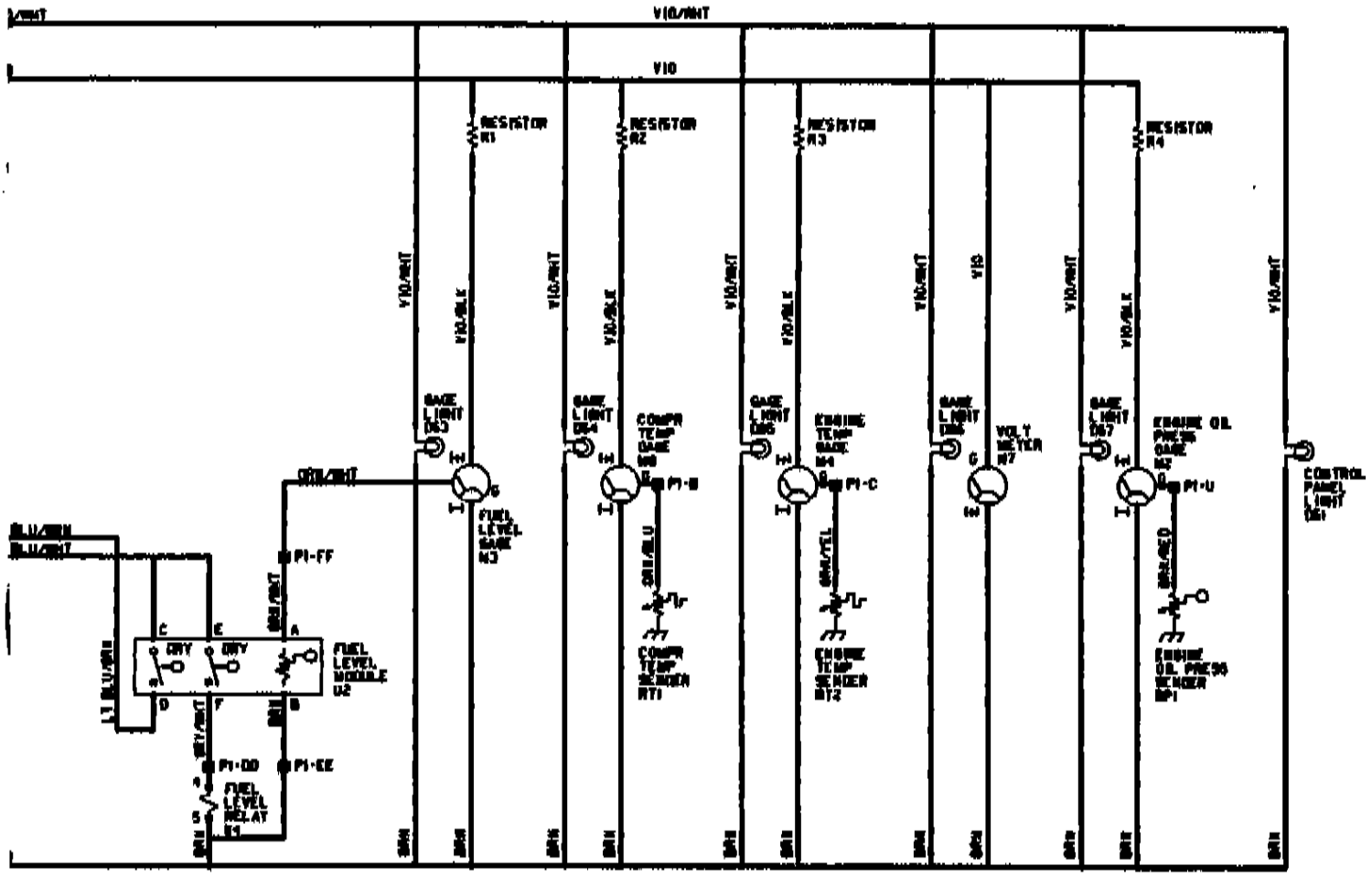
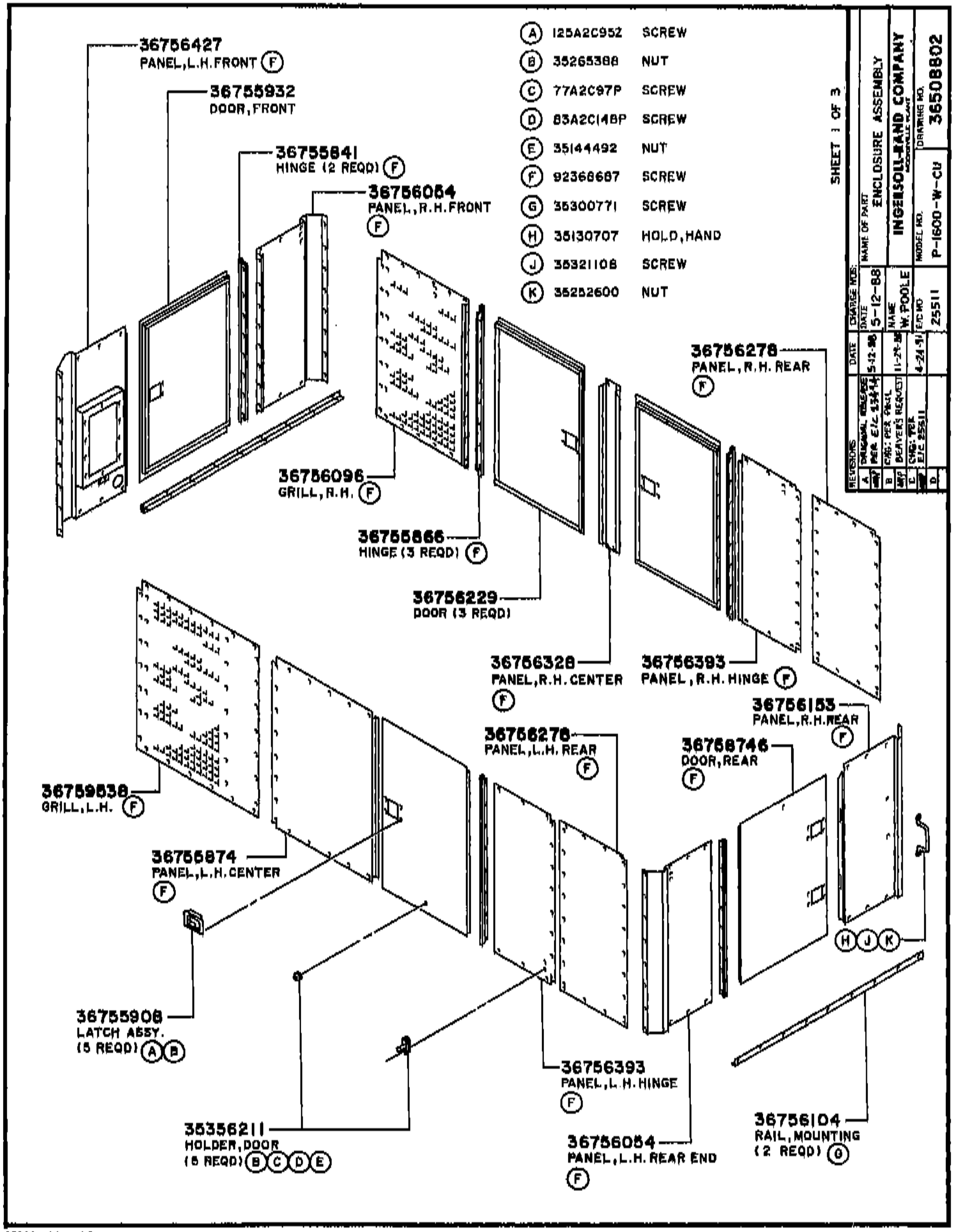


ELECTRICAL DIAGRAM: XP1200/P-1600-W-CU 36841930

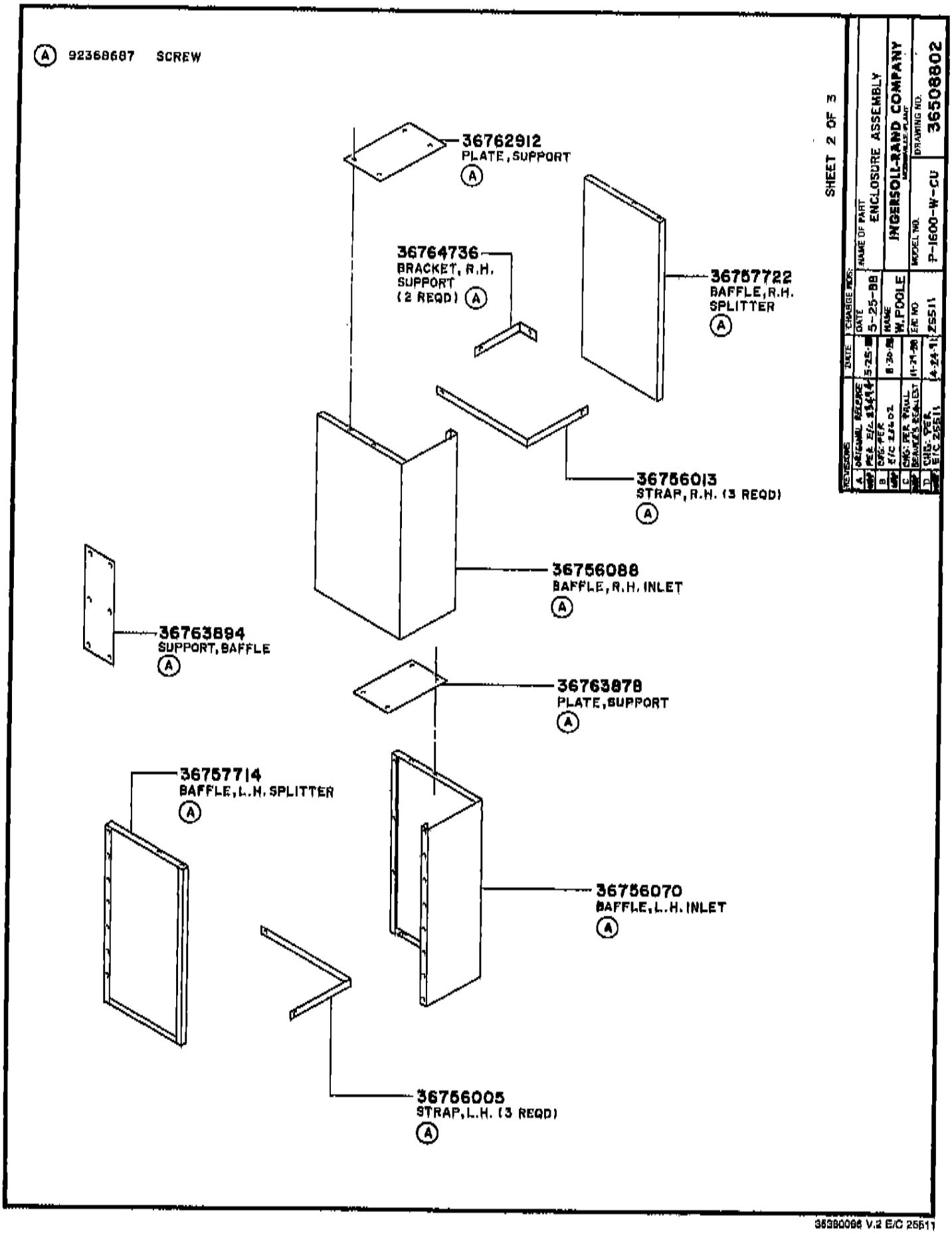
Electrical System for
Units After S/N 194192

Page 8 of 8

INGERSOLL-RAND COMPANY CONSTRUCTION EQUIPMENT PORTABLE OPERATIONS MOCKSVILLE, NC 27028			
TITLE CARD ASSY ELEC DIAGRAM			
SIZE D	CODE IDENT NO.	PART NO. 36841930	ENG 25988
SCALE 1:1	P-1600-W-CU		SHEET 2 OF 2

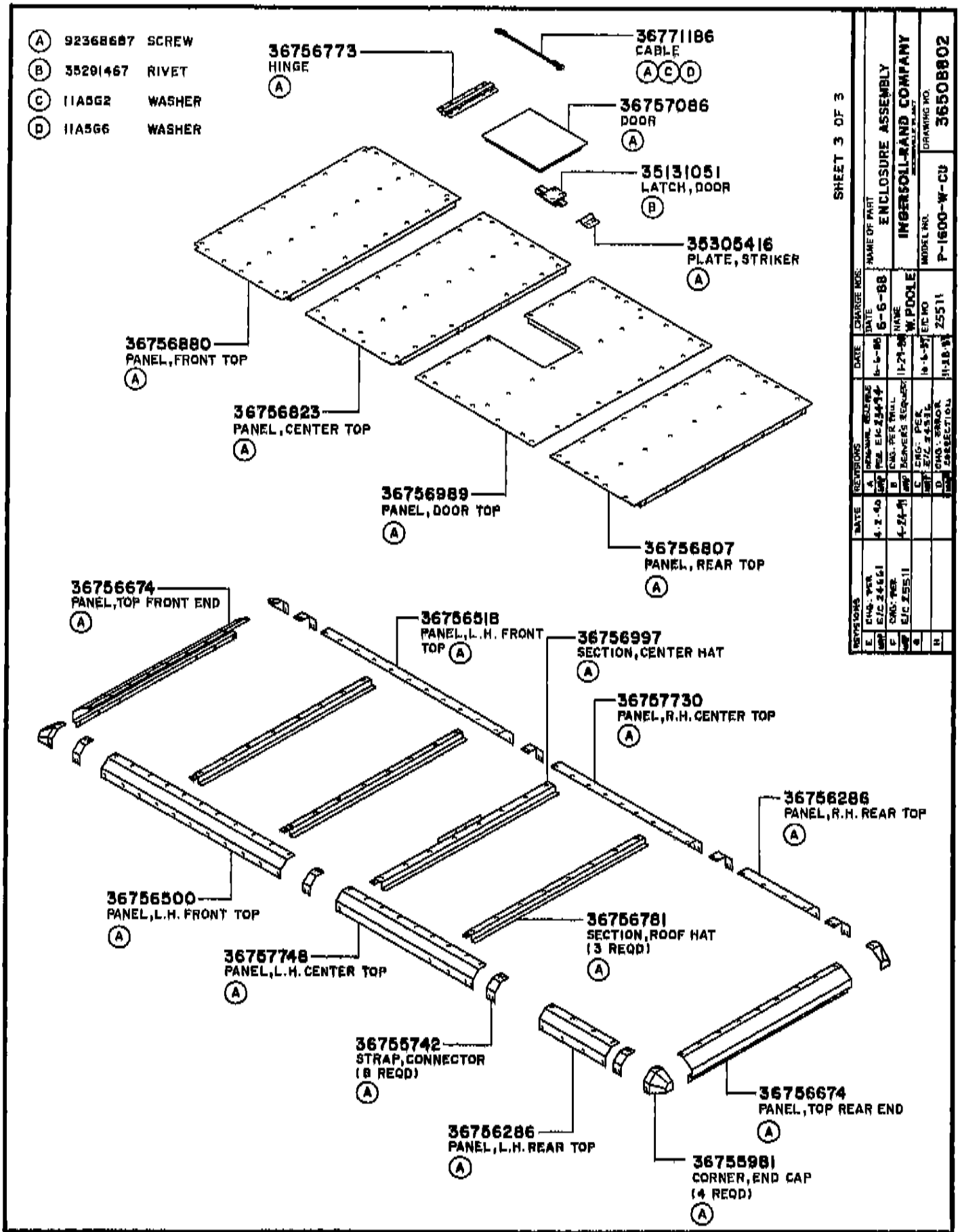


35380086 V.2 E/C 25511



36380096 V.2 E/C 25511

9



36360096 V.2 E/C 25511

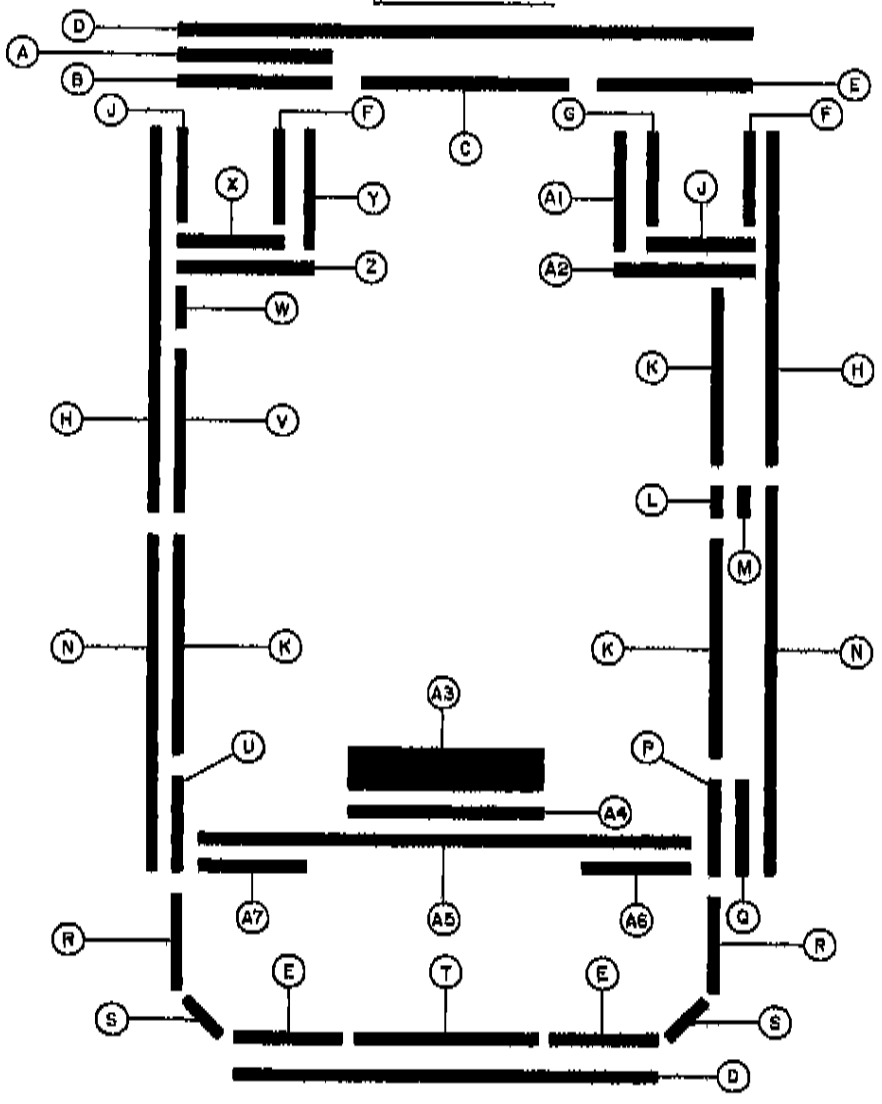
A	36797355	F. H. FRONT VERT. COR. PNL. (2.35")	
B	36797363	L. H. FRONT VERT. COR. PNL. (1.35")	
C	36797520	FRONT END DOOR (1.35")	
D	36797869	FRONT TOP EDGE PNL. (1.0")	
E	36797371	L. H. & R. H. VERT. COR. PNL. (2.35")	
F	36757938	L. H. & R. H. BAF. INLET SIDE (1.0")	
G	36757953	R. H. FR. BAF. INLET SIDE (1.0")	
H	36787877	TOP SIDE EDGE PNL. (1.0")	
J	36757946	L. H. & R. H. FR. BAF. INLET SIDE (1.0")	
K	36797612	L. H. & R. H. SIDE DOOR (1.35")	
L	36797397	R. H. DOOR POST LOWER (1.35")	
M	36797389	R. H. DOOR POST UPPER (1.35")	
N	36787885	L. H. & R. H. TOP SIDE EDGE PNL. (1.0")	
P	36797462	R. H. LOWER SIDE PNL. (2.35")	
Q	36797454	R. H. SIDE PNL. AT SHROUD (2.35")	
R	36797439	L. H. & R. H. REAR SIDE PNL. (2.35")	
S	36797538	L. H. & R. H. REAR VERT. COR. PNL. (1.0")	
T	36787935	REAR END DOOR (1.35")	
U	36797421	L. H. SIDE PNL. AT SHROUD (2.35")	
V	36797413	L. H. MIDDLE SIDE PNL. (2.35")	
W	36797405	L. H. FRONT SIDE PNL. (2.35")	
X	36757920	L. H. FRONT BAF. INLET SIDE (1.0")	
Y	36797470	L. H. FR. BAF. ENG. SIDE (2.35")	
Z	36797488	L. H. FR. BAF. ENG. SIDE (2.35")	
A1	36797496	R. H. FR. BAF. ENG. SIDE (2.35")	
A2	36797504	R. H. FR. BAF. ENG. SIDE (2.35")	
A3	36788008	BELLY PAN UNDER FAN (1.35")	
A4	36769464	LWR REAR BAF. AT CLR. (1.0")	
A5	36797561	TOP REAR BAF. ENG. SIDE (2.35")	
A6	36797546	R. H. REAR BAF. ENG. SIDE (2.35")	
A7	36797553	L. H. REAR BAF. ENG. SIDE (2.35")	

SHEET 1 OF 2

REVISIONS	DATE	CHARGE NOS:
A CHANGE TO E/C 25511	4-23-91	
B		
C		
D		

NAME OF PART: ACOUSTICAL PANELS
INGERSOLL-RAND COMPANY
DRAWING NO. 36516334
MODEL NO P-1600-W-CU
E/C NO 25511
DATE 4-23-91
NAME W. POOLE

DRAWBAR END



SHEET 2 OF 2

REVISIONS	DATE	CHANGE NOS:
A ORIGINAL RELEASE PER E/C 25511	4-23-91	DATE 4-23-91
B		NAME W. POOLE
C		E/C NO 25511
D		

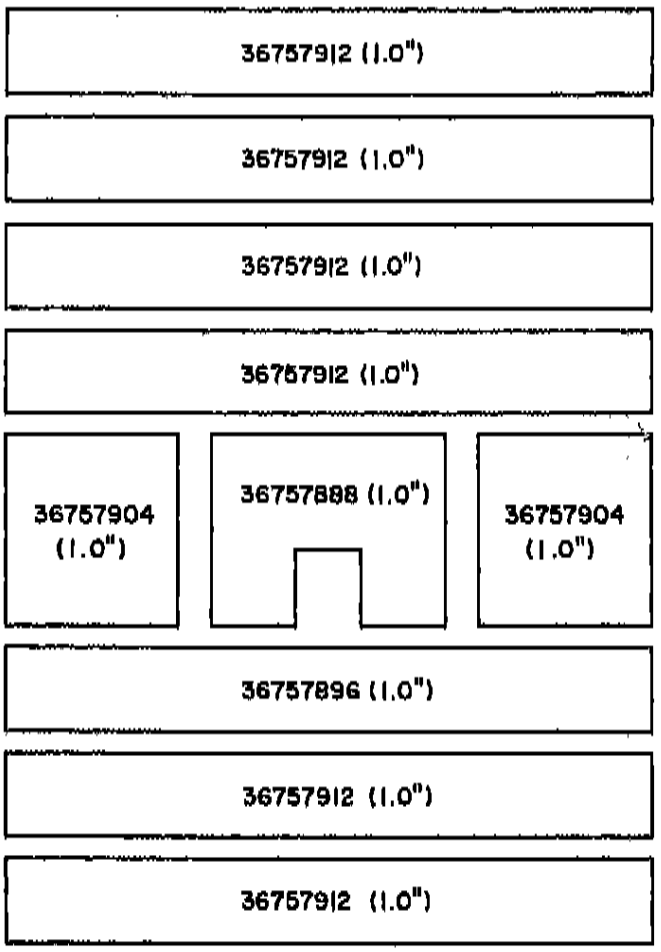
NAME OF PART: ACOUSTICAL PANELS

INGERSOLL-RAND COMPANY
ASHEVILLE PLANT

MODEL NO P-1600-W-CU

DRAWING NO. 36516334

ROOF PANELS
(DRAWBAR END)



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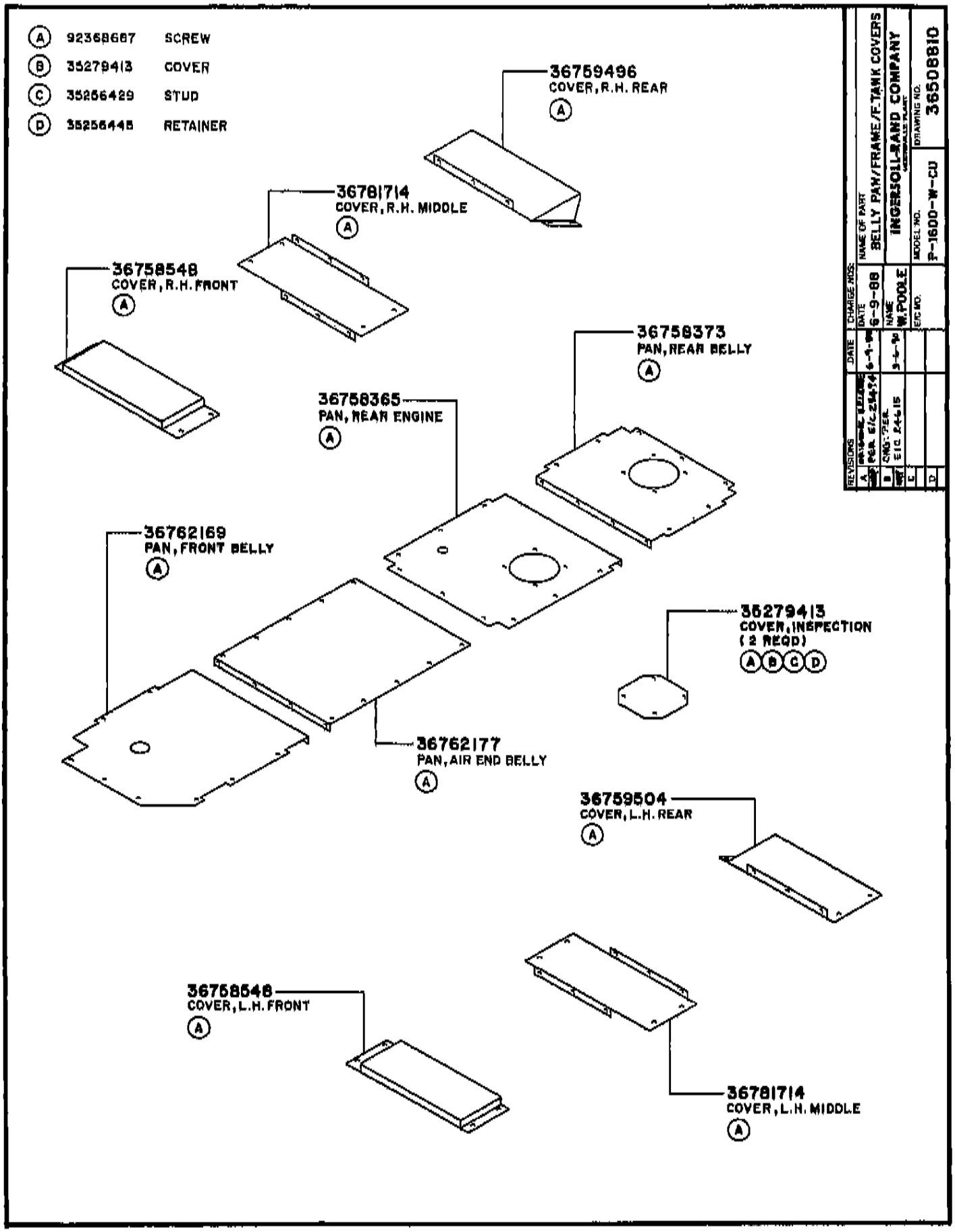
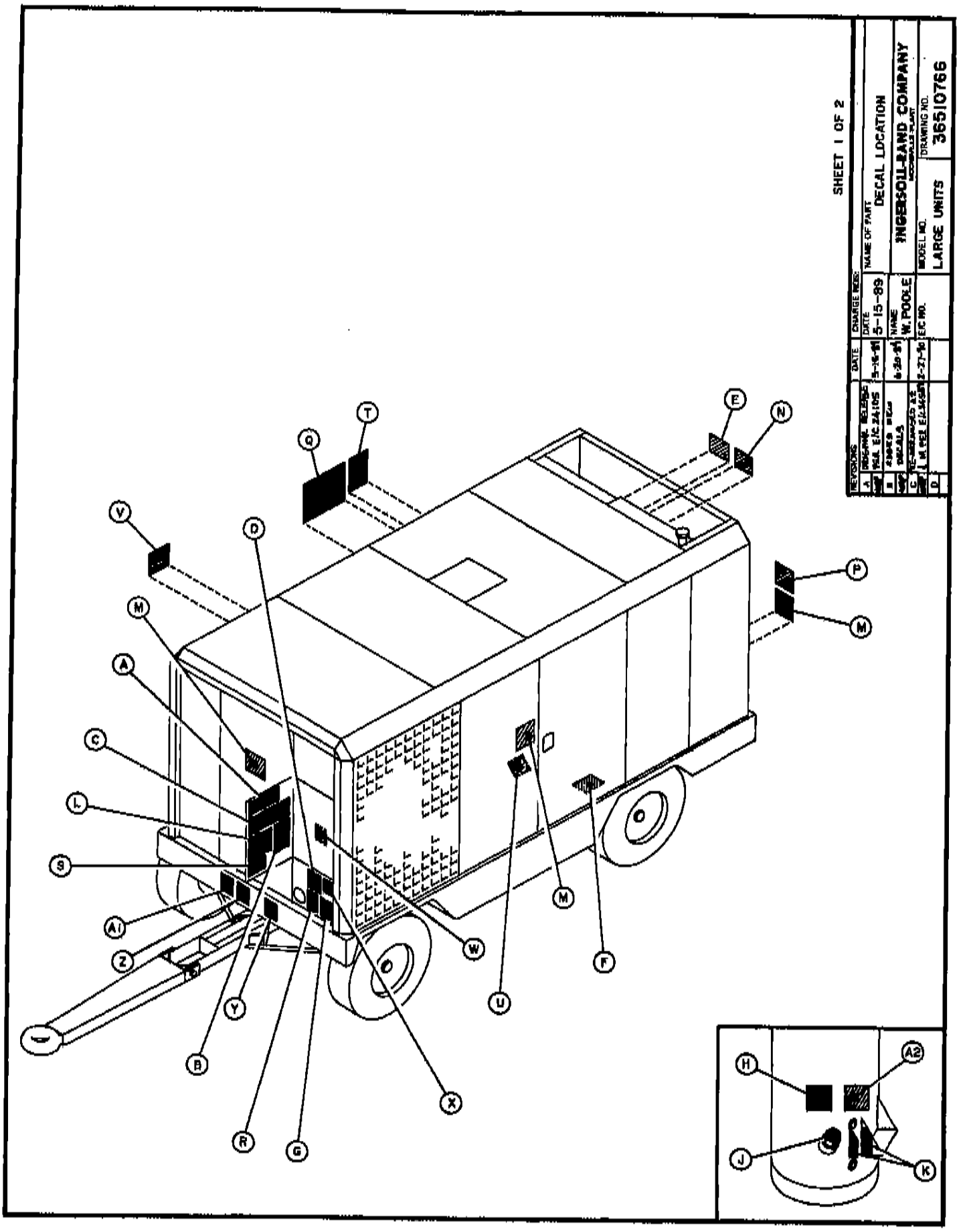

A 92368687 SCREW
B 35279413 COVER
C 35256429 STUD
D 35256445 RETAINER
36759496
COVER, R.H. REAR
A
36781714
COVER, R.H. MIDDLE
A
36758548
COVER, R.H. FRONT
A
36758373
PAN, REAR BELLY
A
36758365
PAN, REAR ENGINE
A
36762169
PAN, FRONT BELLY
A
35279413
COVER, INSPECTION
(2 REQD)
A B C D
36762177
PAN, AIR END BELLY
A
36759504
COVER, L.H. REAR
A
36758548
COVER, L.H. FRONT
A
36781714
COVER, L.H. MIDDLE
A
REVISIONS
DATE
CHARGE NOS:
NAME OF PART
BELLY PAN/FRAME/F.TANK COVERS
DATE
6-9-88
INGERSOLL-RAND COMPANY
NAME
W.POOLE
MODEL NO.
P-1600-W-CU
DRAWING NO.
38508810
E/C NO.



35360096 V.1

9