OPERATING, MAINTENANCE & PARTS MANUAL

MODELS
P-185A-S-JD
P-185A-W-JD
XP-175A-S-JD
XP-175A-W-JD

NOVEMBER, 1983

COMPRESSOR SERIAL NUMBER RANGE

(APPLY SERIAL NO. LABEL HERE)

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 proceeds 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.

CD 900 (35337518) V.2 21239

Manual 35337518

NOTE: The information shown on this page applies only to units that are built in compliance with the U.S. Environmental Protection Agency. This information does not apply to those units that are built and sold for export use only.

Warning

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Federal law prohibits the following acts or the causing thereof:

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

Among those acts included in the prohibition against tampering are the acts listed below.

(1) Removal or rendering inoperative any of the following:
   a. the engine exhaust system or parts thereof
   b. the air intake system or parts thereof
   c. enclosure or parts thereof
(2) Removal of any of the following:
   a. fan shroud
   b. vibration mounts
   c. sound absorption material
(3) Operation of the compressor with any of the enclosure doors open.

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 PCD685) with each compressor shipped from the factory. (The Maintenance Log Book applies only to units that are built in compliance with the U.S. Environmental Protection Agency. The Maintenance Log Book is not supplied with those units that are built or sold for export use only.) 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.

INDEX

A BATTERY CONTAINS SULFURIC ACID AND CAN GIVE OFF GASES WHICH ARE CORROSIVE AND POTENTIALLY EXPLOSIVE. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. IN CASE OF CONTACT, FLUSH AREA IMMEDIATELY WITH WATER.

EXERCISE EXTREME CAUTION WHEN USING BOOSTER BATTERY. TO JUMP BATTERY, CONNECT ENDS OF ONE BOOSTER CABLE TO THE POSITIVE (+) TERMINAL OF EACH BATTERY. CONNECT ONE END OF OTHER CABLE TO THE NEGATIVE (–) TERMINAL OF THE BOOSTER BATTERY AND OTHER END TO A GROUND CONNECTION AWAY FROM DEAD BATTERY (TO AVOID A SPARK OCCURRING NEAR ANY EXPLOSIVE GASES THAT MAY BE PRESENT). AFTER STARTING UNIT, ALWAYS DISCONNECT CABLES IN REVERSE ORDER.

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

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

DO NOT LOOSEN OR REMOVE OIL FILLER PLUG OR PERFORM ANY MAINTENANCE FUNCTIONS WITHOUT FIRST MAKING SURE ALL AIR PRESSURE HAS BEEN RELIEVED FROM UNIT.

NEVER OPERATE THIS MACHINE WITH ANY GUARDS REMOVED.

THE HIGH AIR PRESSURE DEVELOPED BY THIS MACHINE CAN BE HAZARDOUS.

THE AIR DISCHARGED FROM THIS UNIT IS NOT SUITABLE FOR HUMAN CONSUMPTION.

NEVER OPERATE UNIT WITHOUT FIRST OBSERVING ALL CAUTION AND WARNING DECALS AND CAREFULLY READING THE OPERATOR'S AND MAINTENANCE MANUAL FURNISHED WITH THIS MACHINE. ADDITIONAL COPIES OF THE MANUAL CAN BE OBTAINED FROM INGERSOLL-RAND COMPANY, MOCKSVILLE, NC 27028, USA.

35839570

GENERAL DATA

AIR COMPRESSOR	MODEL P-185A-S-JD MODEL P-185A-W-JD	MODEL XP-175A-S-JD MODEL XP-175A-W-JD
ACTUAL DELIVERY OF COMPRESSOR	185 cfm (87 litres per sec.)	175 cfm (83 litres per sec.)
RATED OPERATING PRESSURE	100 psi (7.03 kgf per cm^2)	125 psi (8.79 kgf per cm^2)
AIR CLEANER ELEMENT	PART NO. 35291970	PART NO. 35291970
COMPRESSOR OIL FILTER ELEMENT	PART NO. 35296920	PART NO. 35296920
COMPRESSOR OIL CAPACITY	14 QTS. (13.25 litres)	14 QTS. (13.25 litres)

*RECOMMENDED COMPRESSOR LUBRICANT: USE A HEAVY-DUTY, DETERGENT-TYPE OIL CONFORMING TO SPECIFICATION MIL-L-46152, GRADE SAE 10W FOR AN AMBIENT TEMPERATURE RANGE OF 125°F TO −10°F (52°C to −23°C). ASCERTAIN THAT MIL-L-46152 LUBRICANTS MEET API CLASS CC ONLY AND NOT CD. FOR AMBIENT TEMPERATURES BELOW −10°F (−23°C) AND FOR ALTERNATE TYPE COMPRESSOR LUBRICANTS, CONSULT COMPRESSOR OPERATING AND MAINTENANCE MANUAL.

CAUTION: DO NOT MIX OILS OF DIFFERENT TYPES OR BRANDS.

JOHN DEERE, DIESEL ENGINE	SERIES 300	SERIES 300
ENGINE SPEED AT FULL LOAD	2500 RPM	2500 RPM
ENGINE SPEED AT NO LOAD	1400 RPM	1400 RPM
ELECTRICAL STARTING SYSTEM	12 Volt	12 Volt
ENGINE LUBE OIL CAPACITY (INCLUDING OIL FILTER)	9 qts. (8.5 litres)	9 qts. (8.5 litres)
ENGINE COOLANT CAPACITY	5 US gals. (18.9 litres)	5 US gals. (18.9 litres)
FUEL TANK CAPACITY	24 US gals. (90.8 litres)	24 US gals. (90.8 litres)
(USE NO. 2-D DIESEL FUEL OIL WITH MINIMUM CETANE NUMBER OF 45 AND SULFUR CONTENT NOT GREATER THAN 0.5%)		
LENGTH INCLUDING TOWBAR	12.0' (3.66 m)	12.0' (3.66 m)
HEIGHT	4.83' (1.47 m)	4.83' (1.47 m)
WIDTH	6.25' (1.91 m)	6.25' (1.91 m)
NET WEIGHT (INCLUDING LUBE OIL)	2456 lbs. (1114 kg)	2456 lbs. (1114 kg)
GROSS WEIGHT (INCLUDING FUEL AND COOLANT)	2670 lbs. (1211 kg)	2670 lbs. (1211 kg)

THIS COMPRESSOR EQUIPPED WITH G78 x 15, LOAD RANGE "B" (OR EQUIVALENT) SIZE TIRES, AS DESCRIBED IN TRA 1980 YEARBOOK, TABLE PC-7. SERVICE LOAD AND INFLATION ARE IN COMPLIANCE WITH THE PROVISIONS AT THE RESTRICTED SPEED RANGE.

COLD INFLATION PRESSURE	32 psi (2.25 kgf per cm^2)	32 psi (2.25 kgf per cm^2)
MAXIMUM TOWING SPEED	50 mph (80 kmh)	50 mph (80 kmh)

CAUTION: ANY DEPARTURE FROM THE ABOVE RECOMMENDATIONS MAY MAKE THIS EQUIPMENT UNSAFE.

SECTION 1

DESCRIPTION

GENERAL DESCRIPTION

The Spiro-Flo® series air compressor is a completely enclosed, single-stage compressor, directly connected to and driven by a diesel engine. Special attention has been given to the aesthetic appeal of this unit. The compressor is a positive displacement, cycloidal type. The engine is a heavy-duty, industrial type, specially compressor-matched to provide optimum performance with the utmost in fuel economy. The engine is operated at its maximum speed and horsepower rating while still maintaining good service life.

Each unit includes, as standard equipment, compressor and engine inlet air cleaners, a compressor air inlet unloader valve, a speed and pressure regulator, OSHA* type fan guards, full but simplified instrumentation and controls and an air receiver-oil separator system. Instrumentation includes an air discharge pressure gage and an hourmeter. A solid state electronic board controls the shutdown switches and indicators for a more reliable indication of unit malfunctions and subsequent automatic unit shutdown. Panel lights are used to indicate high air discharge temperature, high engine coolant temperature, low engine oil pressure and alternator output. A feature of the electronic circuitry is a built-in test for the panel lights to ensure they are operating properly. The entire circuit requires less current drain than does a typical dome light in an automobile. Controls include an "on-off" toggle switch, an engine start switch, a bypass switch, and a "start-run" valve.

The compressor lubricating oil system includes a receiver-separator tank, an oil cooler, an oil temperature bypass valve and an oil filter. An unusual feature of these units is the heat exchanger or cooling fan which is driven by the compressor instead of the usual engine mounted type. This provides more efficient fan operation with resulting higher air flow since engine blockage is greatly reduced. The receiver-separator tank is provided with a readily replaceable element including a unique porous separation media. The engine is provided with an electrical starting system, an alternator, a large capacity fuel tank, a coolant radiator, and an optional cold weather starting aid. The optional cold weather starting aid is a starting fluid (ether) discharger. An engine operator's manual and a parts manual are provided with each unit shipped from the factory. Refer to these manuals for specific information concerning the engine in your unit.

Each unit is completely enclosed in a sheet metal housing which is equipped with two, separately mounted, hinged doors.

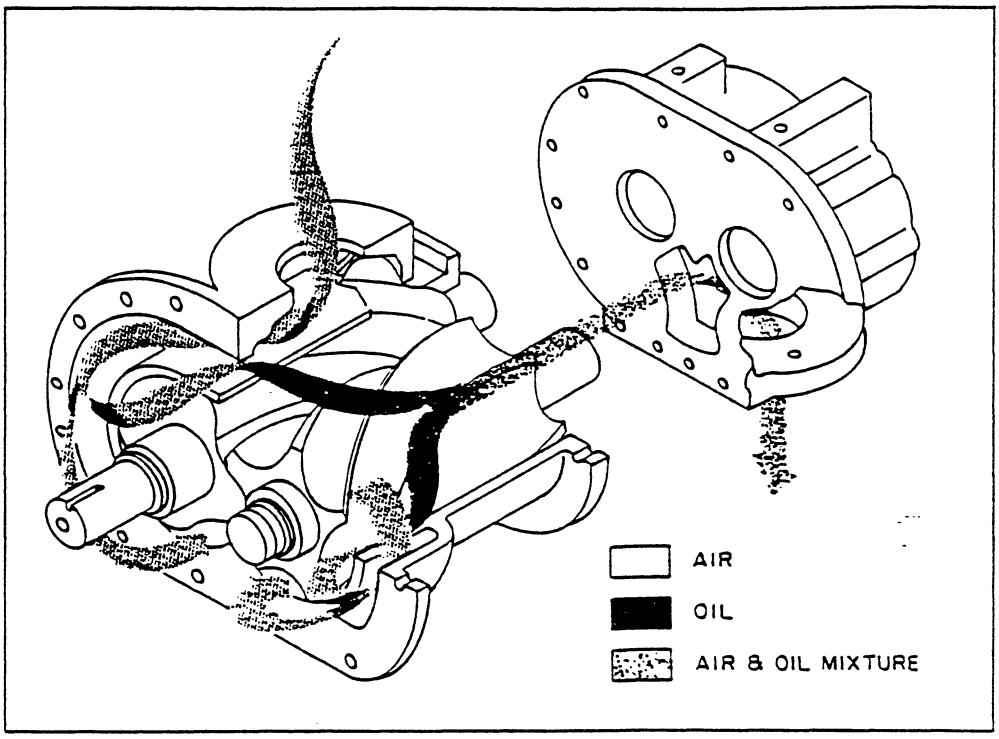
On Models P-185A-S-JD and XP-175A-S-JD, the housing is designed to provide a straight through air flow system.

On Models P-185A-W-JD and XP-175A-W-JD, the silencing type housing is provided with a specially baffled air flow system to attenuate the noise level. An attenuated engine exhaust system further reduces the noise level. The acoustical enclosure, the air flow system and the exhaust system all contribute to limiting the full load sound rating to 76 decibels (A scale) at a distance of seven metres. This noise level requirement applies only to units that are built in compliance with the U.S. Environmental Protection Agency.

DESCRIPTION OF COMPRESSOR

Compression is created by the meshing of

Spiro-Flo® - Reg. T.M. of Ingersoll-Rand Co.
*OSHA - Occupational and Safety Health Act

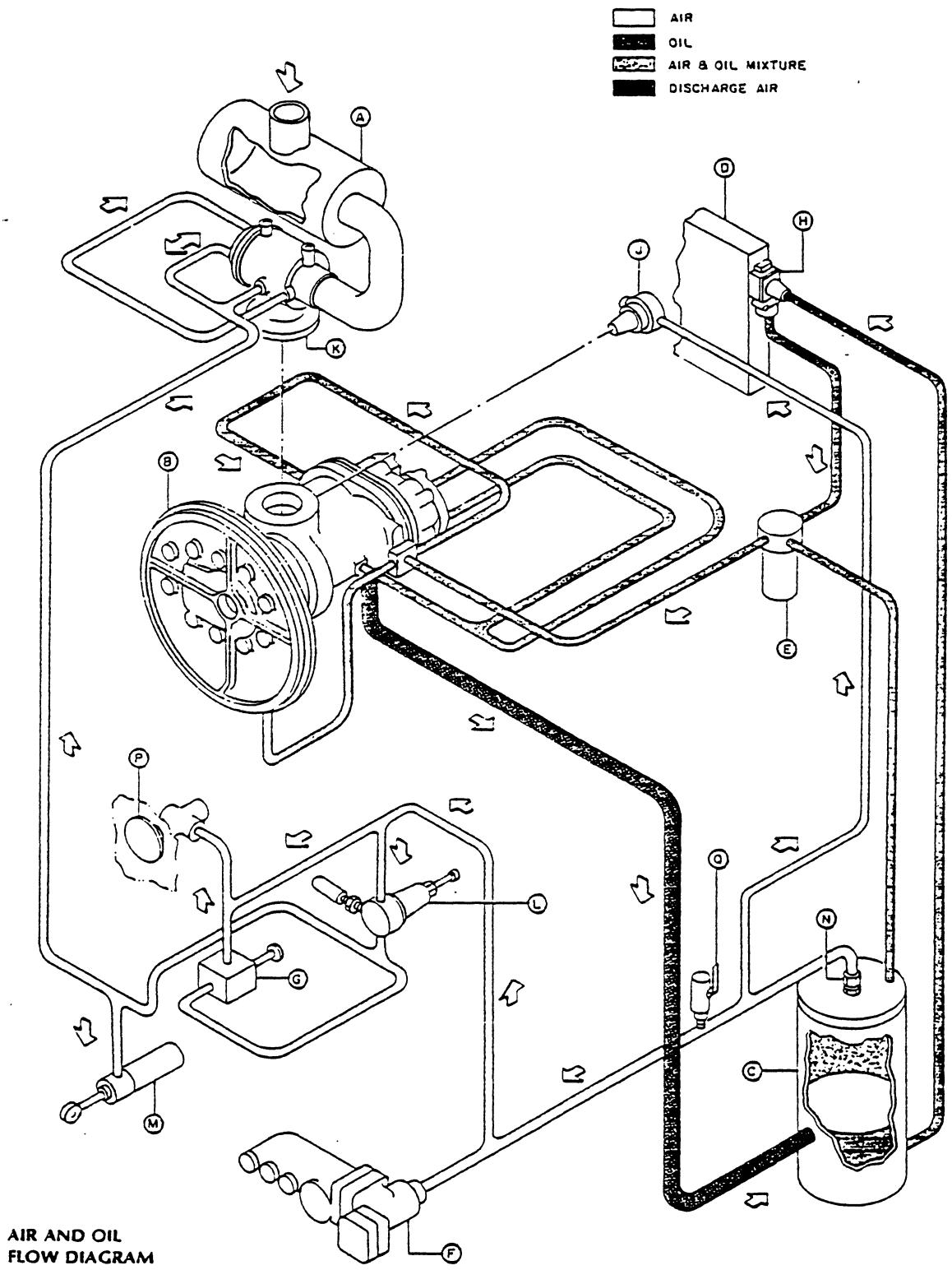


two helical rotors (male and female) on parallel shafts enclosed in a heavy-duty cast iron housing with air inlet and outlet ports located on opposite ends of the housing. The male rotor has four lobes 90 degrees apart and the female rotor has six grooves 60 degrees apart. The grooves of the female rotor mesh with and are driven by the male rotor. Thrust bearings at the rear of the airend prevent longitudinal movement of the rotors. As rotation in the compressor occurs, the rotors enmesh and free air is drawn into the cavities or pockets between the male rotor lobes and the grooves of the female rotor. The air is trapped in these pockets and follows the direction of rotation of each rotor. As soon as the inlet port is closed, the compression cycle begins and the trapped air is directed to the opposite or discharge side of the rotor housing. As the rotors mesh, the normal free volume of air is decreased and the pressure increased until the closing pocket reaches the discharge port. Cooled lubricating oil is admitted to the compressor by being injected, in a metered flow, directly into the rotor housing so that it passes on with the air being compressed. This removes the heat of compression to a large degree and results in an unusually low final discharge air temperature. From the discharge port, the compressed air and lubricating oil is directed to the receiver-separator which also serves as an oil storage reservoir.

DESCRIPTION OF AIR FLOW

Air flow through the compressor can be regulated from full capacity to zero capacity dependent upon the air demand placed upon the unit. Reduction to zero capacity is accomplished by the inlet unloader valve. The inlet unloader valve, mounted on the rotor housing intake port, controls the capacity of the compressor through a throttling effect. This is accomplished through the use of a calibrated spring which maintains a sufficient pressure on the diaphragm to prevent movement of the inlet unloader valve until such time that the regulator valve signals the air actuating cylinder to slow the engine to idle speed and the unloader to close off air to the airend. Discharge air pressure can be controlled between 80 psi (5.62 kgf per cm^2) and the unit's rated pressure by adjustment of the regulator valve.

Air and Oil Flow Diagram—Page 10



AIR AND OIL
FLOW DIAGRAM
35845189

A — INLET AIR CLEANER

Prevents foreign particles such as dirt, dust and water from being inducted into compressor air inlet.

B — COMPRESSOR AIREND

A positive displacement, cycloidal-type compressor consisting of two, one-piece meshing helical rotors within a compression chamber. Operating at high speed within a closely conforming casing, the rotors draw air in from the top inlet, compress it axially and discharge it from the bottom at the opposite end. Cooled oil is injected into the compression chamber under controlled pressure to perform three functions — cool the air, seal the rotor clearances and lubricate the rotor surfaces. Pressure lubrication is also supplied to the gears and bearings. The oil which mixes with the air during compression passes into the receiver-separator.

C — RECEIVER-SEPARATOR

Receives compressed air and oil mist from compressor. Most of the oil falls immediately to bottom of receiver-separator tank. Any oil remaining in air is removed by the oil separator. Receiver-separator stores compressed air as well as compressor lubricating and cooling oil. Pressure of compressed air in the receiver tank is indicated by air discharge pressure gage on instrument panel.

D — OIL COOLER

Cools compressor lubricating and cooling oil to prevent overheating of compressor airend.

E — COMPRESSOR OIL FILTER

Removes foreign particles from compressor lubricating and cooling oil to a nominal 25 microns in size.

F — MINIMUM PRESSURE VALVE

Automatically closes when air pressure in receiver-separator system drops below 75 psi (5.27 kgf per cm^2). This action ensures that excess amounts of lubricating and cooling oil are not drawn into air service lines.

G — START-RUN VALVE

Reduces compressor airend horsepower load on engine during start-up and permits engine warm-up before loading the compressor to full capacity.

H — OIL TEMPERATURE BYPASS VALVE

Regulates cooling and lubricating oil flow to partially bypass oil cooler when oil is cold. Valve modulates oil flow between bypass and oil cooler to control oil temperature at an optimum level.

J — AUTOMATIC BLOWDOWN VALVE

Releases compressed air from receiver-separator system when engine is shut down as unit should never stand idle with pressure in system. Pressure is vented to atmosphere.

K — AIR INLET UNLOADER VALVE

Controls the capacity of the compressor by means of an air operated valve throttling the volume of air being admitted to the airend.

L — PRESSURE REGULATOR VALVE

Senses air pressure in receiver-separator system to provide automatic regulation of engine speed and air volume passed through air inlet unloader valve by acting upon pneumatic actuating cylinder.

M — AIR ACTUATING CYLINDER

This cylinder controls the engine governor to allow more or less air on demand from the system.

N — SAFETY VALVE

Releases compressed air from receiver-separator system to atmosphere when air pressure exceeds 150 psi (10.55 kgf per cm^2).

P — AIR DISCHARGE PRESSURE GAGE

Gage located on instrument panel indicates air pressure in receiver-separator system. Normal indication should be between 80 psi (5.62 kgf per cm^2) and the unit's rated pressure, depending on adjustment of speed and pressure regulator valve.

Q — MANUAL BLOWDOWN VALVE

Hand operated valve which allows receiver-separator system to be relieved of all pressure.

SECTION 2

OPERATION

OPERATING INSTRUCTIONS

BEFORE STARTING

Place the unit in a position as level as possible. This is necessary as an out-of-level unit may give a false coolant level in the radiator due to the coolant being trapped above the deaeration baffle in the radiator top tank. The design of these units permits a 15 degree lengthwise and a 15 degree sidewise limit on out-of-level operation. The engine, not the compressor, is the limiting factor in any case. 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 gage show no more than half full (with the unit level). Do not overfill either the engine crankcase or the compressor lubricating oil system.

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.

Open manual blowdown valve to ensure pressure is relieved in receiver-separator system. Close valve after relieving system.

Check the compressor lubricating oil level. Refer to Section 3, Lubrication.

Caution

The proper oil level should be within 3/8-inch (9.5 mm) of the center of the sight gage, but never above the center of the sight gage. Add oil only if the level falls to the bottom of the sight gage when the unit is not running.

Check the engine lubricating oil level in accordance with the Operating Instructions Section of the engine Operator's Manual.

Check the radiator coolant level. Coolant should be visible in the top tank or filler tube. If coolant must be added, fill to top of filler tube. The excess will be forced out of the radiator through the vent tube when the unit is operated. Whenever the coolant system is drained, it must be refilled slowly. Wait about five minutes to see whether more coolant can be added. Leave the radiator cap off until it has been ascertained that the radiator is full to capacity.

Warning

Use extreme care when removing a radiator pressure cap from the engine radiator. The sudden release of pressure from a heated cooling system can result in a loss of coolant and possible personal injury by scalding.

Check the battery for proper charge.

Warning

Exercise extreme caution when using a booster battery to start. To jumpstart, 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 fuel level.

Caution

Use only a No. 2-D diesel fuel oil with a minimum Cetane Number of 45 and a sulfur content not greater than 0.5%.

Close all service valves.

Caution

All service valves must be closed before starting the unit in order to build up full air pressure to ensure proper oil circulation.

Note

In order to allow the unit to start at a reduced load, a button-type start-run valve, located on the control panel, is incorporated in the regulation control system. In the start position, air pressure is routed into the air inlet unloader. When the pressure reaches approximately 50 psi (3.52 kgf per cm^2), as observed on the instrument panel's discharge pressure gage, the pressure quickly closes the air inlet unloader and also reduces the engine speed. After running at reduced speed, the engine and compressor should reach operating temperature. At this point depressing the start-run button switches the start-run valve to the run position. This permits the air in the receiver system to bleed off, thereby permitting the air actuating cylinder to act upon the engine governor and increase the engine speed. When the unit is stopped and blown down, the valve automatically returns to the start position.

STARTING UNIT

Position the toggle switch to "ON".

Press the start switch and the bypass switch simultaneously. Release the start switch when the engine starts.

Caution

Do not operate starting motor more than 20 seconds at a time. Allow starting motor to cool approximately two minutes between cranking periods.

Release the bypass switch when the air discharge pressure reaches approximately 40 psi (2.81 kgf per cm^2.)

Note

When the bypass switch is depressed all of the panel lights should glow.

In cold weather it may be necessary to operate the cold weather starting aid just prior to activating the starting switch, and during the cranking cycle.

The cold weather starting aid is a starting fluid (ether) discharger and is optional equipment on this unit.

Avoid engine damage and costly downtime. When using the cold weather starting aid follow the engine manufacturer's recommendations and don't over-use a good thing. This is one instance where a little too much can hurt. Follow the John Deere Series 300 Operators Manual on the operation of this device.

Caution

Ether is an extremely volatile gas with a combustion temperature lower than that of vaporized diesel fuel. Because of this characteristic, ether is used to assist in starting the diesel engine during cold weather when compression temperatures may not be high enough to initiate combustion. "A little more won't hurt" is true for many things, but ether is not one of them. If too little ether is injected into the air intake system, the engine may not start. If too much is injected, the uncontrolled explosion which results can damage the engine.

Normally the unit must be started with the service valves and the manual blowdown valve closed; but in extremely cold weather it may be advisable to leave the manual blowdown valve partially open. This will allow the engine to warm up at a higher speed and reduced load. Once the unit starts, gradually close the manual blowdown valve until the engine comes to idle speed.

Caution

Never allow the system pressure to fall below 50 psi (3.52 kgf per cm^2) to assure adequate oil flow to the compressor at low temperature.

The manual blowdown valve is to be used only as a safety precaution to assure zero system pressure before attempting repairs or maintenance checks and as an aid for cold weather starting.

Caution

Opening the manual blowdown valve during operation of the unit or upon shutdown will result in excessive compressor oil carryover.

If the engine does not start, refer to the Trouble Shooting Chart found in this publication and to Trouble Shooting in the separate engine Operator's Manual.

After the engine has warmed up, then push the "start-run" valve. At this point in the operation of the unit, it is safe to apply full load to the engine.

Note

During normal running conditions all of the panel lights should be off.

PANEL LIGHT TESTING

The lamp test feature is incorporated within the circuit to the bypass switch. When the toggle switch is positioned to the "ON" position and the bypass switch is depressed, the high air discharge temperature, the high engine coolant temperature and the engine low oil pressure panel lights will illuminate. If the engine is not running the alternator light will also illuminate. The lamps may be tested at any time during operation by depressing the bypass switch.

STOPPING

Close all service valves. Allow the unit to run unloaded for a few minutes to reduce the engine temperature. It is important to idle an engine 3 to 5 minutes before shutting it down to allow lubricating oil and coolant to carry heat away from the combustion chamber, bearings, shafts, etc.

Position the toggle switch to "OFF".

Note

As soon as the engine stops the automatic blowdown valve should relieve all pressure from the receiver-separator system.

Caution

Never allow the unit to stand idle with pressure in the receiver-separator system.

SAFETY SHUTDOWN

Should any of three shutdown failures occur, the unit will stop. In a shutdown situation, the function of the panel lights is to indicate what specific failure caused the unit to shut down. These lights will remain illuminated until the unit completes its blowdown cycle. Cranking the unit for a few seconds will direct enough air to the receiver-separator tank to make the trouble light illuminate temporarily so that the cause for the probable trouble may be determined.

SECTION 3

LUBRICATION

GENERAL

Both compressor lubrication and cooling are accomplished by the compressor lubricating oil. The oil is forced from the oil storage reservoir (receiver-separator tank), under system pressure, to the oil cooler. The cooler is located at the compressor end of the unit in such a manner that the heat exchanger fan cools the compressor lubricating oil. When the compressor is operating at low capacity, some of the oil may bypass the cooler through a thermostatically controlled bypass valve. This valve bypasses varying amounts of oil, depending upon the temperature, until the oil being circulated reaches a temperature of 185°F (85°C) thus maintaining a higher average oil temperature thereby reducing the possibility of water vapor condensation in the oil. From the oil cooler, the cooled oil is directed thru the oil filter then to the rotor bearings, and in metered amounts directly into the rotor housing. All of the oil thus introduced mixes with, and passes on with the air being compressed, thus removing the heat of compression to a large degree. On its way to the final discharge connection the air passes through piping to the receiver-separator where the oil is removed from the air to collect in the oil storage reservoir. Primary separation of the oil takes place through a change in velocity and direction as the compressed air enters the receiver-separator, dropping out most of the oil from the air. Secondary separation of the oil takes place in the separator element, which is located entirely within the tank. The oil separator consists of a disposable element made of special materials designed to separate and trap the finely divided oil droplets carried in the compressed air as it passes through the separator element.

COMPRESSOR OIL CHANGE

These units are normally furnished with an initial supply of oil sufficient to allow operation of the unit for approximately 500 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 **Oil Recommendations.**

If the unit has been operated for 500 hours (or 2500 hours, dependent upon the lubricant used), it should be completely drained of oil. If the unit has been operated under adverse conditions, or under long shutdown periods, 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 300 to 500 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.

Caution

Make sure that the compressor oil level is never above the center of sight gage. Add oil only if the level falls to the bottom of the sight gage when the unit is not running.

Completely drain the receiver-separator, piping, and oil cooler. After the unit has been completely drained of all old oil, replace the drain plugs, making sure they are tight. 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.

Caution

Shorter oil change intervals may be necessary if unit is operated under adverse conditions.

Warning

Do not, under any circumstances, remove any drain plugs, or the oil filler plug from the compressor lubricating and cooling oil system without first making sure the air receiver system has been completely relieved of all air pressure.

Caution

Some oil mixtures are incompatible, 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, try to avoid mixing oils of the same type but different brands. A brand change is best made at the time of a complete oil change.

OIL FILTER CHANGE

On new or overhauled units replace the oil filter element after the first 50 and 150 operating hours; thereafter service the oil filter every 500 operating hours or every six months, whichever comes first. When using an oil conforming to Specification MIL-L-46152 or DEXRON® automatic transmission fluid drain and refill with new oil every 500 operating hours or every six months, whichever comes first.

ENGINE LUBRICATING OIL

Refer to engine operator's manual.

COMPRESSOR LUBRICATING AND COOLING OIL RECOMMENDATIONS

Alternate lubricants should conform to the following specifications found in Table 1.

Caution

Care should be taken to assure that all downstream components will be compatible with synthetic lubricants.

TABLE 1

PORTABLE COMPRESSOR LUBRICANT SPECIFICATIONS

AMBIENT TEMPERATURE	125°F (51.7°C) TO —10°F (—23.3°C)	—10°F (—23.3°C) TO —50°F (—45.6°C)
COMPRESSOR LUBRICANTS	*MIL-L-46152 — SAE 10W OR MIL-L-2104B — SAE 10W	.....
	DEXRON® OR DEXRON® II AUTOMATIC TRANSMISSION FLUID	.....
	.....	**MIL-L-23699B Synthetic Lubricant
	.....	***MIL-L-46167 Sub-zero Arctic Lubricant

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

***MIL-L-46152** — Supersedes the former MIL-L-2104B. Ascertain that MIL-L-46152 lubricants meet API Class CC only and not CD.

****MIL-L-23699B** — Lubricants which meet this specification are used in most jet aircraft engines and should be available worldwide.

*****MIL-L-46167** — Is intended to supersede Federal Specification APG #1 (Aberdeen Proving Ground Purchase Description #1). APG #1 is the current designation for sub-zero arctic lubricants.

For temperatures above 125°F (51.7°C) or below —50°F (—45.6°C), please consult the Customer Service Department, Mocksville, North Carolina, USA.

SECTION 4

TROUBLE SHOOTING

INTRODUCTION

Trouble shooting for a portable air compressor is an organized study of a particular problem or series of problems and a planned method of procedure for investigation and correction. The trouble shooting chart that follows includes some of the problems that an operator may encounter during the operation of a portable compressor. The problem areas covered in this trouble shooting chart apply to air compressors generally and may or may not be applicable to your particular unit. The operator should, therefore, use the information presented with discretion.

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. The main purpose of the chart is to stimulate a train of thought and to indicate a work procedure directed toward the source of trouble. To use the trouble shooting chart, determine the area or system that has the problem using the left-hand column; then pinpoint the specific trouble in the middle column. Refer to the right-hand column for the possible cause(s).

For trouble shooting electrical problems refer to the wiring diagram schematic found in the parts list section of this manual.

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?

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.

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.

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		
AREA	**TROUBLE**	**CAUSE**
Air Flow System	Air Cleaner Element Life Too Short	Defective Service Indicator
	Operation of Blowdown Valve Erratic	Defective Blowdown Valve Diaphragm
		Dirty or Clogged Blowdown Valve
Lubricating and Cooling Oil Flow System	Excessive Carryover of Oil into Air Discharge	High Oil Level
		Separator Element Improperly Installed
		Clogged Oil Scavenger Line
		Leaking Oil Seal
		Ruptured Separator Element
		Worn or Damaged Oil Seal
		Plugged Orifice in Scavenger Line
		Defective Minimum Pressure Valve, Improper Unit Shutdown
	Oil Seal Leaks	Contaminated Lube Oil
	Oil Blows Back into Air Cleaner	Damaged Unloader Valve or Seat
		Missing/Damaged Unloader Valve Spring
		Unloader Valve Bushings Damaged
	Compressor Overheats	Dirty or Clogged Oil Cooler
		Low Oil Level
		Clogged Oil Filter
		Wrong Grade or Type of Oil

TROUBLE SHOOTING

AREA	TROUBLE	CAUSE
Lubricating and Cooling Oil Flow System (continued)	Compressor Overheats	Defective Oil Temperature Bypass Valve Element
		Incorrect Oil Cooler Piping
		Inadequate Oil Flow
	Engine Runs Backward Upon Shutdown	Damaged Unloader Valve or Seat
		Missing/Damaged Unloader Valve Spring
		Unloader Valve Bushings Damaged
Operational System	Air Cleaner Element Life Too Short	Excessive Exhaust Soot Entering Air Cleaners
		Contaminated Running Condition
		Oil Blowback Upon Shutdown
	Air Discharge Capacity Too Low	Engine Speed Too Low
	Unable to Obtain Correct Engine Speed	Clogged Fuel Filter or Air Filter
	Oil Consumption Too High	Unit Out of Level
		Excessive Oil Carryover
		Oil Blowback Upon Shutdown
	Oil Level Readings Erratic	Unit Out of Level, Improper Unit Shutdown
	Oil Blows Back into Air Cleaner	Damaged Unloader Valve or Seat
		Missing/Damaged Unloader Spring
		Unloader Valve Bushings Damaged
	Compressor Overheats	Recirculation of Cooling Air

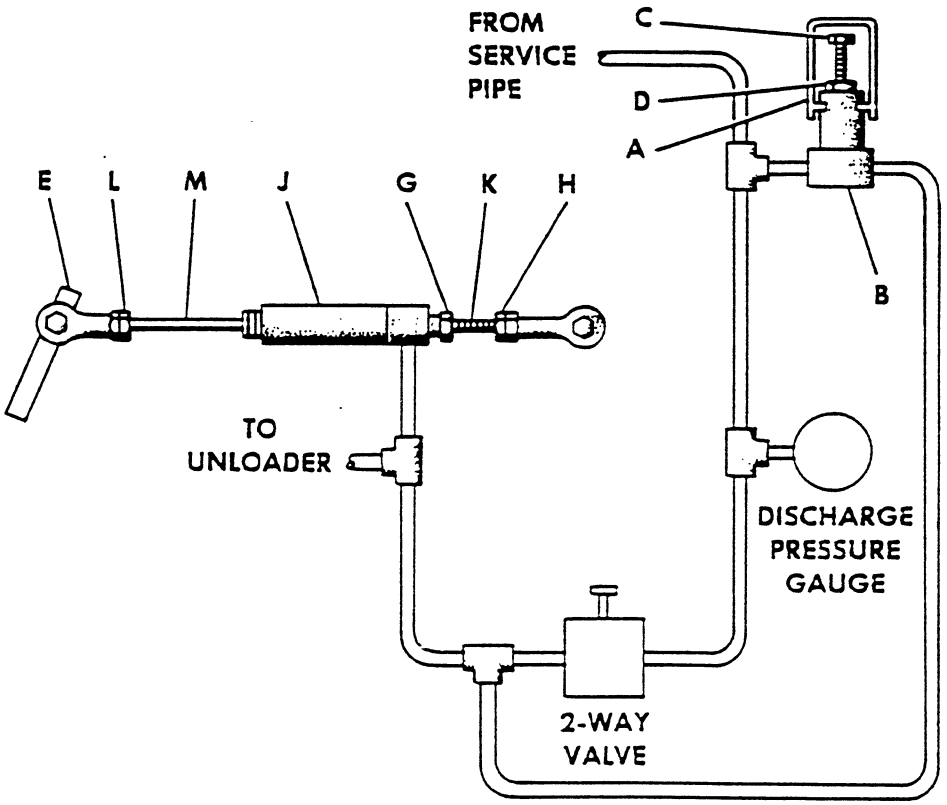
TROUBLE SHOOTING		
Operational System (continued)	Compressor Overheats	Re-starting Too Soon
	Unit Shuts Down Prematurely	Excessive Vibration
		Loose Electrical Connections
	Engine Runs Backward Upon Shutdown	Improper Unit Shutdown
	Excessive Vibration	Engine Idle Speed Too Low
Regulation System	Air Discharge Capacity Too Low	Regulation Set Improperly
		Main Unloader Spring Failed
	Unable to Obtain Correct Engine Speed	Regulator Valve Set Too Low
		Plugged Regulator Bleed Orifice
		Plugged Regulator Bleed Orifice Silencer
		Debris in Regulator Valve
	Unit Will Not Unload	Regulator Valve Set Too High
		Blocked Inlet to Regulator Valve
		Ruptured Regulator Diaphragm
		Leaks in Regulation Hoses
		Ruptured Unloader Diaphragm
	Oil Consumption Too High	Operating Pressure Too Low
	Excessive Carryover of Oil into Air Discharge	Operating Pressure Too Low
	Compressor Overheats	Operating Pressure Too High
		Operating Pressure Too Low
	Safety Valve Pops Off	Operating Pressure Too High
		Regulator Valve Set Too High

TROUBLE SHOOTING		
AREA	**TROUBLE**	**CAUSE**
Regulation System (continued)	Safety Valve Pops Off	Blocked Inlet to Regulator Valve
		Ruptured Regulator Diaphragm
		Leaks in Regulation Hoses
		Ruptured Unloader Diaphragm
	Surging Engine Speed	Orifice in Regulator Valve Too Small or Else Restricted
		No Tension on Inner Spring on Engine Speed Control
		Broken Engine Speed Control Springs
	Start Pressure Too High	Blocked Inlet to Regulator Valve
		Ruptured Regulator Diaphragm
		Leaks in Regulation Hoses
		Ruptured Unloader Diaphragm
Maintenance Practice	Air Discharge Capacity Too Low	Dirty Intake Air Cleaner
	Unable to Obtain Correct Engine Speed	Engine in Poor Operating Condition
	Air and Oil Lines Leaking	Vibrating Air and Oil Lines
		O.E.M. Air and Oil Lines Not Used
	Compressor Overheats	Dirty or Clogged Oil Cooler
		Low Oil Level
		Loose Fan Belt(s)
	Operation of Blowdown Valve Erratic	Debris in Blowdown Valve
	Wheel Bearings Worn	Inadequate Wheel Bearing Lube
Mechanical Adjustments	Air Discharge Capacity Too Low	Oversize Scavenger Orifice
		Excessive Discharge End Clearance

TROUBLE SHOOTING		
AREA	**TROUBLE**	**CAUSE**
Mechanical Adjustments (continued)	Unable to Obtain Correct Engine Speed	Regulation Out of Adjustment
	Unit Will Not Unload	Regulation Out of Adjustment
	Oil Seal Leaks	Improperly Installed Oil Seal
		Scored or Rough Rotor Shaft
	Compressor Overheats	Faulty Temperature Shutdown Switch
		Incorrect Piping
	Safety Valve Pops Off	Regulation Out of Adjustment
	Unit Prematurely Shuts Down	Faulty Temperature or Pressure Shutdown Switch
		Defective Wiring/Loose Connections
	Excessive Vibration	Loose Fan Hub
		Bent or Broken Fan Blades
		Broken Compressor or Engine Mount

SECTION 5

SPEED AND PRESSURE REGULATOR ADJUSTING INSTRUCTIONS



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ADJUSTING INSTRUCTIONS

Normally, regulation requires no adjusting, but if proper adjustment is lost, proceed as follows (refer to General Data table for proper engine speeds):

Before Starting Unit

1. Remove regulator valve cover (A) on valve (B) to expose adjusting screw (C). Loosen jam nut (D) on adjusting screw (C) and turn screw counterclockwise until tension is no longer felt on screw. Now, turn screw clockwise one full turn.
2. Inspect throttle arm (E) on engine governor to see if it rests against the high speed stop. If not, loosen jam nuts (G) and (H) on air actuating cylinder (J), then turn adjusting rod (K) until throttle arm (E) rests against its high speed stop.
3. Close all service valves.

After Starting Unit

4. Allow unit to warm up, then operate push button 2-way valve after warm-up

to obtain full service air pressure.

5. With engine running at idle speed, loosen jam nut (L) and turn cylinder rod (M) until idle speed is reached. Tighten jam nut (L).
6. Open and adjust service valves to obtain unit's rated operating pressure on discharge pressure gauge. Note: If rated operating pressure cannot be maintained with engine at full speed (throttle arm (E) against its high speed stop), turn adjusting screw (C) clockwise.
7. With discharge at rated operating pressure adjust the speed to the full load engine speed by first loosening jam nuts (G) and (H) on air actuating cylinder (J). Turn adjusting rod (K) until full load engine speed is reached. Tighten jam nuts (G) and (H).
8. While still maintaining rated operating pressure, adjust regulator adjusting screw (C) until throttle arm (E) just begins to move. Tighten jam nut (D). Note: Turning regulator adjusting screw (C) clockwise will raise the full speed pressure.
9. Close all service valves (engine will slow to idle speed).
10. Repeat steps 5, 6, 7 and 8 if necessary.
11. Replace regulator valve cover (A).
12. To select any pressure range between 80 psi (5.62 kgf per cm^2) and unit's rated operating pressure, change adjustment of screw (C) to obtain desired discharge pressure at full load engine speed. Always lock and protect pressure setting of adjusting screw (C) with jam nut (D) and regulator valve cover (A).

SECTION 6

MAINTENANCE

PREVENTIVE MAINTENANCE

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 your John Deere, Series 300 Operator's Manual for specific requirements of preventive maintenance for the engine in this unit.

SCHEDULED PREVENTIVE MAINTENANCE

The following attendance schedule is based on normal operation of the unit. In the event unusual environmental operating conditions exist, the schedule should be adjusted accordingly. The unit is also provided with a brief attendance schedule in the form of a decal on the inside of one of the doors.

Caution

Before inspecting or servicing this unit, be sure to disconnect the battery cable(s).

FUEL TANK

The fuel tank on this unit should be filled daily or every eight hours if necessary. However, in order to prevent condensation from forming in the fuel tank, it should be filled immediately after the unit has been operated, for example, at the end of each working day. Using clean fuel in the fuel tank 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 **nonmetallic** funnel which is kept for this purpose only. Make sure the funnel is wiped clean before using.

Every six months the drain plug should be removed from the fuel tank so that any sediment or accumulated condensate may be drained. When replacing the drain plug, make sure it is tightened securely.

AIR CLEANERS

Inspect the air cleaners periodically. Never guess about restrictions in the air cleaners, always know what condition they are in. If they are not working properly, replace them. Maximum compressor and engine protection against the ravages of dust is possible only if the air cleaners are serviced at regular intervals.

If your unit is equipped with the optional air cleaner service indicators, they should be checked daily. Normally, the flag in the service indicators shows green indicating that the filter element is still serviceable. If the

flag shows red when the unit is operating at full speed (and remains red when unit is shutdown)it is an indication that proper servicing of the filter element is necessary.

To service the air cleaners proceed as follows:

1. Loosen clamp screw on V-band clamp securing end cap to air cleaner cylinder.
2. Remove end cap to gain access to filter element.
3. Remove old air filter element.
4. Inspect air cleaner housing for any condition that might cause a leak and correct as necessary.
5. Wipe inside of air cleaner housing with a clean, damp cloth to remove any dirt accumulation. This will permit better seal for gasket on new filter element.
6. Install new air filter element after checking it closely for shipping damage.
7. Replace end cap on air cleaner cylinder.
8. Tighten clamp screw on V-band clamp securing end cap to cylinder.

In addition, the air cleaners should be inspected periodically to maintain maximum protection to the compressor and engine and to obtain maximum service life. Make sure that all inlet accessories are free from obstructions. Check air cleaner mounting brackets for security and condition. Check the entire assembly for any dents or other damage that could result in a leak. Inspect the air transfer ducting to the compressor and the engine. Make sure that all clamps are tight, that all flange joints are tight and that there are no leaks in the ducting.

In the event that the filter element must be re-used immediately, maintenance of the element should be performed as follows: 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.

Caution

To prevent damage to the element, never exceed a maximum air pressure of 100 psig (7.03 kgf per cm^2).

Compressed air cleaning is recommended whenever the element must be re-used immediately. A washed element must be thoroughly dried before re-using.

In the event the element is contaminated with dry dirt, oil or greasy dirt deposits, maintenance of the element should be performed as follows:

1. If only a mild cleaning is required, mix a sufficient amount of warm water and household detergent to allow the element to be fully submerged. Place the element in the cleaning solution and allow it to soak for five minutes. Agitate the element thoroughly in the cleaning solution after the soaking period. Remove the element from the cleaning solution, drain, then flush using a gentle stream of clean water.
2. If more difficult cleaning is required, wash the element in a thoroughly mixed cleaning solution consisting of four tablespoons of household deter-

gent and one-half a teaspoon of trisodium phosphate to each gallon of lukewarm water. After soaking the element in the cleaning solution for not less than five minutes, agitate the element in the solution to make sure it is thoroughly cleaned.

3. Discard the dirty solution and rewash the element in a newly mixed bath of cleaning solution. After the element has been thoroughly cleaned, flush the element with clear water, using a gentle stream being careful not to point the stream directly at the element.

4. Inspect the washed element for any damage by placing a bright light inside the element and rotating the element slowly. Keep in mind that the slightest rupture requires replacement of the element.

5. Allow the element to air-dry or use a stream of warm flowing air not exceeding a maximum temperature of 160°F (71°C). Do not use compressed air or the heat of a light bulb to dry the element.

Note

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.

Reset the restriction indicator to green, if so equipped. This may be done by pressing down on the indicator's flexible top.

REGULATOR LINKAGE

The air cylinder/engine governor linkage should not require lubrication more often than each week. Apply a small amount of oil (same as used in the engine) to the rod end swivels and to other linkage pivot points as applicable.

COOLING FAN DRIVE

The heat exchanger or cooling fan is driven by a V-belt arrangement directly from the compressor. The proper belt tension is maintained at all times independent of belt stretch and wear by a spring-loaded idler pulley. Normally this system requires no adjustment or servicing other than to periodically inspect the V-belt for condition. Should any fraying or ply separation be noted, the belt should be replaced at once.

ENGINE RADIATOR

The engine cooling system functions not only to prevent the high combustion chamber temperatures from damaging the engine but, at the same time, must maintain the operating temperature within safe limits. It is extremely important to maintain efficiency in the engine cooling system as the engine temperatures must be brought up to and maintained within a satisfactory range for efficient operation, but must also be kept from overheating in order to prevent damage to the engine's moving parts.

To control the engine operating temperature range the cooling system is designed so that the coolant is allowed to circulate only within the engine itself until normal operating temperatures are reached. At this point the bypass-type thermostat opens to allow all of the coolant to circulate through the radiator as well as the engine.

Blowing compressed air carrying, if possible, a nonflammable safety solvent, between the cooling fins of the radiator in a direction opposite to that of the fan circulated air, should serve to keep the exterior cooling surfaces of the radiator core section free of dirt and other foreign particles. This cleaning operation should be performed each month.

The use of a permanent type of antifreeze is recommended for both summer and winter operations. When purchasing antifreeze, check to be sure that it contains rust inhibitors. If the use of water as the coolant medium cannot be avoided, add ½ pint of water soluble oil or other rust inhibitors to help reduce the likelihood of rust formation when water is used.

Caution

If antifreeze is not used as the coolant, failure to drain the engine may cause serious damage during freezing weather.

Sludge and rust, as well as scale, which form when the use of water alone as a coolant cannot be avoided, form deposits in the cooling system. These deposits can inhibit normal heat transfer and in time render the cooling system ineffective to properly maintain normal operating temperatures. The appearance of rust in a coolant system is a warning that the corrosion inhibitor has lost its effectiveness and that the system requires cleaning and flushing. Use a dependable cleaning compound and follow the specific procedure recommended by the supplier. This is of prime importance because different cleaners vary in concentration and chemical compositions.

Whenever a cooling system is badly clogged, corrective cleaning by reverse flow flushing will most effectively remove the heavy deposits of sludge, rust and scale. The reverse flow flushing should be performed immediately after draining the cleaning solution and it is advisable to flush the radiator first, allowing the engine to cool as much as possible.

To reverse flush the radiator, first disconnect the engine-to-radiator inlet hose. Attach a section of hose long enough to allow the coolant and sediment to drain off without spilling on the engine. Disconnect the radiator outlet hose at the water pump and attach the flushing gun to this hose. After first making sure that water will flow through the radiator, proceed to apply water and air pressure in short bursts. This pulsating flow will loosen sediment faster than a steady flow.

Caution

The use of excessive water or air pressure may damage the radiator core section when using a flushing gun, so be certain that water will flow through the core before attempting reverse flushing.

To reverse flush the engine cooling system, first remove the thermostat. Attach the flushing gun to the radiator inlet hose. Fill the engine cooling system with water before applying any air pressure. Proceed to

apply both water and air pressure in a pulsating manner until the system flows clear at the water pump inlet connection.

Before placing the unit back in service, make sure that all hose connections are tight and that all radiator draining points are tight, including all of the engine drain cocks. Then fill the radiator with a permanent-type antifreeze solution.

COMPRESSOR OIL COOLER

The compressor lubricating and cooling oil is cooled by means of the fin and tube-type oil cooler. The oil cooler is so arranged that the lubricating and cooling oil, flowing internally through the core section, is cooled by the air stream to the heat exchanger and 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 carrying, if possible, 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 shutdown of the unit. To correct this situation it will be necessary to remove the oil cooler and 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 reinstallation.

HOSES

Every 500 hours of operation it is necessary to inspect all of the intake lines to and from the air cleaner, the engine cooling system hoses and all of the flexible hoses used for air lines, oil lines and fuel lines.

The design of these units requires an elastically mounted engine and compressor. The cleaners are rigidly mounted to the air end so flexible links between them are an absolute necessity to reduce vibration and facilitate installation alignment. To ensure freedom from air leaks, all rubber 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 chambers or the compressor intake practically unfiltered.

All components of the engine cooling system, in addition to radiator maintenance, should be checked periodically to keep the engine at peak efficiency. The cooling system hoses should be checked for wear or deterioration and replaced if necessary. At the same time the thermostats, as well as the radiator pressure cap, should be checked and replaced if necessary. Whenever new hoses are installed, be sure the connecting parts are properly aligned and that the hose is in its proper position before tightening the clamps. All leaks should be corrected as soon as they are detected.

It is extremely important that the flexible

hose lines used on this unit be inspected periodically 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 or broken and that additional clamps be added if required to prevent further wear. It is also important that the operator does not use the hoses as convenient handholds. Such use can cause early hose failure.

COMPRESSOR OIL FILTER

The compressor lubricating and cooling oil system is equipped with an in-line, spin-on type oil filter and a bypass valve. With a clean, new filter element all of the oil flows through the full element area from the outside/inside. As the element becomes contaminated with dirt, a pressure differential is created in the filter housing between the oil inlet and outlet ports. As dirt builds up on the outside filter surface, this pressure differential increases. As this differential approaches 15 psi (1.05 kgf per cm^2), the bypass valve starts to open thus permitting a small quantity of oil to bypass the filter. As the contaminants continue to build up on the surface of the filter, the pressure differential increases, thus permitting more oil to bypass until finally the valve is wide open. This provides a maximum flow of compressor lubricating and cooling oil to preclude any possible damage from loss of oil. The design of the filter prevents any washing-off of any dirt during oil bypassing.

Caution

The oil filter must be serviced 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 filter it will 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:

1. Turn the spin-on filter element counterclockwise to remove it from the filter housing.

Caution

If there is any indication of formation of varnishes, shellacs or lacquers on the oil filter element, it is a warning that the compressor lubricating and cooling oil has improper characteristics and should immediately be changed. Refer to Section 3, Lubrication.

2. Coat gasket of new filter element lightly with clean compressor oil and install new element by turning clockwise until gasket makes contact. Then tighten one-half to three-fourths turn maximum.

Caution

Replenish oil supply as required to maintain proper oil level.

3. Start engine and check for leaks before placing unit back into service.

Disconnect the battery cable(s) before performing any further maintenance.

SAFETY SHUTDOWN SWITCHES

The operation of the safety shutdown switch-

es should be checked every three months, or whenever it appears they are not operating properly. The three switches involved in this protective shutdown system are the air discharge temperature switch, the engine high temperature switch and the engine oil pressure switch. The operation of these switches is extremely important in order to protect the engine and the compressor airend from overheating. The engine oil pressure switch prevents the engine from being damaged due to oil starvation.

Once a year, the switches should be removed from the unit for testing. The two temperature actuated switches may be tested by removing them and placing them in a bath of heated oil. The high engine coolant temperature switch will require a temperature of approximately 215°F (102°C), while the high air discharge temperature switch will require approximately 248°F (120°C) to actuate. Test the switch's operation by connecting an ohmmeter between the two terminals. The ohmmeter should show zero ohms. When the switch is placed in the heated oil bath and its contacts open, the ohmmeter should indicate infinite ohms. Tap the switch lightly during the checking operation. Replace any defective switch before continuing to operate the unit. Test the engine oil pressure switch 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 10 psi (.70 kgf per cm^2) the contacts should open and the ohmmeter should show a lack of continuity through the contacts. Replace a defective switch before continuing to operate the unit.

SCAVENGER LINE

In the compressor lubricating and cooling oil system, primary separation of the oil from the compressed air takes place in the oil separator tank (receiver-separator). As the compressed air enters the tank, the change in velocity and direction drop out most of the oil from the air. Secondary separation of the oil takes place in the oil separator element, which is located entirely within this tank. Any oil accumulation is continuously drained off by means of a scavenger line which returns the accumulated oil to the system.

The scavenger line originates at the receiver-separator tank cover and terminates at the outlet side of the oil filter housing. Once a year or every 1000 hours of operation (whichever comes first) remove this line including the check valve and the .063 inch (1.59 mm) diameter orifice. Make sure the orifice, check valve and line are not plugged and are thoroughly cleaned before replacing them.

OIL SEPARATOR ELEMENT

Under normal conditions, the oil separator element will not require periodic replacement provided the air and oil filters are properly maintained.

Caution

Should replacement of the oil separator element become necessary, be sure the new element is installed with the drain hole at the bottom as marked on the element.

When replacing the element make sure the lubricating and cooling oil system has been thoroughly flushed, the scavenger line, orifice and check valve thoroughly cleaned and the oil has been changed.

RUNNING GEAR

Periodically (approximately every six

months) use a brush to apply a small amount of grease to the free (slip) ends of the springs. Use a general chassis lubricant, including wheel bearing grease, conforming to specification MIL-G-10924.

Every six months, wheel bearings and axles should be inspected for contamination (i.e., from corrosion, scratches, metal particles). If the unit is exposed to prolonged operation in wet corrosive and dusty atmospheres, the frequency should be increased to every three months for inspection of the wheel bearings and axles. If, upon inspection, contamination is found, then the axles and bearings should be thoroughly cleaned and repacked immediately. Use a wheel bearing grease conforming to Specification MIL-G-10924 and suitable for all ambient temperatures. Moisture and metal chips are the first and second most prevalent causes of bearing failure.

Along with bearing adjustment, proper bearing lubrication is essential to the functioning and reliability of the axle. It is important to protect bearings from contaminants at all times whether in operation or during inspection or overhaul.

Work the grease into the bearing until the bearing is completely filled. The technique used here is to push a segment of the bottom (the wider end) of the bearing into the outer edge of the grease pile closest to the thumb. Keep doing this until the bearing interior is completely filled and the 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 drum.

Note

It is not important to pack an excessive amount of grease inside the hub or in the grease cap. Excessive grease in the hub or grease cap serves no purpose due to the fact that there is no way to get the grease to the bearing. The manufacturer's standard procedure is to pack the inner and outer bearing with grease and then to apply only a very small amount of grease into the grease cap. The hub itself is not packed with grease.

If bearing adjustment is required or the hub has been removed for any reason, the following procedure must be followed to insure a correct bearing adjustment of .001 to .012 end play.

(1) While rotating hub slowly to seat the bearings, tighten spindle nut to approximately 50 ft. lbs. (12" wrench or pliers with full hand force).

(2) Loosen nut slightly to remove preload torque. Do not rotate hub.

(3) Finger tighten nut until just snug and place cotter pin in the first nut castellation which lines up with cotter pin hole in spindle.

(4) Bend over cotter pin legs to secure nut and clear grease or oil cap.

(5) Nut should be free to move with only restraint being the cotter pin.

It is important to protect the wheel bearing bores from metallic chips. Make certain the wheel bearing cavities are clean and free of any contamination before reinstalling bearings and seals. Allowing contaminants to be present in the wheel bearing bores will lead to premature wheel bearing failure.

ENGINE

Refer to your John Deere, Series 300 Operator's Manual for specific requirements on preventive maintenance not found in this manual.

SECTION 7

PARTS LIST INTRODUCTION

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.

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 all of the options that are available. A series of illustrations shows 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 sub-assembly, 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 damaged threads by the use of wrong fasteners. In order to clarify the proper usage and for exact replacement parts, all fasteners have been identified by part number, size and description. This will enable a customer to order fasteners that may be available locally rather than factory replacement parts. 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.

HOW TO USE THIS ILLUSTRATED PARTS BREAKDOWN

a. Turn to the Index and find the Parts List Section.

b. Locate the proper illustration to find the section or system of the compressor in which the desired part is used.

c. Locate the desired part on the illustration by visual identification.

MARKINGS AND DECALS

In the event a unit is being repainted after an overhaul, the markings and the decals are available as spare parts for application to the unit following painting. The markings and decals may be purchased as complete sets or they they may be ordered on an individual basis. An itemized list of each complete set will be found at the rear of this publication.

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 of the unit is also permanently stamped in the metal of the frame side rail.)

c. Always specify the form part number of the 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.

PARTS ORDERS — TERMS AND CONDITIONS

Acceptance: Acceptance of this offer is expressly limited to the exact terms contained herein. If purchaser's order form is used for acceptance of this 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 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.

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. THE ONLY EXCEPTION TO THE PREVIOUS STATEMENT IS THE EXTENDED WARRANTY AS IT APPLIES TO THE SPECIAL AIR END EXCHANGE PROGRAM.

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.

AIR END 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 air end exchange program the exchange price is determined by the age and condition of the air end and may be classified by one of the following categories.

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

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

Category "C"
The air end 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 air end exchange number. The air end must be tagged with this preassigned number and returned to the factory pre-

paid. The air end must be intact, with no excluded parts, otherwise the exchange agreement may be cancelled. The warranty on an exchange or factory rebuilt air end is 365 days.

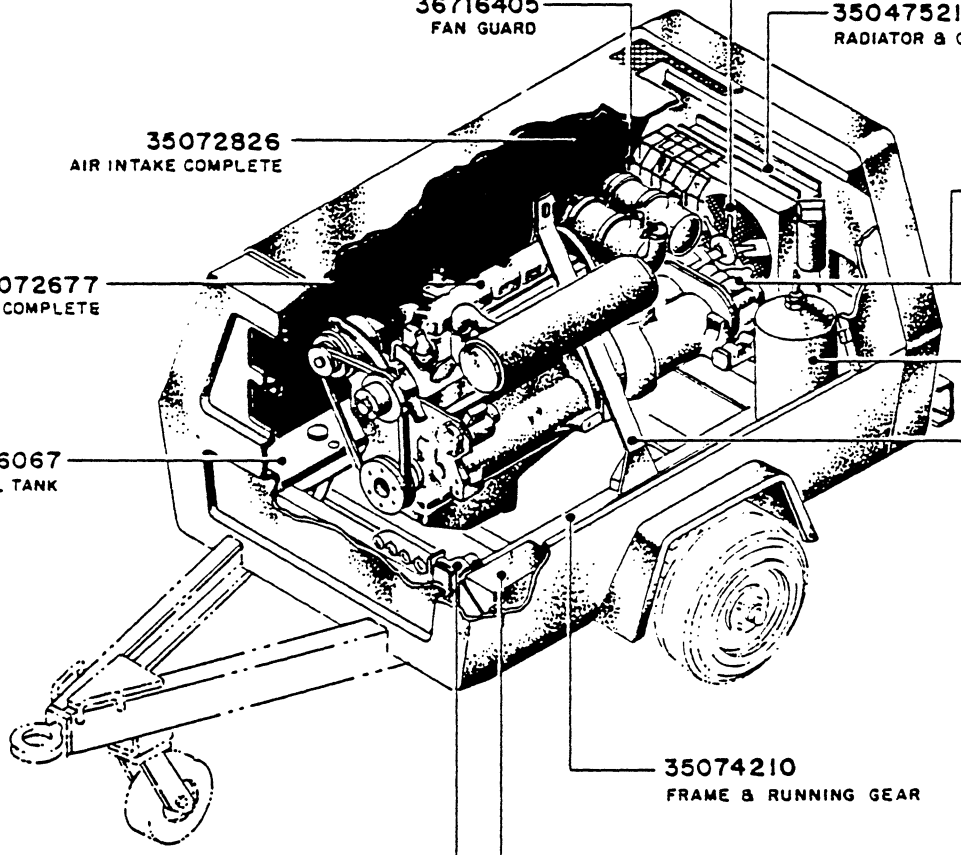
Note

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

SECTION 8

PARTS LIST

INGERSOLL-RAND COMPANY			E C
DESCRIPTION	UNIT SUB – ASSEMBLY		SHEET NO 1 OF 1
REFER TO PARTS LIST NO		ILLUSTRATION NO 35825652	
		DATE 11-2-83	



35073980
FAN DRIVE COMPLETE

36716405
FAN GUARD

35047521
RADIATOR & OIL COOLER

35072826
AIR INTAKE COMPLETE

35072719
AIR END COMPLETE
(XP-175A-W-JD)

35072677
ENGINE COMPLETE

35072727
AIR END COMPLETE

35072784
SEPARATOR TANK
SUBASSEMBLY

36706067
FUEL TANK

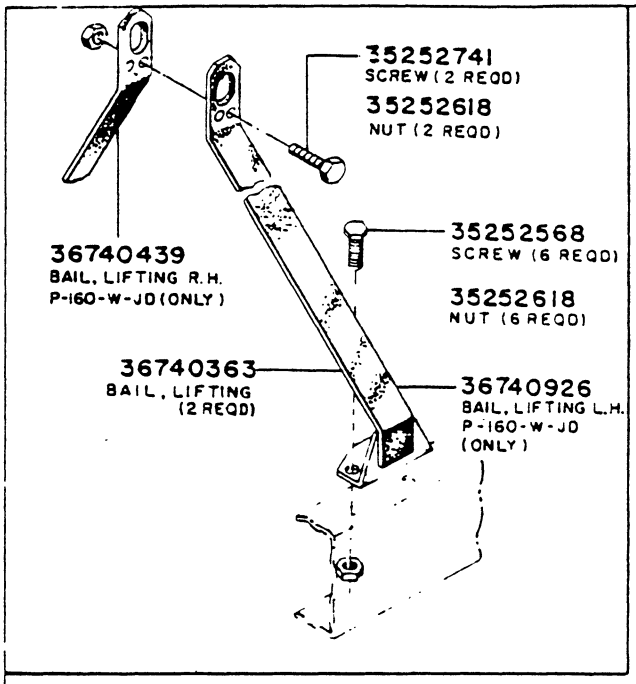
36740363
LIFTING BAIL

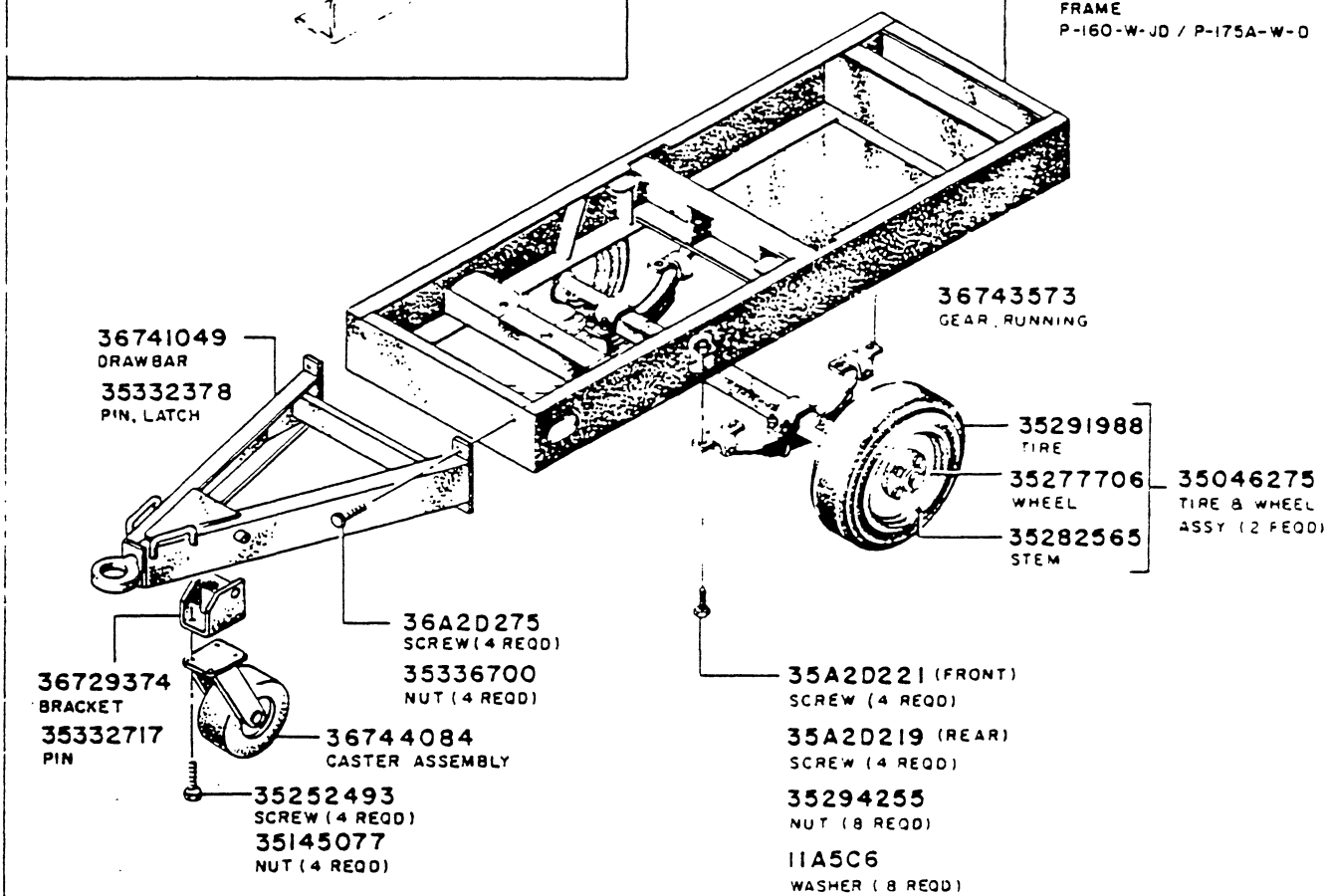
35074210
FRAME & RUNNING GEAR

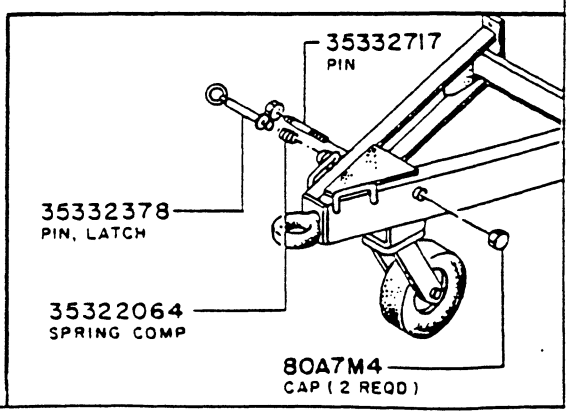
35072776
MINIMUM PRESSURE &
SERVICE VALVE COMPLETE

35047760
ELECTRICAL SYSTEM

INGERSOLL-RAND COMPANY
FRAME & RUNNING GEAR
2-23-84
35819887







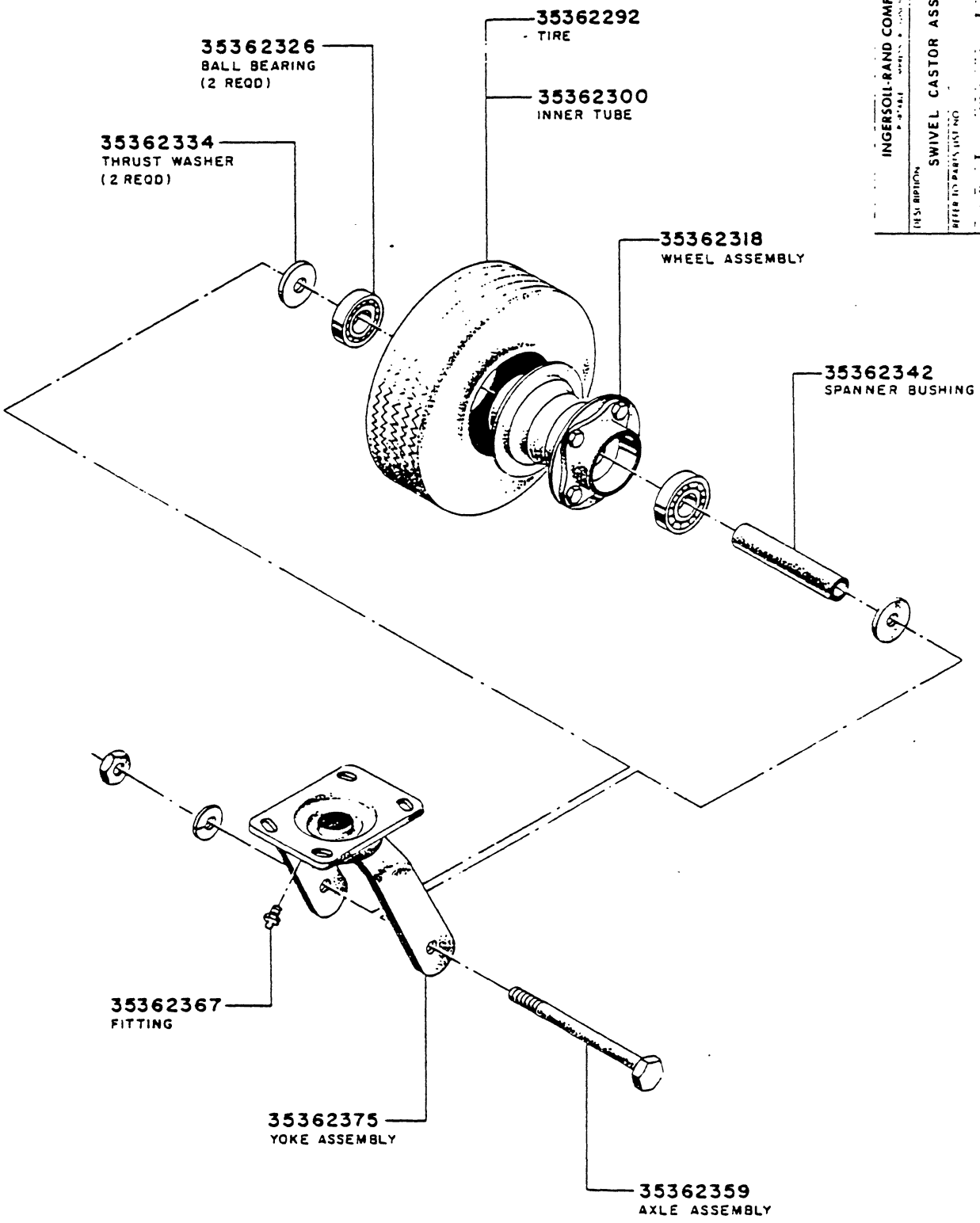
CASTER WHEEL ASSEMBLY
PART NO. 36744084

INGERSOLL-RAND COMPANY

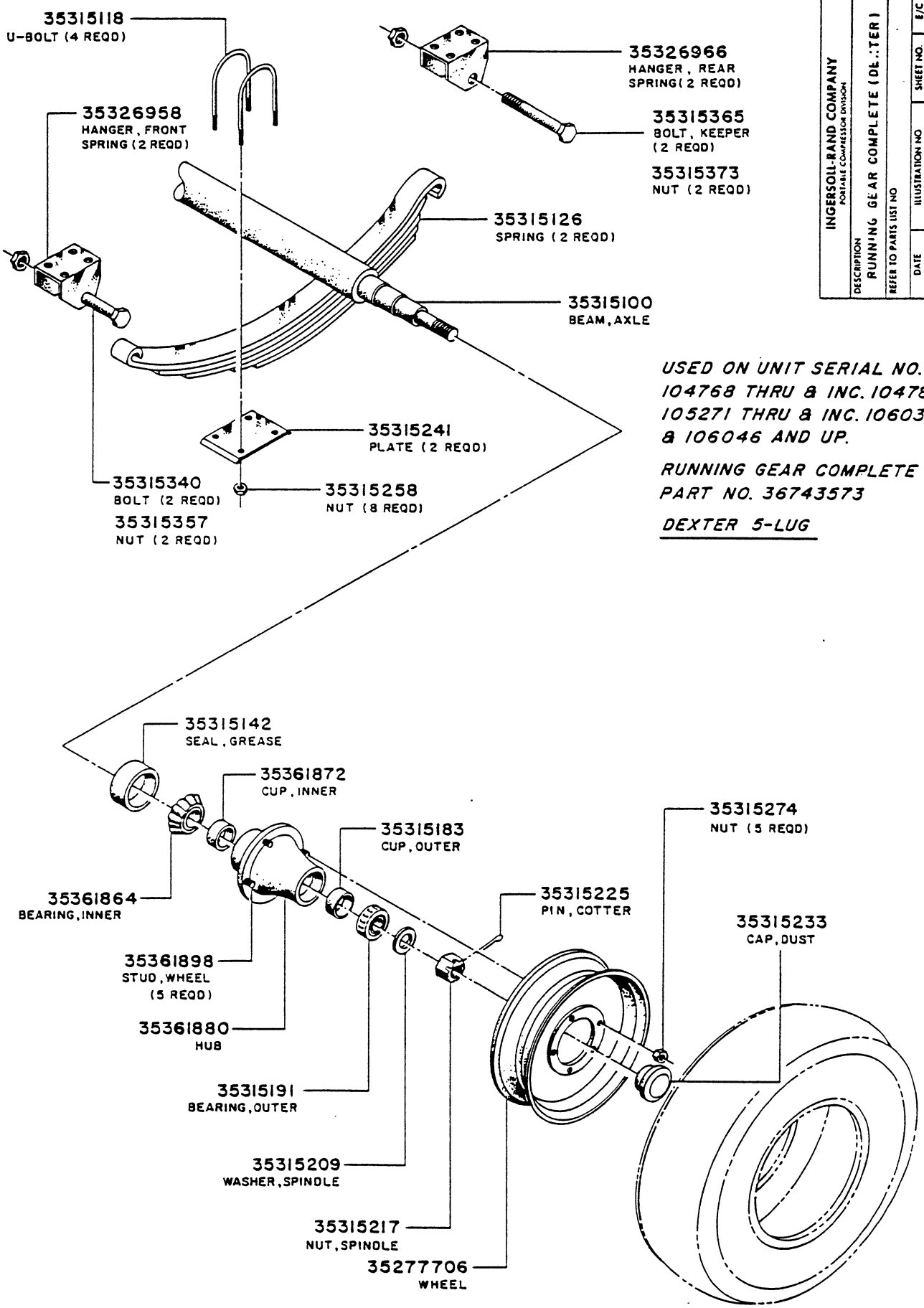
SWIVEL CASTOR ASSEMBLY

DATE 2-28-84

ILLUSTRATION NO. 35818947



INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION	DESCRIPTION RUNNING GEAR COMPLETE (DEXTER)	REFER TO PARTS LIST NO	E/C
		ILLUSTRATION NO 35832468	SHEET NO. 1 OF 1
		DATE 2-23-84	



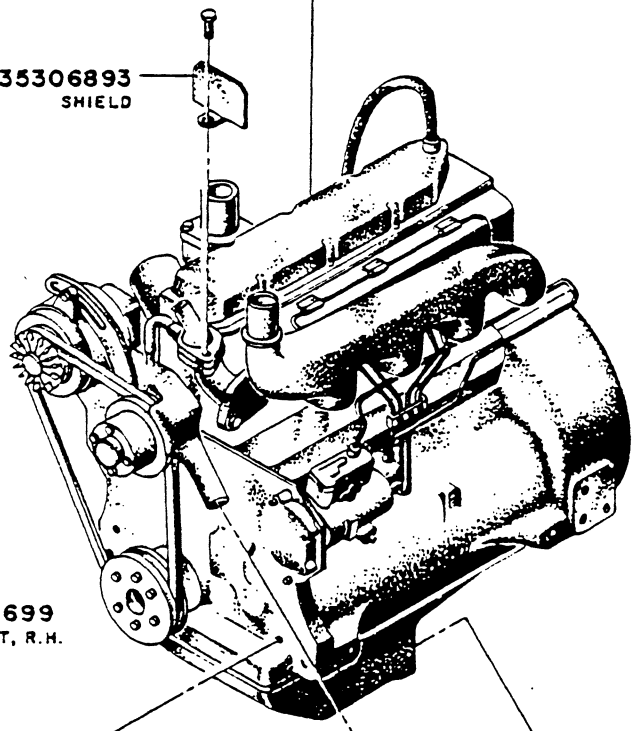
USED ON UNIT SERIAL NO.S 104768 THRU & INC. 104781; 105271 THRU & INC. 106034 & 106046 AND UP.

RUNNING GEAR COMPLETE PART NO. 36743573

DEXTER 5-LUG

ELEMENT, ENGINE LUBE
PART NO. 35308030
ELEMENT, ENGINE FUEL
PART NO. 35308040

INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION			E/C
DESCRIPTION ENGINE COMPLETE		ILLUSTRATION NO 35837764	SHEET NO 1 OF 1
REFER TO PARTS LIST NO		DATE 1-4-84	



35353218
ENGINE

35306893
SHIELD

35A2D382
SCREW (2 REQD)

35273937
WASHER (2 REQD)

35823699
BRACKET, R.H.

35823707
BRACKET, L.H.

35A2D321
SCREW, (4 REQD)

14A5C120
WASHER (4 REQD)

35287838
MOUNT (2 REQD)

14A5C133
WASHER (2 REQD)

16A4C8
NUT (2 REQD)

67A7M4
ELBOW, 90°

35305572
HOSE, REDUCING

W86684
CLAMP

W86681
CLAMP

INGERSOLL-RAND COMPANY

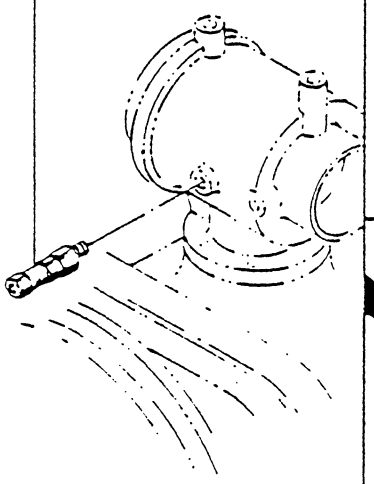
DESCRIPTION: AIR END COMPLETE

REFER TO PARTS LIST NO

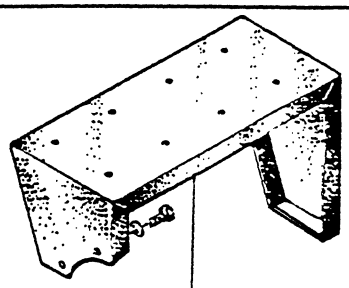
DATE 1-4-84

ILLUSTRATION NO 35845130

SHEET NO 1 of 1

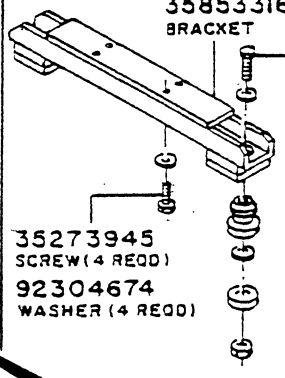


35328459
VALVE, CHECK

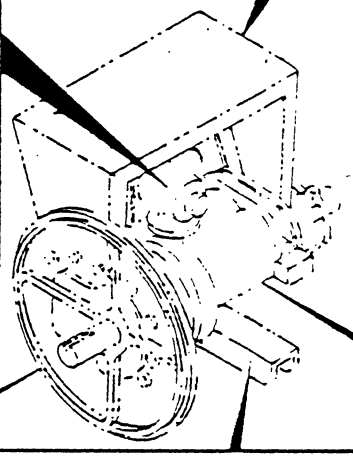


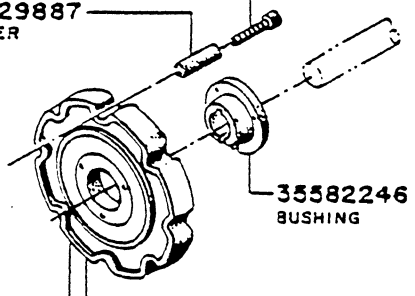
36709129
BRACKET, AIR CLEANER
92304393
SCREW (4 REQD)
92304674
WASHER (4 REQD)

P-160-W-JD ONLY
P-185A-W-JD

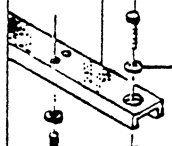


35853316
BRACKET
35A20384
SCREW (2 REQD)
35273937
WASHER (2 REQD)
35287838
MOUNT (2 REQD)
14A5C133
WASHER (2 REQD)
35601376
SPACER (2 REQD)
16A4C8
NUT (2 REQD)
35273945
SCREW (4 REQD)
92304674
WASHER (4 REQD)

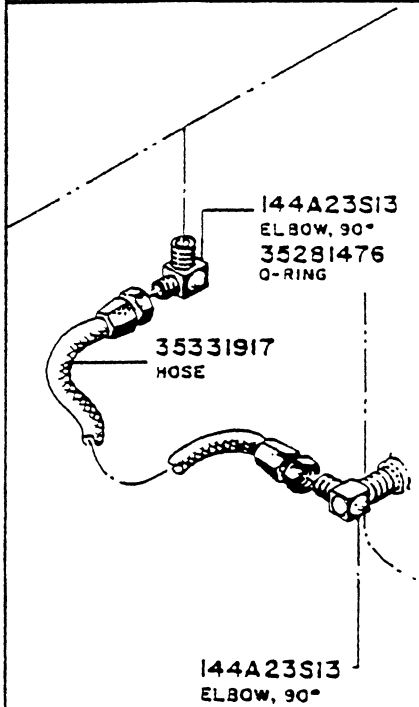




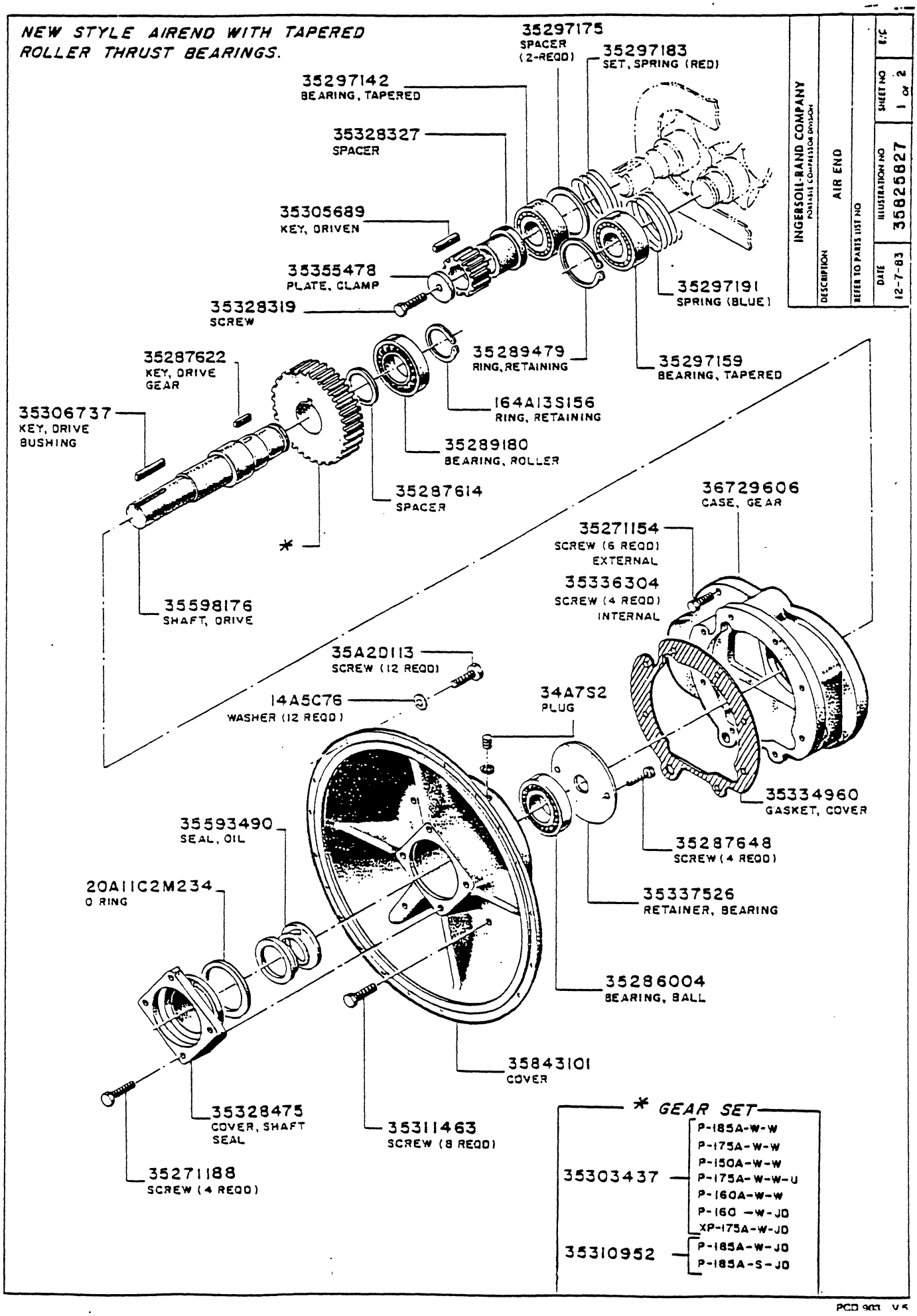
119A2A206
BOLT, SOCKET HD
35329887
DRIVER
35582246
BUSHING
35073196
KIT, HUB & COUPLING ASSY
35271188
SCREW (6 REQD)
12A5C4
WASHER (6 REQD)
92304674
WASHER (6 REQD)
35843952
COUPLING (P-175A-W-W ONLY)
35843937
COUPLING (P-175A-W-W-U, P-185A-W/S-JD ONLY)



35815810
BRACKET
35A20384
SCREW (2 REQD)
35273937
WASHER (2 REQD)
35287838
MOUNT (2 REQD)
14A5C133
WASHER (2 REQD)
16A4C8
NUT (2 REQD)
35273945
SCREW (4 REQD)
92304674
WASHER (4 REQD)



144A23S13
ELBOW, 90°
35281476
O-RING
35331917
HOSE
144A23S13
ELBOW, 90°


NEW STYLE AIREND WITH TAPERED ROLLER THRUST BEARINGS.
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION AIR END
REFER TO PARTS LIST NO
DATE 12-7-83
ILLUSTRATION NO 35825827
SHEET NO 1 OF 2
REV
35297175 SPACER (2-REQD)
35297183 SET, SPRING (RED)
35297142 BEARING, TAPERED
35328327 SPACER
35305689 KEY, DRIVEN
35355478 PLATE, CLAMP
35328319 SCREW
35297191 SPRING (BLUE)
35289479 RING, RETAINING
35297159 BEARING, TAPERED
35287622 KEY, DRIVE GEAR
35306737 KEY, DRIVE BUSHING
164A13S156 RING, RETAINING
35289180 BEARING, ROLLER
35287614 SPACER
*
35598176 SHAFT, DRIVE
36729606 CASE, GEAR
35271154 SCREW (6 REQD) EXTERNAL
35336304 SCREW (4 REQD) INTERNAL
35A20113 SCREW (12 REQD)
14A5C76 WASHER (12 REQD)
34A7S2 PLUG
35334960 GASKET, COVER
35593490 SEAL, OIL
35287648 SCREW (4 REQD)
20A11C2M234 O RING
35337526 RETAINER, BEARING
35286004 BEARING, BALL
35843101 COVER
35328475 COVER, SHAFT SEAL
35311463 SCREW (8 REQD)
35271188 SCREW (4 REQD)
* GEAR SET
35303437
P-185A-W-W
P-175A-W-W
P-150A-W-W
P-175A-W-W-U
P-160A-W-W
P-160 -W-JD
XP-175A-W-JD
35310952
P-185A-W-JD
P-185A-S-JD

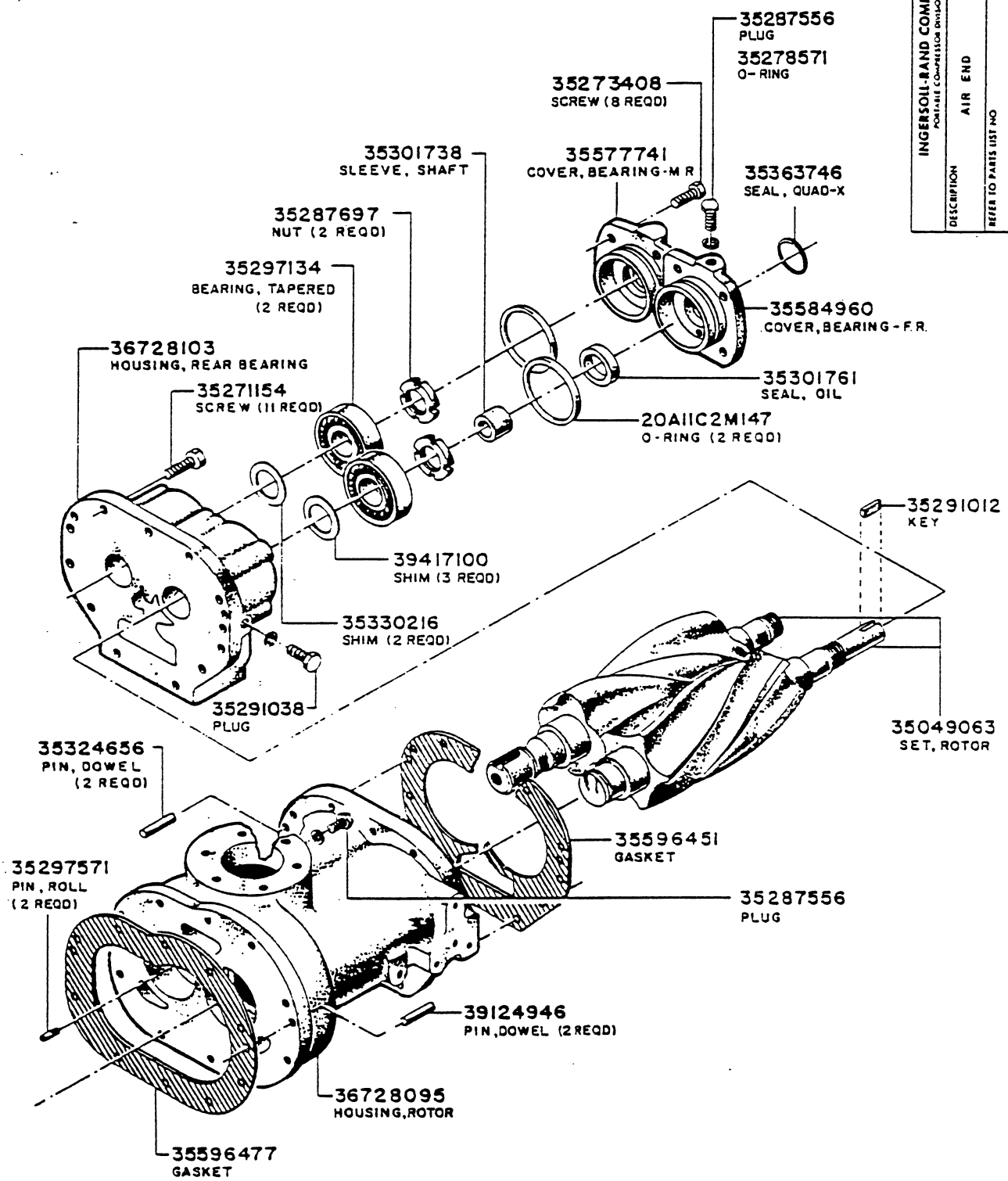
NEW STYLE AIREND WITH TAPERED ROLLER THRUST BEARINGS.

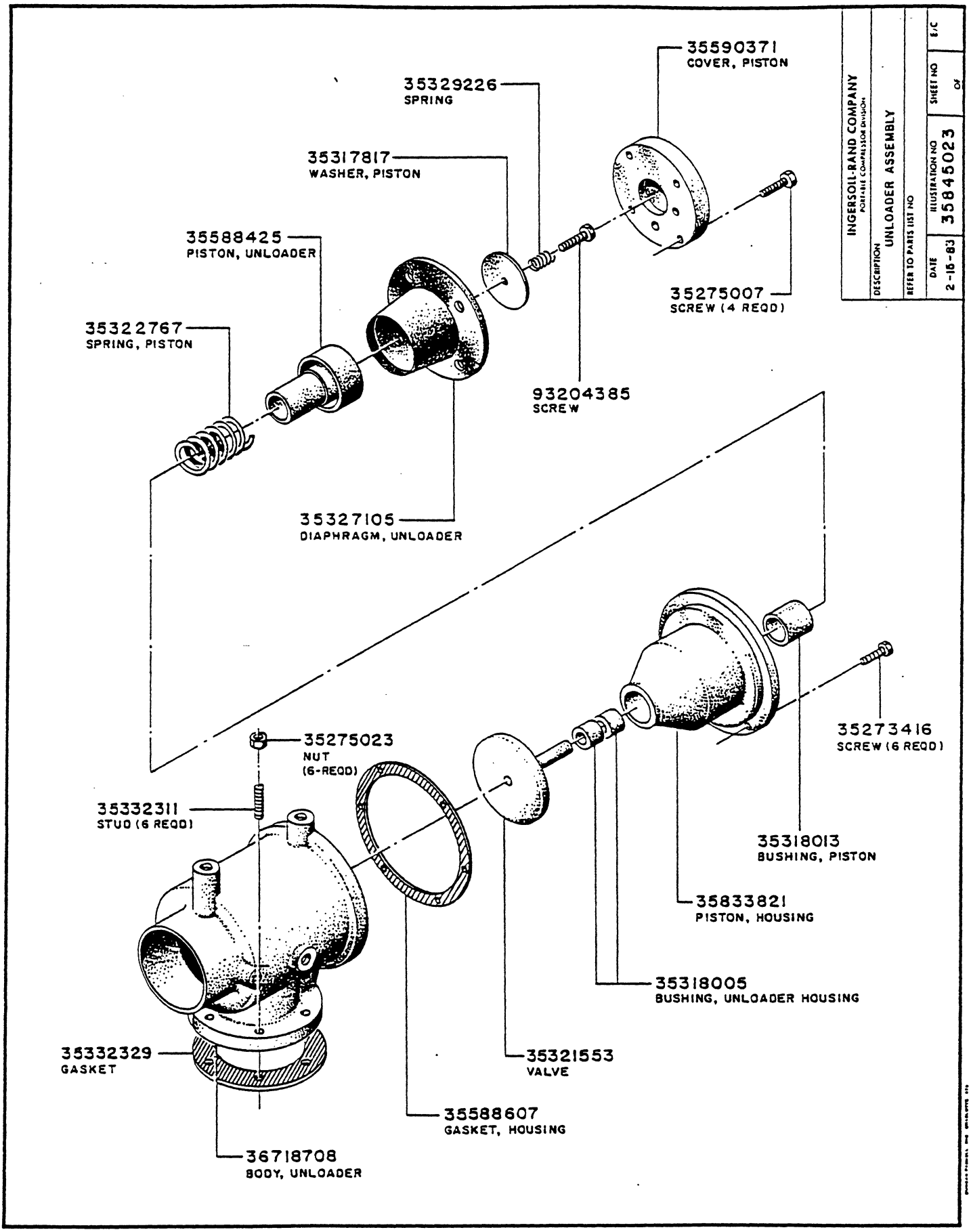
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION: AIR END

REFER TO PARTS LIST NO

DATE: 9-6-84 | ILLUSTRATION NO: 35825827 | SHEET NO: 2 of 2 | E/C




INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION
UNLOADER ASSEMBLY
REFER TO PARTS LIST NO
DATE
2-16-83
ILLUSTRATION NO
35845023
SHEET NO
OF
E/C
35590371
COVER, PISTON
35329226
SPRING
35317817
WASHER, PISTON
35588425
PISTON, UNLOADER
35322767
SPRING, PISTON
35275007
SCREW (4 REQD)
93204385
SCREW
35327105
DIAPHRAGM, UNLOADER
35275023
NUT
(6-REQD)
35332311
STUD (6 REQD)
35273416
SCREW (6 REQD)
35318013
BUSHING, PISTON
35833821
PISTON, HOUSING
35318005
BUSHING, UNLOADER HOUSING
35332329
GASKET
35321553
VALVE
35588607
GASKET, HOUSING
36718708
BODY, UNLOADER

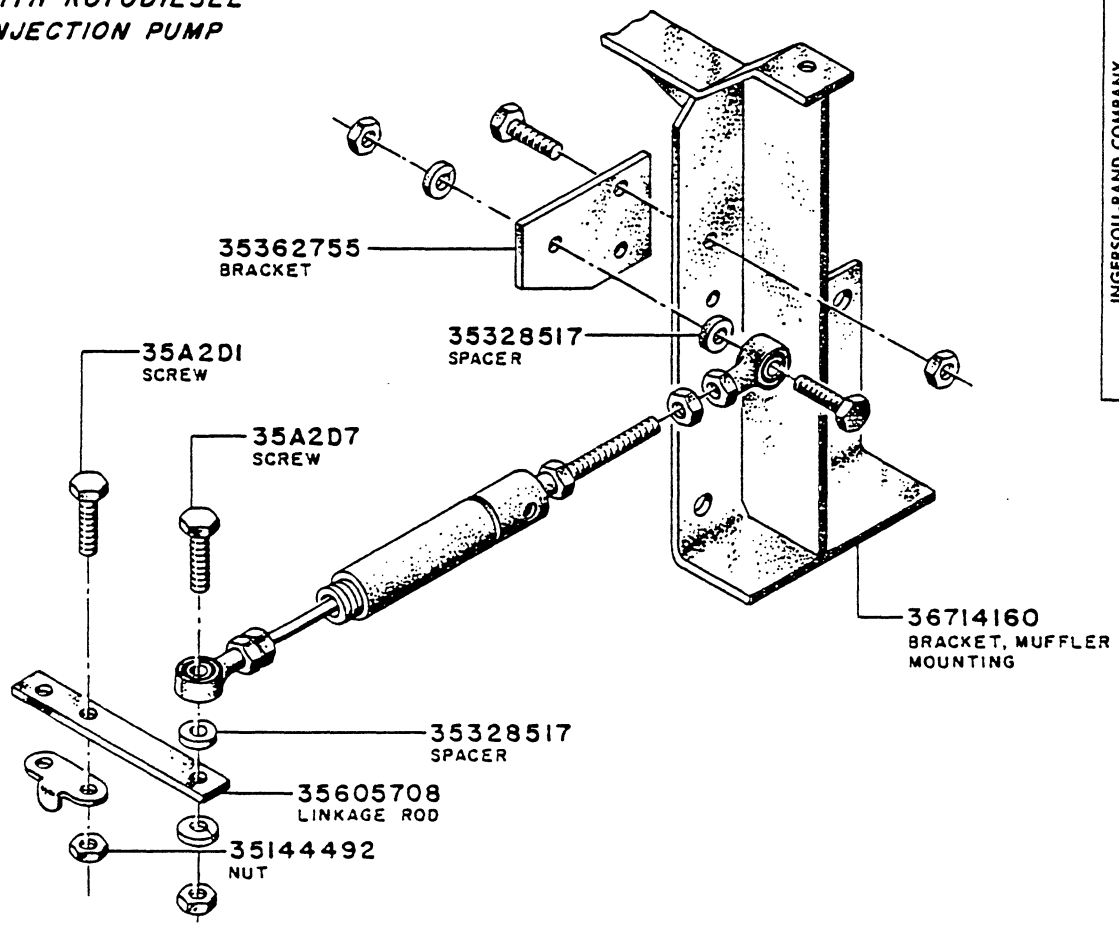
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION: LINKAGE & REGULATION ASSY

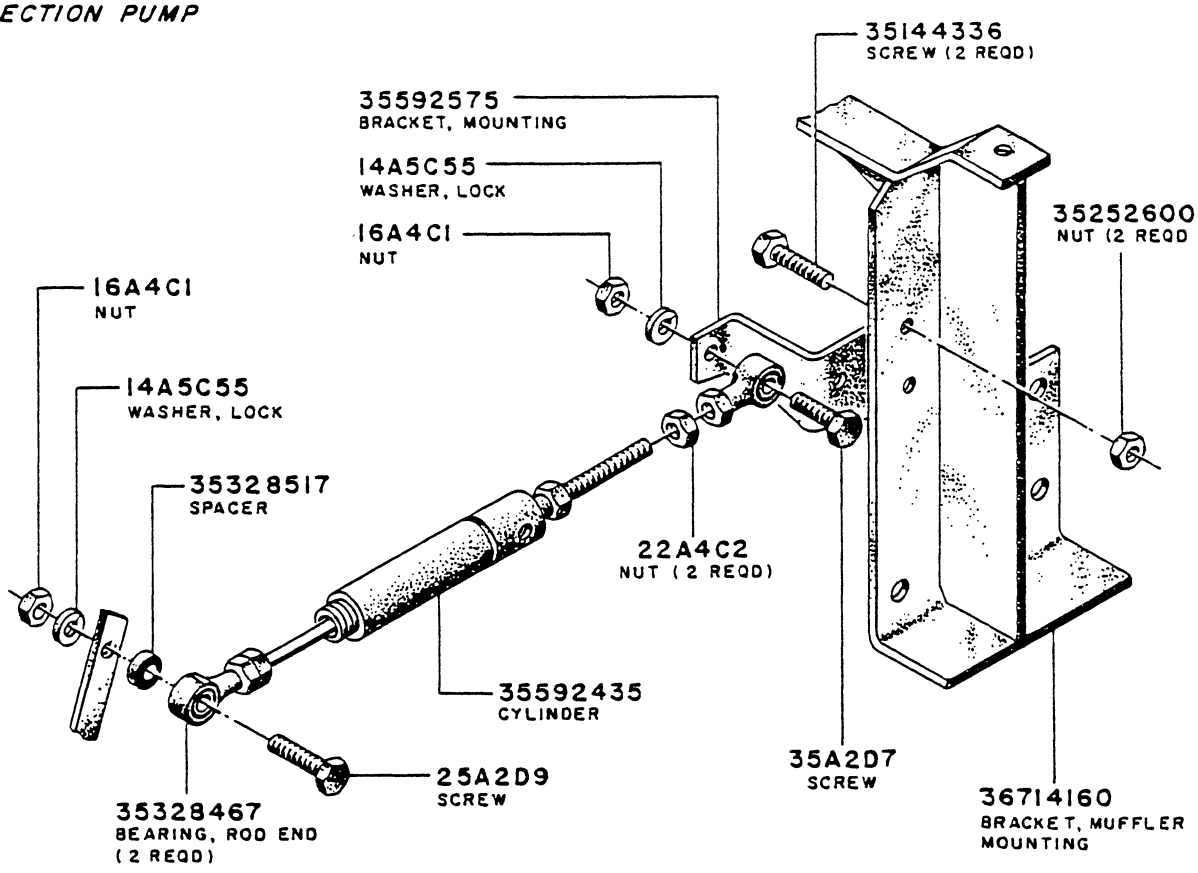
REFER TO PARTS LIST NO

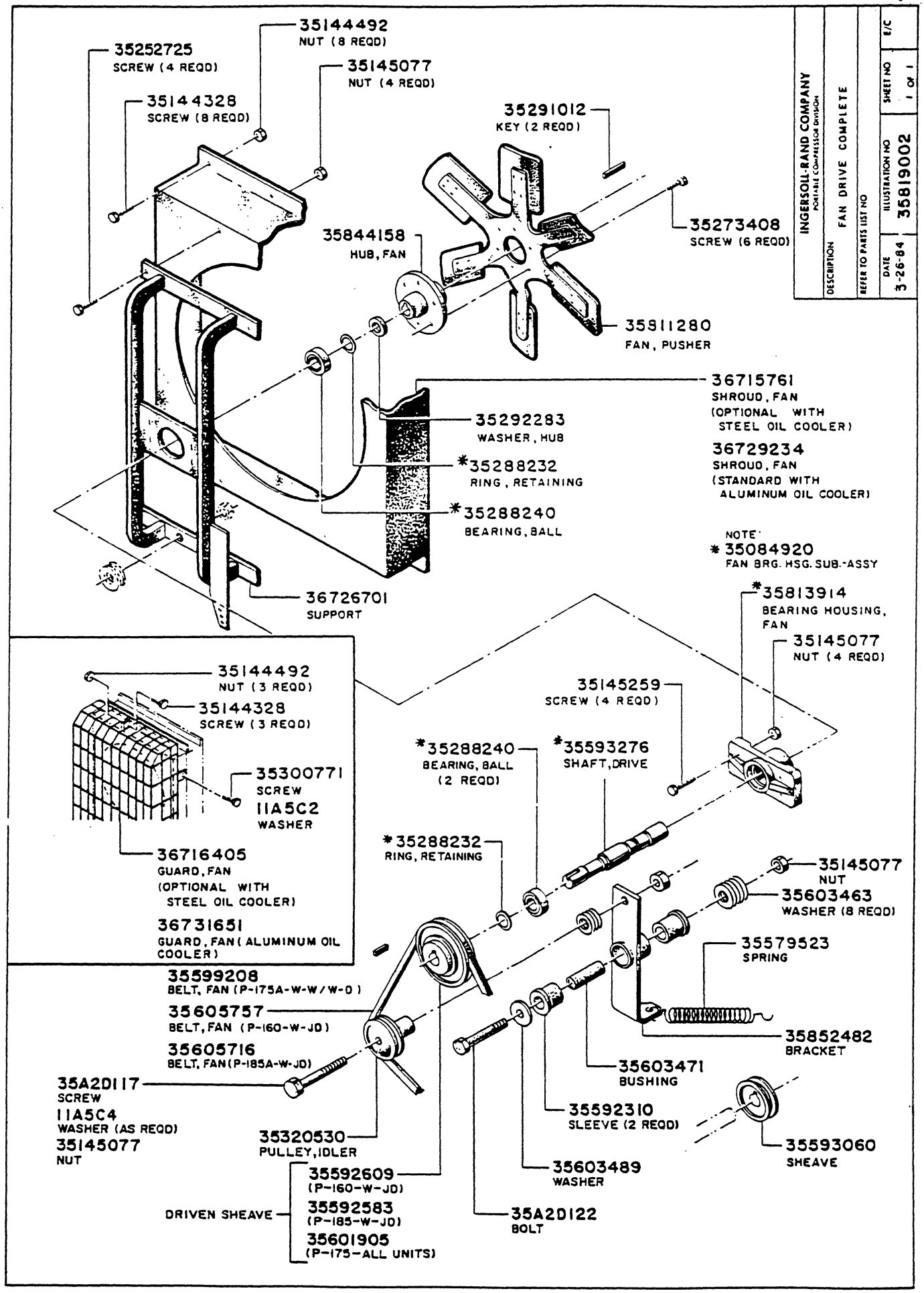
DATE	ILLUSTRATION NO	SHEET NO	E/C
6-13-84	35845197	Of	

WITH ROTODIESEL INJECTION PUMP



WITH ROOSAMASTER INJECTION PUMP




INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION FAN DRIVE COMPLETE
REFER TO PARTS LIST NO
DATE 3-26-84
ILLUSTRATION NO 35819002
SHEET NO 1 OF 1
E/C
35144492 NUT (8 REQD)
35252725 SCREW (4 REQD)
35145077 NUT (4 REQD)
35144328 SCREW (8 REQD)
35291012 KEY (2 REQD)
35844158 HUB, FAN
35273408 SCREW (6 REQD)
35811280 FAN, PUSHER
36715761 SHROUD, FAN (OPTIONAL WITH STEEL OIL COOLER)
35292283 WASHER, HUB
*35288232 RING, RETAINING
36729234 SHROUD, FAN (STANDARD WITH ALUMINUM OIL COOLER)
*35288240 BEARING, BALL
NOTE
* 35084920 FAN BRG. HSG. SUB.-ASSY
36726701 SUPPORT
*35813914 BEARING HOUSING, FAN
35145077 NUT (4 REQD)
35144492 NUT (3 REQD)
35144328 SCREW (3 REQD)
35145259 SCREW (4 REQD)
*35288240 BEARING, BALL (2 REQD)
*35593276 SHAFT, DRIVE
35300771 SCREW
11A5C2 WASHER
36716405 GUARD, FAN (OPTIONAL WITH STEEL OIL COOLER)
36731651 GUARD, FAN (ALUMINUM OIL COOLER)
*35288232 RING, RETAINING
35145077 NUT
35603463 WASHER (8 REQD)
35579523 SPRING
35599208 BELT, FAN (P-175A-W-W/W-O)
35605757 BELT, FAN (P-160-W-JD)
35605716 BELT, FAN (P-185A-W-JD)
35852482 BRACKET
35A2D117 SCREW
11A5C4 WASHER (AS REQD)
35145077 NUT
35603471 BUSHING
35592310 SLEEVE (2 REQD)
35320530 PULLEY, IDLER
35593060 SHEAVE
35592609 (P-160-W-JD)
35603489 WASHER
DRIVEN SHEAVE
35592583 (P-185-W-JD)
35601905 (P-175-ALL UNITS)
35A2D122 BOLT

INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION: RADIATOR & OIL COOLER COMPLETE

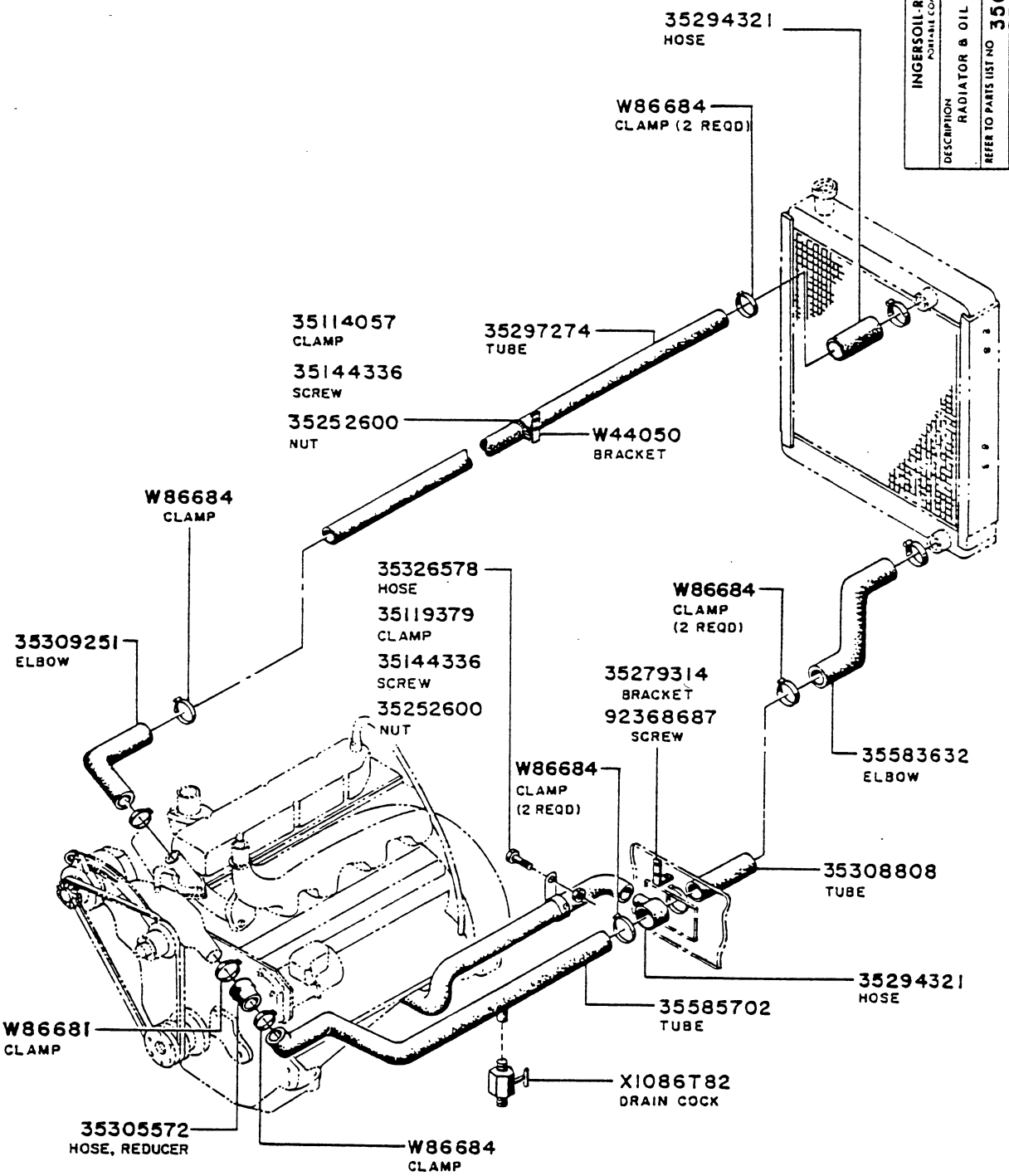
REFER TO PARTS LIST NO 35047521

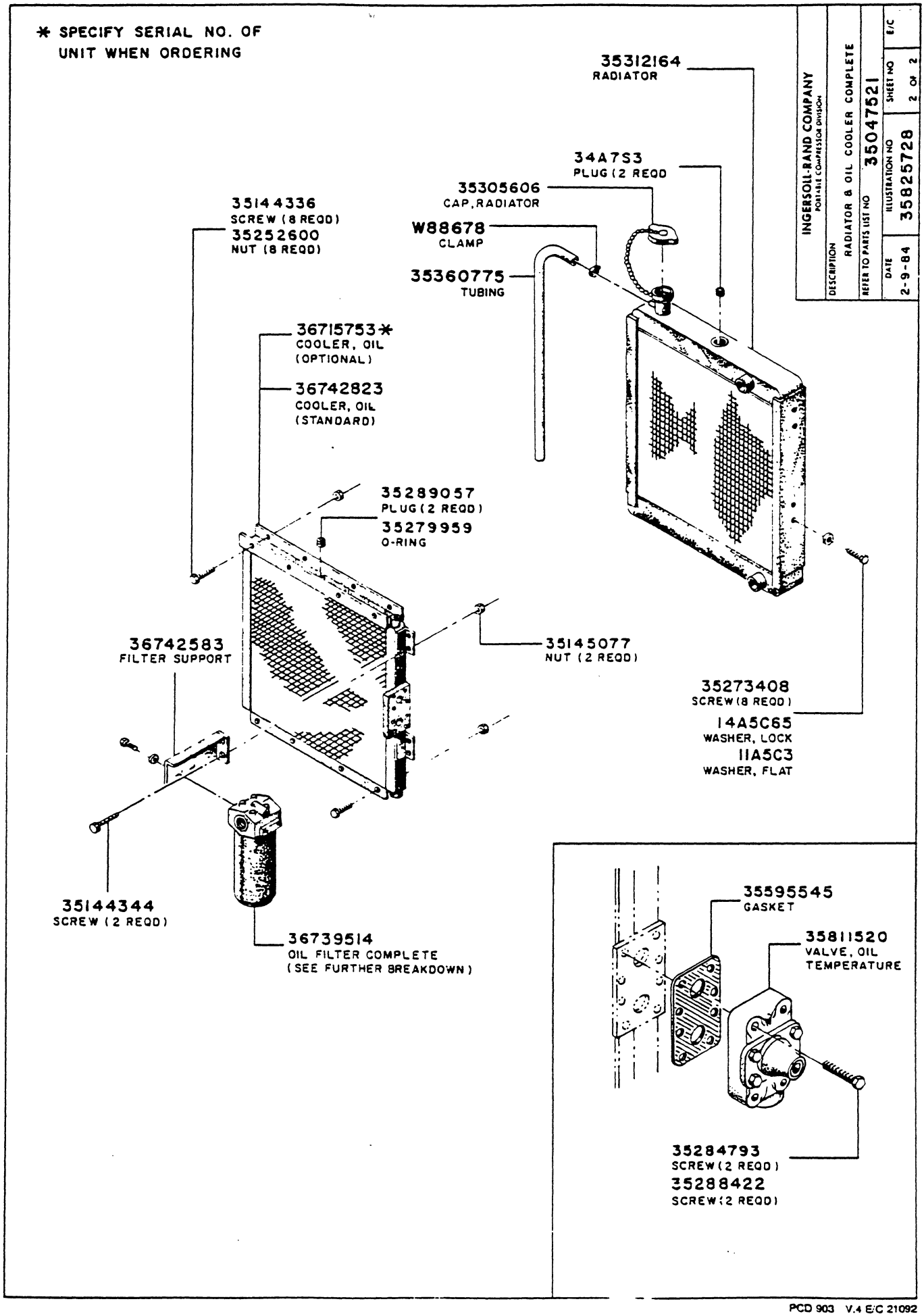
DATE 1-27-81

ILLUSTRATION NO 35825728

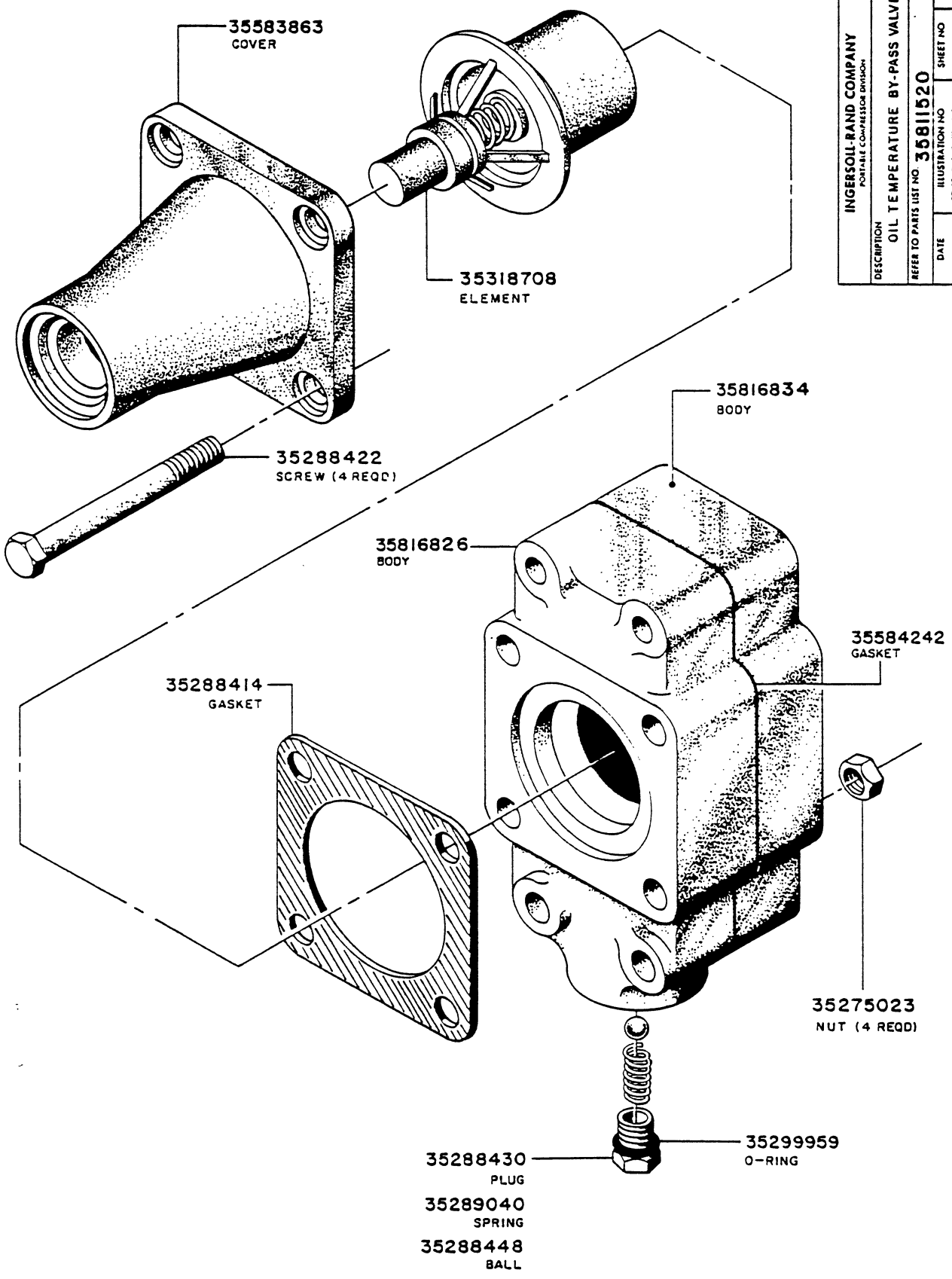
SHEET NO 1 OF 2

E/C



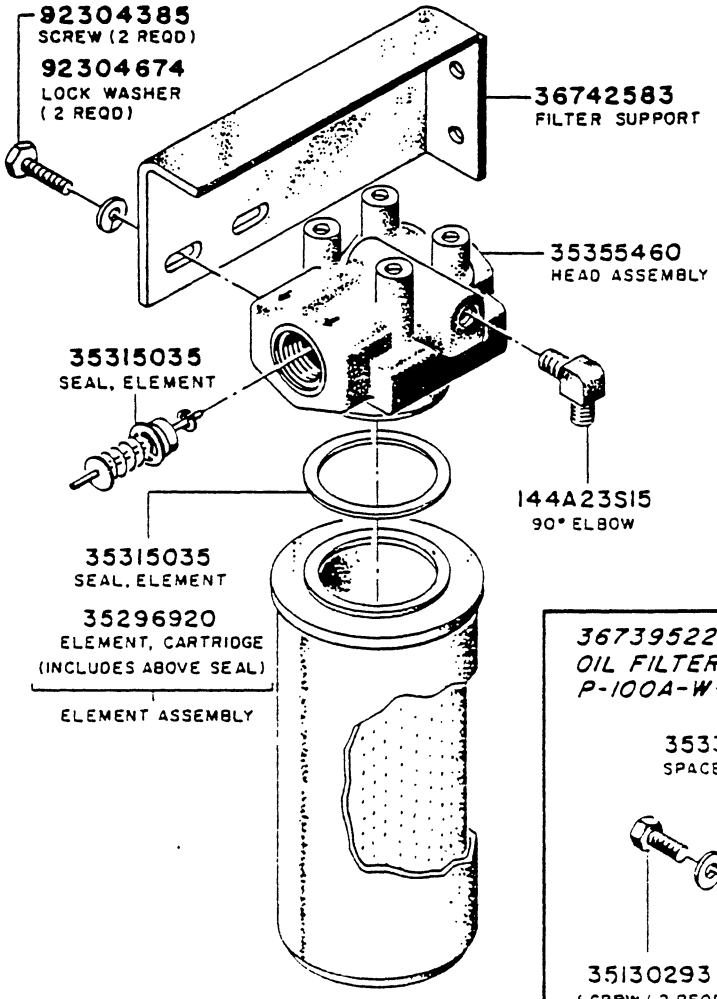

* SPECIFY SERIAL NO. OF UNIT WHEN ORDERING
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION
RADIATOR & OIL COOLER COMPLETE
REFER TO PARTS LIST NO 35047521
ILLUSTRATION NO 35825728
SHEET NO 2 OF 2
E/C
DATE 2-9-84
35312164 RADIATOR
34A7S3 PLUG (2 REQD)
35305606 CAP, RADIATOR
W88678 CLAMP
35360775 TUBING
35144336 SCREW (8 REQD)
35252600 NUT (8 REQD)
36715753* COOLER, OIL (OPTIONAL)
36742823 COOLER, OIL (STANDARD)
35289057 PLUG (2 REQD)
35279959 O-RING
36742583 FILTER SUPPORT
35145077 NUT (2 REQD)
35273408 SCREW (8 REQD)
14A5C65 WASHER, LOCK
11A5C3 WASHER, FLAT
35144344 SCREW (2 REQD)
36739514 OIL FILTER COMPLETE (SEE FURTHER BREAKDOWN)
35595545 GASKET
35811520 VALVE, OIL TEMPERATURE
35284793 SCREW (2 REQD)
35288422 SCREW (2 REQD)

INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION			
DESCRIPTION OIL TEMPERATURE BY-PASS VALVE			E/C
REFER TO PARTS LIST NO. 35811520		SHEET NO	1 OF 1
DATE 4-14-81	ILLUSTRATION NO 35818541		

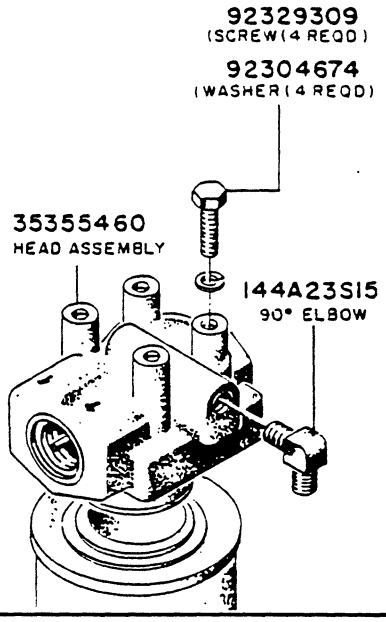


OIL TEMPERATURE BYPASS VALVE
COMPLETE, PART NO. 35811520

36739514
OIL FILTER COMPLETE
P-160, 175, 185

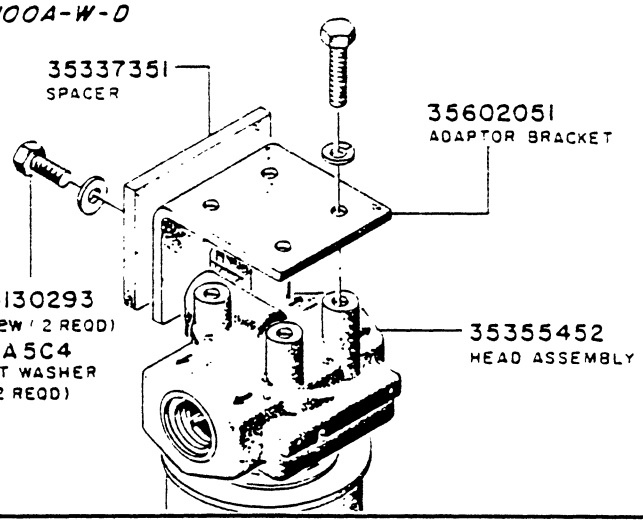


36739514
OIL FILTER COMPLETE
P-100A-W-W

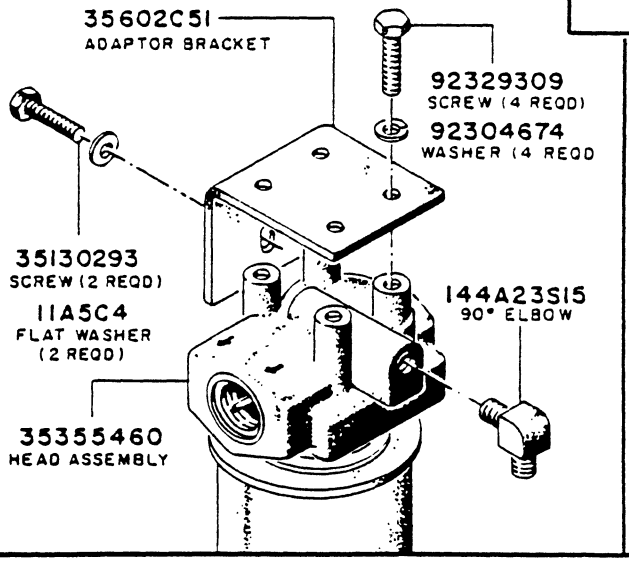


REVISIONS	DATE	CHARGE NOS	NAME OF PART	
		DATE 2-9-84	OIL FILTER ASSEMBLY	
		NAME I RILEY	INGERSOLL-RAND COMPANY	
		E/C NO	MODEL NO P-100 THRU P-185	DRAWING NO 35818558

36739522
OIL FILTER COMPLETE
P-100A-W-D



36739514
OIL FILTER COMPLETE
P-100A-W-W-U

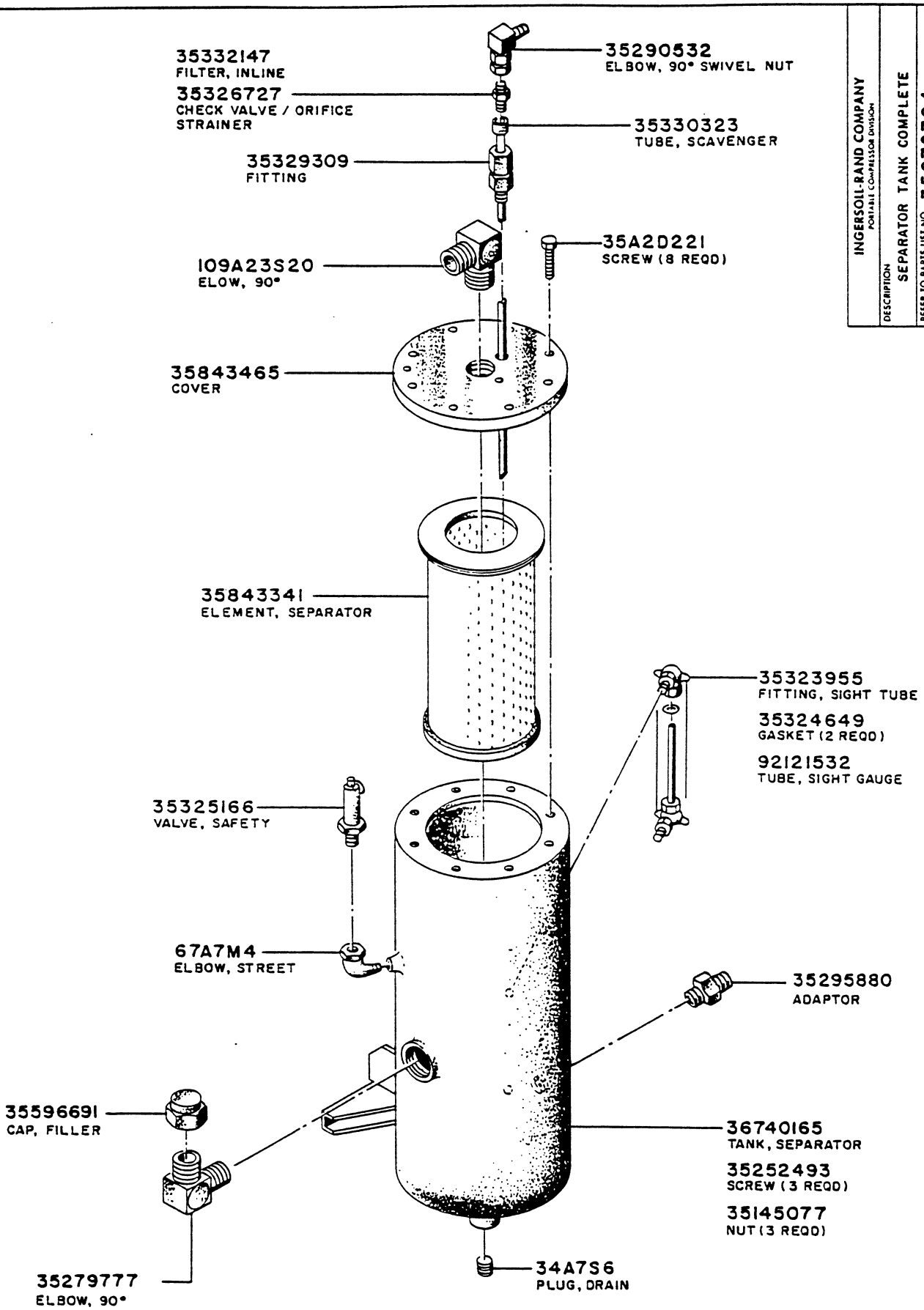


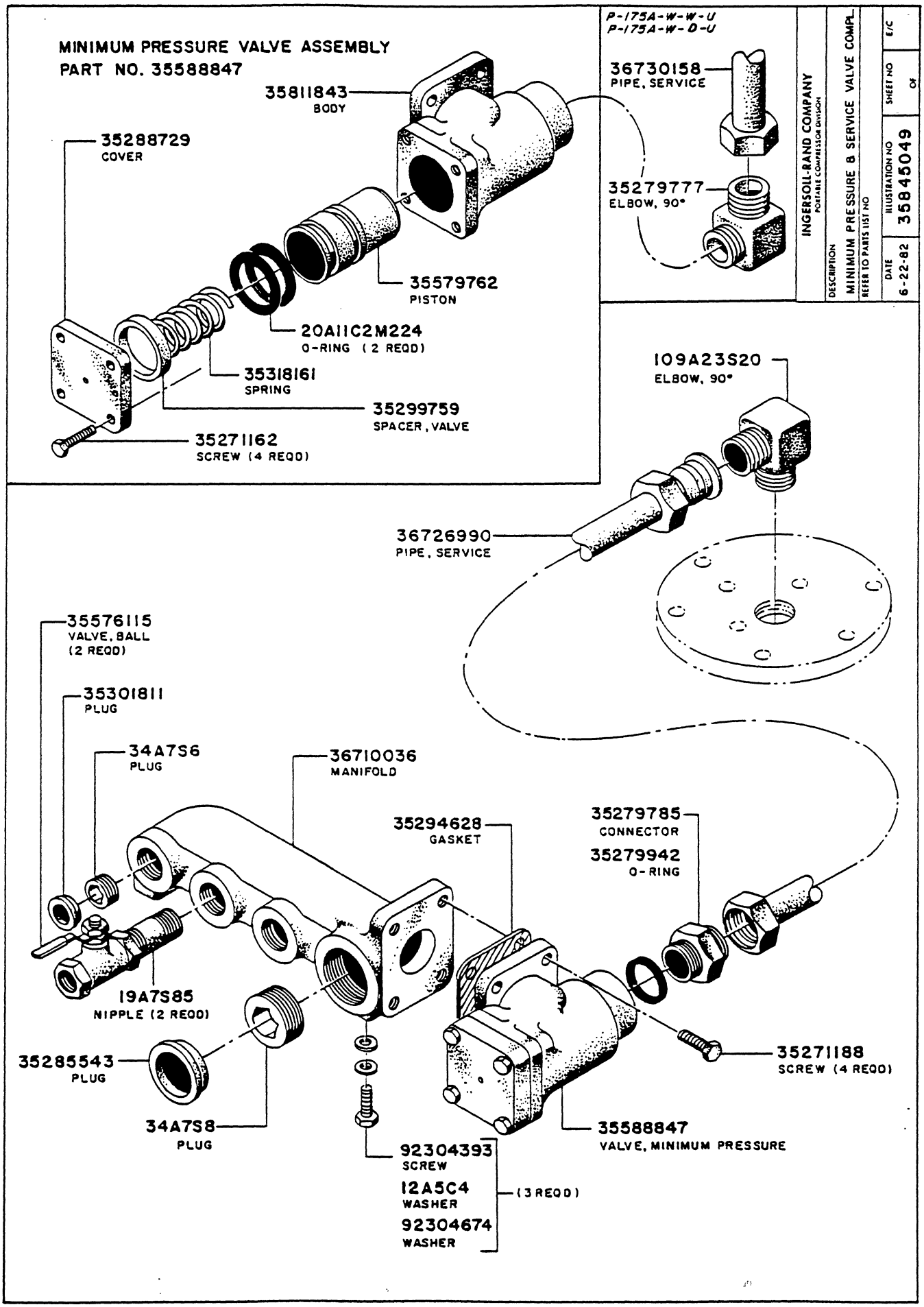
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION: SEPARATOR TANK COMPLETE

REFER TO PARTS LIST NO 35072784

DATE 2-9-84 | ILLUSTRATION NO 35845031 | SHEET NO 01 | E/C




MINIMUM PRESSURE VALVE ASSEMBLY
PART NO. 35588847
35811843
BODY
35288729
COVER
35579762
PISTON
20A11C2M224
O-RING (2 REQD)
35318161
SPRING
35299759
SPACER, VALVE
35271162
SCREW (4 REQD)
P-175A-W-W-U
P-175A-W-D-U
36730158
PIPE, SERVICE
35279777
ELBOW, 90°
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION
MINIMUM PRESSURE & SERVICE VALVE COMPL
REFER TO PARTS LIST NO
DATE
6-22-82
ILLUSTRATION NO
35845049
SHEET NO
OF
E/C
109A23S20
ELBOW, 90°
36726990
PIPE, SERVICE
35576115
VALVE, BALL
(2 REQD)
35301811
PLUG
34A7S6
PLUG
36710036
MANIFOLD
35294628
GASKET
35279785
CONNECTOR
35279942
O-RING
19A7S85
NIPPLE (2 REQD)
35285543
PLUG
34A7S8
PLUG
92304393
SCREW
12A5C4
WASHER
92304674
WASHER
(3 REQD)
35271188
SCREW (4 REQD)
35588847
VALVE, MINIMUM PRESSURE

INGERSOLL-RAND COMPANY
PORTABLE COMPRESSION DIVISION

DESCRIPTION: AIR INTAKE COMPLETE

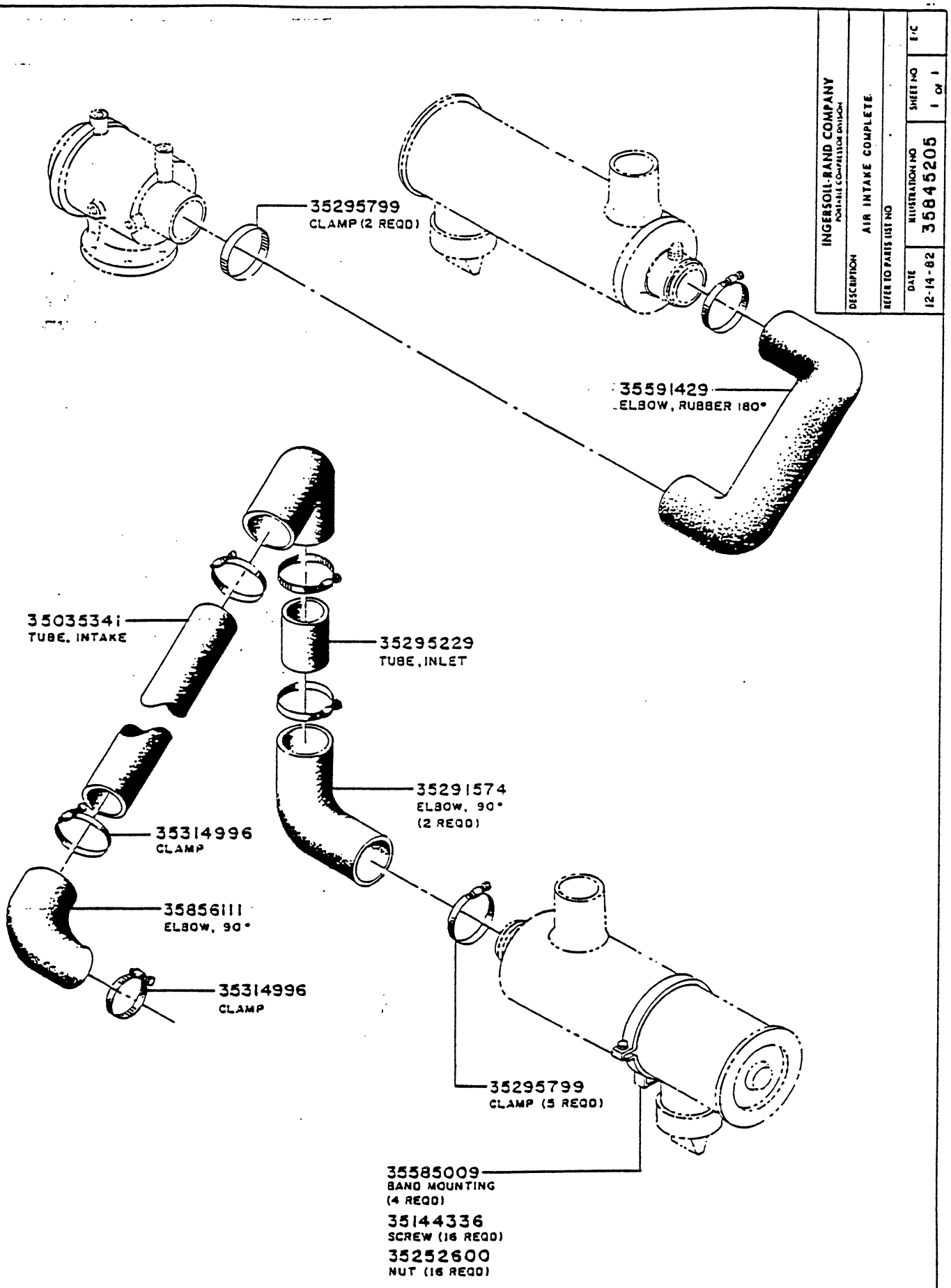
REFER TO PARTS LIST NO

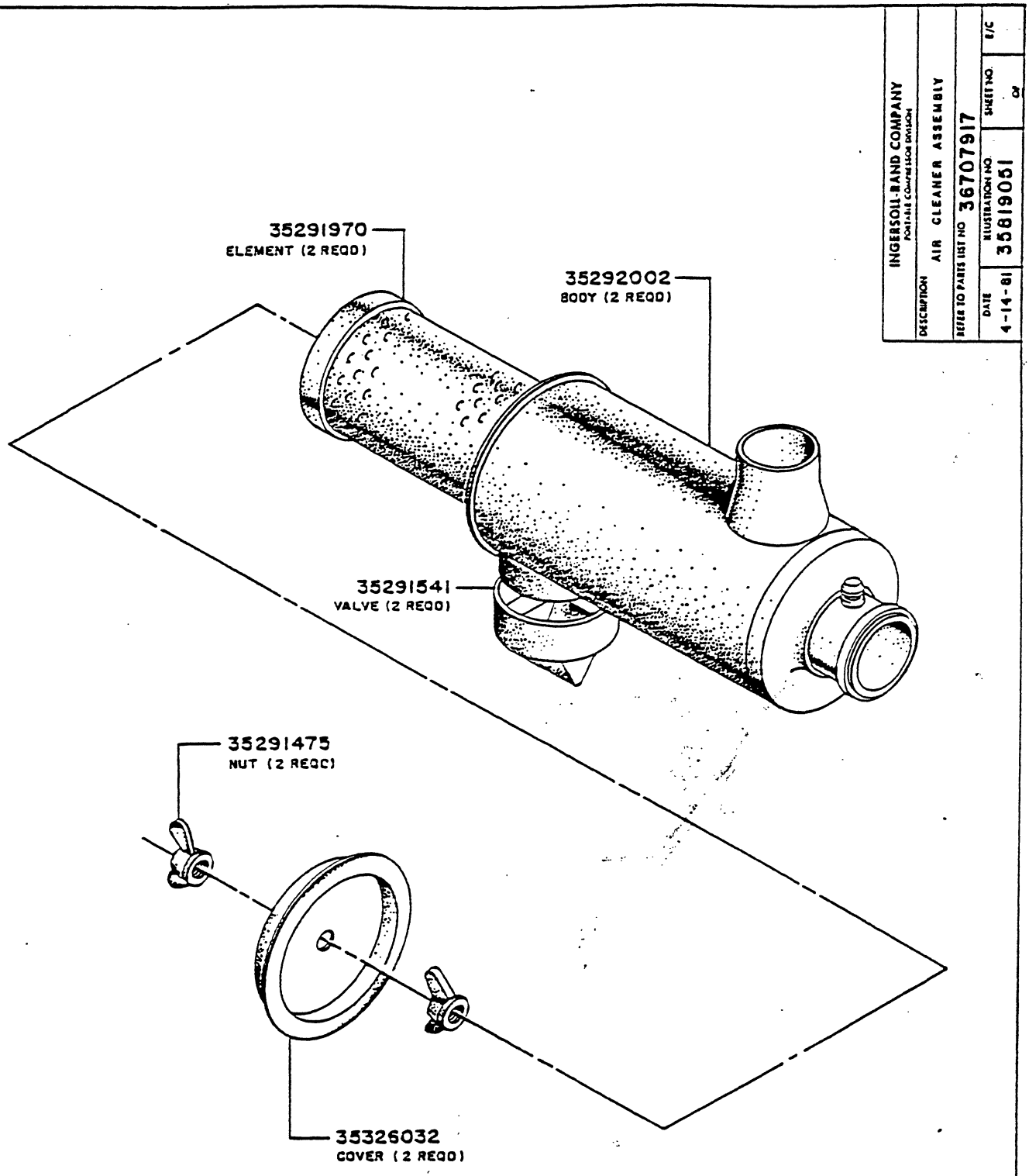
DATE: 12-14-82

ILLUSTRATION NO: 35845205

SHEET NO: 1 of 1

E/C



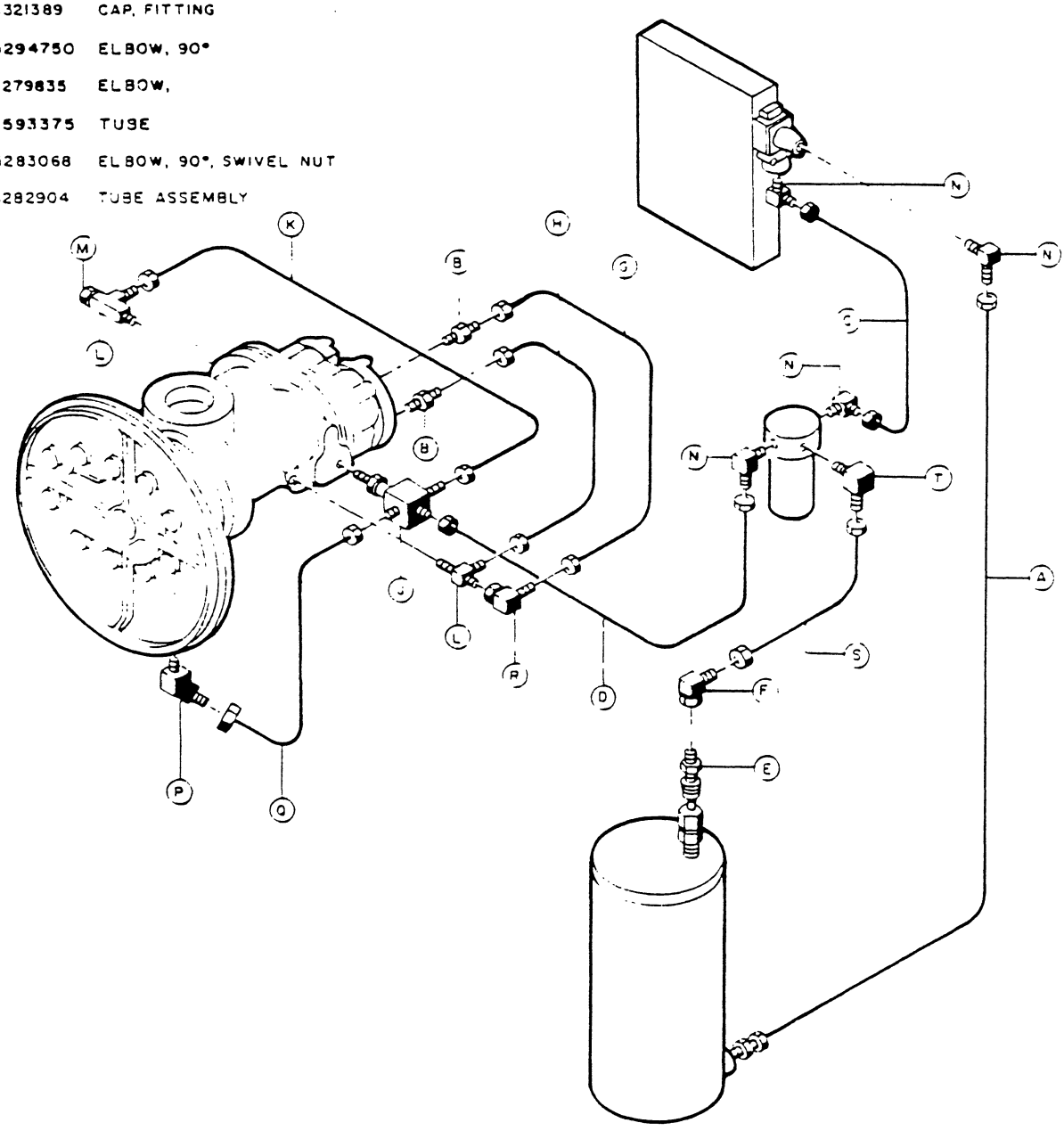

INGERSOLL-RAND COMPANY
DESCRIPTION AIR CLEANER ASSEMBLY
REFER TO PARTS LIST NO 36707917
DATE 4-14-81
ILLUSTRATION NO. 35819051
SHEET NO. 01
E/C
35291970
ELEMENT (2 REQD)
35292002
BODY (2 REQD)
35291541
VALVE (2 REQD)
35291475
NUT (2 REQD)
35326032
COVER (2 REQD)

(A)	35843523	TUBE TEMPERATURE BYPASS
(B)	35823076	CONNECTOR
(C)	35860832	TUBE, OIL FILTER
(D)	35294693	HOSE ASSEMBLY
(E)	35326727	CHECK VALVE
(F)	35290352	ELBOW, 90° SWIVEL NUT
(G)	35844588	TUBE
(H)	35593383	TUBE
(J)	35596220	CROSS/ORIFICE
(K)	35844570	TUBE
(L)	35279850	TEE, RUN
(M)	35321389	CAP, FITTING
(N)	35294750	ELBOW, 90°
(P)	35279835	ELBOW,
(Q)	35593375	TUBE
(R)	35283068	ELBOW, 90°, SWIVEL NUT
(S)	35282904	TUBE ASSEMBLY
(T)	144A23S15	ELBOW, 90°

INGERSOLL-RAND COMPANY

OIL PIPING COMPLETE

2-9-84 | 35845064



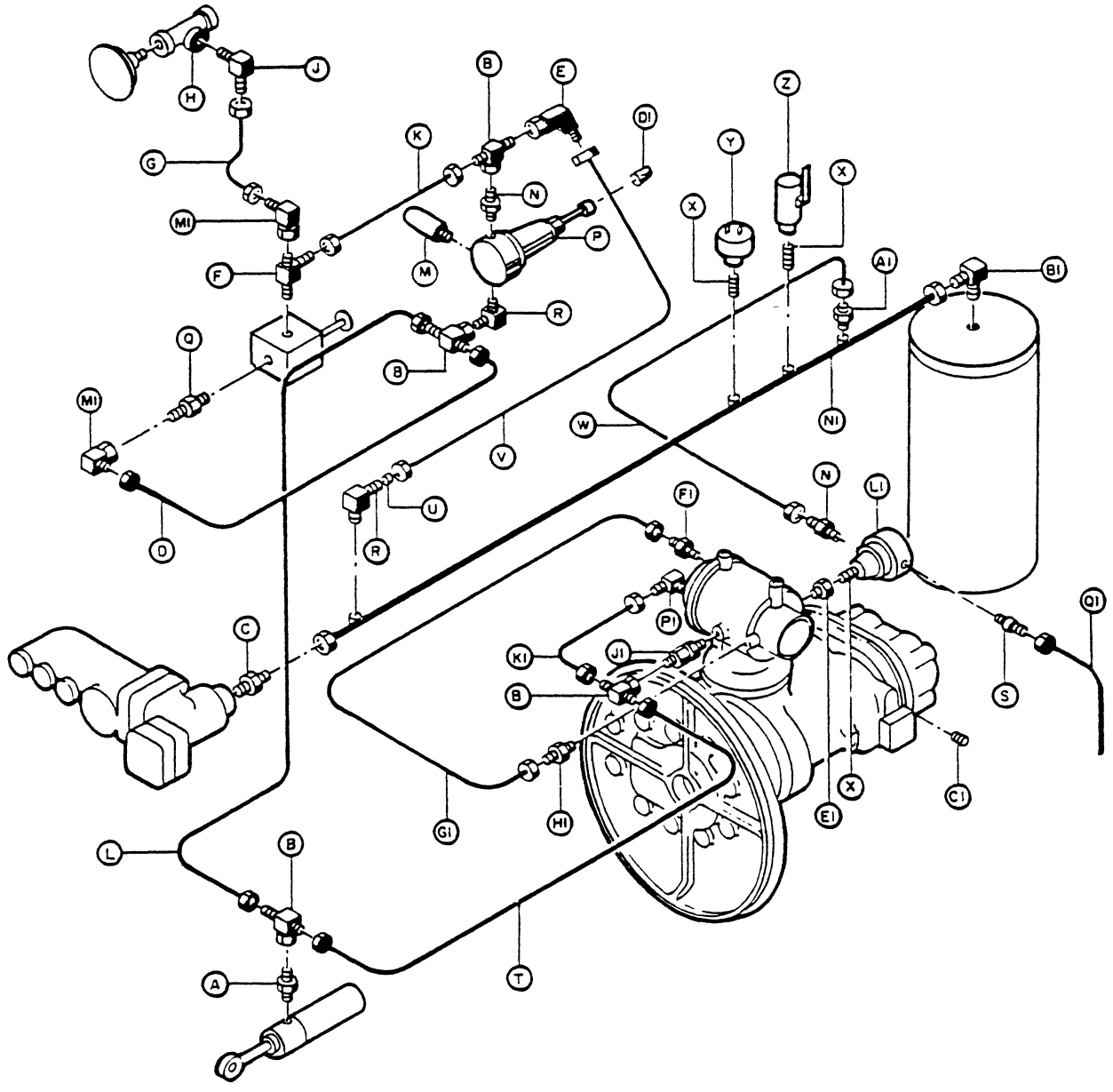
(A) 108A23S20	CONNECTOR	
(B) 35283092	TEE	
(C) 35279785	CONNECTOR	
(D) 35322262	TUBE	
(E) 35283100	ELBOW, 45°	
(F) 35279850	TEE, RUN	
(G) 35283282	HOSE	
(H) 71A7M2	TEE	
(J) 35279934	ELBOW, 90°	
(K) 35322270	TUBE	
(L) 35282987	HOSE	
(M) 35357870	MUFFLER, ORIFICED	
(N) 35284082	CONNECTOR	
(P) 35355106	REGULATOR, PRESS.	
(Q) 35283076	CONNECTOR	
(R) 35279934	ELBOW, 90°	
(S) X1080T53A	CONNECTOR	
(T) 35288042	TUBE	
(U) 35333723	FILTER, IN-LINE	
(V) 35592500	TUBE	
(W) 35330513	TUBE	
(X) 19A7S2	NIPPLE	
(Y) 35362110	VALVE, SOLENOID	
(Z) 35324839	VALVE, BLOWDOWN	
(AI) 35284082	CONNECTOR	
(BI) 109A23S20	ELBOW, 90°	
(CI) 35287556	PLUG	
(DI) 35326065	KNOB	
(EI) 35302314	ADAPTER	
(FI) 35323542	CONNECTOR	
(GI) 35282292	TUBE	
(HI) 35316587	CONNECTOR	
(JI) 35328459	VALVE, CHECK	
(KI) 35583012	TUBE	
(LI) 35322379	VALVE, BLOWDOWN	
(MI) 35283068	ELBOW, 90°	
(NI) 36726990	PIPE, SERVICE	
(PI) 35279827	ELBOW, 90°	
(QI) 35330588	HOSE	

INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

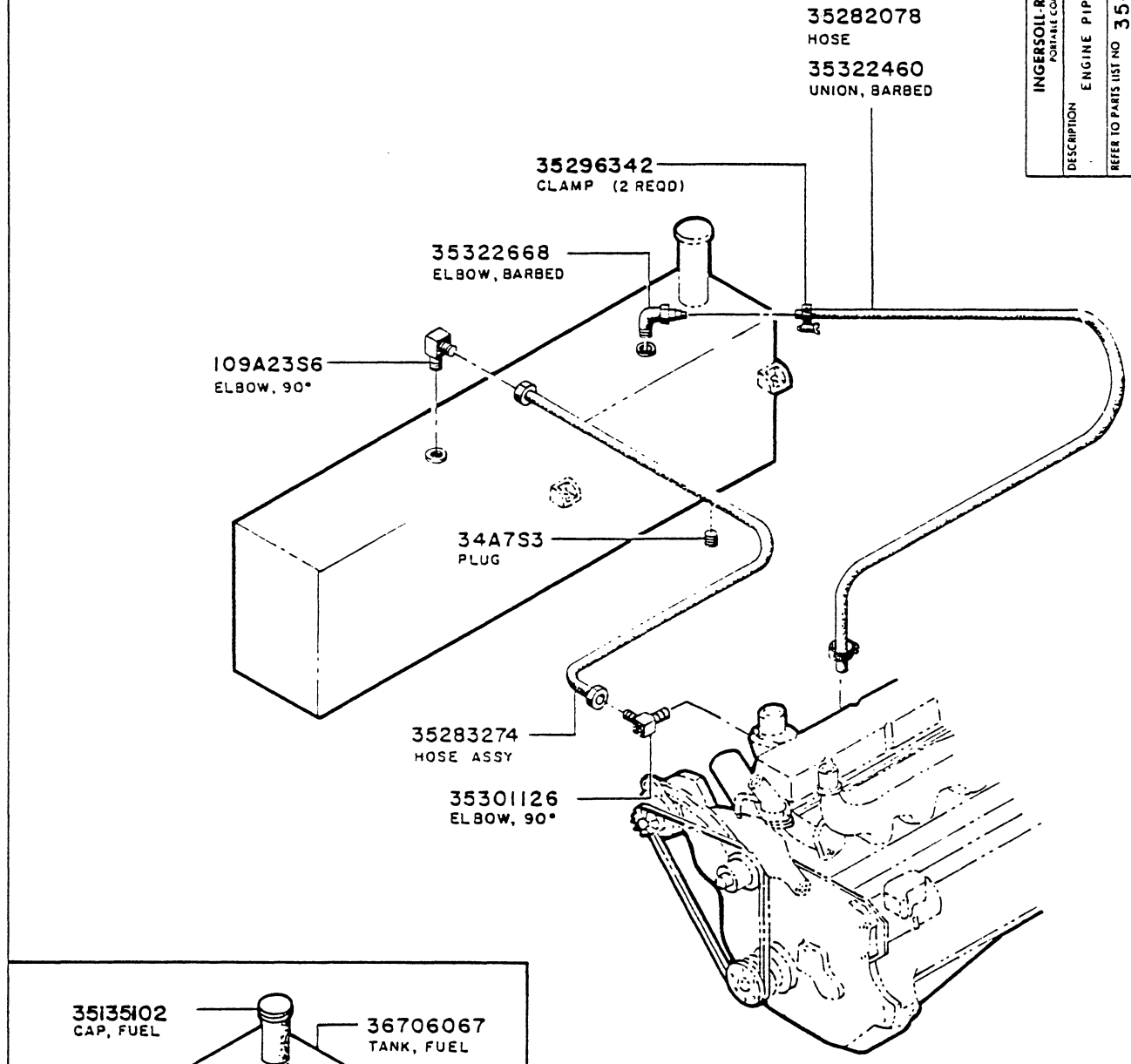
DESCRIPTION: AIR PIPING COMPLETE

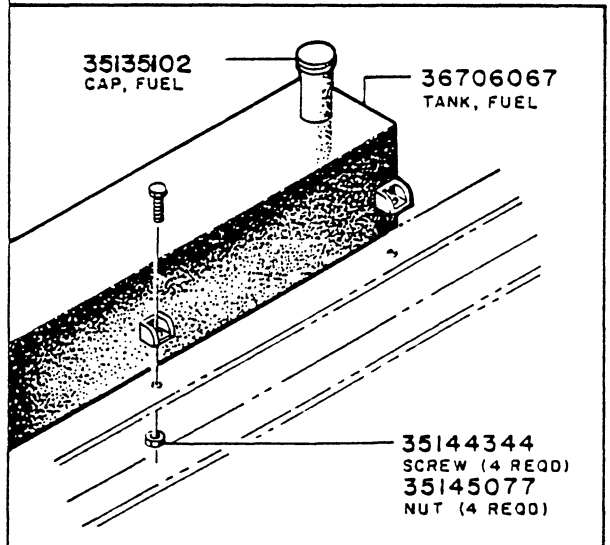
REFER TO PARTS LIST NO

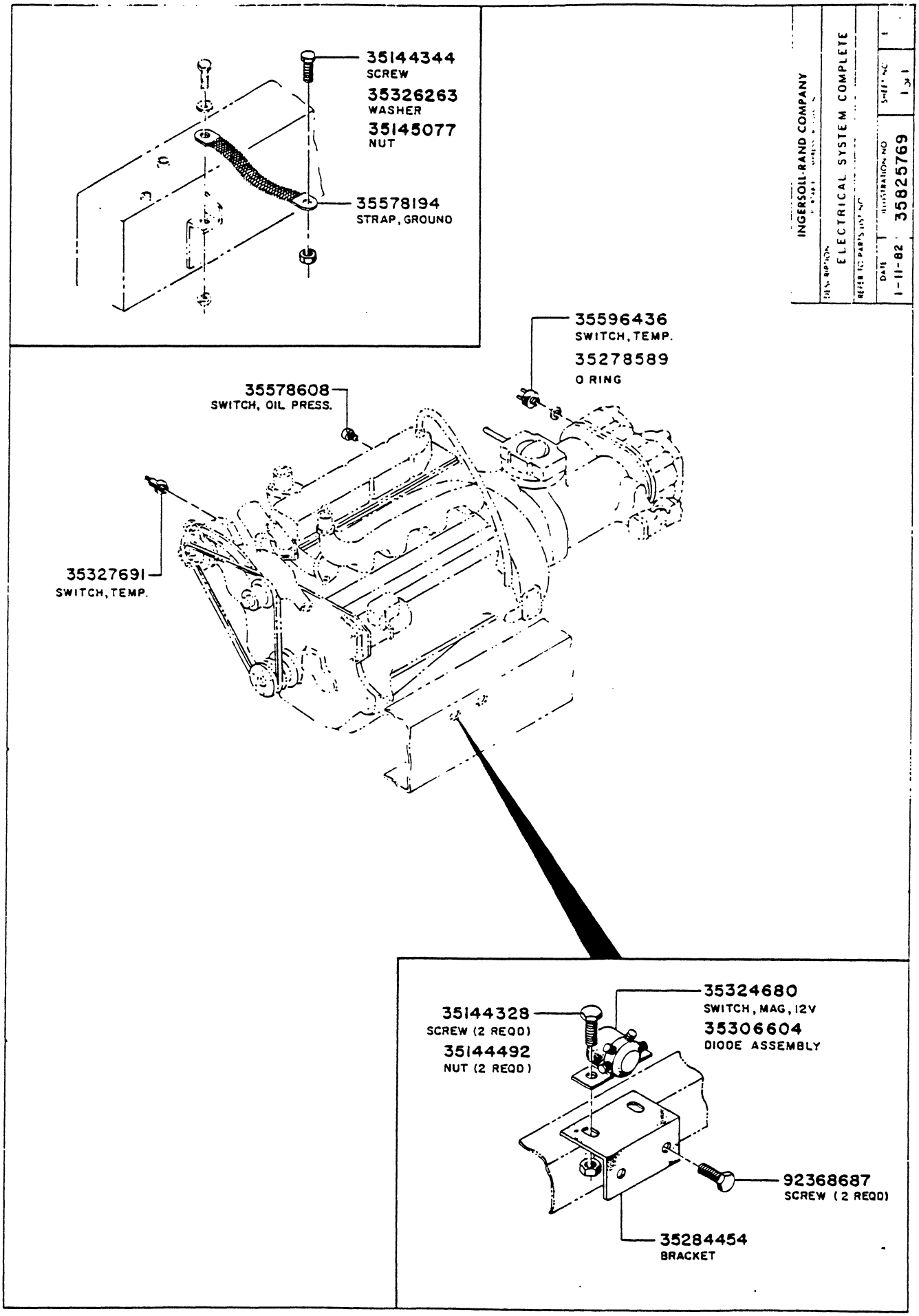
DATE	ILLUSTRATION NO	SHEET NO	E C
3-29-84	35845221	OF	



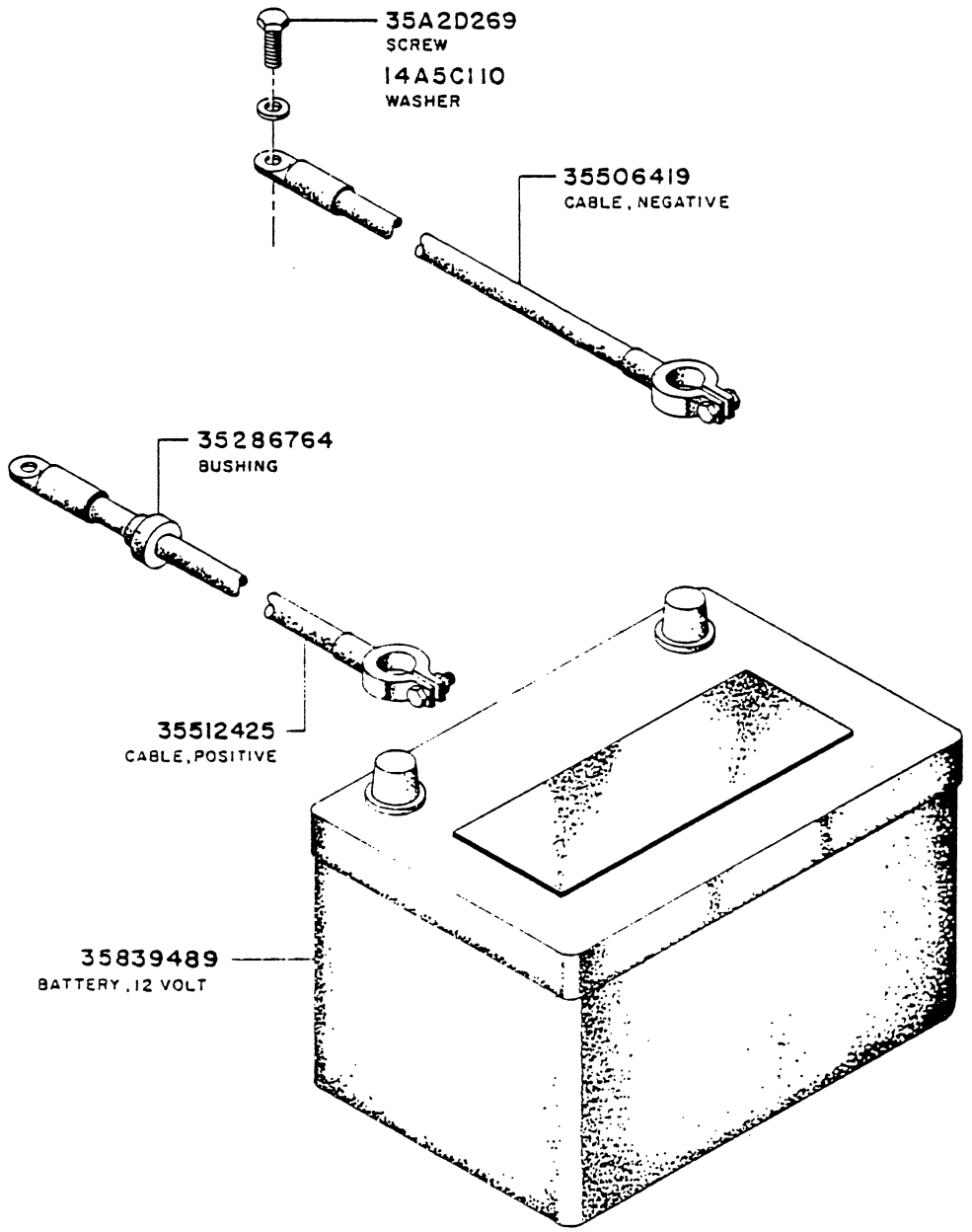
INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION			E/C
DESCRIPTION ENGINE PIPING COMPLETE			
REFER TO PARTS LIST NO 35049246	ILLUSTRATION NO 35825751	SHEET NO 1 OF 1	
DATE 8-1-84			

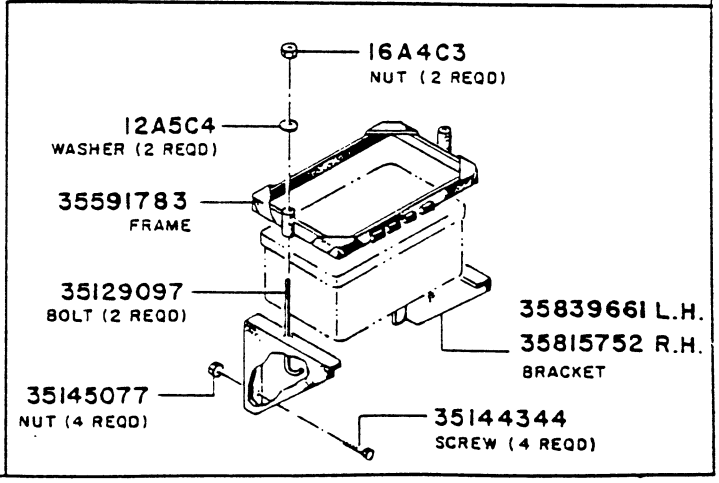




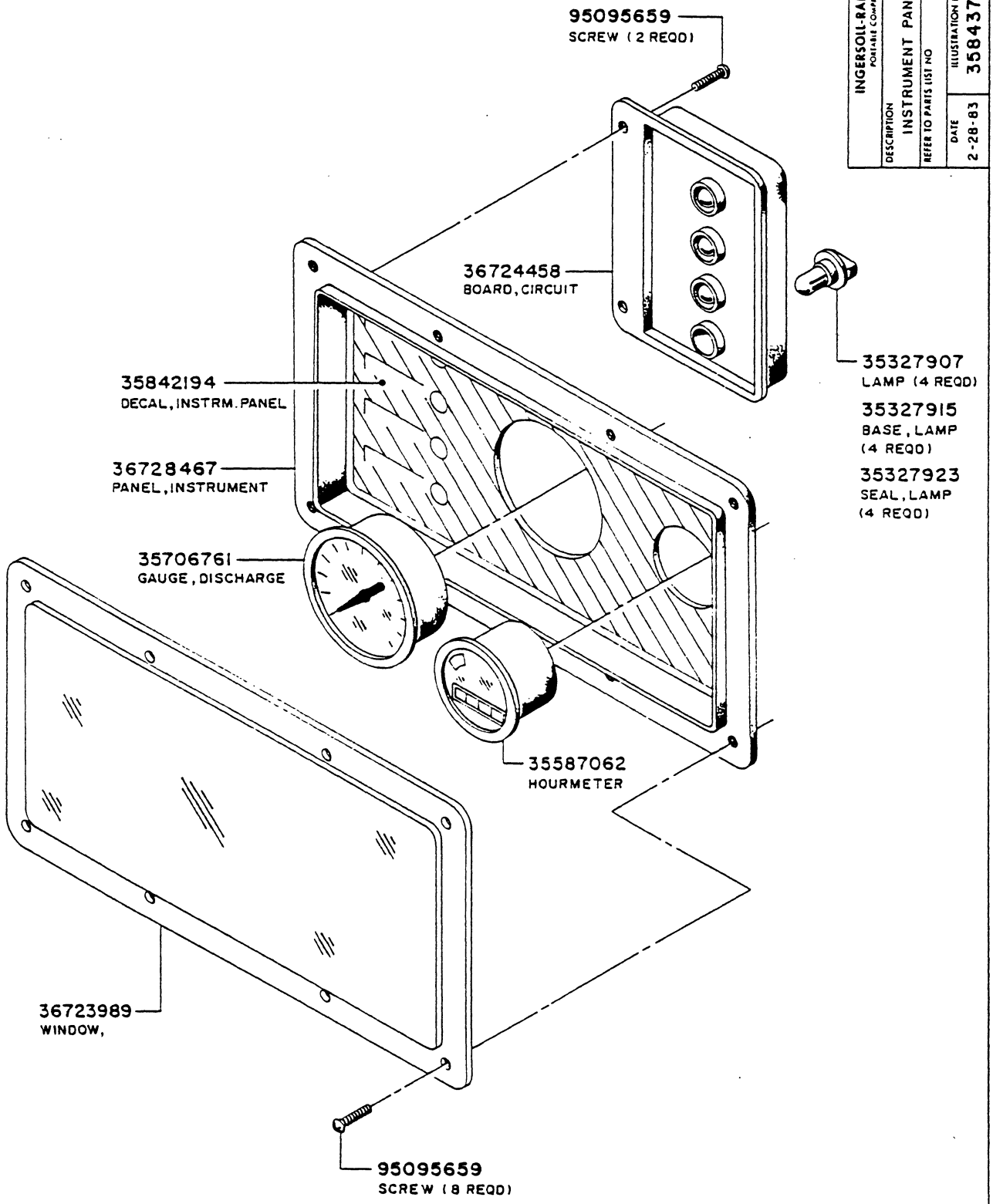

35144344
SCREW
35326263
WASHER
35145077
NUT
35578194
STRAP, GROUND
INGERSOLL-RAND COMPANY
ELECTRICAL SYSTEM COMPLETE
DATE
1-11-82
35825769
35596436
SWITCH, TEMP.
35278589
O RING
35578608
SWITCH, OIL PRESS.
35327691
SWITCH, TEMP.
35324680
SWITCH, MAG, 12V
35306604
DIODE ASSEMBLY
35144328
SCREW (2 REQD)
35144492
NUT (2 REQD)
92368687
SCREW (2 REQD)
35284454
BRACKET

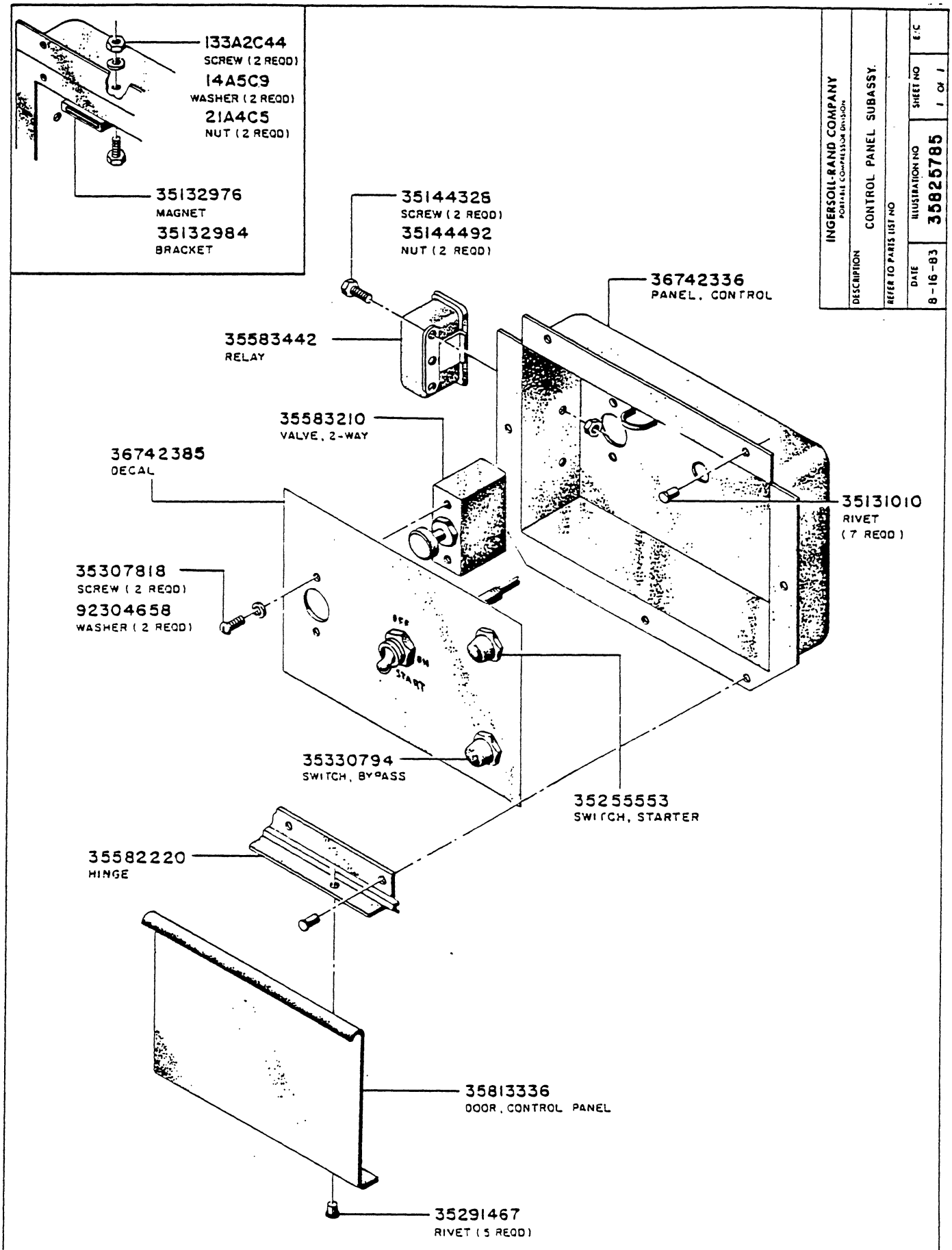
INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION			E/C
DESCRIPTION	BATTERY & MOUNTING		
REFER TO PARTS LIST NO	35047760	ILLUSTRATION NO	SHEET NO
DATE 10/23/80		35825777	1 of 1

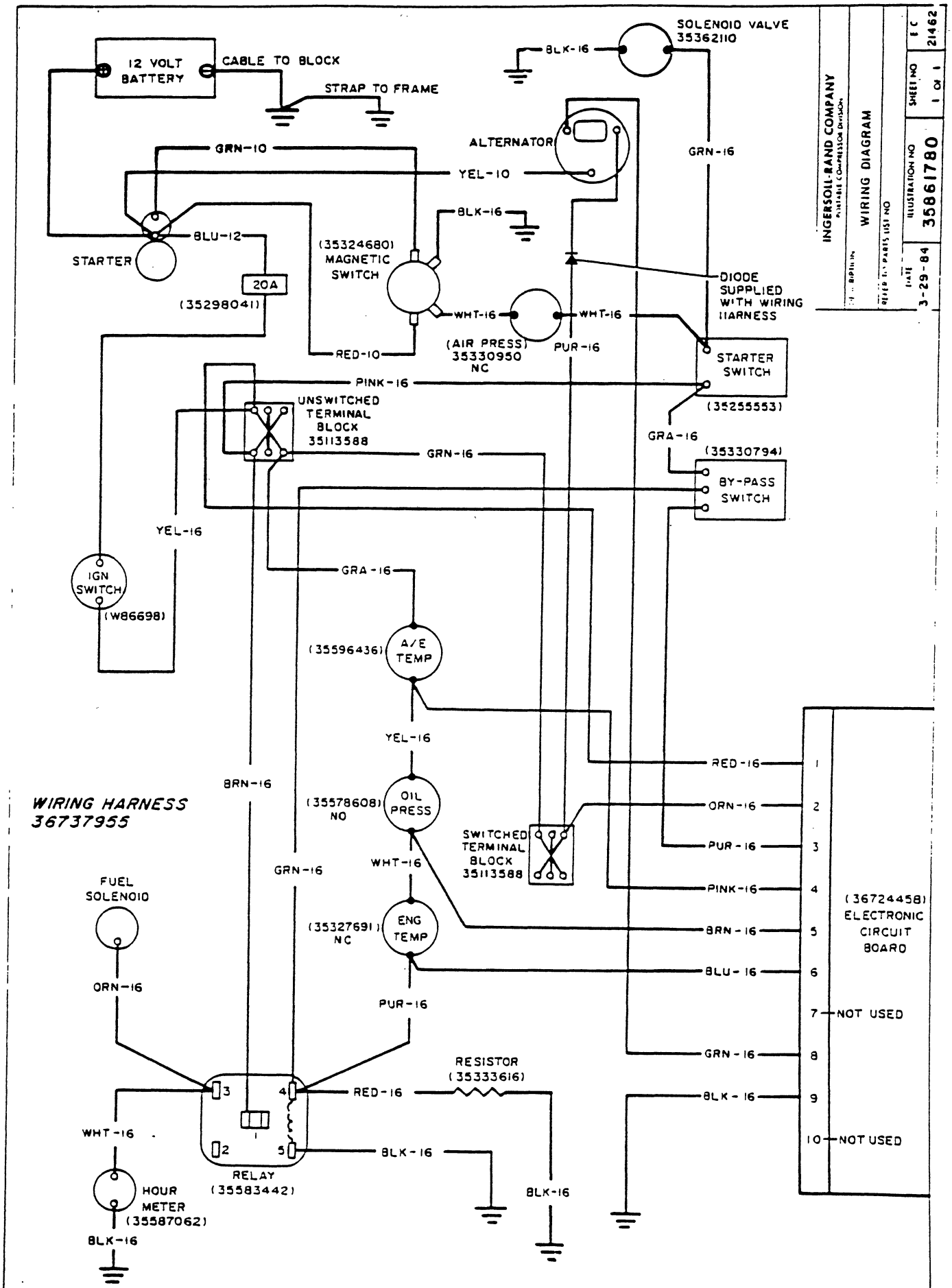


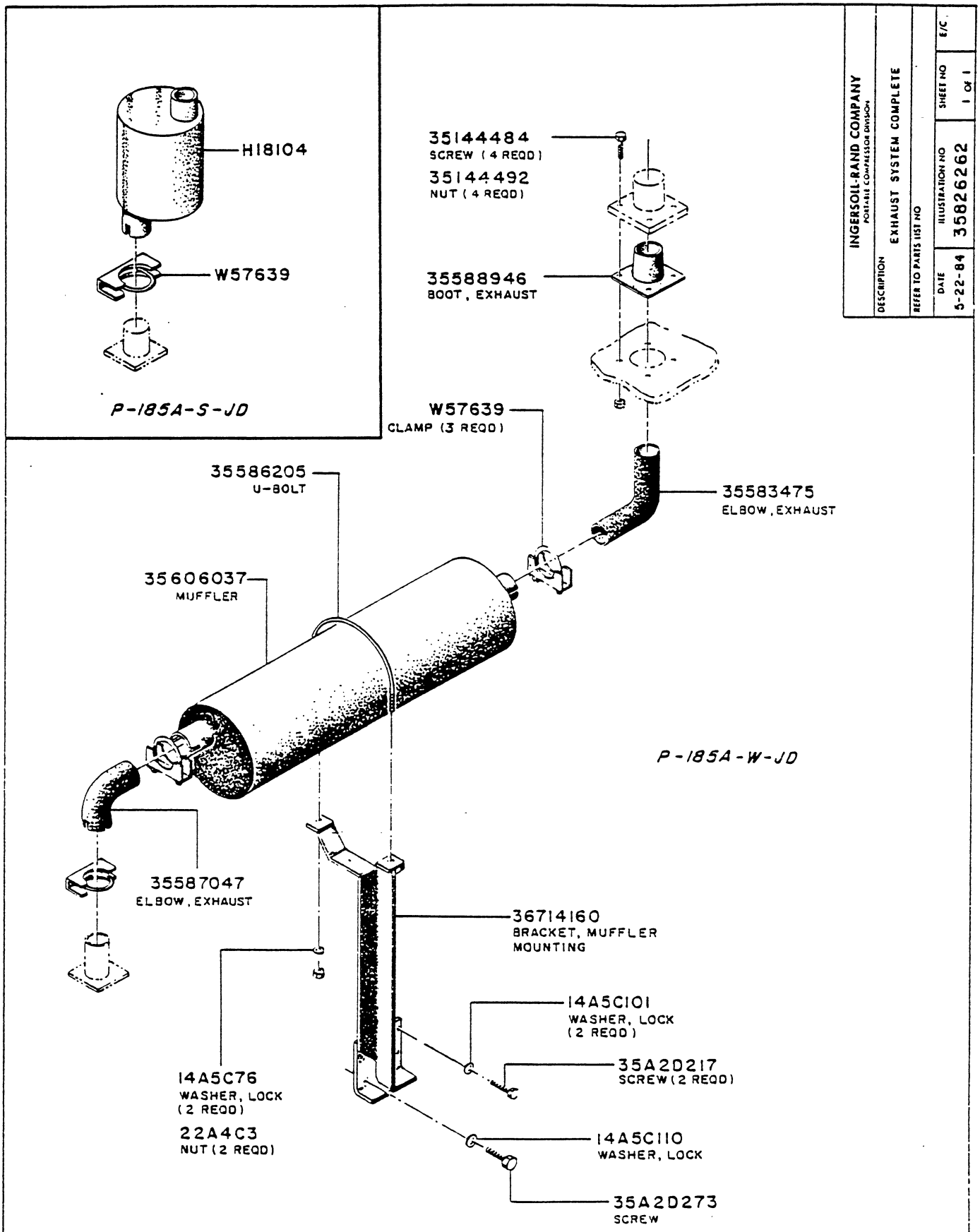


INGERSOLL-RAND COMPANY PORTABLE COMPRESSOR DIVISION			
DESCRIPTION INSTRUMENT PANEL SUB-ASSEMBLY			
REFER TO PARTS LIST NO			
DATE 2-28-83	ILLUSTRATION NO 35843762	SHEET NO OF	E/C




133A2C44
SCREW (2 REQD)
14A5C9
WASHER (2 REQD)
21A4C5
NUT (2 REQD)
35132976
MAGNET
35132984
BRACKET
35144328
SCREW (2 REQD)
35144492
NUT (2 REQD)
36742336
PANEL, CONTROL
35583442
RELAY
35583210
VALVE, 2-WAY
36742385
DECAL
35131010
RIVET
(7 REQD)
35307818
SCREW (2 REQD)
92304658
WASHER (2 REQD)
RUN
START
35330794
SWITCH, BYPASS
35255553
SWITCH, STARTER
35582220
HINGE
35813336
DOOR, CONTROL PANEL
35291467
RIVET (5 REQD)
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION
CONTROL PANEL SUBASSY.
REFER TO PARTS LIST NO
DATE
8-16-83
ILLUSTRATION NO
35825785
SHEET NO
1 OF 1
E.C.


INGERSOLL-RAND COMPANY
WIRING DIAGRAM
ILLUSTRATION NO 35861780
SHEET NO 1 OF 1
E/C 21462
3-29-84
12 VOLT BATTERY
CABLE TO BLOCK
STRAP TO FRAME
SOLENOID VALVE 35362110
BLK-16
ALTERNATOR
GRN-16
GRN-10
YEL-10
BLK-16
BLU-12
STARTER
20A
(35298041)
(35324680) MAGNETIC SWITCH
DIODE SUPPLIED WITH WIRING HARNESS
WHT-16
WHT-16
(AIR PRESS) 35330950 NC
PUR-16
RED-10
STARTER SWITCH
(35255553)
PINK-16
UNSWITCHED TERMINAL BLOCK 35113588
GRA-16
(35330794)
GRN-16
BY-PASS SWITCH
YEL-16
IGN SWITCH
(W86698)
GRA-16
(35596436) A/E TEMP
YEL-16
BRN-16
WIRING HARNESS 36737955
(35578608) NO OIL PRESS
SWITCHED TERMINAL BLOCK 35113588
RED-16
ORN-16
PUR-16
PINK-16
WHT-16
GRN-16
FUEL SOLENOID
(35327691) NC ENG TEMP
BRN-16
BLU-16
ORN-16
PUR-16
(36724458) ELECTRONIC CIRCUIT BOARD
1
2
3
4
5
6
7 NOT USED
8
9
10 NOT USED
GRN-16
RESISTOR (35333616)
RED-16
BLK-16
WHT-16
BLK-16
3
4
1
2
5
RELAY (35583442)
HOUR METER (35587062)
BLK-16
BLK-16


INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION
DESCRIPTION
EXHAUST SYSTEM COMPLETE
REFER TO PARTS LIST NO
DATE
5-22-84
ILLUSTRATION NO
35826262
SHEET NO
1 OF 1
E/C
H18104
W57639
P-185A-S-JD
35144484
SCREW (4 REQD)
35144492
NUT (4 REQD)
35588946
BOOT, EXHAUST
W57639
CLAMP (3 REQD)
35586205
U-BOLT
35583475
ELBOW, EXHAUST
35606037
MUFFLER
P-185A-W-JD
35587047
ELBOW, EXHAUST
36714160
BRACKET, MUFFLER
MOUNTING
14A5C101
WASHER, LOCK
(2 REQD)
35A2D217
SCREW (2 REQD)
14A5C76
WASHER, LOCK
(2 REQD)
22A4C3
NUT (2 REQD)
14A5C110
WASHER, LOCK
35A2D273
SCREW

DESCRIPTION / PART NO.	QTY
(A) 92368687 SCREW	110
(B) 35144328 SCREW	20
(C) 35144492 NUT	
(D) 35275023 NUT	4
(E) 14A5C65 WASHER, LOCK	4
(F) 12A5C3 WASHER	2
(G) 35252741 SCREW	4
(H) 35252618 NUT	4
(J) 35294859 BUSHING, SNAP	1

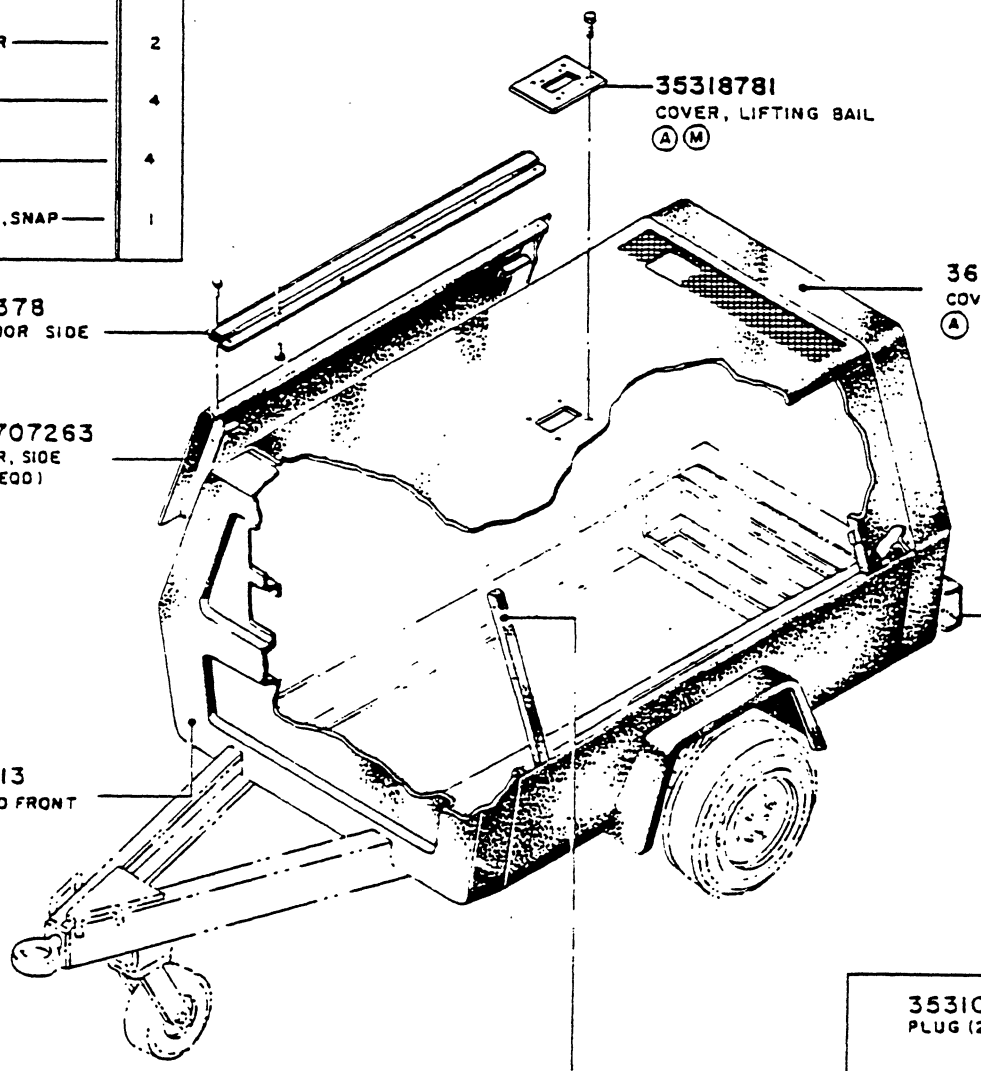
DESCRIPTION/PART NO.	QTY
(K) 35A2D2G SCREW	20
(L) 16A4C1 NUT	20
(M) 35287119 SCREW	8

INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION: ENCLOSURE

REFER TO PARTS LIST NO

DATE	ILLUSTRATION NO	SHEET NO	EC
4-5-84	35833862	1 of 2	



35318781
COVER, LIFTING BAIL
(A) (M)

36705036
COVER, END REAR
(A)

36708378
HINGE, DOOR SIDE
(K) (L)

36707263
DOOR, SIDE
(2 REQD)

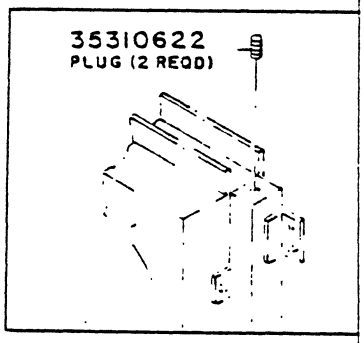
36707073
BUMPER
(G) (H)

36733913
COVER, END FRONT
(A)

P-175A-S-D

P-185A-S-JD

35821826 R.H.
35821818 L.H.
DOOR STOP, FRONT
(A) (B) (C)



DESCRIPTION / PART NO	QTY.	DESCRIPTION / PART NO.	QTY
(A) 92368687 SCREW	110	(L) 35275023 NUT	8
(E) 14A5C65 WASHER	8	(M) 35287119 SCREW	4
(F) 12A5C3 WASHER	4		
(J) 35144336 SCREW	5		
(K) 35252600 SCREW	5		

INGERSOLL-RAND COMPANY

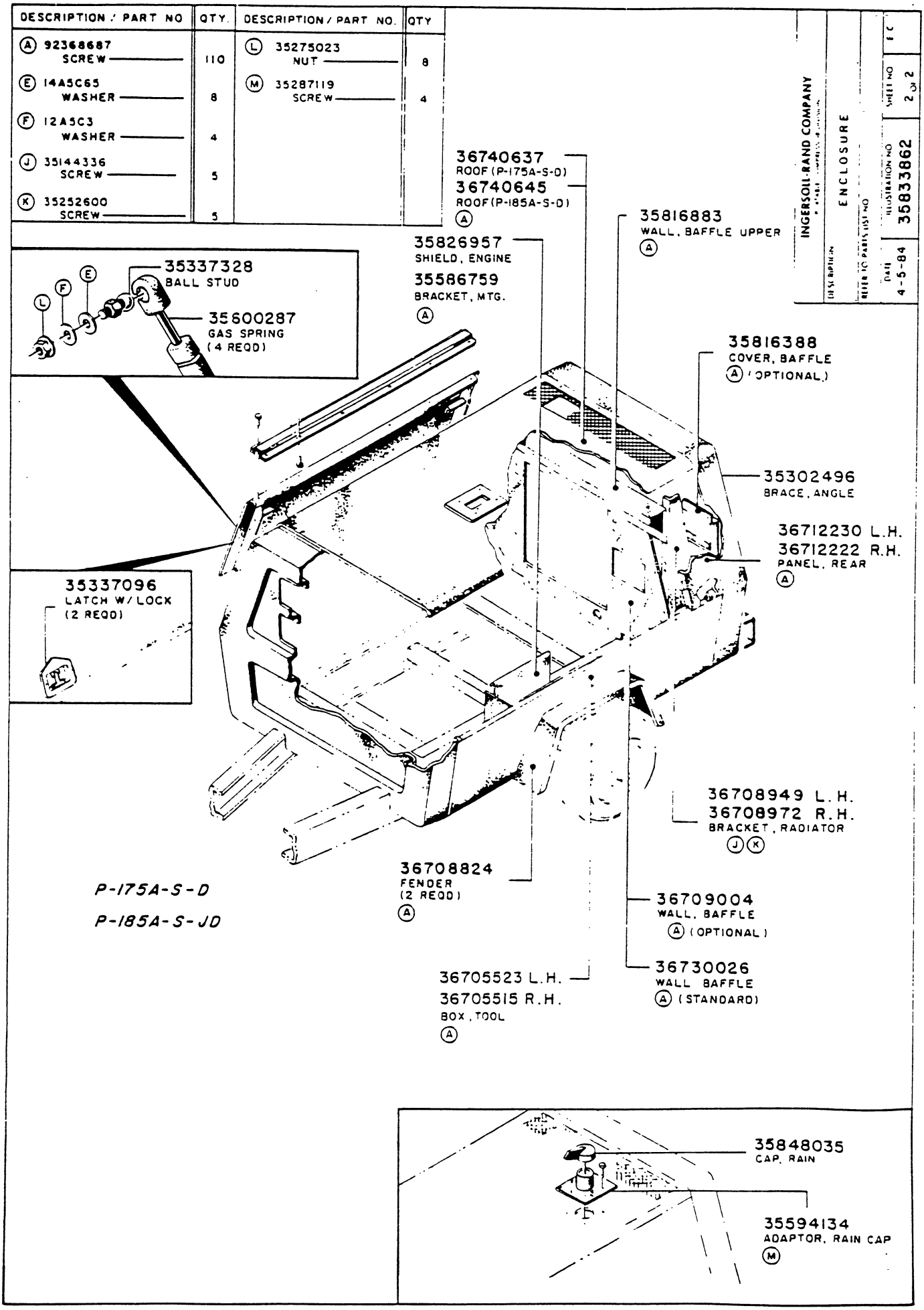
ENCLOSURE

ILLUSTRATION NO 35833862

DATE 4-5-84

SHEET NO 2 OF 2

FC



DESCRIPTION / PART NO.	QTY
(A) 92368687 SCREW	110
(B) 35144328 SCREW	24
(C) 35144492 NUT	24
(D) 35275023 NUT	4
(E) 14A5C65 WASHER, LOCK	4
(F) 12A5C3 WASHER	2
(G) 35252741 SCREW	4
(H) 35252618 NUT	4
(J) 35294859 BUSHING, SNAP	1

DESCRIPTION / PART NO.	QTY
(K) 35A202G SCREW	20
(L) 16A4C1 NUT	20
(M) 35287119 SCREW	4

INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION: ENCLOSURE

REFER TO PARTS LIST NO

DATE: 4-5-84

ILLUSTRATION NO: 35825801

SHEET NO: 1 of 2

E/C

35294966
COVER, EXHAUST
(B)

35318781
COVER, LIFTING BAIL
(A)(M)

(K)
(L)

36708378
HINGE, DOOR SIDE
(A)(B)(C)

36707263
DOOR, SIDE
(2 REQD)

35073758
BAFFLE, FRONT
(A)(B)(C)(J)

35246768
GROMMET

36733913
COVER, END FRONT
(A)

35049360
COVER, END REAR
(A)

35816396
INSULATION, FOAM REAR

35295930
NAIL, GRIP

35582071
PIECE, FILLER
(B)(C)

36707073
BUMPER
(G)(H)

35826957
SHIELD, ENGINE
(A)

35073741
BAFFLE, LH FRONT

35295930
GRIP, NAIL (16 REQD)

35824598
PAN, BELLY FRONT
(A)

35821826 R.H.
35821818 L.H.
DOOR STOP, FRONT
(A)(B)(C)

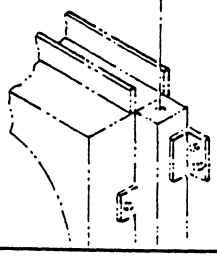
35296516
COVER, OIL DRAIN (FRONT)

35256429
STUD, SHORT (3 REQD)

35256445
RETAINER (3 REQD)

35256452
CLIP ON, RECEPTACLE

35294537
PLUG (2 REQD)



DESCRIPTION / PART NO.	QTY.	DESCRIPTION / PART NO.	QTY
(A) 92368687 SCREW	110	(L) 35275023 NUT	8
(E) 14A5C65 WASHER	8	(M) 35287119 SCREW	4
(F) 12A5C3 WASHER	4	(N) 35144492 NUT	10
(J) 35144336 SCREW	5	(P) 35144328 SCREW	6
(K) 35252600 SCREW	5		

INGERSOLL-RAND COMPANY
DESCRIPTION: ENCLOSURE
REFER TO PARTS LIST NO
DATE 4-5-84
ILLUSTRATION NO 35825801
SHEET NO 2 OF 2
EC

35337328
BALL STUD
35600287
GAS SPRING
(4 REQD)

35816883
WALL, BAFFLE UPPER
(A)

36740983
ROOF

35816388
COVER, BAFFLE
(A) (OPTIONAL)

35302496
BRACE, ANGLE

36712230 L.H.
36712222 R.H.
PANEL, REAR
(A)

35303239
SEAL (2 REQD)

35298892
CLIP (6 REQD)

35337096
LATCH W/LOCK

36708949 L.H.
36708972 R.H.
BRACKET, RADIATOR
(A)(J)(K)

36708824
FENDER
(2 REQD)
(A)

36722353
WALL, BAFFLE (OPTIONAL)
(A)(N)(P)

36730026
WALL, BAFFLE (STANDARD)

36705523 L.H.
36705515 R.H.
BOX, TOOL
(A)(N)(P)

TOOL TRAY
35061019
(OPTIONAL)

35144328
SCREW (2 REQD)

35144492
NUT (2 REQD)

36717163
TRAY, TOOL

35314574
STUD

35314582
CLIP-ON

35314590
RETAINER
RUBBER

35144336
SCREW (2 REQD)

35252600
NUT (2 REQD)

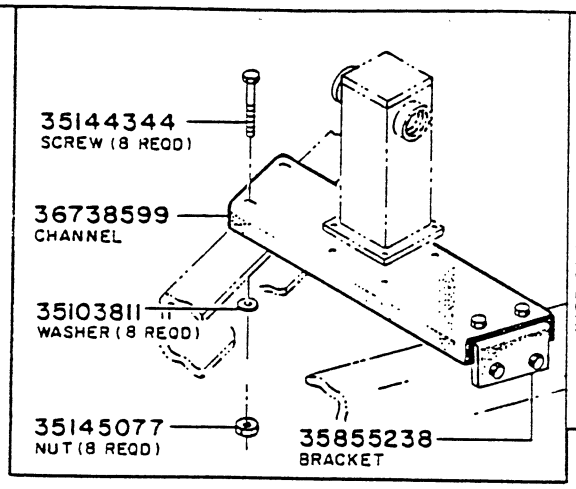
35848035
CAP, RAIN

35594134
ADAPTOR, RAIN CAP
(M)

OPTIONS

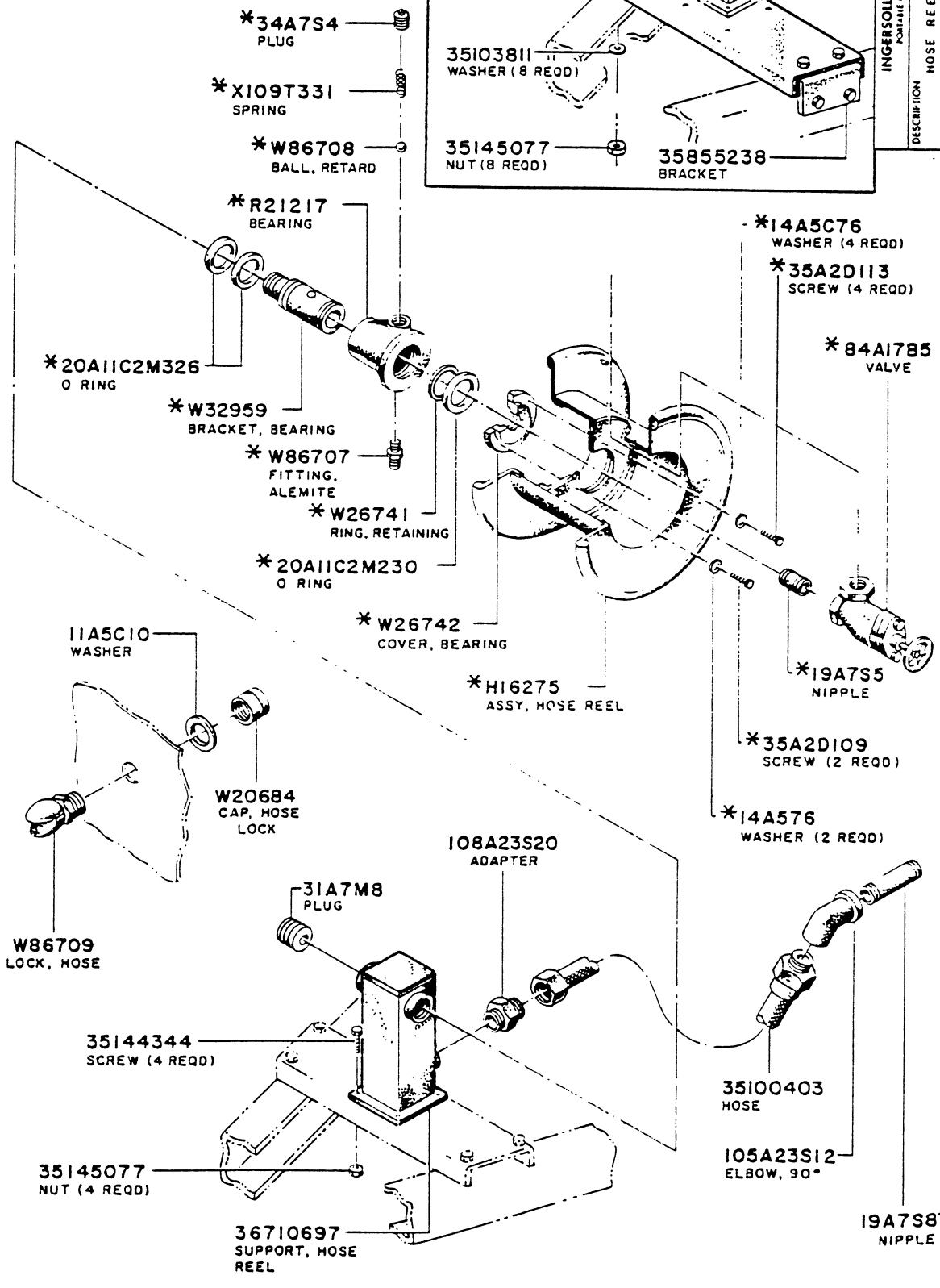
*50 FT. HOSE REEL SUBASSEMBLY
PART NO. 35010297

HOSE REEL COMPLETE
PART NO. 35082072

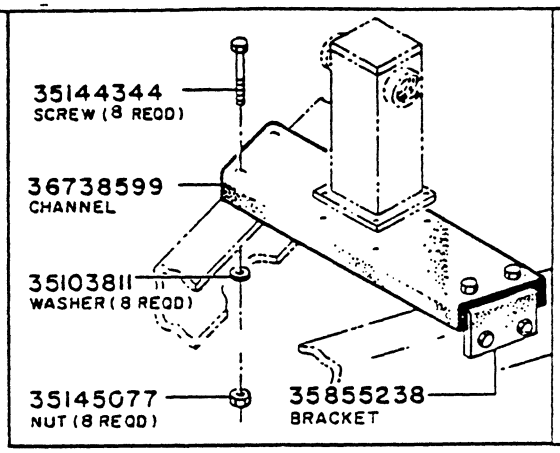


INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

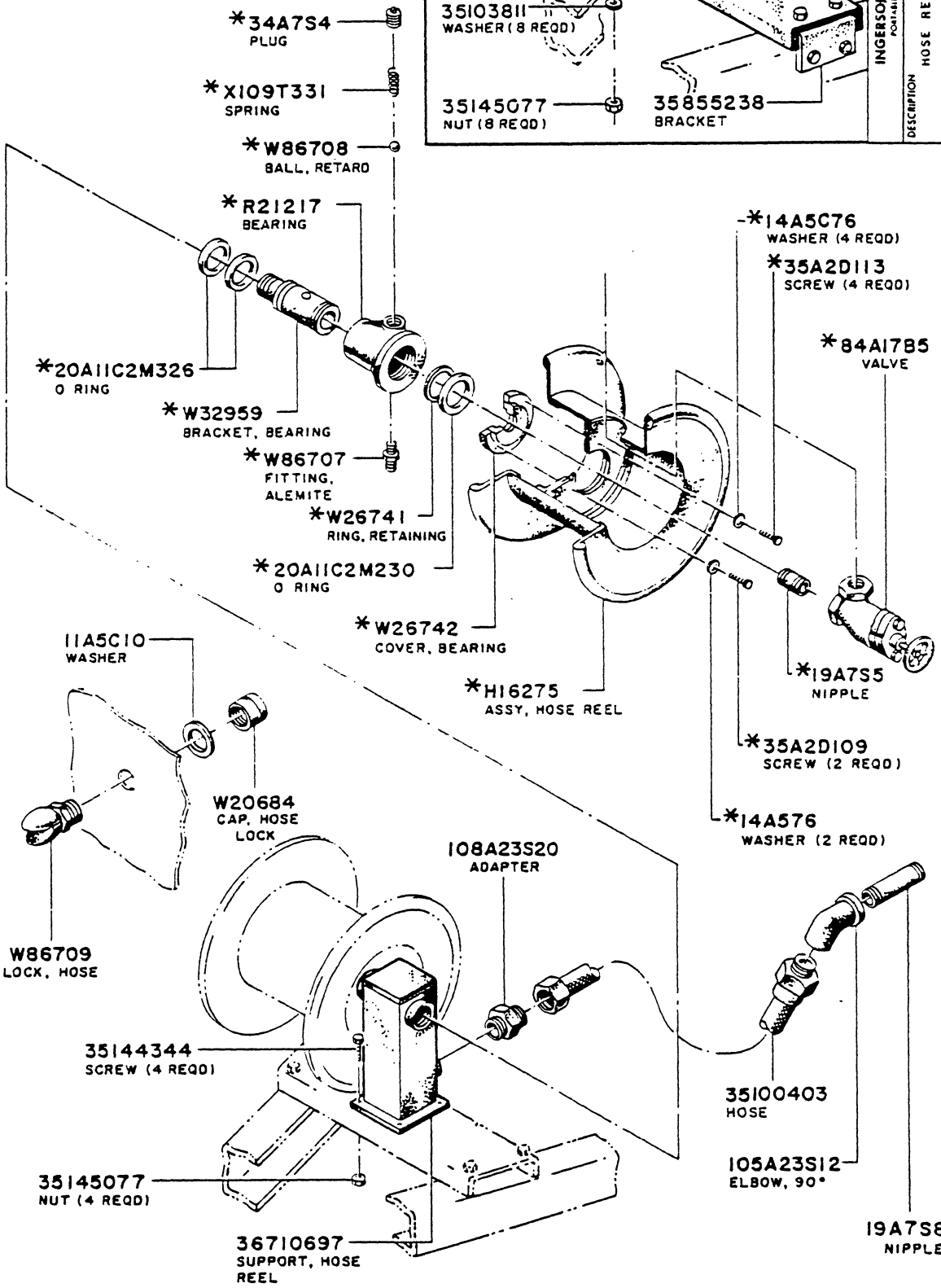
DESCRIPTION	REFER TO PARTS LIST NO	ILLUSTRATION NO	SHEET NO	E/C
HOSE REEL COMPLETE	35082072	35821040	1 OF 1	
	DATE 12-13-82			



*50 FT. DOUBLE HOSE REEL SUBASSEMBLY
PART NO. 35010297
(2 REQD)
HOSE REEL COMPLETE
PART NO. 35082080

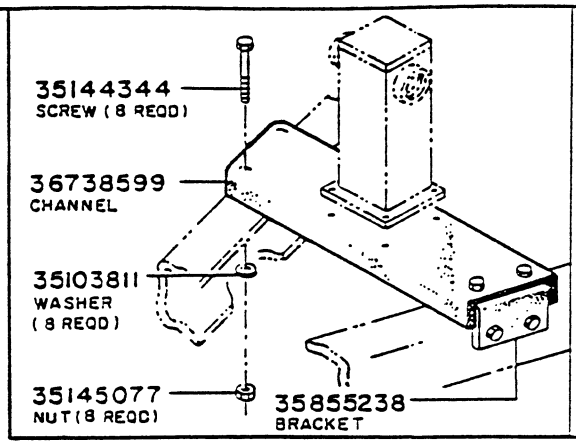


INGERSOL-RAND COMPANY PORTABLE COMPRESSOR DIVISION			E/C
DESCRIPTION HOSE REEL COMPLETE	REFER TO PARTS LIST NO 35082080	ILLUSTRATION NO 35821057	SHEET NO 1 OF 1
	DATE 12-13-82		



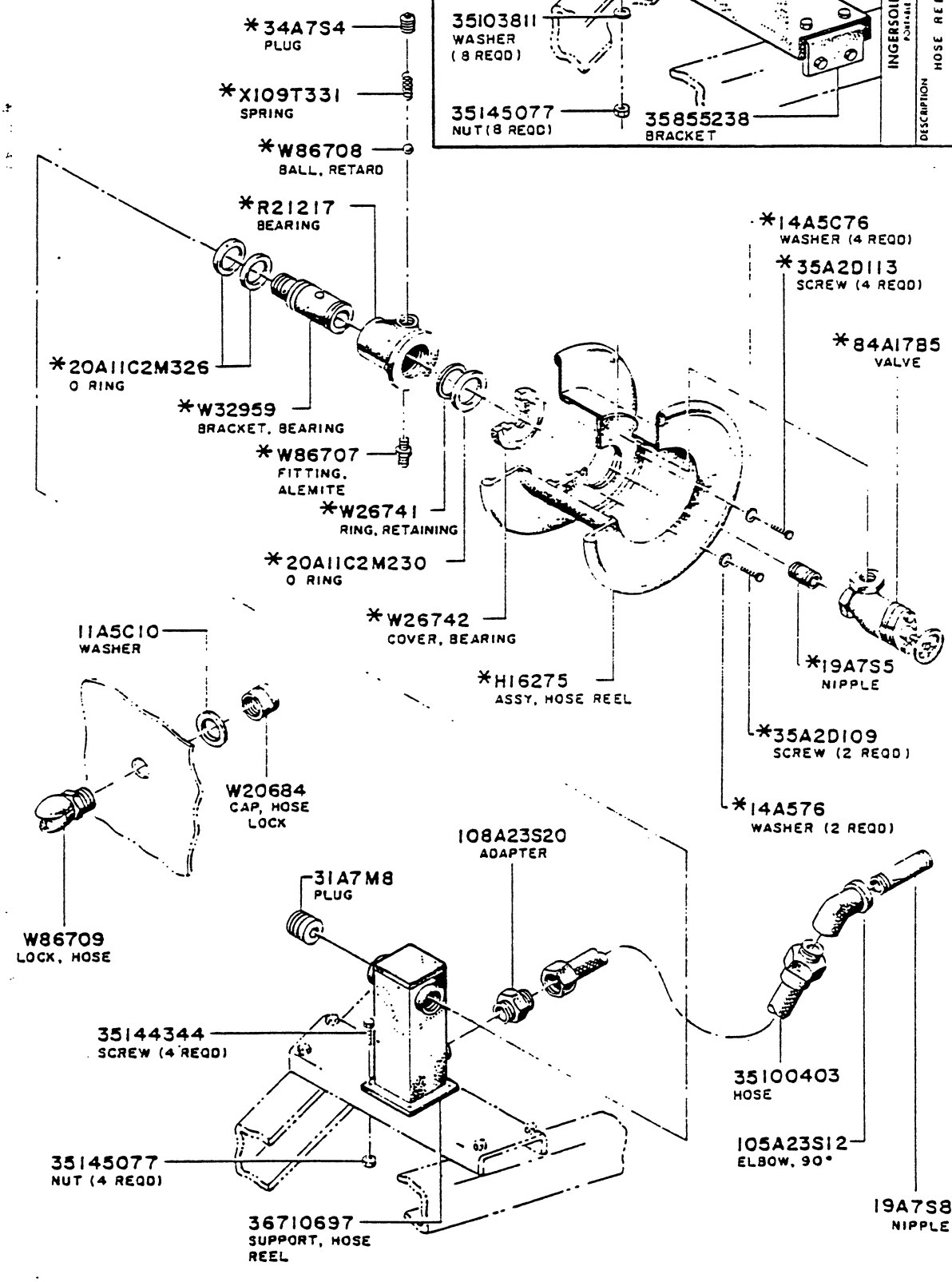
*100 FT. HOSE REEL SUBASSEMBLY
PART NO. 35010297

HOSE REEL COMPLETE
PART NO. 35082098



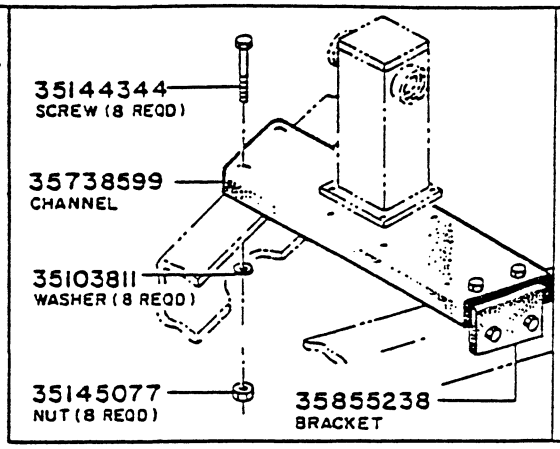
INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION	HOSE REEL COMPLETE		
REFER TO PARTS LIST NO	35082098	SHEET NO	E/C
DATE	ILLUSTRATION NO		1 OF 1
12-13-82	35821065		



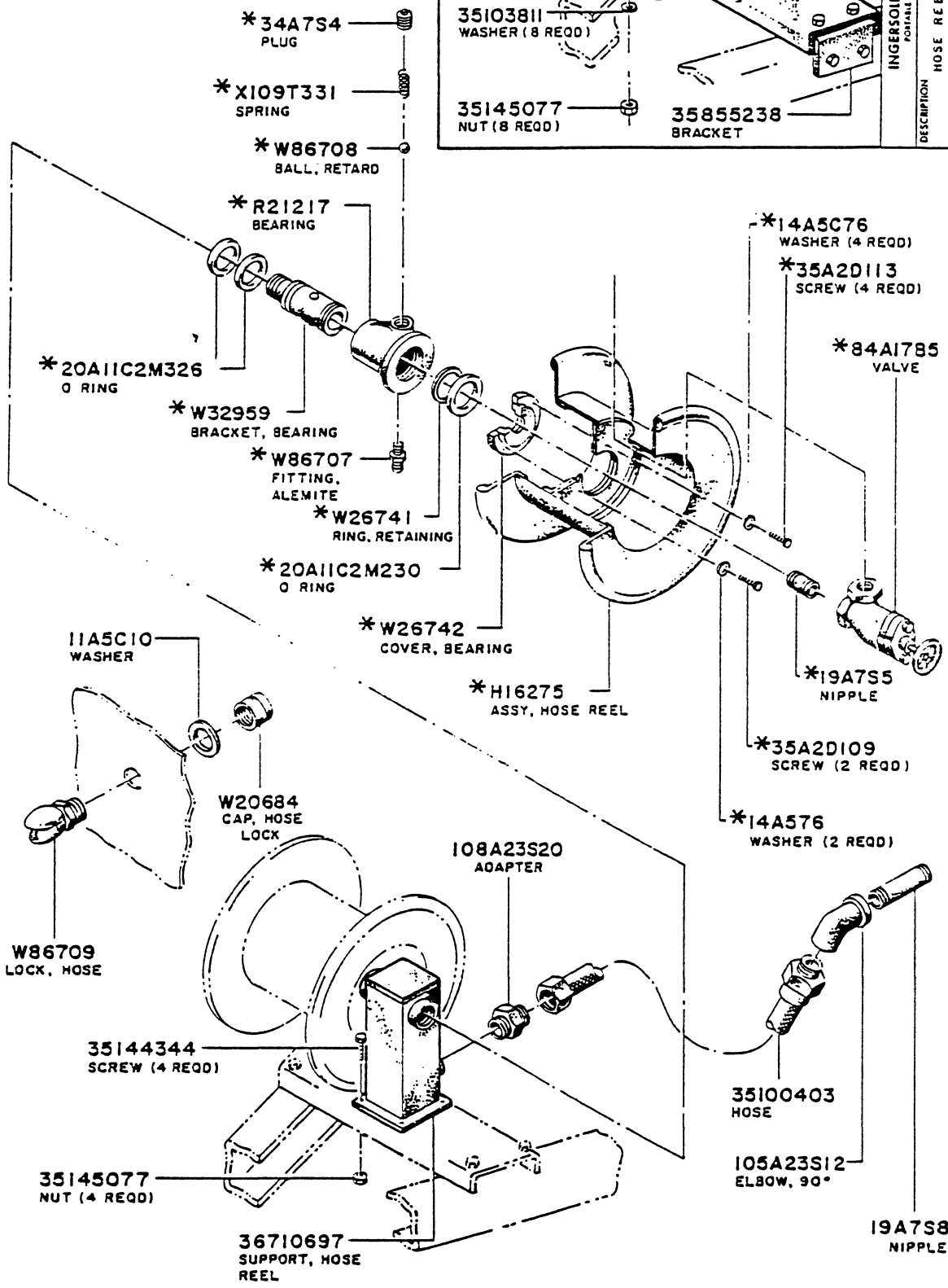
*100 FT. DOUBLE HOSE REEL SUBASSEMBLY
PART NO. 35010297

HOSE REEL COMPLETE
PART NO. 35082106



INGERSOLL-RAND COMPANY
PORTABLE COMPRESSOR DIVISION

DESCRIPTION	REFER TO PARTS LIST NO	DATE	ILLUSTRATION NO	SHEET NO	E/C
HOSE REEL COMPLETE	35082106	12-13-82	35821073	1 OF 1	



SECTION 9

HARDWARE

TABLE 1
SAE/Inch Screws

Part Number	Size	Description
119A2A117N	5/16"—18 UNC—3A x 1-1/4"	Hex. Socket Head (Nylon Insert)
119A2A146	1/4"—20 UNC—3A x 3/4"	Hex. Socket Head
119A2A148	1/4"—20 UNC—3A x 3/8"	Hex. Socket Head
119A2A198	3/8"—16 UNC—3A x 3/4"	Hex. Socket Head
119A2A202N	3/8"—16 UNC—3A x 1/1/4"	Hex. Socket Head (Nylon Insert)
119A2A206N	3/4"—16 UNC—3A x 2"	Hex. Socket Head (Nylon Insert)
120A2A169	5/16"—24 UNF—3A x 3/8"	Hex. Socket Head
123A2S66	.190 x 10—24 x1/2"	Self-Tapping
125A2C46P	#6—32 UNC—3A x 5/16"	Round Head Phillips
35A2D1	1/4"—20 UNC—2A x 1/2"	Hex Head
35A2D109	3/8"—15 UNC—2A x 3/4"	Hex Head
35A2D111	3/8"—16 UNC—2A x 1"	Hex Head
35A2D113	3/8"—16 UNC—2A x 1-1/4"	Hex Head
35A2D115	3/8"—16 UNC—2A x 1-1/2"	Hex Head
35A2D117	3/8"—16 UNC—2A x 2"	Hex Head
35A2D123	3/8"—16 UNC—2A x 3-1/2"	Hex Head
35A2D13	1/4"—20 UNC—2A x 2-1/2"	Hex Head
35A2D166	7/16"—14 UNC—2A x 1-1/4"	Hex Head
35A2D170	7/16"—14 UNC—2A x 2"	Hex Head
35A2D174	7/16"—14 UNC—2A x 3"	Hex Head
35A2D219	1/2"—13 UNC—2A x 1-1/4"	Hex Head
35A2D221	1/2"—13 UNC—2A x 1-1/2"	Hex Head
35A2D225	1/2"—13 UNC—2A x 1/2"	Hex Head
35A2D277	1/2"—13 UNC—2A x 3"	Hex Head
35A2D3P	1/4"—20 UNC—2A x 3/4"	Hex Head
35A2D326	5/8"—11 UNC—2A x 1-3/4"	Hex Head
35A2D327	5/8"—11 UNC—2A x 2"	Hex Head
35A2D330	5/8"—11 UNC—2A x 2-3/4"	Hex Head
35A2D335	5/8"—11 UNC—2A x 4"	Hex Head
35A2D377	3/4"—10 UNC—2A x 3/4"	Hex Head
35A2D382	3/4"—10 UNC—2A x 3"	Hex Head
35A2D384	3/4"—10 UNC—2A x 4"	Hex Head
35A2D386	3/4"—10 UNC—2A x 4"	Hex Head
35A2D4	1/4"—20 UNC—2A x 7/8"	Hex Head
35A2D5	1/4"—20 UNC—2A x 1"	Hex Head
35A2D56	5/16"—18 UNC—2A x 3/4"	Hex Head
35A2D58	5/16"—18 UNC—2A x 1"	Hex Head
35A2D60	5/16"—18 UNC—2A x 1-1/4"	Hex Head
35A2D68	5/16"—18 UNC—2A x 3"	Hex Head
35A2D9	1/4"—20 UNC—2A x 1-1/2"	Hex Head
35138759	1/4"—20 x 5/8"	Hex Washer Head, Thread-Forming, Type W Point
35139047	.190 x 10—24 x 3/4"	Hex Head, Self Tapping
35139781	#440 x 3/8"	Hex Washer Head, Thread-Forming, Type W Point
35144328	5/16"—18 x 3/4"	M-F Flange Whiz-Lock®
35144336	5/16"—18 x 3/4"	M-F Flange, Whiz-Lock®
35144344	3/8"—16 x 1"	M-F Flange, Whiz-Lock®
35144484	1/4"—20 x 5/8"	M-F Flange, Whiz-Lock®
35145259	3/8"—16 x 1 1/4"	M-F Flange, Whiz-Lock®
35252451	1/4"—20 x 1"	M-F Flange, Whiz-Lock®
35252493	3/8"—16 x 3/4"	M-F Flange, Whiz-Lock®
35252568	1/2"—13 x 1-1/4"	M-F Flange, Whiz-Lock®
35252725	3/8"—16 x 1/2"	M-F Flange, Whiz-Lock®
35252741	1/2"—13 x 1-1/2"	M-F Flange, Whiz-Lock®
35277631	#6—32 UNC—2A x 3/16"	Round Head, Slotted
35284371	1/4" x 3/4"	Hex Washer Head, Self Tapping, Type A-B
35287119	1/4"—14 x 3/4"	Hex Washer Head, Self Tapping
83A2C144	1/4"—20 UNC—2A x 1/2"	Round Head, Slotted
83A2C49	#6—32 UNC—2A x 1/2"	Round Head, Slotted

SAE/Inch Nuts

Part Number	Size	Description
16A4C1	1/4"—10 UNC—2B	Hex
16A4C1P	1/4"—20 UNC—2B	Hex
16A4C2	5/16"—18 UNC—2B	Hex
16A4C3	3/8"—16 UNC—2B	Hex
16A4C5	1/2"—13 UNC—2B	Hex
16A4C7	5/8"—11 UNC—2B	Hex
16A4C8	3/4"—10 UNC—2B	Hex
21A4C7	#6-32 UNC—2B	Hex
22A4C2	5/16"—24 UNF—2B	Hex
35144492	1/4"—20	M-F Flange, Whiz-Lock®
35145077	3/8"—16	M-F Flange, Whiz-Lock®
35252600	5/16"—18	M-F Flange, Whiz-Lock®
35252618	1/2"—13	M-F Flange, Whiz-Lock®

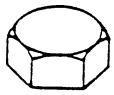
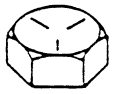
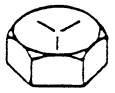
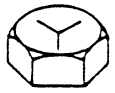
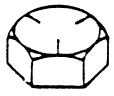
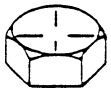
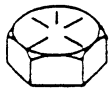
®Reg. T.M. of MacLean-Fogg Lock Nut Co.
(Alternate Suppliers are Acceptable for this Part Number)

SAE/Inch Washers

Part Number	Size	Description
11A5C2	1/4"	Flat (Commercial)
11A5C3	5/16"	Flat (Commercial)
12A5C26	#6	Flat (SAE)
12A5C3	7/16"	Flat (SAE)
12A5C4	3/8"	Flat (SAE)
14A5C101	1/2"	Spring Lock
14A5C120	5/8"	Spring Lock
14A5C133	3/4"	Spring Lock
14A5C19	#6	Spring Lock
14A5C55	1/4"	Spring Lock
14A5C55P	1/4"	Spring Lock, Cadmium Plate
14A5C65	5/16"	Spring Lock
14A5C76	3/8"	Spring Lock
14A5C91	7/16"	Spring Lock

SAE/Inch Capscrews
Grade Identification

Grade identification markings are normally stamped on the heads of capscrews, however these marks may vary slightly from manufacturer to manufacturer.

SAE Grade 1 or 2	SAE Grade 5	SAE Grade 6 or 7	SAE Grade 8
	   	 	
QUALITY OF MATERIAL INDETERMINATE	QUALITY OF MATERIAL MINIMUM COMMERCIAL	QUALITY OF MATERIAL MEDIUM COMMERCIAL	QUALITY OF MATERIAL BEST COMMERCIAL
UNACCEPTABLE	PREFERRED	ALTERNATE IF PREFERRED NOT AVAILABLE	*

*Due to their material and hardness, grade 8 capscrews are **not** suitable for use on the pressurized air systems on an Ingersoll-Rand Portable Air Compressor. On uses other than pressure applications, grade 8 capscrews are acceptable.

TABLE 2

ISO/Metric Screws

Part Number	Size	Description
35271147	M12 x 1.75 x 30 MM	Hex Head, Class 8.8
35271188	M10 x 1.5 x 25 MM	Hex Head, Class 8.8
35272533	M12 x 1.75 x 35 MM	Hex Head, Class 8.8
35272541	M16 x 2 x 40 MM	Hex Head, Class 8.8
35272558	M20 x 2.5 x 45 MM	Hex Head, Class 8.8
35273341	M12 x 1.75 x 35 MM	Socket Head, Class 12.9
35273408	M8 x 1.25 x 20 MM	Hex Head, Class 8.8
35273945	M10 x 1.5 x 55 MM	Hex Head, Class 8.8
35278977	M12 x 1.75 x 75 MM	Hex Head, Class 8.8
35278985	M12 x 1.75 x 30 MM	Socket Head, Class 12.9
35279025	M8 x 1.25 x 20 MM	Hex Washer Head, Class 8.8
35279702	M16 x 2 x 65 MM	Hex Head, Class 8.8
35285584	M12 x 1.75 x 25 MM	Socket Head, Class 12.9
35286335	M12 x 1.75 x 120 MM	Hex Head, Class 8.8
35286343	M5 x .8 x 10 MM	Set, Socket Head, Class 8.8
92304393	M10 x 1.5 x 20 MM	Hex Head, Class 8.8
92368687	M6 x 1 x 12 MM	Hex Washer Head, Class 8.8

ISO/Metric Nuts

Part Number	Size	Description
35273366	M10 x 1.5	Lock, Nylon Insert
35278522	M6 x 1	Lock, Nylon Insert
35278530	M8 x 1.25	Lock, Nylon Insert
35284058	M10 x 1.5	Lock, Conical
35285576	M12 x 1.75	Lock, Conical
90103839	M16 x 2	Hex
90103854	M12 x 1.75	Hex

ISO/Metric Washer

Part Number	Size	Description
35280619	12 MM	Flat
35286889	12 MM	x 2 MM Thick, Lock, Conical Contact

ISO/Metric Capscrews
Grade Identification

Grade identification markings are normally located at the top of the screw head and may either be raised or depressed at option of the manufacturer, or alternatively, on the side of the head. Capscrews shall be identified with their property class symbol with the manufacturer's identification symbol at his option.

CLASS 4.6	CLASS 5.8	CLASS 8.8	CLASS 9.8	CLASS 10.9	CLASS 12.9
EQUIVALENT TO SAE GRADE 1	EQUIVALENT TO SAE GRADE 2	EQUIVALENT TO SAE GRADE 5	APPROXIMATELY 9 PER CENT STRONGER THAN SAE GRADE 5	EQUIVALENT TO SAE GRADE 8	NO EQUIVALENT SAE GRADE
UNACCEPTABLE	UNACCEPTABLE	PREFERRED	ALTERNATE IF PREFERRED NOT AVAILABLE	*	*

*Due to the material and hardness, class 10.9 and 12.9 capscrews are **not** suitable for use on the pressurized air systems on an Ingersoll-Rand Portable Air Compressor. On uses other than pressure applictions, class 10.9 and 12.9 capscrews are acceptable.

SECTION 10

MARKINGS AND DECALS

INGERSOLL-RAND

DECAL SET
35074822
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SST	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL P-185A-S-JD UNITS	C	J	19710
35512250	1	SERIAL NO. PLATE			B	19710
35138163	4	RIVET		I	B	19710
36742674	1	DECAL, GEN. DATA			B	21139
35839612	1	DECAL, OPER. INSTR.			B	19710
35861780	1	DECAL, WIRING DIAG.			B	21462
35810357	1	DECAL, OIL FILLER			B	19710
35839570	1	DECAL, DANGER			B	19710
35327568	1	TAG, ENGINE DIPSTICK			B	19710
35849173	1	DECAL DANGER TOW SPD			B	20160
35815802	1	DECAL DISCHARGE AIR	LOCATE NEAR DISCH VLV		B	20279
35854900	1	DECAL CAUT. SEP. ELE.			B	20647

DECAL SET
35074830
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SST	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL P-185A-W-JD UNITS	C	J	19710
35512250	1	SERIAL NO. PLATE			B	19710
35138163	4	RIVET		I	B	19710
36742682	1	DECAL, GEN. DATA			B	21139
35839612	1	DECAL, OPER. INSTR.			B	19710
35861780	1	DECAL, WIRING DIAG.			B	21462
35810357	1	DECAL, OIL FILLER			B	19710
35839570	1	DECAL, DANGER			B	19710
35327568	1	TAG, ENGINE DIPSTICK			B	19710
35849173	1	DECAL, DANGER TOW SPD			B	20160
35815802	1	DECAL, DISCHARGE AIR	LOCATE NEAR DISCH VLV		B	20279
35854900	1	DECAL CAUT. SEP. ELE.			B	20647

DECAL SET
35086503
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SST	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL XP-175A-W/S-JD UNITS	C	J	21239
35512250	1	SERIAL NO. PLATE			B	21239
35138163	4	RIVET		I	B	21239
36743268	1	DECAL, GEN. DATA			B	21239
35839612	1	DECAL, OPER. INSTR.			B	21239
35861780	1	DECAL, WIRING DIAG.			B	21462
35810357	1	DECAL, OIL FILLER			B	21239
35839570	1	DECAL, DANGER			B	21239
35327568	1	TAG, ENGINE DIPSTICK			B	21239
35849173	1	DECAL, DANGER TOW SPD			B	21239
35815802	1	DECAL, DISCHARGE AIR	LOCATE NEAR DISCH VLV		B	21239
35854900	1	DECAL CAUT. SEP. ELE.			B	21239

INGERSOLL-RAND

EXT MARKING SET
35071729
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SIS	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL P-185-S-JD AND	C	J	10005
COMMENTS		• • • •	P-185A-S-JD UNITS	C	J	10005
35816230	1	DECAL STRIPING RH			B	19455
35834175	1	DECAL STRIPING LH			B	19455
35861343	2	DECAL MODEL RH/LH			B	21351
35861251	1	DECAL CORP SIGNATURE			B	21336
35861269	3	DECAL CORP SIGNATURE			B	21353
35821883	1	DECAL EXPORT ONLY			B	19455

EXT MARKING SET EPA
35071737
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SIS	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL P-185-W-W AND	C	J	19455
COMMENTS		• • • •	P-185-W-JD UNITS	C	J	19455
35862200	1	DECAL STRIPING RH			B	21525
35862218	1	DECAL STRIPING LH			B	21525
35851914	2	DECAL REG. MARK			B	20386
35861004	2	DECAL MODEL RH/LH			B	21316
35861251	1	DECAL CORP SIGNATURE			B	21336
35861269	3	DECAL CORP SIGNATURE			B	21353
35819663	1	DECAL REGULATION EPA			B	19455
35831163	1	DECAL-EPA DOOR REG			B	19455
35354935	1	TAG WAX TREATMENT			B	20689

EXT. MARKING SET EPA
35071703
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SIS	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL P-175-W-W, P-175-W-D,	C	J	21239
COMMENTS		• • • •	AND XP-175A-W-JD UNITS	C	J	21239
35862200	1	DECAL STRIPING, RH			B	21525
35862218	1	DECAL STRIPING, LH			B	21525
35851914	2	DECAL REG. MARK			B	20386
35860998	2	DECAL MODEL RH/LH			B	21316
35861251	1	DECAL CORP. SIGNATURE			B	21336
35861269	3	DECAL CORP. SIGNATURE			B	21353
35819663	1	DECAL REGULATION EPA			B	19455
35831163	1	DECAL—EPA DOOR REG.			B	19455
35354935	1	TAG WAX TREATMENT			B	20689

INGERSOLL-RAND

EXT MARKING SET
35071711
PARTS LIST

PART NUMBER	QUANTITY	DESCRIPTION	COMMENTS	USAGE	SEC	ENGINEERING CHANGE
COMMENTS		• • • •	FOR MODEL P-175-S-D, P-175A-S-D,	C	J	21239
COMMENTS		• • • •	AND XP-175A-S-JD	C	J	21239
35816230	1	DECAL STRIPING, RH			B	19455
35834175	1	DECAL STRIPING, LH			B	19455
35861327	2	DECAL MODEL RH/LH			B	21351
35861251	1	DECAL CORP. SIGNATURE			B	21336
35861259	3	DECAL CORP. SIGNATURE			B	21353
35821883	1	DECAL EXPORT ONLY			B	19455