

CROWN 914-4 TURBO KIT

1.7 & 1.8

For ease of installation, we suggest you purchase a service manual from your Porsche dealer. While you are there pick-up a set of valve cover gaskets, four copper exhaust gaskets, two rubber throttle valve seals and an oil filter.

This kit uses all the stock emissions equipment, and stock tune-up parameters.

The tools required for this installation are a set of inch wrenches and a set of metric wrenches, screw drivers, pliers and a small hammer. An electric drill and sheet metal shears are required to make some holes in the rear, vertical engine shroud. An oil drain tube must be silver soldered to the right hand rocker cover.

This kit installation is simple, but the directions must be followed. Cleanliness is extremely important.

I. Engine Compartment Preparation

1. Remove air cleaner
2. Disconnect throttle linkage and throttle valve switch plug.
3. Remove throttle valve.
4. Disconnect plug to temperature feeler #1. Remove the feeler probe, install 8mm bolt, jam nut, and washer in the hole. This is the temperature probe in the intake air distributor box referred to as TI.
5. Slide the plug dust cover back from TI plug. Cut the wires about one inch back from the plug.
6. Using the wire and four connectors supplied; add nine inches to each wire and crimp the connectors.
7. Carefully open the main wiring harness to free eight inches of wire from the harness to the throttle valve switch plug.
8. Tape up the harness bundle for protection and neatness.
9. Install eight 4-1202 clamps, two on each intake tube connecting hose. See illustration # I .
10. Install two 4-4541 clamps on the hose connecting the intake air distributor box to the supplementary air valve.
11. Install two 4-4540 clamps on the hose connecting the intake air distributor box to the pressure sensor.
12. Remove the oil pressure sensor (use a 24mm or 15/16 inch, deep socket).
13. Install a 1/8 pipe short nipple, female "T" and the oil pressure sensor. The "T" goes in with two ports vertical with one port pointing toward the rear and center.
14. In the horizontal port install a 1/8 pipe by 1/4 O.D. tube compression fitting. Tape the end to prevent foreign object entry.
15. Disconnect the battery cable to the starter and feed it through its hole in the engine shroud.

II Under the Car

1. Remove the lower engine cooling shrouds.
2. Remove screws and disconnect the heater and fresh air ducting; three places on each side.
3. Remove the entire exhaust system from the head to the bumper.
4. Layout the required holes on the rear, vertical portion of the engine compartment. See Illustration #2 & 3 See Step 14.
5. These holes can BE CUT WITH SHEET METAL SHEARS, OR drilling around the perimeter of the outline with a small drill and connecting the holes with shears, or the use of a chassis punch, or any method desired. The edges can be cleaned up with a file and rolled slightly by using pliers and a ball peen hammer.

6. Relocate the battery cable hole and push the cable through into the engine compartment. Install the grommet.
7. Drill two 1/4 diameter holes as shown and mount the Crown throttle cable bracket.
8. Attach the throttle cable jacket to the Crown bracket so the jacket shoulder is against the bracket, secure with stock locking nut.
9. Grasp the rod at the end of the throttle cable with two pair of pliers and bend it approximately 20 degrees in the center.
10. Make certain the mating faces of the Crown header pipes are clean and flat.
11. Replace the copper caskets at the exhaust port. These can be held in place with gasket sealer.
12. Install the left and right headers pulling up the nuts evenly, make certain the headers do not contact the pushrod tubes, hammer slightly if necessary, do not heat.
13. Fasten the two headers together with a gasket, two 5/16-18 X 1 bolts and self-locking nuts.
14. Install the 2.5 inch flexible ducting so about 5 inches protrudes into the engine compartment. The remainder goes around aft of the starter and across the top of the transaxle. ('72 models, plug the hot air duct to the stock air cleaner and position hole so Crown air cleaner will clear the duct.

III. Turbo Preparation

NOTE: Cleanliness is absolutely essential to turbo longevity. Temporarily tape each opening until necessary to attach the joining part.

1. Attach the throttle valve adapter to the compressor inlet with a gasket and three 5/16-18 socket head capscrews so a line between the two threaded holes is nearly parallel to the compressor outlet axis.
2. Attach the throttle valve to the adapter using the Porsche rubber seal and two 1/4-20 X 1 bolts and flat washers.
3. Slip 2-1/4 O.D. X 1 silicon hose over the throttle valve inlet.
4. Remove plastic plug and install 1/8 pipe by 1/4 O.D. tube compression fitting in the oil inlet, tape closed.
5. Remove plastic plug and install oil drain with a gasket and two 3/8-16 X 3/4 bolts and lockwashes, tape closed.
6. Install compressor outlet hose and place two 4-1204 clamps on the hose.
7. "V" band clamp nut is torqued to 25 in/lbs prior to leaving Crown. If you don't have access to an inch/pound torque wrench, it is possible to accurately measure the free bolt length and use this as a reference for proper torque. Loosen the "V" band until it is possible to rotate the turbine housing.

LV. Turbo Oil

1. Place the turbine inlet gasket on the header flange.
2. Set the turbo in place on the header rotating the housing to position the compressor outlet hose near the bottom of the shroud opening but not touching it.
3. Hold the 1/2 O.D. 90 degree bend tube against the aft valve cover face just above the cover retaining spring. The drain should slope down continuously. Mark around the tube on the valve cover.
5. Drill a 3/8 hole in the center of the mark.
6. Attach the tube to the valve cover by using silver solder, braze or heliarc. We prefer silver solder. Be careful to position it for a continuous downhill slope.
7. Install the valve cover with a new gasket.
8. Install the turbo oil supply line into the compression installed in Part I, step 14.
9. Note positioning of the compressor outlet hose clamps outlet hose.

V. Turbo Installation

1. Slip the oil drain 1/2 I.D. hose and two 4-4541 clamps over the drain tube on the valve cover.
2. Place the turbo in position, attach the vacuum hoses to the throttle valve, the oil supply line, and the oil drain hose.
3. Tighten the 'v' hand clamp to 25 in/lbs.
4. Attach the turbo with a gasket, three 3/8-16 X 1-1/4 bolts, flatwashers, and self-locking nuts.
5. Tighten the oil supply line compression fitting. Be sure not to overtighten.
6. Clamp the oil drain hose.
7. Slide 4-1204 clamp over the flexible ducting. Place the ducting over the silicon hose on the throttle valve, tighten the clamp.

VI. Throttle Linkage

1. Drill a 1/16 inch hole into the transaxle web as shown in the Illustration # 4
2. Connect the throttle cable to the throttle valve attach the stock return spring in the hole drilled in the previous step.
3. Check that full throttle travel is available.
4. Insert throttle valve switch plug.

VII. Under the Car

1. Use stainless steel wire to hold the clutch and speedometer cables above the crossover pipe, attach the wire to the turbo oil drain tube.
2. Install the Crown heat shield below the engine thermostat with two stock screws.
3. Close the air vents directly opposite the engine cooling blower with duct tape.

4. Attach the tailpipe to the turbin outlet with a gasket and three 3/8-16 X 1 bolts and lockwasher--leave them loose.
5. Attach the muffler and tailpipe assembly to the stock bracket at the rear of the transaxle with two 5/16-18 X 3/4 bolts and self-locking nuts.
6. Tighten all bolts, clamp muffler and tailpipe.

VIII. Intake System.

1. Install the compressor outlet pipe into the compressor hose. Position the clamps so they can be tightened. See Illustration #1
2. Slide a two inch length of hose and two 4-1204 clamps over each end of the controller.
3. Attach controller to the 180 degree intake tube with the arrow pointing toward the air distributor box.
4. Slip the other end of the controller onto the compressor outlet tube.
5. Attach 180 degree intake tube to the air distributor box using a Porsche rubber seal and two stock screws.
6. Carefully tighten the six clamps and two screws holding this assembly,

IX. Air Cleaner

1. Install TI probe into the air cleaner adapter.
2. Slip the velocity stack into the adapter as far as it will go and drill through both for a #6 X 3/4 sheet metal screw.
3. Lightly oil the filter element with engine oil.
4. Attach the element to the stack with the retaining ring and the four #6 X 3/4 screws.
5. Slip the air cleaner and adapter into the 2-1/2 inch flexible ducting and clamp with a 4-1204 clamp.
6. Attach the extended TI plug to the probe.

X, Smog Equipment

1. Hook up the hoses as shown in Illustration #1.
2. '71 and later cars have an additional clean air line coming from each head and joining together. Splice a "T" onto the line from the air cleaner adaptor to accomodate this line.
3. '71 & 72 cars have a small vacum line to the air cleaner vacume motor, romove line and plug at the air distributor box.

XI. Operation

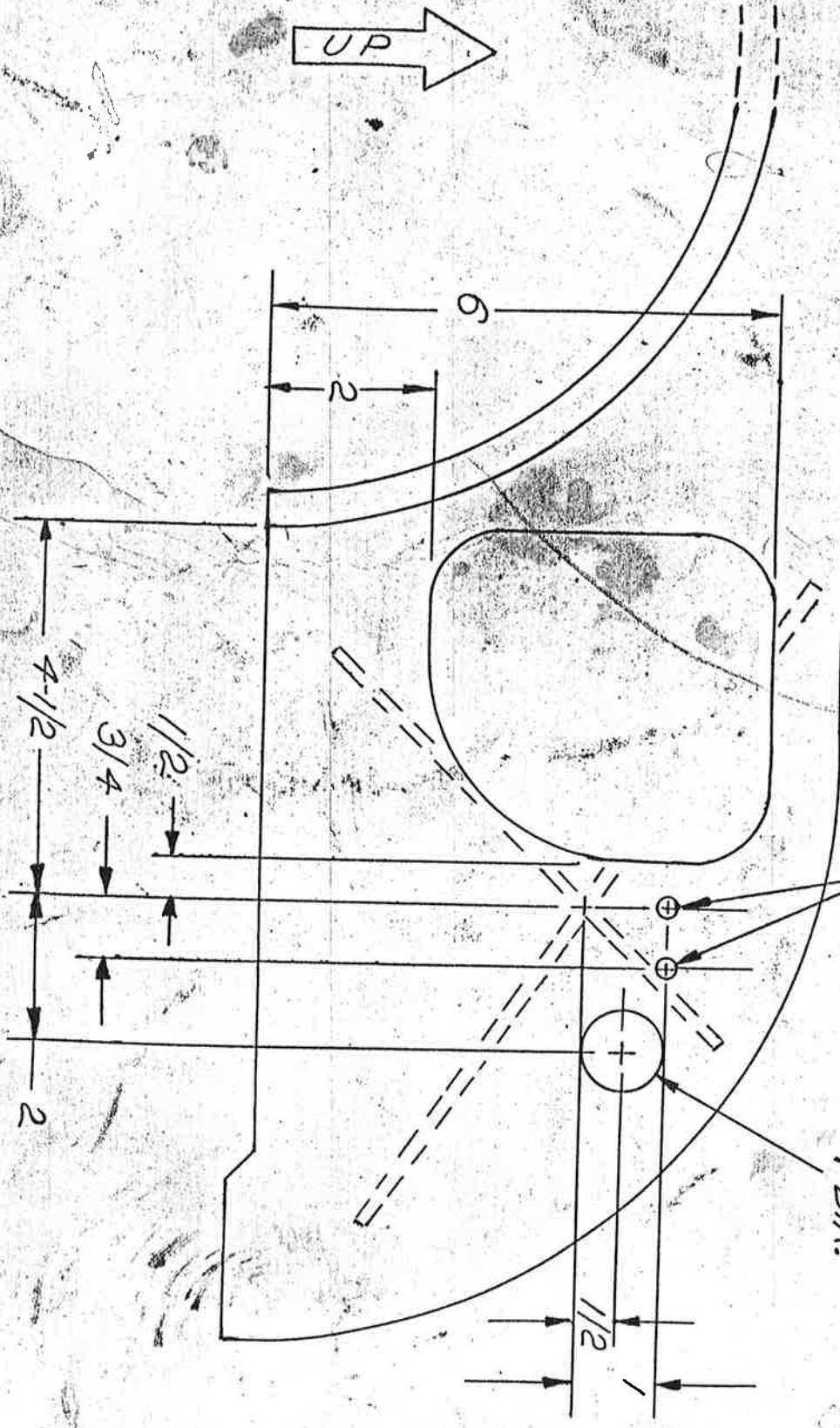
1. Turbo life is dependent upon a good supply of clean oil, with installation of the kit is a good time to change oil & filter.
 2. Remove the oil hi-tension wire from the distributor cap and ground it to the engine.
 3. Crank the engine until the oil light goes out and continue cranking for ten seconds to assure oil to the turbo,
 4. Reconnect the coil wire, check for oil leaks.
 5. Stock ignition timing and spark plug gap are recommended,
- NOTE: We have had poor success with Bosch plugs when used with Turbo. Try champion N-7Y or equivalent.

UP

ENGINE SHROUD
RIGHT SIDE, REAR
VIEW

5/16 DIA.
2 HOLES

1 DIA.



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858 PRODUCTION PLACE, P.O. BOX 2860
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ILLUSTRATION # 2
5-23-74 TW

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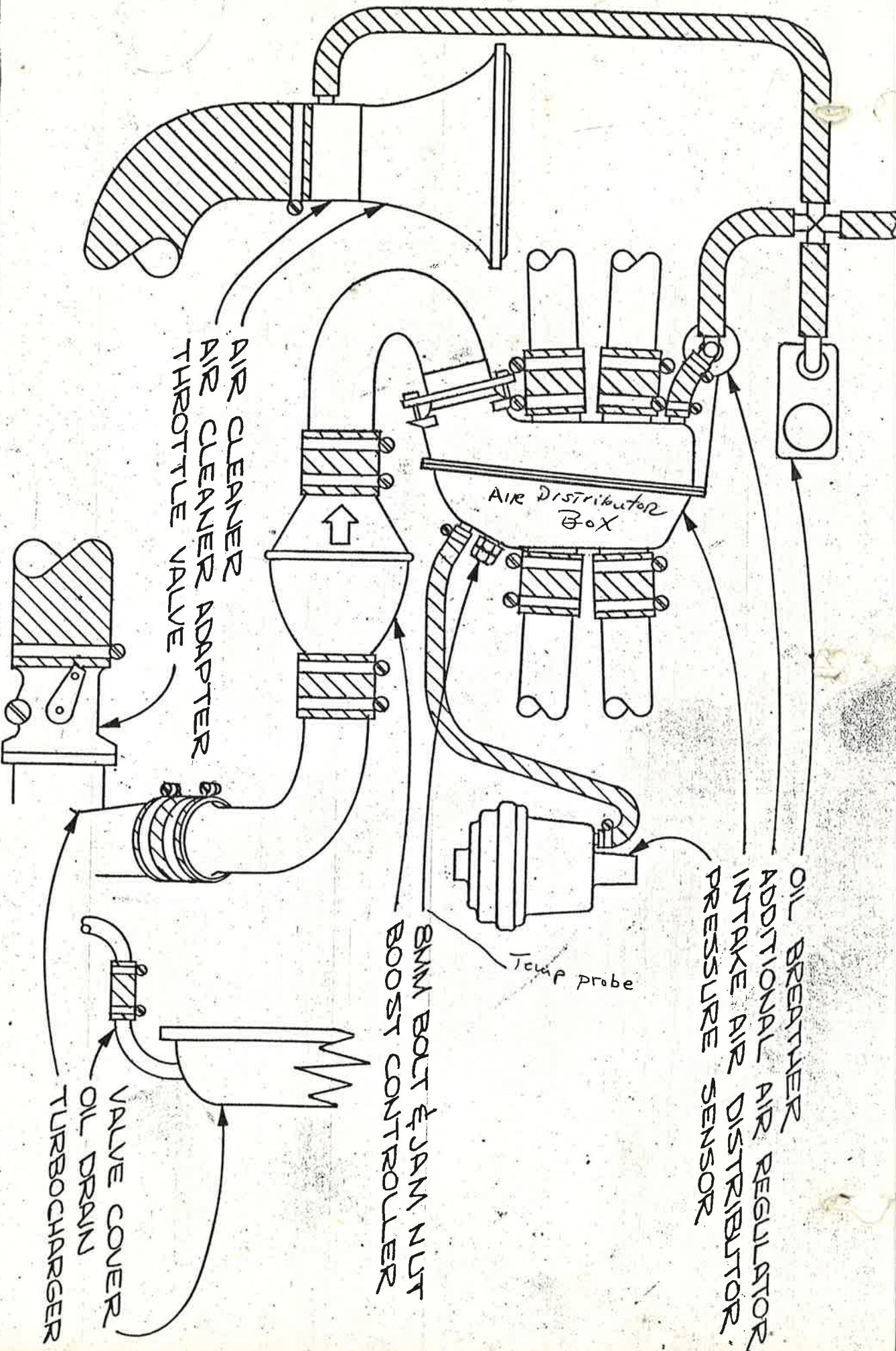
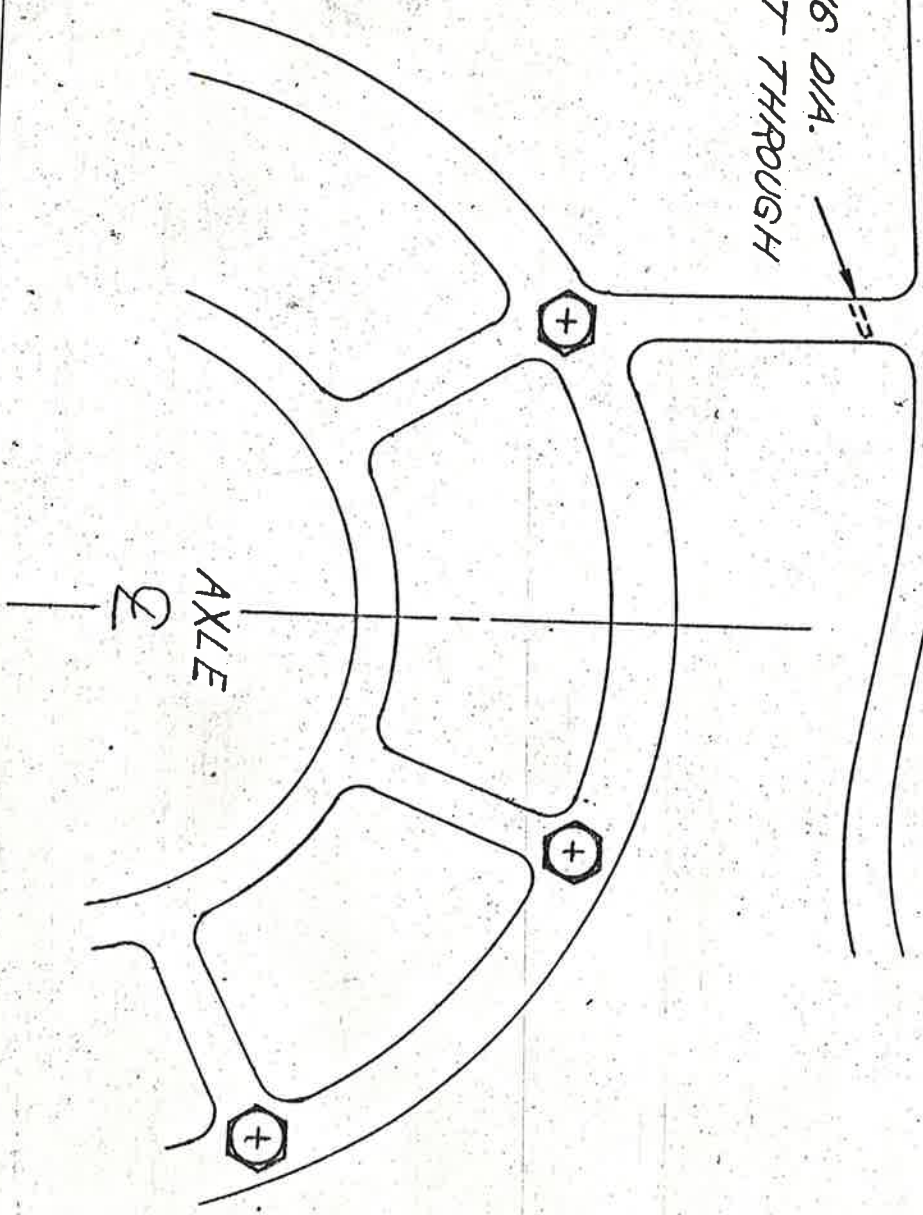


ILLUSTRATION # 1
 S-22-74 RTM

TRANS AXLE
RIGHT SIDE VIEW

1/16 DIA.
NOT THROUGH



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ILLUSTRATION # 4

ENGINE SHROUD
LEFT SIDE, REAR
VIEW

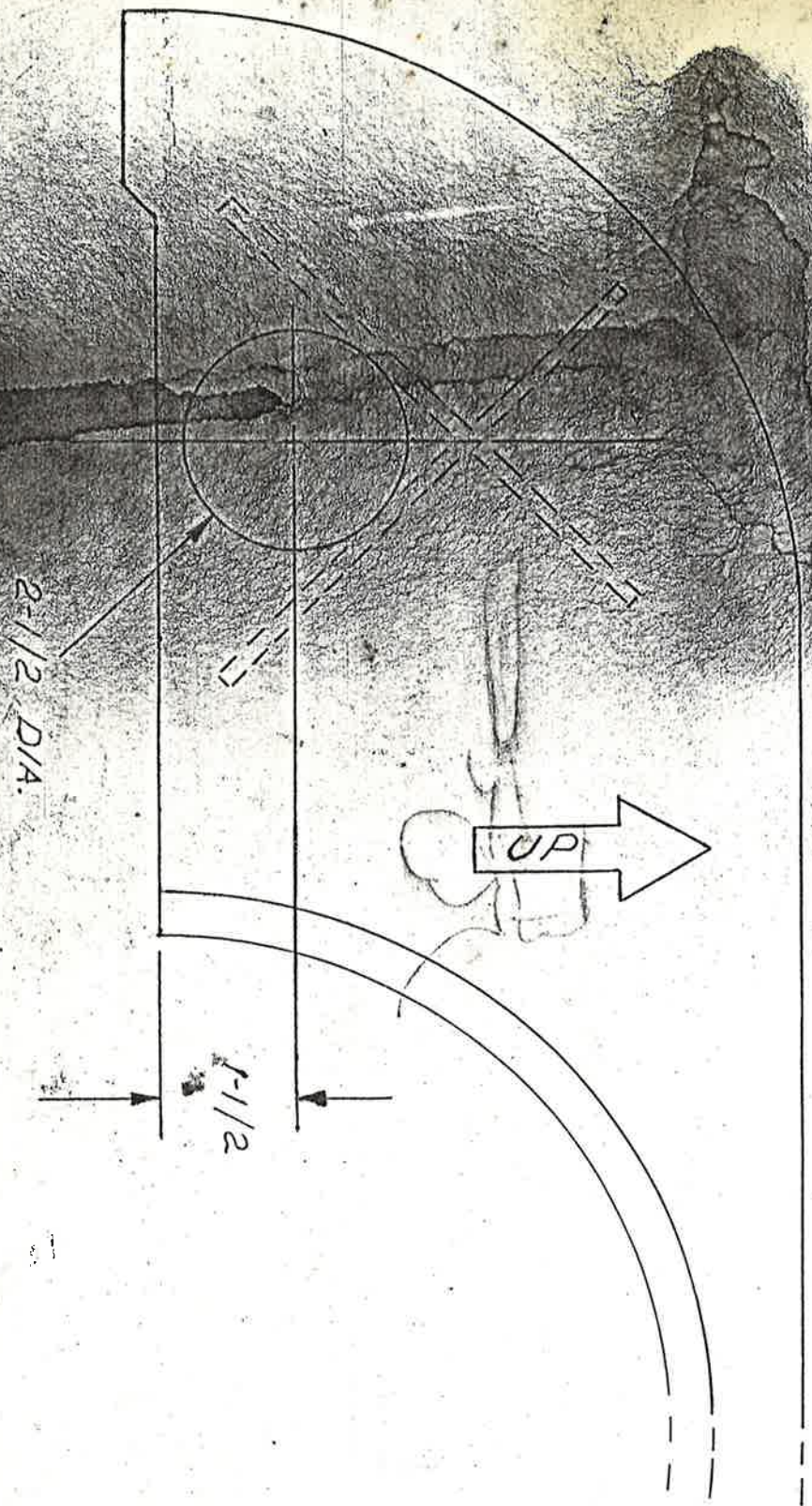


ILLUSTRATION # 3
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