



1100HP Six Valve High Performance Mechanical Fuel Pump

Part Number: 1039

Application: Ford 331-428 FE series V8 engines up to 1100 horsepower

Note: 1100HP pumps can be distinguished from the 550HP pumps by the "H" stamped on the top of the pump. The "H" stamp stands for "high pressure".

Maximum Output Volume: 197 gallons per hour free flow; 161 gallons per hour at 4 psi.

Maximum Output Pressure: 12 psi (+/-1 psi)

Recommended Fuel: Gasoline or Gasoline/Ethanol blends (methanol not recommended)

Recommended Pressure Regulator: RobbMc PN 1115 or 1050

Recommended **Minimum** Line Size from Tank to Pump:

3/8" (or -6AN) up to 450 horsepower

1/2" (or -8AN) up to 750 horsepower

5/8" (or -10AN) up to 1100 horsepower

Recommended **Minimum** Line Size from Pump to Regulator:

5/16" (or -5AN) up to 450 horsepower

3/8" (or -6AN) up to 750 horsepower

1/2" (or -8AN) up to 1100 horsepower

Side Inlet Port: 1/2 NPT (National Pipe Thread, tapered)

Bottom Outlet Port: 1/2 NPT Side Outlet Port: 3/8 NPT

Bottom Gauge Port: 1/8 NPT

Rotating The Valve Body: The valve body is the bottom portion of the pump with the inlet and outlet ports. By loosening the six screws (four long and two short) on the bottom of the pump which thread into the steel clamp ring, the valve body can be rotated to any position.

Water Pump Clearance: The steel clamp ring has a flat machined into it to help clear the water pump and upper water pump hose. If the pump valve body is rotated, it may be necessary to rotate the clamp ring to a new position or file a new flat on the ring.

Fittings for Inlet: Try to use a straight fitting to reduce restriction, especially on the inlet. Do *not* use a sharp

90 degree fitting. RobbMc offers steel fittings to connect AN line. Fittings to connect rubber hose or inverted flare line are available at most hardware and auto parts stores. Steel or brass fittings are preferred because aluminum NPT fittings may gall in the aluminum pump ports and be difficult to remove later. Use Teflon thread sealant on the NPT threads.

Fittings for the Outlet: Choose the side or bottom outlet port. While a straight fitting is preferred, a 45 or a *smooth* 90 degree fitting on the outlet is acceptable. RobbMc offers steel fittings to connect AN line. Fittings to connect rubber hose or inverted flare are available at most hardware/auto parts stores. Steel or brass fittings are preferred because aluminum NPT fittings may gall and be difficult to remove later. Use Teflon thread sealant on the NPT threads. Plug the unused outlet port with the provided plug.

Bolting the Pump to the Engine: Removing the power steering pump makes installing the pump easier; as does rotating the engine so the pump arm is pressing on the low side of the eccentric. Makes sure that none of the oil filter adapter gasket extends out the front of the block or it will interfere with the pump. A small amount of grinding/filing on the pump and/or engine may be required to clear the front of the engine.

Pressure Regulator: Use only a dead-head (non-return) style regulator such as RobbMc PN 1046 or 1050. Adjust the regulator to the pressure recommended by the carb manufacturer.

Vapor Return Line: A RobbMc metered vapor return fitting PN 1010 can be used to reduce fuel vaporization during hot weather. It will also improve hot restarts and help prevent the pressure creep at idle that sometimes occurs when using some dead-head regulators. Install the fitting in the outlet side of the regulator (such as the gauge port) or anywhere between the regulator and the carb(s). Connect a 1/4" return line from the fitting back to the gas tank. (Note: If you do not have a RobbMc fitting PN 1010, or if you wish to use a return line larger than 1/4", any fitting with a .040"/1 mm diameter restriction may be used. To accomplish this, plug the inside of the fitting and then drill a .040"/1 mm diameter hole through the plug).

Fuel Filters: If the in-tank filter has been removed (which is a good idea in most cases), a large, free flowing filter (90 to 150 microns) such as RobbMc PN 1025 should be installed between the tank and the pump. One or more filters (30 to 50 micron) such as RobbMc PN 1028 or 1029 should also be used between the pump and the carb(s).

Troubleshooting

This pump will supply enough fuel for 1100 horsepower. If a fuel delivery problem is suspected, install a pressure gauge that can be seen by the driver and monitor fuel pressure entering the carb(s). Note the pressure during full throttle acceleration. If the fuel pressure does not drop below 4 psi, the problem is not with the fuel system. (Note: Some nitrous systems require more than 4 psi).

DO NOT TRUST PRESSURE GAUGES MOUNTED IN THE ENGINE COMPARTMENT: Most fuel pressure gauges (**especially liquid filled**) read lower as the temperature of the gauge increases. If the fuel pressure at idle appears to decrease as the engine warms up, and the gauge is mounted in the engine compartment, it is most likely a problem with the gauge. Use a hose to temporarily mount the gauge outside the engine compartment to verify.

If the pressure drops below 4 psi, check the following:

- ~Make sure the fuel lines between the tank and the pump are at least 3/8". Engines over 450 hp may require 1/2" lines. Engines over 750 horsepower may require 5/8" lines.
- ~Make sure there are no kinks or smashed sections in the feed line. Remove any sharp 90 degree fittings.
- ~Replace any rubber lines showing signs of cracking. Cracking lines may not leak fuel but may allow air bubbles to be sucked into the line, which greatly reduces pump efficiency.
- ~Make sure all fittings and hose clamps are tight so air cannot be sucked into the fuel.
- ~There must be a vent somewhere on the tank. If a vent tube is used, make sure it is not plugged or kinked. The addition of a vented gas tank cap may help.
- ~Make sure the pickup tube is not uncovering during hard acceleration. Try filling the tank completely with fuel. If this fixes the fuel pressure problem, run the tank at least half full when racing, add a sump to the tank, or switch to a fuel cell.
- ~Make sure there are no obstructions in the fuel line: **Remove the gas cap from the gas tank.** Remove the hose from the pump inlet and use compressed air to blow air into the hose until you hear a steady flow of air coming from the tank. If this corrects the fuel pressure problem, it is an indication that the tank needs to be removed and cleaned. If the tank is removed for cleaning, remove the factory in-tank filter sock. Add a large 100 micron external filter (such as RobbMc 1025) in the line between the tank and the pump.
- ~If a filter is used between the tank and the pump, make sure it is not restricting flow. Replace or clean the filter element or install a freer flowing filter.
- ~On hot days, fuel vaporization can *greatly* reduce pump efficiency and cause erratic fuel pressure.

Vaporization can best be reduced by keeping engine coolant temperature under 180 degrees F.

Vaporization can also be reduced by using a vapor return line, running race/aviation gas, using a "cool can" to cool the fuel, rerouting the fuel away from the exhaust, wrapping the fuel lines with insulating material, and by reducing the restriction in the lines by using larger lines or fewer bends.

~If a vapor return line is used, a fitting with a .040" diameter restriction (such as RobbMc VR fitting PN 1010) must be used. Using a fitting without a .040" diameter restriction will cause a severe loss of pressure.

If none of the above fixes the problem, there may be a problem with the pump. If a problem with the pump is suspected, email us at robb@robbmcperformance.com and we will arrange to have the pump checked and/or repaired at the factory. If the pump was purchased in the last 90 days, it will be repaired at no charge if defective. If the pump has been damaged or purchased more than 90 days ago, it can be repaired for no more than half the price of a new pump.