



1500 Frost Rd. | P.O. Box 2068 | Streetsboro, Ohio 44241 330.626.2801 | support@permco.com

Gemini DG20

Common Installation Instructions

Product designed for Multi Purpose applications

1. The vehicle must be securely "locked out" before any work is performed on the hydraulic circuit. Never work on a raised dump bed without proper body props and supports.
2. Follow PTO/Truck Chassis Manufacturers Guidelines for PTO connection(s) to ECMs/TCMs to control operating parameters.
3. Prior to PTO engagement, ensure the Pump has unobstructed oil supply!
4. PTO should be properly disengaged PRIOR to vehicle movement.

Standard Offering Plumbing Instructions

Do not use Teflon Tape as a thread sealant. The use of Teflon Tape will void all warranties expressed or implied for this product.

Always use a minimum 1-1/2" suction hose (SAE-100R4) on pump side inlet.

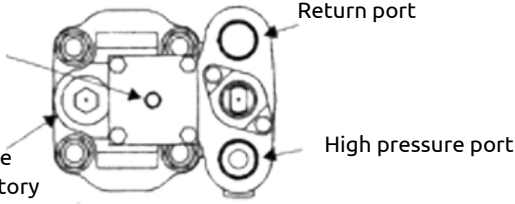
3-LINE PLUMBING ONLY -- 3 line sleeve is factory installed in the 1-1/4" plugged REAR port.

Install a 1-1/4" return line (SAE-100R1) to reservoir below operational oil level at all times. To prevent aeration, return lines connected above the operational oil level of the reservoir, a drop tube must be used in addition to the Permco Check Valve, Part Number 514-01903, installed directly to the pump return port.

The relief valve settings should be verified before the equipment is put into service. Standard Factory relief valve settings are 2500/3200 PSI. (3200 PSI when HIGH Pressure air cab switch is activated).

Port for high pressure air into the Gemini relief valve

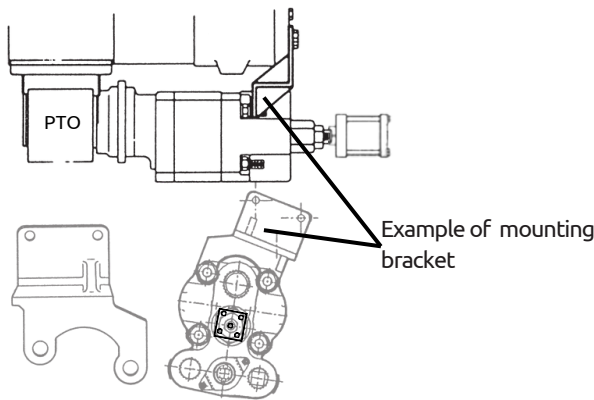
Third line sleeve installed from factory (Do not remove plug.)



Rear View
CCW Rotation Shown

MOUNTING INSTRUCTIONS – DIRECT MOUNT

(EXAMPLES ONLY) FOR BRACKET CONSTRUCTION



Direct mount DG20 Pump comes standard with SAE 4 bolt B mount, 7/8" 13 T spline and two extended studs for mounting support bracket.

Consult PTO Owners Manual for pump mounting/support recommendations. 4 point support required, see example to the left.

If factory extended studs are relocated, re-torque to 200 ft lbs.

Apply anti-seize grease to PTO output shaft before mounting Pump. Re-apply annually or sooner for severe duty applications.

In-Cab Air Control Shift Tower

997-01908

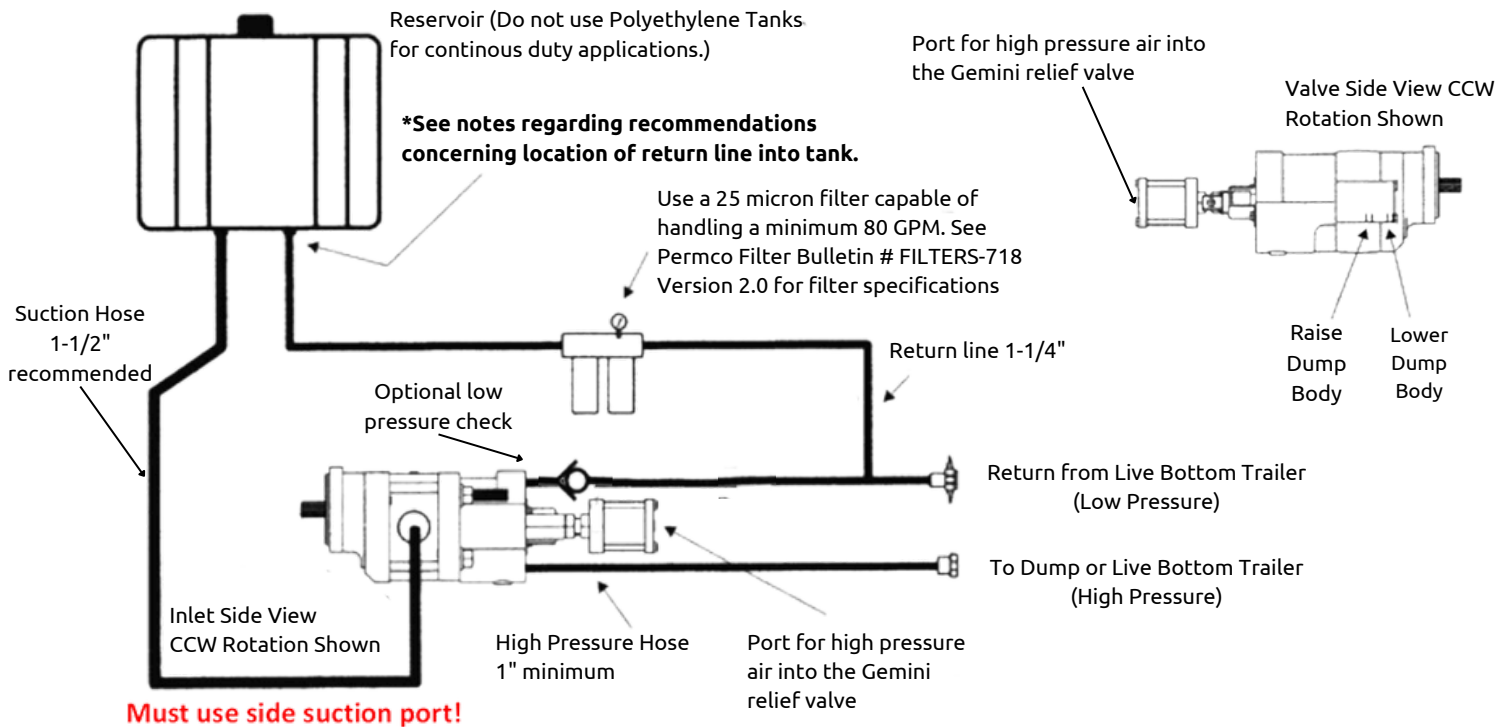
- Independently controls PTO, cylinder function, and high/low-pressure settings.
- Product feature includes auto kick-out to low-pressure setting when PTO is disengaged.

997-01926

- Offers the same features as above, minus PTO engagement & kick-out function.
- Visual and audible notifications when shifted to high-pressure setting



Typical Gemini DG20 Pump Hydraulic System



It is important for the installer and operator to be familiar with the hydraulic pressure requirements for the equipment(s) the pump will be operating specific to the in-cab pressure setting for the relieve valve. It's important to verify and document the maximum operating pressures for each application and adjust it to the appropriate pressure setting on the Gemini DG20 in-cab high pressure control setting: default setting <2500 PSI, high setting <3200 PSI.

- **Walking Floor** manufacturers vary from 2500 PSI or up to 3200 PSI maximum.
- **Traditional Dump Cylinders** have a 2000-2500 PSI maximum.
- **Higher Pressure Dump Cylinders:** up to 3200 PSI maximum.

Installation Review & Recommendations

1. Use 1-1/2" suction rated hose (minimum). Incorrect hose and/or size will cause cavitation and Pump failure. Heavy Duty T-bolt hose clamps or crimped hose ends are recommended.
2. Caution, do not over-tighten inlet fitting.
3. All Gemini DG20 Pumps have a Factory installed 3-Line Sleeve installed under the rear plugged inlet port.
4. *Caution: Incorrect Return Line Size or restrictions of flow/incorrect connection to Reservoir can cause aeration of the oil, increase of oil temperature and potential equipment failures.
5. *All fluid connections on the Reservoir must be below the operational minimum fluid level at all times.
6. *A return line diffuser is required if the Reservoir does not have an internal baffle.
7. *When a top Reservoir return port is used, a long drop tube should be installed and located on the opposite side of suction port.
8. Oil should NOT exceed an ISO 4406 cleanliness level of 19/17/14
9. After installation, verify there are no leaks, and the reservoir has the correct fluid level.