

NZH

TRANSPORT HYDRAULIC SOLUTIONS

HYDROCAR

PTO'S AND PUMPS

INSTRUCTIONS & WARRANTY



REMEMBER

NZH offer a full consultation service for all your hydraulic requirements.

NZH offer you, the valued customer, our knowledge and backup for competent after sales service.

“We’re there when you need us”

Please note it is the installer’s responsibility to ensure that all the products supplied are of the correct type and specification for the application, to read all fitting instructions, and carry out all work in a tradesmans like manner. Failure to comply with these instructions could void your right to equipment warranty as detailed in this booklet. NZH products used outside the manufacturers recommended specification will void right for warranty.

Thank you for purchasing our equipment, we are confident given the correct care, it will provide many years of trouble free service.





HYDROCAR PRODUCTS WARRANTY

GENERAL CONDITIONS

NZH Ltd (hereinafter called NZH) guarantees new HYDROCAR products supplied by them to be free from manufacturing defects. NZH undertakes to repair or replace (at their discretion) any part which is or becomes faulty as a direct result of a manufacturing defect within the warranty period, provided that the faulty product is presented for repair to NZH. The customer shall bear any labour costs, freight charges and other cost associated with the return of allegedly defective goods to NZH. Any repairs required to rectify warranty defects are to be carried out by NZH or authorised service agents. Only genuine HYDROCAR replacement parts are to be used. No responsibility is accepted for the suitability or otherwise of the machinery, truck, chassis, transmission, or other equipment or device which the product might be mounted on or fitted to.

APPLICABILITY

This warranty applies to equipment manufactured by HYDROCAR and any accessories supplied by, fitted to the equipment by HYDROCAR. Warranty products other than those manufactured by HYDROCAR will be covered by that manufacturer's warranty policy.

WARRANTY PERIOD

The period of this warranty is for a 12 month period from the date of invoicing by NZH.

This warranty is predicated upon the normal utilisation rate indicated by HYDROCAR and NZH on its specification sheets. NZH reserves the right to reduce the warranty period when a higher utilisation rate occurs or when the product is being used against recommended manufacturers applications.

CANCELLATION OF WARRANTY

This warranty is cancelled in full under the following conditions:

- Modifications unauthorised by NZH or not carried out by authorised NZH service agent.
- Repairs not carried out by authorised NZH agent or use other than genuine NZH/HYDROCAR replacement parts.
- Pressure settings found to be in excess of HYDROCAR/NZH specifications.
- Equipment found to be modified without NZH's approval.
- Equipment found to have been used in an application outside the manufacturers application guidelines.

Note: This warranty does not apply to any faults arising from any cause whatever other than manufacturing defects.



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HYDROCAR PTO MAINTENANCE INSTRUCTIONS

PTO/Pump Coupling Area:

- Should be greased on a regular basis.
- Replace when signs of wear start to appear on the PTO splines or pump shaft.

Seals and Bearings:

- Depending on application, it is recommended that bearings and seals be replaced on an annual basis.

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HYDROCAR PTO OPERATING AND SAFETY INSTRUCTIONS

Engagement:

- Do not engage PTO if engine speed is above idle.
- Do not exceed the recommended engine speed as damage to PTO and pump may occur – additional pressure is not achieved by increasing engine revolutions.

AIR AND MANUAL SHIFT PTO'S		POWER SHIFT PTO'S
MANUAL TRANSMISSIONS	AUTOMATIC TRANSMISSIONS	MANUAL OR AUTOMATIC TRANSMISSIONS
1. Push in clutch pedal.	1. Let engine idle and apply brakes.	1. Let engine idle.
2. Shift transmission into nneutral.	2. Place shift selector in any drive range.	2. engage PTO with swtich.
3. Engage PTO	3. Engage PTO.	3. Resume operting speed.
4. Let clutch pedal out.	4. Shift transmission to neutral or park.	



HYDROCAR PUMP OPERATING AND SAFETY INSTRUCTIONS

Speed:

- Always read and adhere to manufacturers recommendations.
- Never exceed maximum continuous speed recommendations.

Pressure:

- Ensure a suitable pressure relief valve is installed at the outlet of the pump to eliminate damage caused by over-pressurisation.





HYDROCAR PTO INSTALLATION INSTRUCTIONS

- 1 Drain the gearbox oil, checking cleanliness. If the oil is dirty or contaminated, it should be replaced. In some applications (eg automatic Allison gearboxes) it is not necessary to empty gearbox. Always check gearbox service manual.
- 2 Remove PTO aperture cover from transmission, and clean the surface thoroughly. Rock gears by hand in transmission and PTO to become familiarised with the amount of backlash already designed into each unit. This will prove helpful in establishing the backlash later.
- 3 Check that the holes in the gearbox are threaded. Tighten mounting studs securely in transmission pad to a torque of 5kgm, using a medium thread locking fluid on all stud applications. Check to be sure that the studs do not interfere with the transmission gears after fitting.
- 4 Mount PTO using gaskets and a suitable sealer between all mounting surfaces. Add or remove gaskets and establish backlash at 0.15mm–0.40 mm. Tighten top and bottom nuts to torque specified below. **Recheck the backlash after tightening the nuts.**
- 5 Securely fasten PTO to transmission torque nuts to 4-5kgm (30-35lb.ft) for 6 bolt PTO and 6-7 kgm (43-50lb.ft.) for 8 bolt PTO.
- 6 When the installation operation has been completed refill the gearbox with oil as prescribed by the truck manufacturer. If PTO is mounted on automatic transmission, or where oil levels change or are non-existent, a pressure-lubed PTO is required.
- 7 Once installation is complete, the following checks are recommended:
 - a ENGAGEMENT/DISENGAGEMENT CHECK – Perform soon after engine start. If a crash is heard, this may be due to one of the following:
 - i Clutch not working properly.
 - ii There is insufficient air pressure.





HYDROCAR PTO INSTALLATION INSTRUCTIONS *continued...*

- b OIL LEVEL CHECK – Carry out an oil check when the engine is still cold and top up if necessary.
- c OIL LEAK - Check to be carried out after 15-20 minutes operation. Be sure that there are no leaks between gearbox aperture PTO mounting flange and PTO output. In the case of a leak, check tightness.
- d NOISE CHECK – To be carried out under all the working conditions, with PTO engaged, gearbox in neutral position. In case of a side and bottom mounted PTO , an excessive noise may mean a wrong backlash according to the following:
 - i High pitched whining: PTO may be mounted too tightly (too little backlash). Add gaskets.
 - ii Rattle/clatter noise: indicates looseness (too much backlash). Remove gaskets.
- e TIGHTENING BOLTS CHECK – Normally bolts tend to loosen because of the seal setting. It is recommended that all bolts and nuts are checked after a few hours of work, checking the tightness by means of a torque wrench. With side and bottom mounted PTO's recheck the backlash after tightening.

NB: These instructions do not apply for the 17 Series PTO. Please refer to separate installation instructions to ensure correct installation is carried out. Failure to do so will void all warranty.





HYDROCAR PUMP INSTALLATION INSTRUCTIONS

- 1 Ensure both PTO and pump mounting faces are clean and clear of any dirt, burrs, old gaskets etc.
- 2 Fit all studs into PTO housing, using a stud locking compound, ensuring to tension them to 4.5 kgm.
- 3 Test fit pump to ensure that no interference occurs with the coupling or pump housing.
- 4 Check spline on PTO is packed with antiseize/antiwear grease.
- 5 Secure pump with nuts and washers supplied in the coupling kit. Tension nuts to 4.5 kgm, it is also advisable to use a stud locking compound as well.

SUCTION HOSE REQUIREMENTS

To minimise damage to pump the following information is offered as a guide.

FLOW LITRES/MINUTES	INTERNAL HOSE DIAMETER (Up to max. 1.5 metres)
0-30	1 ¼" 32mm
31-65	1 ½" 38mm
66-120	2" 50mm
121-200	Refer to NZH for recommendation

CAUTION: Cavitation and starvation are the most common cause of pump failure.

- CAUSES:**
- Exceeding the maximum speed of pump.
 - Low oil level.
 - Damaged suction hose.
 - Loose suction fittings.
 - Incorrect specification suction filters.
 - Excessive suction hose length.

IF UNSURE, ASK YOUR NZH REPRESENTATIVE.





HYDRAULIC OIL RECOMMENDATIONS

High quality oil should always be maintained in the hydraulic operation system to ensure maximum life for your equipment.

Circuit operating temperatures should never exceed 50°C (130°F). If the oil temperature does exceed these limits, it is recommended that it be replaced.

GEAR PUMPS – RECOMMENDED VISCOSITY IS 68cSt AT 40°C.

PISTON PUMPS – RECOMMENDED VISCOSITY IS 46cSt AT 40°C.

HYDRAULIC FILTRATION

Always ensure the hydraulic system has been cleaned throughout before use (ie tank, hoses).

To achieve maximum life of hydraulic components, it is recommended that a high quality filter is fitted to either the return line or the pressure lines only.

NOTE: THIS INFORMATION IS SUPPLIED AS AN AID TO PROLONG THE LIFE OF THE HYDRAULIC COMPONENTS IN USE.



NZH

TRANSPORT HYDRAULIC SOLUTIONS

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