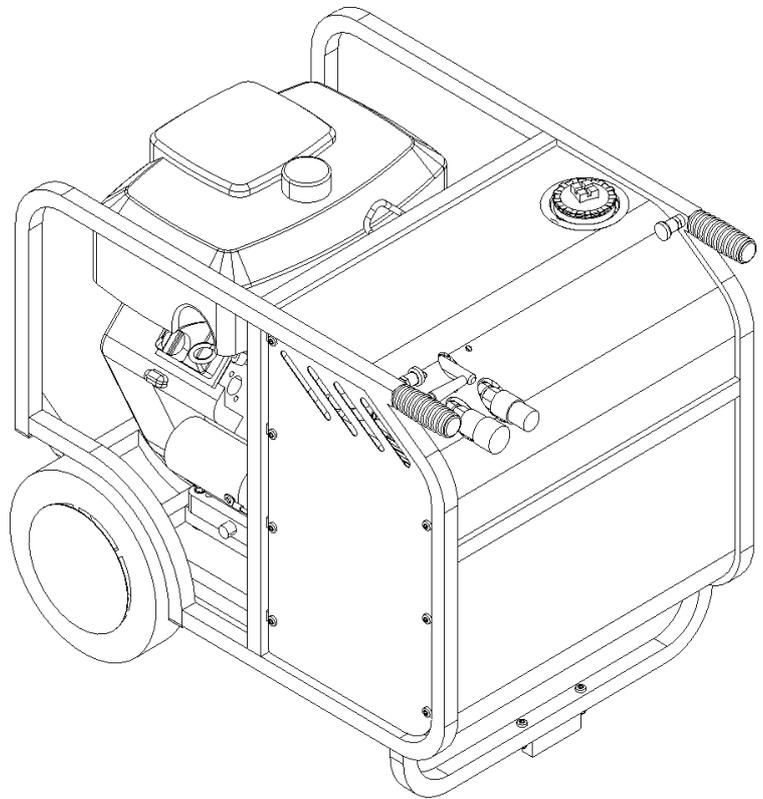


# Operating Manual

## Rhino® HPP18V FLEX Hydraulic Powerpack

Revised  
1.2016



### Prior to Operation

We thank you for choosing a Rhino® Powerpack.

Please note that the powerpack is delivered without hydraulic oil, and therefore it must be filled up with hydraulic oil prior to operation.

To ensure smooth operation and long-lasting performance of your new powerpack, we recommend that you study this operating manual carefully and pay special attention to the

### Safety and Service Precautions

We hope you will be satisfied with your new Rhino® Hydraulic Power Pack.

Best regards  
Rhino® Tool Company



Rhino Tool Co. Inc.  
620 Andrews Ave.  
Kewanee, IL 61443

Tel: 309.853.5555 main  
Tel: 866.707.1808 toll-free  
Fax: 309.856.5905

info@rhinotool.com  
www.rhinotool.com

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## Safety Precautions

1. Always use protective earplugs. The powerpack complies with the EU noise limits, but by daily long-lasting operation there is a risk of hearing defects.
2. Always connect hoses before starting.
3. Never add fuel and oil when the engine is running.
4. In case of non-operation or performance, always turn off the engine.
5. Never start the engine without side covers.
6. Operation of the powerpack without tool connected and with lever at "ON" ("on" is indicated by "5", "8" or "10" setting) may cause overheating of the system and damage to the powerpack.
7. When lifting the powerpack from a vehicle, we recommend the use of a crane.
8. The pressure relief valve is set at 2300 psi (160) bar from our plant. Never set it higher.
9. Always use filters with by-pass. The use of filters without by-pass may damage the hydraulic hoses and the filter cover.

## Filling Up Hydraulic Oil

- To fill up with hydraulic oil, loosen the filter cover on top of the powerpack.
- Remove the filter element (see photo), and fill up with oil. When oil is showing at the bottom of the filter unit, there is enough oil on the powerpack.
- Insert the filter element again, mount the cover and the powerpack is ready for use.

*Please note: When connecting new extension hoses, it is necessary to fill up with extra 1/2 gal. (2 litres) of oil. Therefore always top up the powerpack when connecting new extension hoses.*



# Technical Data

## Hydraulics

The Rhino<sup>®</sup> HPP18V FLEX open center hydraulic powerpack is designed in accordance with the EHTMA categories C, D and E, which prescribe a minimum performance of 5 g.p.m., 8 g.p.m. and 10 g.p.m. (20 l.p.m., 30 l.p.m. and 40 l.p.m.) respectively at 2000 psi (138 bar).

The powerpack is designed with a pressure relief valve to avoid too high a pressure. Furthermore, the very efficient air cooling protects the powerpack against overheating. The powerpack has no POR (Power On Request) system, and the engine r.p.m. (oil supply) must be adjusted manually by means of the throttle.

<b>Oil flow</b>	5 g.p.m. (20 l.p.m.) at 1800 r.p.m. 8 g.p.m. (30 l.p.m.) at 2700 r.p.m. 10 g.p.m. (40 l.p.m.) at 3600 r.p.m.
<b>Working pressure nominal</b>	1750 psi (120 bar)
<b>Pressure relief valve</b>	Set at 2300 psi (160 bar)
<b>Pump</b>	Gear pump
<b>Oil temperature</b>	Max. 160°F (70°C)
<b>Hydraulic oil tank capacity</b>	Min. 2.1 gal (8 litres) Max. 2.9 gal (11 litres)
<b>Petrol tank capacity</b>	2.2 gal (8.5 litres)
<b>Hydraulic system compl.</b>	3.2 gal (12 litres)
<b>Filter system (filter element)</b>	25 Micron with by-pass
<b>Engine</b>	Vanguard 2-cylinder 18 HP (gross power) 4-stroke gas Gas - normal or unleaded Engine oil 0.3 gal (1.1 litres)
<b>Guaranteed sound power level L<sub>WA</sub></b>	101 dB
<b>Sound pressure level 1 m L<sub>PA</sub></b>	89 dB
<b>Dimensions (LxWxH)</b>	31-5/8"x24-5/8"x27-3/8" (805x625x695 mm)
<b>Weight, without hydraulic oil</b>	232 lbs (105 kg)

# Starting Instructions

Please observe the starting instructions on the front of the powerpack.

- Start:**
- Check engine oil level
  - Check hydraulic oil level at sight glass
  - Connect hoses and tool
  - Switch fuel tap to "ON"
  - Activate choke
  - Turn ignition switch
  - Activate electric start or pull recoil starter
  - Set the lever at the desired oil flow  
5/8/10 g.p.m. (20/30/40 l.p.m.) - see below
- Stop:**
- Move the lever to "OFF"
  - Turn off the ignition switch
  - Turn the fuel tap to "OFF"



## Setting of Flow

The desired oil flow can be set on the front of the powerpack. A marking is engraved in the lever.

To set the flow at 5, 8 or 10 g.p.m. (20, 30 or 40 l.p.m.), the lever must be turned to the right until the marking is opposite the required flow.

The pressure relief valve setting will be the same on all flows.



## Service, Maintenance and Hydraulic Settings

Service/Maintenance	Daily	Weekly	Yearly
Engine oil	Check		1 x replacement
Hydraulic oil	Check		1 x replacement
Hydraulic oil filter *)			1 x replacement
Check hoses		(tighten up if needed)	
Air filter			1 x replacement
Fuel filter			1 x replacement

\*) Use only filters with by-pass

## Hydraulic Settings

Check the working pressure by means of test equipment. The test equipment must comprise a pressure gauge, a flow meter and a valve for adjustment of pressure.

The pressure relief valve is placed on the right side of the valve block.

1. Connect the test equipment, start the powerpack and move the lever to "ON" ("on" is indicated by "5", "8" or "10" setting). Then close the valve on the test equipment - the pressure gauge must show 2300 psi (160 bar).

Adjust the pressure relief valve by loosening the lock nut and turning the adjustment screw in or out. "In" increases the pressure, and "out" decreases the pressure.

Retighten the lock nut after adjustment.

2. When the pressure relief valve has been adjusted correctly, the working pressure must be set at 1450 psi (100 bar) by means of the valve on the test equipment. At 1450 psi (100 bar) the oil flow should correspond to the flow rate the lever is set at (see Setting of Flow).

If correct pressure/oil flow cannot be achieved by following the above instructions, the powerpack must be re-adjusted. If the pressure/oil flow is then still incorrect, the pump is defect and must be replaced.

## Oil Types

The Rhino<sup>®</sup> powerpack uses standard hydraulic oil, i.e. all types of mineral oil and biodegradable oil, which comply with the following values:

Recommended viscosity	ISO 32 (20-40 cSt)
Permitted viscosity	ISO 15-1000 (15-1000 cSt)
Viscosity index	Min. 100
Temperature area	-70°F to 160°F (-57°C to 71°C)



## **General Warranty Conditions & Limitations on Liability**

Rhino Tool Company, Inc. ("Rhino") warrants to the original purchaser, purchasing the Equipment in new condition, in original packaging from an authorized dealer that its Hydraulic Tool(s) will be free from defects in workmanship and materials (the "Limited Warranty"). The Limited Warranty shall survive for twelve (12) months with regard to all other components, excluding the Honda 13 HP engine and Vanguard 18 HP engine for which Rhino provides no warranty and for which the warranty is provided by American Honda Motor Co., Inc and by Briggs and Stratton Corporation respectively and the shall be the sole warranty applicable thereto. This Limited Warranty is non-transferable.

In the event of a warranty claim, the Hydraulic Tool(s) must be returned freight prepaid to Rhino or delivered in person to a Registered Rhino Servicing Dealer within the applicable warranty period with proof of original purchase provided. Rhino's obligation under this Limited Warranty is expressly limited to the repair or replacement, at Rhino's election, of such defective Hydraulic Tool(s), which is proved to be defective upon inspection by a Rhino-certified/authorized technician.

This Limited Warranty does not extend to a Hydraulic Tool(s) which has been subject to misuse, neglect, or accident, nor does it extend to any Hydraulic Tool(s) which has been repaired, altered, or serviced by unauthorized persons. This Limited Warranty does not cover any damage or adjustments required to any Hydraulic Tool(s) if such damage or adjustment is caused by the use of supplies, parts, or attachments not sold or approved by Rhino.

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