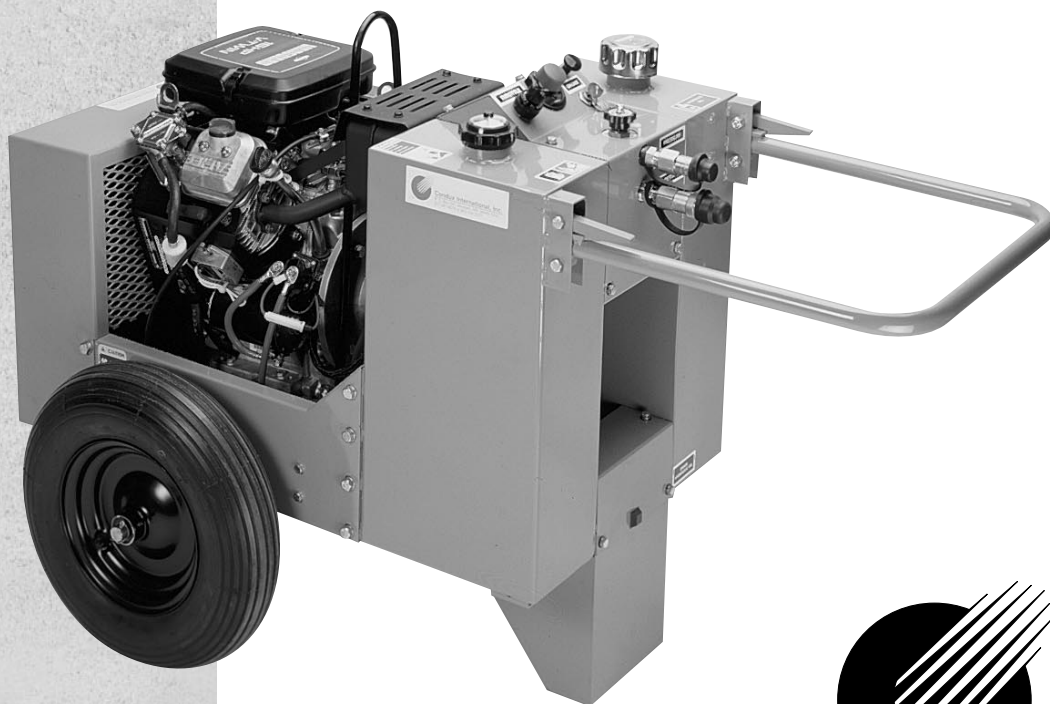
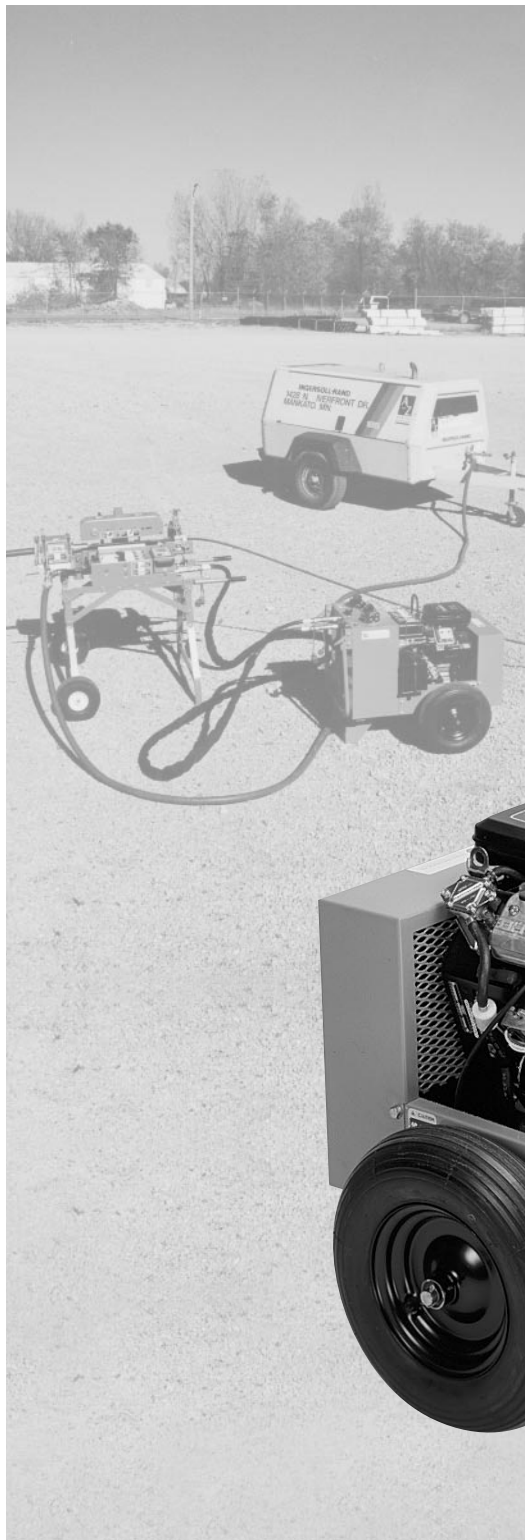


# Portable Hydraulic Power Pack



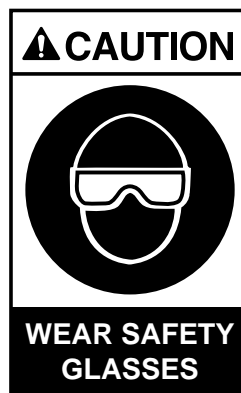
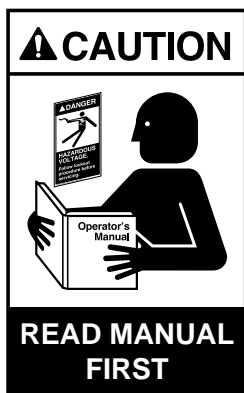
**CONDUX**

# Important Safety Notice

Read and understand these usage and safety instructions before using a Condux Portable Hydraulic Power Pack. Observe all safety information on this page and note specific safety requirements as explained by procedures called out in this manual. Failure to follow these instructions could result in serious personal injury or death.

## ADVERTENCIA:

Favor de leer y comprender todas las instrucciones de operación y seguridad antes de usar la máquina. Si Ud. no comprende las instrucciones favor de consultarle a su jefe.



**Save this user's guide for future reference.**



If you have questions on:  
**SAFETY - OPERATIONS - APPLICATIONS**  
CALL 1-800-533-2077

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# ***General Information***

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**1.**

The Condux Portable Hydraulic Power Pack is designed to provide safe and dependable hydraulic power for various tool operations. The Power Pack is well suited for use with the Condux Fiber Optic Cable Blower, meeting all the blower's hydraulic power requirements.

## ***Technical Specifications***

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**2.**

The Condux Portable Hydraulic Power Pack is designed to provide hydraulic flow and pressure for operation of H.T.M.A. Type I and Type II hydraulic tools. The unit provides power for operation of Type I or Type II open-center tools, 5-10 gpm (19-38 liters per minute) at 2000 psi (140 bar).

The power pack is equipped with 16 HP (11.9 kW) Briggs & Stratton Vangaard V-Twin. An optional 18 HP (13.4 kW) Duetz diesel engine is available.

The power pack is all equipped with an air-to-oil cooler with suction fan mounted to the power shaft on the engine.

The fuel and hydraulic systems are self-contained with the required reservoir, filtration and level indicators.

### **A. HYDRAULIC SYSTEM DESCRIPTION**

The hydraulic system consists of a hydraulic fluid reservoir filter assembly, single (or optional tandem) pump and a wide variety of flow controls. The filter element is a "spin on" type element for easy replacement. The filter housing has a pressure bypass valve to divert fluid directly to the tank in the event of a restricted filter.

Hydraulic pumps will vary depending upon the capabilities of the power unit. Pressure hoses from the pump are connected directly to a control module, which contains a relief valve, a flow control valve, and a pressure and return port.

### **B. HYDRAULIC FLUID REQUIREMENTS**

The power pack is shipped from the factory with the recommended fluid. Oils meeting the specifications listed below will provide good all-season operation if normal maintenance is performed (periodic filter change, draining of condensation, etc.).

<b>Viscosity (Fluid Thickness)</b>	
50° F (10° C)	450 SSU Max. (95 Centistrokes Max.)
100° F (38° C)	130-200 SSU (27-42 Centistrokes)
140° F (60° C)	85 SSU Min. (16.5 Centistrokes Min.)

Pour Point	-10° F (-23° C) Minimum (for cold startup)
Viscosity Index	(ASTM D 2220) 140 Minimum
Demulsibility	(ASTM D-1401 ) 30 Minutes Maximum
Flash Point	(ASTM D-92) 340° F (171° C) Minimum
Rust Inhibition	(ASTM D-665 A & B) Pass
Oxidation	(ASTM D943) 1000 Hours Minimum
Pump Wear Test	(ASTM D2882) 60 mg Maximum

The following fluids work well over a wide temperature range at startup, allow moisture to settle out, and resist biological growth likely in cool operating hydraulic circuits. These fluids are recommended by Condux International. Other fluids that meet or exceed the specifications of these fluids may also be used.

- Ams-Oil Hydraulic Fluid A/W 150 SSU, 100 V.I.
- Chevron AW-MV-32
- Exxon "Univis" J-26
- Mobil D.T.E. 13
- Gulf "Harmony" AW-HVI-150-32
- Shell "Tellus" T-32
- Sun "Sunvis" 805 MG
- Texaco "Rando" HD-AZ
- Union "Unax" AW-WR-32

### **C. FUEL REQUIREMENTS**

Due to the variety of engines used, you must check the engine manual for recommended fuels. A manual is provided with each unit.

### **D. ENGINE DESCRIPTION**

A Briggs and Stratton Vanguard V-Twin engine or Ruggerini Diesel engine owner's manual is provided with the power pack. This manual lists recommended service intervals. It should be followed to ensure proper power unit maintenance.

### E. HOSE RECOMMENDATIONS

The hoses below are recommended for the previously mentioned hydraulic fluids at normal oil temperatures of 100-130° F (38-54° C) (viscosity 100-150 SSU). Avoid the use of quick disconnects to attach multiple hose lengths. Use full size steel pipe couplings.

FLOW PER CIRCUIT		LENGTH EACH HOSE		USE	INSIDE DIAMETER		SAE SPEC HOSE (WIRE BRAID)	SAE SPEC HOSE (FIBER BRAID)
GPM	LPM	FEET	METERS		INCH	MM		
9 to 12	34 to 45	To 50	To 15	Both	5/8	16	SAE 100R2-10	SAE 100R8-10
9 to 12	34 to 45	51-100	15-30	Pressure Return	5/8 3/4	16 19	SAE 100R2-10 SAE 100R2-12	SAE 100R8-10 SAE 100R7-16
9 to 12	34 to 45	100-200	30-60	Pressure Return	3/4 1	19 25.4	SAE 100R2-12 SAE 100R1-16	SAE 100R8-12 SAE 100R7-16

## Safe Operating Procedures

### 3.

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the safety labels and tags attached to the power pack. Review safety precautions carefully before operating the power pack and before performing maintenance or repairs. Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations.

#### A. GENERAL SAFETY PRECAUTIONS

Read and understand this manual and any safety labels attached to the power unit before operating. Failure to do so could result in personal injury or equipment damage.

- The safety tag is attached to the power pack when shipped from the factory. Read and understand the safety instructions listed on this tag before removal.
- Always wear appropriate safety equipment such as goggles, ear protection and toe guards.
- Be trained thoroughly before operating the power pack.
- Do not operate this product on steep slopes or rough terrain.
- Never operate the power unit in a closed space. Inhalation of engine exhaust can be fatal.
- Keep clear of hot engine exhaust.

- Keep the power unit at least 4 ft (1 meter) away from buildings, obstructions and flammable objects. Do not aim engine exhaust at materials that could catch fire.
- Make sure hoses and fittings are undamaged and tight before starting the power pack.
- Make sure all hoses are connected for correct flow direction to and from the tool being used.
- Do not attempt to locate hydraulic leaks by feeling around hoses and fittings with bare hands. "Pin-hole" leaks can penetrate the skin.
- Never use flammable solvents around the power pack engine.
- Clean up oil and fuel spills immediately. Do not overfill fluids.
- Do not operate the power unit if fuel odor is present. Check for spilled fuel. Check for fuel leaks.
- Always shut down the power pack's engine before performing any maintenance or adjustments on the power unit unless otherwise specified.
- Allow the engine to cool before storing the power pack in an enclosure.
- Operating the power pack engine at excessive speeds increases the danger of personal injury. Do not change governor setting or tamper with governor components.
- Unauthorized modifications to the power pack may impair the function and/or safety and impair machine life. Use only approved service parts or accessories.
- Keep all fasteners tight to be sure the power pack is in a safe working condition.
- To avoid personal injury or equipment damage, all tool repairs, maintenance, and service must be performed by authorized and properly trained personnel.

## **B. SAFETY SYMBOLS**

Safety symbols are used throughout the manual to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

Always observe safety symbols. They are included for your safety and for the protection of the power pack.

# Set Up The Power Pack

## 4.

The following checks must be made prior to operating the power unit.

### A. ENGINE CRANKCASE OIL LEVEL.

Check that the crankcase oil level is at the "Full" mark on the dipstick. (Figure 1).

### B. HYDRAULIC OIL

The hydraulic tank is filled at the factory before shipment. Check the oil level in the tank by removing the filler cap. The oil must appear at the perforated basket at the bottom of the inlet pipe (Figure 2). Add oil as required. Refer to Section 2 for hydraulic fluid requirements.

### C. FUEL LEVEL

The power pack is shipped with no fuel for safety purposes. The engine has been run at the factory to purge all air from the fuel system. To prevent air from entering the system, always fill the fuel tank before starting the engine. Refer to Section 2 for specifications.

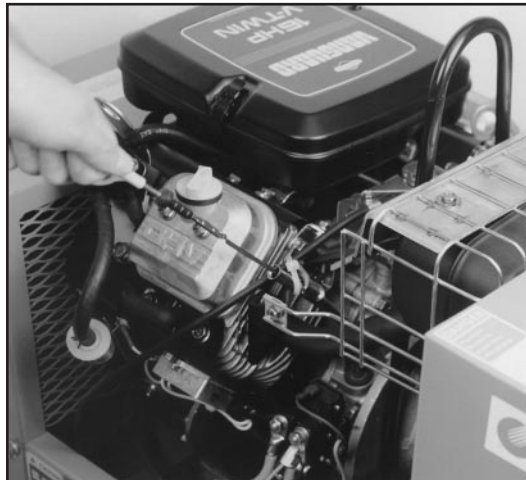


Figure 1

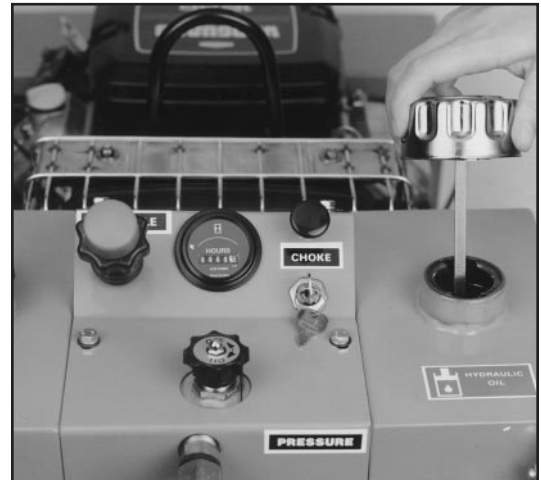


Figure 2



**!DANGER:** Battery contains explosive gases and sulfuric acid, which can cause severe burns, blindness or other bodily injury. Avoid contact with battery gas and sulfuric acid. Do not smoke while servicing battery.

#### **D. BATTERY**

Check the electrolyte level in each battery cell. The level should never be below the top of the plates. If the level is low, add distilled water. The level is correct when filled to the bottom of the split ring in each cell. Check that the battery cables are clean and tight so that the charging circuit will function properly.

#### **E. TIRES**

Check the air pressure in the tires. See recommended pressures on the sidewall of the tire.



**Figure 3**



**Figure 4**

#### **F. HYDRAULIC CONNECTIONS**

Pressure and return hoses are connected to the ports at the control panel (Figure 3). The pressure and return ports are marked with a decal. When installing Quick Disconnect couplings, the pressure port receives the male coupling and the return port receives the female coupling. The hoses can then be connected directly to the couplings. Quick Disconnect couplings are available through your Condux dealer.

#### **G. ELECTRONIC CONNECTIONS**

The electronic connection port is located on the hydraulic power pack, just below the hydraulic couplings. Remove cap before making electronic connection (Figure 4).

# Operating Instructions

## 5.

### A. BEFORE START UP

1. Perform the checks specified in Section 4 before operating the unit. Make certain the following conditions are met.
2. Engine oil level must be at the "FULL" mark on the dipstick. Add oil as required.
3. Hydraulic tank must be full.
4. Check that fuel level is adequate for estimated operating time. Allowing the fuel tank to run dry on diesel engines will cause air to enter the injection system. The system must then be bled.



**!WARNING:** Escaping fluids under pressure can penetrate skin and cause serious personal injury. Observe the following precautions to avoid hydraulic hazards:

- Always relieve pressure before disconnecting hoses.
- Check for leaks with a piece of cardboard. Do not use hands!
- Do not exceed working pressure of hydraulic hoses.
- Visually inspect hoses regularly and replace if damaged.

5. All hose and coupling fittings must be tight and free of damage.
6. The front section of the engine must be free of leaves, dirt and other debris that may inhibit cooling or create a fire hazard.



Figure 5

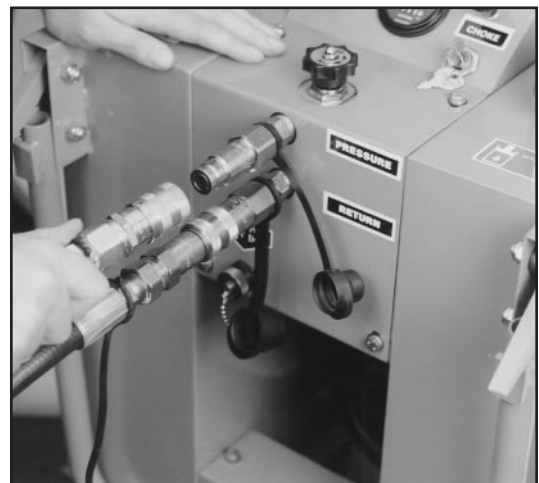


Figure 6

## B. START UP

1. Make sure the flow control circuit is set to OFF (Figure 5).
2. Connect hydraulic hoses to the applicable couplings on the control panel. The male coupling is the pressure port. The female coupling is the return port (Figure 6).
3. Check that the hoses are properly connected to the tool and that the tool is in the OFF or deactivated mode.

**!WARNING: Surface hot. The hydraulic power packs' engine will become hot during operation. A burn hazard exists. Do not touch surface of engine during operation.**



4. Pull the throttle knob out slightly, then turn the ignition key to start the engine. Allow the engine to run at low speed until the engine and hydraulic circuits are warm (Figure 7).



Figure 7



Figure 8

## C. TOOL OPERATION

1. Pull throttle knob completely out to bring power pack to full throttle
2. Turn the hydraulic circuit to the ON position to start fluid flowing to the tool (Figure 8).

#### D. SHUT DOWN

1. Push throttle knob in.
2. Return hydraulic circuit to the OFF position (Figure 9).



Figure 9



Figure 10

3. Turn the ignition key to OFF. If the power pack is equipped with a diesel engine you must also pull out the STOP knob. Disconnect the hydraulic hoses and store in a suitable area.

**NOTE:** The hour meter will continue operating until the ignition switch is moved to the OFF position (Figure 10).

# Maintenance

## A. HYDRAULIC SYSTEM MAINTENANCE

Observe the following for maximum performance and service life from the hydraulic system. Hydraulic system wear is noted by increased heat during tool operation, reduced tool performance and eventual system breakdown.



- Use the correct hydraulic fluid at all times.
- Keep the hydraulic system and fluids clean at all times.
- Keep water out of the fluid. Remove water from the fluid as specified in this section.
- Keep air out of the lines. Air is indicated by hydraulic system overheating and foam at the hydraulic tank breather. Tighten all suction line fittings and clamps.

**To keep your hydraulic system operating at maximum efficiency follow these procedures:**

1. Remove condensed moisture from hydraulic fluid. Condensation is a frequent problem with cool mobile hydraulic circuits. This condition occurs in moist or cold climates. When warm air in the reservoir tank draws moisture from the cooler outside air, water accumulates in the tank.

Approximately once each week (less often in hot dry weather) take a small sample from the bottom of the hydraulic tank by removing the 1/2-inch NPT drain plug (Figure 11). If clear water appears, drain the tank until clean oil starts to show. If fluid is milky, allow it to settle for about 48 hours before draining. 1% water in a 2000 psi (140 bar) hydraulic system can cause a 25 % increase in wear rate.

**NOTE:** Operate the unit with fluid temperature at 50° to 140° F (10° to 60°C) for improved seal and hose life, maximum efficiency.

**!WARNING:** Escaping fluids under pressure can penetrate skin and cause serious personal injury. Observe the following precautions to avoid hydraulic hazards:

- Always relieve pressure before disconnecting hoses.
- Check for leaks with a piece of cardboard. Do not use hands!



2. Check hydraulic lines and fittings. Check for loose fittings, leaks, etc., throughout the entire hydraulic circuit.



Figure 11



Figure 12

3. Change hydraulic filter. The filter element should provide maximum performance if hose ends are connected together after and wiped off before use. To replace the filter element, stop the engine and unscrew the element from the filter housing (Figure 12).

The following replaceable filter is recommended:  
Donaldson P550388. Or any filter of equal or greater quality.

4. Fill the hydraulic tank. Fill the hydraulic tank by removing the filler cap at the top center of the tank. The tank is full when oil appears in the perforated basket at the bottom of the filler pipe.

Do not use engine oils or transmission fluids other than petroleum-based hydraulic fluids. The fluids listed in Section 2 are recommended. These fluids will flow easier when cold, will allow water to settle for draining, and will prevent wear at high pressure and cool temperature during tool use.

## B. ENGINE MAINTENANCE

See engine manual for maintenance requirements.

## C. MAINTENANCE SCHEDULE

MAINTENANCE SCHEDULE					
Hydraulic System	Every 8 Hours or Daily	25 Hours or Every Season	50 Hours or Every Season	100 Hours or Every Season	Yearly
Check fluid level	X				
Check fluid for condensation		X*			
Change oil & filter					X
Inspect hydraulic system for leaks	X				
* Note: Check more often if temps. (ambient) change quickly over a short period of time.					

# Troubleshooting

## 7.

**NOTE:** If internal circuit wear is present, the cause should be determined. Most circuit wear is caused by poor maintenance. Proper maintenance is essential for preventing problems. Keep hydraulic circuits clean at all times.

Check the following and correct as required before performing any repairs.

- Proper hydraulic fluid must be used
- Check for dirt or water in the hydraulic fluid
- Make sure return filter is not clogged
- Check for air leaks in circuit

If symptoms of poor performance develop, the following charts can be used as a guide to isolate the problem. When diagnosing faults, review the recommended maintenance procedures given in Section 6.

PROBLEM:	CAUSE:	SOLUTION:
Starter will not crank engine.	Engine working against the hydraulic pump pressure.	Be sure Circuit Switches are OFF.
	Battery discharged or not properly connected.	Check condition of battery, cable connections, etc. Replace as necessary.
	Starter defective.	Inspect starter. Replace as necessary.
	Ignition switch or solenoid switch(es) defective.	Replace as necessary.

<b>PROBLEM:</b>	<b>CAUSE:</b>	<b>SOLUTION:</b>
<b>Engine cranks but will not start.</b>	Air in injectors and/or injector pump.	Bleed injectors.
	Water in fuel.	Refer to engine manual.
	Inadequate compression.	Empty water sediment trap. Bleed injectors per engine manual.
	Tool not connected to power unit.	Check for clogged air cleaner, valves seated, cylinder compression loss. Repair as required.
<b>Engine runs but hydraulic circuit will not drive tool.</b>	Hydraulic fluid reservoir low.	Connect tool. Check couplers. Check and fill as required.
	Tool hoses blocked.	Remove obstruction.
	Tool hoses incorrectly connected to circuit fittings.	Check that tool hose goes from top port tool pressure or IN port and from tool return or OUT port to lower port, both ports on the same side of manifold.
	Tool is defective.	Repair as necessary.
<b>Tool runs too hot.</b>	Hoses too small.	Increase hose diameter.
	Cooler clogged, blocked airflow.	Clean cooler, straighten fins as necessary. Replace.
	Hydraulic pump damaged.	Replace or adjust as required.
	Airflow is loose or broken.	Some rotary tools must have flow controls.
	Flow control valves or priority valves have been added to circuit.	Adjust flow to match tool gpm to avoid forcing excess flow over relief.
	Closed center tools in use.	Use only open center tools.

# Repair/Replacement Parts

8.

The following replacement parts are available from Condux International:

Part Number	Description
08675858	Hydraulic Hose Kit, 20' (6 m) Hose with Couplings
02260000	Hydraulic Coupling, Female Flat Face Faster 2FFN38-12NPT-F Bruning FF371-8FP
02260100	Hydraulic Coupling, Male Flat Face Faster 2FFN38-12NPT-M Bruning FF372-8FP
02260200	Dust Cap, Male Coupling
02260201	Dust Cap, Female Coupling
02286416	Power cord assembly extension, 2-pin straight (20'/6.1 m)
08675240	Power cord adapter for Fiber Optic Puller
08675201	Replacement Tire
08675202	Throttle Cable
08675203	Hydraulic Fluid Filter
08675204	Replacement Cap Hydraulic Fluid Tank
08675205	Ignition Switch
08675207	Replacement Cap Gas Tank
08675208	Ignition Keys
08675210	Custom Fit Cover



**Cover for Condux Portable Hydraulic Power Pack**

# Warranty Information

9.

## A. FACTORY ASSISTANCE

Condux International can provide further advice regarding any problems with the installation, service, assembly, or disassembly of the Condux Portable Hydraulic Power Pack. Call toll free at 1-800-533-2077 (USA and Canada) or 1-507-387-6576 and ask for assistance. The Condux Portable Hydraulic Power Pack can be returned to the factory at any time for service or repair; however, a Return Material Authorization (RMA) must be obtained from Condux before shipping. Condux will not accept returned items without an RMA.

## B. LIMITED WARRANTY

Condux International, Inc. extends the following warranty to the original purchaser of these goods for use, subject to the qualifications indicated: Condux International, Incorporated warrants to the original purchaser for use that the goods or any component thereof manufactured by Condux International will be free from defects in workmanship for the period of one year from the date of purchase, provided such goods are installed, maintained, and used in accordance with Condux's written instructions.

Components not manufactured by Condux International, but used within the assembly provided by Condux International, are subject to the warranty period as specified by the individual manufacturer of said component, provided such goods are installed, maintained, and used in accordance with Condux's and the original manufacturer's written instructions.

Condux's sole liability and the purchaser's sole remedy for a failure of goods under this limited warranty, and for any and all claims arising out of the purchase and use of the goods, shall be limited to the repair and replacement of the goods that do not conform to this warranty.

To obtain repair or replacement service under the limited warranty, the purchaser must contact the factory for a Return Material Authorization (RMA). Once obtained, send the RMA along with the defective part or goods, transportation prepaid, to:

Condux International, Inc.  
145 Kingswood Road  
Mankato, MN 56001 USA

**THERE ARE NO EXPRESS WARRANTIES COVERING THESE GOODS OTHER THAN AS SET FORTH ABOVE. THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO ONE YEAR FROM DATE OF PURCHASE.**

**CONDUX ASSUMES NO LIABILITY IN CONNECTION WITH THE INSTALLATION OR USE OF THIS PRODUCT, EXCEPT AS STATED IN THIS LIMITED WARRANTY. CONDUX WILL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.**



**Condux International, Inc.**

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