

IMPORTANT: READ OPERATING INSTRUCTIONS AND PREPARATION PROCEDURE THOROUGHLY BEFORE OPERATING THE HYDRAULIC POWER UNIT!!!

OPERATOR'S MANUAL **for** **HYDRAULIC POWER UNIT**

Model: 55-1-2-G

- Preparation
- Operating Instructions
- Maintenance

IT IS IMPORTANT TO THOROUGHLY READ THIS MANUAL BEFORE STARTING THE POWER UNIT!!!

-ASSEMBLY INSTRUCTIONS-

Power Unit is completely assembled and set up with a Manual 4-way, 3-Position Directional Control Valve. Valve is a Tandem Spool Spring Loaded to neutral.

NOTE: System is capable of operating at 3000 P.S.I. It is extremely important that the pressure hoses used for power beyond the power unit are rated for 3000 P.S.I. or greater value.

Step 1) Properly connect appropriate pressure hoses (Supplied by others) to connect ports (A+B) on the Directional Control Valve.

NOTE: Hydraulic power source is equipped with a Single Circuit Control Valve.

A) 4-way, 3-position manually operated directional control valve with a spring loaded to neutral center and a tandem spool.

-PREPARATION-

It is extremely important that the pump is not started until oil is in the system. As the warning tag indicates operating a pump even for a time will result in damage.

NOTE: It is IMPERATIVE that the hydraulic reservoir is filled with "Premium Quality" hydraulic oil, (Approximately 5-Gallons). Reservoir must be filled before power unit is started. Be certain that the oil being used is filtered as it is being put into the reservoir. Oil should have anti-wear characteristics, excellent rust protection and contain additives to protect against foaming.

NOTE: Manufacturer uses hydraulic oil supplied by U.S. Oil Corporation with the following characteristics.

Viscosity Index 101

Grade 32

@ 100 F. it has a viscosity of 156

@210 F. it has a viscosity of 43.7

Cross-referencing to other manufacturers the following oils could be substituted.

Gulf Harmony 32A

Shell Tellus 32

Texaco Rando H.D. 32

NOTE: Power unit will operate satisfactorily on any Quality Grade, Petroleum Base Hydraulic Oil.

-PREPARATION- (CONTINUED)

Step 1) Remove oil breather cap and fill reservoir to the point that the oil level is approximately 1" from the top of the tank, (Approximately 5-Gallons)

Step 2) Replace oil breather cap when tank has been properly filled. Wipe up any oil that might have spilled.

NOTE: Before proceeding to step 3) Make sure that the engine has been properly serviced and fueled. Refer to Honda Engine Manual.

Step 3) Serviced with the proper oil level in the reservoir the Honda Engine can be jogged, but not started. Remove spark plug cap so the engine will not start and jog the starter for a second or two at a time. Repeat the jogging a few times and then stop this procedure and replace the spark plug cap.

Step 4) Start the engine (See engine manual for proper starting of the engine).

NOTE: The Engine has an adjustable throttle but it has been "Factory Set" at 3450 R.P.M. (The engine speed is what determines the amount of flow from the pump. If the R.P.M.'s are set too low there will be less flow and possibly not enough torque to support the pump's demand. If the engine is overloaded it will shut down.

NOTE: Make sure that the hydraulic circuit is properly plumbed and adequate so that the reservoir does not run out of oil. Depending on what the power unit is plumbed to it could lower the reservoir level considerably.

NOTE: For initial start-ups the power unit should be allowed to run a couple of minutes before it is allowed to build system pressure.

NOTE: The control valve used is a 4-way, 3-position tandem spool type. The Directional Control Valve is used to control a circuit from the Power Unit controls flow in (2) directions.

-OPERATING INSTRUCTIONS-

Once the proper oil has been put in the reservoir and the engine has been properly serviced the engine can be started.

Step 1) To direct and pressurize a circuit from the power unit position the use of the manually operated Directional Control Valve would be used.

(A) Properly connect pressure hoses to the working ports "A & B".

Circuit is controlled by the spool's position caused by the shifting of the valve's lever.

(B) NOTE: The control valve used is a 4-way, 3-position, tandem spool type with a spring loaded center position.

NOTE: Control Valve Spool is spring loaded so when the spool is crossed over to the "B"-Port the lever must be held. If it is released the spool will immediately shift to Neutral. The same requirement will be necessary when shifting to the "A" working port.

Step 2) To direct and pressurize the "A"-Port of the control valve it merely requires pulling up on the directional control valve's handle. As long as the handle is held, flow and pressure capabilities are in the circuit.

Step 3) To direct and pressurize the "B"-Port of the control valve it merely requires pushing back on the directional control valve's handle. As long as the handle is held, flow and pressure capabilities are in the circuit.

NOTE: AN ADJUSTABLE RELIEF VALVE LOCATED IN THE DIRECTIONAL CONTROL VALVE CONTROLS SYSTEM PRESSURE.

----OPERATING INSTRUCTION (CONTINUED) ---

Step 3) Adjusting System Pressure By Removing The Hex Cap Nut Fastener On The Pressure Side Of The Control Valve. Change in setting is accomplished by rotating the adjusting screw. When required system pressure has been obtained the adjusting screw should lock it into position by replacing and tightening the Hex Cap Nut.

A) To INCREASE PRESSURE, rotate adjusting screw clockwise.

B) To DECREASE PRESSURE, rotate adjusting screw counter-clockwise.

NOTE: SYSTEM'S RELIEF VALVE SHOULD NEVER BE SET HIGHER THAN 3000 P.S.I.

MAINTENANCE

Periodic inspection of all fasteners should be done as a routine precautionary procedure.

The Honda GX-160 Engine used should be serviced and maintained per the Maintenance scheduled as outlined in the Honda Engine Owner's Manual.

Periodic inspection of the condition of hydraulic hoses and fittings should be routine. A failure of hydraulic hose could be very hazardous, so frequent inspection for damage is good practice.

Check hydraulic oil reservoir level periodically. Proper oil level should be approximately 1"-1 1/2" from the top of the reservoir.

Hydraulic system includes a return line filter. Routine inspection is necessary to determine when to replace filter element. A clogged filter element should be replaced instead of trying to get extended life out of it. There are too numerous factors to consider in giving an element-projected life. The life of the element varies with the amount of contaminants or dirt introduced into the system. The amount of dirt introduced into the circuit varies from hour to hour and day to day. We therefore recommend frequent inspection.

Inspection of hydraulic oil can and should be set up on a routine schedule to determine when system's oil should be changed. When obvious signs of contaminants and oil breakdown are present, the hydraulic oil should be drained and new oil used.

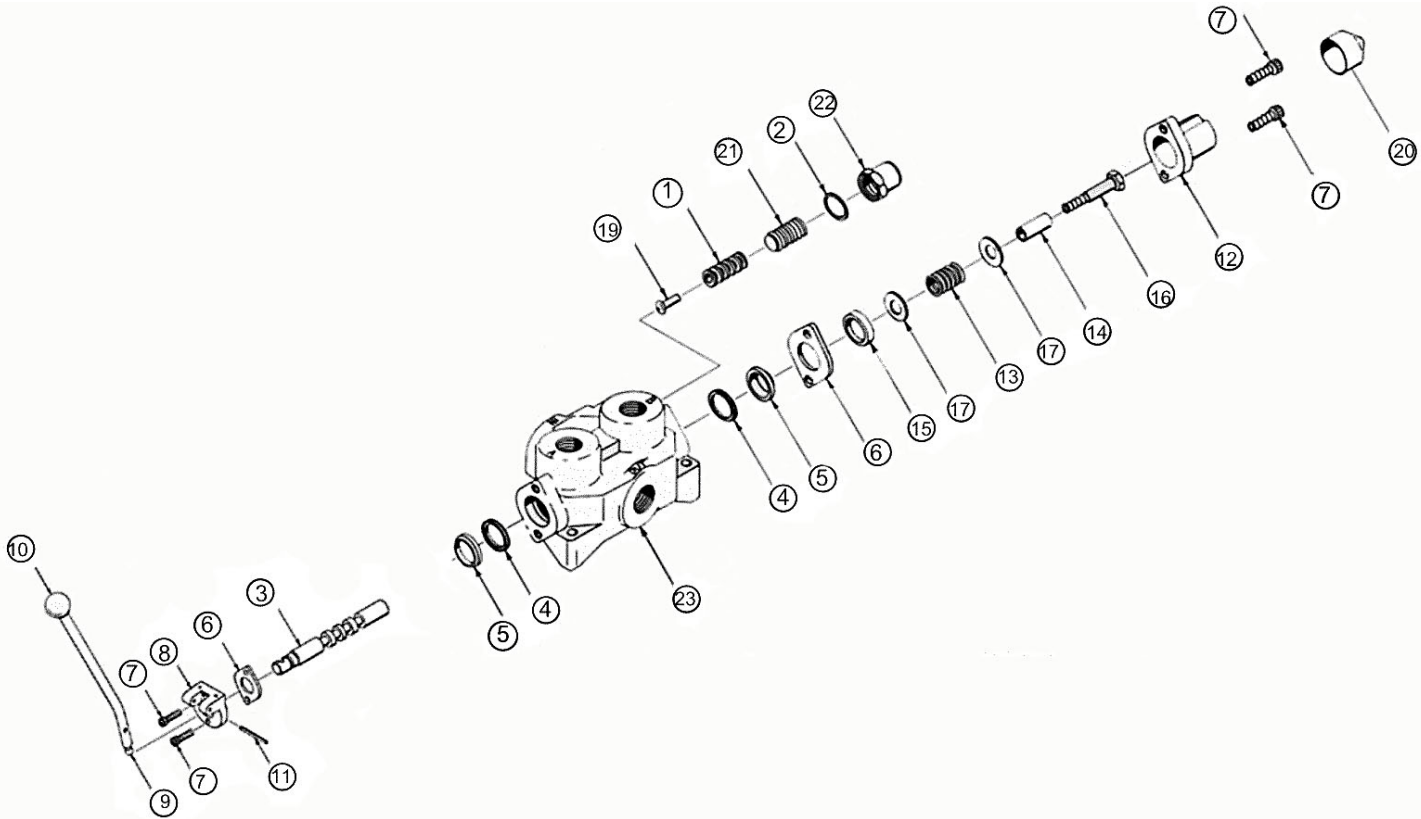
NOTE: The best performance can be obtained by utilizing industrial grade hydraulic oil. Operating viscosity should be between 200-300 SUS.

Escaping fluid under pressure can have sufficient force to penetrate skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood rather than hands to search for suspected leaks.

If injured by escaping fluid, **SEE A DOCTOR AT ONCE**. Serious infection or adverse reaction can develop if proper medical treatment is not administered immediately

HYDRAULIC CONTROL VALVE REPAIR PARTS

(STANDARD CONTROL)



KEY NO.	DESCRIPTION	PART NO.
1	SPRING RELIEF	B505
2	WASHER	B5030
3	SPOOL	SF303T4L
4	QUAD RING 1" O.D. 1/8	SF304
5	WIPER	SF305
6	SEAL RETAINER	SF306
7	CAP SCREW 1/4-20 x 3/4	SF308
8	CLEVIS BRACKET	SF309D
9	HANDLE	SF310B
10	KNOB	SF311
11	PIN	SF312
12	END CAP	SF313
13	SPRING	SF314
14	SPACER	SF315
15	SPRING GUIDE	SF316
16	BOLT 5/16 -18 x1 1/2	SF327
17	WASHER	SF328

KEY NO.	DESCRIPTION	PART NO.
18	DRIVE SCREWS (NOT SHOWN)	SF330
19	POPPET	SF361A
20	DUST COVER	SF362
21	ADJ. SCREW	SF364A
22	CAP SCREW	SF365B
23	BODY	AO1 CAST

Model 55-1-2-G Hydraulic Components

- 1) Model GX-160 Honda Engine, Recoil Start
- 2) Single-Stage Gear Pump, 2 G.P.M. Displacement, 4651
- 3) 4-way, 3 position Manual Directional Control Valve, Tandem Spool
- 4) Hydraulic Reservoir, 5-Gallon Capacity
- 5) Filler / Breather Cap
- 6) Sight / Level Gauge



