Fabco Power

Setting the Standard in Mobile Power

Instruction Manual for Model

HYDRO

20 KP-21

Hydraulic Generator

Manufacturing of: Vehicle Mounted Generators • Hydraulic Generators

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GENERAL INFORMATION
MODEL: HYDRO 20KP-21

GENERATOR	*BRUSHLESS*
GENERATOR	*3600 (60 Hz)*
GENERATOR VOLTAGE	*120 or 120/240*
GENERATOR AMPS	167/84
MOTOR STARTING	*300% SURGE*
VOLTAGE REGULATOR	*INHERENT*
OUTPUT	*20 KW CONTINUOUS AT 100° F OIL TEMPERATURE*
HYDRAULIC MOTOR	*AXIAL PISTON TYPE*
FLOW CONTROL (OPTIONAL)	*CARTRIDGE TYPE*
MAXIMUM SPEED	*4200 RPM (3600 RPM IDEAL)*
MOTOR SHAFT	*1”*
CONTINUOUS PRESSURE RATING	*3000 PSI*
PORT SIZE	
INLET	*1 1/16 - 12 S.A.E.*
RETURN	*1 1/16 -12 S.A.E.*
CASE DRAIN	*1 1/16 -12 S.A.E.*
WEIGHT…	*190lbs*
DIMENSIONS…	*30 ½”L 10 ½”W 13”H*

RECOMMENDATIONS
MODEL: HYDRO 20KP-21

HIGH PRESSURE LINE.....¾ inch

LOW PRESSURE LINE .....1 inch

CASE DRAIN.....½ inch

FLOW CONTROL .....22 GPM IDEAL

DO NOT EXCEED 175°F. HYDRAULIC OIL TEMPERATURE, FOR BEST RESULTS KEEP OIL TEMPERATURE BELOW 120°F. AN OIL COOLER IS RECOMMENDED.

MAXIMUM BACK PRESSURE .....150 PSI

OPEN CENTER 2500 PSI SYSTEMS.

RECOMMEND FILTER 10m

RECOMMEND HYDRAULIC OIL .....DEXTRON III A.T.F.

RECOMMEND RESERVOIR SIZE.....MINIMUM 50 GAL.

INSTALLATION TIPS

If our hydraulic generator is to be used on a truck or system that will be changing speeds, such as, in a fire truck (pumping water) we suggest you use a load sensing piston type pump rather than a fixed displacement gear type. The system will run much cooler and more efficient.

Initial Installation and Start-Up

Be sure you set the hydraulic flow (GPM) to the generator at Approximately 62.5 HZ or 3750 RPM with NO electrical load on the generator.

By using this setting you will have approximately 60HZ (cycles) or 3600 RPM when you are running at full rated load.

One way this can be accomplished is by using a Photo Tachometer on our generator coupling or generator cooling fan.

A Photo Tachometer is an inexpensive tool that can be purchased at McMasters, Grainger, Sears or any other electrical supplier.

TECHNICAL INFORMATION

These self-excited and self-regulating generators, although overall dimensions have been reduced to a minimum, are designed for high-level electrical performance and the maximum in operating reliability.

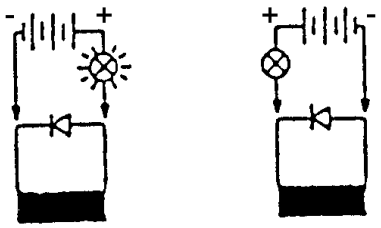
PRELIMINARY CHECKS: Before touching the machines, perform a thorough and in depth visual inspection, checking that components are correctly connected up and that no cables or terminals are broken or loose.

STARTING UP: Make sure, when starting up, that cooling air intake and discharge openings are free and unblocked. We also recommend (when the machine operates in a dusty environment) do periodic checks to make sure it is properly ventilated

THE IMPORTANCE OF SPEED: Frequency and voltage depend directly on rotation speed. This must be kept as constantly as possible on its nominal value no matter what the load. Drive motor speed control systems generally have a small drop in speed between no load and loaded conditions. We therefore recommend setting no load speed 3÷4% above nominal speed.

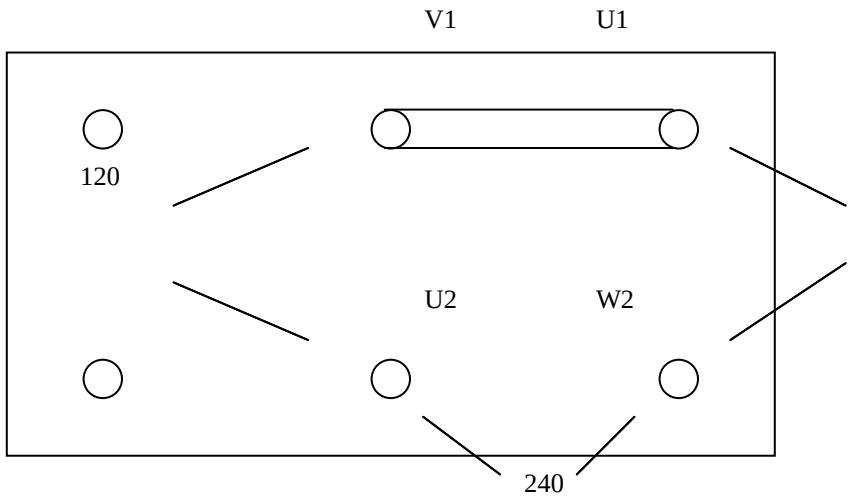
CHECKING VOLTAGE: All the machines are regulated during factory testing. If voltage readings differ from the value indicated on the name plate, this maybe caused by a mistaken reading or by a different rotation speed and we recommend regulating motor speed in order to have nominal RPM under loaded conditions.

CHECKING THE DIODES: For the ohmmeter test it is best to disconnect the diode from its circuit. Measure continuity in one direction only. The test can also be made without disconnecting the diode form the circuit, using a 12V battery and a 45 watt light bulb (automobile light) as shown in the illustration. The light should turn totally on only in one direction, as shown below.



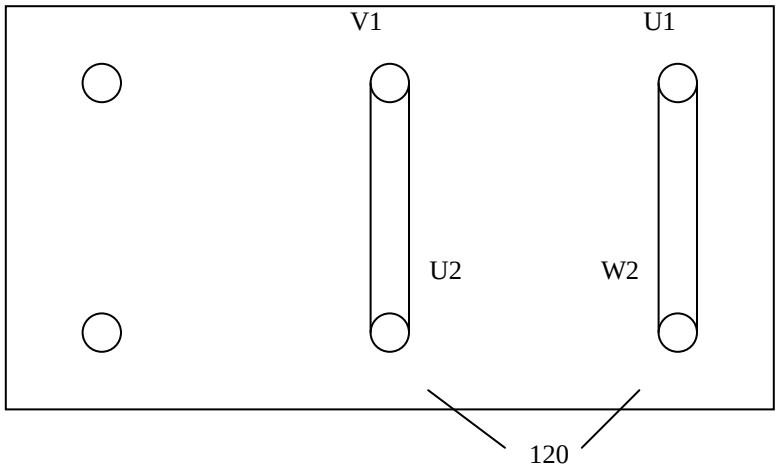
ELECTRICAL CONNECTIONS

20KW



120 / 240 VOLT OPERATION

TERMINAL BLOCK



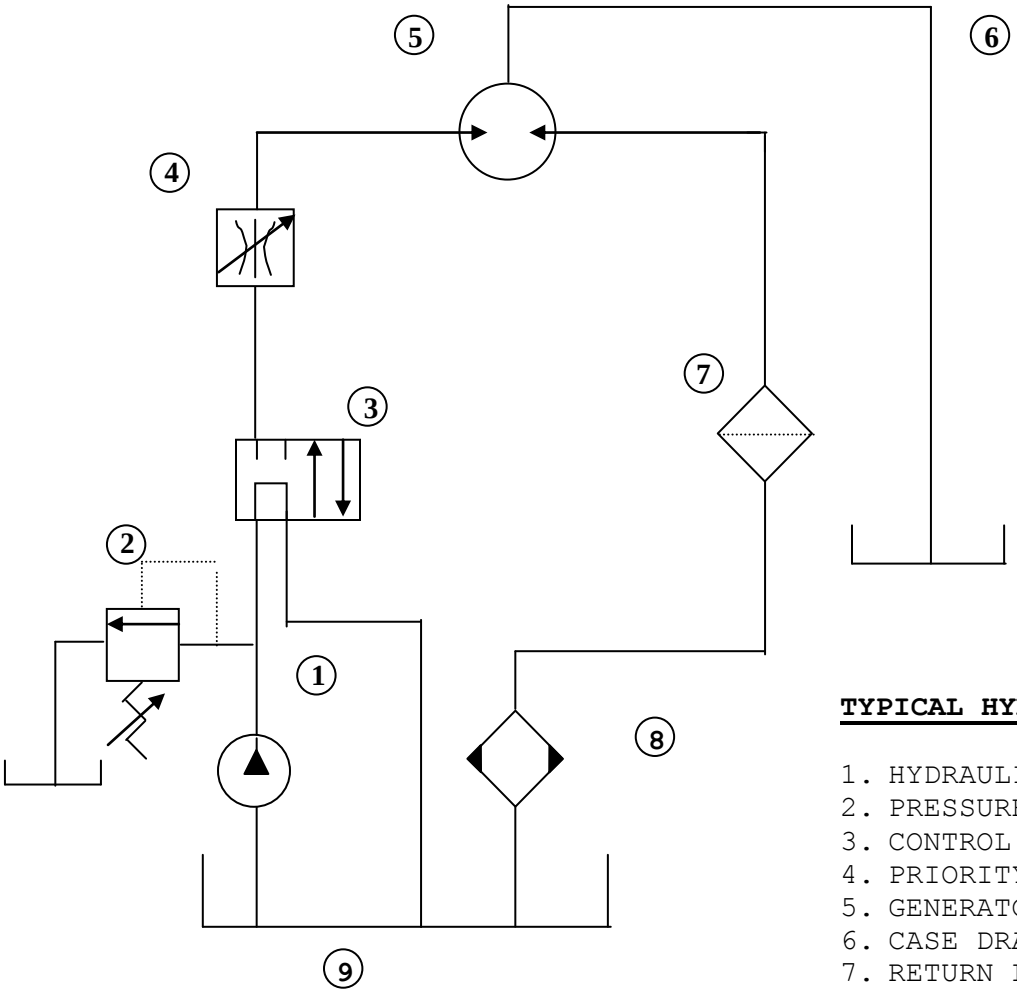
120 VOLT FULL POWER OPERATION

TERMINAL BLOCK

TROUBLE SHOOTING

PROBLEMS	CAUSES	REMEDIES
ALTERNATOR EXCITATION FAILURE	1. Low Speed 2. Faulty capacitor 3. Faulty winding	1. Check RPM and set at nominal value. 2. Check and replace. 3. Check that winding resistance is as shown in the tables.
HIGH NO-LOAD VOLTAGE	1. Speed too high. 2. Capacitor with high capacity.	1. Check and adjust RPM's 2. Check and replace
LOW NO-LOAD VOLTAGE	1. Speed too low. 2. Faulty rotary diodes. 3. Breakdown in windings. 4. Capacitor with high capacity.	1. Check and adjust RPM's 2. Check and replace. 3. Check winding resistance, as per tables. 4. Check and replace.
PROPER NO-LOAD BUT LOW LOADED VOLTAGE	1. Low loaded speed. 2. Load too large. 3. Rotary diodes short-circuited	1. Check and regulate RPM. 2. Check and change. 3. Check and replace.
UNSTABLE VOLTAGE	1. Loose contacts. 2. Uneven rotation.	1. Check connections. 2. Check for uniform rotation speed.
NOISY GENERATOR	1. Broken bearings. 2. Poor couplings.	1. Replace. 2. Check and repair.

FIXED DISPLACEMENT TYPE GEAR PUMP



TYPICAL HYDRAULIC SCHEMATIC

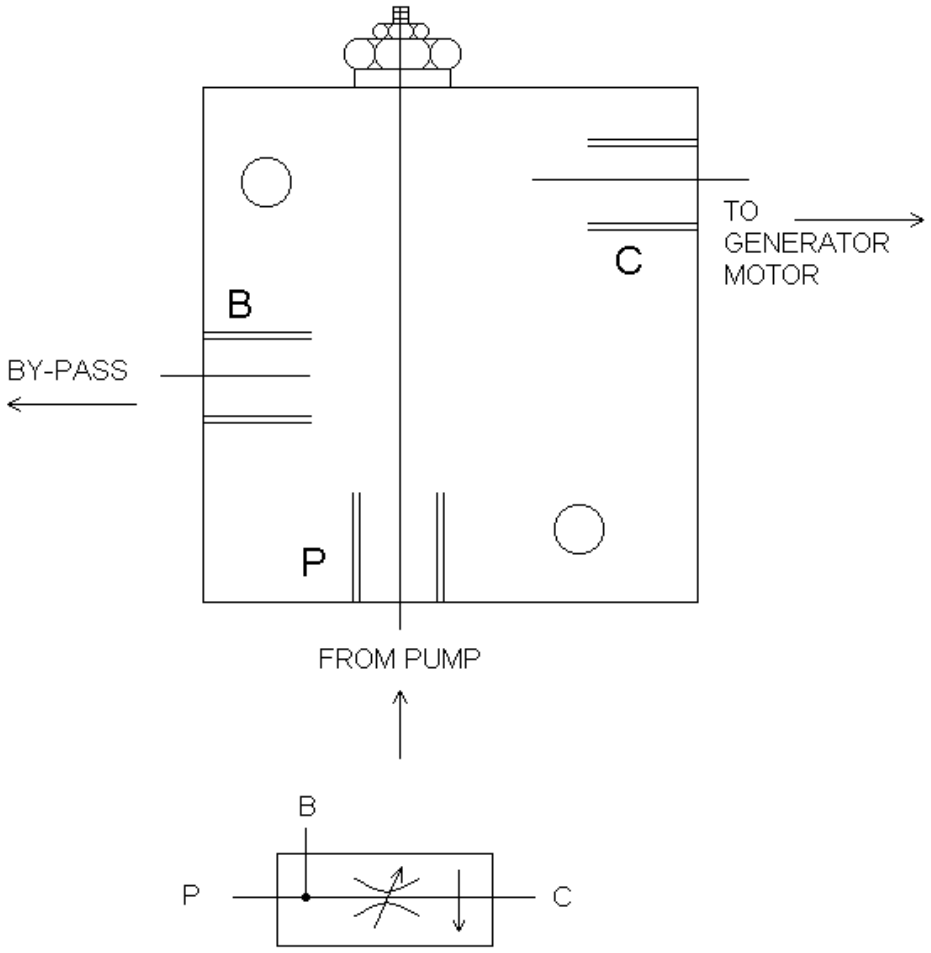
1. HYDRAULIC PUMP
2. PRESSURE RELIEF VALVE
3. CONTROL VALVE
4. PRIORITY FLOW CONTROL*
5. GENERATOR HYRAULIC MOTOR
6. CASE DRAIN LINE**
7. RETURN LINE FILTER
8. OIL COOLER
9. HYDRAULIC FLUID RESERVOIR

* Some units may be equipped with integral priority flow control, refer to specific model number.

** External case drain line may be required on some units refer to specific model number.
When external case drain is required it should be unobstructed direct return to reservoir with a minimum I.D. no less than that of case drain port on generator motor.

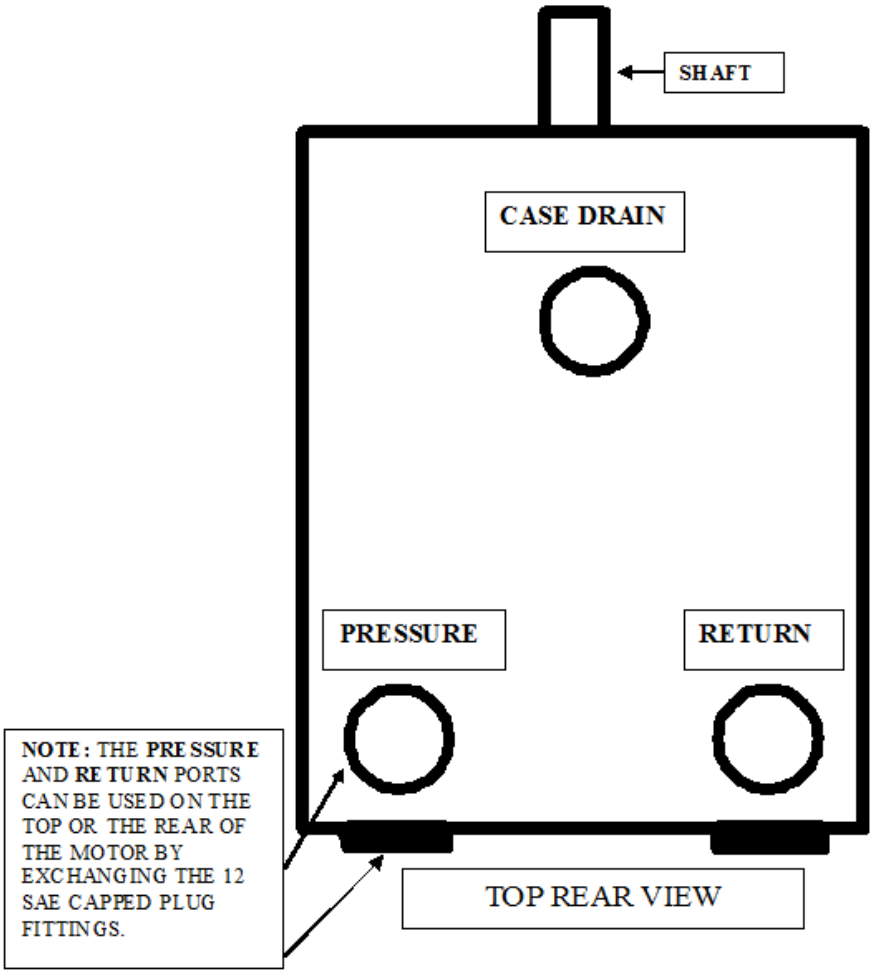
FOR SPECIFIC INSTALLATION RECOMMENDATIONS CONSULT FACTORY

FABCO BY-PASS FLOW CONTROL

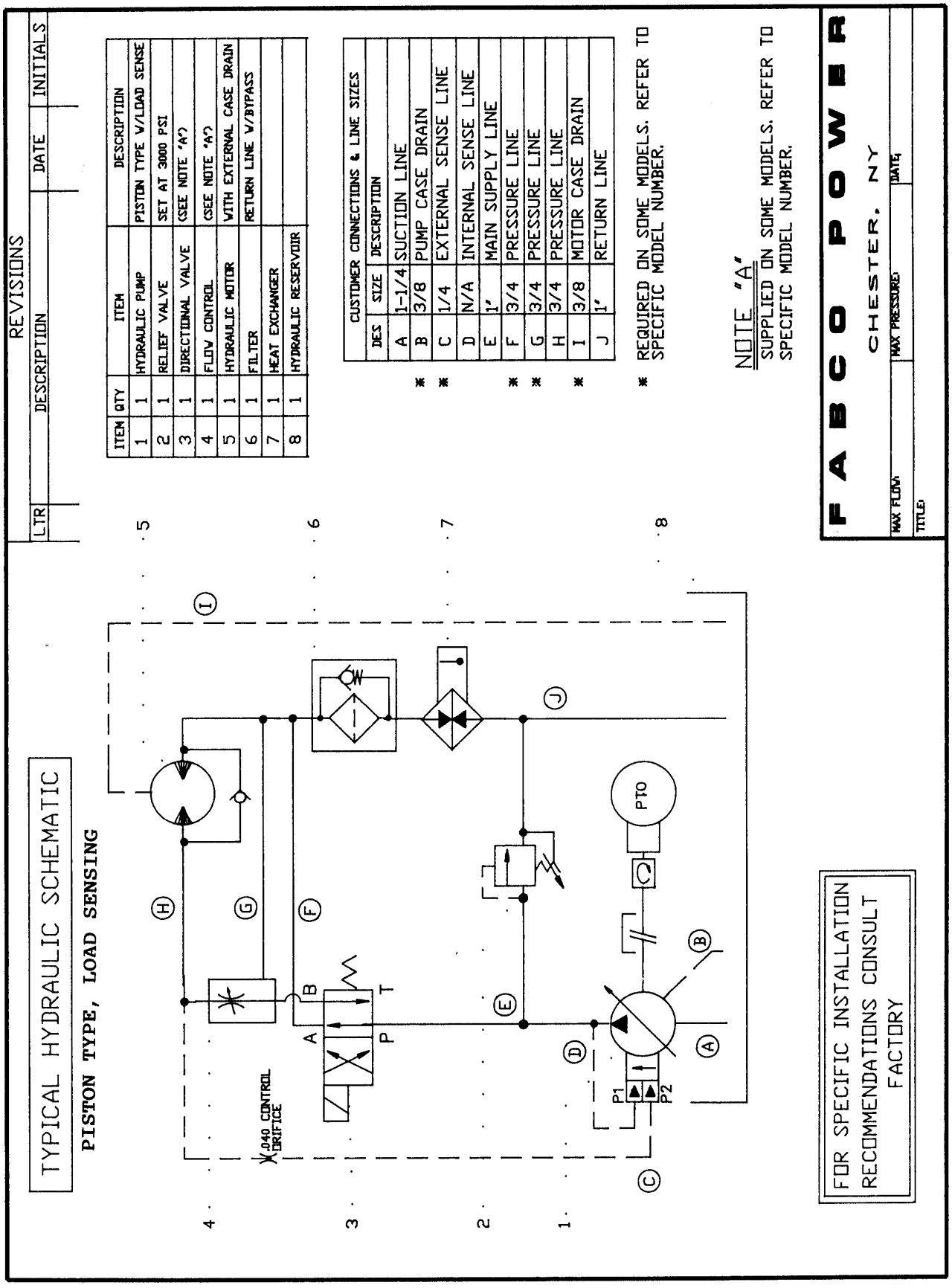


FABCO PN 572233

NOTE: THIS ASSEMBLY ONLY NEEDED WITH FIXED DISPLACEMENT TYPE GEAR PUMP.



21 cc PISTON MOTOR ALL FITTINGS ARE # 12 SAE


REVISIONS
LTR
DESCRIPTION
DATE
INITIALS
TYPICAL HYDRAULIC SCHEMATIC
PISTON TYPE, LOAD SENSING
ITEM QTY ITEM DESCRIPTION
1 1 HYDRAULIC PUMP PISTON TYPE W/LOAD SENSE
2 1 RELIEF VALVE SET AT 3000 PSI
3 1 DIRECTIONAL VALVE (SEE NOTE "A")
4 1 FLOW CONTROL (SEE NOTE "A")
5 1 HYDRAULIC MOTOR WITH EXTERNAL CASE DRAIN
6 1 FILTER RETURN LINE W/BYPASS
7 1 HEAT EXCHANGER
8 1 HYDRAULIC RESERVOIR
CUSTOMER CONNECTIONS & LINE SIZES
DES SIZE DESCRIPTION
A 1-1/4 SUCTION LINE
B 3/8 PUMP CASE DRAIN
C 1/4 EXTERNAL SENSE LINE
D N/A INTERNAL SENSE LINE
E 1" MAIN SUPPLY LINE
F 3/4 PRESSURE LINE
G 3/4 PRESSURE LINE
H 3/4 PRESSURE LINE
I 3/8 MOTOR CASE DRAIN
J 1" RETURN LINE
* REQUIRED ON SOME MODELS. REFER TO SPECIFIC MODEL NUMBER.
NOTE "A"
SUPPLIED ON SOME MODELS. REFER TO SPECIFIC MODEL NUMBER.
.040 CONTROL ORIFICE
P1
P2
PTO
FABCO POWER
CHESTER, NY
MAX FLOW:
MAX PRESSURE:
DATE:
TITLE:
FOR SPECIFIC INSTALLATION RECOMMENDATIONS CONSULT FACTORY

WARRANTY TERMS

EACH FABCO POWER GENERATOR IS WARRANTED TO THE ORIGINAL OWNER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP UNDER NORMAL USE AND SERVICE FOR ONE (1) YEAR FROM THE DATE OF PURCHASE.

OUR OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPLACING OR REPAIRING, AT OUR OPTION, ANY PART OR PARTS PROVED TO BE SO DEFECTIVE WILL REQUIRE AN RGA NUMBER.

ALL SHIPPING CHARGES ARE THE CUSTOMERS RESPONSIBILITY UNDER THIS WARRANTY.