KTI Hydraulics Engineering

3195 D Airport Loop

Costa Mesa, CA 92626

Tel. 714-556-8818 Fax. 714-656-1520

www.ktihydraulics.com

INSTALLATION RECOMMENDATIONS

1) To avoid contamination, do not remove plastic port plugs until fittings are to be installed
2) Power Unit mounting flange must make full contact with equipment mount, do not use the mounting bolts to force alignment of the power unit on to the equipment mount
3) If pump fails to prime, remove Cartridge Check valve and start the power unit until hydraulic oil flows from the valve cavity and reinstall the Cartridge Check Valve
4) Reservoir temperature should not exceed 150*F. System reliability and component service life will be reduced when system is operated at higher temperature

INLET CONDITIONS

1) Positive pressure must be available at the pump inlet while it is operating. If overrunning load causes the motor to rotate faster than the pump can fill it, cavitations will occur. Consult the factory for inlet pressure requirements and speed limitation

FILTRATION

1) For maximum pump and system component life, the system should be protected from contamination at a level not to exceed 125 particles greater than 10 microns per millilitre of fluid (SAE Class 4/ISO 16/13)

SERVICE

1) Clean fluid = improved system reliability and longer component service life
2) It is recommended that every 4,000 operating hours or once a year, whichever occurs first, the sir filter/breather cap and suction strainer should be replaced
3) Every 2,000 operating hours, or every 6 months, whichever occurs first, drain hydraulic oil from the reservoir and remove the reservoir from Universal Manifold (end plate). Use WD-40 or similar product to wipe down and remove all debris inside the reservoir and check the magnet for signs of metal particles. Lubricate Manifold O-ring with bearing grease. Remount the reservoir
4) For TEFC motors, remove fan casing and wipe fan blade and casing

For other service, please consult factory for proper procedures

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KTI DC POWER UNIT TROUBLE SHOOTING GUIDE

General Instructions for 12V DC Systems

1) Check battery voltage. If voltage is 9 Volt or less, do not operate power unit. Change battery to 12 Volts
2) Check to see that the motor is wired correctly to starter switch and all other contact wires have light connections
3) Check ground wire for good connection
4) Check reservoir oil level
5) Do not tamper with relief valve. Factory preset to specified pressure and wired. Cutting this wire voids warranty

SYMPTOMS

1) Unit will not start (see causes 1,2,7)
2) Unit drifts when power is off (see causes 3,4,5)
3) Slow Cylinder travel (see causes 1,2,4,5)
4) Unit will not lower (see causes 2,3)

PROBABLE CAUSE

1) Improper voltage motor (see solutions A,D,E)
2) Improper Ground (see solutions A,F,G)
3) Improper voltage to calves (see solutions A,F)
4) Leakage thru solenoid valves (see solutions C,D)
5) Internal leakage at cylinder (see solutions D,E)
6) Insufficient oil to pump inlet (see solutions B,C,E)
7) Pump seized or locked (see solutions D,E)

POSSIBLE SOLUTION

A) Check wiring to insure that all connections are tight
B) Keep oil reservoir full and clean
C) Flush and clean cartridge valves and/or hydraulic system
D) Replace components
E) Return for necessary repair
F) Check for clean, tight, metal- to- metal contact on wire connections
G) Make sure nuts on top of solenoid valve coil is tight to 40 inch/lb maximum

FLUIDS

KTI recommends using top quality hydraulic fluid with AISO VG 22-68(198-74 8 cSt 97-347 SUS at 40* C) to ensure optimum performance and system life. Fluids should have anti-wear properties rust and oxidation inhibitors. If using synthetic fluids, consult the factory for alternative seal material requirements

Fluid Temperature Range	ISO Viscosity Grade (ISO VG)
-5* F to +140 *F	22
-21* C to + 60* C	22
+5* F to + 170* F	32
-15* C to + 77 * C	32
+15* F to + 190*F	46
-9*C to + 88* C	46
+30* F to + 210* F	68
-1*C to + 99*C	68

Do not operate Power unit above recommended Fluid Temperature Range. Premium hydraulic oil with proper Viscosity Grade and additives such as Chevron EP, Mobile DTE10, DTE 20 Series or Shell Tellus would be acceptable.

QUICK REFERENCE TROUBLE SHOOTING GUIDE

For KTI Hydraulics Pump

For additional trouble shooting questions, please call KTI Hydraulics at (1) -714-556-8818

	Not Building Pressure	Motor Not Running	Cylinder Won't Extend	Cylinder Won't Retract	Won't Hold Load	Excessive Heat From Unit	Aeration of Hydraulic Fluid	Reservoir Overflows	Cylinder Extends With Unit Not Operating	Struggles To Lift Load	Load Bounces When Cylinder Retracts	Start Solenoid Just Clicks-Motor Not Engaging	Won't Lift Load (DC Motor Under Load)	Won't Lift Load (DC Motor Not Under Load)	Won't Lower	Start Solenoid Stays On	Cylinder Won't Retract (Motor Under Load)
LOW BATTERY VOLTAGE		•	•	•		•		•		•		•					
POOR GROUND CONDITION		•	•	•		•		•		•		•					
CHECK HAND CONTROL												•			•		•
DEBRIS IN LOAD HOLDING VALVE					•												
THERMAL PRESSURE LOCK			•														•
COIL NOT ENERGIZING			•	•									•		•		•
BAD SEALS IN CYLINDER	•									•							•
LOOSE INLET				•			•	•		•							•
PACKING ON CYLINDER ROD WORN OUT			•		•				•	•					•		•
HOSES CONNECTED BACKWARDS										•							
PUMP NOT PRIMING	•		•														
CLOGGED ORIFICE				•											•		•
RUST IN MOTOR		•															
BAD DIODE				•													•
CHECK FOR ADDITIONAL VALVING ON OR CONNECTED TO CYLINDER					•												
DIRECTIONAL VALVE NOT SHIFTING PROPERLY			•	•					•						•		•
BAD START SOLENOID											•				•	•	
DIRTY CONTACTS IN HAND CONTROL			•	•							•	•					