Hydra 50

Hydra 50

Table of Content:

Hydra-50Parts Washing System.

1) The Hydra 50 heated chemical tank:

- Tank: MoldedHDPE plastic capacity of 45 to 55 gallons.
- Tank electrical requirements 120 Volts AC, 10 Amps.
- The heater is 1000 watts and constructed of Stainless Steel.
- The tank includes a 300 GPH brush pump with a 75 micron filter attached.
- The tank includes a sink that has 2 bag filters in its drain. one 400 micron 4” and one 200 micron 8”. These bag filtersand the pump filter each filter 100% of the fluid to increase the life of the chemistry.
- Safety features: Ground fault plug, low level **safety** float, and a digital temperature control.
- All three filters are replaceable with out the need for tools.
- The bag filters can be removed from the sink drain for cleaning. The brush pump intake filter can be accessed throught the drain opening.
- The sink can be removed from the tank by removing the upper cabinet door left hand slide. This slide is held in place by 2 removable bolts.Then lift out the sink.
- The sink has a quick disconnect camlok fitting to easily remove the sink to gain access to the whole tank area.
- The washer has 4 multi directional casters.

This machine is compatable with many of the Bioforce Services AQC Chemistries for manual washing.
When the tank is used with the high pressure pump and upper cabinet the BioForce JackHammer low foam chemistries should be used.

The equipment and chemistry should be serviced in the following way.

Regular and Full Service Procedure for Complete On-Site Maintenance and Used Filter Management.
It should be noted that the Hydra 50 washer, the AQC and the JackHammer Parts Wash chemistries are designed as a system. Each of the AQC formulas has slightly different test results such as pH and refraction.

The following procedure is for a machine that has already been in service.

Note: a normal service cycle is approximately the time it takes for the cartridge filter (75 micron) on the pump intake to plug up.

Regular Service Procedure

1. Switch system to the off position; unplug from electrical connection (110 volt) outlet.

2. Remove the 2 nylon filter bags from the drain hole then dumpthem out, they can be reused after cleaning if they are not damaged.Next lift out the sink tipping the front up first then lift pulling towards you. Disconnect the camlock fitting from the sink and set the sinkdown. A floating polypropylene oil sorbent pad can be floated on top of the solution to remove separated oil.The pad should be disposed of according to your facility plan. If there is excess oil in the machine it may be necessary to use an additional oil pad. **Proper disposal requirements for Used Oil and Sorbents may vary, check local andstate regulations.** In most cases the sorbent pad and cartridge filter are classified as sorbent waste that have a high BTU value and can be burned for energy recovery or disposed of with other filters you may have in your facility.

3. Remove the 75 micron cartridge filterfrom the inside of the machine it is mounted on the intake of the pump. No tools are required, simply pull it off and replace it with either a 15” 75 micron for heavy or extended service or a 10” for normal service.
4. Perform the chemical service for the type of chemistry you have in your machine. (use the procedure in your attached chemical documents.) It should be noted that the AQC family of chemicals and the JackHammer 130 LF/RI are splitters.This means that they will clean the oil and grease from your parts and then release them either to the top of the solution for oils and light greases or to the bottom for heavy greases, dirt and inks.

Note: Steps 1 through 4 above consitute a regular service

For full service machine cleaning and to remove grease, oil andsediment when the chemistry is stillfunctioning, follow these steps.

Note: the heater shouldbe allowed to cool down (approximately5 minutes) before the solution is drained from themachine.

5. Pump existing solution into a 55 gallon container until heavy oil and grease sludge level is exposed.

NOTE: Any discoloration of the solution during this initial stage of the maintenance service should be disregarded, discoloration will naturally occur during the cleaning process and will not necessarily affect the cleaning performance in auto, truck and maintenance repair.

6. Your washer can be cleaned in one of the following ways. ***Note it is important to understand your correct disposal procedures before you proceed.***

6.1) Utilizing a wet vacuum to remove heavy oil, grease and sediment. The grease can be combined with your waste grease or you can solidify with oil sorbent.
6.2) A loose or pourable sorbent can be mixed with the grease and dirt to make it easier to remove and then it can be scooped out and added to your sorbent waste were it is appropriate. For small amounts of grease and oil at the bottom of the tank wiping it up with absorbent pads may be the best approach. (Proper disposal requirements for Used Oil and Sorbents may vary, check local and state regulations.)

7. Pump the recycled/filtered solution into the Parts Washer using a wet vac with a pumping feature or a sump pump.

8. After adding water to bring it back to the normal operating level check the chemical concentration and pH. Water level should be checked weekly. Average evaporation of water is approximately 1 ½ to 3 gallons per week. Evaporation rate is based on the frequency of operation, heavy usage or leaving the **pump running continously will exceed projected volume.**

9. For a machine that has been in service for at least one service period and the refraction is low add approximately (+/-) one quart of the AQC Parts Wash orJackHammer 1301 LF/RI concentrate for every 15 gallons of machine capacity (example: Hydra-50 will hold aproximately 50 gallons of chemistry 50/15 = 3.3 quarts.)

10. Install a new cartridge filter.

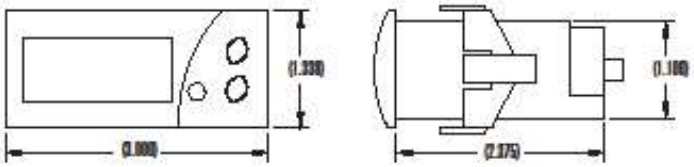
11. Install a new floating oil sorbent pad if used and clean or replace thepolypropylene filter bags.

12. Reconnect system into electrical outlet, switch system to on position. Test system for flow capacity and overall equipment operation. Wipe the unit clean.

If the machine is run without the intake filter it is possible that the pump may become plugged.You may be able to clear the blockage by blowing compressed air into the flexible nozzle with the valve shutoff to the brush.

Series TS2- Digital Temperature Switch

Specifications - Installation and Operating Instructions



DESCRIPTION

Monitor and control temperature for heating and cooling applications with the Series TS2 Digital Temperature Switch. The Series TS2 offers twelve programmable functions to customize the unit to fit application requirements. Use the 15(5) Amp SPDT relay output to drive a motor, compressor, or fan. Designed with the OEM in mind, the TS2 offers the ability to configure multiple units with the touch of a button.

Programming multiple units is quick and easy. Simply program one switch with the desired parameter settings and connect the configuration key (sold separately) to the back of the unit. Press the button on the configuration key and download the parameter settings. Connect the key to the other switches to upload the stored settings with the push of a button.

The TS2 features set point adjustments, static defrost timing, compressor mean time, hysteresis, and ambient probe adjustment. Security protection is offered using a password code. The Series TS2 Digital Temperature Switches are designed to operate with PTC (1000Ω @ 25°C) probes sold separately.

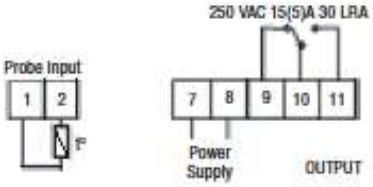
INSTALLATION

The thermostat must be installed by authorized professionals. It should be located in a place free of vibrations, impacts, water and corrosive gases.

A hole measuring 71 x 29 mm must be cut in the panel where the thermostat is to be fitted (apply silicone to make it leaktight). Then, the fixing cups must be fitted, sliding them onto the thermostat until secure. Do not force tightening of the screw if the U-brackets are used. The connections must be covered with the rear cover for this.

WIRING INSTRUCTIONS

Avoid installing the probe's cables in proximity with any power cable. If the length of the probe cables measures more than 100 meters, a recalibration adjustment must be made (parameter P1).



SPECIFICATIONS

Probe Range: -58 to 302°F (-50° to 150°C).
Input: PTC thermistor 1000Ω @ 25°C.
Output: 15A PTC SPDT relay @ 250 VAC resistive, 5A inductive.
Horsepower Rating (HP): 3/4 HP.
Control Type: ON/OFF.
Power Requirements: 110 VAC.
Accuracy: ±1°C.
Display: 3-digit, Red, 1/2" digits.
Resolution: ±1 digit.
Memory Backup: Nonvolatile memory.
Ambient Operating Temperature: 14 to 158°F (-10 to 70°C).
Storage Temperature: -4 to 176°F (-20° to 80°C).
Weight: 2.3 oz (65 g).
Front Panel Rating: NEMA 4X (IP65).
Agency Approvals: CE, URc, UR.

FRONT OPERATION
PUSH BUTTONS

SET — Pushing SET once gives access to the SP. Pushing for 8 seconds gives way to the requested code. After entering the correct code, all parameters are accessible. This button alternates between text parameters and their value. It validates the modified parameters. When pressed with DOWN, it exits parameter programming.

Pressing this arrow allows the user to go to the next parameter or increase the value viewed on the display. When pressed for 8 seconds, it activates or deactivates defrosting.

Pressing this arrow allows the user to go to the previous parameter or decreases the value viewed on the display. When pressed for 8 seconds, it activates or deactivates the continuous cooling cycle. When pressed simultaneously with SET, it exits the programming mode.

PROGRAMMING PARAMETERS

Access only to Set Point SP (without code protection):
•Press and release SET. SP text appears on the display.
•Press SET again. The real value is shown on the display.
•Modify the value using the UP and DOWN keys.
•Press SET and DOWN to quit programming, or wait 1 minute for the TIMEOUT.
Access to all parameters (code protected):
•Press SET for 8 seconds. The access code value 00 is shown on the display.
•Using the UP and DOWN buttons, set the code (factory-set code is 00).

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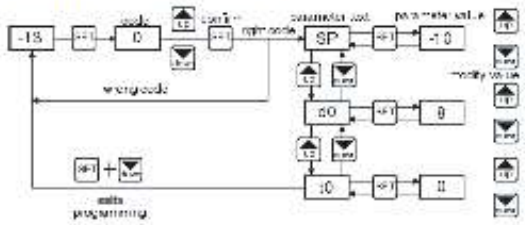
•Press SET to enter the code. If it is correct, the first parameter label will be shown on the display (SP).
•Move to the desired parameter with the UP and DOWN keys.
•Press SET to see the value.
•Modify the value with the UP and DOWN keys.
•Press SET to enter it, and exit to text parameter.
•Press SET and DOWN to quit programming, or wait 1 minute for the TIMEOUT.

SETTING THE KEYBOARD CODE TO ZERO



The keyboard code can be set to zero by holding the SET key and turning the controller off then on again.

LED INDICATIONS
Out: This indicates that the compressor is connected. It waits the programmed minimum stop time of the compressor.
Def: This indicates that defrosting is activated.

MESSAGES DISPLAY

In normal operation, the probe temperature will be shown. In case of alarm or error, the following messages will be shown:
• Er- Memory error.
• -- Short-circuited probe error.
• oo- Open probe error.

	Description	Units	Range
SP	Set point	degrees	r1 to r2
r0	Differential or hysteresis	degrees	1 to 20°
r1	Lower value for set point	degrees	-50 to 150°C -50 to 302°F
r2	Higher value for set point	degrees	-50 to 150°C -50 to 302°F
d0	Heating or cooling control	option	Ht/Co
d2	Time for defrosting	minutes	0 to 59'
d8	Interval time between defrosting	hours	0 to 24
c0	Minimum stop time for compressor	minutes	0 to 59'
c1	Continuous cycle time	hours	0 to 24
c2	ON time of fault cycle	minutes	0 to 999
c3	OFF time of fault cycle	minutes	0 to 999
P1	Ambient probe adjustment	degrees	-10° to 10°
P4	Decimal point	option	yes/no
H5	Parameter access code	numeric	0 to 99
H6	Ambient probe type	option	ptc/ntc
t0	Maximum temperature on display	degrees	-50 to 150°C -50 to 302°F

PARAMETERS

PARAMETER DESCRIPTIONS
SP = Set Point. Temperature wished to regulate the machine. Can vary from r1 to r2.
r0 = Differential. Heating: If temperature is ≥ Set then out OFF. If temperature is ≤ Set then out OFF. Cooling: if temperature is > Set + r0 then out ON. If temperature is ≤ Set then out OFF.
r1 = Lower Set Point Limit
r2 = Higher Set Point Limit
d0 = Heat or Cooling Control. Ht = heating control, Co = cooling control.
d2 = Defrosting Time Remaining, in minutes. If d2 = 0, defrosting will not start.
d8 = Interval Between Two Defrostings, in hours.
c0 = Minimum time for compressor to be OFF. Minimum time from when the compressor stops till it connects again.
c1 = Continuous Cycle Time. The remaining time for a continuous cold cycle.
c2 = ON time of fault cycle, during probe error.
c3 = OFF time of fault cycle, during probe error.
P1 = Ambient Probe Calibration. Offsets degrees to adjust the ambient probe.
P4 = Decimal Point. Display decimal point in normal operation. Always present in parameter menus.
H5 = Access Code to Parameters. Factory-set as 00.
H6 = Ambient Probe Type. Sets probe type to be NTC or PTC.
t0 = Temperature Display Limit. Maximum temperature shown on the display, although the real temperature can be greater.

OPERATION IN CASE OF ERROR
If the probe or thermostat memory should fail, the compressor will be connected for 5 minutes ON then 5 minutes OFF.

MAINTENANCE

CLEANING
Clean the surface of the display controller with a soft, damp cloth. Never use abrasive detergents, petrol, alcohol or solvents.

REPAIRS
After final installation of the TS Series Digital Temperature Switch, no routine maintenance is required. A periodic check of system calibration is recommended. The devices are not field repairable and should be returned to the factory if recalibration or other service is required. After first obtaining a Returned Goods Authorization (RGA) number, send the material, freight prepaid, to the following address. Please include a clear description of the problem plus any application information available.

Dwyer Instruments,Inc.
Attn: Repair Department
102 Highway 212
Michigan City, IN 46360 U.S.A

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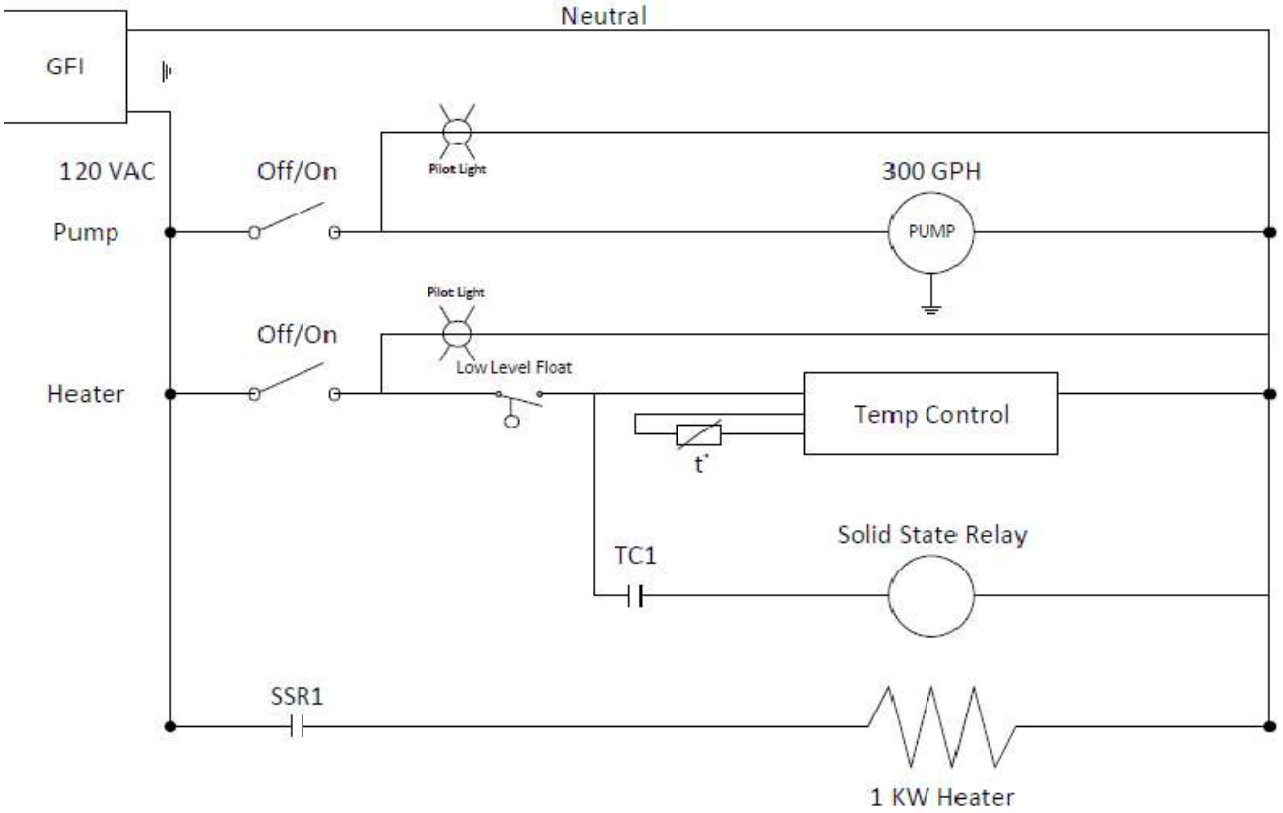
HYDRA-50	
BIOFORCE PART #	**DESCRIPTION**
H50-1000	SOLID STATE RELAY-25AMP
H50-1001	DIGITAL TEMP CONTROL-LOVE
H50-1002	PTC SENSOR/PVC TEMP PROBE
H50-1003	FLOAT-POLY PRO
H50-1004	ROCKER SWITCH-MAINTAINED
H50-1005	JIC SCREW COVER ENCLOSURE
H50-1008	HEATER-1KW-STAINLESS STEEL
H50-1023	GFCI PLUG BLACK OR YELLOW
H50-1024	PUMP-300GPH
H50-1025	PUMP INTAKE FILTER
H50-1031	LARGE FILTER RING-NATURAL POLY PRO
H50-1032	SMALL FILTER RING-NATURAL POLY PRO
H50-1033	FILTER BAG 400 MICRON 4 1/8” X 13”
H50-1034	FILTER BAG 200 MICRON 7 1/16” X 32”
H50-1035	FILTER CARTRIDGE 75 MICRON 15”
H50-1036	FILTER PLATE-PVC
H50-1037	LOC-LINE 1/2” FLEX TUBE
H50-1038	LOC-LINE 1/2” VALVE NPT
H50-1039	LOC-LINE 1/2” ROUND NOZZLE
H50-1040	1/2” TEE POLY BLACK
H50-1041	1/2X1/4” REDUCING BUSHING POLY BLACK
H50-1042	1/4”XHOSE BARB VALVE PVC
H50-1043	5/16” BRUSH HOSE EITHER BASED/FOOT
H50-1044	FLO-THRU BRUSH
H50-1045	1/2” HOSE EITHER BASED/FOOT
H50-1046	1/2” TEE POLY BLACK
H50-1047	1/2X1/4” REDUCING BUSHING POLY BLACK
H50-1048	1/4”XHOSE BARB VALVE PVC
H50-1049	BANJO FITTING 1/2”NPT
H50-1050	BANJO FITTING CAM X HOSE BARB



	Hydra 50 w/ Thermister	BIOFORCE	Wiring Diagram DATE: 11/20/2013	DRAWING: Control

Bioforce Services Inc. Fridley, MN 55432 Phone: 763-780-3939