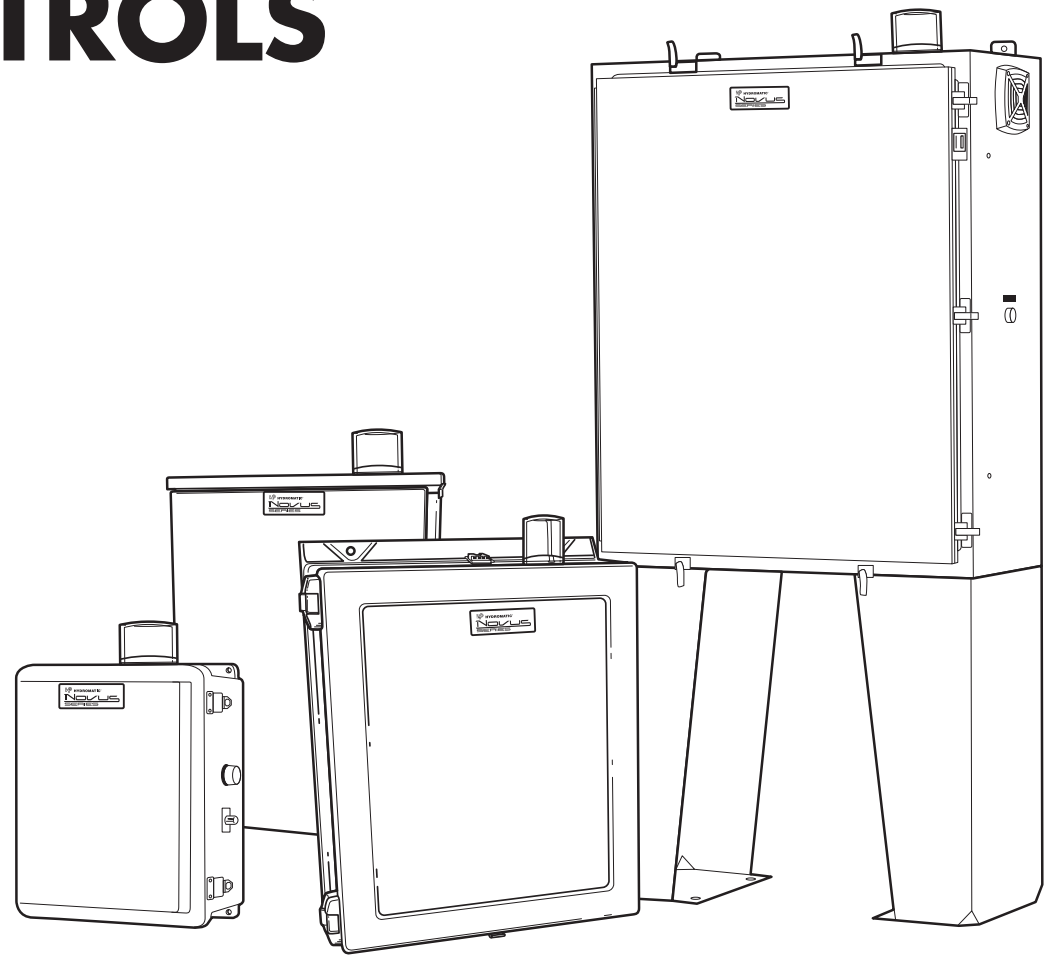
Pump Installation and Service Manual

HYDROMATIC®

ENGINEERED PRODUCTS

NOVUS 2000 SERIES

STANDARD ELECTRICAL CONTROLS



NOTE! To the installer: Please make sure you provide this manual to the owner of the pumping equipment or to the responsible party who maintains the system.

Part # 05625-516-1

Item # H-03-516 03/09

General Information

Thank you for purchasing your Hydromatic® Novus Control Panel. To help ensure years of trouble-free operation, please read the following manual carefully.

Before Operation:

Read the following instructions carefully. Reasonable care and safe methods should be practiced. Check local codes and requirements before installation.

Attention:

This manual contains important information for the safe use of this product. Read this manual completely before using this product and refer to it often for continued safe product use. DO NOT THROW AWAY OR LOSE THIS MANUAL. Keep it in a safe place so that you may refer to it often.

Unpacking Panel:
Remove panel from carton. When unpacking unit, check for concealed damage. Claims for damage must be made at the receiving end through the delivery carrier. Damage cannot be processed from the factory.

Power Supply

WARNING: Do not attempt to wire this control box unless you have a good working knowledge of electricity and are familiar with the state and local codes. If you are in doubt about anything, contact a qualified electrician.

Do not attempt to operate this unit on any other voltage or power distribution other than for which it was originally designed (check nameplate). **Failure to comply with this will result in the immediate cancellation of all warranties and claims.**

It is advisable to put the panel on its own circuit using a circuit breaker adequately sized to protect the pump(s). Check state and local codes for the correct wire size and circuit protection to use. The wire should be sized large enough to handle the full load current of the pump(s) you are operating, and any voltage drop that might occur due to long service runs.

Run power supply lines to the control box and secure (knockouts are not supplied in this box). Select a convenient location on the bottom to enter the box with the power supply. Cut a hole with a chassis punch. Caution should be taken not to get metal chips in the components while cutting hole. After the hole is cut, any metal particles must be removed from the box. Failure to do so may result in premature component failure.

Connect incoming power to the terminal blocks labeled L_1, L_2, L_3, and all necessary ground wires to the ground lug at the bottom of the box. The ground lug should be fastened to a good driven earth ground by one of the methods described in the National Electric Code. NEC does not permit using ground as a current carrying conductor, therefore a neutral must be provided for 115 volt 1 phase, 208 volt 1 phase, 230 volt 1 phase, or 208 volt 3 phase systems.

WARNING: Before handling these pumps and controls, always disconnect the power first. Do not smoke or use sparkable electrical devices or flames in a septic (gaseous) or possible septic sump.

Electrical Connections:

The contractor must conform to the latest requirements of the National Electrical Code. All conduit and cables shall be in accordance with NEC Code NFPA #70. To maintain UL and CSA ENCL rating, use the same type UL and CSA weatherproof conduit hubs when connecting to this enclosure. Prior to conducting any installation, repair or service with regard to the control panel, refer to the schematic appropriate for that panel. The schematic will provide guidance with regard to the terminal block connections.

CAUTION: A nonmetallic enclosure does not provide grounding conduit connections. Use grounding bushing and jumper wires.

Make the Following Electrical Connections:

a. **Connect the pump leads to the control panel.** ***If pump is single phase and the panel has start capacitor, start relay and run capacitor, it is critical that the pump leads be connected properly. The White, Black, and Red pump leads must be connected to the appropriate terminals as directed by the panel schematic and the label on the back panel below the terminals.***

b. Connect the pump heat sensor and seal failure leads (if available on the pump) to the appropriate terminal blocks in the control panel.

c. Connect all the float control leads to the appropriate panel terminals. Contractor must be very careful in locating the floats at the proper elevations. The maximum distance from the control panel to the floats is the lesser of l00 feet, or the maximum distance recommended for the pump.

d. *Before connecting power to the control panel, make sure all control switches (e.g. H-O-A switch) and protective devices (e.g. breakers) are in the Off position. Now connect power to the terminal block or the circuit breaker as directed by the schematic.*

e. *Control panel must be grounded properly per NEC and/or local codes. To facilitate this, a ground lug is provided on the control panel.*

Simplex Operation

The Novus 2000 Simplex uses three normally open floats as level sensing inputs. When the tank is empty, all of the floats are down. On rising water the Off float closes first which causes the controller to take no action. The On float will close next as the water rises which will then turn on the pump. If this pump causes the water level to fall, the pump will be turned off when both the On and Off float are out of the water and open.

The last float input is for the high water alarm float. Whenever the high water alarm float is under water (closed), then the high alarm condition is set. This will cause the alarm light to flash on and off and the horn to activate. The horn output will remain on until the High float comes out of the water or until the mute input is closed. The controller has an alarm test button which will simulate the high water alarm float and cause the high alarm and horn to activate.

The pump controller has an input (two terminals) for a pump seal fail (leak) sensor. This input measures the resistance between the two pins. If the resistance is less than 50,000 ohms, then the seal fail indicator will be turned on. This action does not disable the pump.

The pump controller has an input (two terminals) for a pump temperature sensor. If the controller detects an open circuit between these terminals, then a temperature failure is set and the pump will be disabled from automatic operation and the TEMP FAIL lamp will be illuminated. This condition does not latch up and will return to normal if the short is reestablished.

The controller has a switch to select what mode the pump is in. This H-O-A switch has the following function:

H – When in Hand the pump will be constantly called to run.

O – When in Off the pump will be off.

A – When in Automatic the pump will be called by the pump controller. The Hand and Off functions of this switch will operate even if the controller is off or has failed.

The controller has an input, which should be connected to the auxiliary switches on the motor starter. This input causes the pump run indicator to be illuminated. Using this input may eliminate the need for a panel-mounted pump running lamp.

Simplex Specifications

1. Float and sensor input. There are three float inputs, one leak sensor input, one mute input, and one temperature fail input. They have the following specifications:

   Closed circuit current: less than 100 Ma.

   Open circuit voltage: 12 VDC.

2. Aux. contact inputs. There is one input for the auxiliary contacts on the motor starter. When this input is closed, the pump running lamp is illuminated. This input has the following specifications:

   Closed circuit current: less than 20 Ma.

   Open circuit voltage: 12.0 VDC.

3. Relay outputs. There are two form A (SPST) relay outputs. One is to call the pump and one for the Seal Fail. They have the following specifications:

   Maximum current at 120 VAC: 5 amps with a resistive load.

   Maximum voltage: 140 volts.

4. 12 VDC outputs. There are two 12 VDC outputs. They are used to drive the alarm light and alarm horn which must be 12 VDC devices or l2 VDC relays. They can drive a maximum of 100 Ma.

5. Power inputs. The controller is designed to run on 120 VAC control power. The controller can optionally be provided with a dual power supply, one for the control circuitry and one for the alarm circuitry. If a dual supply is provided, each one will be independently fused and protected internally.

Simplex Specifications

The fuses (one or two) are internally mounted and the transient protection is a MOY transient protector. It uses a transformer isolated regulated power system with the following specifications:

Input voltage: 120 volts A.C. ±15% 50 to 70 Hz.

Maximum current: 0.25 amps.

6. Temperature range: –20 to +60 degrees C.

Duplex Operation

The 2000 Duplex uses four normally open floats as level sensing inputs. When the tank is empty, all of the floats are open. On rising water the Off float closes first which causes the controller to take no action. The Lead float will close next as the water rises. The controller will then turn on the lead pump. If this pump causes the water level to fall, the lead pump will be turned off when both the Lead and Off floats are out of the water and open. If the lead pump is not sufficient to control the water level, then the Lag pump will be started when the Lag float closes. The two pumps will not be turned off until the Lag, Lead, and Off floats are out of the water and open, at which time all pumps will be turned off. The controller has delays built into the software, which will ensure that whenever a pump is turned on, the second pump cannot come on for at least 8 seconds. Another delay ensures that when a pump is turned off, the other one cannot turn off for 4 seconds. These delays help ensure smooth pump operation and prevent excessive electrical surges.

The last float input is for the high water alarm float. Whenever the high float is under water (closed), then the high alarm condition is set. When a high alarm condition is set, the alarm light will flash on and off, and the horn will be activated. The horn can be silenced using an external mute button. Both the alarm light and horn will turn off when the high float input opens. The 2000 Duplex has an alarm test button on the front panel which can be used to test the alarm horn and light. The pump controller has two inputs for pump seal fail (leak) sensors (one for each pump). These inputs measure the resistance between the input and ground. If the resistance is less than 50,000 ohms, then the seal fail indicator for that pump will be turned on. This action does not disable the pump; however, it does demote the pump to the lag position in the alternation order.

For each pump there are two temperature terminals. If the controller detects an open circuit between the two terminals, then a temperature failure condition exists and the pump associated with that input will be disabled and the Temp Fail indicator is illuminated. This condition does not latch up and will retum to normal if the short to ground is reestablished.

All of the float and sensor inputs are transient protected and filtered to prevent electrical interference from causing improper operation.

The controller has two switches that select what mode the two pumps are in. These H-O-A switches have the following function:

H – When in Hand the pump will be constantly called to run.

O – When in Off the pump will be off.

A – When in Automatic the pumps will be called by the pump controller. The Hand and Off functions of these switches will operate even if the controller is off or has failed.

The controller has a switch that is used to select the lead pump. When this switch is in the center position, the two pumps will alternate as lead pump during each pumps cycles. When in the 1-2 position, then pump one is the lead and when in the 2-1 position, pump two is the lead.

The controller has two inputs, which should be connected to the auxiliary switches on the two motor starters. These inputs, when closed, cause the pump running indicators to be illuminated. Using these inputs may eliminate the need for panel-mounted pump running lamps.

Duplex Specifications

1. Power inputs. The controller is designed to run on 120 VAC control power. It is internally fused and protected with a MOV transient protector. It uses a transformer isolated regulated power system with the following specifications:

   Input voltage: 120 volts A.C. ±15% 50 to 70 Hz.

   Maximum current: 0.25 amps.

2. Float and sensor inputs. There are four float inputs, two leak sensor inputs, and two temperature fail inputs. They use current limiting resistors and a zener diode for transient protection. They also have a resistor/capacitor filter as well as a software filter to avoid electrical interference. They have the following specifications:

   Closed circuit current: less than 2 Ma.

   Open circuit voltage: 12.0 VDC.

3. Aux. contact inputs. There are two sets of inputs for the auxiliary contacts on the motor starters. When these inputs are closed, the pump running lamps are illuminated. These inputs have the following specifications:

   Closed circuit current: less than 2 Ma.

   Open circuit voltage: 12.0 VDC.

4. Relay outputs. There are three Form A (SPST) relay outputs. One is to call the pumps and one for the seal fail. They have the following specifications:

   Maximum current at 120 VAC: 5 amps with a resistive load.

   Maximum voltage: 140 volts.

5. 12 VDC outputs. There are two 12 VDC outputs. They are used to drive the alarm light and alarm horn which must be 12 VDC devices or 12 VDC relays. They can drive a maximum of 100 Ma.

6. Temperature range –20 to +60 degrees centigrade.

Start-up Operation

1. Check junction box for moisture. Moisture may cause chattering of relays/contactors.
2. **If pump is single phase with start capacitor, start relay and run capacitor in panel. Check that pump White, Black, and Red power wires are connected to panel correctly.**
3. **WARNING!** *Live voltage can kill!* Check incoming power voltage to make sure that it is correct for panel and pump model.
4. Energize control panel. (Turn on power to panel.)
5. Check overload relay and verify reset mode (if overload is supplied).
6. **WARNING!** *Live voltage can kill!* Check voltage to the panel and at secondary of control transformer using a voltmeter. If no transformer is supplied, check voltage at the circuit breakers.
7. With H-O-A switch in hand, check discharge to verify the pump is running. Check for flow. On three phase power, check to see if each pump has proper rotation. Wrong rotation will give low flow.
8. Check full load current with amp probe and compare it with the nameplate rating. On three phase pumps, check all three phases. On single phase pumps, check black pump lead.
9. Check operation of start relay, if supplied on single phase panels, per procedure in Item #7 of Maintenance Instructions.
10. With H-O-A switch in Auto, check float operation and response to control panel to the float operation. For sequence of operation, refer to design specification.
11. Make sure H-O-A switch is left
    in the Auto position after start-up is completed.

Pump Start-Up:

Refer to pump Installation and

Pump Maintenance

WARNING: Before handling these pumps and controls, always disconnect the power first. Do not smoke or use sparkable electrical devices or flames in a septic (gaseous) or possible septic sump.

The maintenance schedule will vary with operating and environmental conditions. It will also vary with the specific type of control supplied. The list herein is a guide only.

1. Exercise breaker through one cycle. Be careful not to overexercise as the breaker is not a switching device. *Excessive operations tend to affect the trip curve of the breaker.*
2. Check contactors and relays for excessive humming. This can be accomplished by turning pumps on and off in the Hand mode with the H-O-A switch.
3. Check pump run light(s) by running pump(s) in Hand mode. Check bulb(s) in any other light(s).
4. *With the power off*, check continuity of all control fuses.

5. Check voltage at primary and secondary of control transformer.
6. Check the pump full load amps.
7. For 1 phase panels with start circuit, about 5 seconds after the pump starts check the voltage from terminal 1 to terminal 2 on the start relay to be sure that the relay has operated. The voltage from terminal 1 to terminal 2 on the start relay must exceed 10 VAC. For some pumps the voltage may exceed 400 VAC. If after 5 seconds the voltage from terminal 1 to terminal 2 on the start relay does not exceed 10 VAC stop the pump as the start capacitor may be damaged in about 15 seconds.

   If the start relay is not operating check the pump and the system voltage to be sure that they match. Check the power wiring to ensure that the pump is connected properly. Start the pump once more and check that the voltage from the terminal for the black wire to the white wire is within system tolerance. Call for help if you cannot resolve the problem.
8. Check junction boxes for moisture. Moisture may cause chattering of relays and contactors.
9. Check for moisture inside control panel enclosure. Moisture can cause damage to electrical components. Check door gasket for proper seal.
10. Check labels to verify they have not been damaged.
11. Lubricate enclosure hinges.
12. Pull floats and check for proper operation and ensure there is no foreign buildup on them.

Spare Parts List:

The following is a list of recommended spare parts. However, conditions of service vary significantly and a general list may not in its entirety be applicable to a given installation. The user should exercise judgment in defining specific requirements based on this guide.

1. Fuses for control transformer primary and secondary. (If required)
2. Contactor.
3. Bulbs for any light requiring a bulb.
4. Control transformer. (If required)

Float Controls

Optional: The Low Water/ Redundant Off float should be installed just above where the pump begins to ingest air normally; this is about the top of the volute.

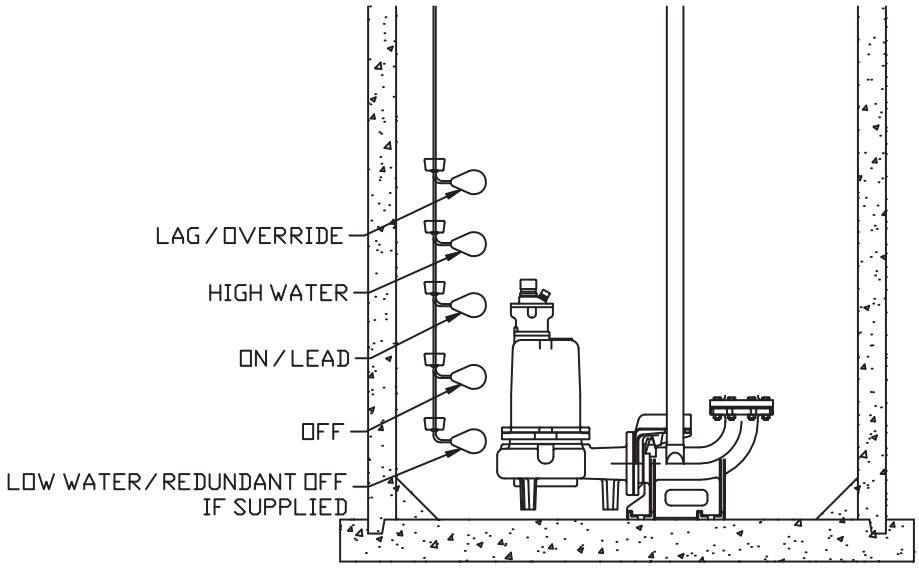
The Off float should be installed about halfway down the pump. If a Low Water/Redundant Off float is used, then the Off float should be installed a minimum of 4 inches above the Low Water/ Redundant Off float.

Install the On/Lead floats a minimum of 4 inches above the Off float. If additional volume is to be pumped on each cycle or if the pump running time for each cycle needs to be increased, then increase the distance from the On/Lead float to the Off float as needed.

Install the High Water float 4 inches above the On/Lead float.

For duplex systems, install the Lag/Override float 4 inches above the High Water float.

On duplex systems where both pumps have to run on a daily basis to keep up with the incoming flow, then the High Water and the Lag/Override float positions should be reversed.



Pump Troubleshooting

WARNING: Before handling these pumps and controls, always disconnect the power first. Do not smoke or use sparkable electrical devices or flames in a septic (gaseous) or possible septic sump.

1. Pump does not run in Hand position.

a. Check pump circuit breaker and control fuse for tripping or blown condition.

b. Check incoming power voltage and control circuit voltage.

c. Check overload relay to see if it is tripped. Reset relay if tripped and check pump current with ammeter.

d. *With the power off*, check motor heat sensor continuity.

e. Check wiring of pump to control panel. It should agree with the schematic.

f. Check contactor coil resistance.

2. Pump does not run in Auto position.

a. Check items (a.) through (f.) per Item #1 above.

b. Floats may be miswired to control panel. Check float type (N.O. or N.C.) and hook up by referring to the schematic. If the start and stop floats are hooked in reverse, pump will short cycle and will not pump the level down.

1. Is water level in the system high enough to activate the floats?

2. If there is enough water in the system (with the power turned off), mark and disconnect the Off and On floats. Next, install jumper wires in the terminal blocks for Off and On floats. Turn power back on, put H-O-A switch in Auto and see if pump runs.

3. If pump runs with jumper, problem is with floats. Remove jumpers and troubleshoot floats with ohmmeter.

4. If pump does not run in Auto mode with jumpers, check Auto circuit wiring in panel.

3. Pump runs, but run light does not energize.

a. Remove light and check with an ohmmeter.

b. Check run light wiring.

4. Pump runs but does not pump down the wet well.

a. On three phase only, pump rotation may be wrong. Wiring of pump to control panel may be reverse sequenced.

b. Impeller may be dragging in volute due to solids. High amperage draw would identify this.

c. Refer to the pump manual for other possibilities such as closed discharge gate valve, etc.

5. Severe humming/chattering of contactors and control relays.

a. There may be low voltage. Check voltage at primary and secondary of control transformer using a voltmeter. This low voltage condition may cause severe chattering and burnout of contactors and relays.

b. Contactor may have dust around magnet of coil structure. Dry or clean as required.

c. Check voltage to the control panel. Contactors require a minimum of 85% of full voltage to pull in without chatter. If the problem is a recurring one, measure voltage with recorder on a 24 hour basis.

d. Make sure the floats are located away from any turbulence.

e. Dry out the junction box (if furnished); moisture in the junction box may cause relays to energize intermittently.

6. Short cycling pump.

a. Check float controls.

7. Run light stays on.

a. Selector switch may be in the Hand position.

8. Nuisance tripping of overload on motor starters or circuit breakers.

a. Check pump amp draw with amp probe and compare to nameplate amps on pump.

b. The impeller may be locked up due to excessive debris or solids.

c. Possible motor failure (fault in windings).

d. Pump may be miswired to terminal block.

e. Voltage and current unbalance. Three phase only.

Voltage unbalance on three phase power sources can cause motor current to become unbalanced and excessive heating will result. Tripping of the overload protectors and premature motor failures

Pump Troubleshooting

can be expected if the current unbalance exceeds five percent.

$$\text{Percent Current Unbalance} = \frac{\text{Maximum Current Difference from Average Current}}{\text{Average Current}} \times 100$$

To determine if motor current unbalance is a function of the motor or the power supply:

1. Label the leads and the terminals 1, 2, and 3 respectively.
2. Record the amperage for each lead.
3. Move each lead to the next terminal (1 to 2, 2 to 3, 3 to 1).
4. Again read the amperage of each lead.
5. Move each lead to the next terminal (1 to 3, 2 to 1, 3 to 2).
6. Again read the amperage of each lead.
7. If the unbalance moves with the motor leads, the unbalance is caused by the motor. If the unbalance remains with the terminals, the unbalance is in the power supply.
8. If the current unbalance exceeds five percent, nuisance tripping or excessive heating will result.
9. Connect leads for the lowest percent of current unbalance.

f. Connections and start components. Single phase only.

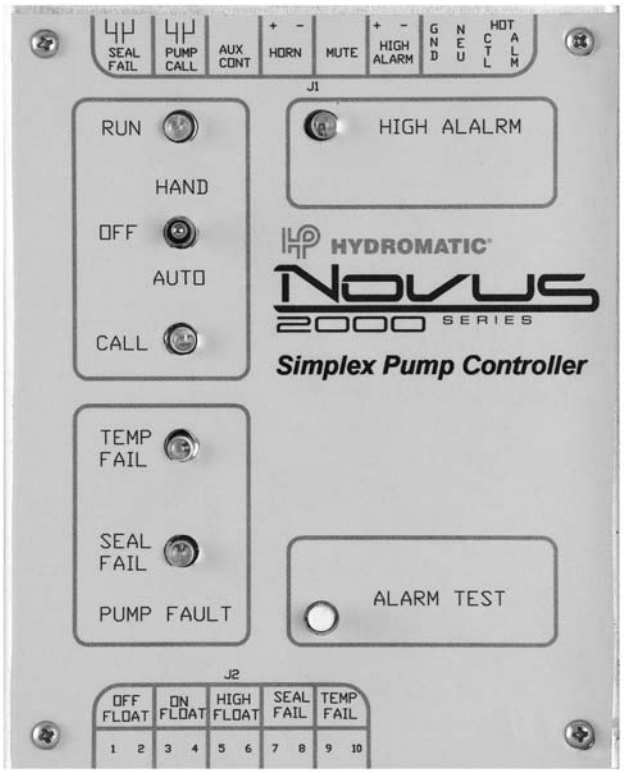
1. *Disconnect all power from the panel before making these checks.*
2. Motor winding resistance readings.
   a. Disconnect all three motor leads from panel terminal blocks.
   b. Using a volt-ohmmeter, with the scale set on RX1, measure the resistance between the leads with the chart.

Winding	Typical Motor Leads	Resistance Reading
Main	Black to White	Lowest
Start	Black to Red	Next Lowest (Middle)
Both	White to Red	Highest (Main & Start)

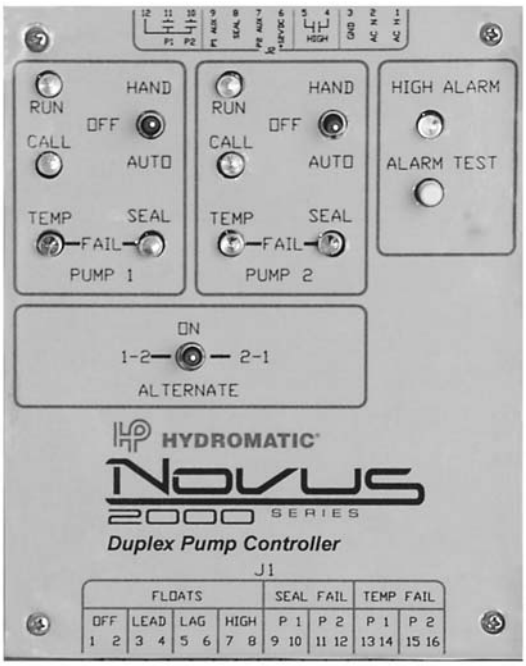
3. Capacitor check.
   a. Make sure the capacitor is discharged. Use extreme caution as a spark might occur.
   b. Disconnect the capacitor leads and connect an analog-type volt-ohmmeter to the capacitor terminals.
   c. Set the meter on the RX1,000 scale to check the start capacitor. Set the meter on the RX10,000 scale to check the run capacitor.
   d. The meter should indicate low ohms when it is first connected, but as the capacitor becomes charged (by the meter), it will return to a reading of infinity (open circuit).
4. Start relay check.
   a. Check the coil resistance. It should be 3,000 to 15,000 ohms.
   b. Install a clamp on amp meter around the start winding lead.
   c. Set the amp meter scale to at least 2 times the pump motor full load current.
   d. Place the H-O-A switch in the Hand position to start the pump.
   e. The meter should read approximately 2 times full load current during starting.
   f. After the motor has started (within one second) the current should drop to a value much less than full load current.
5. Motor voltage check:

Component	Typical Motor Lead	Mode	Voltage Reading
Main Winding	Black to White	Start	Line Voltage
Main Winding	Black to White	Run	Line Voltage
Start Winding	Black to Red	Start	Line Voltage
Start Winding	Black to Red	Run	120% Line Voltage

Simplex Controller



Duplex Controller



LIMITED PRODUCT WARRANTY

HYDROMATIC® warrants that its products are free from defects in material and workmanship for a period of twelve (12) months from the date of purchase or eighteen (18) months from the date of manufacture, whichever occurs first.

During the warranty period and subject to the conditions hereinafter set forth, **HYDROMATIC**, will repair or replace to the original user or consumer parts which prove defective due to defective materials or workmanship of **HYDROMATIC**. Contact the nearest authorized **HYDROMATIC** distributor, **HYDROMATIC** authorized service center or **HYDROMATIC** for warranty service. At all times, **HYDROMATIC** shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts or components.

Start up reports and electrical system schematics may be required to support warranty claims. Warranty is effective only if **HYDROMATIC** supplied or authorized control panels are used, where applicable. All dual seal pumps must have seal failure and heat sensors attached, functional and monitored for the warranty to be in effect. If a seal failure should occur, **HYDROMATIC** will only cover the lower seal and labor thereof. If the heat sensor and seal fail sensor is not attached and functional, the warranty is void.

LABOR, ETC. COSTS: HYDROMATIC shall in NO EVENT be responsible or liable for the cost of field labor, removal and/or reinstallation charges of any **HYDROMATIC** product, part or component thereof, or the expense of freight.

THIS WARRANTY WILL NOT APPLY: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance with applicable local codes, ordinances and good trade practices; or (e) if the unit is moved from its original installation location; (f) unit is used for purposes other than for what it was designed and manufactured; (g) to any unit which has been repaired or altered by anyone other than **HYDROMATIC**, a **HYDROMATIC** distributor or a **HYDROMATIC** authorized service center and (h) to any unit which has been repaired using non factory specified parts/OEM parts.

RETURN OR REPLACED COMPONENTS: any item to be replaced under this Warranty must be returned to **HYDROMATIC** in Ashland, Ohio, or such other place as **HYDROMATIC** may designate, freight prepaid.

PRODUCT IMPROVEMENTS: HYDROMATIC reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such a change or improvement.

WARRANTY EXCLUSIONS: **HYDROMATIC** MAKES NO EXPRESS OR IMPLIED WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. **HYDROMATIC** SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Some states do not permit some or all of the above warranty limitations and, therefore, such limitations may not apply to you. No warranties or representations at any time made by any representatives of **HYDROMATIC** shall vary or expand the provision hereof.

LIABILITY LIMITATION: IN NO EVENT SHALL **HYDROMATIC** BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY **HYDROMATIC** PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. **HYDROMATIC** DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION — **HYDROMATIC** RECOMMENDS INSTALLATION BY PROFESSIONALS.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

In the absence of suitable proof of this purchase date, the effective date of this warranty will be based upon the date of manufacture.

HYDROMATIC®
Pentair Water

– Your Authorized Local Distributor –

USA
740 East 9th Street, Ashland, Ohio 44805
Tel: 419-289-3042 Fax: 419-281-4087

www.hydromatic.com

CANADA
269 Trillium Drive, Kitchener, Ontario, Canada N2G 4W5
Tel: 519-896-2163 Fax: 519-896-6337

Part # 05625-516-1

Item # H-03-516 3/09

HYDROMATIC®
ENGINEERED PRODUCTS

START-UP REPORT

cut along dotted line

Distributor_____Order #: _____

Installing Contractor: _____ Phone: _____

Sales Contact: _____ Phone: _____

Customer & Location _____

1. SYSTEM INFORMATION

A. Size of wet well: _____ Manufacturer:_____
B. Discharge from bottom of basin: _____ Location:_____
C. Inlet from bottom of basin:_____ Location: _____
D. Type of check valves: _____
E. Type of piping _____
F. Does system have suction and discharge gauges? _____
G. Pressure reading? Suction_____ Discharge _____
H. Liquid being pumped:_____ Temperature: _____ % of solid: _____
I. Sketch or photograph of system attached? _____
J. Any additional comments on system: _____

_____

2. ELECTRICAL INFORMATION

A. Control panel part #:_____ Panel rated amps: _____
Manufacturer _____ Voltage: _____ Phase: _____
B. Heater size: _____
C. Location of panel to wet well: _____
D. Incoming line voltage: _____ Actual? _____
E. Voltage to pumps _____ Actual? _____
F. Type of junction box: _____ Manufacturer:_____
G. Are floats installed in wet well? _____
H. Are floats set to engineer's spec? _____
I. Are floats wired for proper sequencing? _____
J. Any additional comments on electrical: _____

_____

3. PUMP INFORMATION

A. Type of pump:_____ Serial # _____
B. Voltage:_____ Phase:_____ RPM:_____ Amps: _____
C. Impeller size: _____ C.O.S. TDH:_____ GPM: _____
D. Voltage supplied from panel:_____ Actual?: _____
E. Actual amperage (all phases): _____ amps _____amps _____amps
F. Have you checked pump rotation? _____
G. Any additional comments on pumps: _____

_____

Acknowledge that all information is accurate and proper procedures have been followed:

Customer Signature:_____ Date _____

Start-up Technician:_____ Date _____

Send to: Warranty Department, 740 E. Ninth Street, Ashland, OH 44805, Fax: 419-207-3344,
or e-mail to: startupreport@hydromatic.com

We will make this a permanent part of our file on this order.