

**SHOP
DRAWING
REVIEW**

<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

NOT REVIEWED
REVIEWED
REVIEWED AS NOTED
REVISE AND RESUBMIT

This review by Hilditch Architect Inc. is for the sole purpose of ascertaining conformance with the general design concept features only, and does not in any way constitute review of the design of engineering elements which form part of the Contract Documents prepared by others. This review shall not mean that Hilditch Architect Inc. approves the design detail inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all trades.

Hilditch Architect Inc.

By: Sasha Stairs

Project No: 1809

Date Rec'd:

Date Rev'd: 2024.11.21

GC/CM: 2024.11.21

Consultant: 2024.11.21

HAI; reviewed for Architectural only; 34 pages total:

1. GC to coordinate sump pit locations, sizes, etc. and installation as noted in rebar shop drawings.
2. Change to be issued to clarify sump pit and cover as indicated.

Submittal No. 11

Sump Pump

Project Name:
Neshama Hospice

Owner:
Neshama

Prime Consultant:
Hilditch Architect Inc

General Contractor: Renokrew

SHOP DRAWING <hr/> SUBMITTAL REVIEW	JOB NAME Neshama Hospice
	JOB # 24-130
	DATE Nov 21, 2024
REVIEWED <input type="checkbox"/>	<p>This review is for general conformance of plans and specifications only. Approvals are subject to subcontractors performance within the confines of the contract documents. Review of dimensions will not serve to relieve the subcontractor of contractual responsibility for any deviation from the contract requirements.</p> <p>SPECIFICATION 23 08 10</p> <p><input checked="" type="checkbox"/> SHOP DRAWING</p> <p><input type="checkbox"/> PRODUCT DATA</p> <p><input type="checkbox"/> DOCUMENTATION</p> <p><input type="checkbox"/> LETTER</p> <p>RENOKREW TORONTO OTTAWA</p> <p>CHECKED BY:</p> <p>REVIEWED BY:</p> <p>TOTAL PAGES: 34</p>
REJECTED <input type="checkbox"/>	
REVIEW & RESUBMIT <input type="checkbox"/>	
REVIEW AS NOTED <input type="checkbox"/>	

SustainGlobe Ltd.

THIS DRAWING REVIEWED SOLELY FOR GENERAL CONFORMITY WITH DESIGN CONCEPTS. QUANTITIES, DETAILS, DIMENSIONS AND DESIGNS INHERENT IN THE SHOP DRAWINGS ARE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY DATA WITH FIELD DIMENSIONS. CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGN OF MANUFACTURED ITEMS, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION AND INSTALLATION OF EQUIPMENT.

DATE RECEIVED:

November 21, 2024

☒ MECHANICAL

☐ ELECTRICAL

☐ OTHERS

THIS DRAWING IS:

☐ REVIEWED

☒ REVIEWED AS NOTED

☐ REVIEWED AND
TO BE RESUBMIT

BY: TL

DATE: November 21, 2024

PROJ. NO.: 18031



54 Audia Court, Unit 2
Concord, ON L4K 3N5
(905)-738-1400

Submittal 24-256-008

PROJECT NAME	PROJECT ADDRESS	DATE SUBMITTED
NESHAMA HOSPICE	24-256 3 Cadillac Avenue North York, ON M3H 1R9	Nov 21, 2024

TO	FROM
Taranjeet Singh	PAUL LEDDY
COMPANY	COMPANY
1568796 ONTARIO INC. C/A RENOKREW	Consult Mechanical Inc.
EMAIL	EMAIL
taranjeet@renokrew.com	paul.l@consultmechanical.com
ADDRESS	ADDRESS
43 LEPAGE COURT TORONTO, ON M3J 1Z9	54 Audia Court, Unit 2 Concord, ON L4K 3N5

Title

Sump Pump Submittal Package

Description

SP1/SP2 Sanitary Grinder Pentair HV200 Series
SP3/SP4 Groundwater Pump Hydromatic SPD50H/100H
SP5 Groundwater Pump Liberty Model FL Series

Package Items

SPEC	SUBSECTION	ITEM	TYPE
M15 Submersible Pumps	M15	Submersible Pumps	Shop Drawings



Metropolitan Pump Co. Ltd. Head Office
475 Thompson Drive
Cambridge, Ontario N1T 2K7
P: (519) 886-5710 F: (519) 886-5203

Metropolitan Pump Co. Ltd. West
18051 - 111 Avenue NW #2
Edmonton, Alberta T5S 2P2
P: (780) 408-8045 F: (780) 408-8046

Submittal Drawing Package

Customer: NEXT Supply

Job Name: NESHAMA HOSPICE 3 CADILLAC AVE NORTH YORK

Quote: 202406-135

Completed By: BM

SP1 / SP2 SANITARY GRINDER 40 GPM @ 22 FT TDH

SP3 / SP4 GROUNDWATER SUMP PUMP 48 GPM @ 30 FT TDH

SP5 GROUNDWATER SUMP PUMP 10 GPM @ 122 FT TDH

BASIN/ COVER FOR SP1 / SP2

BASIN/ COVER FOR SP3 / SP4 & ADJACENT SETTLING PIT



CLEAR FORM

METROPUMP.COM



SP1 / SP2 SANITARY GRINDER 40 GPM @ 22 FT TDH

HV200 SERIES GRINDER PUMPS



ADVANCED
HYDRAULICS



LEGENDARY SEAL
LEAK DETECTION



PATENTED
AXIAL CUTTER
TECHNOLOGY

pentair.com

PENTAIR® HYDROMATIC® HV200 SERIES GRINDER PUMPS

HYDROMATIC HV200 SERIES SUBMERSIBLE GRINDER PUMPS

Pentair Hydromatic HV200 Series Grinder Pumps are engineered from the ground up, in order to overcome the increased debris and higher pressure required in today's wastewater environment. These grinder pumps feature a patented axial cutter design and semi-open impeller to help slice through the toughest solids and trash found in domestic wastewater without roping or clogging.



ADVANCED HYDRAULICS

The only single stage centrifugal 2 HP grinder that can deliver up to 185' of lift for superior performance and reliability.



LEGENDARY SEAL LEAK DETECTION

Early warning system for reduced downtime and maintenance costs.

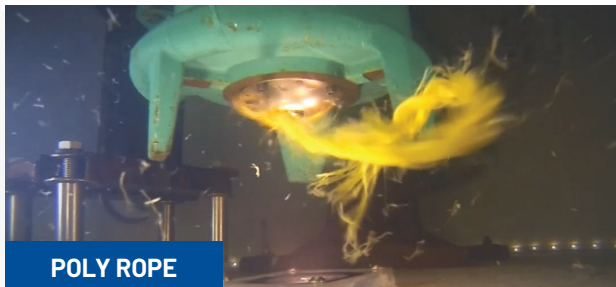


PATENTED AXIAL CUTTER TECHNOLOGY

Easily slices through solids and trash found in domestic wastewater without roping or clogging.



WATCH THE VIDEO AT PENTAIR.COM



POLY ROPE



SHOP RAG



FLOOR SWEEPING PADS



MOP HEAD

FEATURES

Cable Entry System

- Cable jacket sealed by compression fitting; individual wires sealed by compression grommet for double seal protection against water ingress
- Replace power cord without disturbing motor for ease of maintenance

Oil-Filled Motor

- Maximizes heat dissipation; provides constant bearing lubrication for long life

Heavy 416 SST Shaft

- Corrosion resistant, reduces shaft deflection for long life

Double Mechanical Shaft Seals

- In oil-filled seal chamber for continuous lubrication, superior motor protection

Seal Leak Probe

- Located in seal chamber instead of motor area for early warning of water leaks. Allows corrective action before costly motor or bearing failure occurs
- Activates warning light in control panel

SST Semi-Open Impeller

- Provides improved performance, resists clogging
- Pump-out vanes help keep trash from seal, reduces pressure at seal face for longer life

Heat Sensor

- Protects motor from burnout due to excessive heat from any overload condition
- Automatically resets when motor has cooled

Lower Double Row Ball

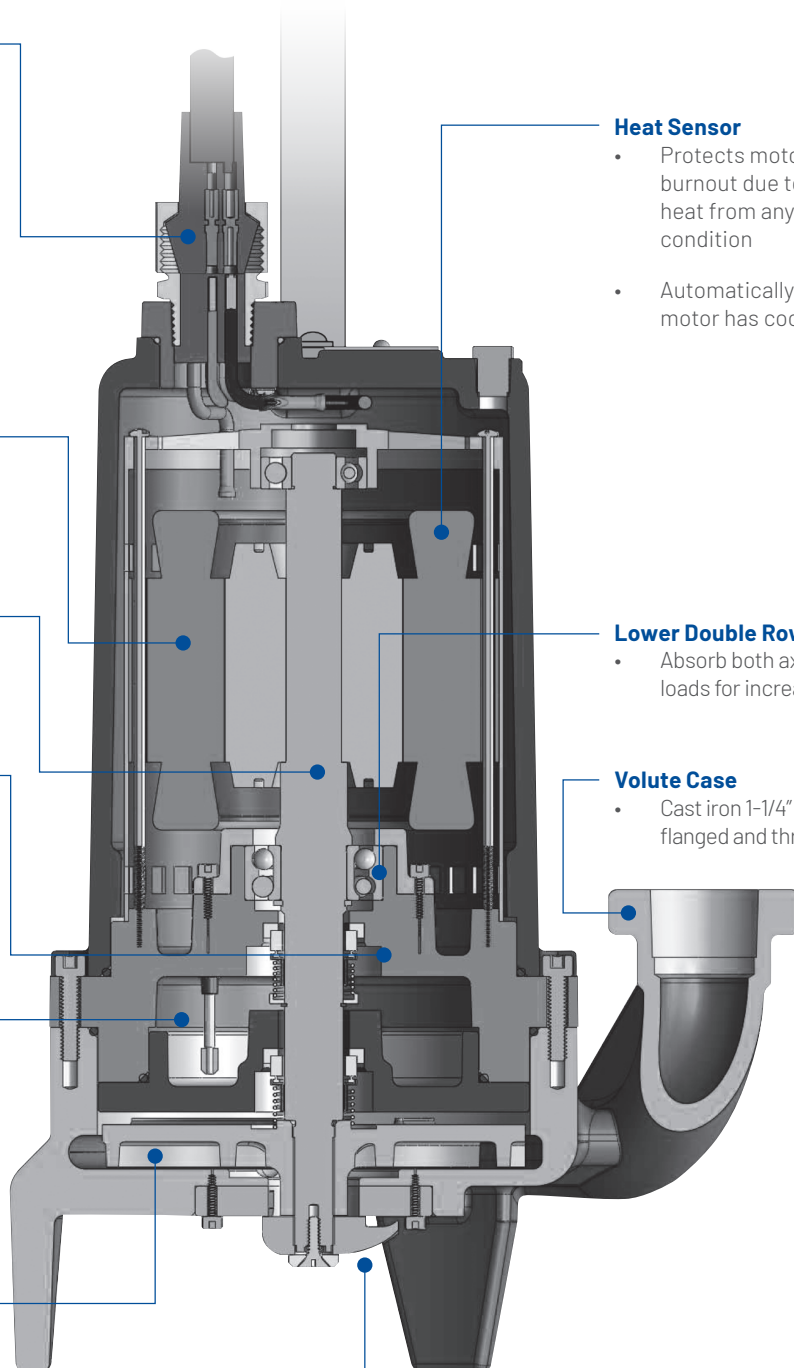
- Absorb both axial and radial loads for increased durability

Volute Case

- Cast iron 1-1/4" NPT vertical flanged and threaded discharge

Axial Cutter System

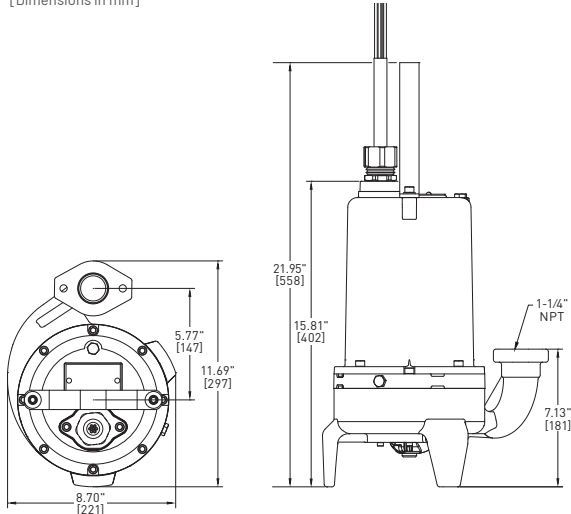
- Constructed of 440 SST hardened to 57-60Rc for long life
- Easily replaceable without dismantling pump



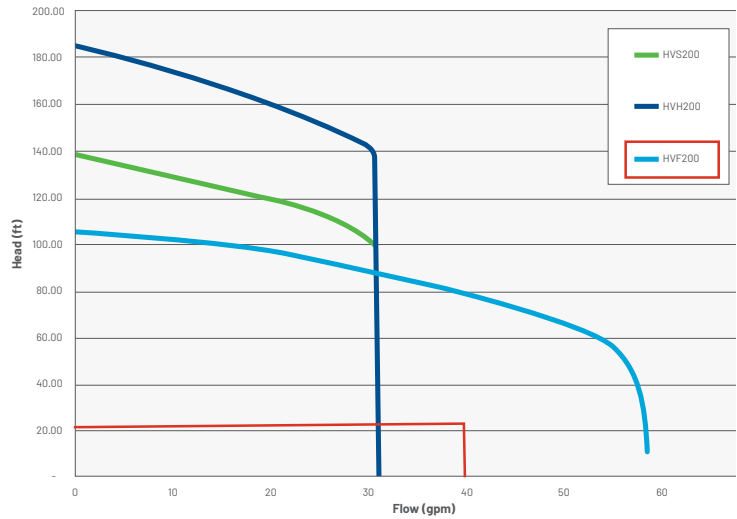
PERFORMANCE DATA AND DIMENSIONS

3450 RPM

[Dimensions in mm]



2HP PUMP CURVES



CONSTRUCTION MATERIALS

MOTOR HOUSING, SEAL HOUSING, CORD CAP AND VOLUTE CASE		Cast Iron, Class 30, ASTM A48
IMPELLER		Semi-Open, Stainless Steel
POWER CORD		20' S00W
MECHANICAL SEALS	STANDARD	Double Tandem Carbon and Ceramic
	OPTIONAL	Lower Tungsten Carbide
PUMP, MOTOR SHAFT		416 SST
FASTENERS		300 Series SST
ROTATING CUTTER, STATIONARY CUTTER		440 SST 57-60 Rockwell

PRODUCT CAPABILITIES

CAPACITIES TO	58.5 gpm	22.41 lpm
HEADS TO	185 ft	56.38
LIQUIDS HANDLING	domestic raw sewage	
INTERMITTENT LIQUID TEMP.	up to 140°F	up to 60°C
WINDING INSULATION TEMP. (CLASS F)	311°F	155°C
MOTOR ELECTRICAL DATA*	2 hp, 3450 rpm 1 ph - capacitor start/run 200, 230 volts; 60 Hz 3 ph - induction run 200 , 230, 460, 575 volts, 60 Hz	
STD. THIRD PARTY APPROVALS	CSA	
ACCEPTABLE PH RANGE	6 - 9	
SPECIFIC GRAVITY	.9 - 1.1	
VISCOSITY	28 - 35 SSU	
DISCHARGE (FLANGE DIA.)	1-1/4 in.	31.75 mm
MIN. SUMP DIAMETER	SIMPLEX	24 in. 61.0 cm
	DUPLEX	36 in. 91.4 cm

*Single phase motors are capacitor start type. Hydromatic control panels or capacitor kits are recommended for proper operation and warranty.



AMERICAS
1101 Myers Parkway
Ashland, Ohio 44805
PH: 855-274-8947

CANADA
490 Pinebush Road,
Unit 4
Cambridge, Ontario,
Canada N1T 0A5
PH: 800-363-7867

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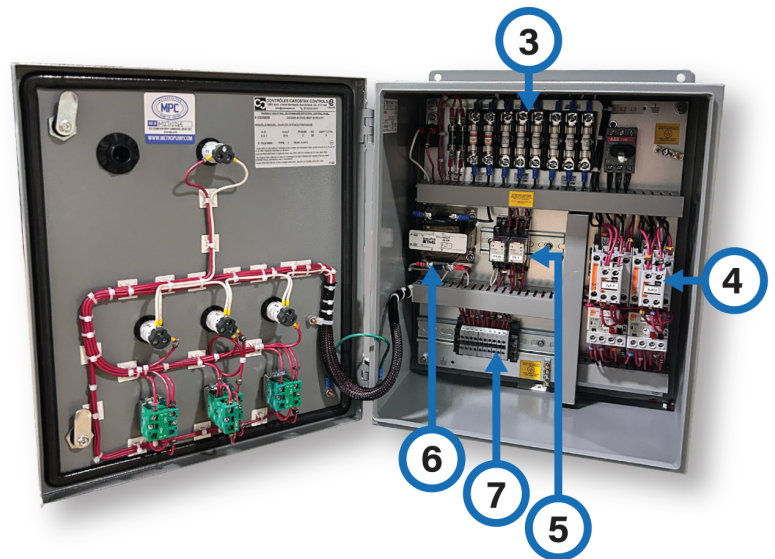
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HYD12017ENG(08-20-21)



DUPLEX CONTROL PANEL

① EEMAC 1 ENCLOSURE



STANDARD DUPLEX PANEL FEATURES

- ① EEMAC 1 Enclosure
- ② Main Disconnect
- ③ Set of Fuses
- ④ Magnetic Starter
- ⑤ Alternation Circuit
- ⑥ Transformer (Except 115V)
- ⑦ Terminals to Connect Floats
- ⑧ 3-Position Selector Switch (Man-O-Auto)
- ⑨ Pilot Light (Power on)
- ⑩ Green Pilot Lights (Run)

EEMAC 4 ENCLOSURE

(w/ Inner Door & Alarm Beacon)



120V dedicated power is provided to control panel

Designed to control 2 pumps, this fully customizable panel is available in 115, 208, 230, 460 or 575 volt, single or three phase, indoor, outdoor and hazardous location. Engineered for reliability and performance, choose the Duplex Control Panel for a seamless integration into your operations. Carostan control panels are CSA & UL listed and backed by a one year manufacturing warranty.

Note: Options, voltage, and amp range selected may change enclosure size and component layout.



Selection Sheet

Input requirements and select options to generate a model number and description at the bottom.

Select Phase & Voltage:

Input Pump Horsepower: HP

Select Amp Range:

Input Pump Full Load Amps: FLA

Select Enclosure Type:

	DESCRIPTION	SELECT
D	Main Disconnect, Magnetic Starter, Transformer, Alternation Circuit, Power-on & Run Lights, Terminals to Connect Floats, 3-Position Selector Switch (Man-O-Auto)	INCLUDED
A	Alarm Block (Buzzer+Silence+Light)	<input checked="" type="checkbox"/>
B	Alarm Relay (Dry Contacts)	<input checked="" type="checkbox"/>
C	Overload Indication	<input type="checkbox"/>
E	Seal Failure Detection	<input checked="" type="checkbox"/>
F	Overheat Detection	<input checked="" type="checkbox"/>
G	Bell Alarm	<input type="checkbox"/>
H	Elapsed Time Meters (Cema 1, 12)	<input type="checkbox"/>
I	Safe Pack	<input type="checkbox"/>
J	Control Done Through Electrodes	<input type="checkbox"/>
K	Alarm Beacon	<input type="checkbox"/>
L	Breaker Without Handle For 1 Phase 120 V	<input type="checkbox"/>
M	Breaker Without Handle For 1 Phase 240V	<input type="checkbox"/>
N	Heater + Thermostat	<input type="checkbox"/>
O	Capacitor Installation	<input type="checkbox"/>
P	1 PH Lightning Arrestor	<input type="checkbox"/>
Q	3 PH Lightning Arrestor	<input type="checkbox"/>
R	Cycle Counter	<input type="checkbox"/>
T	Dry Contact for Pump Run	<input type="checkbox"/>
U	Bacnet IP communication	<input type="checkbox"/>
V	Emergency Transfer	<input type="checkbox"/>
W	Breakers	<input type="checkbox"/>
X	Touchscreen PLC	<input type="checkbox"/>
Y	Auto-Dialer	<input type="checkbox"/>
Z	Mini CAS For 1/2GA, 15/20GSD/GXS	<input type="checkbox"/>

Model Number & Description:

© Copyright 2024 Property of Metropolitan Pump Co. Limited

DZ11316+E4ID+A+B+E+F

Duplex Control Panel Main Disconnect, Magnetic Starter, Transformer, Alternation Circuit, Power-on & Run Lights, Terminals to Connect Floats, 3-Position Selector Switch (Man-O-Auto), 3Ø/208V, 11.3 to 16 FLA, EEMAC 4 Padlockable Enclosure w/ Inner Door, Alarm Block (Buzzer, Silence, Light), Alarm Relay (Dry Contacts), Seal Failure Detection, Overheat Detection, Pump Data: 2 HP



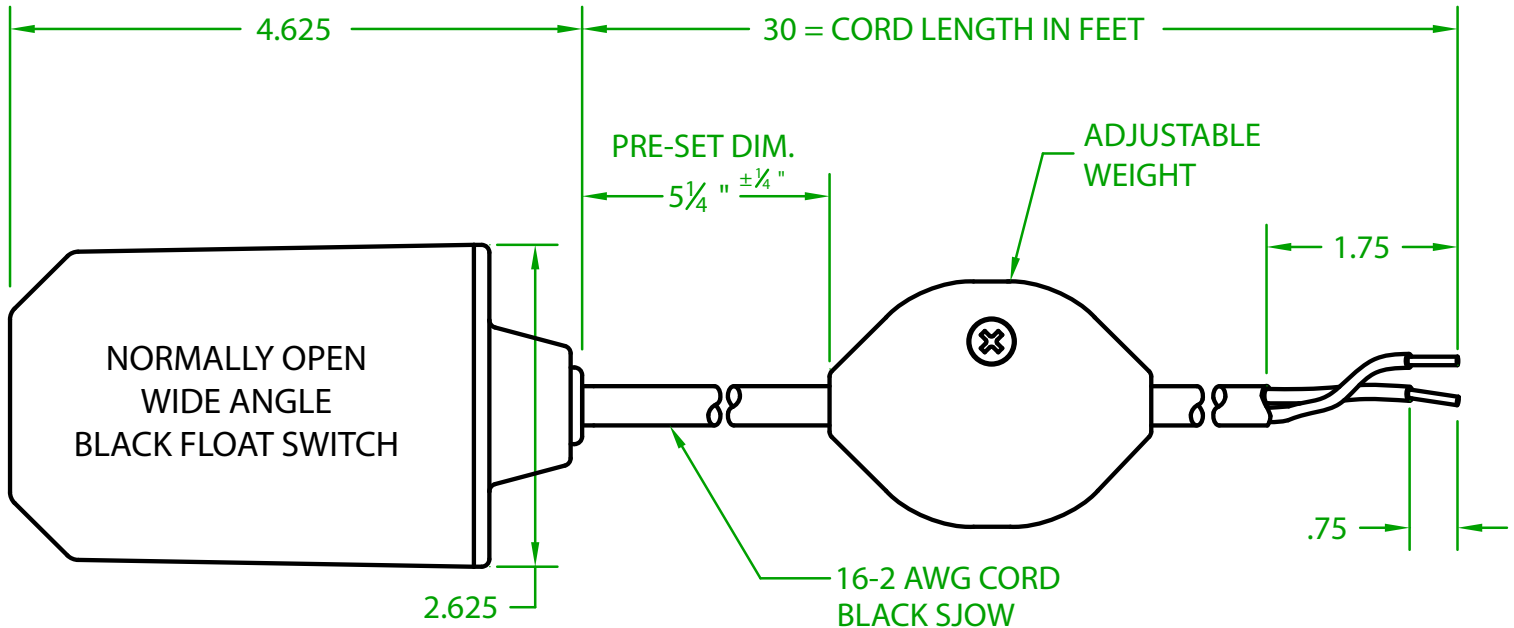
MERCURY DISPLACEMENT INDUSTRIES, INC.

Post Office Box 710 - U.S. 12 East - Edwardsburg, Michigan 49112-0710

Phone (269) 663-8574 - Fax (269) 663-2924

(800) 634-4077

GF10W3000W



OPERATING ANGLE 90°: CONTACTS CLOSE @ 45° ABOVE HORIZONTAL
CONTACTS OPEN @ 45° BELOW HORIZONTAL

ELECTRICAL RATINGS: 1/2 H.P. 13 AMPS @ 120/240 VAC. 58.8 LRA

FLOAT MATERIAL: H.I.P.S.



LR-41198

E-93774



J.J.S. AUGUST 21, 2008

REV. 06-18-19

Contactors - Relays - Switches

<http://www.mdious.com>



METROPOLITAN PUMP CO. LIMITED
CAMBRIDGE, ONTARIO | EDMONTON, ALBERTA
"WE WILL MAKE IT EASIER."

OFFICIAL MPC SHOP DRAWING

PART #:	DESCRIPTION:	DATE:
HB-4SS	4-HOLE STAINLESS STEEL HANGER BRACKET	02/2023

METROPOLITAN PUMP'S HB-4SS HANGER BRACKET IS MADE OF DURABLE, NON-CORROSIVE 12 GAUGE 304 STAINLESS STEEL. THE HB-4SS PROVIDES A CONVENIENT TETHER POINT FOR FLOATS AND PREVENTS CORDS FROM TANGLING, WHICH COULD LEAD TO MALFUNCTIONS. THE HB-4SS PROVIDES A WAY TO KEEP EVERYTHING ORGANIZED IN A SUMP OR SEWAGE BASIN.

INCLUDED

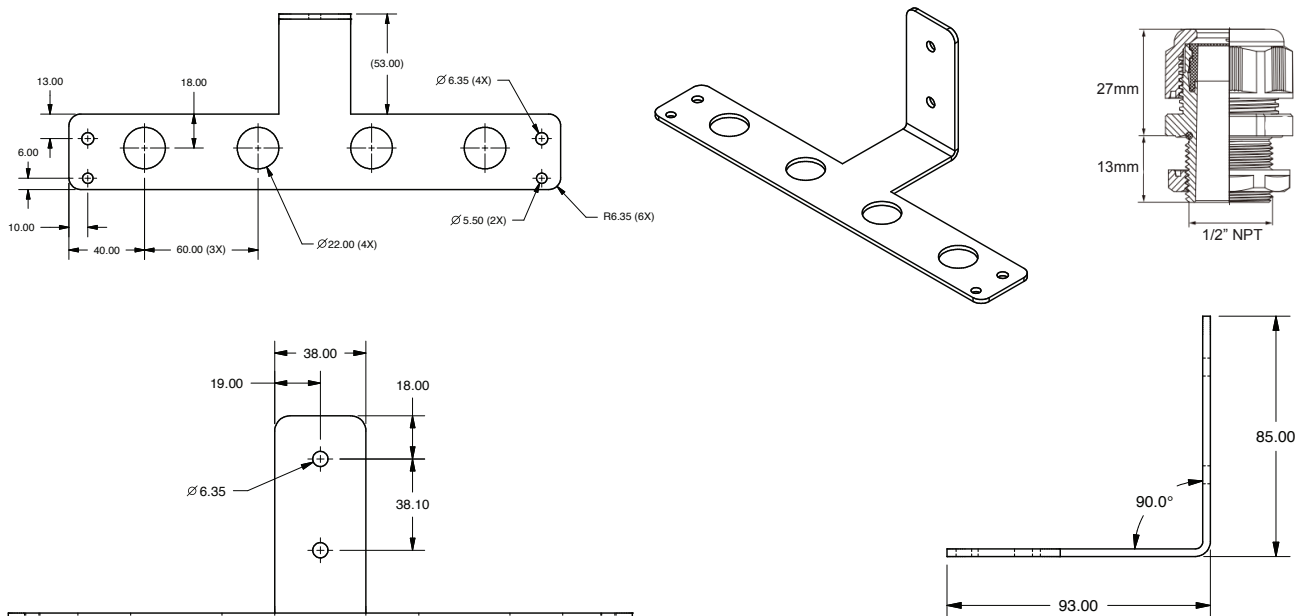
- (1) 12 GAUGE 304 STAINLESS STEEL TABBED HANGER BRACKET
- (4) 1/2" NPT ADJUSTABLE CABLE GLANDS TO FIT VARIOUS CORD SIZES
- (4) 1/2" LOCK NUTS

OPTIONAL

STAINLESS STEEL UTILITY HOOK FOR CHAIN (ORDER AS HB-4SS-H)



DIMENSIONS (METRIC)



ORDERS@METROPUMP.COM | QUOTES@METROPUMP.COM

WWW.METROPUMP.COM



METROPOLITAN PUMP CO. LIMITED
475 THOMPSON DRIVE CAMBRIDGE, ONTARIO
N1T 2K7
(519) 886-5710

OFFICIAL MPC SHOP DRAWING

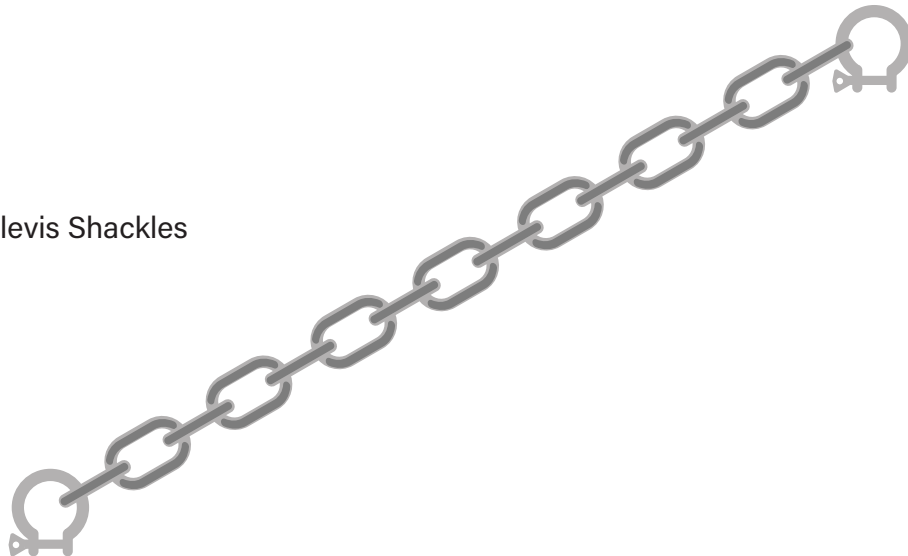
PART #:	DESCRIPTION:	DATE:
10FTLC-2C--G-3/16	10FT GALVANIZED LIFT CHAIN PACKAGE 3/16" C/W 2 CLEVIS	01/2023

Specification Requirements:

NACM Welded Steel Chain Specifications, Grade 30 Proof Coil Chain

- Material: Carbon steel meeting Grade 30 per NACM
- Mechanical Properties: ASTM A413/A413M
- Marking: Manufacturer's ID and 3, 30 or 300
- Finish: Hot Dip Galvanized per ASTM A153/A153

Includes 2
3/16" Galvanized Clevis Shackles



NOT TO BE USED FOR OVERHEAD LIFTING

Chain Size (Inches)	Material Diameter	Inside Length	Inside Width	Working Load Limit (Max.)	Min Breaking Force
	-7%	Max.	Min.	Lbs.	Lbs.
1/8	0.156	0.94	0.25	400	1,600
3/16	0.217	0.98	0.30	800	3,200
1/4	0.276	1.24	0.38	1,300	5,200
5/16	0.331	1.29	0.44	1,900	7,600
3/8	0.394	1.38	0.55	2,650	10,600
7/16	0.488	1.64	0.65	3,700	14,800
1/2	0.512	1.79	0.72	4,500	18,000

SP3 / SP4 GROUNDWATER SUMP PUMP 48 GPM
@ 30 FT TDH

HYDROMATIC®

PERFORMANCE DATA

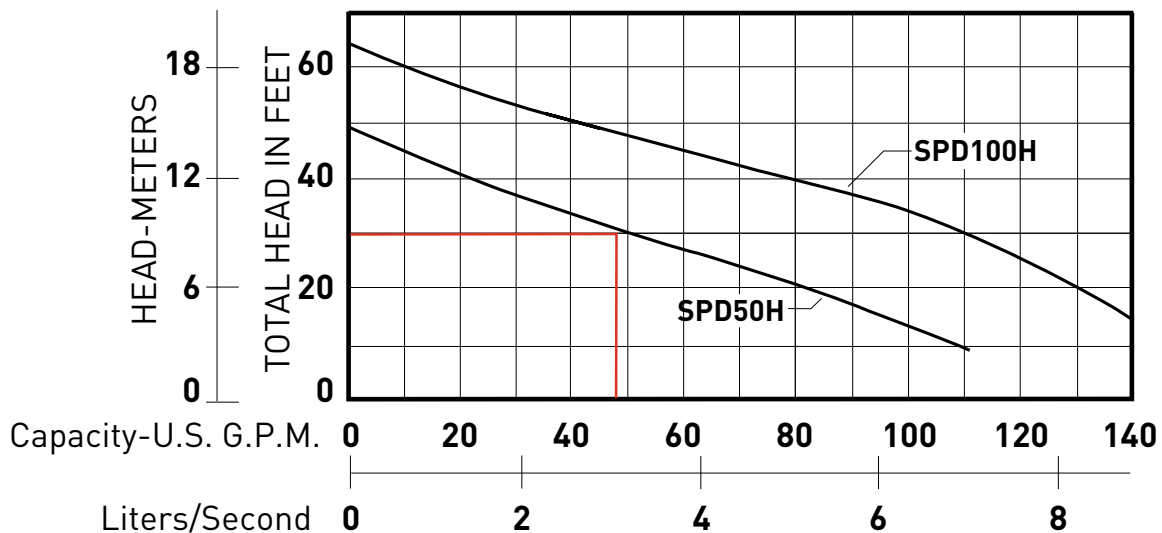
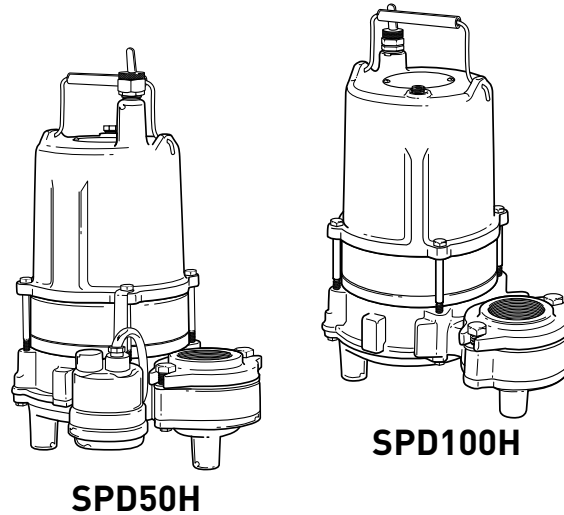
SPD50H/100H
SUBMERSIBLE HIGH HEAD,
DOUBLE SEAL EFFLUENT

Wholesale Products Page: 6130-1

Dated: September 2011

Supersedes: April 2002

RPM: **3450** Discharge: **2"** Solids: **¾"**



The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F. and 1280 feet site elevation.

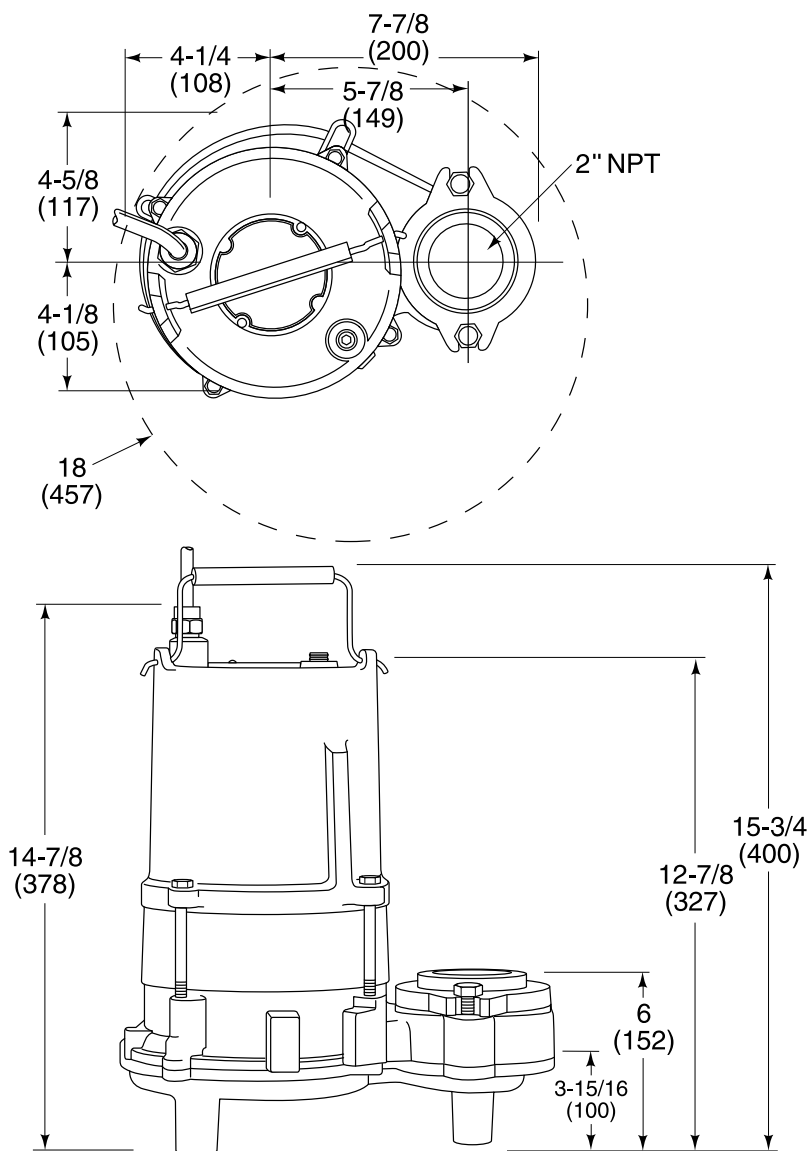
HYDROMATIC®

DIMENSIONAL DATA

SPD50H/100H
SUBMERSIBLE HIGH HEAD,
DOUBLE SEAL EFFLUENT

Wholesale Products Page: 6130-2

Dated: September 2011



All dimensions in inches. Metric for international use. Component dimensions may vary $\pm 1/8$ inch. Dimensional data not for construction purpose unless certified. Dimensions and weights are approximate. On/Off level adjustable. We reserve the right to make revisions to our product (s) and the product (s) specifications without notice.

HYDROMATIC®

ELECTRICAL DATA

SPD50H/100H

SUBMERSIBLE HIGH HEAD,
DOUBLE SEAL EFFLUENT

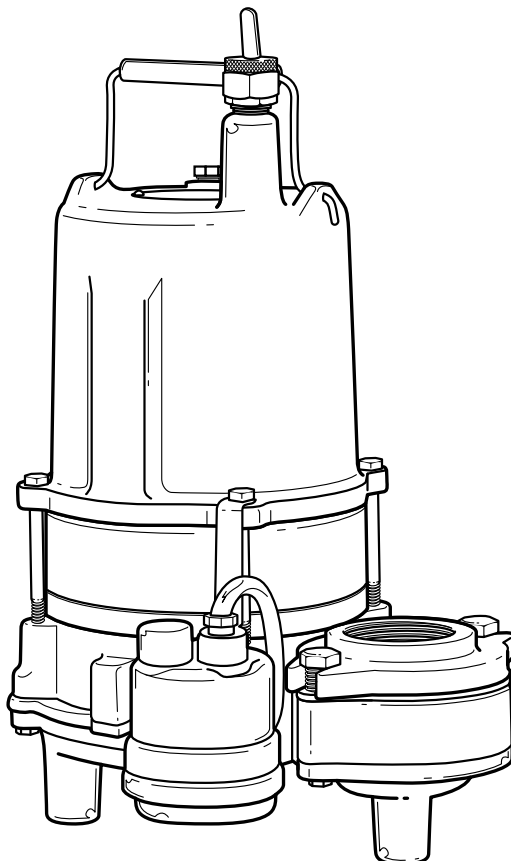
Wholesale Products Page: 6130-3

Dated: September 2011

MODEL: SPD50H

R.P.M.	3450
MOTOR TYPE	OIL FILLED WITH AUTOMATIC RESET OVERLOAD
MOTOR PROTECTION	THERMAL OVERLOAD WITH AUTOMATIC RESET

HP	VOLTAGE	PHASE	NEC CODE	SERVICE FACTOR	FULL LOAD AMPS
1/2	115	1	-	1	14
	230				7
	200	3			3.6
	230				3.5
	460				1.8
	575				1.9



HYDROMATIC®

ELECTRICAL DATA

SPD50H/100H

Wholesale Products Page: 6130-4

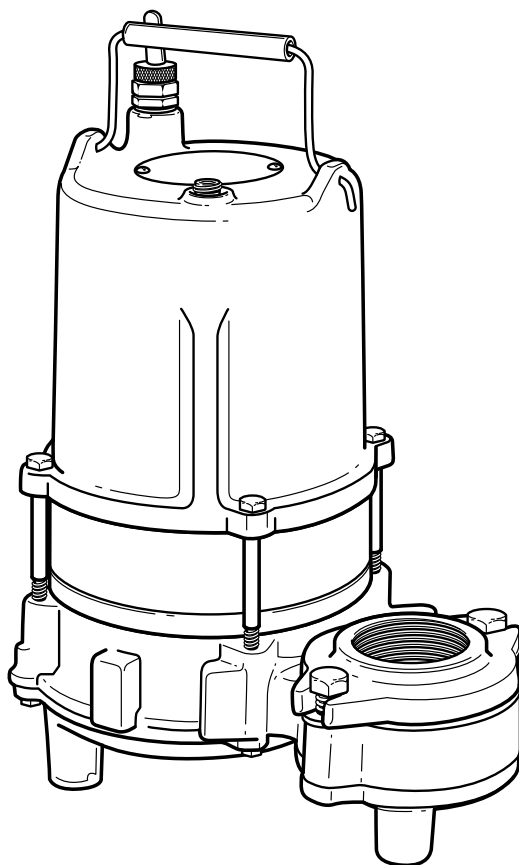
SUBMERSIBLE HIGH HEAD,
DOUBLE SEAL EFFLUENT

Dated: September 2011

MODEL: SPD100H

R.P.M.	3450
MOTOR TYPE	OIL FILLED WITH THERMAL OVERLOAD
MOTOR PROTECTION	THERMAL OVERLOAD WITH AUTOMATIC RESET

HP	VOLTAGE	PHASE	NEC CODE	SERVICE FACTOR	FULL LOAD AMPS
1	230	1	-	1	9.9
	200	3			5.5
	230				5.2
	460				2.5
	575				2.5



HYDROMATIC®

TECHNICAL DATA

SPD50H/100H SUBMERSIBLE HIGH HEAD, DOUBLE SEAL EFFLUENT

Wholesale Products Page: 6130-5

Dated: September 2011

MODEL: SPD50H

Physical Data

DISCHARGE SIZE	2" NPT (STANDARD), 3" NPT (OPTIONAL)
SOLIDS SIZE	¾"
IMPELLER TYPE	2 VANE NON CLOG
CABLE LENGTH	10' STANDARD 20' OPTIONAL
PAINT	PAINTED AFTER ASSEMBLY, DARK GREEN, WATER REDUCIBLE ENAMEL, ONE COAT, AIR DRIED.

Temperature

MAXIMUM LIQUID	140°F
MAXIMUM STATOR	-
OIL FLASH POINT	-

Technical Data

POWER CORD TYPE		SJTW / STW-A
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON
	CASING	CAST IRON
	IMPELLER	CAST IRON
	MOTOR SHAFT	-
	HARDWARE	STAINLESS STEEL
	"O" RINGS	-
MECHANICAL SEALS Standard:		CARBON / CERAMIC
UPPER BEARING		BALL
LOWER BEARING		BALL

HYDROMATIC®

TECHNICAL DATA

SPD50H/100H

SUBMERSIBLE HIGH HEAD, DOUBLE SEAL EFFLUENT

Wholesale Products Page: 6130-6

Dated: September 2011

MODEL: SPD100H

Physical Data

DISCHARGE SIZE	2" NPT (STANDARD) 3" NPT (OPTIONAL)
SOLIDS SIZE	¾"
IMPELLER TYPE	2 VANE NON CLOG
CABLE LENGTH	20' STANDARD
PAINT	PAINTED AFTER ASSEMBLY, DARK GREEN, WATER REDUCIBLE ENAMEL, ONE COAT, AIR DRIED.

Temperature

MAXIMUM LIQUID	140°F
MAXIMUM STATOR	-
OIL FLASH POINT	-

Technical Data

POWER CORD TYPE		STW-A
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON
	CASING	CAST IRON
	IMPELLER	CAST IRON
	MOTOR SHAFT	416 STAINLESS STEEL
	HARDWARE	STAINLESS STEEL
	"O" RINGS	BUNA-N
MECHANICAL SEALS Standard:		CARBON / CERAMIC
UPPER BEARING		BALL
LOWER BEARING		BALL

HYDROMATIC®

SPD50H/100H

SUBMERSIBLE HIGH HEAD, DOUBLE SEAL EFFLUENT

SPECIFICATION DATA

Wholesale Products Page: 6130-7

Dated: September 2011

MODELS: SHEF50 and SHEF100

1.01 GENERAL

Contractor shall furnish all labor, materials, equipment and incidentals required to provide _____ (Qty.) submersible centrifugal high head double seal effluent pump(s) as specified herein. The pump models covered in this specification are the SPD50H and SPD100H. The pump furnished for this application shall be MODEL _____ as manufactured by Hydromatic Pumps.

2.01 DESIGN CONDITIONS

Each pump shall be rated _____ H.P., _____ volts, _____ phase, _____ hertz and operate at _____ RPM.

3.01 OPERATING CONDITIONS

The pump shall deliver _____ U.S. GPM/LPS at feet/meters TDK, and handle a _____ inch solid. The curve submitted for approval shall state, in addition to head and capacity performance, solid handling capability, amp rating, and design impeller diameter.

4.01 CONSTRUCTION

Each pump shall be of the sealed submersible type, incorporating features normally found in pumps furnished for the residential market.

These features include:

1. The pump volute and motor housing shall be high quality gray cast iron, ASTM A-48, Class 30.
2. The pump inlet shall be open and clear, without screening to provide access for effluent and septic tank solids.
3. All external mating parts shall be machined and Buna N, O-Ring sealed.
4. All fasteners exposed to the pumped liquid shall be 300 series stainless steel.
5. All power cords shall be water resistant UL or CSA approved, with double insulation, and sized as a function of Amp. draw.

5.01 MOTOR AND SHAFT

The stator, rotor and bearings shall be mounted in a sealed submersible type housing. Single phase motors shall be split phase with solid state switch and start capacitor. Three phase motors shall be Polyphase. Full Load and Locked Rotor Amps as well as Start and Run winding resistance shall be tabulated for each pump.

6.01 BEARINGS AND SHAFT

A thrust bearing shall be required. It shall be heavy duty single row ball bearings which are permanently and continuously lubricated and cooled by the dielectric oil which fills the motor housing. The motor shaft shall be stainless steel and sealed from the pumped liquid with a carbon ceramic mechanical seal.

7.01 SEALS AND SENSORS

The rotor and stator in the motor housing shall be separated and protected from the pumped liquid by an oil filled housing incorporating two type 21 carbon ceramic mechanical seals mounted in tandem.

HYDROMATIC®

SPD50H/100H

SUBMERSIBLE HIGH HEAD, DOUBLE SEAL EFFLUENT

SPECIFICATION DATA

Wholesale Products Page: 6130-8

Dated: September 2011

This seal housing shall be equipped with a moisture sensing probe installed between the seals, and the sensing of moisture in the seal chamber shall be automatic, continuous and not require the pump be stopped or removed from the wet well.

8.01 EXCEPTIONS (SENSOR)

The seal failure sensor is optional on single phase automatic and single phase manual pumps.

9.01 IMPELLER

The Impeller shall be high capacity, two vane, high head design with pump out vanes on the back side. These vanes wash out grit and stringy material that will damage the shaft and mechanical seal.

10.01 AUTOMATIC CONTROL

All single phase pumps should be capable of automatic operation.

11.01 PRESSURE SWITCH

The Single Phase SPD50H pump is furnished with a pressure diaphragm switch that is UL listed for water and sewage and CSA certified. The diaphragm switch cord shall be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

12.01 FLOAT SWITCH

The SPD100AH pump (automatic version) is supplied with a tilt-sensitive wide-angle float switch which is sealed in a non-corrosive PVC enclosure. The switch is UL listed for water and sewage and CSA certified. The float switch cord shall also be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

13.01 PAINTING

All cast iron parts shall be painted before assembly with a water reducible alkyd air dried enamel. The paint shall be applied in one coat with a minimum thickness of 3 to 4 mils.

14.01 TESTING

All pumps shall be individually tested to include the following:

1. The pump and power cord shall be visually inspected for imperfections, cuts or nicks.
2. The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for moisture content and/or insulation defects.
3. The motor and volute housing shall be pressurized and a 10 second air leak decay test run.
4. Oil is added, and the pump is run. Voltage and current are monitored visually, electronically, and the tester listens for any noise or malfunction.



USA
293 WRIGHT STREET, DELAVAN, WI 53115 WWW.HYDROMATIC.COM
PH: 888-957-8677 ORDERS FAX: 800-426-9446

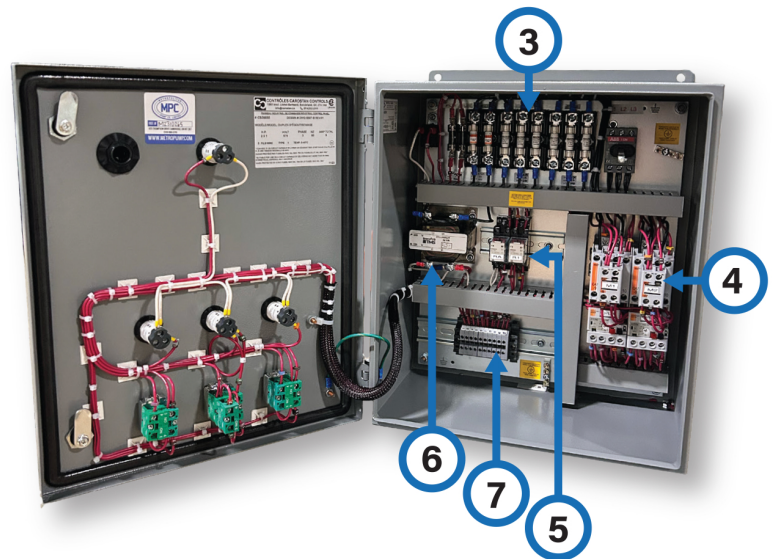
CANADA
269 TRILLIUM DRIVE, KITCHENER, ONTARIO, CANADA N2G 4W5
PH: 519-896-2163 ORDERS FAX: 519-896-6337

Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.



DUPLEX CONTROL PANEL

① EEMAC 1 ENCLOSURE



STANDARD DUPLEX PANEL FEATURES

- ① EEMAC 1 Enclosure
- ② Main Disconnect
- ③ Set of Fuses
- ④ Magnetic Starter
- ⑤ Alternation Circuit
- ⑥ Transformer (Except 115V)
- ⑦ Terminals to Connect Floats
- ⑧ 3-Position Selector Switch (Man-O-Auto)
- ⑨ Pilot Light (Power on)
- ⑩ Green Pilot Lights (Run)

EEMAC 4 ENCLOSURE

(w/ Inner Door & Alarm Beacon)



208V, 3 phase dedicated circuit is assigned to the control panel

Designed to control 2 pumps, this fully customizable panel is available in 115, 208, 230, 460 or 575 volt, single or three phase, indoor, outdoor and hazardous location. Engineered for reliability and performance, choose the Duplex Control Panel for a seamless integration into your operations. Carostan control panels are CSA & UL listed and backed by a one year manufacturing warranty.

Note: Options, voltage, and amp range selected may change enclosure size and component layout.

Selection Sheet

Input requirements and select options to generate a model number and description at the bottom.

Select Phase & Voltage:

Input Pump Horsepower: HP

Select Amp Range:

Input Pump Full Load Amps: FLA

Select Enclosure Type:

	DESCRIPTION	SELECT
D	Main Disconnect, Magnetic Starter, Transformer, Alternation Circuit, Power-on & Run Lights, Terminals to Connect Floats, 3-Position Selector Switch (Man-O-Auto)	INCLUDED
A	Alarm Block (Buzzer+Silence+Light)	<input checked="" type="checkbox"/>
B	Alarm Relay (Dry Contacts)	<input checked="" type="checkbox"/>
C	Overload Indication	<input type="checkbox"/>
E	Seal Failure Detection	<input checked="" type="checkbox"/>
F	Overheat Detection	<input checked="" type="checkbox"/>
G	Bell Alarm	<input type="checkbox"/>
H	Elapsed Time Meters (Cema 1, 12)	<input type="checkbox"/>
I	Safe Pack	<input type="checkbox"/>
J	Control Done Through Electrodes	<input type="checkbox"/>
K	Alarm Beacon	<input type="checkbox"/>
L	Breaker Without Handle For 1 Phase 120 V	<input type="checkbox"/>
M	Breaker Without Handle For 1 Phase 240V	<input type="checkbox"/>
N	Heater + Thermostat	<input type="checkbox"/>
O	Capacitor Installation	<input type="checkbox"/>
P	1 PH Lightning Arrestor	<input type="checkbox"/>
Q	3 PH Lightning Arrestor	<input type="checkbox"/>
R	Cycle Counter	<input type="checkbox"/>
T	Dry Contact for Pump Run	<input type="checkbox"/>
U	Bacnet IP communication	<input type="checkbox"/>
V	Emergency Transfer	<input type="checkbox"/>
W	Breakers	<input type="checkbox"/>
X	Touchscreen PLC	<input type="checkbox"/>
Y	Auto-Dialer	<input type="checkbox"/>
Z	Mini CAS For 1/2GA, 15/20GSD/GXS	<input type="checkbox"/>

Model Number & Description:

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DZ11316+E4ID+A+B+E+F

Duplex Control Panel Main Main Disconnect, Magnetic Starter, Transformer, Alternation Circuit, Power-on & Run Lights, Terminals to Connect Floats, 3-Position Selector Switch (Man-O-Auto), 3Ø/208V, 11.3 to 16 FLA, EEMAC 4 Padlockable Enclosure w/ Inner Door, Alarm Block (Buzzer, Silence, Light), Alarm Relay (Dry Contacts), Seal Failure Detection, Overheat Detection, Pump Data: 2 HP



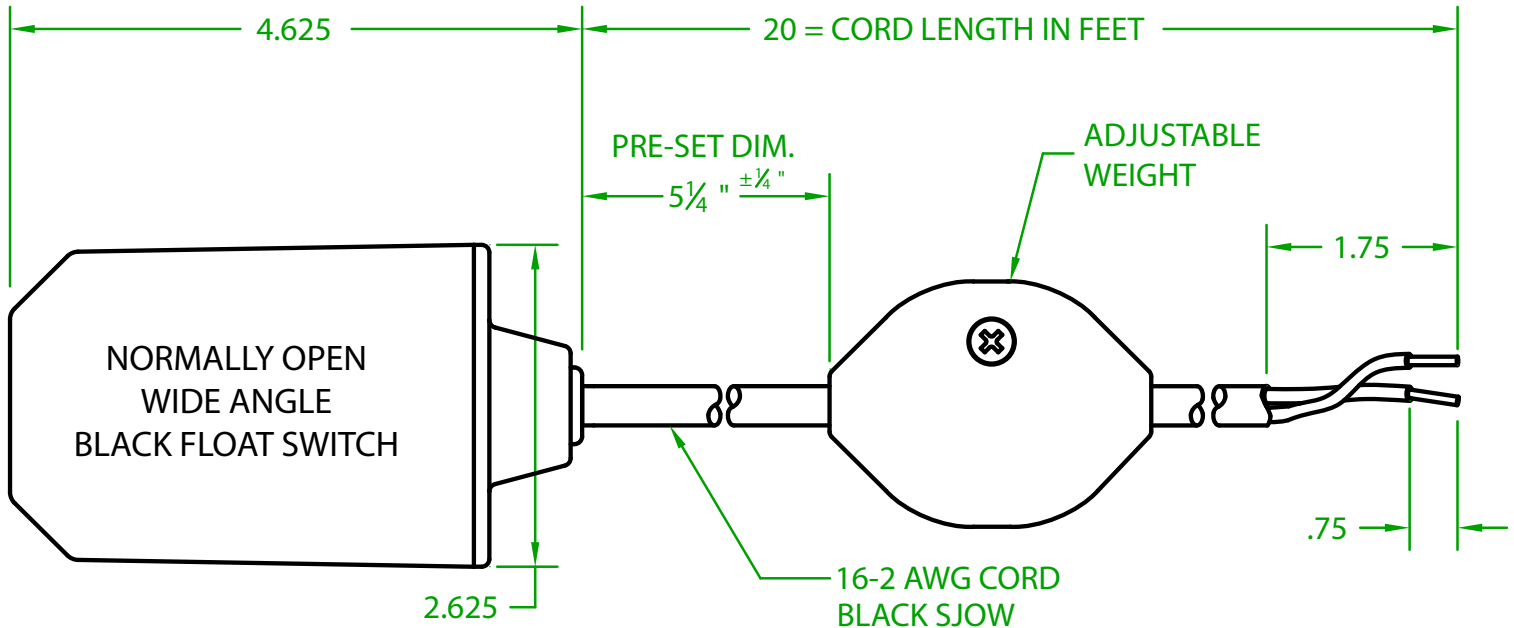
MERCURY DISPLACEMENT INDUSTRIES, INC.

Post Office Box 710 - U.S. 12 East - Edwardsburg, Michigan 49112-0710

Phone (269) 663-8574 - Fax (269) 663-2924

(800) 634-4077

GF10W2000W



OPERATING ANGLE 90°: CONTACTS CLOSE @ 45° ABOVE HORIZONTAL
CONTACTS OPEN @ 45° BELOW HORIZONTAL

ELECTRICAL RATINGS: 1/2 H.P. 13 AMPS @ 120/240 VAC. 58.8 LRA

FLOAT MATERIAL: H.I.P.S.



LR-41198

E-93774 

J.J.S. AUGUST 21, 2008

REV. 06-18-19

Contactors - Relays - Switches

<http://www.mdious.com>



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475 THOMPSON DRIVE CAMBRIDGE, ONTARIO
N1T 2K7
(519) 886-5710

OFFICIAL MPC SHOP DRAWING

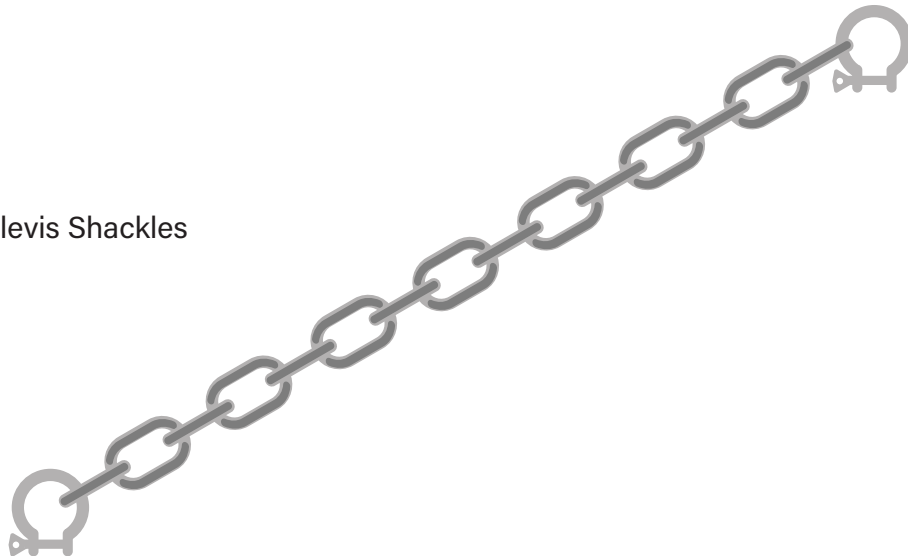
PART #:	DESCRIPTION:	DATE:
10FTLC-2C--G-3/16	10FT GALVANIZED LIFT CHAIN PACKAGE 3/16" C/W 2 CLEVIS	01/2023

Specification Requirements:

NACM Welded Steel Chain Specifications, Grade 30 Proof Coil Chain

- Material: Carbon steel meeting Grade 30 per NACM
- Mechanical Properties: ASTM A413/A413M
- Marking: Manufacturer's ID and 3, 30 or 300
- Finish: Hot Dip Galvanized per ASTM A153/A153

Includes 2
3/16" Galvanized Clevis Shackles



NOT TO BE USED FOR OVERHEAD LIFTING

Chain Size (Inches)	Material Diameter	Inside Length	Inside Width	Working Load Limit (Max.)	Min Breaking Force
	-7%	Max.	Min.	Lbs.	Lbs.
1/8	0.156	0.94	0.25	400	1,600
3/16	0.217	0.98	0.30	800	3,200
1/4	0.276	1.24	0.38	1,300	5,200
5/16	0.331	1.29	0.44	1,900	7,600
3/8	0.394	1.38	0.55	2,650	10,600
7/16	0.488	1.64	0.65	3,700	14,800
1/2	0.512	1.79	0.72	4,500	18,000

SP5 GROUNDWATER SUMP PUMP 10 GPM
@ 122 FT TDH

Liberty Pumps®

FL100-Series

1hp

FL150-Series

1-1/2hp

FL200-Series

2hp

**Submersible
Effluent Pumps**

1-1/2" or 2" Discharge

Flange Mounted

Features:

- 3/4" Solids-handling
- Heavy cast iron construction
- 2 vane semi-open cast iron impeller
- 416 stainless steel rotor shaft (see back for shaft material)
- Dual shaft seals
- Single float, mercury free level control
- Additional mounting clamp provided for optional switch mounting to pipe
- Fully adjustable pumping range
- 2" FNPT threaded discharge with 1-1/2" FNPT flange provided
- Quick-disconnect power cord - 25' length standard
- Available in automatic and manual models



**Dual Sized
Discharge**
1-1/2" or 2"

innovate. evolve.

FL100, FL150 and FL200-Series

Technical Specifications

External Construction:

Pump Volute – Gray iron casting class 25
 Pump Legs – Gray iron casting class 25
 Motor Cover – Gray iron casting class 25
 All casting shall be powder coated for corrosion resistance prior to assembly.

Motor:

Submersible 3450 RPM, oil filled and hermetically sealed. Class B insulation rating. FL100 only 17-4 PH Stainless steel. (FL150 and FL200, 416 Stainless steel rotor shaft.) Thermally protected – single phase models. Three phase models shall have overloads incorporated into the control panel, properly sized for the horsepower and amperage of the pump.

Impeller:

2 vane, semi-open design. Cast iron construction.

Dual Shaft Seals:

FL100-Series feature upper unitized carbon ceramic and lower Viton double lip.

FL150 and FL200-Series feature upper unitized silicon carbide, lower Viton double lip.

Fasteners:

All fasteners shall be 300-series stainless steel.

Power Cord:

25' length standard. Quick-disconnect design allows easy field replacement.

Level Control:

The pump shall be controlled by a wide angle mechanical float sealed in a PVC housing. The float shall have a series plug for manual by-pass operation.

A water-stop seal shall be incorporated into the cord entry to eliminate potential water wicking into the switch.

An adjustable clamp is provided for optional pipe mounting of the float.

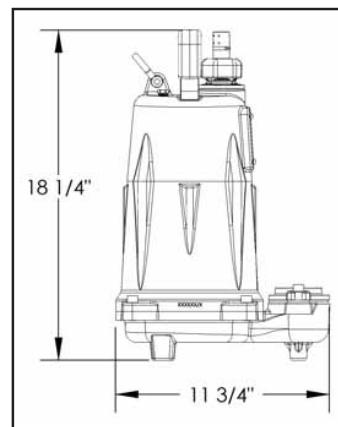
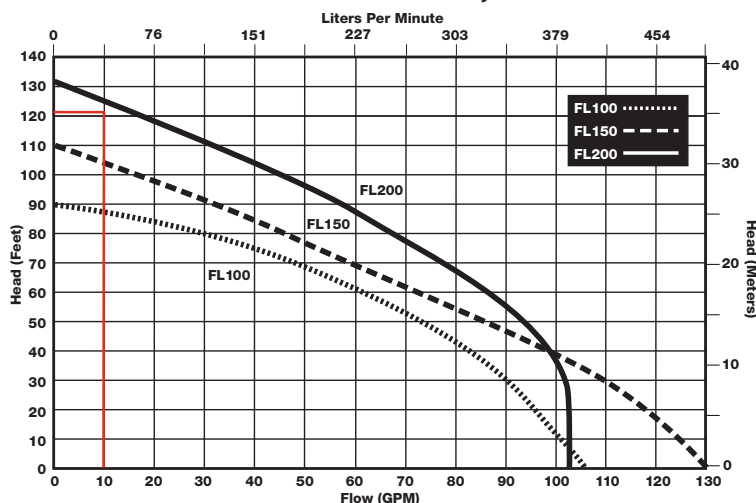
Discharge:

2" FNPT with 1-1/2" FNPT cast iron flange provided.

Model	hp.	Volts	Phase	Amps	Discharge	Automatic	Cord Length	Wgt. Lbs.
FL102M-2	1	208-230	1	12	1-1/2" & 2"	No	25'	71
FL102A-2	1	208-230	1	12	1-1/2" & 2"	Yes	25'	72
FL103M-2	1	208-230	3	9	1-1/2" & 2"	No	25'	71
FL104M-2	1	440-480	3	4.5	1-1/2" & 2"	No	25'	71
FL105M-2	1	575	3	3.3	1-1/2" & 2"	No	25'	71
FL152M-2	1-1/2	208-230	1	15	1-1/2" & 2"	No	25'	81
FL152A-2	1-1/2	208-230	1	15	1-1/2" & 2"	Yes	25'	82
FL153M-2	1-1/2	208-230	3	10.6	1-1/2" & 2"	No	25'	81
FL154M-2	1-1/2	440-480	3	5.3	1-1/2" & 2"	No	25'	81
FL155M-2	1-1/2	575	3	4.9	1-1/2" & 2"	No	25'	81
FL202M-2	2	208-230	1	15	1-1/2" & 2"	No	25'	82
FL202A-2	2	208-230	1	15	1-1/2" & 2"	Yes	25'	83
FL203M-2	2	208-230	3	10.6	1-1/2" & 2"	No	25'	82
FL204M-2	2	440-480	3	5.3	1-1/2" & 2"	No	25'	82
FL205M-2	2	575	3	4.9	1-1/2" & 2"	No	25'	82

NOTE: 3-phase models require a control panel for automatic operation. See simplex and duplex panel literature for complete information. 35' cord option available on some models. Consult factory.

60 hz Performance Curve FL100, FL150 and FL200-Series - Maximum Fluid Temperature 140° F



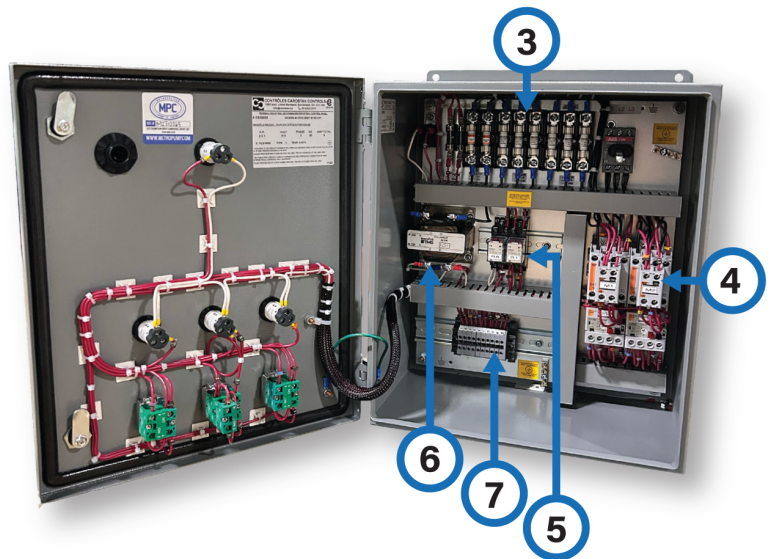
Certified

Specifications subject to change without notice.



DUPLEX CONTROL PANEL

① EEMAC 1 ENCLOSURE



STANDARD DUPLEX PANEL FEATURES

- ① EEMAC 1 Enclosure
- ② Main Disconnect
- ③ Set of Fuses
- ④ Magnetic Starter
- ⑤ Alternation Circuit
- ⑥ Transformer (Except 115V)
- ⑦ Terminals to Connect Floats
- ⑧ 3-Position Selector Switch (Man-O-Auto)
- ⑨ Pilot Light (Power on)
- ⑩ Green Pilot Lights (Run)

208V, 3 phase dedicated circuit is assigned to the control panel

EEMAC 4 ENCLOSURE

(w/ Inner Door & Alarm Beacon)



Designed to control 2 pumps, this fully customizable panel is available in 115, 208, 230, 460 or 575 volt, single or three phase, indoor, outdoor and hazardous location. Engineered for reliability and performance, choose the Duplex Control Panel for a seamless integration into your operations. Carostan control panels are CSA & UL listed and backed by a one year manufacturing warranty.

Note: Options, voltage, and amp range selected may change enclosure size and component layout.



Selection Sheet

Input requirements and select options to generate a model number and description at the bottom.

Select Phase & Voltage: 3Ø/208V

Input Pump Horsepower: 2 HP

Select Amp Range: 11.3 to 16

Input Pump Full Load Amps: FLA

Select Enclosure Type: EEMAC 4 Padlockable Enclosure + Inner Door

	DESCRIPTION	SELECT
D	Main Disconnect, Magnetic Starter, Transformer, Alternation Circuit, Power-on & Run Lights, Terminals to Connect Floats, 3-Position Selector Switch (Man-O-Auto)	INCLUDED
A	Alarm Block (Buzzer+Silence+Light)	<input checked="" type="checkbox"/>
B	Alarm Relay (Dry Contacts)	<input checked="" type="checkbox"/>
C	Overload Indication	<input type="checkbox"/>
E	Seal Failure Detection	<input checked="" type="checkbox"/>
F	Overheat Detection	<input checked="" type="checkbox"/>
G	Bell Alarm	<input type="checkbox"/>
H	Elapsed Time Meters (Cema 1, 12)	<input type="checkbox"/>
I	Safe Pack	<input type="checkbox"/>
J	Control Done Through Electrodes	<input type="checkbox"/>
K	Alarm Beacon	<input type="checkbox"/>
L	Breaker Without Handle For 1 Phase 120 V	<input type="checkbox"/>
M	Breaker Without Handle For 1 Phase 240V	<input type="checkbox"/>
N	Heater + Thermostat	<input type="checkbox"/>
O	Capacitor Installation	<input type="checkbox"/>
P	1 PH Lightning Arrestor	<input type="checkbox"/>
Q	3 PH Lightning Arrestor	<input type="checkbox"/>
R	Cycle Counter	<input type="checkbox"/>
T	Dry Contact for Pump Run	<input type="checkbox"/>
U	Bacnet IP communication	<input type="checkbox"/>
V	Emergency Transfer	<input type="checkbox"/>
W	Breakers	<input type="checkbox"/>
X	Touchscreen PLC	<input type="checkbox"/>
Y	Auto-Dialer	<input type="checkbox"/>
Z	Mini CAS For 1/2GA, 15/20GSD/GXS	<input type="checkbox"/>

Model Number & Description:

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DZ11316+E4ID+A+B+E+F

Duplex Control Panel Main Main Disconnect, Magnetic Starter, Transformer, Alternation Circuit, Power-on & Run Lights, Terminals to Connect Floats, 3-Position Selector Switch (Man-O-Auto), 3Ø/208V, 11.3 to 16 FLA, EEMAC 4 Padlockable Enclosure w/ Inner Door, Alarm Block (Buzzer, Silence, Light), Alarm Relay (Dry Contacts), Seal Failure Detection, Overheat Detection, Pump Data: 2 HP



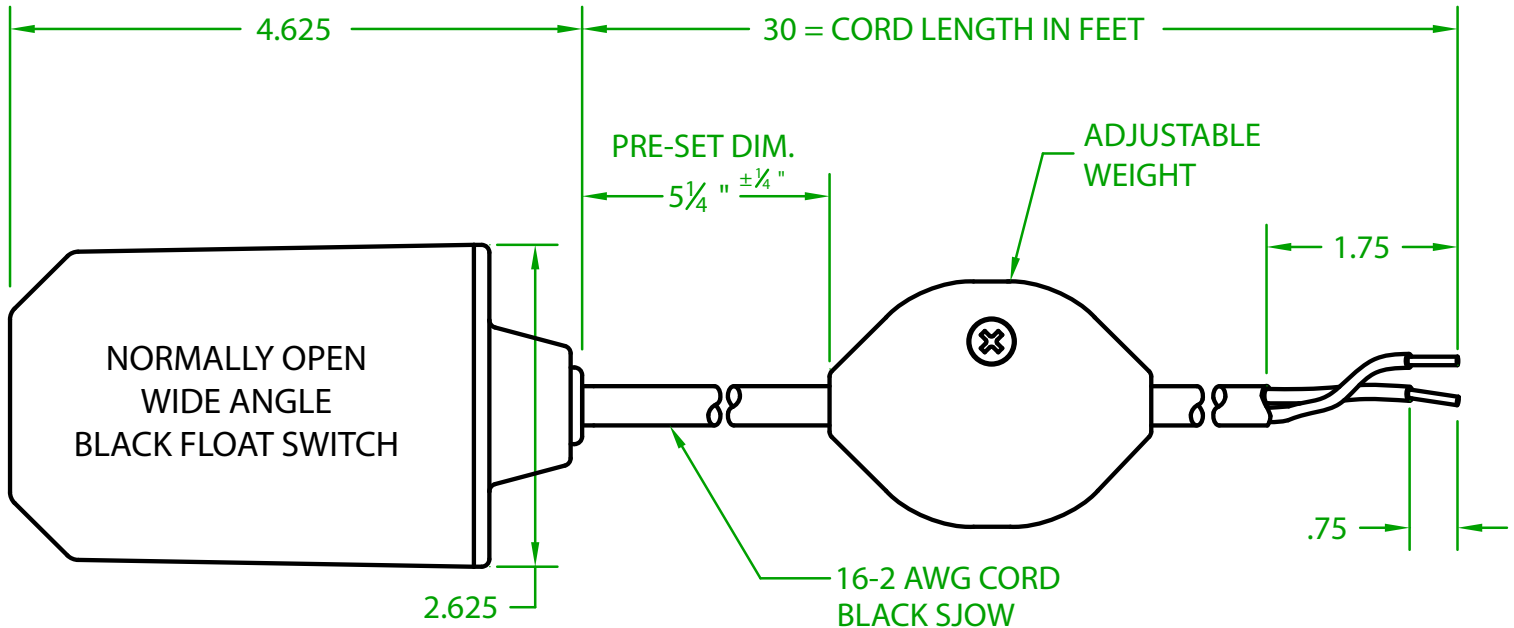
MERCURY DISPLACEMENT INDUSTRIES, INC.

Post Office Box 710 - U.S. 12 East - Edwardsburg, Michigan 49112-0710

Phone (269) 663-8574 - Fax (269) 663-2924

(800) 634-4077

GF10W3000W



OPERATING ANGLE 90°: CONTACTS CLOSE @ 45° ABOVE HORIZONTAL
CONTACTS OPEN @ 45° BELOW HORIZONTAL

ELECTRICAL RATINGS: 1/2 H.P. 13 AMPS @ 120/240 VAC. 58.8 LRA

FLOAT MATERIAL: H.I.P.S.



LR-41198

E-93774 

J.J.S. AUGUST 21, 2008

REV. 06-18-19

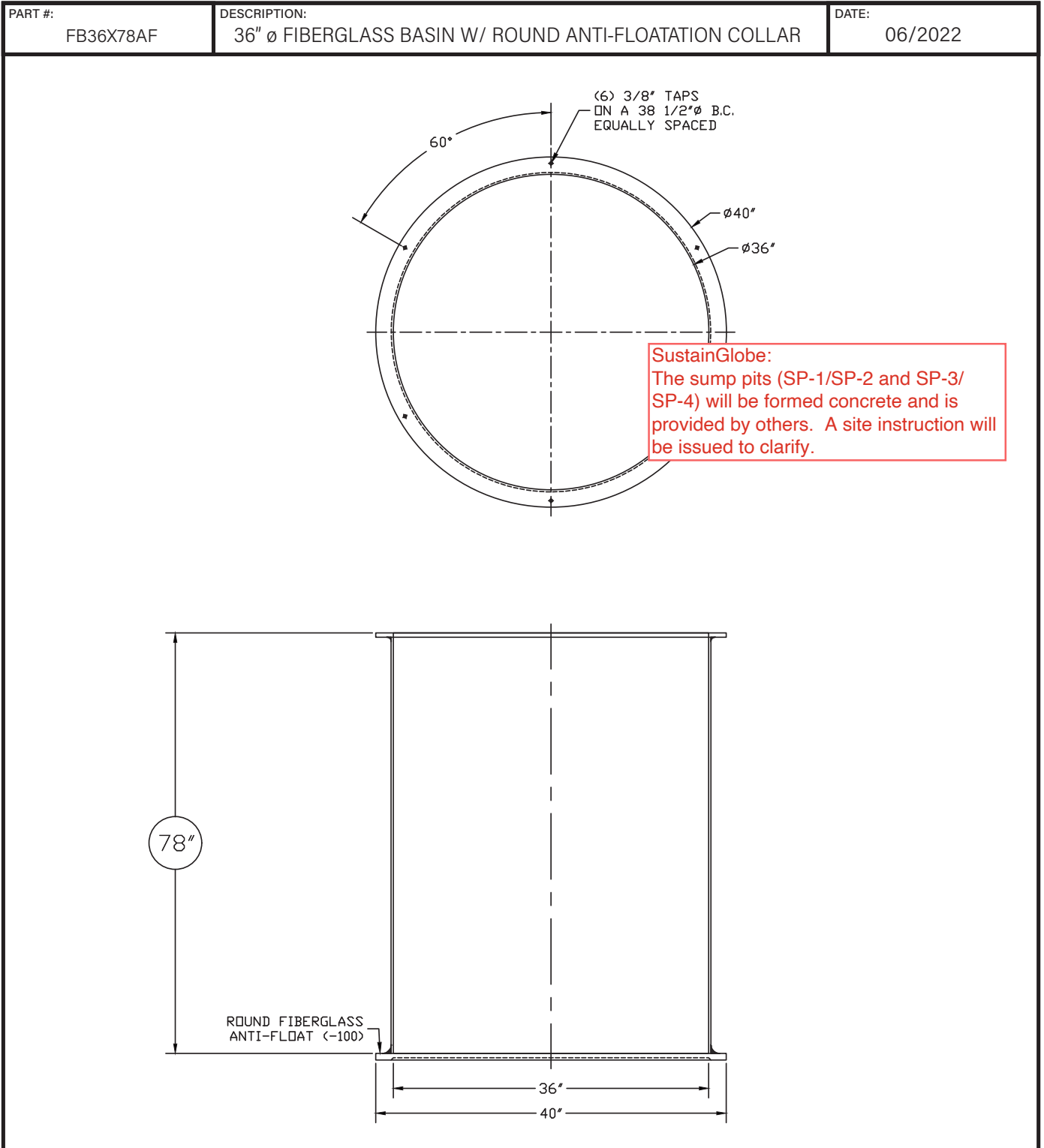
Contactors - Relays - Switches

<http://www.mdious.com>



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475 THOMPSON DRIVE CAMBRIDGE, ONTARIO
N1T 2K7
519-886-5710

OFFICIAL MPC SHOP DRAWING

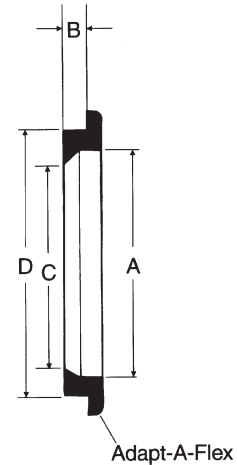




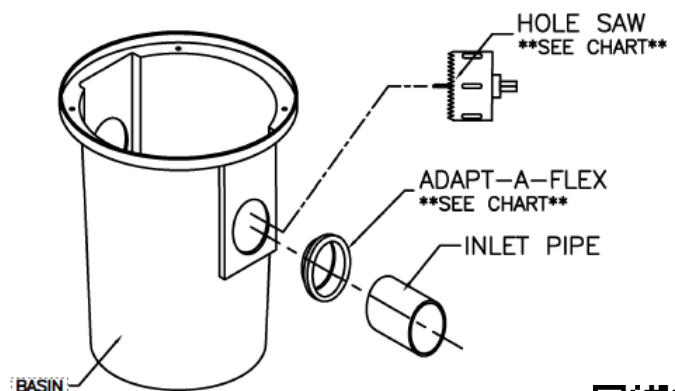
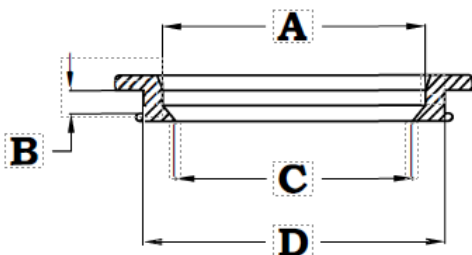
ADAPTAFLEX HUBS

INSTALLATION INSTRUCTIONS

Number		A	B	C	Hole D	Saw Size
AFH-.375	3/8"	.068	.200	.045	1.050	1"
AFH-.50	1/2"	.086	.240	.630	1.310	1-1/4"
AFH-.75	3/4"	1.040	.240	.820	1.310	1-1/4"
AFH-1	1"	1.300	.220	1.050	1.780	1-3/4"
AFH-1.25	1-1/4"	1.630	.230	1.350	3.050	3"
AFH-1.5	1-1/2"	1.870	.230	1.560	3.050	3"
AFH-2	2"	2.300	.250	2.000	3.050	3"
AFH-3	3"	3.450	.250	3.100	4.010	4"
AFH-4 35	4" SDR 35	4.270	.250	3.800	5.025	5"
AFH-4	4"	4.450	.250	4.120	5.060	5"
AFH-6 35	6" SDR 35	6.200	.250	5.850	7.205	7"
AFH-6	6"	6.450	.250	6.125	7.060	7"



- 1) SELECT PROPER HOLE SAW FROM CHART ABOVE AND CUT HOLE AT DESIRED LOCATION IN PART.
- 2) INSERT ADAPT-A-FLEX INTO THE HOLE, MAKING SURE THAT IT IS FLUSH AGAINST PART.
- 3) SLIGHTLY BEVEL ONE END OF INLET PIPE, MAKING IT EASIER TO PUSH THROUGH ADAPT-A-FLEX.
- 4) APPLY SOAPY WATER TO ADAPT-A-FLEX AT INLET INSERTION POINT.
- 5) APPLY SOAPY WATER ON THE BEVELED END OF INLET PIPE.
- 6) PUSH INLET PIPE THROUGH ADAPT-A-FLEX.



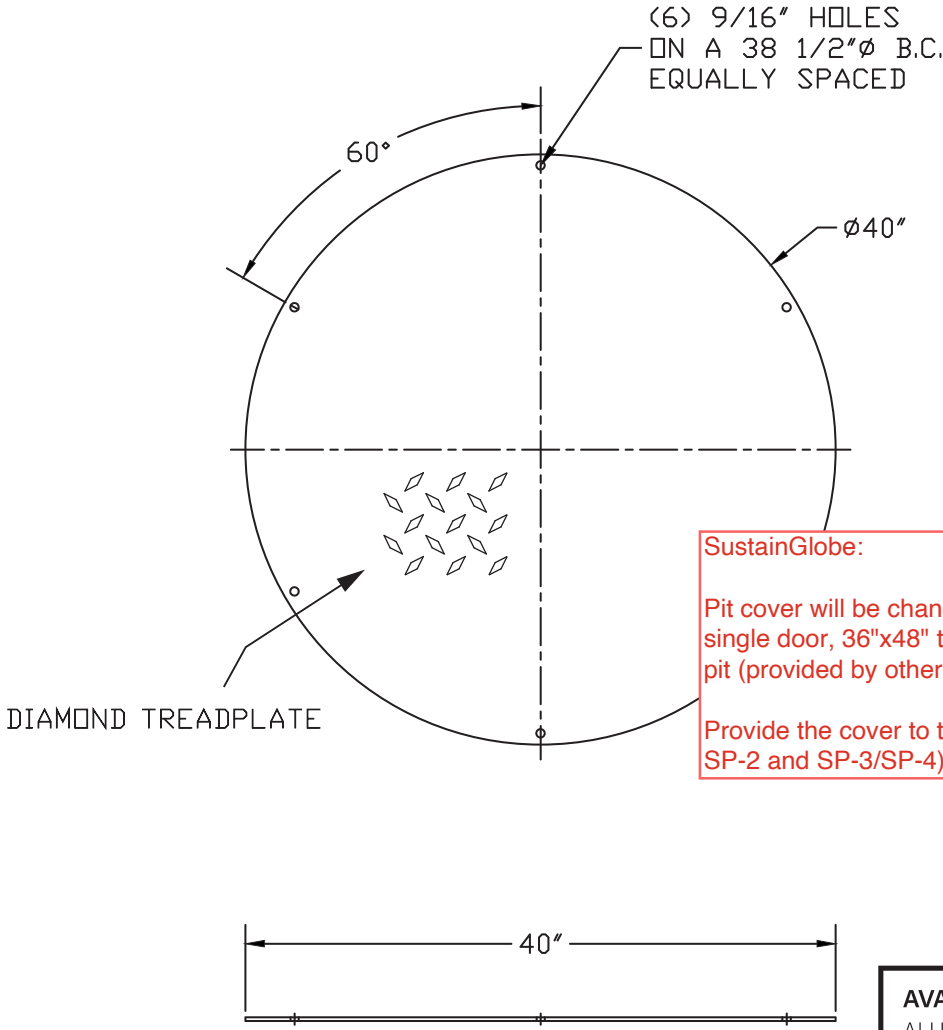
Scan for Video Instructions





METROPOLITAN PUMP CO. LIMITED HEAD OFFICE
475 THOMPSON DRIVE CAMBRIDGE, ONTARIO
N1T 2K7
519-886-5710



PART #:	DESCRIPTION:	DATE:
36BCP	SOLID ROUND COVER 1/4" THICK STEEL - FITS 36" Ø OPENING	09/2022
<div><p>(6) 9/16" HOLES ON A 38 1/2" Ø B.C. EQUALLY SPACED</p><p>60°</p><p>Ø40"</p><p>DIAMOND TREADPLATE</p><p>SustainGlobe:</p><p>Pit cover will be changed to CentriPro A3648 single door, 36"x48" to match concrete sump pit (provided by other).</p><p>Provide the cover to two sump pits (SP-1/ SP-2 and SP-3/SP-4)</p><p>40"</p></div> <div><p>RATED FOR PEDESTRIAN TRAFFIC</p><p>COMES WITH (6) 3/8" COUNTERSUNK BOLTS & GASKET</p><p>WEIGHT: 90 LBS</p></div> <div><p>AVAILABLE IN:</p><p>ALUMINUM (1/4" ONLY)</p><p>10 GAUGE STEEL</p><p>1/4" STEEL ←</p><p>3/8" STEEL</p><p>1/2" STEEL</p><p>5/8" STEEL</p><p>3/4" STEEL</p><p>1" STEEL</p><p>GALVANIZED (STEEL ONLY)</p><p>EPOXY COATED (STEEL ONLY)</p></div>		