

Metropolitan Pump Co. Ltd. Head Office

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## **Submittal Drawing Package**

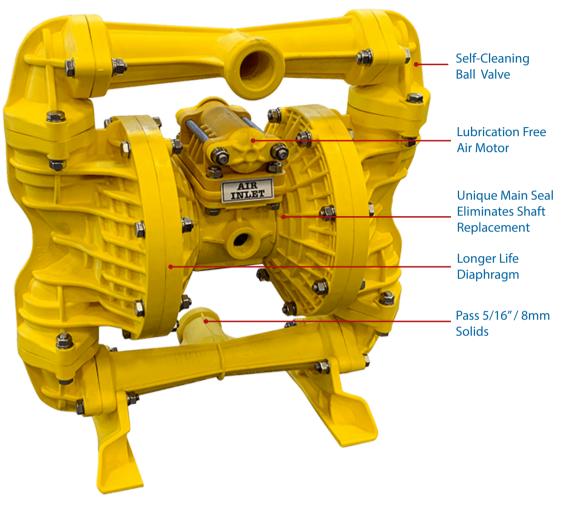
Customer:	
Job Name:	
Quote:	
Completed By:	





## **Pneumatic Diaphragm Pump**

#### P25BY - 1" / 25mm Ball Valve



Yellow Series
General Purpose
Nylon Body – Hytrel Elastomers
ATEX M2 Rating

Other materials are available to suit your specific application



Red Series - P25BR FRAS (Fire Retardant Antistatic) Nylon Body-Hytrel Elastomers- For Explosive Environment-ATEX M1 Rating



Blue Series - P25BB
Polypropylene BodySantoprene ElastomersFor Acids, Caustics,
Chemicals- ATEX M2 Rating



Ebony Series - P25BE Noryl Body- Corrosive Resistant Internals-For Acids And Other Hazardous Liquids, ATEX M2 Rating

#### **Features**

- > Patented design components
- > Simple design with fewer wear parts
- > Large particle handling
- > Low air consumption
- > Lightweight
- > Rugged & impact resistant
- > Lubrication free
- > No end of life can always be repaired
- > ATEX M1 and M2 certified
- > Low noise levels

#### Benefits

- > Increased productivity
- > Reduced costs pays for itself
- > Increased reliability & longer life
- > Less downtime & maintenance
- > Easier to diagnose & repair
- > Save on energy costs more air available for other equipment
- > Fewer injuries
- > No pollutants (oil free)
- > Safe for hazardous environments

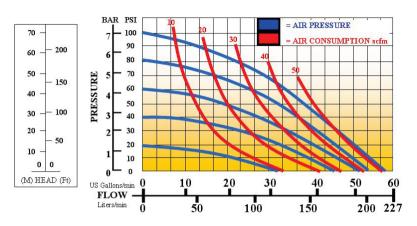
#### P25BY - 1" / 25mm Ball Valve



#### **Ball Valve**

"Pumps 2000" pneumatic diaphragm pumps were specifically designed for harsh mining duties to outperform and outlast the competition due to a number of patented design features. The light weight feature provides ease of mobility and reduces the risk of injury. Low air consumption and long lasting lubrication free parts means low cost running and reduced maintenance. *Ideally suited for pumping applications in all industries*.

#### **Performance Curve**



AIR PRESSURE:	Tested at 100 psi / 690 kPa (not to exceed 125 psi / 861 kPa)
FLOW RATE:	0-58 gpm / 220 Lpm
FLUID CONNECTION:	1" / 25mm (Internal Thread)
AIR INLET PORT:	1/2" / 15mm (Internal Thread)
EXHAUST PORT:	3/4" / 19mm (Internal Thread)
DELIVERY PRESSURE:	Tested to 87 psi / 600 kPa
SUCTION LIFT:	Tested to 19' / 6m dry and 31' / 9m wet
SOLIDS HANDLING:	.31"/8mm
PUMP WEIGHT:	Yellow Series – 18lbs / 8.2kg Red (FRAS) Series – 21lbs / 9.1kg Blue Series – 15lbs / 6.8kg

#### **Pumps 2000 (International)**

6-12 Burleigh Street Toronto 2283 N.S.W., Australia Tel: +61 2 49599400 Fax: +61 2 49504927 info@pumps2000.com

#### Pumps 2000 (America)

1721 Main Street
Pittsburgh, PA 15215
Tel: 412.963.9200
1.800.245.6211
Fax: 412.963.9214
info@pumps2000america.com

#### Pumps 2000 (Europe)

Sunderland Tyne & Wear, SR1 2NQ United Kingdom Tel: +44 (0) 191 5675488 Fax: +44 (0) 191 5678512 info@pumps2000europe.com







# The Lightweight Dual-Diaphragm Pumps that Outperform and Outlast the Competition

#### Pumps 2000 Pneumatic Diaphragm Pumps.

Designed for abrasive, solid-laden and corrosive fluids and to create an alternative to heavy, maintenance-intensive diaphragm pumps.

- > Less downtime and maintenance Pays for itself
- > Dryer mine Lowers indirect costs
- > Lower air consumption **Saves on energy costs**
- > Lightweight Results in less injury
- > Low noise levels

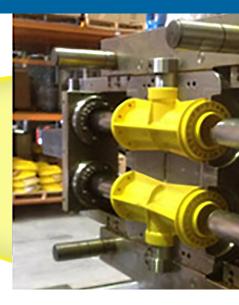




P50BY- 2"/50mm Ball Valve









#### **Yellow Series**

ATEX certified pumps, suitable for general water and slurry conditions, salt water, some low PH acid applications, applications requiring food grade approved materials of construction and more. The Yellow series has an ATEX M2 rating. The pump housing is made of a nylon blend and the internal elastomers are hytrel.



#### **Blue Series**

ATEX certified pumps suitable for a wide range of acids, caustics and other chemicals. The Blue series pump housing is made of a polypropylene blend and the internal elastomers are santoprene.



#### Red FRAS (Fire Retardant Anti-Static) Series

ATEX certified pumps suitable for continuous use in hazardous Explosive atmospheres. FRAS Series pumps are Fire Resistant & Anti-Static. The Red Series has an ATEX M1 rating. The pump housing is made of a nylon blend and the internal elastomers are hytrel.



#### **Ebony Series**

ATEX certified pumps suitable for a wide range of acids and other chemicals. The Ebony series pump housing is made of a Noryl blend and the internal elastomers are santoprene.

Other materials are available to suit your specific application. Please contact us with your application details so that we may select the right mix of materials for your specific application.

## **Pumps That Outlast All Others**

The unique design of **Pumps 2000 pneumatic diaphragm pumps** are based upon more than 35 yrs. of experience with design and manufacture of non-metallic mining equipment.

From the outset, the focus was on creating an ultra-reliable, low weight, rugged and impact resistant pump that would offer the lowest possible air consumption.

#### **Reliability & Long-Life Operation**

Reliability is of the utmost importance in mining application as pump failures lead to flooding, putting workers at risk and imposing potentially massive repair cost on equipment.

Pumps 2000 offers a complete redesign of the diaphragm pump with patented design components resulting in operational life and consistent reliability far beyond what is available in other pumps with no practical end of life. You will save on maintenance, labor costs, replacement pumps and indirect costs such as vehicle maintenance due to a dryer mine while improving the overall efficiency of your operation.

#### **Large Particle Handling**

Pumps 2000 unique slurry pumps allow particles of various types and sizes to pass through the pump unobstructed. If there's enough liquid to carry the solids, Pumps 2000 slurry pumps get the job done.

#### **Low Air Consumption**

Low air consumption is especially important due to increasing energy costs. With a lower air consumption to output ratio, Pumps 2000 pneumatic diaphragm pumps do a better job using less air than traditional pumps.

#### **Lubrication-Free**

Pumps 2000 pumps use plastic components that are low wear and low friction to give you lubrication-free, long-life operation. Save on spare parts, oil, time and labor expenses.

#### **Explosion Proof**

All Pumps 2000 pumps are ATEX M2 Certified and our FRAS (flame retardant antistatic) pumps are **ATEX M1** rated giving you the highest explosion proof rating.

#### **Light Weight**

Correct use of plastic materials enables Pumps 2000 to offer the lightest mining pump on the market reducing the risk of lifting-related workplace injuries. Their light weight allows you to re-locate and maintain pumps quickly and easily.

#### Safety

Pumps 2000 achieves the highest level of safety with industry leading low weight and low noise levels, ATEX certified materials and corrosion proof all-plastic pumps to ensure compatibility with a wide range of fluids and powders.



#### Ease of Maintenance

Pumps 2000 pneumatic diaphragm pumps contain a minimal number of components. Because they contain few parts with different models sharing many of the same parts, you will have no headaches when it comes to maintenance.

#### **Pump Accessories**

#### Air Inlet Particulate Diverter Valve

A simple device that prevents the effects of prolonged exposure to particulate laden (dirty air). It collects air line dirt that can be ejected by the use of a simple purge valve, with the pump still operating.

#### **Water Monitor Float Switch**

Automatic start/stop pumping via a magnetic switch, eliminating the need for electricity. Avoid expensive and unnecessary dry running, easy to install either directly onto the pump or fitted to a pole.

#### **Bore Hole Kit**

Float actuated system to pull water directly from a bore hole.

#### **Pump Frames**

Light weight frames for hanging pumps that provide additional protection.

#### Fluid Inlet Strainers

#### **Square Strainer**

For slurry pumping applications. To prevent clogging attach a short piece of hose to the coupling on the strainer so that the opposite end is above the water level enabling it to pull in air. When dealing with heavy slurry simply connect a hose from the pumps exhaust to outlet on top of slurry strainer. The exhaust air agitates the slurry keeping the solids in suspension.

#### **Roadside Strainer**

Use along gullies or trenches.

#### **Quick Strainer**

For use on end of suction hose or directly on pump to use as a submersible. To prevent clogging attach a short piece of hose to the coupling on the strainer so that the opposite end is above the water level enabling it to pull in air. To pump higher concentrations of solids effectively simply connect a hose from the pumps exhaust to the coupling on the strainer. The exhaust air agitates the slurry keeping the solids in suspension.

#### **Bore Hole Strainer**

Drop directly down a bore hole.

#### **Dolphin Floating Strainer**

Use with a ball valve pump to minimize solids.

#### Pumps 2000 (International)

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#### Pumps 2000 Europe

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Driver & Power Data (@Max density)



Speed criteria

MCSF

**MYERS**°

#### Pump Performance Datasheet

 Customer
 :
 Quote number
 :

 Customer reference
 :
 Size
 : WHR10

 Item number
 : Default
 Stages
 : 1

 Service
 :
 Based on curve number
 : SSE0076

Quantity : 1 Date last saved : 20 Aug 2024 6:15 AM

Operating Conditions Liquid

Flow, rated : 50.00 USgpm Liquid type : --Water Differential head / pressure, rated (requested) : 30.00 ft Additional liquid description : Differential head / pressure, rated (actual) : 29.18 ft Solids diameter, max : 0.00 in

Differential head / pressure, rated (actual) : 29.18 ft Solids diameter, max : 0.00 in Suction pressure, rated / max : 0.00 / 0.00 psi.g Solids concentration, by volume : 0.00 % Temperature, max : 68.00 deg F Site Supply Frequency : 60 Hz Fluid density, rated / max : 1.000 / 1.000 SG

Performance Viscosity, rated : 1.00 cP
: Synchronous Vapor pressure, rated : 0.00 psi.a

Speed, rated: 1725 rpmMaterialImpeller diameter, rated: 6.25 inMaterial selected: StandardImpeller diameter, maximum: 6.25 inPressure Data

Impeller diameter, minimum : 6.25 in Maximum working pressure : 14.27 psi.g

Efficiency :- Maximum allowable working pressure : N/A

NPSH required / margin required : - / 0.00 ft Maximum allowable suction pressure : N/A

nq (imp. eye flow) / S (imp. eye flow) : 38 / - Metric units Hydrostatic test pressure : N/A

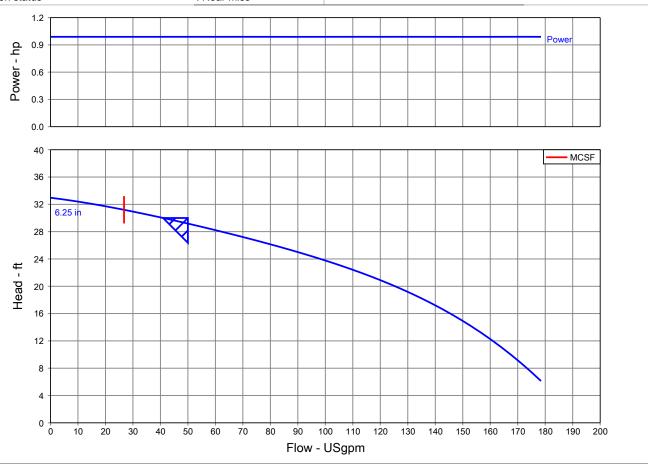
: 26.77 USgpm

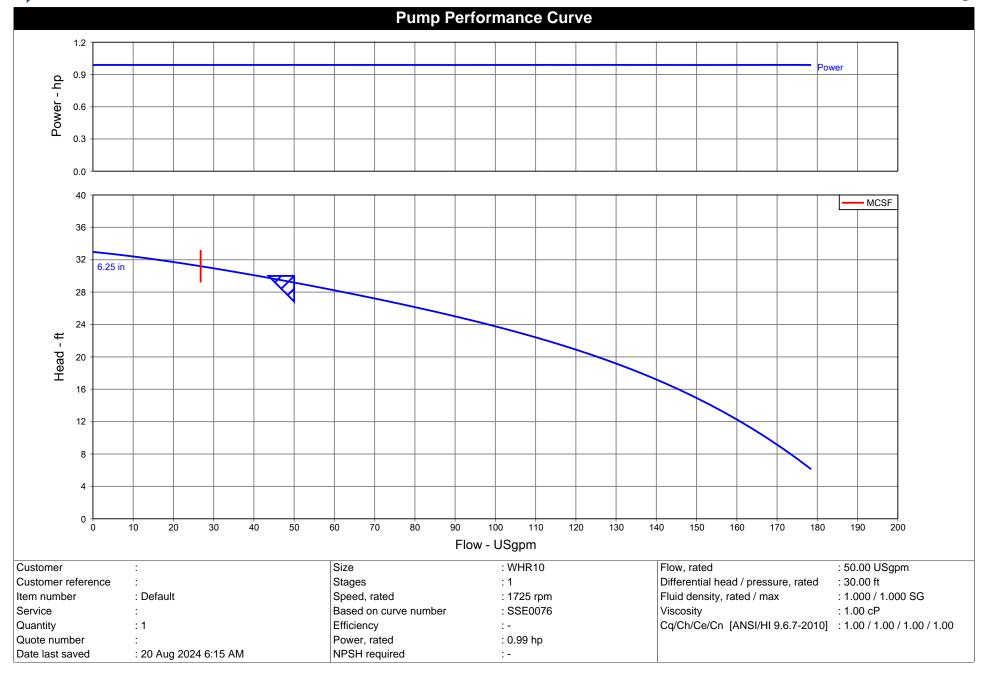
Head, maximum, rated diameter : 32.97 ft
Head rise to shutoff : 12.97 %
Flow, best eff. point : Service factor : 1.00
Flow ratio, rated / BEP : Power, hydraulic : 0.37 hp
Diameter ratio (rated / max) : 100.00 %

Diameter ratio (rated / max) : 100.00 % Power, rated : 0.99 hp
Head ratio (rated dia / max dia) : 100.00 % Power, maximum, rated diameter : 0.99 hp

 Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]
 : 1.00 / 1.00 / 1.00 / 1.00
 Motor rating
 : 1.00 hp / 0.75 kW (Fixed)

 Selection status
 : Near miss
 : Near miss
 : 1.00 hp / 0.75 kW (Fixed)





The Myers WHR series sewage pumps feature all cast iron construction to withstand the most extreme conditions. Available in single seal, and double seal models for additional protection against water leakage. The enclosed two-vane impeller provides highefficiency pumping and will handle stringy, trashy 2" solids without clogging. Designed for sewage and effluent and can be used for applications requiring high heads.

#### **APPLICATIONS**

Domestic wastewater and septic systems

#### **SPECIFICATIONS**

Capacities – 178 GPM (673.8 LPM) Shut-off Head – 33' (10.1 m) Solids Handling – 2" (50.8 mm) Liquids Handling – Drain water and domestic sewage

Intermittent Liquid Temperature – Up to 140°F (60°C)

**Motor/Electrical Data** – 1/2 HP, 115V, 1Ø, 60Hz, permanent split capacitor type; 1/2, 3/4, 1 HP, 230V, 1Ø, 60 Hz, permanent split capacitor type; 208/230/460/575V, 3Ø, 60Hz

Acceptable pH Range - 5-9 Discharge, NPT - 2" (50.8 mm);

3" (76.2 mm)

Housing - Cast iron

Power Cord - WHR-SJOW/SJOW-A 20',

16/3, 10; 20', 16/4, 30;

**WHR-DS** – 20', 14/4, 1Ø; 20', 14/3, 1Ø, L/D;

20', 16/4, 3Ø, L/D

Impeller - Cast iron, vortex

Volute Case – Cast iron

**Shaft Seal** – Single type 21, carbon/ceramic, double tandem carbon/ceramic

Minimum Sump Diameter -

Simplex: 24" (61 cm); Duplex: 30" (76 cm)



#### **FEATURES**

#### **Versatile Applications**

Ideal for residential and commercial sewage, domestic wastewater and septic systems

#### Non-clog Design

Recessed impeller provides maximum efficiency and eliminates jamming between volute case – cast iron construction

#### **Leak Detection**

Optional leak probe senses water leakage past seal (dual seal motors only)

#### **Cool Running**

Durable, oil-filled motor for continuous bearing lubrication and maximum heat dissipation

#### **Powerful Starts**

High-torque, permanent split capacitor (PSC) motor; no starting switches or relays to wear out

#### **Thermal Protection**

Heat sensor overload protection with automatic reset when motor cools to a safe operating temperature

#### **High-capacity Handling**

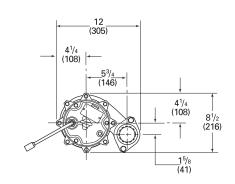
Passes full 2" solids

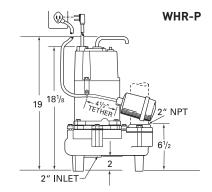


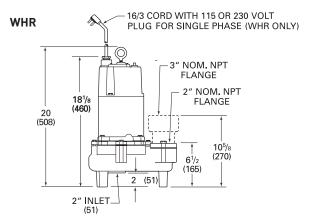
ORDERING INFORMATION							
Catalog Number	НР	Volts	Phase/ Cycles	Discharge Size	Switch Type	Cord Length	Approx. Wt. Lbs.
WHR SERIES (Sin	gle Seal)		-	-			
WHR5-11C	1/2	115	1/60	2"	Manual	20'	75
WHR5-21C	1/2	230	1/60	2"	Manual	20'	75
WHR5P-1*	1/2	115	1/60	2"	Automatic*	20'	76
WHR5P-2*	1/2	230	1/60	2"	Automatic*	20'	76
WHR5-03	1/2	200	3/60	2"	Manual	20'	75
WHR5-23	1/2	230	3/60	2"	Manual	20'	75
WHR5-43	1/2	460	3/60	2"	Manual	20'	75
WHR5-53	1/2	575	3/60	2"	Manual	20'	75
WHR7-21C	3/4	230	1/60	2"	Manual	20'	79
WHR7P-2*	3/4	230	1/60	2"	Automatic*	20'	80
WHR7-03	3/4	200	3/60	2"	Manual	20'	79
WHR7-23	3/4	230	3/60	2"	Manual	20'	79
WHR7-43	3/4	460	3/60	2"	Manual	20'	79
WHR7-53	3/4	575	3/60	2"	Manual	20'	79
WHR10-21C	1	230	1/60	2"	Manual	20'	85
WHR10P-2*	1	230	1/60	2"	Automatic*	20'	86
WHR10-03	1	200	3/60	2"	Manual	20 <sup>*</sup>	85
WHR10-23	1	230	3/60	2"	Manual	20'	85
WHR10-43	1	460	3/60	2"	Manual	20'	85
WHR10-53	1	575	3/60	2"	Manual	20'	85

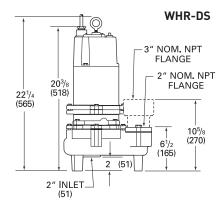
Catalan Number	НР	Volts	Phase/	Wire Size	Discharge Size	Switch	Cord	Approx. Wt. Lbs.
Catalog Number		VOLIS	Cycles	wire Size	Size	Туре	Length	Wt. LDS.
WHR SERIES (Double S	Seal)	_						
WHR5-11-DS	1/2	115	1	14/4	2"	Manual	20'	80
WHR5-01-DS	1/2	208	1	14/4	2"	Manual	20'	80
WHR5-21-DS	1/2	230	1	14/4	2"	Manual	20'	80
WHR5-11-DS-L/D	1/2	115	1	16/3	2"	Manual	20'	80
WHR5-01-DS-L/D	1/2	208	1	16/3	2"	Manual	20'	80
WHR5-21-DS-L/D	1/2	230	1	16/4	2"	Manual	20'	80
WHR5-03-DS-L/D	1/2	208	3	16/4	2"	Manual	20'	80
WHR5-23-DS-L/D	1/2	230	3	16/4	2"	Manual	20'	80
WHR5-43-DS-L/D	1/2	460	3	16/4	2"	Manual	20'	80
WHR5-53-DS-L/D	1/2	575	3	16/4	2"	Manual	20'	80
WHR7-21-DS	3/4	230	1	14/4	2"	Manual	20'	85
WHR7-21-DS-L/D	3/4	230	1	16/3	2"	Manual	20'	85
WHR7-03-DS-L/D	3/4	208	3	16/4	2"	Manual	20'	85
WHR7-23-DS-L/D	3/4	230	3	16/4	2"	Manual	20'	85
WHR7-43-DS-L/D	3/4	460	3	16/4	2"	Manual	20'	85
WHR7-53-DS-L/D	3/4	575	3	16/4	2"	Manual	20'	85
WHR10-01-DS	1	208	1	14/4	2"	Manual	20'	90
WHR10-21-DS	1	230	1	14/4	2"	Manual	20'	90
WHR10-21-DS-L/D	1	230	1	16/3	2"	Manual	20'	90
WHR10-03-DS-L/D	1	208	3	18/4	2"	Manual	20'	90
WHR10-23-DS-L/D	1	230	3	18/4	2"	Manual	20'	90
WHR10-43-DS-L/D	1	460	3	18/4	2"	Manual	20'	90
WHR10-53-DS-L/D	1	575	3	18/4	2"	Manual	20'	90

#### **DIMENSIONS**

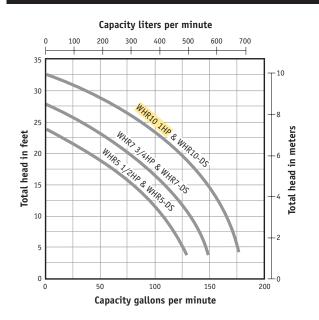








#### PUMP PERFORMANCE



FULL LOAD AMP DATA						
Single Seal	Dual Seal	FLA				
WHR5-11	WHR5-11-DS	10.5				
WHR5-01	WHR5-01-DS	8				
WHR5-21	WHR5-21-DS	5.25				
WHR5-03	WHR5-03-DS	3.6				
WHR5-23	WHR5-23-DS	3.2				
WHR5-43	WHR5-43-DS	1.6				
WHR5-43	WHR5-43-DS	1.3				
WHR7-01	WHR7-01-DS	7				
WHR7-21	WHR7-21-DS	7				
WHR7-03	WHR7-03-DS	5.1				
WHR7-23	WHR7-23-DS	4.1				
WHR7-43	WHR7-43-DS	2				
WHR7-53	WHR7-53-DS	1.6				
WHR10-01	WHR10-01-DS	10.8				
WHR10-21	WHR10-21-DS	9.4				
WHR10-03	WHR10-03-DS	6				
WHR10-23	WHR10-23-DS	5.2				
WHR10-43	WHR10-43-DS	2.6				
WHR10-53	WHR10-53-DS	2.4				



#### **SPECIFICATIONS**

**Operating Conditions** – Each pump shall have a capacity of \_\_\_ GPM at a total head of \_\_\_ feet and motor size shall be \_\_\_ horsepower, \_\_\_ phase 60 Hz for operation at \_\_\_volts and complete performance as shown on curve sheet.

**Pump –** The sewage pump shall be WHR series as manufactured by F. E. Myers, Ashland, Ohio or equal. Pump shall be of the submersible type with recessed impeller to give complete unobstructed volute opening for passing of solids. Pump shall pass 2" diameter solids.

Discharge of pump shall be provided with bolt on 2" NPT flange or optional 3" NPT flange so that 2" or 3" pipe size may be used.

**Motor** – Pump motor shall be of the submersible type rated 1/2, 3/4, or 1 horsepower as required. Motor shall operate at 1750 RPM and shall be for 208 or 230 volts single phase or 200, 230, 460, or 575 volts three phase. Single phase motors shall be of the permanent split capacitor type with no relays or starting switches.

Stator winding shall be of the open type with Class A (105°C) insulation for operating in clean dielectric oil that lubricates bearings and seals and cools the winding. Stator shall be pressed into housing for the best alignment and heat transfer.

Common motor pump shaft shall be of 416 stainless steel and shall be heat shrunk into the die cast motor rotor. Rotor shaft shall be supported by a lower ball bearing to take thrust and radial loads and by an upper bronze sleeve bearing to take radial load only.

Single phase motor shall have an overload element embedded in the winding to protect the motor against over current and overheating conditions. Overload element shall automatically reset when motor cools.

Three phase motor shall be protected by 3 leg overload element in control box. Overload shall be of the quick trip ambient compensated type and shall have a manual reset button.

Motor to be a completely assembled unit with end plate for mounting in volute case. Complete motor and pump impeller to be removable as a unit from the volute casing.

**Corrosion Protection** – All iron castings shall be pretreated with phosphate and chromic rinse and shall be painted with a high quality, lead free, alkyd enamel air dry paint. All fasteners to be 302 stainless steel.

**Shaft Seals (Single Seal) –** Motor shall be protected by a rotating mechanical seal. Seal face shall be carbon and ceramic and lapped to a flatness of one light band.

**Shaft Seals (Double Seal) –** Motor shall be protected by two mechanical seals mounted in tandem with a seal chamber between the seals. Seal chamber shall be oil filled to lubricate seal face and to transmit heat from shaft to outer shell. Seal face shall be carbon and ceramic and lapped to a flatness of one light band.

An optional electrode (1 phase only) shall be mounted in the seal chamber to detect any water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control box. This signal shall not stop the motor, but shall act as a warning only, indicating service is required.

**Impeller –** Shall be cast iron and of the recess type. Pump-out vane shall be used on back shroud. Impeller shall be dynamically balanced. Impeller to be threaded on shaft and held in position with locknut. Impeller and motor shall have top lift-out of case so that the assembly can be removed without disturbing any piping.

Pump Case - The volute case shall be of cast iron and shall be provided with bolt-on flange so the 2" pipe size may be used.

**Cord Seal –** The cord shall be potted into a steel connector with polyurethane resin for leak proof seal. A cord nut and rubber grommet shall clamp the cord into the bushing. Cords shall withstand a pull of 100 pounds.



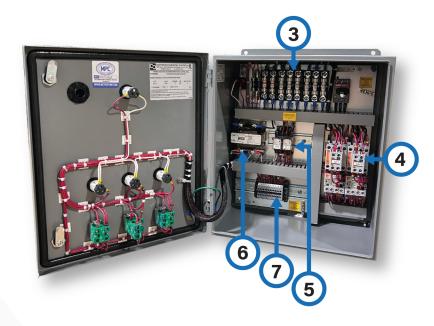
USA 293 WRIGHT STREET, DELAVAN, WI 53115 WWW.FEMYERS.COM PH: 888-987-8677 ORDERS FAX: 800-426-9446 CANADA 490 PINEBUSH ROAD, UNIT 4, CAMBRIDGE, ONTARIO N1T 0A5 PH: 800-363-7867 ORDERS FAX: 888-606-5484



# CAROSTAN 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) Tranformer (Except 115V)
- (7) Terminals to Connect Floats
- 8 3-Position Selector Switch (Man-O-Auto)
- Pilot Light (Power on)
- (Run) Green Pilot Lights

#### **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: 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
Α	Alarm Block (Buzzer+Silence+Light)	
В	Alarm Relay (Dry Contacts)	
С	Overload Indication	
Е	Seal Failure Detection	
F	Overheat Detection	
G	Bell Alarm	
Н	Elapsed Time Meters (Cema 1, 12)	
l	Safe Pack	
J	Control Done Through Electrodes	
K	Alarm Beacon	
L	Breaker Without Handle For 1 Phase 120 V	
M	Breaker Without Handle For 1 Phase 240V	
N	Heater + Thermostat	
0	Capacitor Installation	
Р	1 PH Lightning Arrestor	
Q	3 PH Lightning Arrestor	
R	Cycle Counter	
Т	Dry Contact for Pump Run	
U	Bacnet IP communication	
V	Emergency Transfer	
W	Breakers	
X	Touchscreen PLC	
Y	Auto-Dialer	
Z	Mini CAS For 1/2GA, 15/20GSD/GXS	

**Model Number & Description:** 

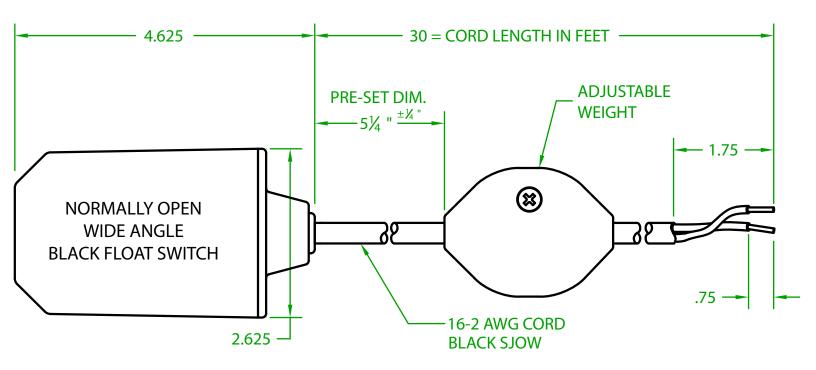
© Copyright 2024 Property of Metropolitan Pump Co. Limited



### 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.

J.J.S. AUGUST 21, 2008 REV. 06-18-19





Contactors - Relays - Switches



#### METROPOLITAN PUMP CO. LIMITED OFFICIAL MPC SHOP DRAWING

CAMBRIDGE, ONTARIO | EDMONTON, ALBERTA "WE WILL MAKE IT EASIER."

HB-4SS

#### 4-HOLF 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**

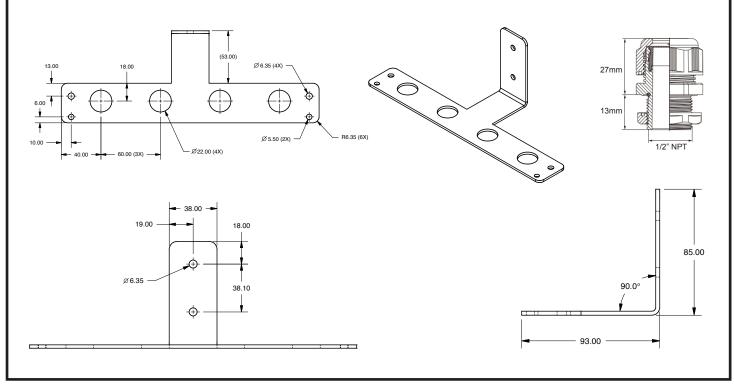
- (1) 12 GAUGE 304 STAINLESS STEEL TABBED HANGER BRACKET
- (4) 1/2" NPT ADJUSTABLE CABLE GLANDS TO FIT VARIOUS CORD SIZES
- (4) 1/2" LOCK NUTS



#### **OPTIONAL**

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

#### **DIMENSIONS (METRIC)**



NOTE: ALL DIMENSIONS ARE IN INCHES. MATERIALS OF CONSTRUCTION:

PUMP ADAPTER: 304 SST

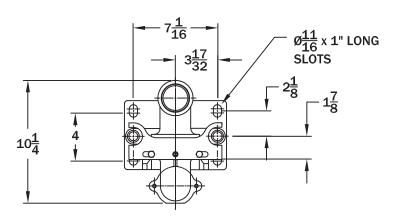
BASE ELBOW: CAST DUCTILE IRON LIFT-OUT FLANGE: CAST DUCTILE IRON LOWER GUIDE BRACKET: 304 SST ALL FASTENERS ARE 304 SERIES SST

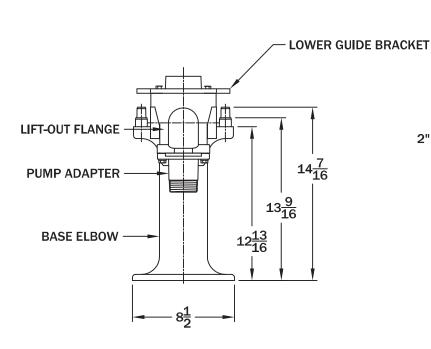
USABLE RAIL SIZES: \(\frac{3}{4}\)" & 1"

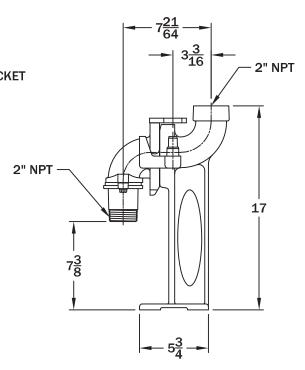
MAXIMUM WEIGHT ALLOWANCE: 250 lbs

BERS-0200

PAGE







ALL INFORMATION CONTAINED IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO CONERY MFG, INC.

- 1					_
	CHANGES	TOLERANCES	DRAWN BY	DATE	
	F	DECIMALS .xxx = ±.005	D. MIDDLETON	03/05/04	
	E	$.XXX = \pm .005$ $.XXX = \pm .010$	MATERIAL SPECIFICATION	ON:	
	D	FRACTIONAL		· · · ·	H
	C	$X/X = \pm .1/64$	AS NOT	FD	Г
	V R	ANGLES x° = ±1/2°	7.0 1101		



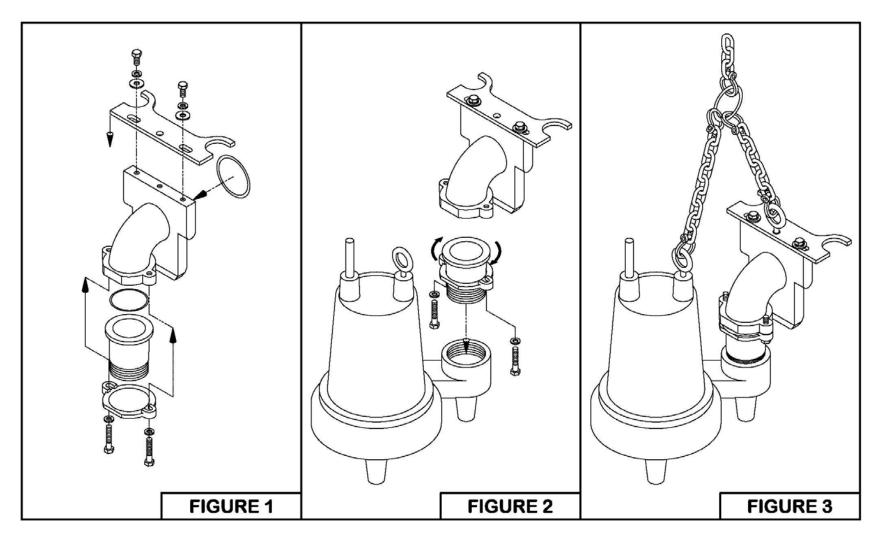
SPECIFICATION SHEET DIMENSIONAL DATA

SCALE: PART NO.

1/8 2" LIFT OUT DIM

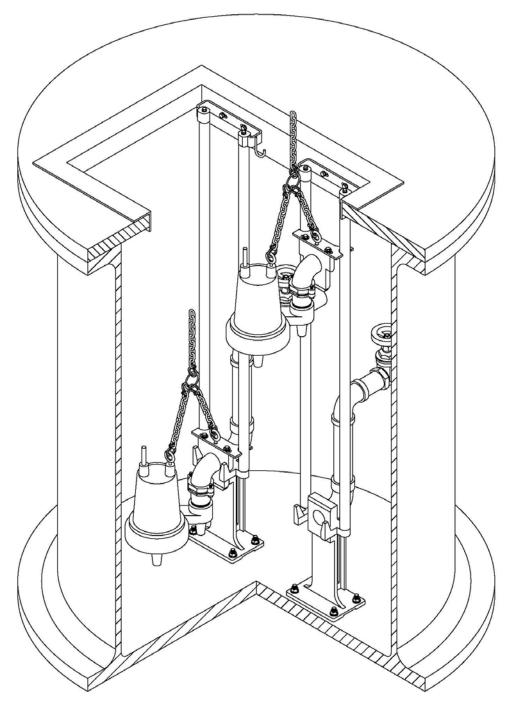


# Freefo Basic Installation Instructions: BERS-0125 thru BERS-0300 Series



**Pull Out Flange Assembly Instructions:** Figure 1 shows all of the parts included with the pull-out flange assembly. This is the removable portion of the Freeflo<sup>TM</sup> base elbow rail system assembly, and it is this assembly that will attach to the discharge of the pump (see figure 2). The threaded pump adapter flange will thread into the pump discharge as shown. The pump adapter flange is secured by tightening the two (2) long cap screws provided. This allows the pump to be oriented as necessary before lowering into the basin or collection tank. After attaching the pull out flange assembly to the pump, the lifting chain or cable assembly should be attached (see figure 3). This should be adequately sized to handle the weight of the pump and the pull out flange assembly as well as be long enough to allow for easy access for pulling the pump (continued on reverse side of this page).



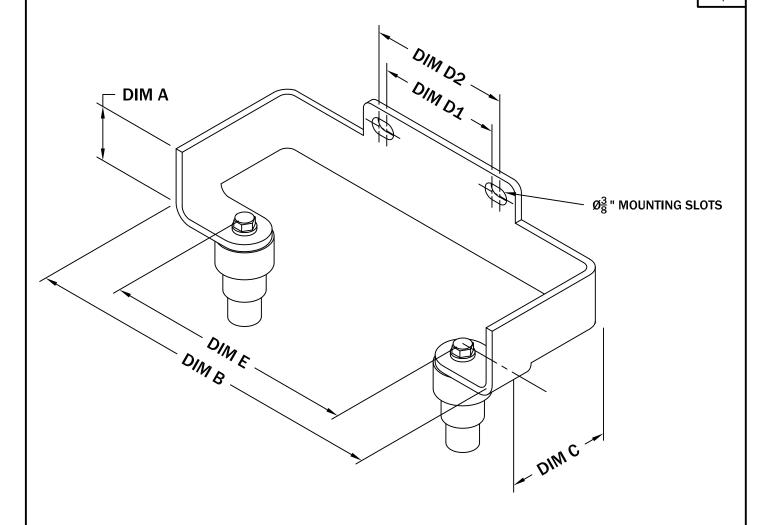


Base Elbow Installation Instruction: There are two main components to the Freeflo<sup>TM</sup> base elbow rail system, the stationary base and the pull out flange assembly. The stationary base will be secured to the bottom of the basin or collection tank. The base elbow should be positioned per the job specifications and the pump manufacturer's recommendations to allow for proper alignment with the access hatch for removal and installation of the pump or pumps. The base elbow is designed to be secured with four (4) studs, lock-washers, and nuts. It is important to make sure the elbow is secured to the basin or collection tank bottom to prevent it from moving or vibrating. After the elbow is installed the remaining items can be installed (i.e. piping, valve, guide rails, rail supports, etc.) into the tank. After this is done simply attach the pull out flange assembly to the pump, and lower the pump into the tank as shown above.

NOTE: BRACKET CAN BE USED FOR  $\frac{3}{4}$  " OR 1" GUIDE RAILS.

GUIDE BRACKET

PAGE 1



MODEL NO.	DIA. "A"	DIM "B"	DIM "C"	DIM "D1 + D2"	DIM "E"
UGB-PC	3 3/4"	10 1/8"	2 11/16"	3 3/8"-3 7/8"	7"

ALL INFORMATION CONTAINED IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO CONERY MFG, INC.

	CHANGES	TOLERANCES	DRAWN BY	DATE
F		DECIMALS	D. MIDDLETON	03/22/04
E		$.XXX = \pm .005$ $.XX = \pm .010$	MATERIAL SPECIFICATI	ON:
C		$FRACTIONAL$ $X/X = \pm .1/64$	POWDER CO	DATED
В		ANGLES	STFFL	
Α		$X^{\bullet} = \pm 1/2^{\bullet}$		



SPECIFICATION SHEET DIMENSIONAL DATA

SCALE: PART NO.

NONE GUIDE BRACKET

## **METROPOLITAN PUMP CO. LIMITED** N1T 2K7

OFFICIAL MPC SHOP DRAWING

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

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

#### FOR USE WITH RAIL ASSEMBLY

#### **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



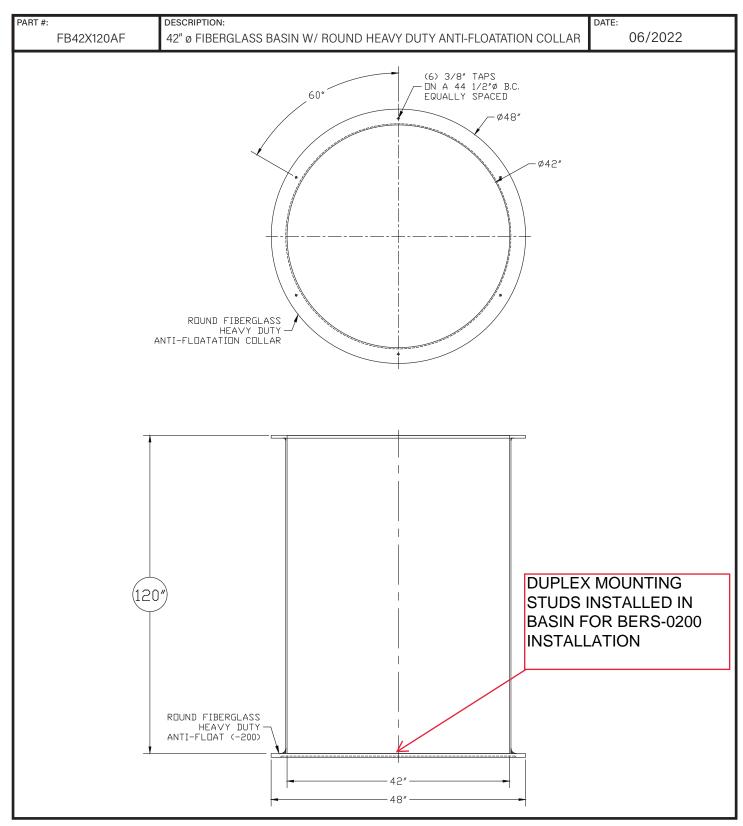
3/16" Galvanized Clevis Shackles

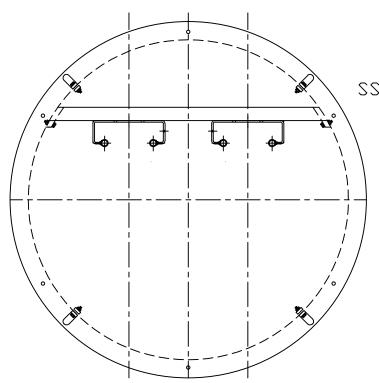
#### NOT TO BE USED FOR OVERHEAD LIFTING

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			

#### **METROPOLITAN PUMP CO. LIMITED**

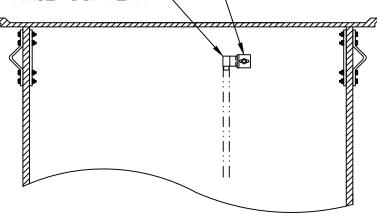
475 THOMPSON DRIVE CAMBRIDGE, ONTARIO N1T 2K7 519-886-5710





SS STAND OFF BRACKET MOUNTED TO BASIN WALL

SS UPPER RAIL SUPPORT-



TO CUSTOMER:

EXAMINE THIS DRAWING CAREFULLY. VERIFY ALL DIMENSIONS, LOCATIONS, AND ELEVATIONS FOR ACCURACY. SIGN AND DATE AT LINE. ANY MODIFICATIONS OR CHANGES TO THIS DRAWING OR FINISHED PRODUCT, AFTER IT HAS BEEN SIGNED, MAY RESULT IN ADDITIONAL CHARGES AND SHIPPING DELAYS. NO JOB WILL BE STARTED UNTIL CONFORMATION THROUGH SIGNATURE.

(REQUESTED SIGNATURE & DATE PER ABOVE)

CONFIRMATION THROUGH SIGNATURE RELEASES ORDER FOR PRODUCTION

2055 PIDCO DRIVE PLYMOUTH, IN 46563 (574) 936-6022	Notes:	DRAWN FOR:		
DESCRIPTION	PO#	DRAWN BY:	DATE	DISCONNECT DESIGN:
		A.DAVIS		
COVER DESCRIPTION	QUOTE #	AK PART NO.		PUMP MODEL NUMBER:
		N/A	SHEET 1 OF 1	



## PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM

#### **BACK FILL INSTRUCTIONS**

- 1) INSPECT ALL MATERIALS SUPPLIED BY OR INSTALLED BY AK INDUSTRIES TO ASSURE THERE ARE NO DAMAGES DUTO SHIPPING PRIOR TO INSTALLATION.
- 2) EXCAVATE HOLE LARGE ENOUGH TO ACCOMMODATE BASIN, BACK FILL MATERIAL, & ADEQUATE WORKING SPACE.
- 3) PREPARE THE BOTTOM OF THE EXCAVATED HOLE WITH 6" OF BACK FILL MATERIAL OR CONCRETE PAD. CHECK BASE TO INSURE IT IS LEVEL & SMOOTH.
- 4) INSTALL BASIN ON GRAVEL BASE OR CONCRETE PAD, ANCHOR IF NECESSARY.
- 5) CONCRETE MAY BE POURED AROUND BASIN BOTTOM IF BALLAST IS REQUIRED FOR BUOYANCY.
- 6) FILL BASIN WITH WATER BEFORE BACKFILLING. BACK FILL WITH PEA GRAVEL 4" TO 6" AROUND THE ENTIRE PERIPHERY OF THE BASIN. COMPACT BACK FILL MATERIAL IN 12" LIFTS. STOP AND CONNECT PIPING AS REQUIRED.

#### RECOMMENDED BACK FILL MATERIAL:

GRAVEL OR STONE TO BE FREE FLOWING, NATURALLY ROUNDED AGGREGATE WITH A PARTICLE SIZE OF NOT LESS THAN 3/8" OR NOT LARGER THAN 3/4" IN DIAMETER.

#### **CAUTION:**

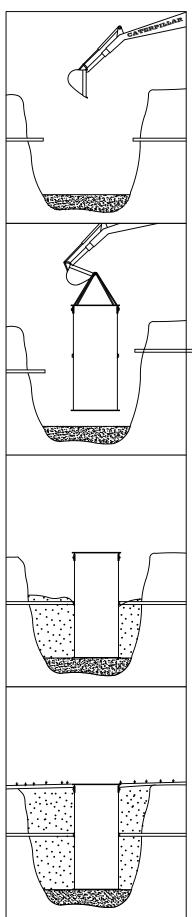
IF BURIAL DEPTH IS GREATER THAN BASIN HEIGHT, CONSULT FACTORY REPRESENTATIVE. TO ASSURE STRUCTURAL INTEGRITY IS NOT COMPROMISED, REINFORCEMENT MAY BE REQUIRED.

#### **CAUTION:**

IN FREEZING CONDITIONS, BACK FILL MATERIAL MUST BE DRY AND FREE OF ICE. DO NOT USE OTHER BACK FILL MATERIALS. IN AREAS WHERE THE SPECIFIED MATERIALS ARE NOT AVAILABLE, CONTACT AK INDUSTRIES, INC.

#### **CAUTION:**

WARRANTY IS VOID IF OTHER THAN APPROVED
BACK FILL MATERIALS ARE EMPLOYED WITHOUT
PRIOR WRITTEN APPROVAL FROM AK INDUSTRIES, INC.





## PH: (574)-936-6022 FX: (574)-936-5811 WWW.AKINDUSTRIES.COM

#### **BACK FILL INSTRUCTIONS**

- 1) INSPECT ALL MATERIALS SUPPLIED BY OR INSTALLED BY AK INDUSTRIES TO ASSURE THERE ARE NO DAMAGES DUTO SHIPPING PRIOR TO INSTALLATION.
- 2) EXCAVATE HOLE LARGE ENOUGH TO ACCOMMODATE BASIN, BACK FILL MATERIAL, & ADEQUATE WORKING SPACE.
- 3) PREPARE THE BOTTOM OF THE EXCAVATED HOLE WITH 6" OF BACK FILL MATERIAL OR CONCRETE PAD. CHECK BASE TO INSURE IT IS LEVEL & SMOOTH.
- 4) INSTALL BASIN ON GRAVEL BASE OR CONCRETE PAD, ANCHOR IF NECESSARY.
- 5) CONCRETE MAY BE POURED AROUND BASIN BOTTOM IF BALLAST IS REQUIRED FOR BUOYANCY.
- 6) FILL BASIN WITH WATER BEFORE BACKFILLING. BACK FILL WITH PEA GRAVEL 4" TO 6" AROUND THE ENTIRE PERIPHERY OF THE BASIN. COMPACT BACK FILL MATERIAL IN 12" LIFTS. STOP AND CONNECT PIPING AS REQUIRED.

#### RECOMMENDED BACK FILL MATERIAL:

GRAVEL OR STONE TO BE FREE FLOWING,
NATURALLY ROUNDED AGGREGATE WITH A PARTICLE
SIZE OF NOT LESS THAN 3/8" OR NOT LARGER THAN 3/4"
IN DIAMETER.

#### **CAUTION:**

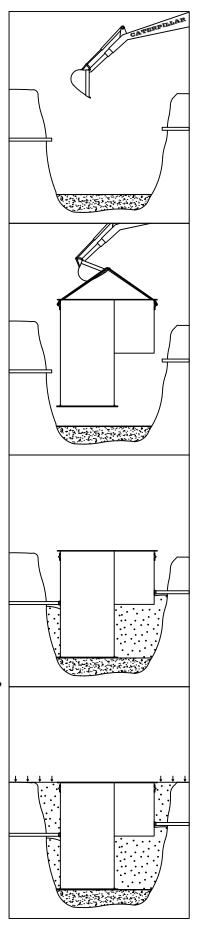
IF BURIAL DEPTH IS GREATER THAN BASIN HEIGHT, CONSULT FACTORY REPRESENTATIVE. TO ASSURE STRUCTURAL INTEGRITY IS NOT COMPROMISED, REINFORCEMENT MAY BE REQUIRED.

#### **CAUTION:**

IN FREEZING CONDITIONS, BACK FILL MATERIAL MUST BE DRY AND FREE OF ICE. DO NOT USE OTHER BACK FILL MATERIALS. IN AREAS WHERE THE SPECIFIED MATERIALS ARE NOT AVAILABLE, CONTACT AK INDUSTRIES, INC.

#### **CAUTION:**

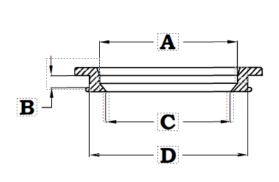
WARRANTY IS VOID IF OTHER THAN APPROVED
BACK FILL MATERIALS ARE EMPLOYED WITHOUT
PRIOR WRITTEN APPROVAL FROM AK INDUSTRIES, INC.

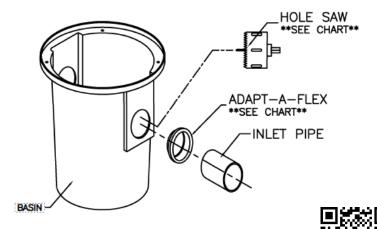




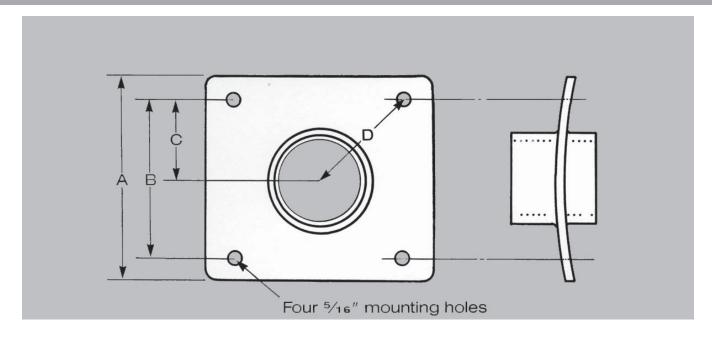
					Hole	
Number		A	В	C	D Saw Size	
AFH375	3/8"	.068	.200	.045	1.050 1"	→B
AFH50	1/2"	.086	.240	.630	1.310 1-1/4"	
AFH75	3/4"	1.040	.240	.820	1.310 1-1/4"	
AFH-1	1"	1.300	.220	1.050	1.780 1-3/4"	<del>                                    </del>
AFH-1.25	1-1/4"	1.630	.230	1.350	3.050 3"	
AFH-1.5	1-1/2"	1.870	.230	1.560	3.050 3"	
AFH-2	2"	2.300	.250	2.000	3.050 3"	D C   A
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	<b>4</b> "	4.450	.250	4.120	5.060 5"	<u></u>
AFH-6 35	6" SDR 35	6.200	.250	5.850	7.205 7"	Adapt-A-Flex
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.





#### PLASTIC FULL COUPLING



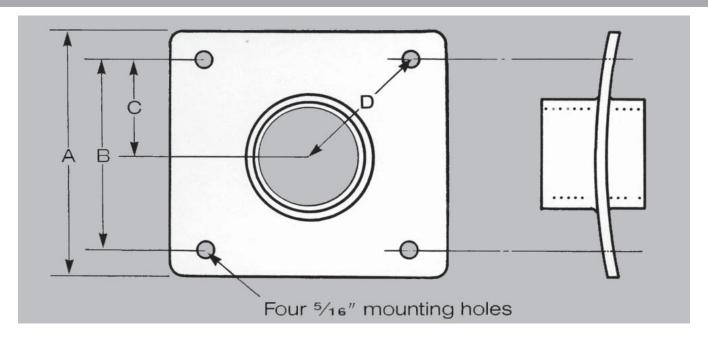
CONSTRUCTED FROM GLASS FILLED NYLON (RECOMMENDED FOR ELECTRICAL CONNECTION) COUPLINGS INCLUDE GASKETS, NUTS, BOLTS, AND WASHERS.

<u>SIZE</u>	<u>1 1/4"</u>	<u>1 1/2</u> "	<u>2"</u>
<u>A</u>	6"	6"	<mark>6"</mark>
<u>B</u>	4 3/8"	4 3/8"	4 3/8"
<u>C</u>	2 3/16"	2 3/16"	2 3/16"
<u>D</u>	3 1/4"	3 1/4"	3 1/4"

#### **INSTALLATION INSTRUCTIONS**

- 1) FIND LOCATION WHERE CENTER OF COUPLING WILL BE POSITIONED ON BASIN
- 2) DRILL OR CUT HOLE IN BASIN TO ACCEPT OUTSIDE DIAMETER OF THE COUPLING BEING INSTALLED.
- 3) PLACE THE COUPLING ON THE BASIN WALL AND DRILL MOUNTING HOLES IN BASIN WALL TO MATCH COUPLING PLATE.
- 4) APPLY GASKET TO BACK OF PLATE AND MOUNT ON BASIN.
- 5) INSERT NUTS, BOLTS, AND WASHERS AND TIGHTEN IN PLACE.

#### STAINLESS STEEL FULL COUPLING



CONSTRUCTED FROM STAINLESS STEEL (RECOMMENDED FOR DISCHARGE CONNECTION). COUPLINGS INCLUDE GASKETS, NUTS, BOLTS, AND WASHERS.

SIZE	<u>1 1/4</u> "	<u>1 1/2</u> "	<u>2</u> "	<u>2 1/2</u> "	<u>3</u> "	<u>4</u> "
Α	6"	6"	<mark>6"</mark>	6"	10"	10"
В	4 3/8"	4 3/8"	4 3/8"	4 3/8"	8 1/2"	8 1/2"
С	2 3/16"	2 3/16"	2 3/16"	2 3/16"	5"	5"
D	3 1/4"	3 1/4"	3 1/4"	3 1/4"	6"	6"

#### **INSTALLATION INSTRUCTIONS**

- 1) FIND LOCATION WHERE CENTER OF COUPLING WILL BE POSITIONED ON BASIN
- 2) DRILL OR CUT HOLE IN BASIN TO ACCEPT OUTSIDE DIAMETER OF THE COUPLING BEING INSTALLED.
- 3) PLACE THE COUPLING ON THE BASIN WALL AND DRILL MOUNTING HOLES IN BASIN WALL TO MATCH COUPLING PLATE.
- 4) APPLY GASKET TO BACK OF PLATE AND MOUNT ON BASIN.
- 5) INSERT NUTS, BOLTS, AND WASHERS AND TIGHTEN IN PLACE.



#### METROPOLITAN PUMP CO. LIMITED HEAD OFFICE

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



