CAPACITY (GALLONS PER MINUTES)

MODEL HB105 EFFLUENT PUMP

Designed specifically for pumping filtered effluent in high pressure applications, the Norweco Model HB105, 1 /2 hp, 115 volt, single phase submersible pump delivers 15 GPM at 100' TDH.

FEATURES

- UL & CSA listed
- 10' jacketed power cord
- Stainless steel construction
- Built-in overload protection
- 1 1 ¼" NPT discharge
- Continuous duty motor
- Built-in surge protection
- Hermetically-sealed windings
- Versatile and efficient
- Capacities to 28 GPM
- Heads to 125'
- Screened bottom intake

SPECIFICATIONS

The pump shall be a Norweco Model HB105 high head submersible pump, designed to handle filtered effluent and be capable of passing 1/4" spherical solids. The 115 volt, single phase, 60 cycle pump shall be UL and CSA listed and capable of running dry for short durations without damage to the motor or pump end.

The pump motor shall be ½ horsepower rated and operate at 3450 RPM. The motor assembly shall have corrosion resistant stainless steel exterior construction and incorporate a dual action starting switch to provide automatic torque reversal. Electrical surge protection shall be provided. Automatic motor overload protection shall be included at the top end of the motor windings and shall be wired in series to automatically cease operation when the motor winding temperature reaches 266° F. The 10 foot long motor power cord shall be 14-3, jacketed, type SJOW. The power cord shall be sealed at the motor entrance by means of a rubber grommet and stainless steel compression plate. The pump impeller shall be of the six vane enclosed type, constructed of engineered thermoplastic. The impeller shall have a hexagonal I.D. and be positively driven by a hexagonal 300 series stainless steel pump shaft. The pump shall be the product of a manufacturer having at least seven years experience in the construction of submersible pumps.

The pump shall be warranted by the manufacturer against defects in material and workmanship for a period of one year under normal use and service.

norweco
Engineering the Natural Power of Microscopic Organisms

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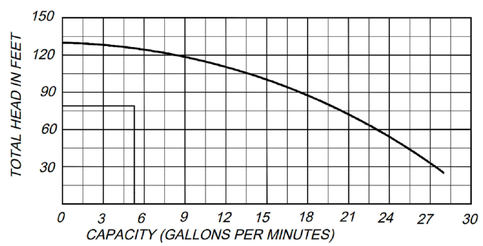

MODEL HB105 EFFLUENT PUMP

TO: MIAMI-DADE HEALTH DEPARTMENT
REQUEST FOR ASTS- ADVANCED SECONDARY TREATMENT SYSTEM APPROVAL
DISPERSAL TO DRIP
JUNE 15, 2022

Treatment Plant: NORWECO
Design treatment levels for ASTS- Advanced Secondary Treatment of Domestic strength waste.

Performance Level:

Advanced Secondary Treatment Standard		
Performance Based Residential 10/10/20/10		
Pollutant	Required effluent	Compliance
CBOD5	≤ 10 mg/l	OK
TSS	≤ 10 mg/l	OK
TN	≤ 20 mg/l	OK
TP	≤ 10 mg/l	OK
FECAL COLIFORM	≤ 200 mg/l	OK

Contents of Permit Application Package

- Engineer of Records/Agent Authorization
- Sample maintenance agreement (final agreement to be executed prior to issuance of operating permit)
- Wastewater affidavit (to be executed and recorded prior to final construction inspection
- Florida DOH form 4016

SETS

- Florida DOH form 4015 pp 1-3
- Certification of Design; Calculation and Specifications
- Operation, Maintenance and Inspection; Sampling and Monitoring requirements
- 24X36 Site plan and details; system tank flow; and dispersal schematic

WTI/MDR Engineered ATU
Operation, Maintenance, and Inspection Specifications

Operation:
Power supply to all electric components must remain constant at all times. It is not acceptable to disconnect power from the system at any time except under the direction of the maintenance entity or in case of emergency.
Homeowner is not to power off during extended absences from home, vacations or otherwise. Liquid waste treatment additives shall not be used

Maintenance and inspection 2/year contract
-Inspections: Effluent monitoring and preventative maintenance shall be performed as required by 64E-6 Part I, FAC.
-First inspection: At system installation by engineer.
-Second: After system has been in operation a total of 6 months by maintenance entity.
-Thereafter: every 6 months, as part of maintenance entity inspection. Maintenance entity inspection to include:
Solids Check accumulation (expect pump-out every 3 to 5 years)
Blower: Confirm proper operation; clean air filter, as required.
Alarms: Trip all alarms manually to confirm effective operation
Outlet Filter: Operate filter plunger. Remove, clean, and reinstall as required.
Pump: Check operation by manually tripping float switch. Operate each pump manually at control panel
-Monitoring to be conducted semi Annually
Monitoring / Sampling: At headwork
Pollutant to be check

- CBOD5 ≤ 10 mg/l
- TSS ≤ 10 mg/l
- TN ≤ 20 mg/l
- TP ≤ 10 mg/l
- Fecal coliform = ≤ 200 fc col/100 ml

Contingency
1- At the high water level, the system alarm sound. The Owner must contact the Maintenance entity within 24 hours of alarm.
2- Maintenance entity personnel will inspect the system, and order a repair on the problem as necessary, within 36 hours as specified in 64E-6.012 (4)(b)
3- Owner shall be have tanks pumped as required to prevent the creation of sanitary nuisance conditions until such time as repairs are effected which prevent sanitary nuisance conditions.

Karel Valdes

Digitally signed by Karel Valdes
DN: c=US, o=Florida, dnQualifier=A01410D000001834 20D30280006BAC0, cn=Karel Valdes
Date: 2023.04.02 20:12:27 -04'00'

Total field

Total Quantity of effluent to be disposed per day	300	gallons / day
Hydraulic loading rate	0.8	gallons / sq.ft. / day
Minimum Dispersal Field Area	225	square ft.
Total Dispersal Field Area	225	square ft.

Flow per zone

Number of Zones	1	zone(s)
Dispersal area per zone	352	square ft.
Choose line spacing between WASTEFLOW lines	2.0083	ft.
Choose emitter spacing between WASTEFLOW emitters	2	ft.
Total linear ft.per zone (minimum required)	176	ft. per zone
Total number of emitters per zone	88	emitters per zone
Select Wasteflow dripline (16mm)	Wasteflow PC - 1/2gph	dripline
Pressure at the beginning of the dripfield	25	psi
Feet of Head at the beginning of the dripfield	57.75	ft.
What is the flow rate per emitter in gph?	0.53	gph
Dose flow per zone	0.78	gpm
If required, choose flush velocity	2	ft/sec
How many lines of WASTEFLOW per zone?	1	lines
Fill in the actual length of longest dripline lateral	176	ft.
Equivalent length including flush requirement	511.1357547	
Flush flow required at the end of each dripline	1.48	gpm
Total Flow required to achieve flushing velocity	1.48	gpm
Total Flow per zone- worst case scenario	2.26	gpm
Select Filter Type	Vortex Screen Filter	

Section 1 - Summary from Worksheet 1	
Flow required to dose field	0.78 gpm
Flow required to flush field	1.48 gpm
Flow required to dose & flush field (Recirculation rated)	2.26 gpm
Filter	AP4E-1.5F
No. of Zones	1 zones
Zone valve	-
Dripline	Wasteflow PC - 1/2gph
Dripline longest lateral	176.00 ft.

Section 2	Ft of head	Pressure
A. Flush line - Losses through return line		
Select Pipe from dropdown menu	PVC schedule 40	
Select Flush Line Diameter	1-1/4" inch	
Length of return line	20 ft.	
Equivalent length of fittings	1 ft.	
Elevation change. (if downhill enter 0)	0 ft.	
Pressure loss in 100 ft of pipe	0.05 ft.	0.02 psi
Total pressure loss from end of dripline to return tank	0.0 ft.	0.00 psi
B. Dripline - Losses through Wasteflow dripline		
Length of longest dripline lateral	176 ft.	
Minimum dosing pressure required at end of dripline	23.10 ft.	10.00 psi
Loss through dripline during flushing	2.59 ft.	1.12 psi
Total minimum required dripline pressure	25.69 ft.	11.12 psi
A+B. Minimum Pressure required at beginning of dripfield		
CALCULATED pressure required at beginning of dripfield	25.70 ft.	11.12 psi
SPECIFIED pressure at beginning of dripfield (from worksht 1)	57.8 ft.	25.00 psi
Great! SPECIFIED Pressure is greater than CALCULATED Pressure requirement. Go to next step		
C. Drip components - Losses through headworks		
Filter	11.6 ft.	5.00 psi
Zone valve pressure loss (not in diagram)	6.93 ft.	3.00 psi
Flow meter pressure loss (not in diagram)	ft.	- psi
Other pressure losses	ft.	- psi
Total loss through drip components	18.48 ft.	8.00 psi
D. Supply line - Minimum Pressure head required to get from pump tank to top of dripfield		
Select Pipe from dropdown menu	PVC schedule 40	
Select Supply line diameter	1-1/4" inch	
Length of supply line	22 ft.	
Equivalent length of fittings	1 ft.	
Height from pump to tank outlet	3.67 ft.	
Elevation change. (if downhill enter 0)	0 ft.	
Pressure loss/gain in 100 ft. of pipe	0.11 ft.	0.05 psi
Total gain or loss from pump to field	3.7 ft.	1.60 psi
Total dynamic head	79.9 ft.	34.60 psi
Pump capacity * - Field Flush Flow	2.3 gpm	34.60 psi
- Field Dose Flow	0.8 gpm	
- Filter Flush Flow	1.4 gpm	1.40 psi
Pump Model Number	HB105	
Voltz / Hp / phase	115.0 1/2 HP 1.00	

Geoflow, Inc. Pump Selection Worksheet, V.2003H 6/1

MARTINEZ & ASSOCIATES MEP DESIGN CO.
13410 SW 128th ST, SUITE A, MIAMI, FL. 33186
TEL:(305) 505 2219 FAX: (786) 558-4328
E-mail: martinezmep@bellsouth.com.

PROJECT NAME:

NEW RESIDENCE
5125 SW 98 TH CT , MIAMI, FL 33165

4755 COLLINS AVENUE MIAMI BEACH, FLORIDA 33140

Issue

No.	Date	Description

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SIGN & SEAL

KAREL VALDES
LICENSE
No.74576
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS DRAWING HAS BEEN ELECTRONICALLY SIGNED BY **Karel Valdes, PE.** USING A DIGITAL SIGNATURE AND SEAL. PRINTED COPIES OF SIGNED AND SEALED SHEETS ARE CONSIDERED SIGNED AND SEALED AND ALL SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SHEET TITLE:

PLUMBING SITE PLAN

Drawn by	A.M
Checked by	K.V
Project Number	021123A
Issued for	
Issue date	02/11/23
Sheet #	P-2
Scale	SEE DWG.