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[www.aquamarkboosters.com](http://www.aquamarkboosters.com)



# Installation, Operation & Maintenance Manual for AquaMark models AM-30V, AM-50V, AM-60V

Minimum incoming supply line for AM-30V is 1 ½"

Minimum incoming supply line for AM-50V is 2"

Minimum incoming supply line for AM-60V is 2"

Standard voltage for these systems is 240 Volt Single Phase

## THIS PUMP MUST BE PRIMED!

Open the city water supply valve to the booster. Open the discharge valve from the pressure booster system that supplies water to the building. Run water in the building for a minute. This will force water into the pump housing from the city. The pump will be primed.

- We recommend a bypass valve configuration be installed on ALL booster pump installations.
- In normal operation the bypass valve should be in the closed position.
- In normal operation the supply line valve from the city water main MUST remain open.
- In normal operation the discharge valve to the building from the booster should be open.
- There is a relief valve included and installed on this AquaMark pressure booster system. This relief valve discharge shall be piped to a floor drain.
- Yearly inspections should be made to check for leaks or unusual noise and proper maintenance procedures performed if necessary.

**Relief valve discharge outlet shall be piped to floor drain. Follow local codes pertaining to relief valve piping and drainage.**

# Installation

- Leave 12" of clear space around the pressure booster to allow for service work to be performed as necessary in the future.
- Use the included anti-vibration mat underneath the steel plate the booster is mounted on. You will find this mat underneath the booster (between the booster and the skid that the booster is bolted to. This mat is placed on the jobsite floor beneath the pressure boosting system during the installation process.
- Plumb pressure booster as shown in the diagram included in this manual.
- Supply pressure booster with correct incoming minimum supply line size (or greater) as noted on the first page of this manual:
  - Minimum incoming supply line for AM-30V is 1 ½"
  - Minimum incoming supply line for AM-50V is 2"
  - Minimum incoming supply line for AM-60V is 2"
- Plumb a three valve bypass system during installation of this pressure booster. When service needs to be performed this will allow normal city water pressure to be supplied to the building while servicing/repairing the pressure booster system.
- Unions are recommended when installing this pressure booster system.
- Install included vibration isolator in the discharge piping after the connection point of the bypass loop's return to the discharge piping. You will find this zip-tied to the support post of the variable frequency drive unit (blue box).
- Have your electrician supply this pressure booster with the correct voltage and phase electrical power. We recommend a wall mounted cut-off switch box dedicated to the pressure booster only be mounted on a wall within 6' of the pressure booster installation location and should be easily accessible. Connect the 6' whip from the pressure booster to the cut-off switch box. Make sure the breaker used is 20 amps or greater.

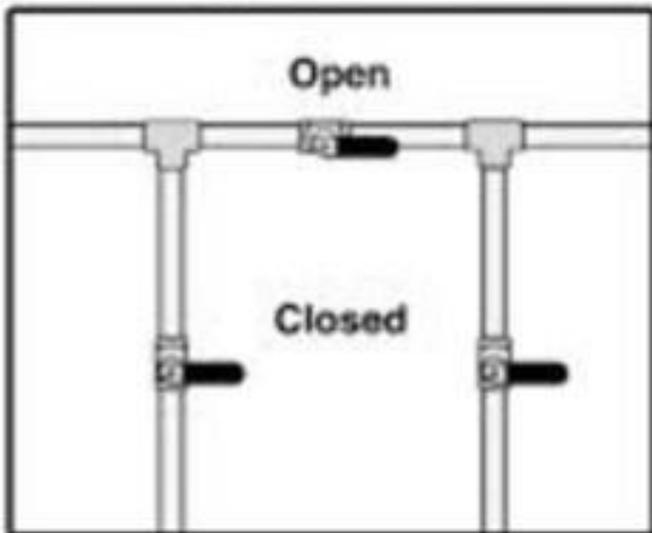
# Operation

- Make sure valve from city water supply to the pressure booster is in the full open position.
- Make sure valve on the discharge side of the pressure booster is in the full open position.
- Make sure that the bypass valve line is in the full closed position (if the bypass valve is in the open position the pressure booster will not shut off).
- Supply electrical power to the pressure booster by switching the wall mounted cut-off switch to the on position.
- Pressure booster will turn on and boost pressure to the desired set-point. Pressure booster will continue to run until the demand has been met. Pressure booster will enter sleep mode after demand has been met and a pre-determined amount of time has passed.

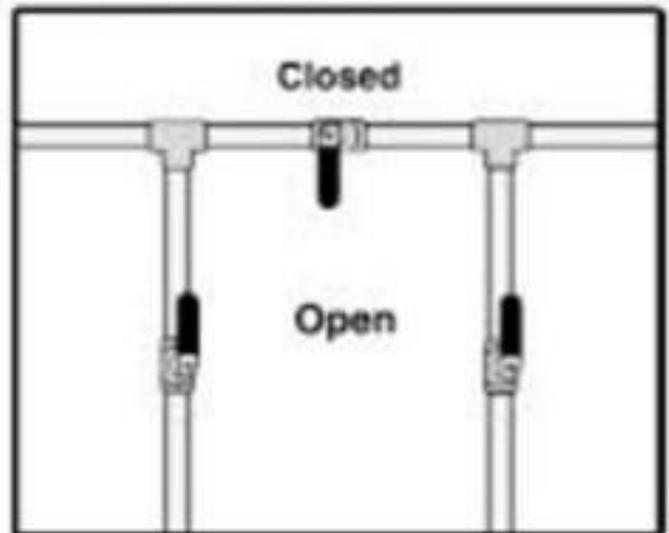
# Maintenance

- This pressure booster has been designed to be maintenance free for many years.
- Do not rest items against switches, gauges, tank drain valves, or pressure relief valve.
- Do not rest items against pump. The pump requires free air space surrounding it to dissipate heat and take in fresh air for cooling purposes. Leave 12" of free air space all around the system.

**In Bypass Position**



**In Service Position**



Above is a generic three valve bypass diagram. This will allow service of the pressure booster system when ball valves are set as shown above in the “Bypass Position” configuration.

When the ball valves are set as shown in the “In Service Position” the pressure booster system will be in its normal mode of operation.

## Submittal Data

AquaMark  
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 Ph.# 800-323-4498

### Variable Frequency Drive

### Simplex Water Pressure Ultra Low Profile Booster System

### AquaMark Model# AM-30V



Dimensions						Pipe Size			
Model	Motor	Height	Length	Width	Inlet	Outlet	Voltage	Hz.	Phase
AM-30V	2 HP	22"	24"	24"	1 1/2"	1 1/2"	208-240	60	1
Option							208	60	3
Materials of Construction					Operating Conditions				
Description									
Pump Casing		Stainless Steel		Max. Flow			38 GPM		
Impeller		Stainless Steel		Max. Press Boost			See Chart Below		
Shaft		Stainless Steel		Max. System Press.			100 PSI		
Seal		Type 21		Min. Suction Press.			10 PSI		
Platform		Fab. Steel		Low Pressure Cut-off			7 PSI		
Valves		Brass		VFD Control			Nema1		
Connection Piping		Brass		Requires 1 1/2 Supply Line Minimum					
Diaphragm Tank		Steel		Up to a 5 Story Building					
Motor		TEFC							

30 GPM Variable Frequency Drive Booster Pump	Available Options: NEMA4 Control
60 PSI Boost @ 10 Gallons Per Minute	Additional Tank For Longer Shut Down Periods
50 PSI Boost @ 20 Gallons Per Minute	460 – 480 Volt
<b>40 PSI Boost @ 30 Gallons Per Minute</b>	
32 PSI Boost @ 38 Gallons Per Minute	

## Submittal Data

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 245 W. Roosevelt Rd  
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### Variable Frequency Drive

### Simplex Water Pressure Ultra Low Profile Booster System

### AquaMark Model# AM-50V



<b>Dimensions</b>				<b>Pipe Size</b>					
Model	Motor	Height	Length	Width	Inlet	Outlet	Voltage	Hz.	Phase
AM-50V	3 HP	22"	24"	24"	2"	2"	240 - 208	60	1 or 3
Option							460 - 480	60	3
<b>Materials of Construction</b>				<b>Operating Conditions</b>					
Description									
Pump Casing		Stainless Steel		Max. Flow			80 GPM		
Impeller		Stainless Steel		Max. Press Boost			See Chart Below		
Shaft		Stainless Steel		Max. System Press.			95 PSI		
Seal		Type 21		Min. Suction Press.			10 PSI		
Platform		Fab. Steel		Low Pressure Cut-off			7 PSI		
Valves		Brass		VFD Control			Nema1		
Connection Piping		Brass		Requires Min. 2" Supply Line					
Diaphragm Tank		Steel		Up To A 7 Story Building					
Motor		TEFC							

50 GPM Variable Frequency Drive Booster Pump	2" Supply Line for up to 65GPM
40 PSI Boost @ 40 GPM	3" Supply Line for up to 80GPM
<b>36 PSI Boost @ 50 GPM</b>	
35 PSI Boost @ 60 GPM	A Tank Can Be Added After The Booster For
28 PSI Boost @ 80 GPM	Longer Shut Down Periods At Low Flows

## Submittal Data

AquaMark  
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### Variable Frequency Drive

### Simplex Water Pressure Ultra Low Profile Booster System

### AquaMark Model# AM-60V



Dimensions					Pipe Size				
Model	Motor	Height	Length	Width	Inlet	Outlet	Voltage	Hz.	Phase
AM-60V	3 HP	22"	24"	24"	2"	2"	230	60	1
Option							240-208	60	3
Materials of Construction					Operating Conditions				
Description									
Pump Casing		Stainless Steel			Max. Flow		70 GPM		
Impeller		Stainless Steel			Max. Press Boost		See Chart Below		
Shaft		Stainless Steel			Max. System Press.		95 PSI		
Seal		Type 21			Min. Suction Press.		10 PSI		
Platform		Fab. Steel			Low Pressure Cut-off		7 PSI		
Valves		Brass			VFD Control		Nema1		
Connection Piping		Brass			Requires 2" Supply Line				
Diaphragm Tank		Steel							
Motor		TEFC			Up to a 9 Story Building				

60 GPM Variable Frequency Drive Booster Pump	Job Name:
	Location:
48 PSI Boost @ 50 GPM, 112' Head	Engineer:
<b>46 PSI Boost @ 60 GPM, 110' Head</b>	<b>A tank may be installed after the booster</b>
43 PSI Boost @ 70 GPM, 100' Head	For longer shut down periods during low flow

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# Model 3U / CDU

end suction centrifugal



EBARA Fluid Handling

an EBARA International Corporation company

# Model 3U / CDU

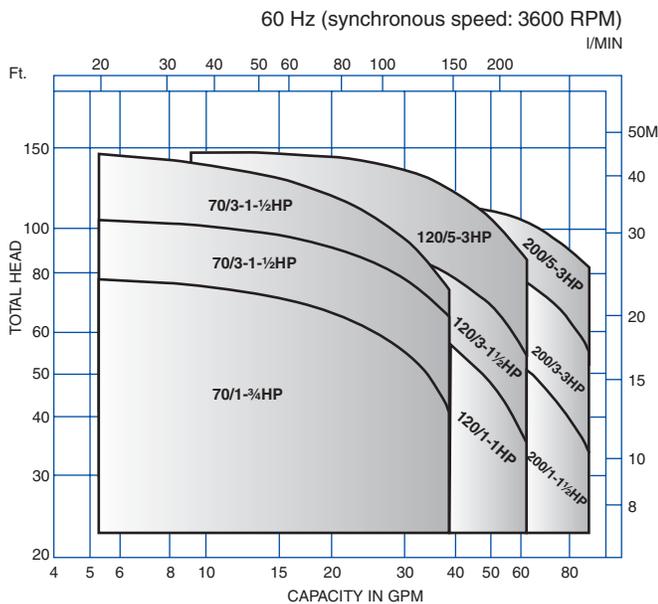
## Features

- **Close coupled design**
  - saves space; simplifies maintenance and installation
- **Stainless steel liquid end components**
  - high quality; corrosion resistance
- **Versatile mounting**
  - can be installed horizontally or vertically
- **Back pullout construction**
  - assembly and overhaul of the impeller and seal without disturbing suction and discharge connections
- **Top centerline discharge and foot support under casing**
  - ensures self-venting and reduces misalignment from pipe loads
- **High operating efficiency**
  - lowers operating costs
- **High quality mechanical shaft seals and o-rings**
  - available for standard pumping requirements or optional high temperature and chemical duty operation

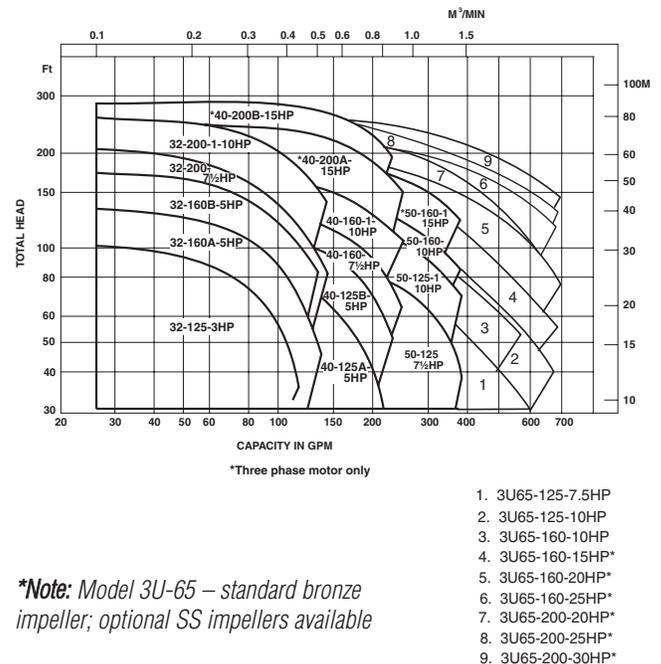
## Applications

- **Plant services**
- **Water supply systems**
- **Washing plants**
- **Cooling water**
- **Car wash**
- **Scrubbers**
- **Ultrapure water systems**
- **Jockey pump services**
- **Air conditioning**
- **Sprinkler/flow irrigation**
- **OEM equipment application**
- **Pressure boosting**
- **Liquid transfer**
- **Heat exchanger**
- **Spray systems**
- **Heating**
- **Beverage processing**
- **Pharmaceutical services**
- **Water reclamation and treatment**
- **General pump applications**

## CDU selection chart



## 3U selection chart



\*Note: Model 3U-65 – standard bronze impeller; optional SS impellers available



### EBARA Fluid Handling

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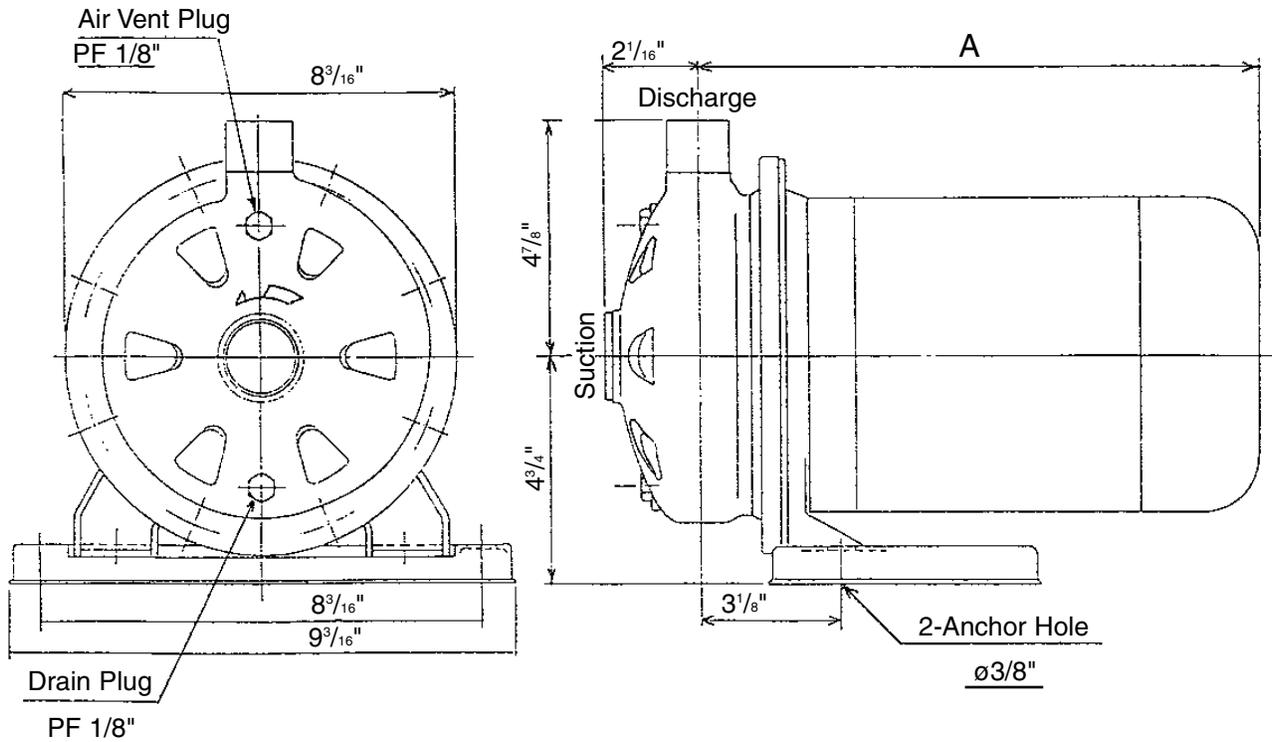
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**Model CDU  
Pump Dimensions**

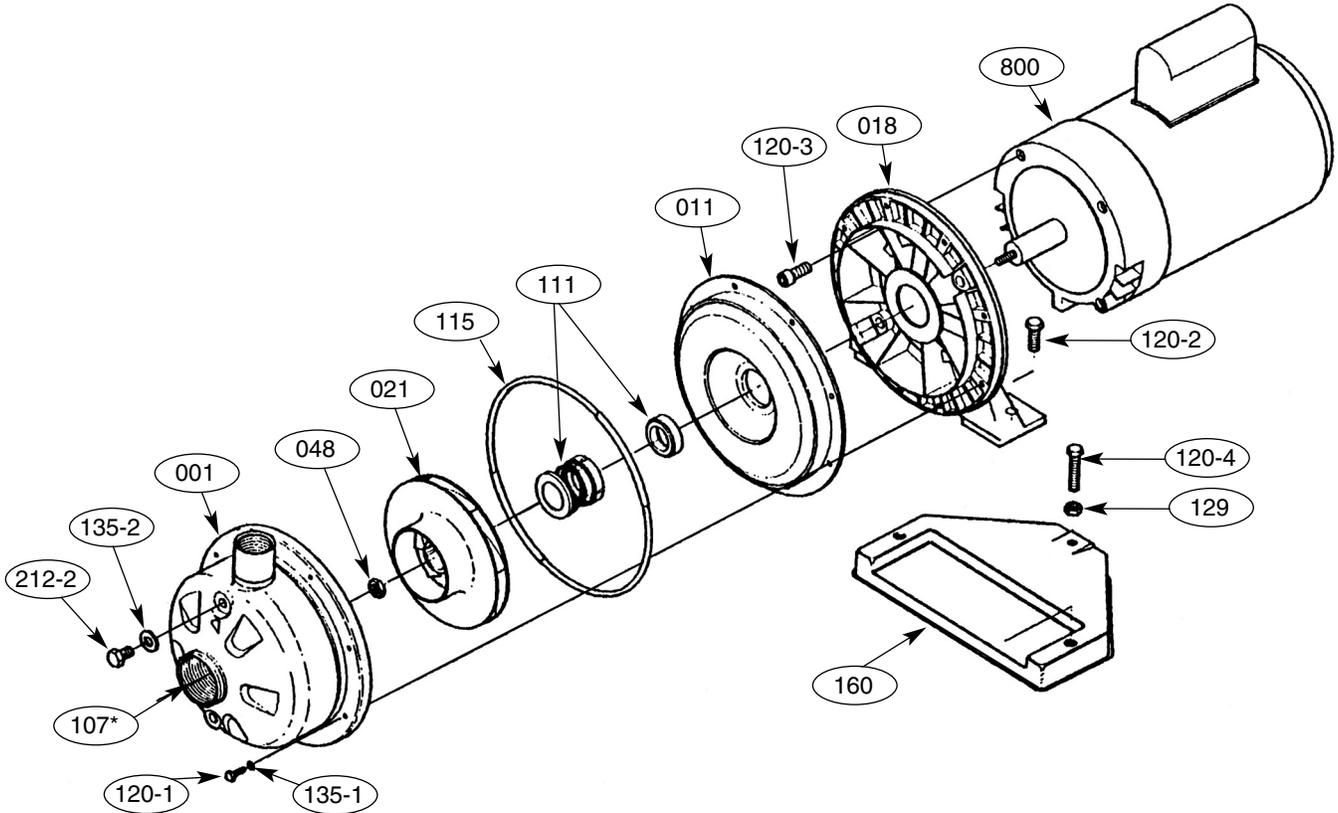
**EBARA Stainless Steel Centrifugal Pumps**



Model	Model	Pump Size – NPT (Inch)		Dimension (Inch)	Unit Weight (lbs.)			
		Suction	Discharge	A	Single Phase		Three Phase	
					ODP	TEFC	ODP	TEFC
CDU70/1-3/4HP	1 x 1 <sup>1</sup> / <sub>4</sub> x 4 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	1	13 <sup>3</sup> / <sub>8</sub> Max.	36	41	31	31
CDU70/3-1 <sup>1</sup> / <sub>2</sub> HP	1 x 1 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1	13 <sup>9</sup> / <sub>16</sub> Max.	47	50	39	39
CDU70/5-2HP	1 x 1 <sup>1</sup> / <sub>4</sub> x 6 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1	14 <sup>7</sup> / <sub>16</sub> Max.	51	58	44	48
CDU120/1-1HP	1 x 1 <sup>1</sup> / <sub>4</sub> x 4 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	1	13 <sup>9</sup> / <sub>16</sub> Max.	41	46	33	32
CDU120/3-1 <sup>1</sup> / <sub>2</sub> HP	1 x 1 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1	13 <sup>9</sup> / <sub>16</sub> Max.	47	50	39	39
CDU120/5-3HP	1 x 1 <sup>1</sup> / <sub>4</sub> x 6 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1	14 <sup>7</sup> / <sub>16</sub> Max.	59	66	51	60
CDU200/1-1 <sup>1</sup> / <sub>2</sub> HP	1 x 1 <sup>1</sup> / <sub>2</sub> x 4 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1	13 <sup>9</sup> / <sub>16</sub> Max.	47	50	39	39
CDU200/3-3HP	1 x 1 <sup>1</sup> / <sub>2</sub> x 5 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1	14 <sup>7</sup> / <sub>16</sub> Max.	58	65	50	59
CDU200/5-3HP	1 x 1 <sup>1</sup> / <sub>2</sub> x 5 <sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1	14 <sup>7</sup> / <sub>16</sub> Max.	58	65	50	59

**Model CDU  
Sectional View**

**EBARA Stainless Steel Centrifugal Pumps**



Part No.	Part Name	Material	No. for 1 Unit
001	Casing	304L Stainless	1
011	Casing cover	304L Stainless	1
018	Bracket	Aluminum	1
021	Impeller	304L Stainless	1
048	Impeller nut	304L Stainless	1
107*	Casing ring (*CDU 70 series only)	Viton	1
111	Mechanical seal	—	1
115	O-Ring	Viton	1
120-1	Bolt	304L Stainless	8
120-2	Bolt	304L Stainless	2
120-3	Bolt	304L Stainless	4
120-4	Bolt	304L Stainless	1
129	Nut	304L Stainless	1
135-1	Washer	304L Stainless	8
135-2	Washer	Aluminum	2
160	Base	Steel	1
212-2	Plug	304L Stainless	2
800	Motor	—	1





# AM-30V

Model CDU

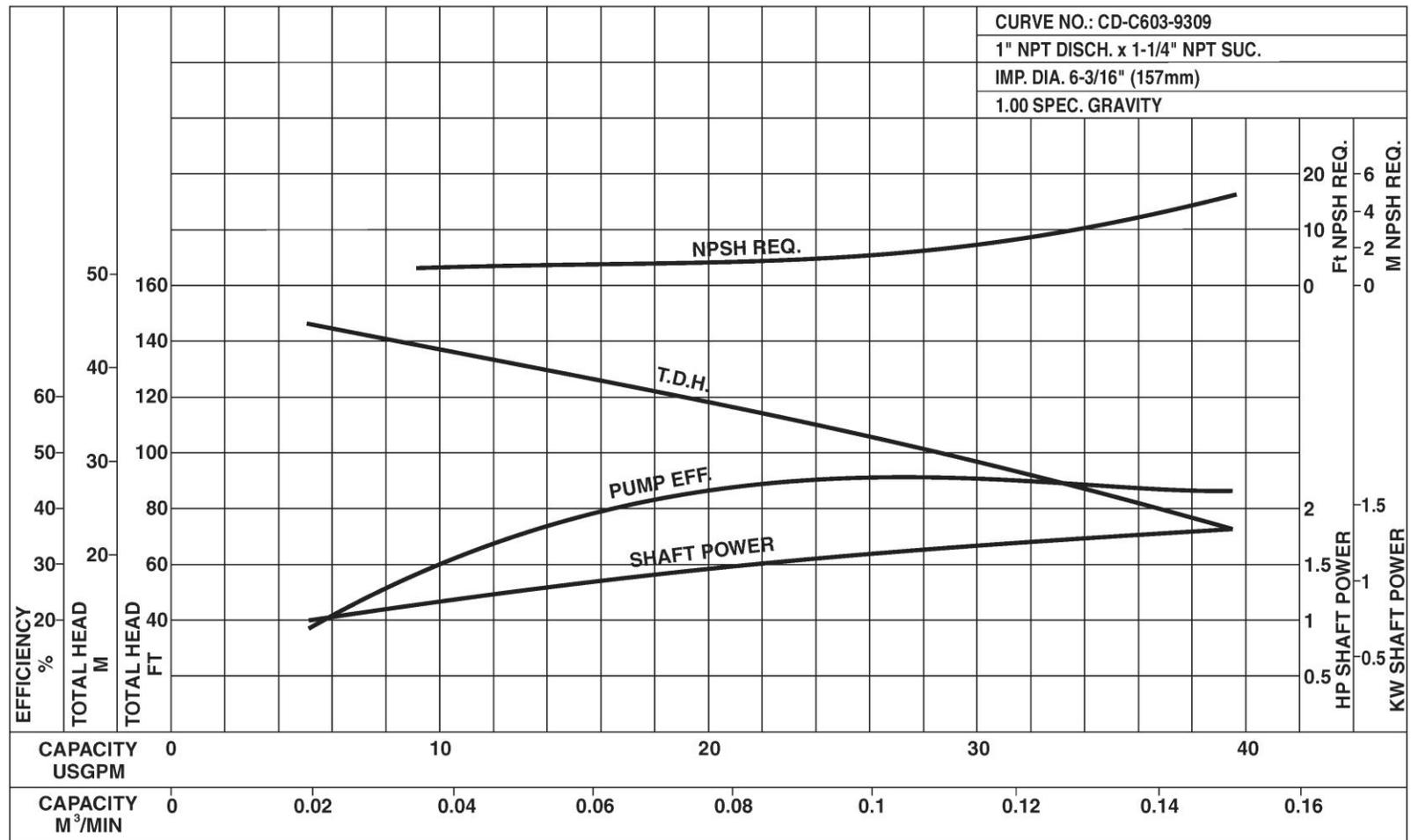
EBARA Stainless Steel Centrifugal Pumps

Performance Curves

CDU70/5-2HP

Synchronous Speed: 3450 RPM

Size: 1 x 1<sup>1</sup>/<sub>4</sub> x 6<sup>3</sup>/<sub>16</sub>





# AM-50V

Model CDU

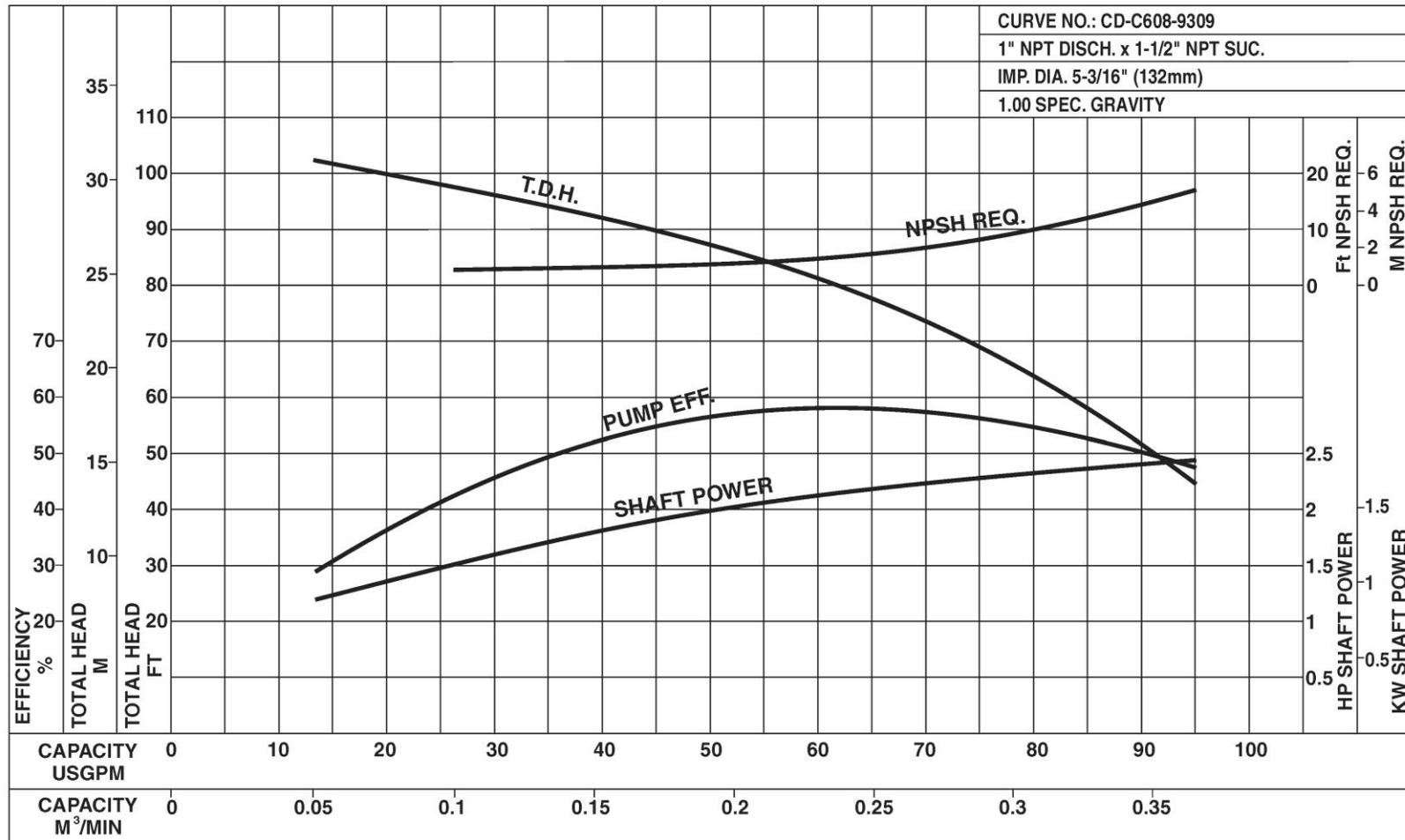
EBARA Stainless Steel Centrifugal Pumps

Performance Curves

CDU200/3-3HP

Synchronous Speed: 3450 RPM

Size: 1 x 1 1/2 x 5 3/16





# AM-60V

Model CDU

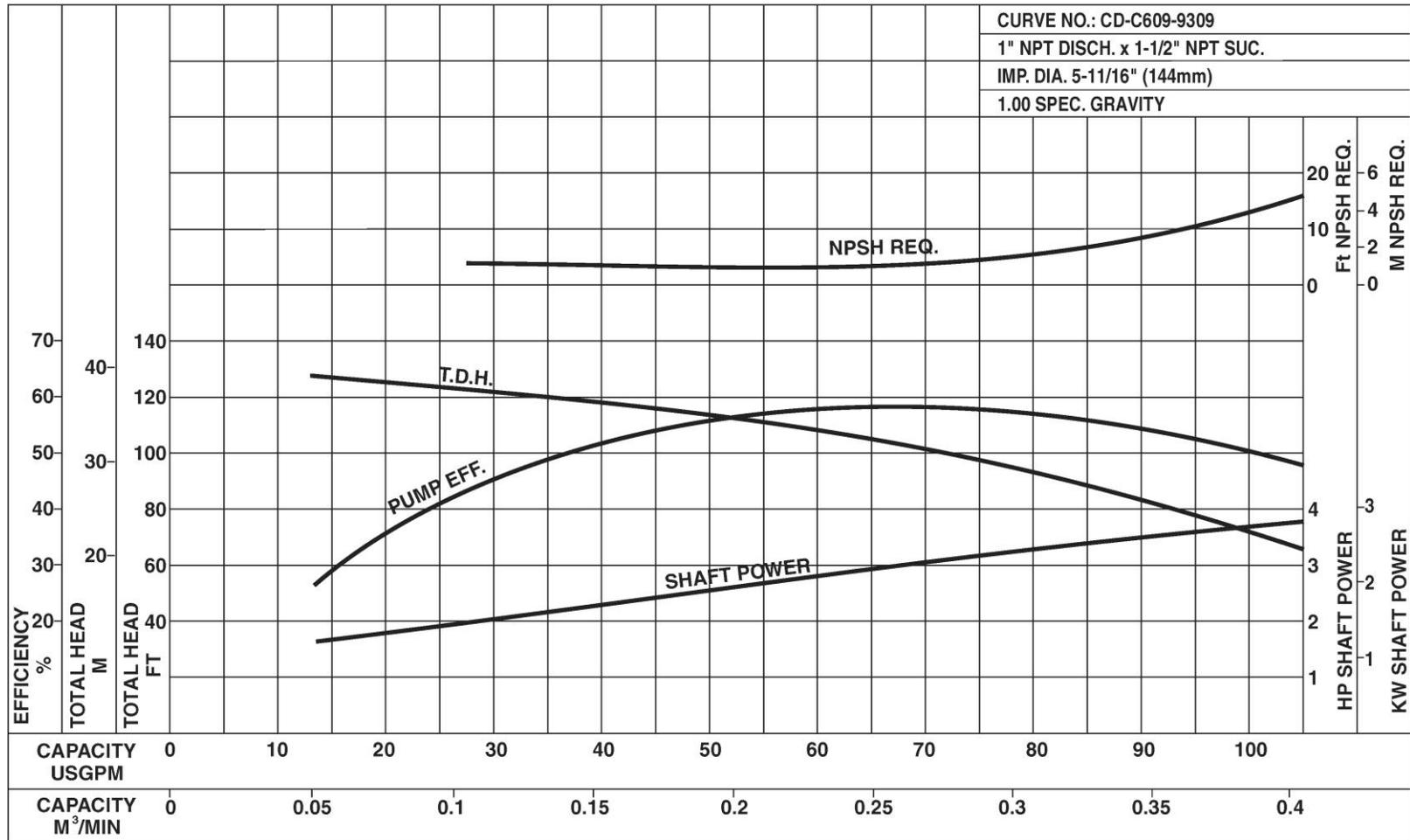
EBARA Stainless Steel Centrifugal Pumps

Performance Curves

CDU200/5-3HP

Synchronous Speed: 3450 RPM

Size: 1 x 1 1/2 x 5 11/16



## TWO YEAR LIMITED WARRANTY

H.O.K. Sales, Incorporated/AquaMark (referred to as Manufacturer hereinafter) warrants all of its pressure boosting systems (Product) for two years from date of purchase, to be free of defects in materials and workmanship, provided they are installed in accordance with factory specifications (as specified in the "INSTALLATION, OPERATION & MAINTENANCE manual") for each individual system.

This warranty applies to the original purchaser (referred to as Purchaser hereinafter) and subsequent owners. By accepting and keeping this product Purchaser agrees to all the warranty terms and limitations of liability described herein. Manufacturer warrants only to original installation location and only when installed, operated and maintained in accordance with printed instructions accompanying the Product.

All claims must be made within the two (2) year warranty time period measured from the time the Product was purchased.

All warranty claims will be handled as follows: Any defect in material or workmanship will be repaired or, at Manufacturer's option, corrected with new or used replacement parts, or Products, at Manufacturer's expense. If after a reasonable number of attempts to remedy the problem, it cannot be repaired so the product will conform to this warranty, a new replacement component or entire Product will be supplied, at the Manufacturer's option. Under no circumstance will any claims for more than the original cost of the Product be accepted, including labor.

This warranty does not cover any failure or problem unless it is caused by a defect in material or workmanship and in addition shall not apply to the following:

- If the product is not correctly installed, operated, repaired, and or maintained as described in the INSTALLATION, OPERATION, & MAINTANANCE manual.
- If any failure or malfunction results from abuse, i.e., freezing, improper or negligent handling, shipping, storage, accident, lightning, flood or environmental conditions.
- If the product is used outside the U.S.A.
- Warranty does not cover any labor costs, shipping and delivery expenses, administrative fees or any costs related to removing or reinstalling the Product.
- If any repair and/or replacement costs are not authorized by Manufacturer or authorized representatives in advance.

Each system has specific electrical and unrestricted piping supply size requirements and they are critical to the application of the one year warranty. See INSTALLATION, OPERATION & MAINTENANCE manual for details.

The remedies in the Warranty are the Purchaser's exclusive remedies. In no circumstances will the Manufacturer or its authorized representatives be liable for more than, and the Purchasers remedies shall not exceed, the price paid for the Product. In no case, shall the Manufacturer or it's authorized representatives be liable for any special damage to property, loss of profits, loss of savings or revenue, loss of use of the Product or any associated equipment, facilities, building or services, downtime, and claims of third parties including customers.

Any covered Warranty service must be authorized by the Manufacturer. Contact the person from whom you purchased the Product, who must receive authorization from the Manufacturer. Before the Manufacturer or an authorized representative determines to provide any replacement parts or Product, it may as a pre-condition to making such a determination, required that the Warranty claimant ship the Product, postage prepaid, to the Manufacturer or an authorized Manufacturer's representative and provide proof of purchase evidenced by the original sales receipt.

In case of replacement of a Product or any component part, the Manufacturer reserves the right to make changes in the design, construction, or material of the substitute components or Products, which shall be subject to all the terms and limitations of the Warranty, except that the applicable warranty period shall be reduced by the amount of time the warranty claimant owned the Product prior to submitting notification of the warranty claim.

### **AquaMark**

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