



# RAFAT

8850 GEORGE BOLTON PARKWAY, CALEDON, ONTARIO L7E 2Y4

Shop Drawings  
Transmittal No:

23 20 00-01R0

Project Name:	Construction of Victoria Park Arena and Brampton Sports Hall of Fame	Project No.	NRFP2024-232
		DATE:	20 Feb 2025
		Submittal Required Return Date:	06 Mar 2025
Submittal No:	33		


Title:	SD-Pumps
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To:	Mark Falkenburger
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Checked by:	Abdullah Hissamuddin	To Be Reviewed By the Following Consultants	Architecture49 & WSP
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Submitted for:	Review and Approval
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Consultants Response	
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<input type="checkbox"/> REVIEWED	BY Jerry Nweisser
<input checked="" type="checkbox"/> REVIEWED AS NOTED	DIVISION Buildings - Sustainability
<input type="checkbox"/> REVISE & RESUBMIT	DATE 4/24/2025
	SUBMITTAL# 21-06
	PROJECT CA-WSP-221-05263-00
THE REVIEW OF THIS DRAWING DOES NOT IN ANY WAY RELIEVE THE VENDOR OR CONTRACTOR OF RESPONSIBILITY FOR ITS ACCURACY OR FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.	



**SUBMITTAL REVIEW**  
For general compliance with the design concept and contract documents. Subcontractor is solely responsible for jobsite correlation and correctness of all ratings, sizings, type, style, dimensions, finish, quantities and satisfactory fitting to other work and equipment. This review does not change the intent of the contract document.

REVIEWED

RESUBMIT

REJECTED



## SHOP DRAWING REVIEW

**Project Name:** Victoria Park Arena

**Project No.** CA-WSP-221-05263-00  
**Date** 2025-03-05

**Shop Drawing:** Title: Pumps  
Revision: 00  
Submission No.: 21-06

This review by consultant is for sole purpose of ascertaining conformance with general design concept. This review does not mean that consultant approves detail design inherent in shop drawings, responsibility for which remains with contractor, and such review does not relieve contractor of responsibility for errors or omissions in shop drawings or of contractor's responsibility for meeting all requirements of contract documents. Be responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication process or to techniques of construction and installation, and for coordination of the work of subtrades.

<input type="checkbox"/> Reviewed	<b>Mechanical Review Required</b> <input checked="" type="checkbox"/>	<b>Electrical Review Required</b> <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Reviewed as Noted	<b>Reviewed by:</b> Jerry Nweisser	<b>Reviewed by:</b> Brad Li
<input type="checkbox"/> Revise & Resubmit	<b>Review Date:</b> 2025-03-05	<b>Review Date:</b> 2025-03-06
<b>Item</b>	<b>Comments</b>	
1.	Contractor to finalize Air Source Heat Pump shop drawing and submit for review before placing order for the pumps	
2.		

End of Review



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

## Submittal 24-280-011

PROJECT NAME	PROJECT ADDRESS	DATE SUBMITTED
VICTORIA PARK ARENA	24-280 20 Victoria Crescent, Brampton, ON L6T 1E4	Feb 19, 2025

TO	FROM
Abdullah Hissamuddin	PAUL LEDDY
COMPANY	COMPANY
RAFAT GENERAL CONTRACTOR INC.	Consult Mechanical Inc.
EMAIL	EMAIL
abdullah.hissam@rafat.ca	paul.l@consultmechanical.com
ADDRESS	ADDRESS
8850 GEORGE BOLTON PKWY BOLTON, ON L7E 2Y4	54 Audia Court, Unit 2 Concord, ON L4K 3N5

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### Title

Consult Submittal for Pumps

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### Description

Bell and Gossett Pump Submittal Package

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### Package Items

SPEC	SUBSECTION	ITEM	TYPE
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**Submittal # 85621**
**APPROVAL REQUIRED**

**Project** 22104386-MECH-1- Brampton Victoria Park Arena  
**Leader** Nevin Wong  
**Job Site** Brampton Victoria Park Arena  
**Submission Date** 2025-02-19  
**Sold To** CONSULT MECH  
**Submitted By** Chukwuebuka Eleagu

**Contacts**

Role	Customer	Our Rep
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
General Contractor	Rafat General Contracing Inc	
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Mechanical Contractor	Con-Sult Mechanical Inc.*	Nevin Wong
Designer	WSP MMM Group	Alex Forsea

**Deliverables**

Track #	289003	289009	289008
<b>Tag</b>	DHWRP-1/2, P-1 TO P-5, P-10/11, P-6/7, P-8/9	P-10/11, P-6/7, P-8/9	P-10/11, P-6/7, P-8/9
<b>Description</b>	Inline Pumps	Triple Duty Valves	Suction Diffuser
<b>Quantity</b>	13	6	6
<b>Production Lead Time</b>	14 - 18 Weeks	14 - 18 Weeks	14 - 18 Weeks
<b>Revision #</b>	0	0	0

**Attention:**

- 1) HTS will provide equipment in accordance with the attached shop drawings.
- 2) Upon approved submittal and customer release, HTS will release equipment to fabrication per the published lead times. Any storage fees associated with project schedule changes will be the responsibility of the purchaser.
- 3) HTS can provide freight and logistics to the purchaser as an added benefit of doing business with HTS. When freight is received by the purchaser, any noticeable damage must be recorded. Otherwise, HTS is not responsible for subsequent damage claims.

**Approval Stamps**





Job/Project: 22104386 BRAMPTON VICTORIA PARK CONVERTED	Representative: None Selected	
ESP-Systemwize: WIZE-24768A03	Created On: 01/31/2025	Phone:
Location/Tag: P-1/2/3/4/5	Email:	
Engineer: None Selected	Submitted By:	Date:
Contractor: None Selected	Approved By:	Date:

## Small Close Coupled In-Line Centrifugal Pump

**Series: e-90**

**Model: 1.25AAB**

### Features & Design

- Designed to be mounted in the piping
- Installed wither horizontally or vertically
- Bolted Flange Connections
- Internally Self-Flushing Mechanical Seal



\*The Bell & Gossett Series e-90 is available in 116 standard pre-configured designs and can be built-to-order in bronze fitted or all bronze construction. The e-90 pump offers proven hydraulic performance which provides an efficiency improvement of 2%-18% at BEP.

575V/3/60

<http://bellgossett.com/pumps-circulators/in-line-pumps/e-90/>

### Pump Selection Summary

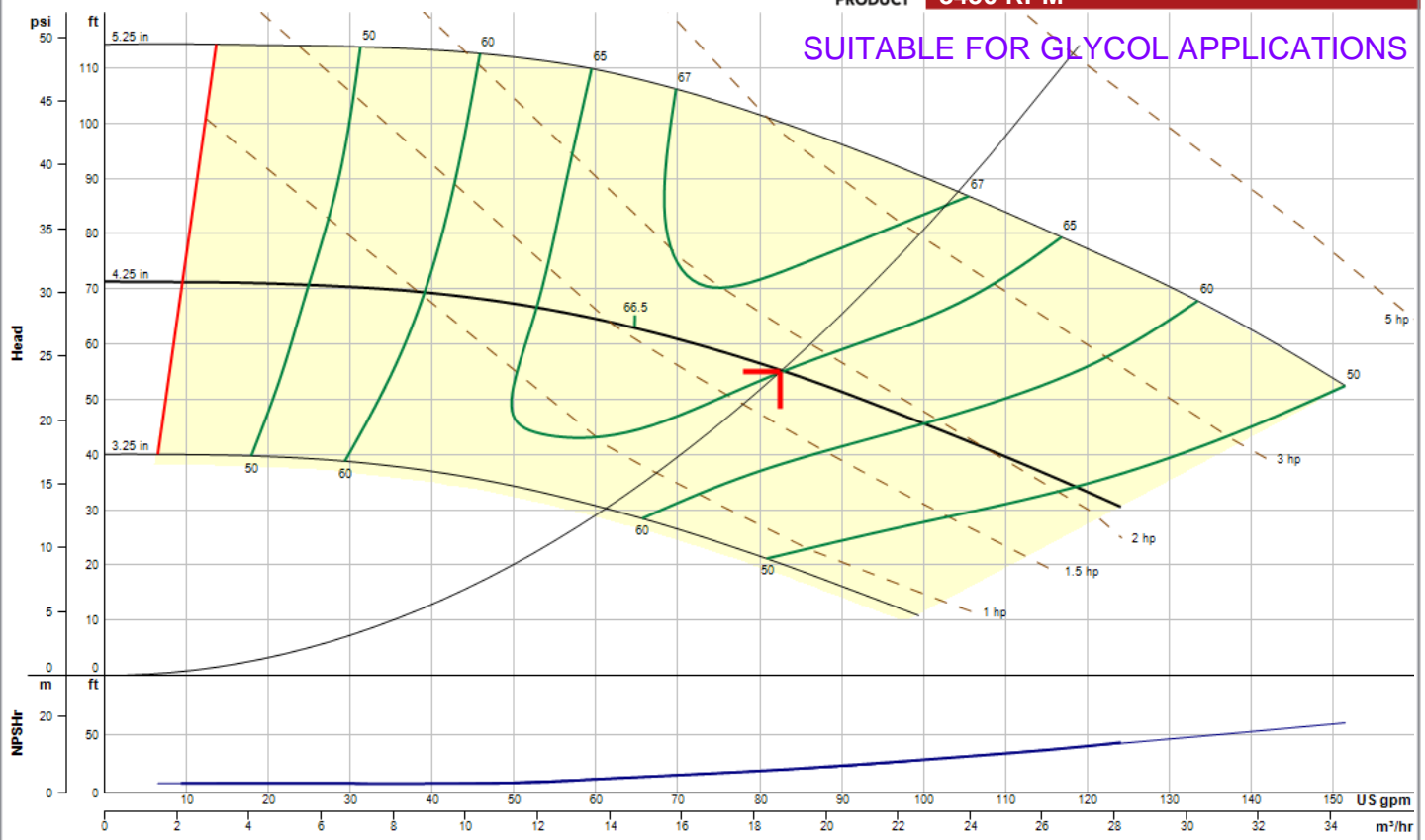
Duty Point Flow	82.5 US gpm
Duty Point Head	55.0 ft
Control Head	0.0 ft
Duty Point Pump Efficiency	65 %
Part Load Efficiency Value (PLEV)	0.0 %
Impeller Diameter	4.25 in
Motor Power	3 hp
Duty Point Power	1.77 bhp
Motor Speed	3600 rpm
RPM @ Duty Point	3450 rpm
NPSHr	19.9 ft
Minimum Shutoff Head	71.3 ft
Minimum Flow at RPM	9.71 US gpm
Flow @ BEP	64.7 US gpm
Fluid Temperature	68 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	66 lbs
Pump Floor Space Calculation	0.57 ft²

## Performance Curve



**e-90**  
**1.25AAB**  
**3450 RPM**

SUITABLE FOR GLYCOL APPLICATIONS



Performance curve meets 14.6 / ISO 9906 acceptance criteria

# P-1/2/3/4/5

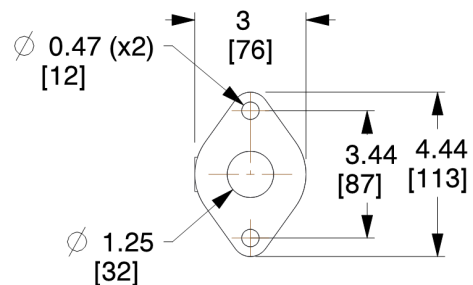
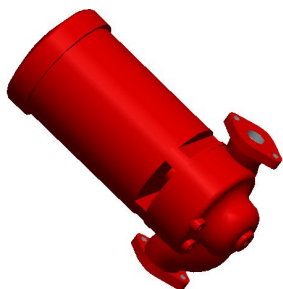
## Materials Of Construction

Pump Information\Construction	
Pump Series	e-90
Pump Size	1.25 AAB
Seal Type	Standard Seal
Seal Material	Standard
Material of Construction	Bronze Fitted
Impeller Diameter	4.25 inches
Sleeve Material	Standard

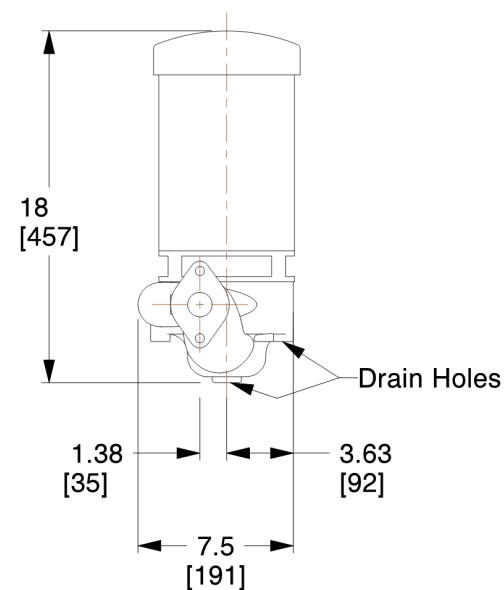
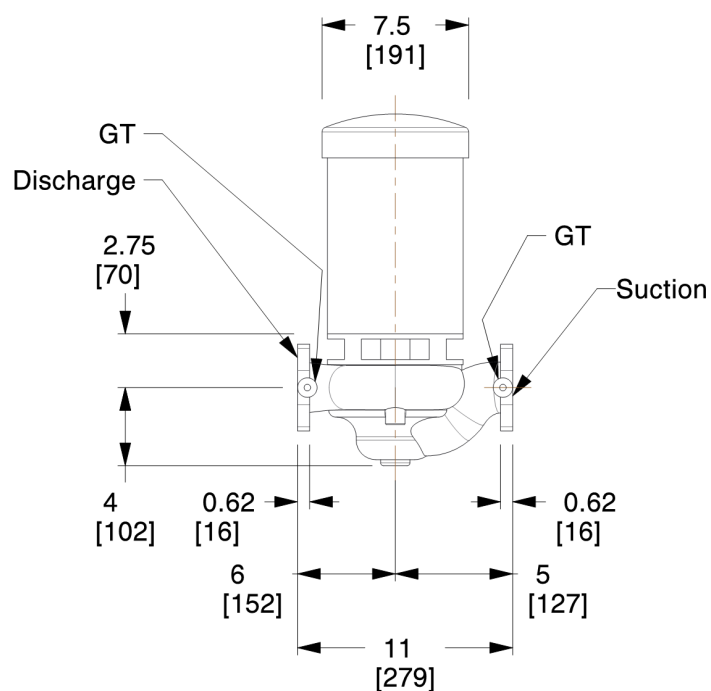
Motor Details	
Motor Power	3
Motor Speed	3600
Frequency	60
Phase	3
Voltage	575
Frame	56J
Enclosure	ODP



# P-1/2/3/4/5



**SUCTION & DISCHARGE  
FLANGE DETAILS**



**Bell & Gossett**  
a xylem brand

8200 N. Austin Ave.  
Morton Grove, IL 60053, USA

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Dimensions are subject to change  
Not to be used for construction unless certified

## BG-E90-125AAB-300-3450-3

Series e-90 Centrifugal Pumps In-Line Mounted-Close Coupled

Motor Hp : 3 | Motor Speed : 3450 | Phase : 3 | Flange : ANSI 125#

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : B-146.1

Job/Project: 22104386 BRAMPTON VICTORIA PARK CONVERTED	Representative: None Selected	
ESP-Systemwize: WIZE-24768A03	Created On: 01/31/2025	Phone:
Location/Tag: P-6/7	Email:	
Engineer: None Selected	Submitted By:	Date:
Contractor: None Selected	Approved By:	Date:

## Split-Coupled In-Line Centrifugal Pump

**Series: e-80SC**

**Model: 2.5x2.5x9.5C**

### Features & Design

- Best in Class Hydraulic Performance
- Shaft Jacking Coupling
- Optional Flange Mounting Supports



\*The Bell & Gossett Series e-80SC is available in stainless steel fitted construction, with flows to 8500 GPM, heads to 202 ft.

575V/3/60

### Pump Selection Summary

Duty Point Flow	201.0 US gpm
Duty Point Head	60.0 ft
Control Head	0.0 ft
Duty Point Pump Efficiency	62.7 %
Part Load Efficiency Value (PLEV)	0.0 %
Impeller Diameter	8.75 in
Motor Power	7.5 hp
Duty Point Power	4.96 bhp
Motor Speed	1800 rpm
RPM @ Duty Point	1750 rpm
NPSHr	6.82 ft
Minimum Shutoff Head	80 ft
Minimum Flow at RPM	34 US gpm
Flow @ BEP	170 US gpm
Fluid Temperature	68 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	320 lbs
Pump Floor Space Calculation	2.34 ft²

## Performance Curve

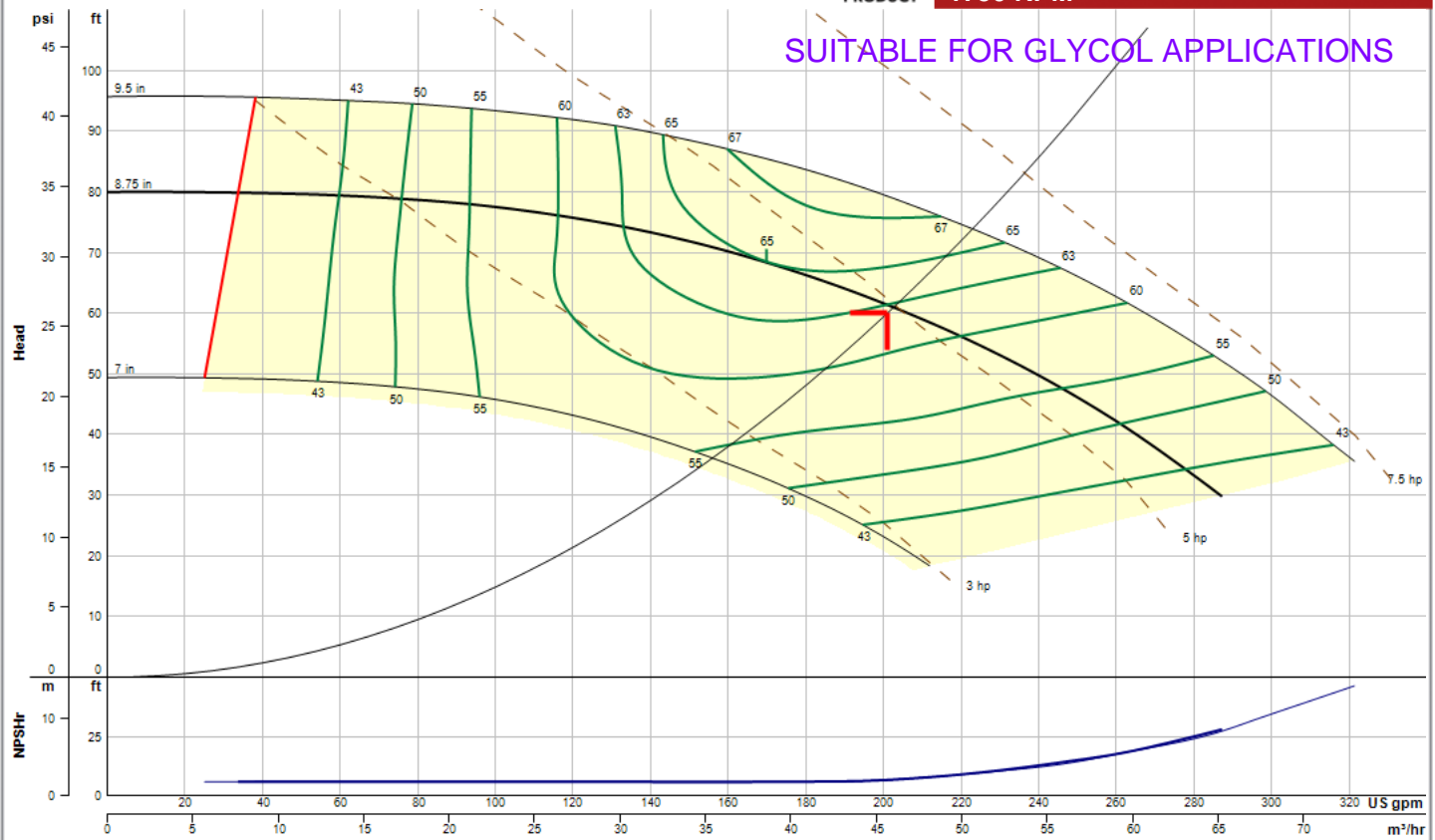
### Energy Efficiency Ratings:

Pump & Motor PEIcl: 0.92 ERcl: 8  
Pump, Motor & Drive: PEIvl: 0.46 ERvl: 54



**e-80SC**  
**2.5x2.5x9.5C**  
**1750 RPM**

SUITABLE FOR GLYCOL APPLICATIONS

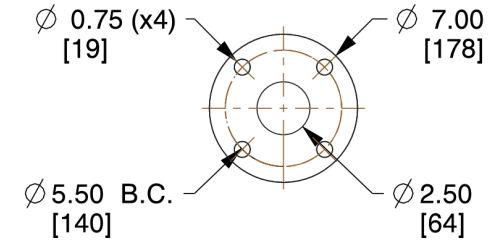
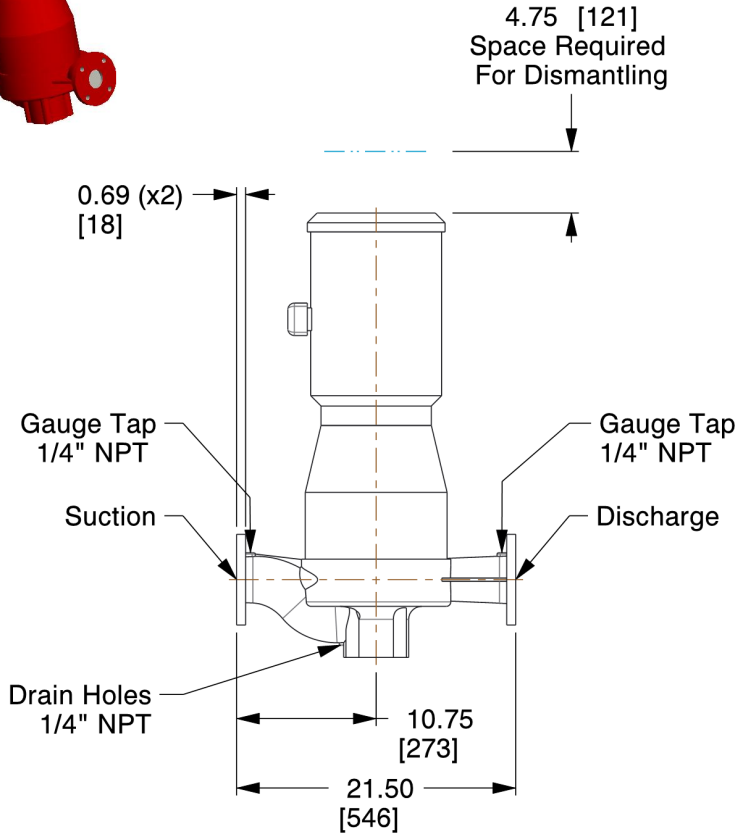
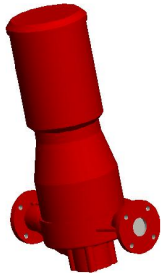


Performance curve meets 14.6 / ISO 9906 acceptance criteria

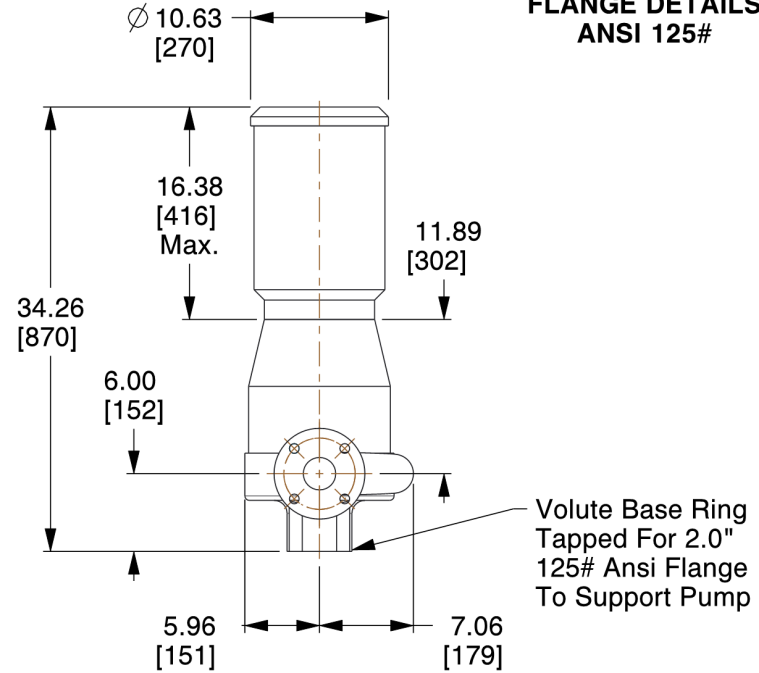
Materials Of Construction

Pump Information\Construction	
Pump Series	e-80SC
Pump Size	2.5 x 2.5 x 9.5C
Seal Type	Stuffing Box
Seal Material	Standard Internal EPR/Carbon/Ceramic/SS
Material of Construction	Stainless Steel Fitted
Impeller Diameter	8.75 inches
Sleeve Material	Standard

Motor Details	
Motor Power	7.5
Motor Speed	1800
Frequency	60
Phase	3
Voltage	575
Frame	213TC
Enclosure	ODP



**2.5" SUCTION & DISCHARGE  
FLANGE DETAILS  
ANSI 125#**



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## BG-E80SC-2.5x2.5x9.5C-213TC-1-IN

Series e-80SC In-Line Mounted Centrifugal Pumps

Motor Frame:213TC | Flange:ANSI 125#

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : B-552.10

Job/Project: 22104386 BRAMPTON VICTORIA PARK CONVERTED	Representative: None Selected	
ESP-Systemwize: WIZE-24768A03	Created On: 01/31/2025	Phone:
Location/Tag: P-8/9	Email:	
Engineer: None Selected	Submitted By:	Date:
Contractor: None Selected	Approved By:	Date:

**Split-Coupled In-Line Centrifugal Pump****Series: e-80SC****Model: 3x3x7C****Features & Design**

Best in Class Hydraulic Performance  
 Shaft Jacking Coupling  
 Optional Flange Mounting Supports



\*The Bell & Gossett Series e-80SC is available in stainless steel fitted construction, with flows to 8500 GPM, heads to 202 ft.

575V/3/60

**Pump Selection Summary**

Duty Point Flow	295.6 US gpm
Duty Point Head	85.0 ft
Control Head	0.0 ft
Duty Point Pump Efficiency	70 %
Part Load Efficiency Value (PLEV)	0.0 %
Impeller Diameter	5.375 in
Motor Power	15 hp
Duty Point Power	9.63 bhp
Motor Speed	3600 rpm
RPM @ Duty Point	3550 rpm
NPSHr	13.9 ft
Minimum Shutoff Head	112 ft
Minimum Flow at RPM	56.9 US gpm
Flow @ BEP	285 US gpm
Fluid Temperature	68 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	410 lbs
Pump Floor Space Calculation	2.79 ft²

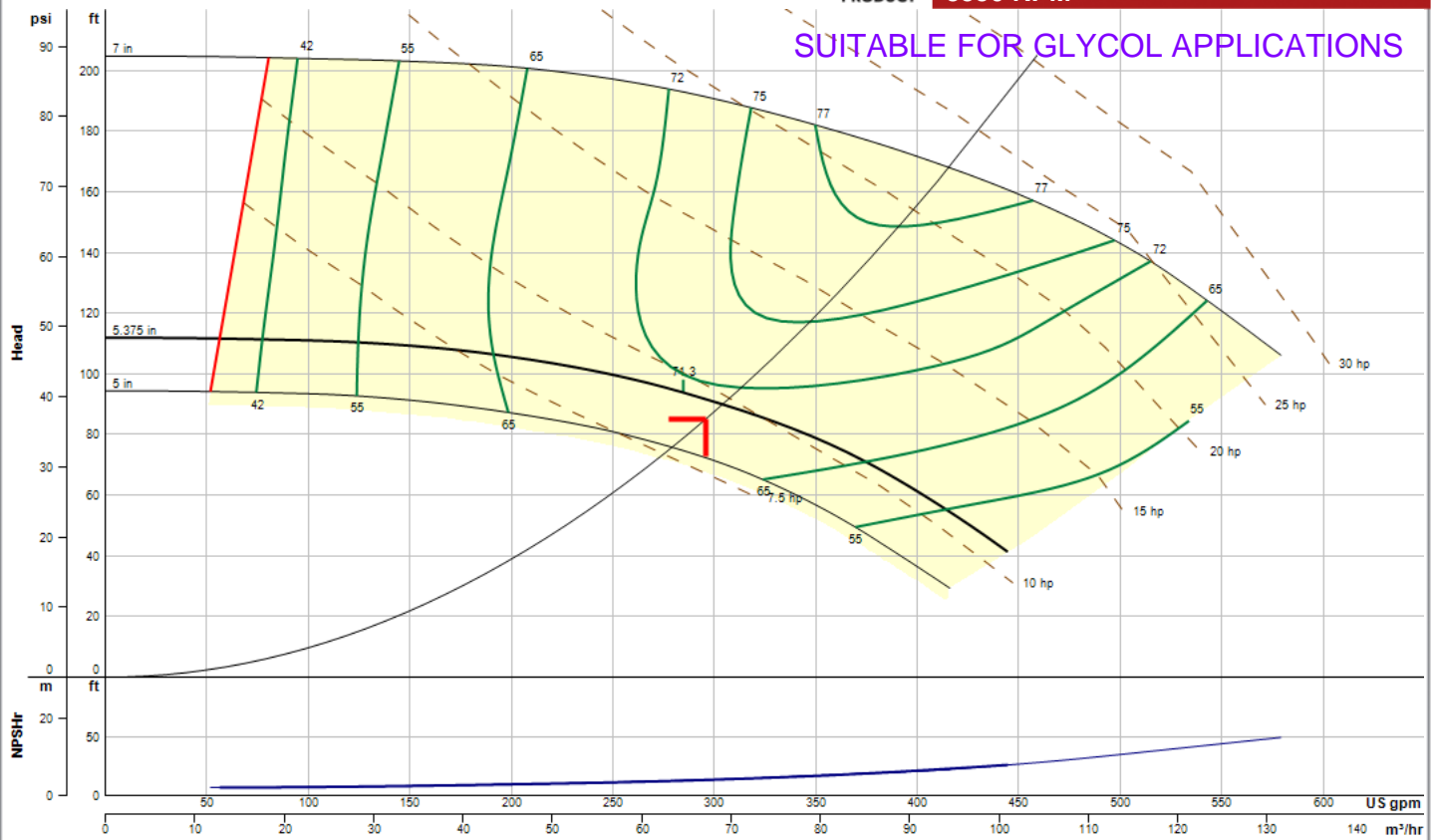
**Performance Curve****Energy Efficiency Ratings:**

Pump &amp; Motor PEIcl: 0.9 ERcl: 10

Pump, Motor &amp; Drive: PEIvl: 0.45 ERvl: 55


**e-80SC**  
**3x3x7C**  
**3550 RPM**

SUITABLE FOR GLYCOL APPLICATIONS

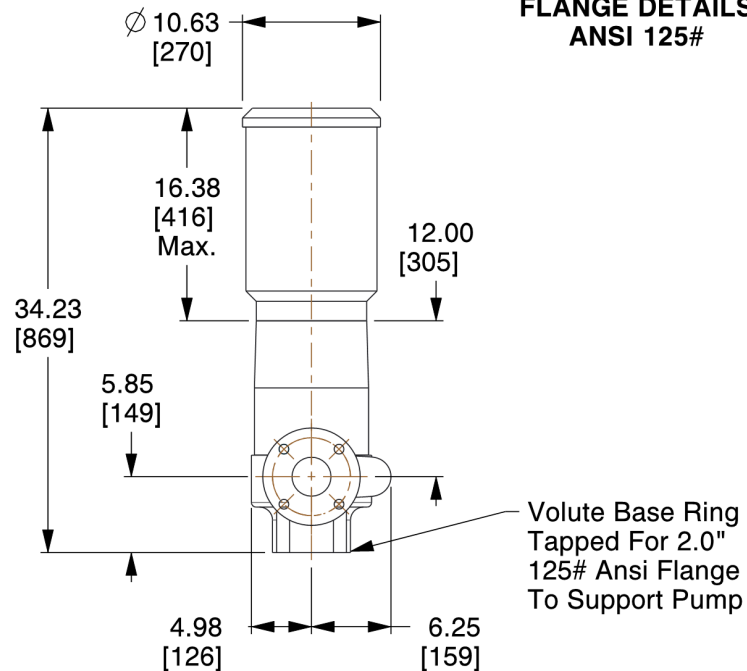
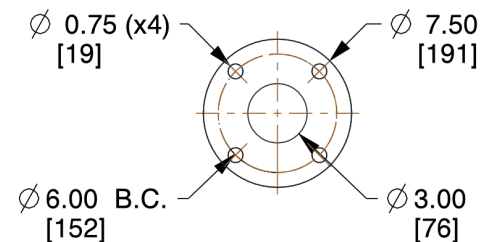
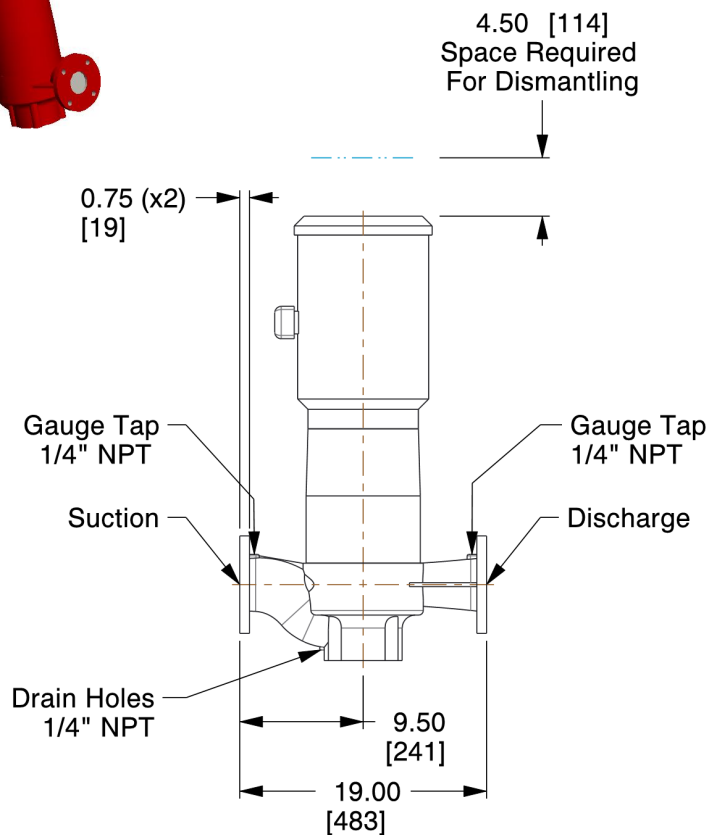
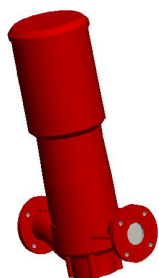


Performance curve meets 14.6 / ISO 9906 acceptance criteria

Materials Of Construction

Pump Information\Construction	
Pump Series	e-80SC
Pump Size	3 x 3 x 7C
Seal Type	Stuffing Box
Seal Material	Standard Internal EPR/Carbon/Ceramic/SS
Material of Construction	Stainless Steel Fitted
Impeller Diameter	5.375 inches
Sleeve Material	Standard

Motor Details	
Motor Power	15
Motor Speed	3600
Frequency	60
Phase	3
Voltage	575
Frame	215TC
Enclosure	ODP



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## BG-E80SC-3x3x7C-215TC-1-IN

Series e-80SC In-Line Mounted Centrifugal Pumps

Motor Frame:215TC | Flange:ANSI 125#

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : B-552.12





**Bell & Gossett**  
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P-10/11

**Submittal**

Job/Project: 22104386 BRAMPTON VICTORIA PARK CONVERTED	Representative: None Selected	
ESP-Systemwize: WIZE-24768A03	Created On: 01/31/2025	Phone:
Location/Tag: P-10/11	Email:	
Engineer: None Selected	Submitted By:	Date:
Contractor: None Selected	Approved By:	Date:

## Close Coupled In-Line Centrifugal Pump

**Series: e-80**

**Model: 1.5x1.5x7C**

### Features & Design

Best in Class Hydraulic Performance  
Low Operating and Maintenance Cost  
Horizontal or Vertical Installation



The Series e-80 is a highly efficient, heavy duty, close coupled pump designed for horizontal or vertical in-line mounting. The e-80 is available in stainless steel fitted construction, with flows up to 2500 GPM, heads to 380 feet.

575V/3/60

<http://bellgossett.com/pumps-circulators/in-line-pumps/series-e-80/>

### Pump Selection Summary

Duty Point Flow	104.6 US gpm
Duty Point Head	95.0 ft
Control Head	0.0 ft
Duty Point Pump Efficiency	56.2 %
Part Load Efficiency Value (PLEV)	0.0 %
Impeller Diameter	5.375 in
Motor Power	5 hp
Duty Point Power	4.47 bhp
Motor Speed	3600 rpm
RPM @ Duty Point	3550 rpm
NPSHr	13.7 ft
Minimum Shutoff Head	126 ft
Minimum Flow at RPM	17.3 US gpm
Flow @ BEP	86.6 US gpm
Fluid Temperature	68 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	205 lbs
Pump Floor Space Calculation	1.55 ft²

## Performance Curve

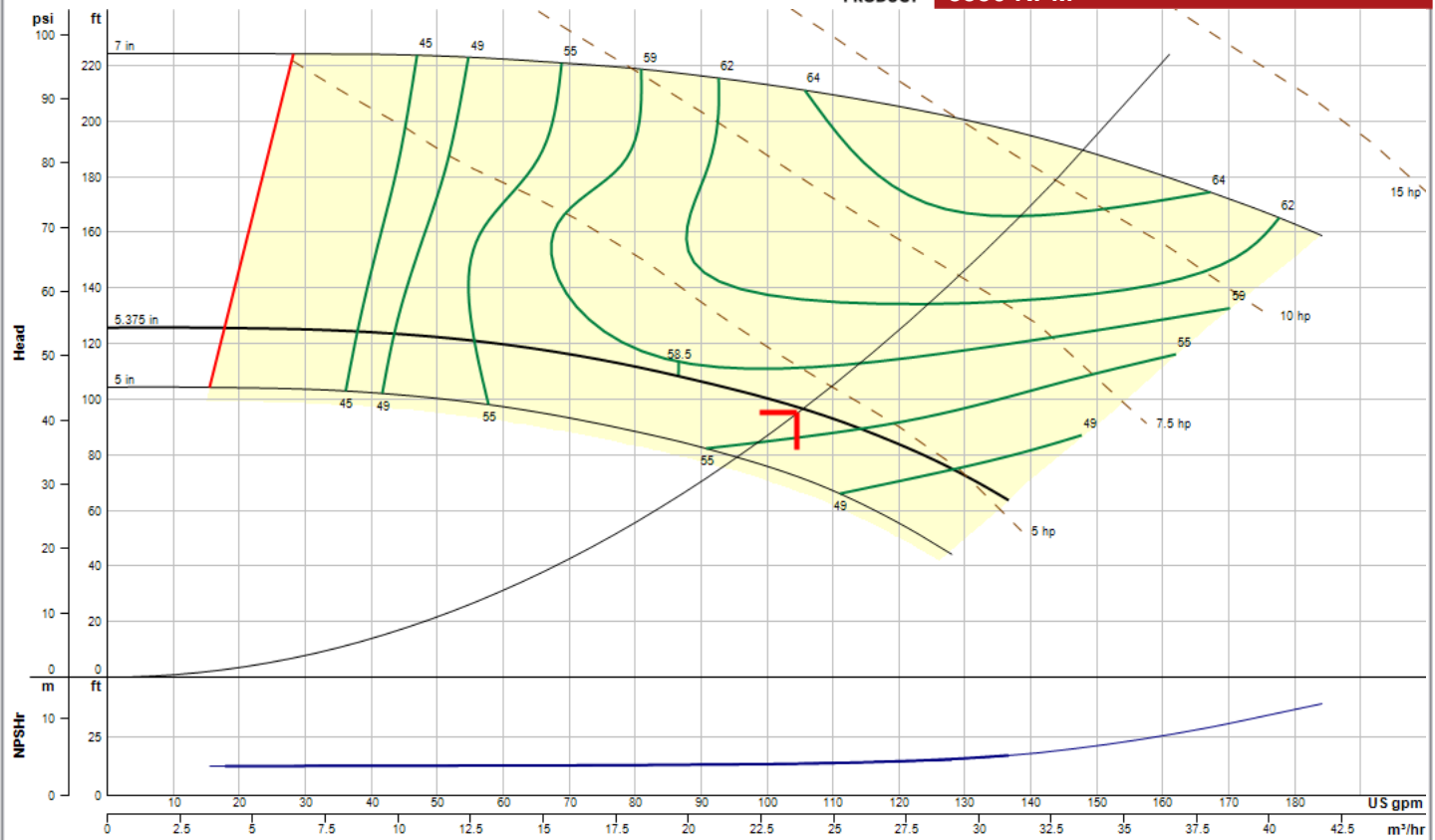
### Energy Efficiency Ratings:

Pump & Motor PEIcl: 0.82 ERcl: 18

Pump, Motor & Drive: PEIvl: 0.42 ERvl: 58



**e-80**  
**1.5x1.5x7C**  
**3550 RPM**



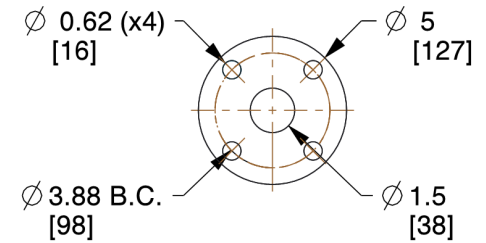
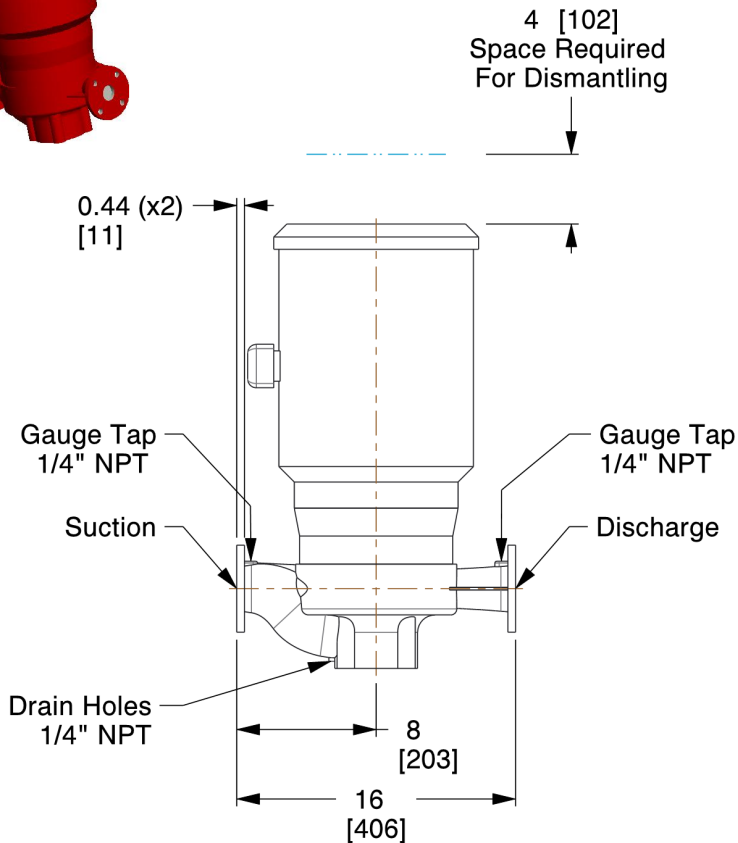
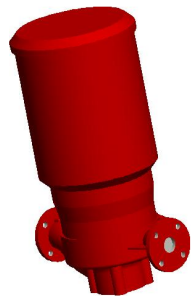
Performance curve meets 14.6 / ISO 9906 acceptance criteria



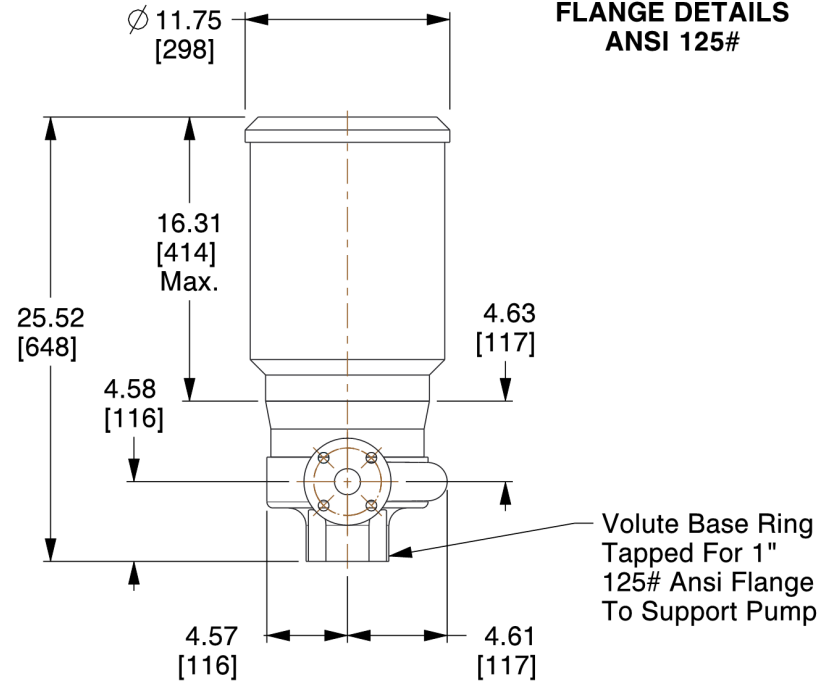
Materials Of Construction

Pump Information\Construction	
Pump Series	e-80
Pump Size	1.5 x 1.5 x 7C
Seal Type	Standard Seal
Seal Material	STD-Buna/Carbon/Ceramic/SS/Bronze
Material of Construction	Stainless Steel Fitted
Impeller Diameter	5.375 inches
Sleeve Material	Stainless Steel Sleeve

Motor Details	
Motor Power	5
Motor Speed	3600
Frequency	60
Phase	3
Voltage	575
Frame	182JM
Enclosure	ODP



**1.5" SUCTION & DISCHARGE  
FLANGE DETAILS  
ANSI 125#**



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Dimensions are subject to change  
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## BG-E80-1.5x1.5x7C-SS182JM-1-IN

Series e-80 Close Coupled In-Line Centrifugal Pump

Seal Type:Standard Seal | Motor Frame:182JM | Flange:ANSI 125#

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : B-139B

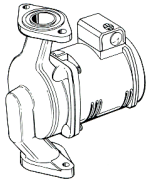
**JOB:** 22104386 BRAMPTON VICTORIA PARK CONVERTED

**REPRESENTATIVE:** HTS Engineering

**UNIT TAG:**  
**ENGINEER:**  
**CONTRACTOR:**

**ORDER NO.**  
**SUBMITTED BY:**  
**APPROVED BY:**

**DATE:** 2025-01-31  
**DATE:**  
**DATE:**



## SERIES PL™

Permanently Lubricated  
Iron & Lead-Free<sup>†</sup> Bronze Booster Pumps



### DESCRIPTION

The Series PL™ close coupled booster pumps are specifically designed for quiet operation in hydronic, radiant and geothermal heating and cooling systems. These inline permanently lubricated pumps are available in cast iron or lead-free<sup>†</sup> bronze body construction.

### OPERATING DATA

Maximum working Pressure: 150 psi (10 Bar)  
Maximum Operating Temperature: 225°F (107°C)



<sup>†</sup>Contains less than 0.25% Lead content by weight on wetted surfaces.

### CONSTRUCTION MATERIALS

Booster Body: Cast Iron or Lead-Free<sup>†</sup> Bronze  
Face Plate: Stainless Steel  
Impeller: 30% Glass Filled Noryl®  
(PL-55 & PL-130): Glass Filled PPS  
Shaft: Carbon Steel  
(PL-55 & PL-130): Stainless Steel  
Shaft Sleeve: Stainless Steel  
(PL-55 & PL-130): None  
Seal: Mechanical, Carbon on Silicon Carbide  
Motor Bearings: Sealed Precision Steel Ball Bearing  
Permanently Lubricated  
Motor Type: ODP  
Elastomers: EPDM

### SCHEDULE

### SUITABLE FOR DOMESTIC APPLICATIONS

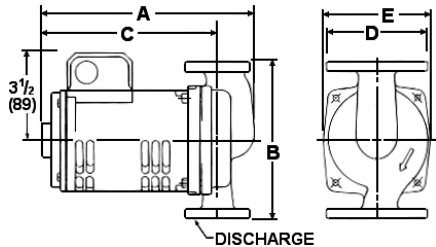
CAST IRON			LEAD-FREE <sup>†</sup> BRONZE			STANDARD 60 CYCLE SINGLE PHASE MOTOR CHARACTERISTICS				TAGGING INFORMATION
MODEL NUMBER	PART NUMBER	QTY.	MODEL NUMBER	PART NUMBER	QTY.	HP	VOLTAGE	F.L. AMPS	RPM	
 PL-30	1BL012		PL-30B	1BL013LF	1	1/12	115	1.4	2650	DHWRP-2
PL-30	1BL014		PL-30B	1BL015LF		1/12	230	0.8	2650	
 PL-36	1BL001		PL-36B	1BL003LF	1	1/6	115	2.1	3300	DHWRP-1
PL-36	1BL006		PL-36B	1BL008LF		1/6	230	1.1	3300	
PL-36	1BL116		PL-36B	1BL118LF		1/6	277	1	3300	
PL-45	1BL002		PL-45B	1BL004LF		1/6	115	2.1	3300	
PL-45	1BL007		PL-45B	1BL009LF		1/6	230	1.1	3300	
PL-45	1BL121		PL-45B	1BL122LF		1/6	277	1	3300	
PL-50	1BL016		PL-50B	1BL017LF		1/6	115	1.8	3300	
PL-50	1BL018		PL-50B	1BL019LF		1/6	230	1.0	3300	
PL-50	1BL123		PL-50B	1BL124LF		1/6	277	1.0	3300	
PL-55	1BL032		PL-55B	1BL068LF		2/5	115	4.7	3250	
PL-55	1BL033		PL-55B	1BL069LF		2/5	230	2.4	3250	
PL-55	1BL115		PL-55B	1BL119LF		2/5	277	1.9	3250	
PL-75	1BL034		PL-75B	1BL035LF		1/6	115	2.1	3400	
PL-75	1BL036		PL-75B	1BL037LF		1/6	230	1.1	3400	
PL-75	1BL125		PL-75B	1BL126LF		1/6	277	1	3400	
PL-130/2"	1BL063		PL-130B/2"	1BL065LF		2/5	115	4.8	3200	
PL-130/2"	1BL064		PL-130B/2"	1BL066LF		2/5	230	2.4	3200	
PL-130/2"	1BL127		PL-130B/2"	1BL128LF		2/5	277	1.9	3200	
PL-130/3"	1BL070		PL-130B/3"	1BL072LF		2/5	115	4.8	3200	
PL-130/3"	1BL071		PL-130B/3"	1BL073LF		2/5	230	2.4	3200	
PL-130/3"	1BL130		PL-130B/3"	1BL131LF		2/5	277	1.9	3200	

**Note: Where potable water is pumped, use a lead-free<sup>†</sup> bronze booster.**  
PL boosters equipped with a drip-proof motor are recommended for indoor use only.

DIMENSIONS AND WEIGHTS

MODEL NO.	FLANGE SIZE INCHES - NPT	MOTOR HP	DIMENSIONS - INCHES (mm)					APPROXIMATE SHIPPING WT. LBS. (KG)
			A	B	C	D	E	
➡ PL-30	3/4, 1, 1-1/4 & 1-1/2	1/12	8 5/8 (219)	6 3/8 (162)	7 1/8 (181)	4 3/16 (106)	4 3/8 (111)	11.6 (5.3)
➡ PL-36	3/4, 1, 1-1/4 & 1-1/2	1/6	8 5/8 (219)	6 3/8 (162)	7 1/8 (181)	4 3/16 (106)	4 3/8 (111)	13.1 (6.0)
PL-45	1, 1-1/4 & 1-1/2	1/6	9 1/8 (232)	8 1/2 (216)	7 1/4 (184)	4 5/8 (117)	4 1/2 (114)	14.5 (6.6)
PL-50	1, 1-1/4 & 1-1/2	1/6	9 1/8 (232)	8 1/2 (216)	7 1/4 (184)	4 5/8 (117)	4 1/2 (114)	14.5 (6.6)
PL-55	3/4, 1, 1-1/4 & 1-1/2	2/5	9 9/16 (243)	6 3/8 (162)	7 15/16 (202)	4 3/16 (106)	4 3/4 (121)	13.1 (6.0)
PL-75	2	1/6	9 15/16 (252)	8 1/2 (216)	7 3/8 (187)	5 3/16 (132)	4 5/8 (117)	18.5 (8.4)
PL-130/2"	2	2/5	10 3/4 (273)	8 1/2 (216)	8 1/4 (210)	5 3/16 (132)	5 1/8 (130)	22 (10)
PL-130/3"	3	2/5	10 3/4 (273)	8 1/2 (216)	8 1/4 (210)	6 (152)	5 1/8 (130)	27 (12.2)

Dimensions are approximate and subject to change. Contact factory for certified dimensions.

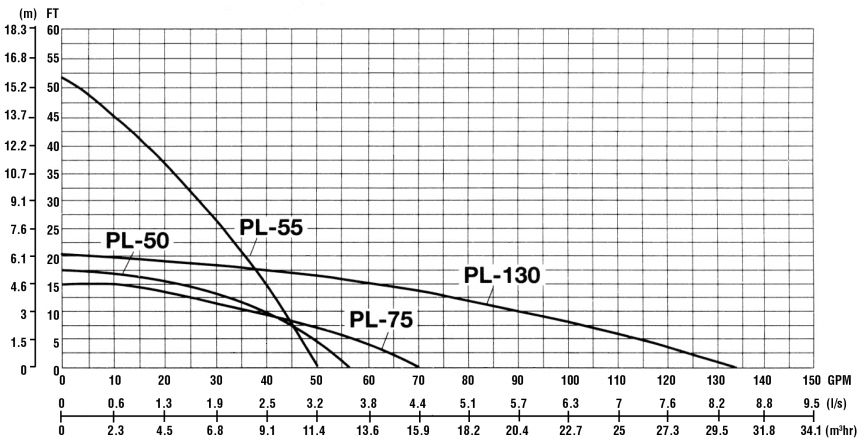
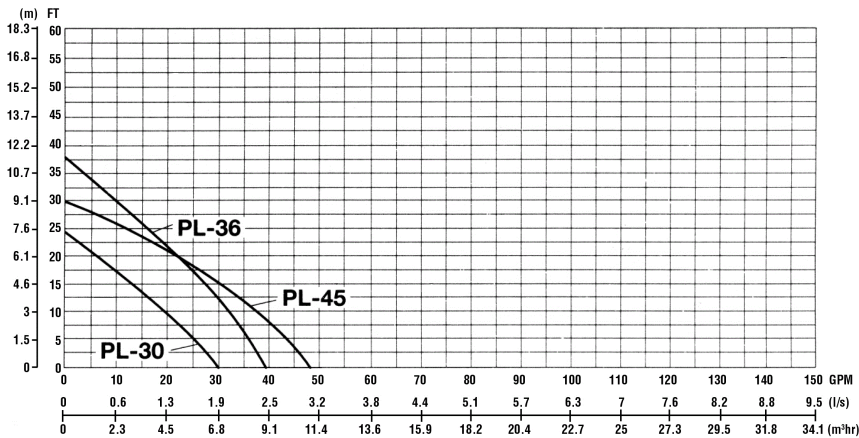


TYPICAL SPECIFICATIONS

The contractor shall furnish and install inline pumps as illustrated on the plans and in accordance with the following specifications:

1. The pumps shall be of the horizontal, permanently lubricated type, specifically designed and guaranteed for quiet operation.
2. The pumps shall have a steel shaft supported by permanently lubricated, sealed precision ball bearings. The pumps are to be equipped with a water-tight seal to prevent leakage. Mechanical seal faces to be carbon on silicon carbide. The motor shall be non-overloading at any point on the pump performance curve.
3. The motor shall be of the drip-proof, sealed precision ball-bearing, quiet-operating construction. The permanent split-capacitor motor shall be equipped with thermal overload protection.
4. Pumps to be suitable for 225°F (107°C) operating temperature at 150 psig (10 bar) working pressure. The pumps shall be Bell & Gossett, A Xylem brand. Model No. PL-\_\_\_\_\_ with a capacity of \_\_\_\_\_ GPM at \_\_\_\_\_ feet of head.

PERFORMANCE CHARACTERISTICS CURVES



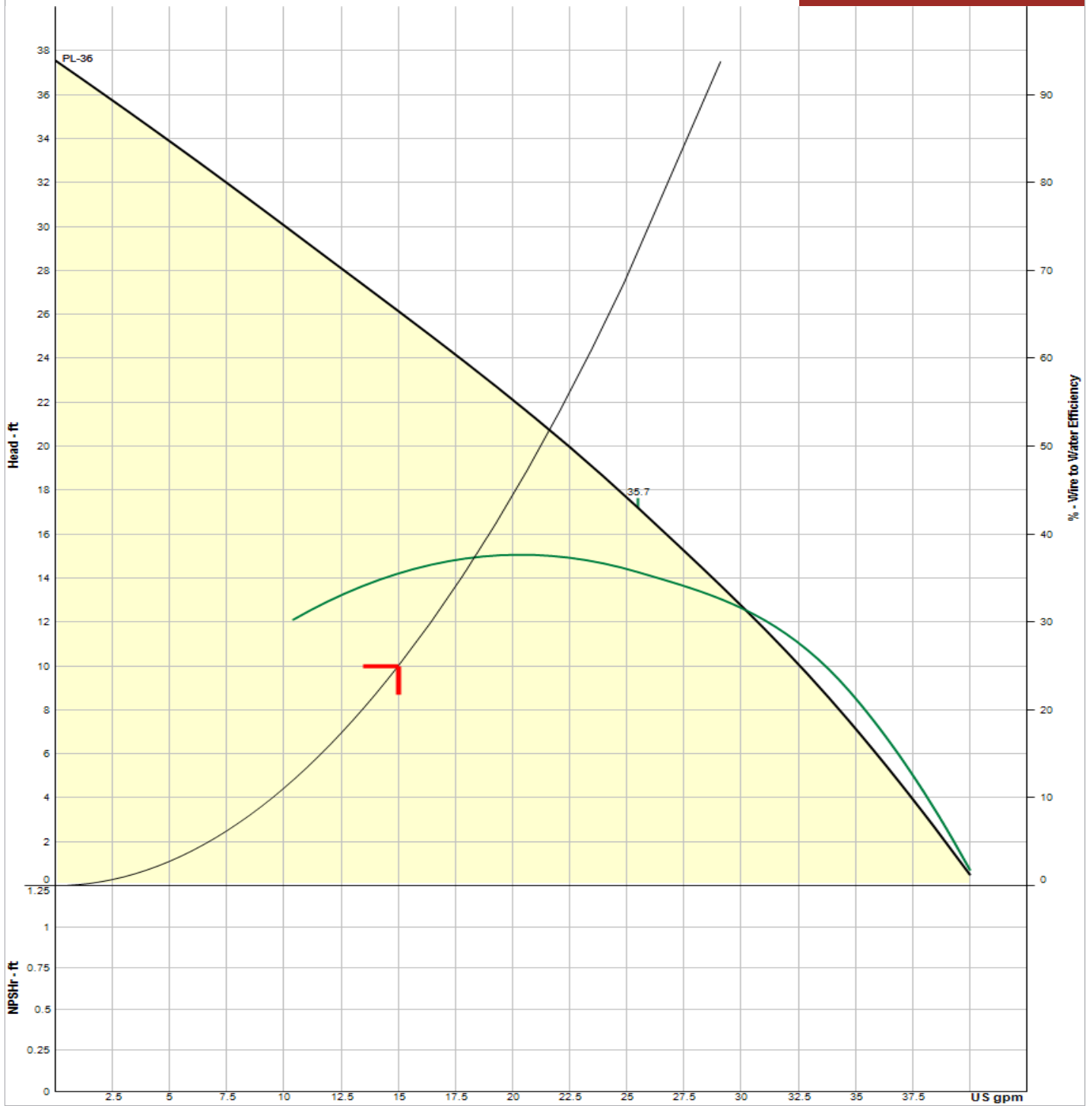
Xylem Inc.  
8200 N. Austin Avenue  
Morton Grove, IL 60053  
Phone: (847)966-3700  
Fax: (847)965-8379  
www.bellgossett.com



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## Performance Curve

PL  
PL-36

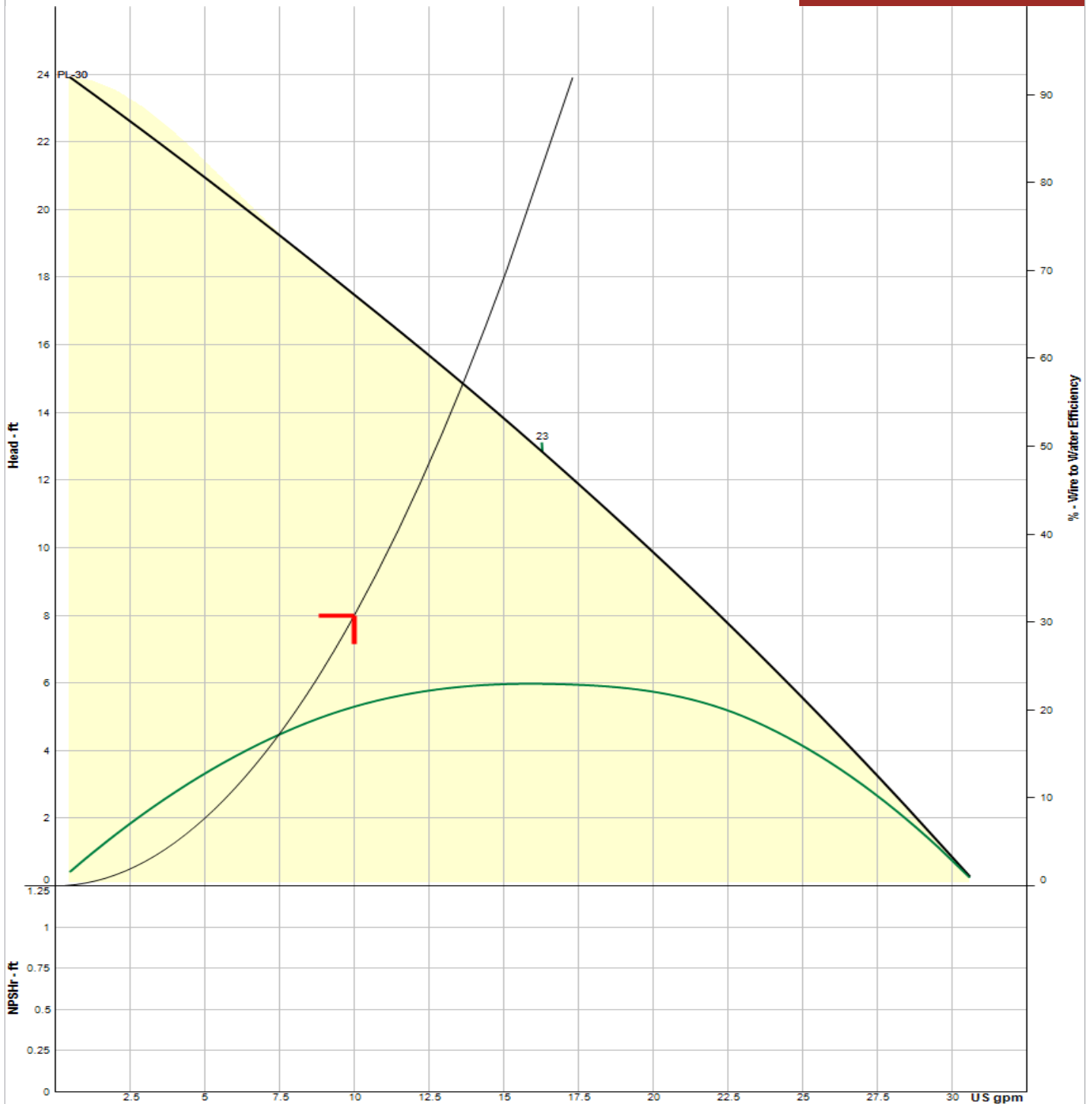


## Pump Selection Summary

Pump Capacity	15 US gpm	RPM @ Duty Point	3300
Pump Head	10 ft	Impeller Diameter	PL-36
Control Head	0 ft	NPSHr	---
Duty Point Pump Efficiency	--- %	Motor Power	--- hp
Pump PLEV Efficiency	0.0 %	Motor Speed	--- rpm
Duty point Power	--- bhp	Minimum Shutoff Head	37.6 ft
Minimum Flow at RPM	--- US gpm	Fluid Type	Water
Flow @ BEP	--- US gpm	Fluid Temperature	68 °F
Weight (approx. - consult rep)	--- lbs	Floor Space	--- ft <sup>2</sup>

## Performance Curve

PL  
PL-30



## Pump Selection Summary

Pump Capacity	10 US gpm	RPM @ Duty Point	2650
Pump Head	8 ft	Impeller Diameter	PL-30
Control Head	0 ft	NPSHr	---
Duty Point Pump Efficiency	--- %	Motor Power	--- hp
Pump PLEVv Efficiency	0.0 %	Motor Speed	--- rpm
Duty point Power	--- bhp	Minimum Shutoff Head	23.9 ft
Minimum Flow at RPM	--- US gpm	Fluid Type	Water
Flow @ BEP	--- US gpm	Fluid Temperature	68 °F
Weight (approx. - consult rep)	--- lbs	Floor Space	--- ft <sup>2</sup>

JOB: 22104386 BRAMPTON VICTORIA PARK CONVERTED

REPRESENTATIVE: HTS Engineering

UNIT TAG:

ENGINEER:

CONTRACTOR:

ORDER NO.

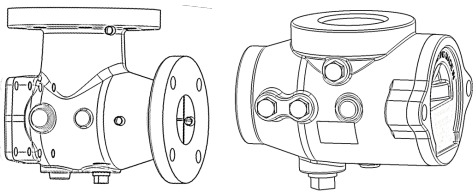
SUBMITTED BY:

APPROVED BY:

DATE: 2025-01-31

DATE:

DATE:



B&G Suction Diffuser Plus

Centrifugal Pump Accessories




DESCRIPTION

The Bell & Gossett Suction Diffuser Plus is designed for direct application to the pump suction and provides ideal flow conditions for the pump, providing NPSH requirements are met. Its integrated Flow Cone directs flow through the unit and into the pump suction while working with the full length straightening vanes to create a more uniform flow profile. The orifice cylinder has a free area equal to five times the cross section of the pump suction opening and serves as a coarse strainer to protect the pump from large sediment. The disposable start-up strainer helps to clean the system during the first 24-48 hours of operation before it is removed. Its optional pressure temperature ports allow you to verify that the start-up strainer has been removed without the need to take the unit apart.


OPERATING DATA

Operating Temperature: 250°F (121°C)  
Working Pressure: 175 psi (1,207 kPa)

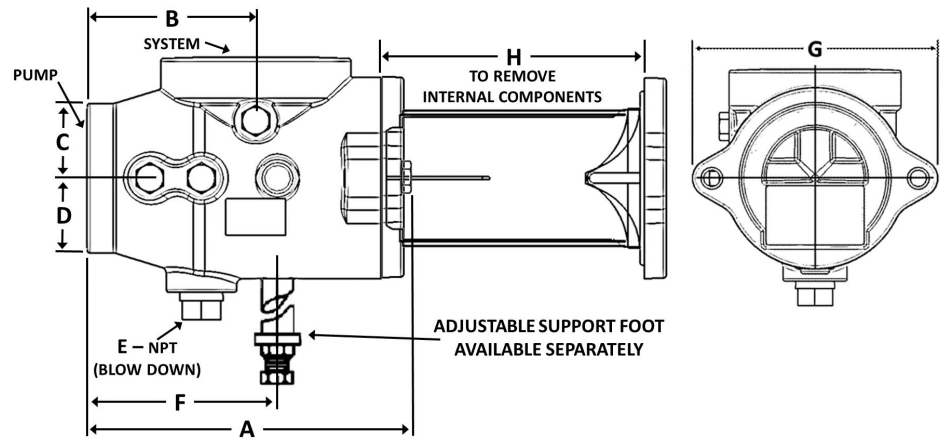
SCHEDULE

MODEL NUMBER	DIMENSIONS INCHES (mm)				TAGGING INFORMATION	X QUANTITY	Z QUANTITY
	SYSTEM SIDE		PUMP SIDE				
BA-3X/BA-3Z	2 (50.8)	FPT	1-1/2 (38.1)	FPT			
 BB-3X/BB-3Z	2 (50.8)	FPT	2 (50.8)	FPT	P-10/11	2	
CB-3X/CB-3Z	2-1/2 (63.5)	FPT	2 (50.8)	FPT			
 CC-3X/CC-3Z	2-1/2 (63.5)	FLG	2-1/2 (63.5)	FLG	P-6/7	2	
DA-3X/DA-3Z	3 (76.2)	FPT	1-1/2 (38.1)	FPT			
DB-3X/DB-3Z	3 (76.2)	FPT	2 (50.8)	FPT			
DC-3X/DC-3Z	3 (76.2)	FLG	2-1/2 (63.5)	FLG			
 DD-3X/DD-3Z	3 (76.2)	FLG	3 (76.2)	FLG	P-8/9	2	
EC-3X/EC-3Z	4 (101.6)	FLG	2-1/2 (63.5)	FLG			
ED-3X/ED-3Z	4 (101.6)	FLG	3 (76.2)	FLG			
EE-3X/EE-3Z	4 (101.6)	FLG	4 (101.6)	FLG			
FE-3X/FE-3Z	5 (127)	FLG	4 (101.6)	FLG			
FF-3X/FF-3Z	5 (127)	FLG	5 (127)	FLG			
GE-3X/GE-3Z	6 (152.4)	FLG	4 (101.6)	FLG			
GF-3X/GF-3Z	6 (152.4)	FLG	5 (127)	FLG			
GG-3X/GG-3Z	6 (152.4)	FLG	6 (152.4)	FLG			
HG-3X/HG-3Z	8 (203.2)	FLG	6 (152.4)	FLG			
HH-3X/HH-3Z	8 (203.2)	FLG	8 (203.2)	FLG			
JH-3X/JH-3Z	10 (254)	FLG	8 (203.2)	FLG			
JJ-3X/JJ-3Z	10 (254)	FLG	10 (254)	FLG			

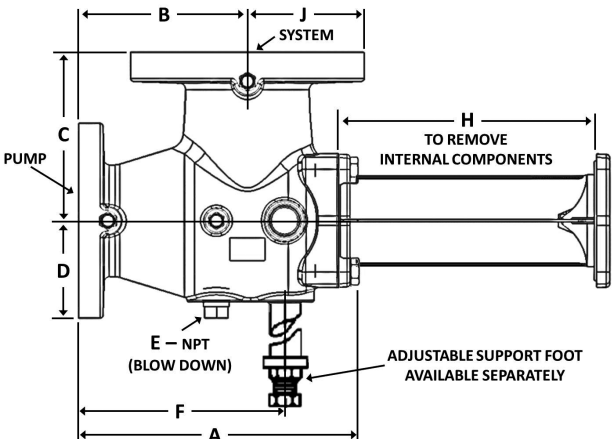
MATERIALS OF CONSTRUCTION

Type	Body	Inlet Vanes	Orifice Cylinder	Start-Up Strainer
 X	Cast Iron	Steel		16 Mesh Bronze
Z	Cast Iron	Stainless Steel		16 Mesh Bronze

NOTES: Type X-For Closed Systems.  
Type Z-For Domestic Water and Tower Systems.



Threaded x Threaded Models



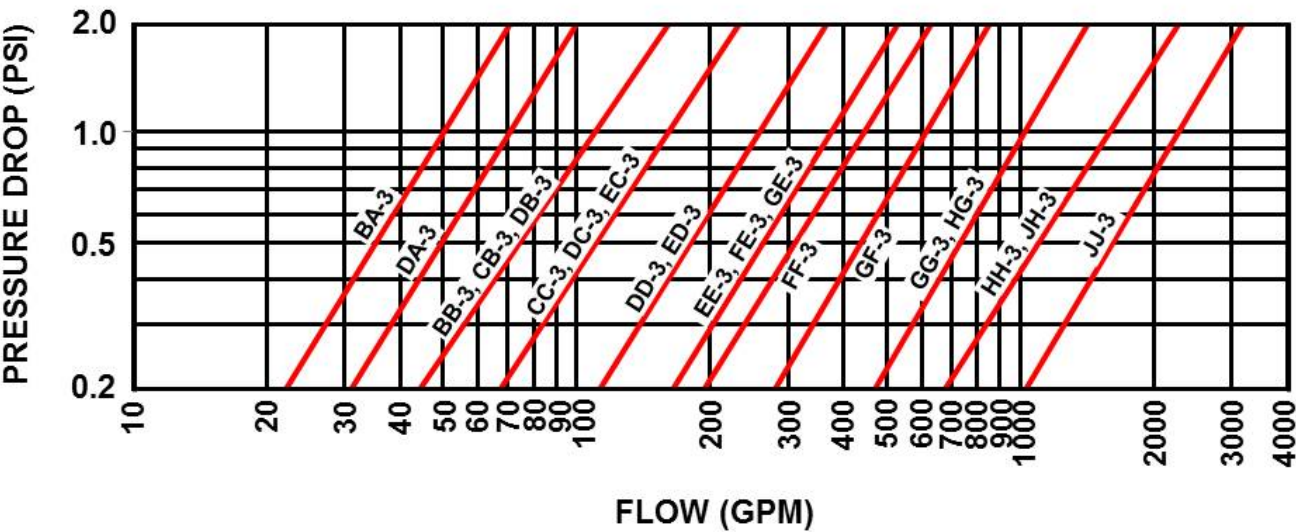
Flange x Flange Models

DIMENSIONS – INCHES (mm)

Model No.	System Side		Pump Side		A	B	C	D	E	F	G	H	J	Orifice Cylinder Free Area in <sup>2</sup> (cm <sup>2</sup> )	Approx. Shpg. Wt. Lbs. (Kg)
BA-3	2 (50.8)	T	1-1/2 (38.1)	T	5.96 (151)	3 (76)	2.25 (57)	2.37 (60)	3/4 (19)	3.81 (97)	5.25 (133)	5.15 (130.8)	N/A	11 (71)	13 (6)
➡ BB-3	2 (50.8)	T	2 (50.8)	T	7.56 (192)	3.87 (98)	2.75 (70)	2.75 (70)	3/4 (19)	4.38 (111)	5.75 (146)	6.75 (171.5)	N/A	20-1/2 (132)	14 (6)
CB-3	2-1/2 (63.5)	T	2 (63.5)	T	7.56 (192)	3.87 (98)	2.75 (70)	2.75 (70)	3/4 (19)	4.38 (111)	5.75 (146)	6.75 (171.5)	N/A	20-1/2 (132)	16 (7)
➡ CC-3	2-1/2 (63.5)	F	2-1/2 (63.5)	F	8.44 (214)	4.75 (121)	4.75 (121)	3.5 (89)	3/4 (19)	5.77 (147)	N/A	7.63 (193.7)	3.5 (89)	26 (168)	36 (16)
DA-3	3 (76.2)	T	1-1/2 (38.1)	T	7.44 (189)	3.87 (98)	2.75 (70)	2.75 (70)	3/4 (19)	4.38 (111)	5.75 (146)	6.63 (168.3)	N/A	20-1/2 (132)	17 (8)
DB-3	3 (76.2)	T	2 (50.8)	T	7.56 (192)	3.87 (98)	2.75 (70)	2.75 (70)	3/4 (19)	4.38 (111)	5.75 (146)	6.75 (171.5)	N/A	20-1/2 (132)	17 (8)
DC-3	3 (76.2)	F	2-1/2 (63.5)	F	8.75 (222)	5 (127)	5 (127)	3.50 (89)	3/4 (19)	5.77 (147)	N/A	7.63 (193.7)	3.75 (95)	26 (168)	44 (20)
➡ DD-3	3 (76.2)	F	3 (76.2)	F	9.56 (243)	5.50 (140)	5.50 (140)	3.75 (95)	3/4 (19)	7.0 (178)	N/A	8.75 (222.3)	3.75 (95)	37-1/2 (242)	48 (22)
EC-3	4 (101.6)	F	2-1/2 (63.5)	F	11 (279)	6.50 (165)	6.50 (165)	3.50 (95)	3/4 (19)	5.77 (147)	N/A	7.63 (193.7)	4.50 (114)	26 (168)	42 (19)
ED-3	4 (101.6)	F	3 (76.2)	F	11 (279.4)	6.50 (165)	6.50 (165)	3.75 (95)	3/4 (19)	7.93 (201)	N/A	10 (254)	4.5 (114)	37-1/2 (242)	55 (25)
EE-3	4 (101.6)	F	4 (101.6)	F	11.5 (292)	6.50 (165)	6.50 (165)	4.50 (114)	3/4 (19)	7.87 (200)	N/A	10.69 (271.5)	4.50 (114)	65 (419)	72 (33)
FE-3	5 (127)	F	4 (101.6)	F	12.5 (318)	7.50 (191)	7.50 (191)	4.50 (114)	3/4 (19)	7.87 (200)	N/A	10.69 (271.5)	5 (127)	65 (419)	84 (38)
FF-3	5 (127)	F	5 (127)	F	13.67 (347)	7.50 (191)	7.50 (191)	5 (127)	3/4 (19)	10.44 (265)	N/A	12.84 (326.1)	5 (127)	90 (581)	100 (45)
GE-3	6 (152.4)	F	4 (101.6)	F	13.5 (343)	8 (203)	8 (203)	4.50 (114)	3/4 (19)	7.87 (200)	N/A	10.69 (271.5)	5.50 (140)	65 (419)	90 (41)
GF-3	6 (152.4)	F	5 (127)	F	15.67 (398)	8 (203)	8 (203)	5 (127)	3/4 (19)	10.46 (266)	N/A	13.84 (351.5)	5.50 (140)	90 (581)	105 (48)
GG-3	6 (152.4)	F	6 (152.4)	F	15.82 (402)	8 (203)	8 (203)	5.50 (140)	3/4 (19)	11 (279)	N/A	14.75 (374.7)	5.50 (140)	127 (819)	134 (61)
HG-3	8 (203.2)	F	6 (152.4)	F	15.82 (402)	9 (229)	9 (229)	5.50 (140)	3/4 (19)	11 (279)	N/A	14.75 (374.7)	6.75 (171)	127 (819)	150 (68)
HH-3	8 (203.2)	F	8 (203.2)	F	19.55 (497)	9 (229)	9 (229)	6.75 (171)	3/4 (19)	12.62 (321)	N/A	18.25 (463.6)	6.75 (171)	218 (1406)	250 (113)
JH-3	10 (254)	F	8 (203.2)	F	19.55 (497)	10 (254)	11 (279)	6.75 (171)	3/4 (19)	12.62 (321)	N/A	18.25 (463.6)	8 (203)	218 (1406)	290 (132)
JJ-3	10 (254)	F	10 (254)	F	22.80 (579)	11 (279)	11 (279)	8 (203)	3/4 (19)	15.68 (398)	N/A	21.50 (546.1)	8 (203)	338 (2180)	415 (188)

(T) Threaded - FPT (F) Flanged \*Dimensions include orifice cylinder + 2-1/2 (64) inch clearance.  
Dimensions are subject to change. Not to be used for construction purposes unless certified.





TYPICAL SPECIFICATIONS

Provide with each pump a Bell & Gossett Suction Diffuser Plus of the size noted on drawings. Units shall consist of angle type body, flanged system connection, integrated Flow Cone, carbon/stainless steel straightening vane and combination diffuser-strainer-orifice cylinder with 3/16" diameter openings for pump protection. The unit shall include a disposable fine mesh strainer which shall be removed after system start-up. Unit shall have pressure/temperature ports at the suction and discharge to allow for measurement of differential pressure across the unit.

Orifice cylinder shall be designed to withstand pressure differential equal to pump shut-off head (maximum \_\_\_\_\_ PSI) and shall have a free area equal to five times cross section area of pump suction opening. Vane length shall be no less than 2-1/2 times the pump connection diameter. Unit shall be provided with adjustable support foot to carry the weight of suction piping.

Unit shall be rated for 175 psi (1,207kPa) maximum working pressure and 250F (121C) maximum working temperature.

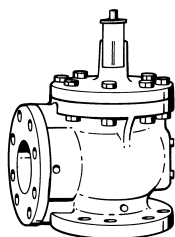
JOB: 22104386 BRAMPTON VICTORIA PARK CONVERTED

REPRESENTATIVE: HTS Engineering

UNIT TAG:  
ENGINEER:  
CONTRACTOR:

ORDER NO.  
SUBMITTED BY:  
APPROVED BY:

DATE: 2025-01-31  
DATE:  
DATE:



Centrifugal Pump Accessories  
**Triple Duty<sup>®</sup> Valve** – with Flanged Ends  
Angle Pattern with Soft Seat Nonslam Check Valve,  
Throttling Valve, Calibrated Balance Valve and Shutoff Valve

**DESCRIPTION**

The Triple Duty Valve is a quiet operating heavy-duty valve which performs all of the functions normally required on the discharge side of hydronic system pumps.

The valve serves as a nonslam check valve as needed for zoned pumping, parallel and standby pumping, and condenser water applications. The spring loaded disk prevents valve chatter, and assures positive shutoff.

Bell & Gossett's Triple Duty Valve has a calibrated nameplate for rough system balance. The Triple Duty Valve is also equipped with Model RV-125A brass readout valves for more accurate system balance.

The calibrated nameplate allows the valve to be returned to the original balance position after shutoff.

To repack under system pressure, turn the valve stem to the fully open position. Turning the valve stem to the closed position provides shutoff.

**CONSTRUCTION MATERIALS**

Body: Cast Iron with Bronze Seat  
Disc: Brass with EPDM Seat Insert  
Stem: Stainless Steel  
Spring: Stainless Steel  
Packing: Teflon-Graphite (Asbestos-free)  
Gasket: Asbestos-free  
Readout Valve: Brass with EPT insert, Check Valve & Gasket

**SCHEDULE** Maximum Working Pressure 175 PSIG (1,207 kPa) – Maximum Operating Temperature 250°F (121°C)

MODEL NO.	PART #	FLANGE SIZE INCHES (mm)	MAXIMUM RECOMMENDED FLOW GPM (m <sup>3</sup> /Hr)	TAGGING INFORMATION	QUANTITY
3D-2S	132131	2 (50.8)	360 (82)	P-10/11	2
3D-2-1/2S	132132	2-1/2 (63.5)	360 (82)	P-6/7	2
3D-3S	132133	3 (76.2)	800 (182)	P-8/9	2
3D-4S	132134	4 (101.6)	1500 (341)		
3D-5S	132135	5 (127)	2050 (466)		
3D-6S	132136	6 (152.4)	2900 (659)		
3D-8S	132137	8 (203.2)	4100 (932)		
3D-10S	132138	10 (254)	6600 (1500)		

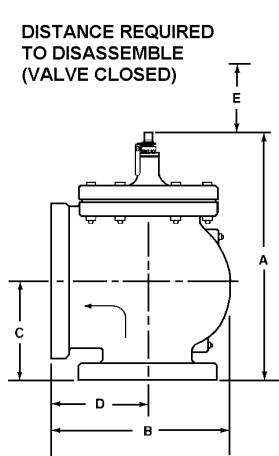
Cv RATING REFERENCE	Cv RATING AT 100% OF STEM RISE <sup>*</sup> (m³/hr)							
	3D-2S	3D-2-1/2S	3D-3S	3D-4S	3D-5S	3D-6S	3D-8S	3D-10S
A	113 (25.7)	106 (24.1)	241 (54.7)	456 (103.6)	632 (143.5)	863 (196.0)	1,239 (281.4)	2,330 (529.2)
B	85 (19.3)	100 (22.7)	202 (45.9)	356 (80.9)	496 (112.7)	733 (166.5)	1,135 (257.8)	1,998 (453.8)




A. FLOWMETER Cv FOR BALANCING. MINIMUM READING OF 3 FEET (.9 m) OF PRESSURE DROP REQUIRED FOR ACCURATE FLOW DETERMINATION.

B. Cv FOR CALCULATING PRESSURE DROP ACCROSS THE VALVE.

NOTE: MAXIMUM RECOMMENDED PRESSURE DROP SHOULD NOT EXCEED 25 FEET (7.6 m).

\* CONTACT YOUR LOCAL BELL & GOSSETT REPRESENTATIVE FOR COMPLETE PERFORMANCE CURVE DATA.



MODEL NUMBER	DIMENSIONS IN INCHES (mm)							APPROX. SHPG. WT. LBS. (Kg)
	FLANGE SIZE*	A		B	C	D	E	
		OPEN	CLOSED					
 3D-2S	2 (50.8)	12-1/8 (308)	11-5/16 (287)	7-15/16 (202)	4-7/16 (113)	4-7/16 (113)	3-1/2 (89)	29 (13)
 3D-2-1/2S	2-1/2 (63.5)	12-5/16 (313)	11-5/16 (287)	7-15/16 (202)	4-7/16 (113)	4-7/16 (113)	3-1/2 (89)	28 (13)
 3D-3S	3 (76.2)	13-7/16 (341)	12-3/16 (310)	8-1/2 (216)	4-3/4 (121)	4-3/4 (121)	3-15/16 (100)	36 (16)
3D-4S	4 (101.6)	17-11/16 (449)	16-3/16 (411)	11 (279)	4-7/8 (124)	6-3/4 (172)	6-1/4 (159)	92 (42)
3D-5S	5 (127)	18-3/8 (467)	16-5/8 (422)	12 (305)	5-1/16 (129)	7 (178)	6-7/8 (175)	112 (51)
3D-6S	6 (152.4)	20-9/16 (522)	18-9/16 (472)	13-1/2 (343)	5-7/8 (149)	8 (203)	8-1/4 (210)	114 (52)
3D-8S	8 (203.2)	24-3/4 (629)	22-1/2 (572)	15-13/16 (402)	7-1/2 (191)	8-9/16 (519)	10-3/8 (264)	260 (118)
3D-10S	10 (254)	29-7/8 (759)	26-5/8 (676)	19-1/2 (495)	10 (254)	10-7/8 (276)	12-1/4 (311)	358 (163)

<sup>\*</sup>STANDARD 125 PSIG (862 kPa) ANSI FLANGES.  
Dimensions are subject to change. Not to be used for construction purposes unless certified.

TYPICAL SPECIFICATIONS

Furnish and install as shown on plans, an angle pattern valve designed to perform the functions of a nonslam check valve, throttling valve, shutoff valve and calibration balancing valve.

The valve shall be a heavy-duty cast iron construction with standard 125 psig (862 kPa) ANSI flanged connections, and rated for a maximum working pressure of 175 psig (1207 kPa) at 250°F (121°C). The valve shall be fitted with a bronze seat, replaceable brass disc with EPDM seat insert, stainless steel stem, and chatter-preventing spring and calibrated nameplate. The valve design shall permit repacking under full system pressure.

The valve shall be equipped with brass readout valve (with integral check valve) for taking differential pressure readings across the orifice for accurate system balance.

Valve Cv rating at full open position not to be less than \_\_\_\_\_. (Refer to the 100% stem rise value shown in row "B" for required valve.)

All valves shall be ITT Bell & Gossett Model No. 3D-\_\_\_\_S Triple Duty Valve.