

FIRE PUMPS

HORIZONTAL SPLIT CASE, END SUCTION, VERTICAL TURBINE,

CONTAINERIZED PUMP, PACKAGED FIRE PUMP, FUEL TANK & ANTI-VORTEX PLATE



CONTENTS



HORIZONTAL SPLIT CASE

Bristol Split Case Pump is a single stage, non-self-priming, centrifugal volute pump with radial suction and discharge port

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END SUCTION

An end suction pump is a centrifugal pump typically designed with a casing feature that suction is present on one end and the discharge is placed at the top.

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VERTICAL TURBINE

This pump is used for any underground water source where the water level is below the pump suction and its Impeller remains submerged with the water tank at all times.

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CONTAINERIZED FIRE FIGHTING PUMPS

Firefighting pump sets assembled inside modified container in accordance with customer specifications and an NFPA requirements

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PACKAGED FIRE FIGHTING SYSTEM

Set of firefighting pumps assembled on engineered skid in accordance with customer specifications and an NFPA requirements

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FUEL TANKS

Aboveground are primarily designed for safe storage of flammable and combustible liquids

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ANTI-VORTEX PLATES

Designed for smooth Laminar flow & diminishing speed of fast moving turbulent flow and employed in suction tank

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END SUCTION TYPE



Description

Are designed according to NFPA 20 for firefighting applications. This pump is designed with latest technology and has premium components for easy maintenance and absolute efficiency .

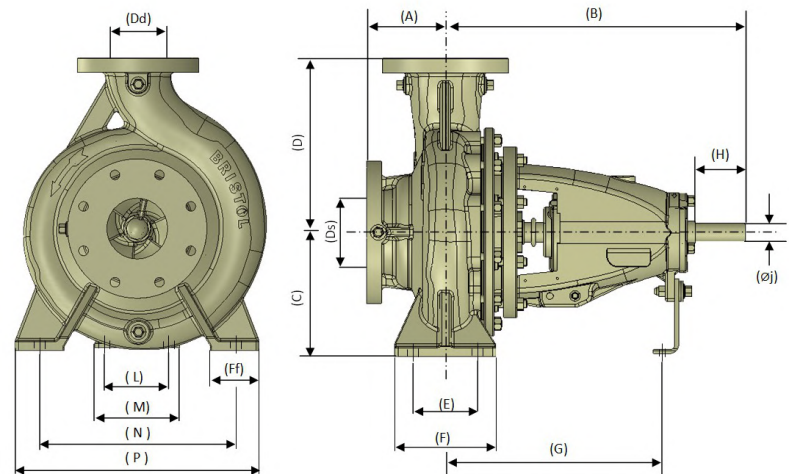
Features

- Available in electric motor driven or engine driven configuration
- UL File No. : EX16459
- Dynamically balanced impellers

Performance Range

- Capacity : From 50 GPM up to 1000 GPM
- Head : From 50 MTR up to 209 MTR

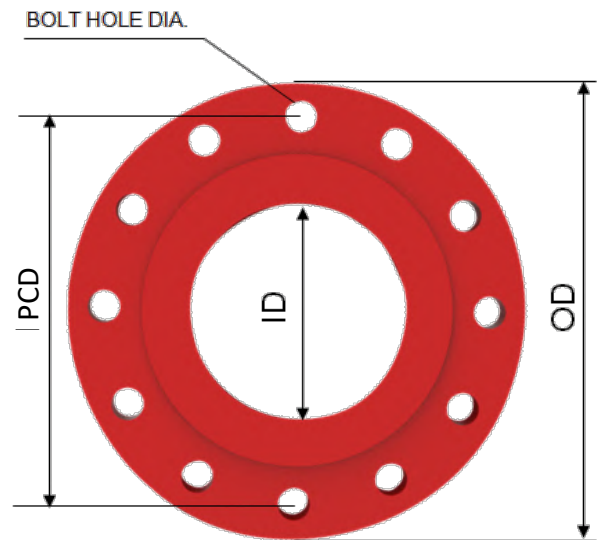
Pump Dimensions



MODEL	A	B	C	D	E	F	Ff	G	H	L	M	N	P	Øj	keyway
IS32 - 200	80	360	160	183.5	70	100	50	267	49	110	140	190	240	22.2	4.7X4.7X32 Form A
IS32 - 260	100	360	180	228	95	125	65	267	49	110	140	250	320	22.2	4.7X4.7X32 Form A
IS50 - 320H	125	470	225	285.6	95	125	65	342	79.4	110	140	280	345	28.5	6.35X6.35X44.5 Form A
IS65 - 320H	125	470	225	280	120	160	80	342	79.4	110	140	315	400	28.5	6.35X6.35X44.5 Form A
IS80 - 260	125	470	200	280	120	160	80	342	79.4	110	140	315	400	28.5	6.35X6.35X44.5 Form A
IS80 - 320H	125	470	250	317.4	120	160	80	342	79.4	110	140	315	400	28.5	6.35X6.35X44.5 Form A
IS100 - 260	140	470	225	280	120	160	80	342	79.4	110	140	315	400	28.5	6.35X6.35X44.5 Form A
IS100 - 320H	142	470	250	316	120	160	80	342	79.4	110	140	315	400	28.5	6.35X6.35X44.5 Form A
BEP 3X2.5LP	105	465	180	225	95	125	65	337	80	110	140	250	320	32	6X6X35 Form A
BEP 4X3LP	125	470	180	250	95	125	65	342	80	110	140	280	345	32	8X8X56 Form A
BEP 5X4 HH	140	529	250	315	120	160	80	369	97	110	160	315	400	42	12X8X80 Form C



End Suction Pump Flange Details

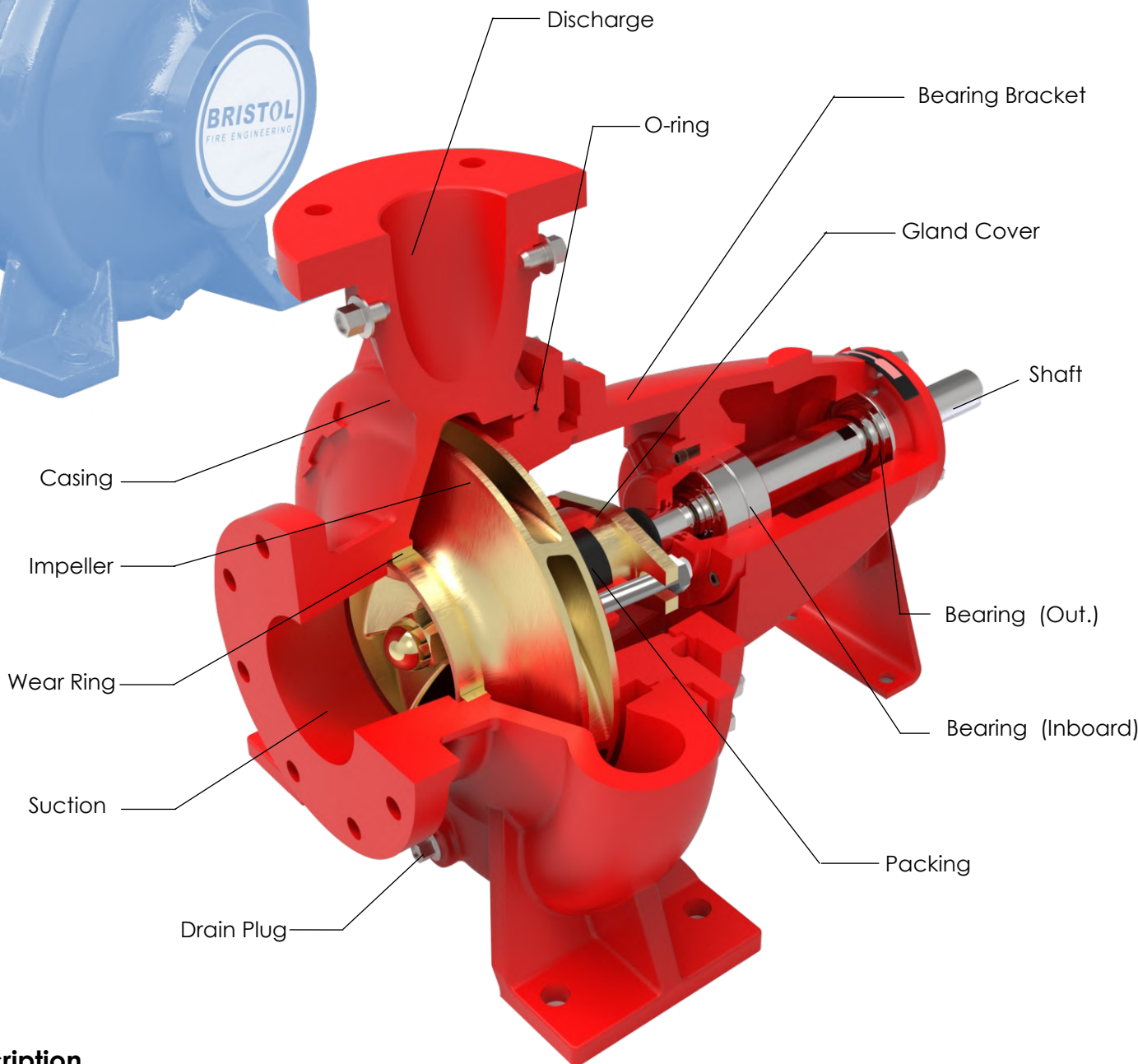


Model	Suction Flange					Discharge Flange				
	ID	OD	No. of Holes	Bolt Hole DIA	PCD	ID	OD	No. of Holes	Bolt Hole DIA	PCD
IS32-200	50	165	4	5/8"- 11UNC-2B	120.7	32	140	4	1/2"- 13UNC-2B	88.9
IS32-260	50	165	4	5/8"- 11UNC-2B	120.7	32	140	4	1/2"- 13UNC-2B	88.9
IS50-320H	65	185	4	5/8"- 11UNC-2B	139.7	50	165	4	5/8"- 11UNC-2B	120.7
IS65-320H	80	200	4	5/8"- 11UNC-2B	152.4	65	185	4	5/8"- 11UNC-2B	139.7
IS80-260	100	229	8	5/8"- 11UNC-2B	190.5	80	200	4	5/8"- 11UNC-2B	152.4
IS80-320H	100	229	8	5/8"- 11UNC-2B	190.5	80	200	4	5/8"- 11UNC-2B	152.4
IS100-260	125	254	8	3/4"- 10UNC-2B	215.9	100	229	8	5/8"- 11UNC-2B	190.5
IS100-320H	125	254	8	3/4"- 10UNC-2B	215.9	100	229	8	5/8"- 11UNC-2B	190.5
BEP 3X2.5LP	80	200	8	18	158.75	65	190.5	4	18	150
BEP 4X3LP	100	220	8	18	181	80	200	8	18	158.75
BEP 5X4 HH	125	255	8	22	216	100	230	8	19	190.5

* Standard for Cast Iron Flanged Fittings : ANSI / ASME B16.1

* Standard for Ductile Iron Flanged Fittings : ANSI/ASME B16.42

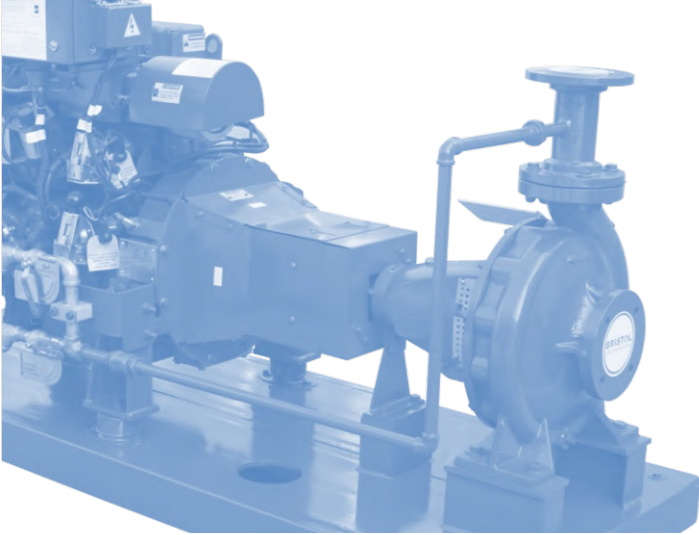
End Suction Pump Components



Description

- Casing** - Ductile Iron 65-45-12 - Heavy-duty power frame
- Impeller** - Bronze / Stainless Steel
- Wear Ring** - Bronze is standard for the certified ANSI pumps radially split casing with flange connection
- Suction** - Horizontal End Suction ANSI 150# or 300# flange drilling is available based on material selection
- Discharge** - Vertical Centreline Discharge

- Bearing Bracket-** Ductile Iron 65-45-12 - Heavy-duty power frame
- Gland Cover** - Bronze - to house a gland seal
- Shaft** - Stainless Steel - Sleeve shaft as standard for extended seal life
- Bearing (Out.)** - Deep Grooved Ball Bearing
- Bearing (Inb.)** - Deep Grooved Ball Bearing



End Suction Pump Selection Chart



Model	Rated Capacity (GPM)	Size (In)	UL Listed Pressure (PSI)	FM Approved Pressure (PSI)	Rated Speed (RPM)
IS32 – 200	50	2 x 1 1/4	62-95		2950
IS32 – 200	50	2 x 1 1/4	55-85		2800
IS32 – 260	50	2 x 1 1/4	113 - 130		2950
IS50 – 320H	50	2 1/2 x 2	103-167		2600
IS50 – 320H	50	2 1/2 x 2	88-142		2400
IS32 – 260	100	2 x 1 1/4	103 - 125		2950
IS50 – 320H	100	2 1/2 x 2	178-298		3500
IS50 – 320H	100	2 1/2 x 2	132-210		2950
IS50 – 320H	100	2 1/2 x 2	119-189		2800
IS50 – 320H	100	2 1/2 x 2	102-166		2600
IS50 – 320H	100	2 1/2 x 2	87-141		2400
BEP 3X2.5 LP	100	3 x 2 1/2	60-92		2950
BEP 3X2.5 LP	100	3 x 2 1/2	62-95		3000
BEP 3X2.5 LP	100	3 x 2 1/2	87-134		3550
IS50 – 320H	150	2 1/2 x 2	177-296		3500
IS50 – 320H	150	2 1/2 x 2	132-209		2950
IS50 – 320H	150	2 1/2 x 2	118-188		2800
IS50 – 320H	150	2 1/2 x 2	99-165		2600
IS50 – 320H	150	2 1/2 x 2	84-140		2400
BEP 3X2.5 LP	150	3 x 2 1/2	59-91		2950
BEP 3X2.5 LP	150	3 x 2 1/2	61-94		3000
BEP 3X2.5 LP	150	3 x 2 1/2	86-132		3550
BEP 3X2.5 LP	200	3 x 2 1/2	58-90		2950
BEP 3X2.5 LP	200	3 x 2 1/2	60-93		3000
BEP 3X2.5 LP	200	3 x 2 1/2	85-130		3550
IS50 – 320H	200	2 1/2 x 2	173-296		3500
IS50 – 320H	200	2 1/2 x 2	127-209		2950
IS50 – 320H	200	2 1/2 x 2	113-188		2800
IS65 – 320H	200	3 x 2 1/2	159-290		3500
IS65 – 320H	200	3 x 2 1/2	108-201		2950
IS65 – 320H	200	3 x 2 1/2	97-181		2800
IS65 – 320H	200	3 x 2 1/2	104-158		2600
IS65 – 320H	200	3 x 2 1/2	88-133		2400
IS80 – 260	200	4 x 3		111-151	2950
IS80 – 260	200	4 x 3		115-157	3000
IS65 – 320H	250	3 x 2 1/2	157-290		3500
IS65 – 320H	250	3 x 2 1/2	107-201		2950
IS65 – 320H	250	3 x 2 1/2	97-181		2800
IS65 – 320H	250	3 x 2 1/2	102-155		2600
IS65 – 320H	250	3 x 2 1/2	85-131		2400
BEP 3X2.5 LP	250	3 x 2 1/2	55-88		2950
BEP 3X2.5 LP	250	3 x 2 1/2	57-91		3000
BEP 3X2.5 LP	250	3 x 2 1/2	83-129		3550
BEP 3X2.5 LP	300	3 x 2 1/2	52-85		2950
BEP 3X2.5 LP	300	3 x 2 1/2	80-126		3550
IS65 – 320H	300	3 x 2 1/2	155-289		3500
IS65 – 320H	300	3 x 2 1/2	107-201		2950
IS65 – 320H	300	3 x 2 1/2	97-181		2800
IS65 – 320H	300	3 x 2 1/2	98-152		2600
IS65 – 320H	300	3 x 2 1/2	82-128		2400
IS80 – 260	300	4 x 3		111-150	2950
IS80 – 260	300	4 x 3	167-222	153-206	3550
IS80 – 260	300	4 x 3		115-156	3000
IS80 – 320H	300	4 x 3	159-203		2950
IS80 – 320H	300	4 x 3	143-183		2800

Model	Rated Capacity (GPM)	Size (In)	UL Listed Pressure (PSI)	FM Approved Pressure (PSI)	Rated Speed (RPM)
BEP 3x2.5 LP	300	3 x 2 1/2	54-88		3000
BEP 4x3 LP	300	4 x 3	55-89		2950
BEP 4x3 LP	300	4 x 3	57-92		3000
BEP 4x3 LP	300	4 x 3	82-130		3550
IS80 – 260	400	4 x 3	165-222	152-206	3550
IS80 – 260	400	4 x 3	105-139	110-149	2950
IS80 – 320H	400	4 x 3	158-203		2950
IS80 – 320H	400	4 x 3	142-183		2800
IS100 – 320H	400	5 x 4	123-158	122-236	2950
IS100 – 320H	400	5 x 4	110-142		2800
IS100 – 320H	400	5 x 4	98-172	118-168	2600
IS100 – 320H	400	5 x 4	83-147		2400
BEP 4X3 LP	400	4 x 3	54-87		2950
BEP 4X3 LP	400	4 x 3	56-90		3000
BEP 4X3 LP	400	4 x 3	79-127		3550
IS80 – 260	400	4 x 3	109-144	114-154	3000
IS100 – 320H	400	5 x 4	133-163	126-244	3000
BEP 4X3 LP	450	4 x 3	53-85		2950
BEP 4X3 LP	450	4 x 3	55-88		3000
BEP 4X3 LP	450	4 x 3	78-126		3550
IS80 – 320H	450	4 x 3	157-203		2950
IS80 – 320H	450	4 x 3	140-182		2800
IS100 – 320H	450	5 x 4	122-158		2950
IS100 – 320H	450	5 x 4	110-142		2800
IS100 – 320H	450	5 x 4	98-172		2600
IS100 – 320H	450	5 x 4	83-147		2400
IS100 – 320H	450	5 x 4	133-164		3000
IS80 – 260	500	4 x 3	101-137	108-146	2950
IS80 – 260	500	4 x 3	163-220	150-204	3550
IS80 – 320H	500	4 x 3	155-202		2950
IS80 – 320H	500	4 x 3	136-182		2800
IS100 – 260	500	5 x 4	144-212	134-197	3550
IS100 – 320H	500	5 x 4	122-226	121-235	2950
IS100 – 320H	500	5 x 4	110-142		2800
IS100 – 320H	500	5 x 4	97-172	116-168	2600
IS100 – 320H	500	5 x 4	82-147		2400
BEP 4X3 LP	500	4 x 3	51-84		2950
BEP 4X3 LP	500	4 x 3	53-87		3000
BEP 4X3 LP	500	4 x 3	78-125		3550
IS80 – 260	500	4 x 3	106-142	112-152	3000
IS100 – 320H	500	5 x 4	124-234	125-244	3000
BEP 5X4 HH	500	5 x 4	155-244		2950
IS100 – 320H	750	5 x 4	119-224	119-233	2950
IS100 – 320H	750	5 x 4	104-131		2800
IS100 – 320H	750	5 x 4	89-166	111-166	2600
IS100 – 260	750	5 x 4	113-139	111-143	2950
IS100 – 260	750	5 x 4	140-212	134-195	3550
IS100 – 320H	750	5 x 4	119-232	123-241	3000
IS100 – 260	750	5 x 4	118-144	115-149	3000
BEP 5X4 HH	750	5 x 4	149-239		2950
IS100 – 260	1000	5 x 4	104-131	109-141	2950
IS100 – 260	1000	5 x 4	132 - 208	130-194	3550
IS100 – 260	1000	5 x 4	109-137	113-146	3000
BEP 5X4 HH	1000	5 x 4	140-231		2950



FUEL TANK

Bristol Aboveground tanks are primarily designed for safe storage of flammable and combustible liquids. These tanks are designed, fabricated, tested and labelled in accordance with underwriters laboratories, Inc. UL-142 (Steel Aboveground Tanks for Flammable and Combustible Liquids) standard. Tanks are designed and engineered to meet the demanding needs of many industries.



Type	Tank Capacity (US Gal)		Type	Tank Capacity (US Gal)	
	Listed	Non-Listed		Listed	Non-Listed
Single wall (SW)	25	25	Double wall (DW)	-	25
	70	70		70	70
	120	120		120	120
	180	180		180	180
	280	280		280	280
	360	360		360	360
		400		545	400
		460		770	460
		545		1000	545
		770			770
	1000		1000		

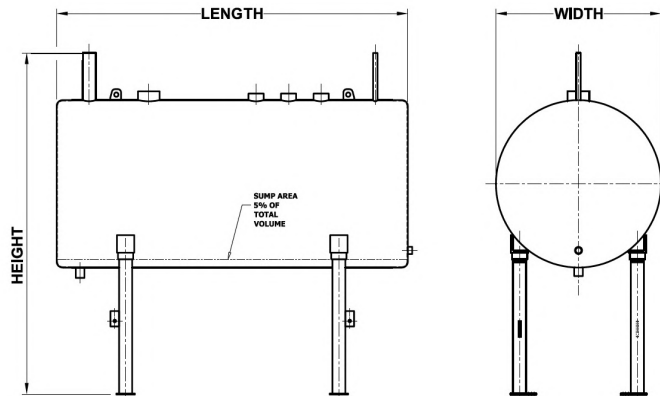


We have experienced team that offers quality engineering and support to help you customize your tank to your specific application. Our tanks are produced according to the highest standards for the commercial, industrial, public and private sectors.

Features

- UL-142 Label
- Standard Capacity: 25 - 1000 US gal.
- MS steel Thickness of 3mm and more.
- connections for normal and emergency venting, gauging, filling and product piping
- Lifting lugs for listed
- Structural legs for easy installation
- Primer paint, Red spray paint finished
- UL File No. MH60409

Tank Dimension

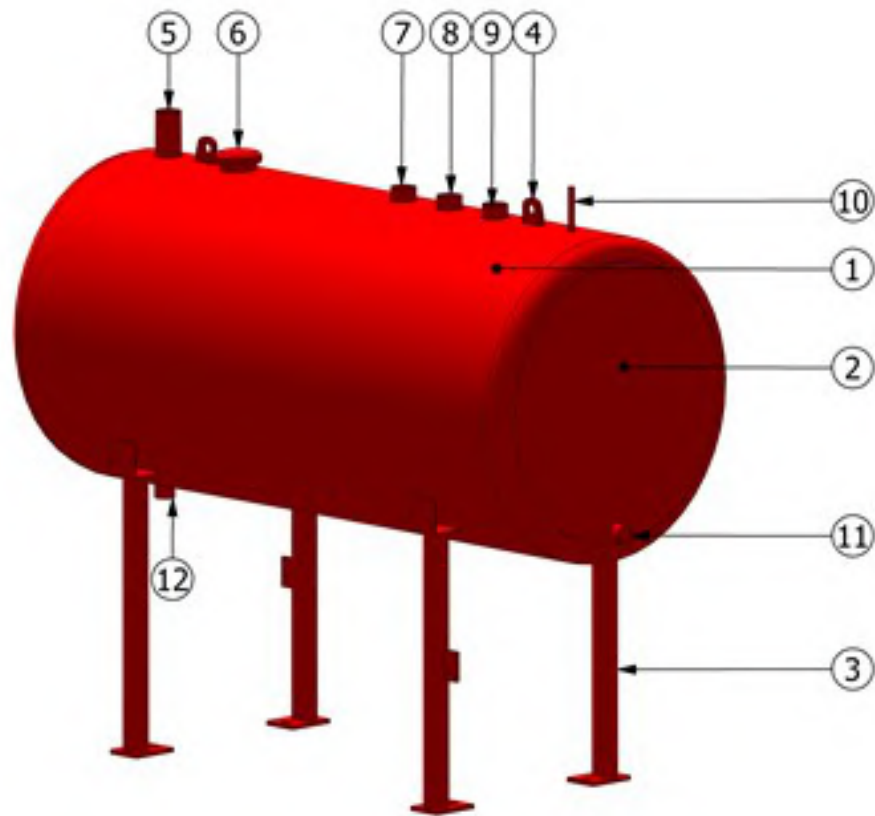


Tank Capacity	Type	Approx. Dimension (Inches)		
		Length	Width	Height
25	SW	33	16	51
70	SW	47	22	49
	DW	49	26	52
120	SW	44	30	57
	DW	47	34	60
180	SW	63	30	57
	DW	67	34	60
280	SW	52	42	66
	DW	55	46	69
360	SW	63	42	66
	DW	67	46	69

* For higher capacities contact Bristol



FUEL TANK COMPONENTS



Description (Typically)

- | | |
|---|---------------------------------------|
| 1. Tank Shell | 7. Normal Vent (2") |
| 2. End Cap (Dish Head) | 8. Fuel Indicator Gauge Connection 2" |
| 3. Leg Assembly | 9. Fuel Switch Connection 2" |
| 4. Lifting Lug (Listed) | 10. Return Connection 1" |
| 5. Fill Cap w/ Provision for pad-lock w/
removable Strainer (1/16" mesh)
(Optional) | 11. Discharge Connection 1-1/4" |
| 6. Emergency Vent (Primary/ Secondary) | 12. Drain Connection |

ANTI-VORTEX PLATES

In accordance with NFPA 20 & 22

About Anti-Vortex Plates:

A vortex is a "Turbulent Flow" that must be controlled to prevent damage to rotating parts. A vortex is a region formed in a fluid when the fluid's flow rotates around an axis line and the fluid flows in a swirling motion at a high velocity towards pump intake.

Bristol Anti-vortex Plates aid to diminishing the speed of a fast moving turbulent flow and smoothen it into a laminar flow, thus reducing wear and tear. **Bristol** Anti-vortex Plates also aid to prevent cavitation (small liquid-free zones such as bubbles or voids) in the fluid. Cavitation can create dents, shock waves and imbalance in the moving parts. Once cavitation affects a surface it tends to erode at an accelerating rate. This makes the surface prone to stress corrosion.

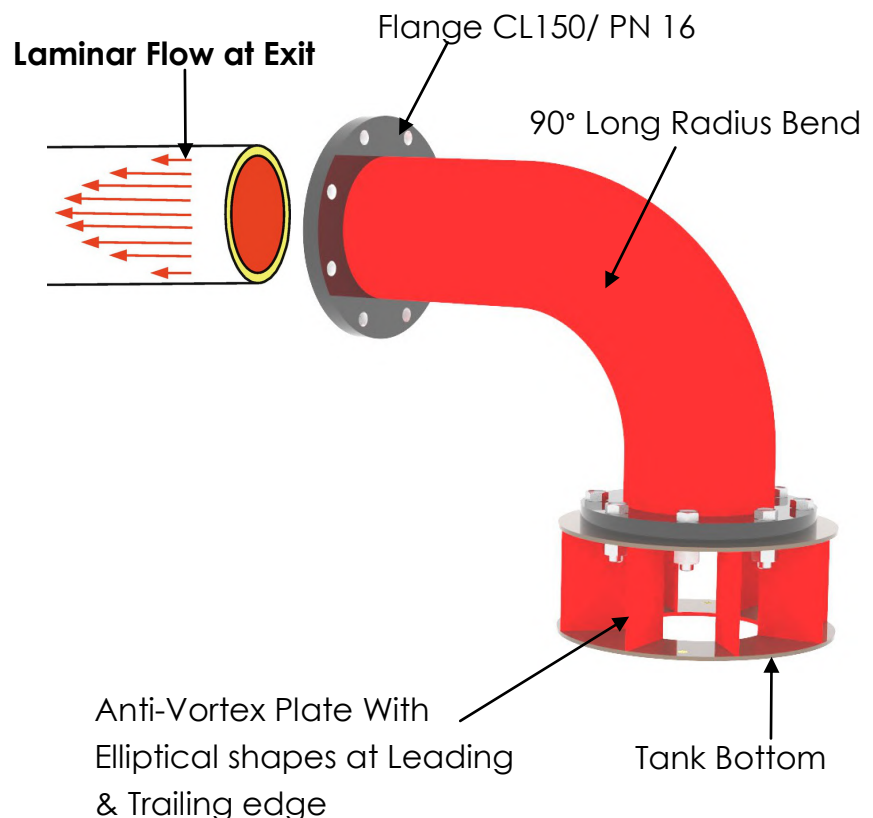
To avoid these issues **Bristol Anti-Vortex Plates** are recommended to installed in the suction line of fire pumps to control the turbulence in flowing water. They are simple in design and very effectively controlling the velocity of the fluid thus preventing cavitation and damage to the impellers. Also it supports off duty conditions when static pressure reduces at the suction along with elevation of the water side level in the tank.

Features

- ◆ Anti-Vortex Plate design is in accordance with NFPA 20/22
- ◆ Where a tank is used as the suction source for a fire pump, the discharge outlet of the tank shall be equipped with an assembly that controls vortex flow in accordance with NFPA 22. i.e. Recommended to use Anti-Vortex Plate.
- ◆ Anti-Vortex plates are provided with Elliptical shapes at leading & trailing edge for getting streamlined flow.
- ◆ The water velocity at the Anti-Vortex Plate is maintained below 1m/Sec limit for maximum flow condition
- ◆ The minimum distance above the bottom of the tank shall be 152 mm (6 Inch).

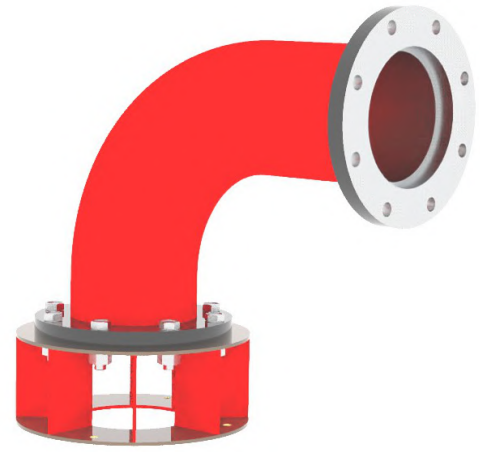
Material:

- Mild Steel (Standard)
- SS 304/SS316 (Optional)





Anti-Vortex Plate: Grooved Design



Anti-Vortex Plate: Flanged Design

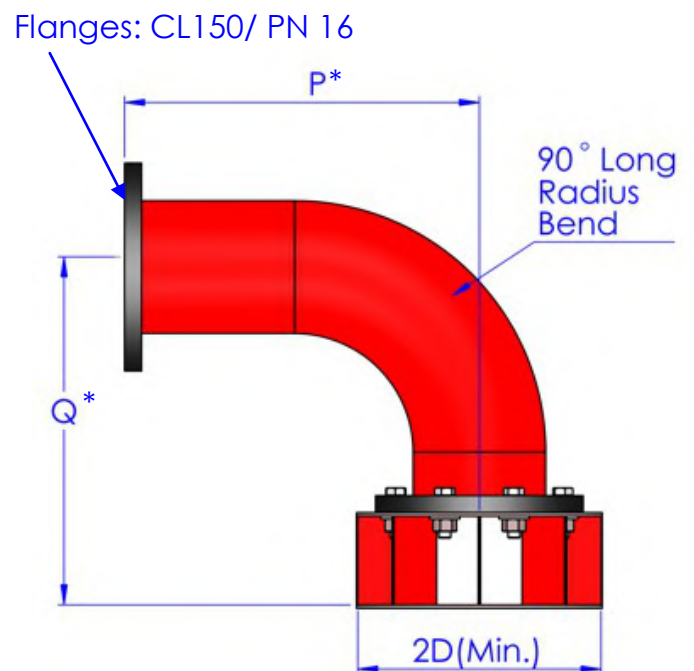
Bristol offers two types of Anti-Vortex plate design to suit Client requirements:

1. Fully assembled **Anti-Vortex Plates with Flanged design**
2. **Anti-Vortex Plates with Grooved Design** to suit site conditions

Selection of Anti-Vortex Plate:

- The sizes indicated in the table below shall be used as a minimum size of the suction pipe & Anti-Vortex Plate .
- Below table shows dimensions for standard Anti-Vortex Plate Design off the Shelf available with **Bristol**.

Pump Rating (GPM)	Min. Suction Size (Inch)	P* (mm)	Q* (mm)
300	4	406	252
400	4	406	252
450	5	406	290
500	5	406	290
750	6	457	331
1000	8	558	405
1250	8	558	405
1500	8	558	405
2000	10	660	481
2500	10	660	481
3000	12	762	557
3500	12	762	557



- ◆ Depending upon site requirements Bristol provides **Custom build Anti-Vortex plates** Assembly. (P* & Q* dimensions are as standard scope & can be varied to suit client requirement)
- ◆ *For higher capacities contact Bristol*