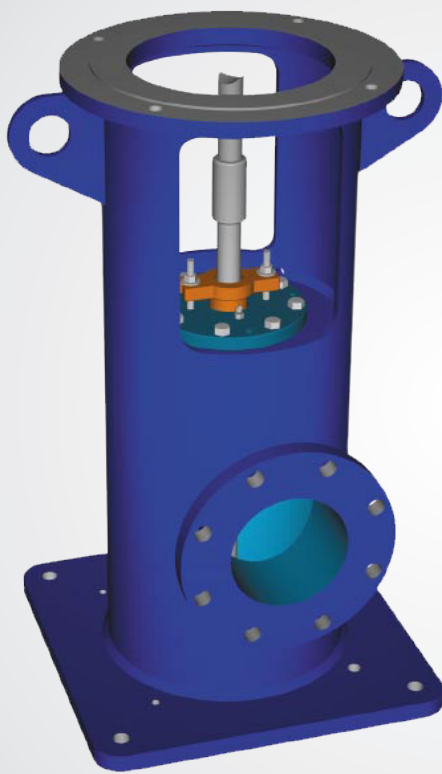


“Building a reputation not resting on one”

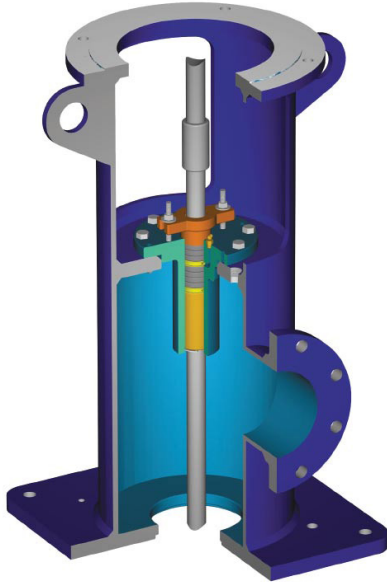
*Product Brochure - 60 Hz.*

## Pump Accessories



## FDH (Fabricated Steel Discharge Head)

For Vertical Turbine Pumps



### Features & Benefits

- Product Lubricated High-Pressure Stuffing Box
- NEMA Type "P" Fit Drivers (BD=16½")
- 150 # ANSI Flanged Discharge Connection
- Flanged Column Connection
- 1 in. Thick Square Steel Sole Plate
- Ductile Iron Stuffing Box and Bronze Packing Gland
- Lifting Lugs
- Integral Air Separation Chamber
- Sand Blasted to a Near White Metal (SSPC-SP6)
- Urethane Enamel Paint Over an Industrial Epoxy Primer

|                   |                                  |
|-------------------|----------------------------------|
| Drive Shaft:      | 1¼", 1½" (Optional)              |
| Discharge Flange: | 6", 8" (std.), 10", 12", and 14" |
| Flanged Column:   | 6", 8" (std.), 10", 12", and 14" |

PLAD FDH fabricated steel discharge heads are designed to provide a larger window for easier access to the headshaft coupling and product lubricated stuffing box.

This heavy-duty fabricated steel discharge head features a high pressure stuffing box with bronze bearing. The standard design includes a by-pass line for proper lubrication and cooling of the stuffing box.

PLAD FDH fabricated steel discharge heads have twice the tensile strength of similar cast iron models, allowing the FDH to exceed cast iron pressure ratings.

The extended discharge head configuration provides:

- A larger working area.
- A higher discharge connection.
- An air separation chamber.
- Enough space to install an air release valve directly on top of the discharge head.

## FDH (Fabricated Steel Discharge Head)

### Suggested Product Specifications

The vertical turbine pump discharge head shall be fabricated of carbon steel featuring a minimum of 60,000 psi tensile strength and shall be capable of withstanding a working pressure of 275 psi.

The discharge flange shall be a 150 # ANSI flat face flange per ANSI B16.5.

The column connection under the discharge head shall be fabricated to receive a specially machined 150 # flange that features a precise center guide raised face.

The discharge head shall accept a NEMA Type “P” standard base, vertical hollow shaft motor with a BD of 16½”.

The discharge head shall be designed to allow air to be discharged through an air release valve mounted directly on top of the head.

A product lubricated high pressure stuffing box containing two lantern rings and six rings of 100% graphite packing shall be provided.

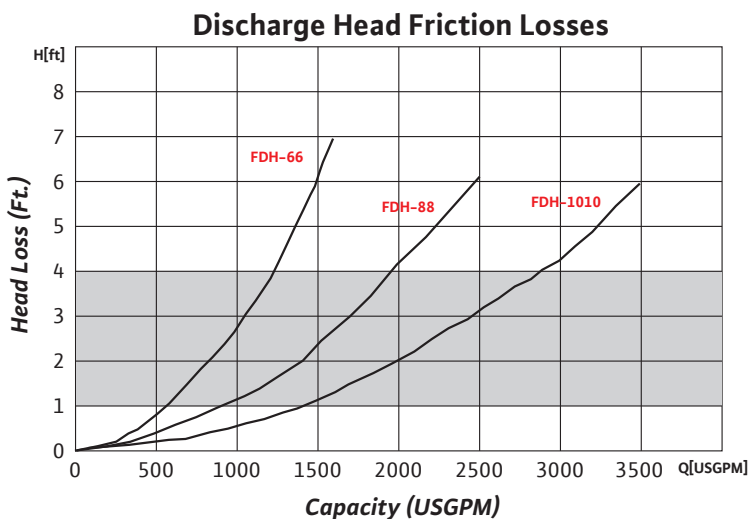
Such packing shall be compressed around the drive shaft by an adjustable bronze packing gland.

A by-pass line shall release water from the first lantern ring for proper cooling and packing lubrication. The discharge head stuffing box area shall include a drain which will be piped, by the contractor, underneath the discharge head sole plate.

The discharge head shall be sand or grit-blasted to a near white metal condition under SSPC-SP-6 requirements and shall immediately thereafter be painted with an industrial epoxy primer (1-GP-165) to a thickness of 5 to 6 mils, in order to receive a final coat of urethane enamel paint, for a total minimum thickness of 10 to 12 mils.

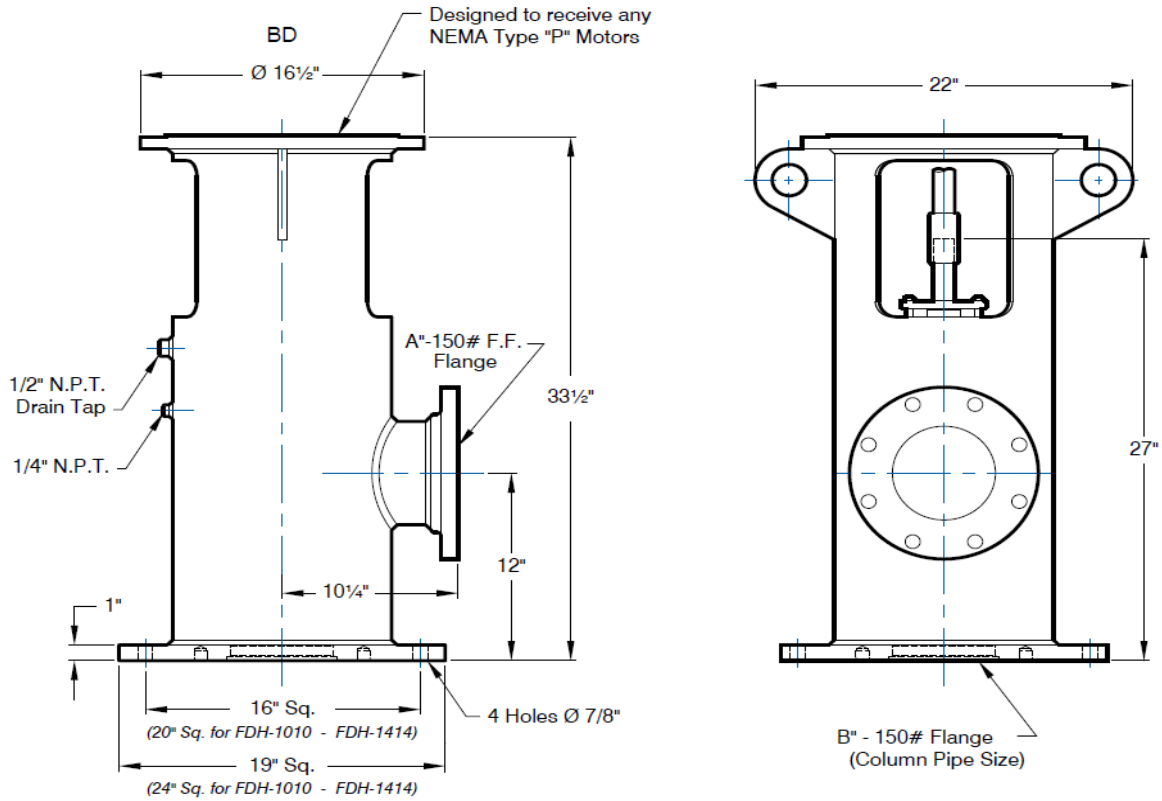
An optional ductile iron bearing retainer with neoprene bearing installed between the flange column connection and the discharge head is also available.

The fabricated steel discharge head shall be model FDH-\_\_\_\_\_ as manufactured by Plad Equipment Ltd.



# FDH (Fabricated Steel Discharge Head)

## Dimensions



| Model Number | Flange Discharge<br>A - Size (150 #) | Flange Column<br>B - Connection | Maximum BD<br>Driver | Max. Head<br>Shaft Diam. | Weight<br>(Pounds) |
|--------------|--------------------------------------|---------------------------------|----------------------|--------------------------|--------------------|
| FDH-66 *     | 6"                                   | 6"                              | $16\frac{1}{2}"$     | $1\frac{1}{4}"$          | 350                |
| FDH-68 *     | 6"                                   | 8"                              | $16\frac{1}{2}"$     | $1\frac{1}{4}"$          | 375                |
| FDH-88       | 8"                                   | 8"                              | $16\frac{1}{2}"$     | $1\frac{1}{2}"$          | 400                |
| FDH-1010     | 10"                                  | 10"                             | $16\frac{1}{2}"$     | $1\frac{1}{2}"$          | 425                |
| FDH-1214     | 12"                                  | 12"                             | $16\frac{1}{2}"$     | $1\frac{1}{4}"$          | 474                |
| FDH-1414     | 14"                                  | 14"                             | $16\frac{1}{2}"$     | $1\frac{1}{4}"$          | 500                |

\* Standard Model in Stock.

Note:  $1\frac{1}{4}"$  Shaft diameter is standard,  $1\frac{1}{2}"$  is an optional feature.

### FDH-66 & FDH-88 in Stock!

All PLAD FDH discharge heads are custom fabricated and can be built to your exact specifications, within an 8 to 12 weeks delivery schedule, except for the FDH-66 and FDH-88 models that Plad keep in stock for standard applications.

### PLAD FDH is VFD rated!

The FDH head is particularly suited for VFD applications. Its elongated shape makes the structure more flexible, keeping natural frequencies low and out of the operating range. Because the discharge head is steel fabricated, critical speeds can be accurately determined and avoided.

## FDH (Fabricated Steel Discharge Head)

### PLAD FDH Optional Features

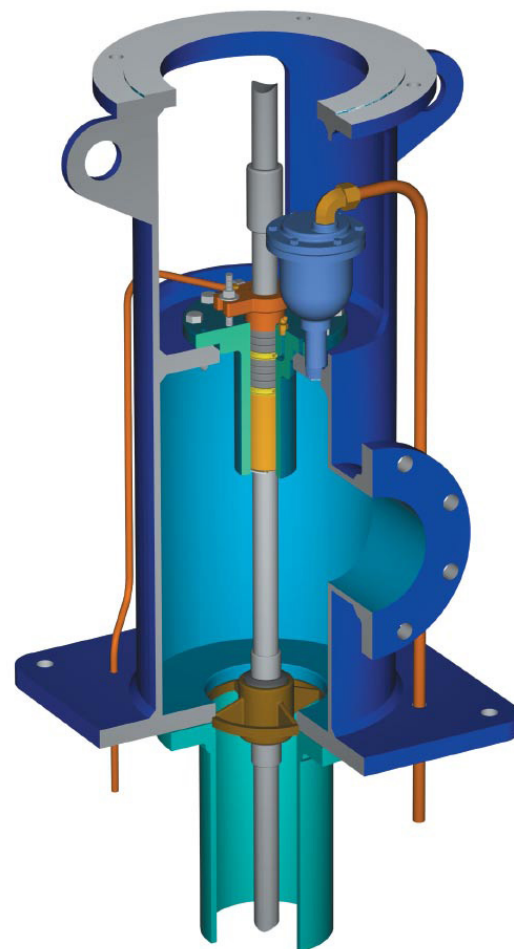
There are several optional features available on the PLAD FDH fabricated discharge head. These features shall be identified by suffixes added to the discharge head model number.

Example: FDH-66AS

- A = Air release valve assembly
- S = Spider bearing retainer under head

| Suffix | Description   |
|--------|---|
| A      | Air release valve assembly mounted on top of discharge head.                        |
| B      | 12" BD motor adaptor plate.   |
| C      | Turbine in a can configuration.   |
| D      | Packing gland drain line.   |
| E      | Reduced discharge flange adaptor 6" x 5" - 150 # ANSI for FDH-66.                   |
| F      | Reduced discharge flange adaptor 6" x 4" - 150 # ANSI for FDH-66.                   |
| L      | Sole plate leveling bolts.  |
| S      | Spider bearing retainer assembly in between discharge head and flanged column pipe. |
| 3      | 300 # ANSI discharge flange.  |

Contact Plad Factory for any Special Material or Other Feature Requirements.



**FDH-66AS**

The above figure illustrates the FDH-66AS fabricated steel discharge head with the optional air release valve assembly and optional spider bearing retainer installed on the underside. This reduces vibration and drive shaft deflection, providing longer life at the stuffing box level.

| General Material Specification |              |                   |
|--------------------------------|--------------|-------------------|
| Description                    | Material     | Grade             |
| Discharge Head                 | Steel        | ASTM A36-90       |
| Stuffing Box                   | Ductile Iron | ASTM A536-84      |
| Stuffing Box Bearing           | Bronze       | ASTM B505         |
| Packing Gland                  | Bronze       | ASTM B505         |
| Lantern Rings                  | Bronze       | ASTM B505         |
| Stuffing Box O'Ring            | Elastomer    | Buna N            |
| Snap Ring                      | Steel        | Zinc Plated       |
| Studs and Nuts                 | Steel        | Zinc Plated       |
| Packing Rings                  | Graphite     | Teflon Reinforced |

## PSD Suction Diffuser

Suction Diffuser  
Cast Iron (ASTM A 126, Class B)  
125 lb. Flanged



### Applications

The PSD mounts to the suction side of a pump in either a horizontal or vertical position. It is designed to remove any foreign matter that may be hazardous to the pump or other system components, while providing the proper flow conditions to the pump. Where space is limited, the PSD can be used as an elbow (in some cases a reducing elbow) with a built in strainer for easy maintenance and system performance.

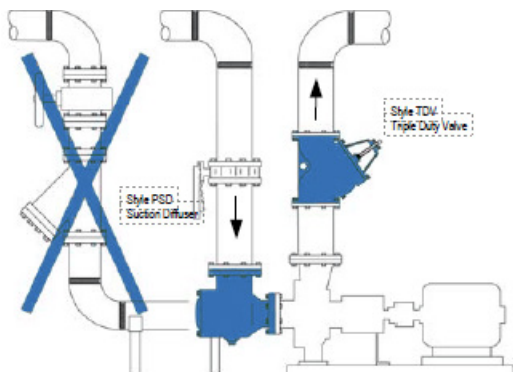
### Construction

The PSD Suction Diffusers are constructed from rugged cast iron castings that are machined to exacting specifications. These bodies have drilled flanges that are in accordance with ASME B16.1.

### Features & Benefits

- Reduces installation costs by replacing the strainer, elbow, and entry pipe on the suction side of the pump.
- Integral straightening vanes ensure uniform flow to the suction inlet of the pump.
- Minimal pressure drop (Oversized body & screen).
- Perforated stainless steel screen with a 20 mesh stainless steel removable start-up sleeve to help promote a cleaner more trouble free system.
- Bolted cover plate with O-ring seal – standard. (Knobs available upon request).
- Cast supporting pads on the diffuser body offer easy mounting of standard I.D. support foot.
- Tapping for inlet and outlet differential connections – Optional.
- Drain connection with plug – standard.

### TYPICAL INSTALLATION

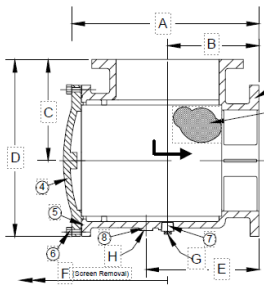


### WORKING PRESSURES - NON SHOCK

|                |        |                 |                 |
|----------------|--------|-----------------|-----------------|
| 125# (FLANGED) | W.O.G. | 200 PSI @ 150°F | 150 PSI @ 150°F |
|----------------|--------|-----------------|-----------------|

# PSD Suction Diffuser

## Technical Data (Dimensions & Weights)



\*20 mesh stainless steel sleeves are provided with all Suction Diffusers for start up applications.

Other meshes or screen perforations available upon request, consult factory.

| Item | Description    | Material                        |
|------|----------------|---------------------------------|
| 1    | BODY           | CAST IRON (ASTM A 126, CLASS B) |
| 2    | SCREEN         | STAINLESS STEEL (304)           |
| 3    | MESH SLEEVE*   | STAINLESS STEEL (304)           |
| 4    | COVER          | CAST IRON (ASTM A 126, CLASS B) |
| 5    | O-RING         | BUNA-N                          |
| 6    | HEX HEAD BOLT+ | STEEL                           |
| 7    | PLUG           | CAST CARBON STEEL               |
| 8    | STUB           | CAST IRON (ASTM A 126, CLASS B) |

| Size      | Screen Perforation | Open Area |
|-----------|--------------------|-----------|
| 2" to 12" | 3/16"              | 51%       |

| Size (Inlet x Outlet) | A        | B     | C      | D       | E        | F (Screen Removal) | G (Blow Down Connection) | H (Pipe Support I.D.) | Weight LBS |
|-----------------------|----------|-------|--------|---------|----------|--------------------|--------------------------|-----------------------|------------|
| 2 X 1-1/2             | 10       | 4-1/2 | 4-1/2  | 7       | 6        | 8-13/16            | 3/4                      | 1.02                  | 24         |
| 2 X 1-1/2             | 10       | 4-1/2 | 4-1/2  | 7       | 6        | 8-13/16            | 3/4                      | 1.02                  | 24         |
| 2-1/2 X 2             | 10-5/8   | 5     | 5      | 7-13/16 | 6-9/16   | 9-1/8              | 3/4                      | 1.02                  | 27         |
| 2-1/2 X 2-1/2         | 10-5/8   | 5     | 5      | 7-13/16 | 6-9/16   | 9-1/8              | 3/4                      | 1.02                  | 37         |
| 3 X 2                 | 10       | 4-1/2 | 5-1/2  | 8-1/8   | 6        | 9-5/8              | 3/4                      | 1.30                  | 42         |
| 3 X 2-1/2             | 11-3/16  | 5-1/2 | 5-1/2  | 9       | 7        | 9-5/8              | 3/4                      | 1.30                  | 46         |
| 3 X 3                 | 11-3/16  | 5-1/2 | 5-1/2  | 9       | 7        | 9-5/8              | 3/4                      | 1.30                  | 51         |
| 4 X 3                 | 13-1/8   | 6-1/2 | 6-1/2  | 11      | 8-3/4    | 11-1/2             | 1                        | 1.30                  | 74         |
| 4 X 4                 | 13       | 6-1/2 | 6-1/2  | 11      | 8-1/4    | 11-1/2             | 1                        | 1.30                  | 76         |
| 5 X 4                 | 15-1/2   | 7-1/2 | 7-1/2  | 13      | 10       | 14-7/8             | 1                        | 1.30                  | 106        |
| 5 X 5                 | 15-1/2   | 7-1/2 | 7-1/2  | 13-3/4  | 10       | 14-7/8             | 1                        | 1.30                  | 111        |
| 6 X 4                 | 13-1/8   | 6-1/2 | 8      | 12-3/16 | 8-3/4    | 16-9/16            | 1                        | 1.30                  | 93         |
| 6 X 5                 | 16-5/8   | 8     | 8      | 14-7/16 | 10-11/16 | 16-9/16            | 1                        | 1.30                  | 128        |
| 6 X 6                 | 16-5/8   | 8     | 8      | 14-1/2  | 10-11/16 | 16-9/16            | 1                        | 1.30                  | 149        |
| 8 X 5                 | 19-3/16  | 9     | 7-9/16 | 13-1/8  | 13       | 16-7/8             | 1                        | 1.30                  | 178        |
| 8 X 6                 | 16-7/8   | 8     | 9      | 15-1/2  | 10-11/16 | 16-7/8             | 1                        | 1.30                  | 178        |
| 8 X 8                 | 21-3/8   | 9     | 9      | 17-1/4  | 11-5/8   | 22-7/8             | 1-1/4                    | 2.05                  | 267        |
| 10 X 8                | 21-3/16  | 9     | 11     | 19-1/4  | 11-5/8   | 22-7/8             | 1-1/4                    | 2.05                  | 353        |
| 10 X 10               | 26-11/16 | 11    | 11     | 20-3/4  | 14-3/16  | 30-1/4             | 1-1/4                    | 2.05                  | 388        |
| 12 X 8                | 21-11/16 | 11    | 11     | 19-1/4  | 13-5/8   | 22-7/8             | 1-1/4                    | 2.05                  | 492        |
| 12 X 10               | 26-11/16 | 11    | 12     | 21-3/4  | 14-3/16  | 33                 | 1-1/4                    | 2.05                  | 492        |
| 12 X 12               | 26-11/16 | 12    | 12     | 21-3/4  | 15-3/8   | 28-3/4             | 1-1/4                    | 2.05                  | 529        |

Larger sizes available upon request.  
 Certified dimensional drawings and metric drawings available upon request.

## TDV (Triple Duty Valve)

Cast Iron (ASTM A 126, Class B)  
125 lb. Flanged



### Features & Benefits

The center guided soft seal disc ensures that there is no leakage. The rising stem design includes an adjustable position indicator for accurate disc positioning for throttling service. This unit comes with a standard gauge taps at both the inlet and outlet sides and a NPT drain plug.

### Operation

The TDV has an automatic and silent operation. The disc will open when the line pressure is approximately ¼ PSI. As the line pressure approaches zero, the spring will close the disc to prevent flow reversal and water hammer. The flow through the valve can be adjusted from bubble tight shut-off to full flow by the acme rising stem.

### Applications

The TDV is a Triple Duty Valve primarily required on the discharge side of a centrifugal pump in a hydronic heating or cooling system. This valve functions as a shut-off valve, spring loaded silent check valve, and balancing valve.

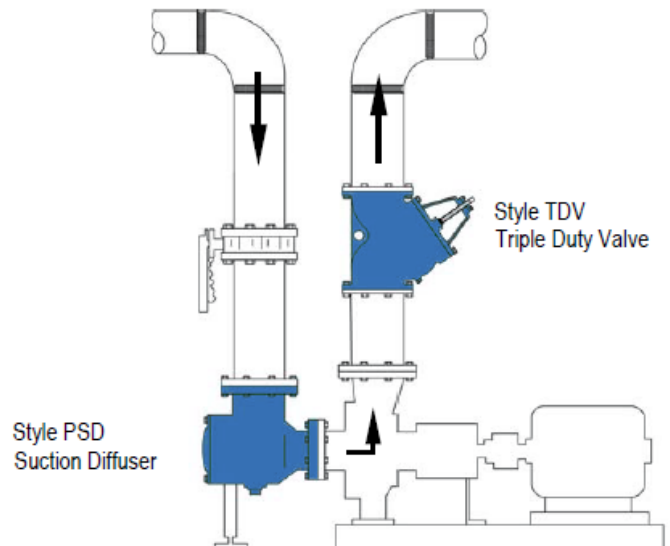
### Construction

The TDV Triple Duty Valves are constructed from rugged cast iron castings that are machined to exacting specifications. These bodies have drilled flanges that are in accordance with ASME B16.1.

### WORKING PRESSURES - NON SHOCK

| Nom. Rating       | Media  | 2" to 12"          | 14"                |
|-------------------|--------|--------------------|--------------------|
| 125#<br>(FLANGED) | W.O.G. | 200 PSI @<br>150°F | 150 PSI @<br>150°F |

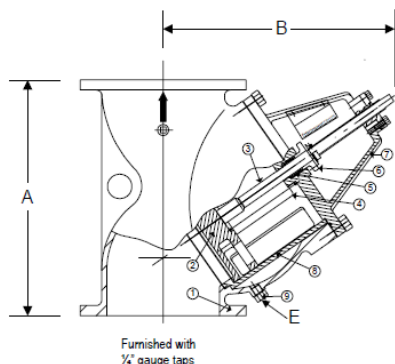
### TYPICAL INSTALLATION





## TDV (Triple Duty Valve)

### Technical Data (Dimensions & Weights)



| Parts List |           |     |                                 |
|------------|-----------|-----|---------------------------------|
| Item       | Part Name | QTY | Material                        |
| 1          | BODY      | 1   | CAST IRON (ASTM A 126, CLASS B) |
| 2          | DISC      | 1   | BRONZE                          |
| 3          | STEM      | 1   | 410 STAINLESS STEEL             |
| 4          | SPRING    | 1   | 304 STAINLESS STEEL             |
| 5          | PACKING   | 6   | NON-ASBESTOS                    |
| 6          | GLAND     | 1   | DUCTILE IRON                    |
| 7          | COVER     | 1   | CAST IRON (ASTM A 126, CLASS B) |
| 8          | GUIDE     | 1   | CARBON STEEL                    |
| 9          | PLUG      | 1   | CARBON STEEL                    |
|            | O-RINGS   |     | BUNA-N                          |

Designed For Pump Protection

#### Features

- A Shut-off Valve
- A Spring Loaded Silent Check Valve
- A Balancing Valve

| Size  |     | Dimensions |     |        |     |     |    | Weights |     |
|-------|-----|------------|-----|--------|-----|-----|----|---------|-----|
|       |     | A          |     | B      |     | E   |    |         |     |
| in    | mm  | in         | mm  | in     | mm  | in  | mm | lbs     | kgs |
| 2     | 50  | 8-3/8      | 213 | 9-5/8  | 244 | 1/2 | 15 | 28      | 13  |
| 2-1/2 | 65  | 9-7/8      | 251 | 10     | 254 | 1/2 | 15 | 33      | 15  |
| 3     | 80  | 10         | 254 | 10-1/8 | 257 | 1/2 | 15 | 57      | 26  |
| 4     | 100 | 14-1/2     | 368 | 12-5/8 | 321 | 1/2 | 15 | 98      | 44  |
| 5     | 125 | 16         | 406 | 16-3/8 | 416 | 1/2 | 15 | 157     | 71  |
| 6     | 150 | 18         | 457 | 17-1/2 | 445 | 3/4 | 20 | 196     | 89  |
| 8     | 200 | 21-1/2     | 546 | 18-1/2 | 470 | 3/4 | 20 | 348     | 158 |
| 10    | 250 | 25-1/2     | 648 | 21-3/4 | 552 | 1   | 25 | 475     | 215 |
| 12    | 300 | 30         | 762 | 24-1/2 | 622 | 1   | 25 | 656     | 298 |
| 14    | 350 | 30-3/8     | 772 | 24-1/2 | 622 | 3/4 | 20 | 787     | 357 |

Certified dimensional drawings are available upon request.

\*This table reflects only the nearest metric equivalents.



“Building a reputation not resting on one”

**Plad Equipment Ltd.**  
+1 450-965-0224  
[www.plad.com](http://www.plad.com)  
[sales@plad.com](mailto:sales@plad.com)