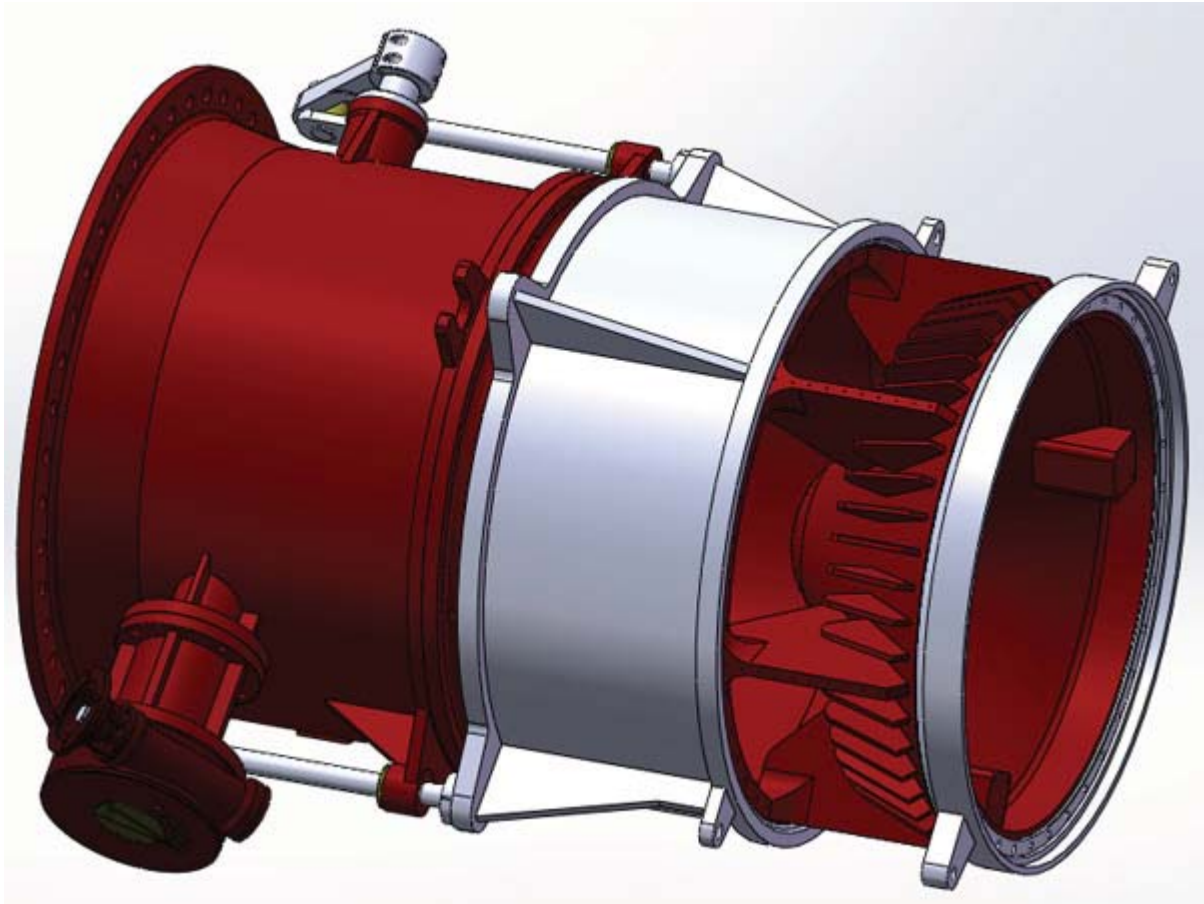




## FIXED CONE VALVE

WEISI VALVE CO.,LTD





## FCV Series Fixed Cone Discharge

- Rugged construction.
- Wide range of sizes and pressure ratings.
- To be used in wide range of applications.
- Various materials options available.
- Low cavitation
- Simple and robust design
- Streamlined contours
- Low head loss
- Large flow rate, discharge coefficient can reach to 0.75 - 0.86
- Various operating gears and actuators
- Different corrosion resistant coatings are available.
- Optional hood offers flow discharge into confined areas.
- Maintenance can be performed while the valve is in line.

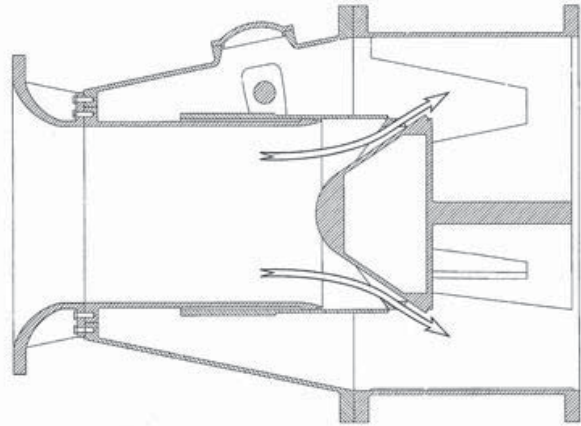
# FEATURES



Contoured Ribs

Fixed cone valves are mostly used to regulate flow from dams, clear-water reservoirs, barrages or storages basins. It is also a free discharge valve that is commonly used as a turbine bypass valve, reservoir drain or continuous discharge flow control valve.

Discharges of large water flow rates under high pressure conditions demands an efficient conversion of energy. Any damages due to cavitation and any risk to the structure due to vibrations and oscillations have to be avoided. Fixed cone valve has a fixed cone with contoured ribs that eliminate the vibration problems associated with other fixed cone designs. Flow is controlled by movement of an external stainless steel gate which has a drip tight metal to metal



Free discharge of continuous flow

shut off. When discharging into the atmosphere, the jet spreads out in a wide cone angle and breaks up into a fine spray. If containment of the jet is desired, a hood can be installed which concentrates the flow.





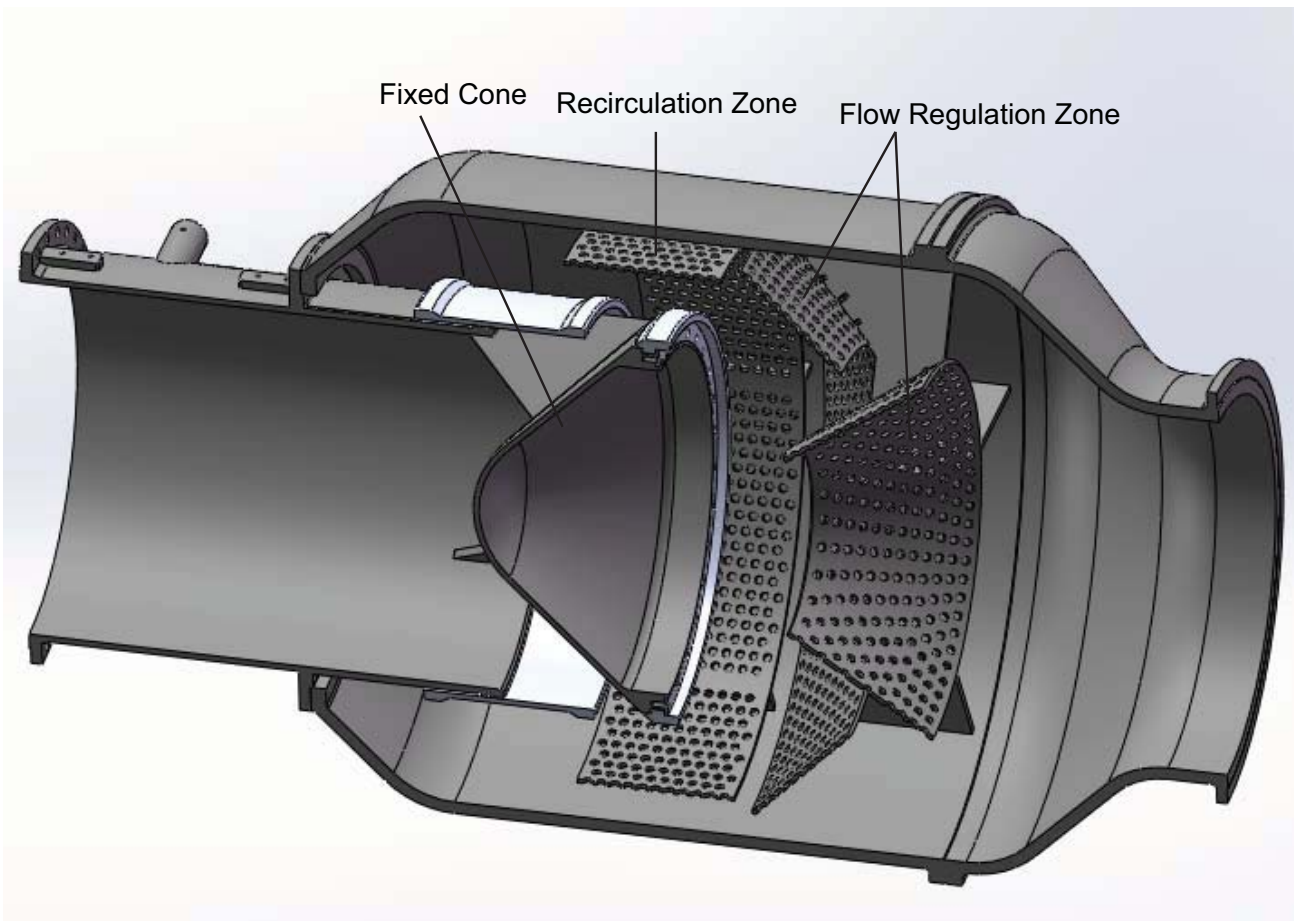
Without hood, flow spray out evenly to a large area.



Optional hood discharges flow into confined areas

**F**ixed cone valve is composed of Actuator units, drive mechanism, welded steel construction with Nitronic 60 pads, sleeve gate, rubber seal, Nitronic 60 seat, contour ribs and optional hood. Spray piece is supported and connected by the fixed cone and the contour ribs. There is an open section between the spray piece and the welded steel body. Sleeve gate is installed outside of the spray piece and the movement of the sleeve gate can change

the free discharge (free spray) area. A hood can be installed for some application needs and this hood can confine the flow to a smaller area which can avoid the spray of the flow and cavitation damage to the line. Hooded fixed cone valves are mostly used in inline installation applications. Unhooded fixed cone valves are mostly used as discharge valves to release pressure, retain pressure or control the flow in the pipe line.



### How to select size and design of a fixed cone valve

$$D = \left( \frac{Q_{max}}{C_d (2gH)^{0.5} \Pi} \right)^{0.5}$$

D - Valve Size in mm

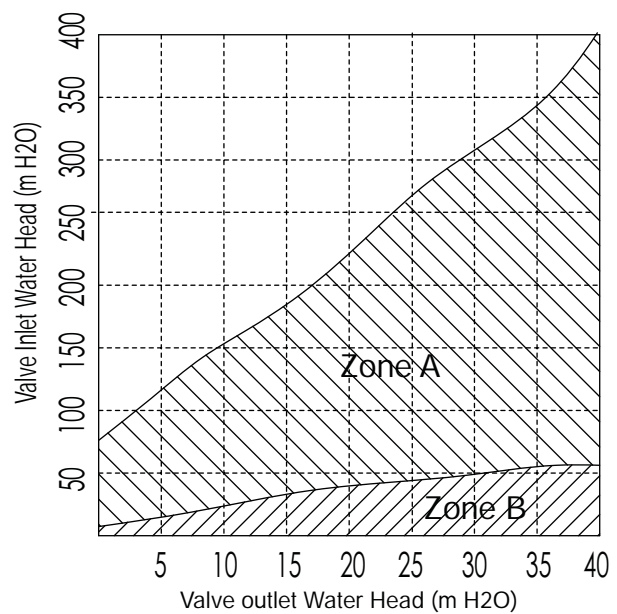
$Q_{max}$  - Valve max flow rate m<sup>3</sup>/s

$C_d$  - Flow factor, without hood=0.87, with hood=0.79

g - Acceleration of gravity=9.8m/s<sup>2</sup>

H - inlet and outlet differential pressure

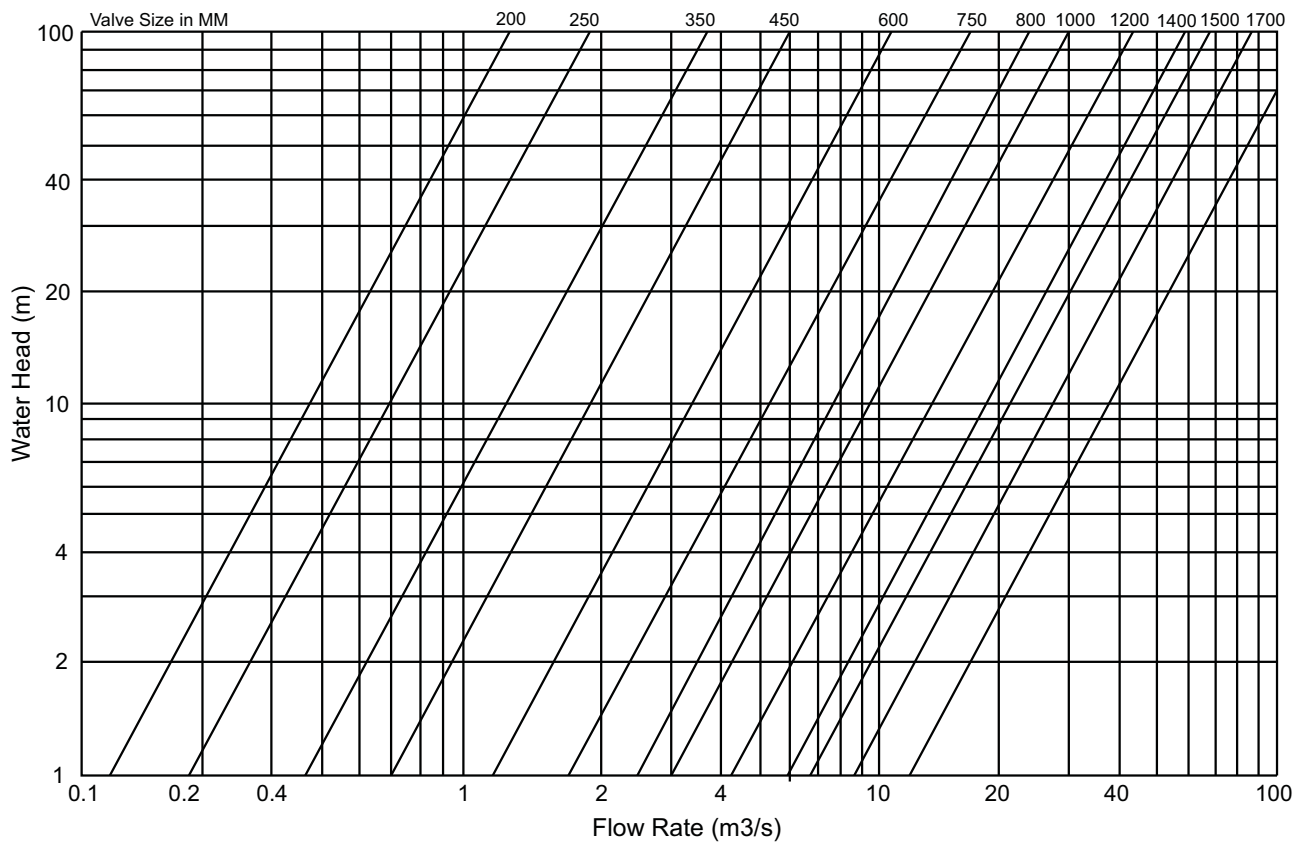
$\Pi$  - pi=3.14



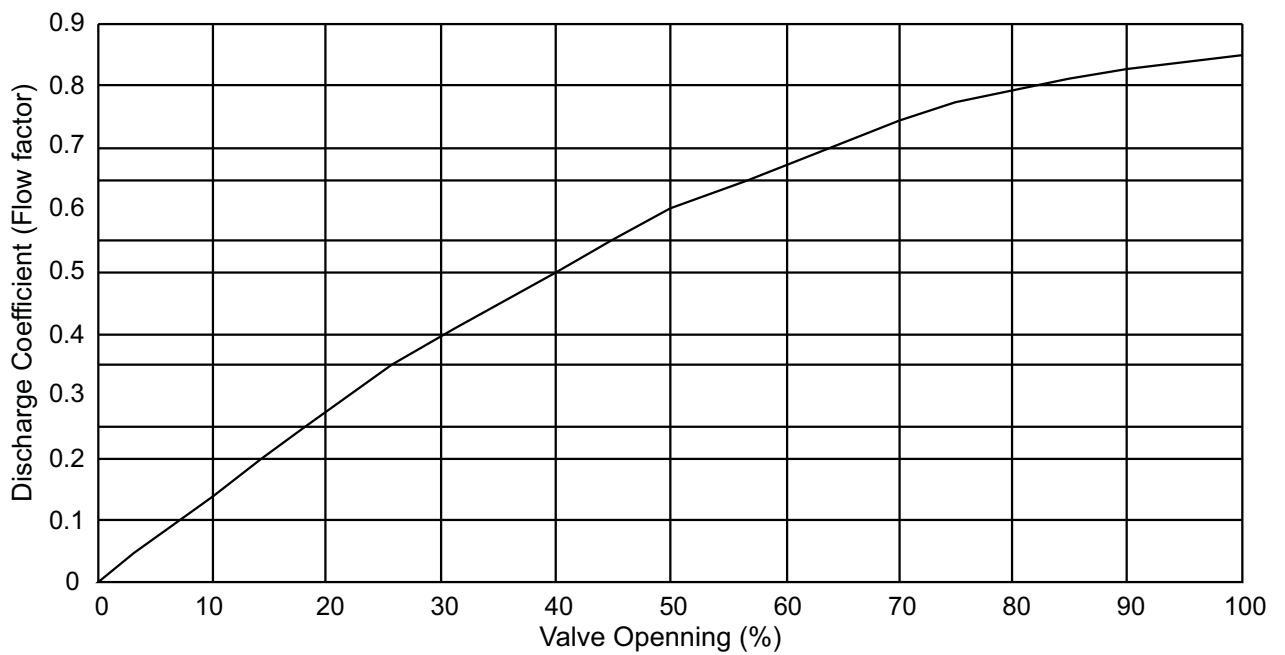
To select the right size and design for your application, it's suggested to contact factory to help.

If inlet and outlet water head falls into Zone A, it suggests to use a hood. If falls into Zone B, the hood is optional.

Flow ability of the Fixed Cone Valve



Flow Rate Characteristic



# WIDE RANGE OF SIZES, PRESSURES, MATERIALS

We offer from DN100 (4inch) to DN2000 (80inch) Fixed Cone Valves in pressure rating PN10, PN16, PN25 and larger, and various materials to choose upon customers' requests or applications.



Installation of our DN1400 Fixed Cone Valve



# SUITABLE FOR VARIOUS APPLICATIONS



1 Water Treatment Plant



2 Water Distribution System



3 Dam



4 Reservoir



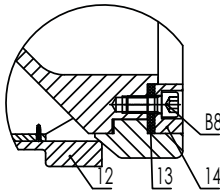
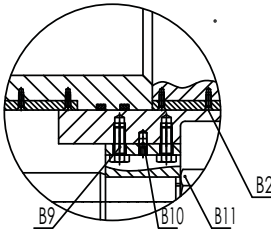
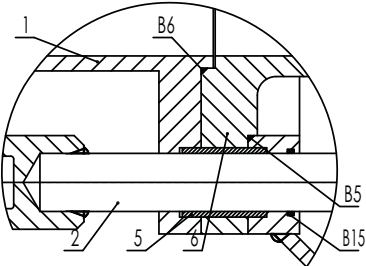
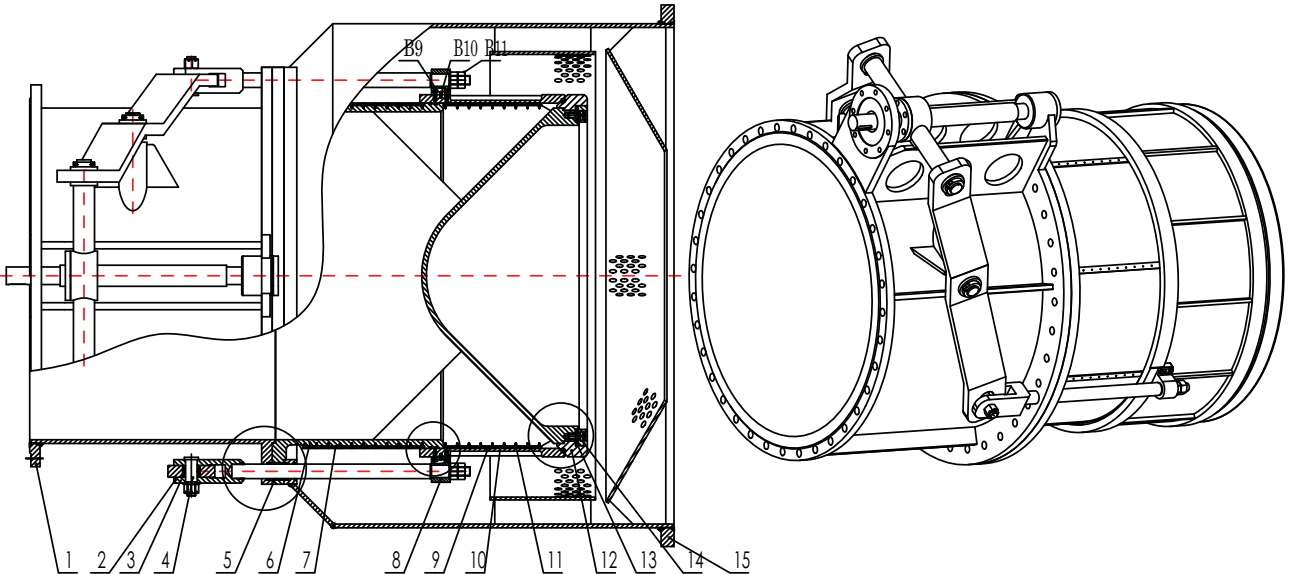
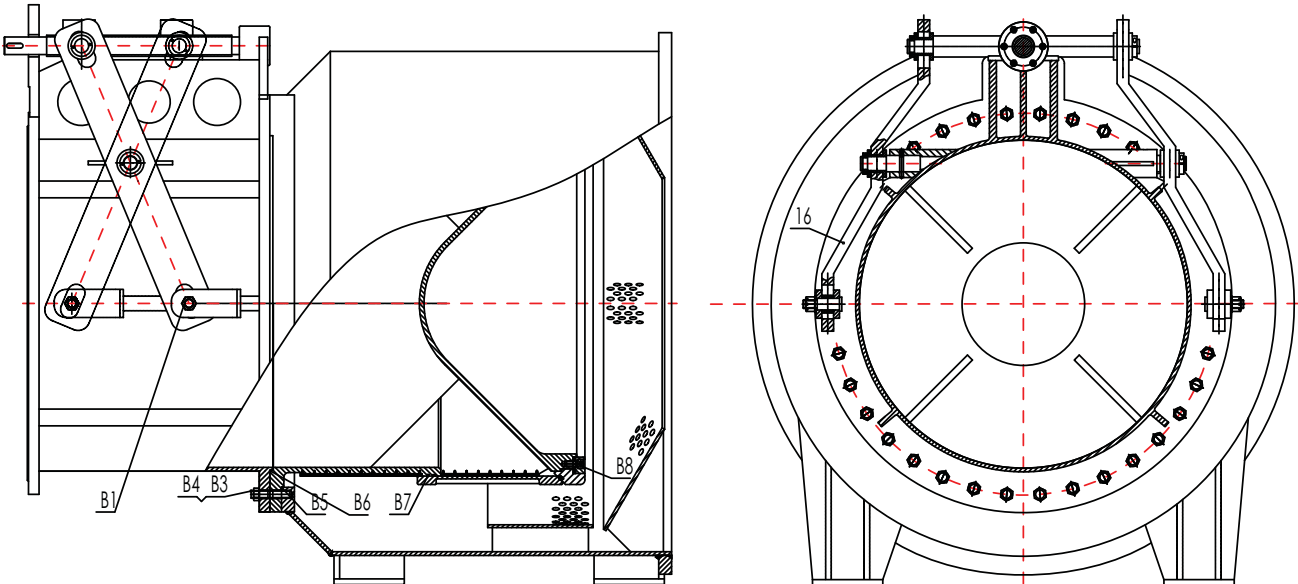
5 Petro-Chemical



6 Power Plant



# PRODUCT DRAWING

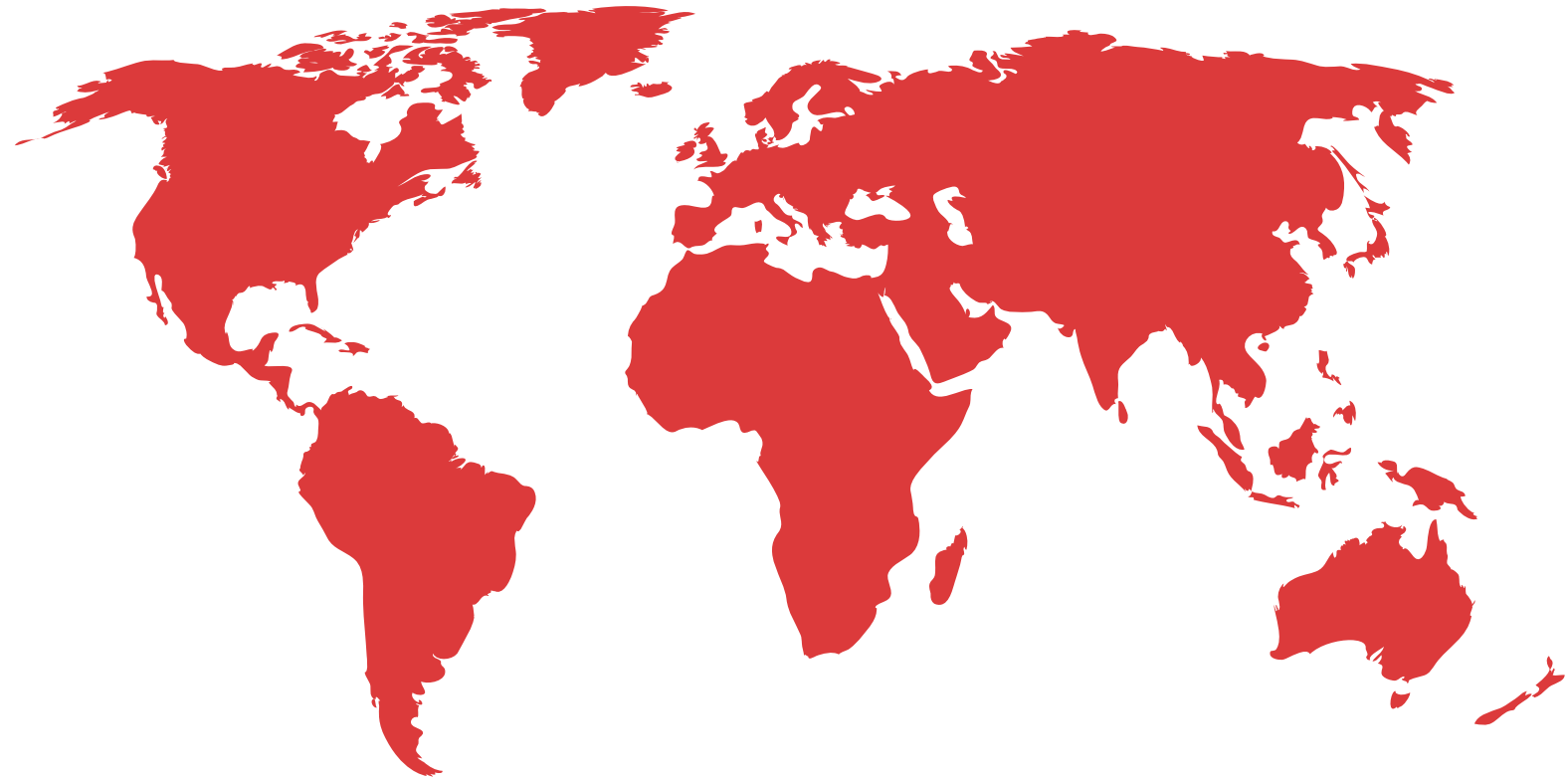


# MATERIAL OF CONSTRUCTION

Bill of Material		
Item	Description	Material
1	Front Body	Steel
2	Drive Stem	Stainless Steel + Bronze
3	Lever	Ductile Iron
4	Pin	Stainless Steel
5	Bushing	Bronze
6	Spray Piece	Ductile Iron
7	Tracks	Bronze
8	Drive Lug	Steel
9	Sleeve Gate	Stainless Steel
10	Tracks	Bronze
11	Track Fastener	Stainless Steel
12	Seat	Stainless Steel/Nitronic 60
13	Seal	Buna-N
14	Retaining Ring	Stainless Steel
15	Hood	Ductile Iron
16	Lever	Ductile Iron
B1	Hex Nut	Stainless Steel
B2	Fastener	Stainless Steel
B3	Stud	Stainless Steel
B4	Hex Nut	Stainless Steel
B5	O ring	NBR
B6	O ring	NBR
B7	O ring	NBR
B8	Inner Hex Bolt	Stainless Steel
B9	Hex Bolt	Stainless Steel
B10	Fastener	Stainless Steel
B11	Hex Nut	Stainless Steel

**Note: Other materials are available upon request.**

WWW.VSIVALVE.COM



CONSTANTLY IMPROVING...

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