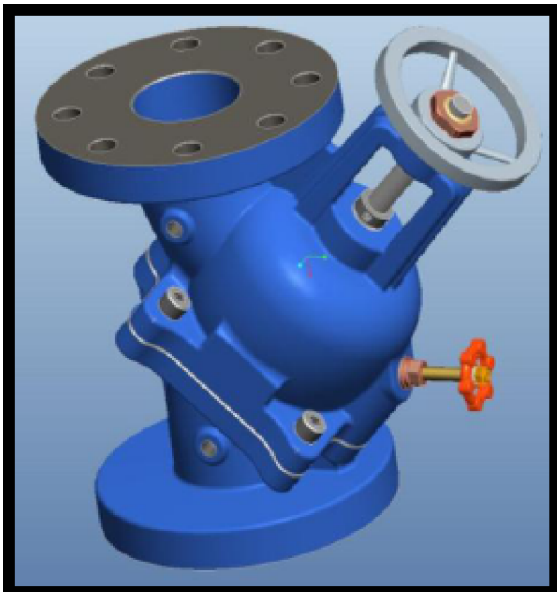


# TRIPLE DUTY VALVE (TDV)

## IDEAL SOLUTION FOR SPACE SAVING AND ECONOMY



This article speaks how TDV Concept is energy efficient triple saver in Material-Man (labour)-Money (space), & reliable design with compact construction. KBL initiated latest technology in Designing TDV for water, building & construction and Industrial projects.

Today we are paying for THREE valves when ONE will do the job. Solution for Saving Space, Labour and Material by introducing TDV (THREE valves in ONE).

### Description :

The Triple Duty Valve is replacement of Non return valve and Isolating Valve (Sluice/ Butterfly Valve) normally fitted at delivery side of the Pump. The conventional Non return valves and Isolating Valves have got the specified flange over distances as per respective valve standards and pressure drop across the valve is purely depend  $\propto Cv$  of the valve. Triple duty valve functions as Three in One (shut-off /check / Regulating) valve. Triple duty valves are primarily required on the discharge side of a centrifugal pump.

### The Concept (Multi functions in Single Valve) :

Generally in all Pumping Systems the discharge side is consist of one Non return Valve and one Isolating valve to prevent reverse flow at power failure or pump stoppage and flow regulator to set system requirement. The separate valve means added space, cost, and maintenance and head loss. To overcome these drawbacks. the new conceptual Valve called Triple duty valve is introduced.

### Operational Philosophy :

Triple duty valve has an automatic and

& reliable design with compact construction. KBL initiated latest technology in Designing TDV for water, building & construction and Industrial projects.

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### Benefits (Advantages) of Triple duty Valve :

Triple duty valve behaves like multi beneficent product as Energy efficient / Space Saver / Economical / Low

## TRIPLE DUTY VALVE

silent operation. The disc will open when the line pressure is approximately 25% of rated Pressure. As the line pressure approaches zero, the spring will assist to close the disc uniformly to prevent flow reversal and water hammer. The external threaded spindle (Rising Stem) will help to control the flow through the valve from bubble tight shut-off to full flow (Open) by rotating Handwheel. 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. The unit comes with a standard gauge taps at both the inlet and outlet sides and a NPT drain plug.

To repack under system pressure, turn the valve stem to the fully open position. Turning the valve stem to the closed position provides shut-off. The Bell & Gossett Triple Duty Valve is a combination valve that provides all of the functions normally required on the discharge side of hydronic pump systems. The design combines three valves into one: a calibrated balance valve, a spring loaded check valve, and an isolation/shut-off valve.

This article speaks how TDV Concept is energy efficient triple saver in Material-Man (labour)-Money (space),

Maintenance as explained below:

### **Behaves like energy efficient product :**

- Low pressure drop due to "Y" pattern valve design
- Spring-closure design check valve prevents gravity or reverse circulation when pump is not operating
- Soft seat to ensure tight shut-off
- Spring-closure design, non-slam silent check valve feature for vertical or horizontal mounting.

### **Behaves like space saver :**

- The combination of multiple valves helps save space and reduces installation time and money.
- Eliminates requirement of three valves on pump discharge and, in some cases, a 90° elbow, thus saving space.

### **Behaves like money saver :**

- Reduced field installation and material cost
- The combination of multiple valves helps save space and reduces installation time and money.

### **Behaves like labor saver :**

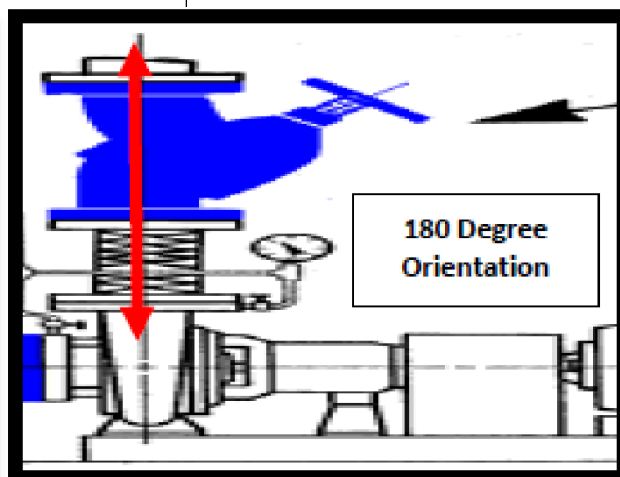
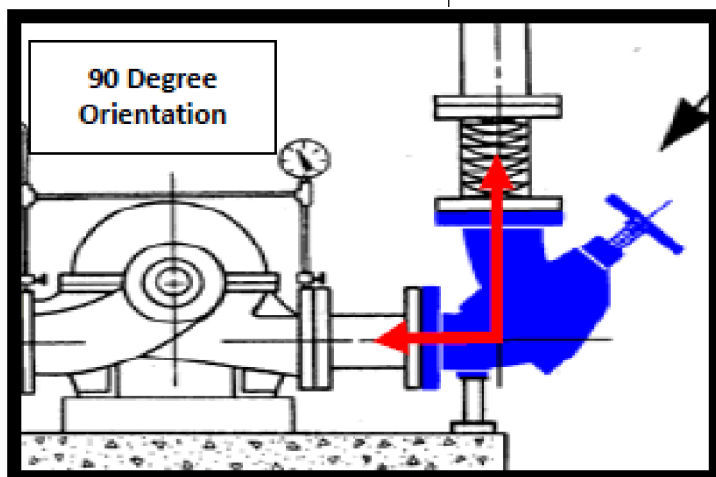
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installation time and money.

- Valve seat can be changed in the field without use of special tools
- Flow measurement and pump throttling capabilities
- Temperature measurement capability

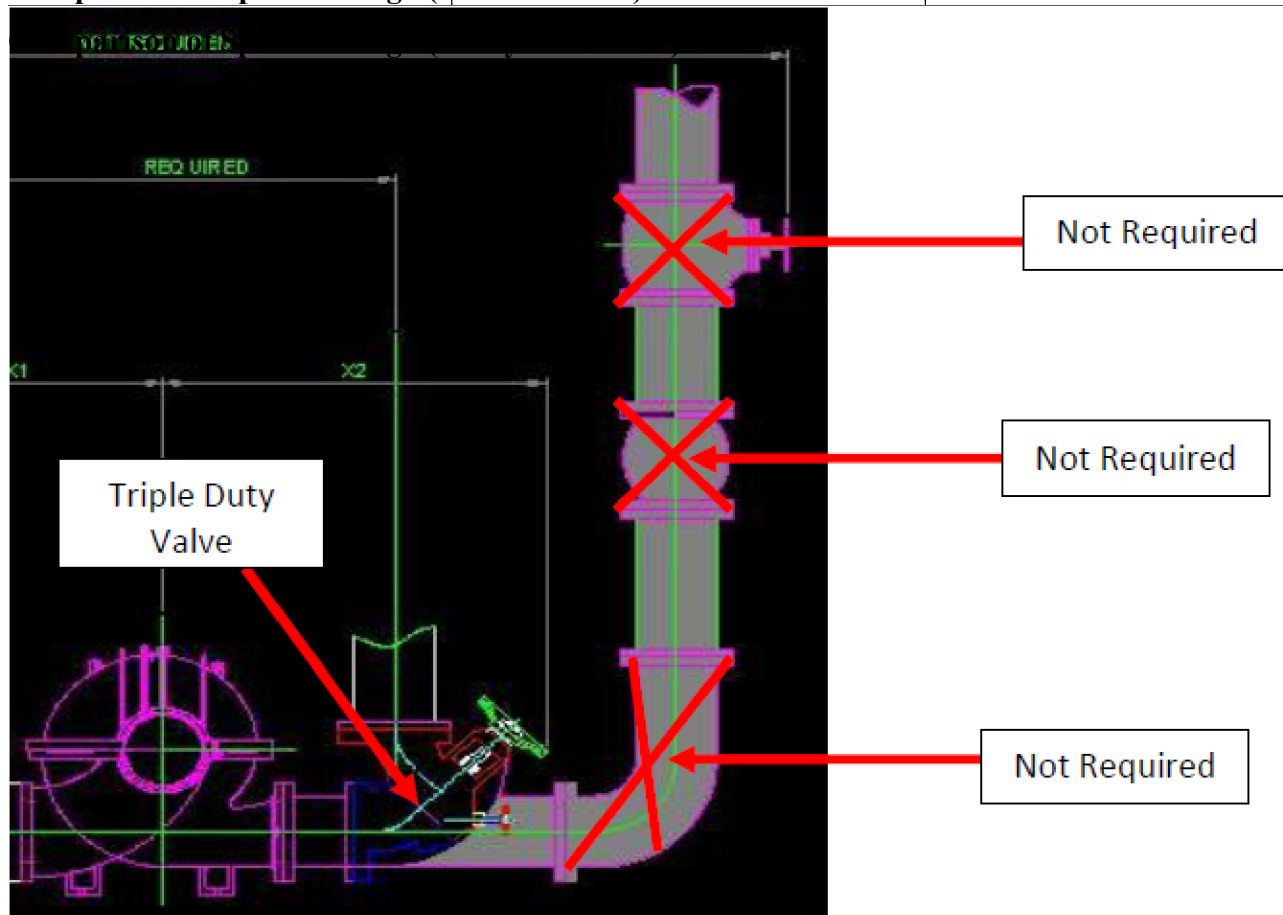
Kirloskar Brothers Limited has developed this new concept in their own CRED. Theory of 3M(Man - Money -Material) is considered while developing this new concept in India. The KBL-TDV have taken care of more than Basic three functions as listed below. KBL-Triple Duty Valve is consist of following Trouble free and Labor free performance.

- Shut-Off: Soft seat to ensure tight shut-off.
- Check Valve: Performs as quick non-slam closure check valve (Unidirectional Flow).
- Regulating: Effective throttling (Calibrated Balancing) design.
- Online Flow Measurement: Built in Standard gauge taps on I/L & O/L Body assists for flow measurement across the seat.
- Dual Mounting: Repositionable Mounting (90° or 180° angle).



## TRIPLE DUTY VALVE

### Comparison of Space Saving : (Pictorial View)



### Comparison of Space Saving : (Analytical Chart)

Size-mm	Flange Over Distance-mm			Total Flange Over Distance-mm		Flange Over Distance-mm	Differences-mm	
	BFV	SLV	NRV	OPN1:BFV+NRV	OPN2:SLV+NRV		TDV	OPN1
50	43	178	200	243	378	227	16	151
100	127	229	300	427	529	310	117	219
200	152	292	500	652	792	436	216	356
300	178	356	700	878	1056	602	276	454
400	216	406	900	1116	1306	711	405	595
500	229	457	1100	1329	1557	858	471	699



*Author Mr. Vallabh Kolvekar has started his career with a Hydraulics Company for an year & then joined Kirloskar Brothers Ltd.*

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*He has enriched with 27 years Experience in the field of D&D and Site Complaint of Valve Products.*

