Masoneilan

a Baker Hughes business

33000 Series Triple Offset Butterfly Valve

Exclusive patented range of superior performance

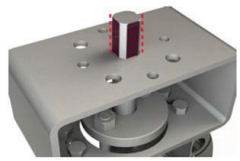
Baker Hughes **Masoneilan**™ 33000 Series Triple Offset Butterfly Valve incorporates new performance enhancing features providing an exclusive patented range of zero leakage bi-directional triple offset butterfly valves suitable for extreme pressure/temperature applications.

Features

Self-Centering Disc

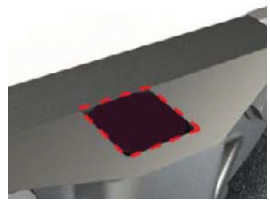
Due to the innovative design of our square drive, the disc is self-centering within the seat. This eliminates the need for a shaft expansion gap and helps prevent the risk of damage to the disc or seat/seal during actuator installation, transportation of the valve or temperature expansion during high or low intensity applications.

Square Actuation Drive Allows Flexible Actuator Orientation



This square shaft drive allows the operator, whether manual or automated, to be positioned in any 90-degree increment of position to provide installation flexibility to clear obstructions or ensure the operator can be placed in the preferred orientation. With the lack of pins or keyways this is easily changeable on site if necessary.

Removal of Keyways or Pins

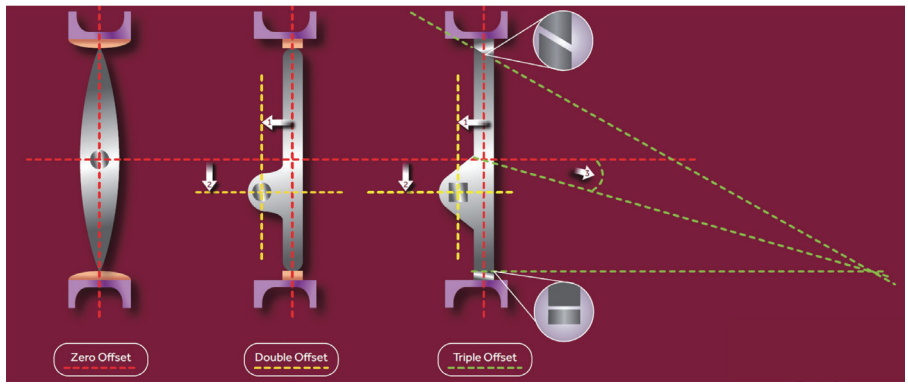


In most butterfly valves, the disc is mechanically operated through the use of pins or keyways along the drive chain. This method has the risk of weakening the shaft and the potential of shearing in high velocity/vibration applications. Through the introduction of a square shaft along the full length of the drive chain Baker Hughes has eliminated these problematic areas while also reducing the torque requirement to operate the valve.

Overview of triple offset

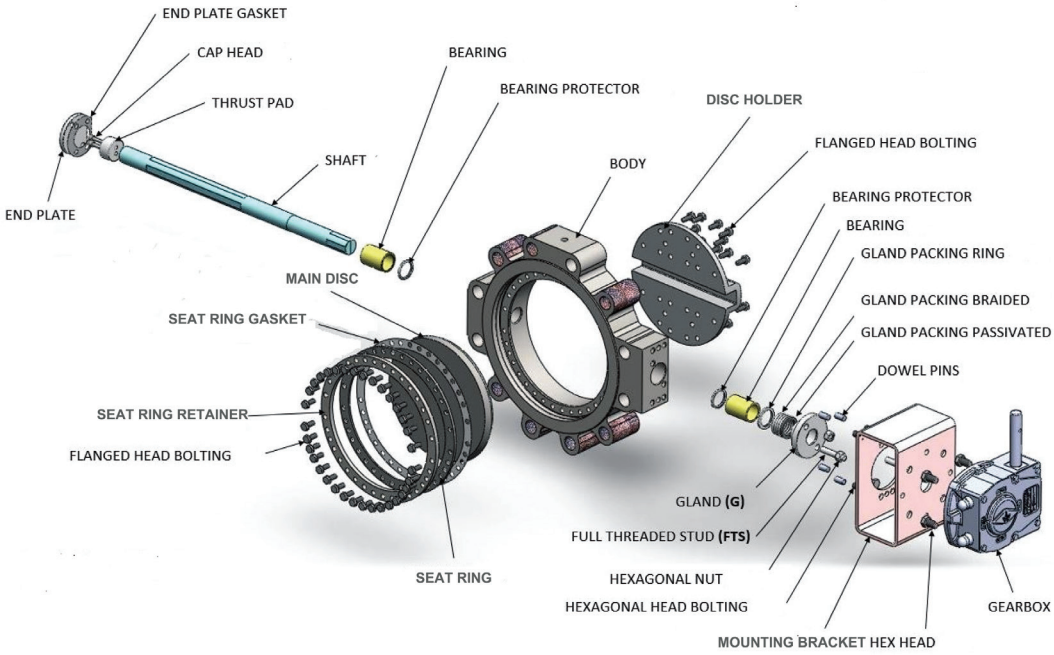
Zero breakaway torque:

The triple offset geometry provides no disc to seat contact until seating. This results in no rubbing of disc and seat at any point in its rotation and no friction from disc to seat rubbing. This globe like seating ensures reliable long-term shutoff performance as well as reduced actuation torque requirements. The triple offset design also provides exceptionally tight seating, with true zero leakage in either flow direction.



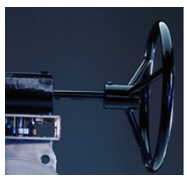
Zero leakage bi-directional triple offset butterfly valves

Standard Valve Components

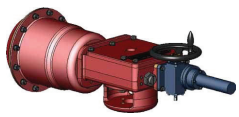


Preferred Flow Direction (Shaft Upstream)		ASME 300 - Valve Sizing Coefficient (Cv)								
Valve Size		Disc Opening Degrees								
Inches	mm	10	20	30	40	50	60	70	80	90
2″	50	0.9	2.6	5.0	8.5	13.6	19.6	26.0	33.0	36.2
3″	80	2.5	7.0	13.5	23.0	36.7	53.0	70.2	89.1	98.0
4″	100	5	15	29	50	79	115	152	193	212
6″	150	14	39	75	129	205	296	393	499	548
8″	200	33	94	181	308	492	711	942	1196	1315
10″	250	56	161	308	525	838	1211	1604	2036	2239
12″	300	93	265	508	866	1381	1996	2644	3357	3691
14″	350	118	337	646	1102	1757	2539	3364	4271	4697
16″	400	153	437	837	1426	2274	3286	4353	5527	6078
18″	450	198	567	1086	1851	2952	4266	5652	7176	7891
20″	500	246	703	1347	2296	3662	5291	7010	8901	9787
24″	600	357	1020	1955	3332	5314	7678	10172	12916	14202

Actuation Options



- Gear type handwheel for manual operation.
- Spring-Diaphragm model 31/32/33 for precise throttling control applications.
- Scotch-Yoke Piston actuators for large size/high torque requirements.



Control Accessories

Combining the features and control accuracy of the 33000 Triple Offset valves with Baker Hughes Masoneilan digital valve positioning technology takes your control accuracy to new heights. The Masoneilan **SVI™ II AP** (**HART™**) or SVI FF (**Foundation™ Fieldbus**) positioners share innovative features that optimize control performance.

- Patented non-contacting stem feedback promotes long-term positioning reliability
- Patented control methods provide impressive speed and accuracy (qualified for compressor anti-surge and emergency applications).

Baker Hughes