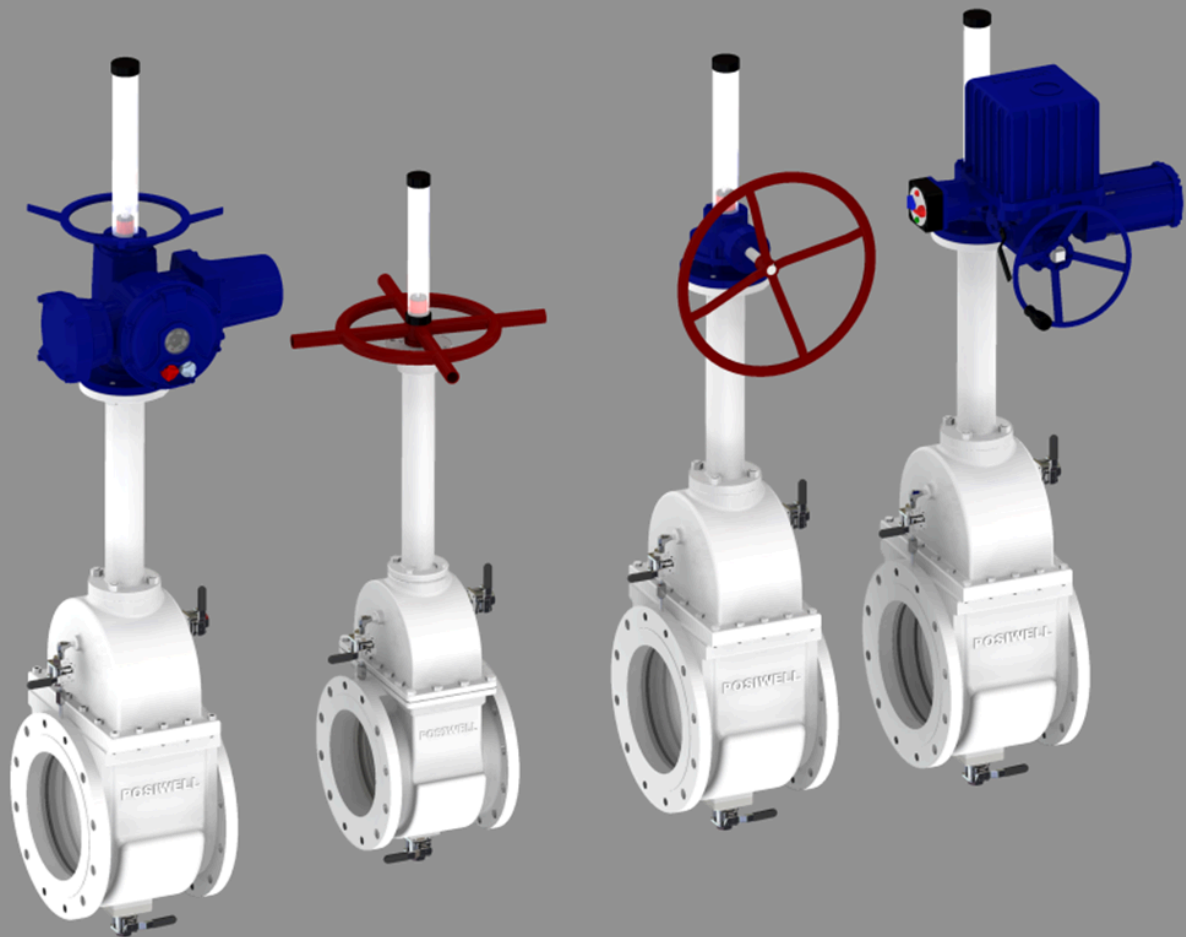


PosiWell®

DBB/DIB-1 Full Bore Gate Valves
Verifiable and Zero Leakage Design

Patent: 8,939,432



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PosiWell®

PosiWell® Patented Full Bore Gate Valves featuring "dual expanding discs," providing both Double Block & Bleed (DBB) and Double Insolation Block & Bleed (DIB-1) functionality. These valves are the result of extensive engineering knowledge accumulated over three decades, including hands-on experience in servicing traditional valves and converting standard valves into DBB configurations.

The **PosiWell®** Double Block & Bleed Gate Valve provides online-verifiable bubble tight sealing and conforms to API6D face to face dimensions of DBB plug valves and traditional gate valves, making it not only a reliable replacement to conventional two-valve systems, but also an easy fit in replacing existing valves.



PosiWell® Double Block & Bleed Gate Valves features an internal stainless steel trim, along with a RPTFE soft seat as a standard to combat the number one cause of failure in DBB valves; corrosion. The patented spring-loaded disc design ensures high integrity, positive, shut-off, along with smooth operation.

PosiWell® Double Block & Bleed Gate Valves are certified to API 6FA and meet the requirements for Fugitive Emission as per ISO 15848 standards.

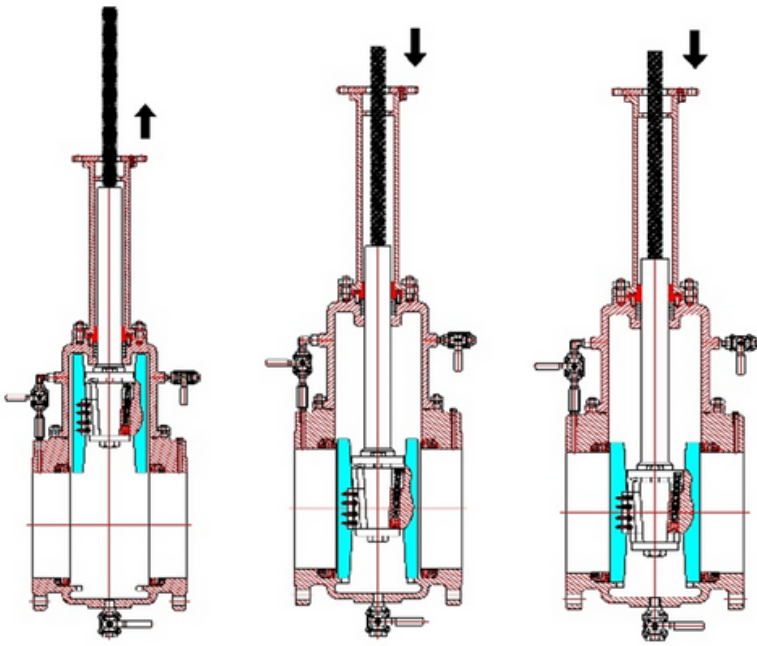


Design & Standards

Parameters	Specifications
Design	API 6D, Dual Expanding Discs - DBB-DIB Gate Valves
Size Range	2" to 40" ANSI Class 150 – Class 300 ANSI 600 on request.
Pressure & Temperature	ASME B16.34
Face to Face	ANSI B16.10 RF Smooth Finish, 125-250AARH
Flanged Connection	ASME B16.5, MSS-SP-44-B16.47
Testing	API 6D, API598
Fire Test	API 6FA -3rd edi. 1999
Fugitive Emission	EN ISO 15848-1
Standard Operation	Handwheel for 2" - 10" (Gearbox Optional) TGM Gearbox for 12" and above Automation of all types available

Materials of Construction

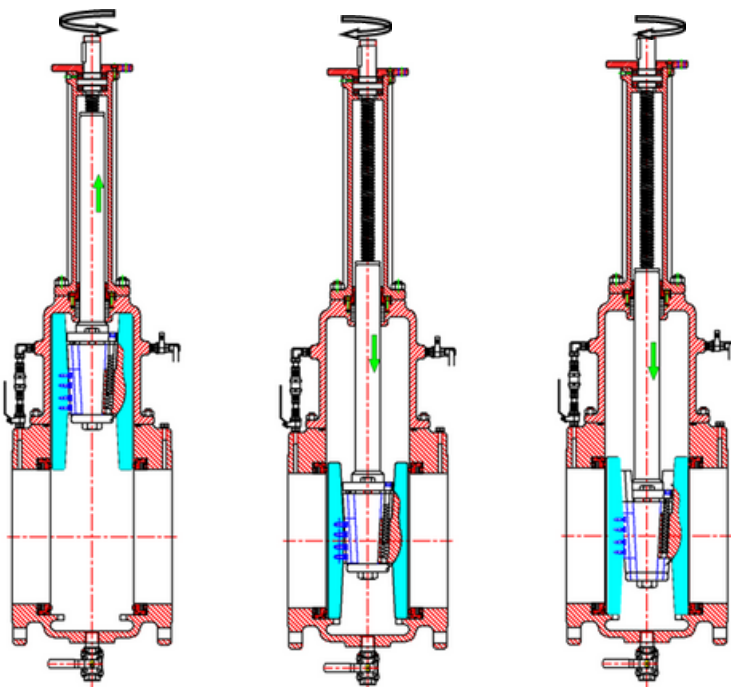
Parameters	Specifications
Body & Bonnet	ASTM A216 WCB + Phosphate Bath Treatment as Standard
Stem & Discs	SS 304
Soft Seats	RPTFE (15% Glass Reinforced, 5% MoS2
Stem Seal	Graphite - Live Load Packing Seals
Bonnet Gasket	Graphite
Bottom Drain	SS316 Ball Valve NPT Threaded (Flanged-end Optional)
Bonnet Vent	SS316 Ball Valve w SS316 Tubing
Thermal Relief	SS316 Cavity Pressure Relief w SS316 Tubing



PosiWell® Double Block & Bleed Gate Valves are full bore valves, meaning users get to enjoy the maximum flow possible. Full bore also means that PosiWell® valves are piggable.

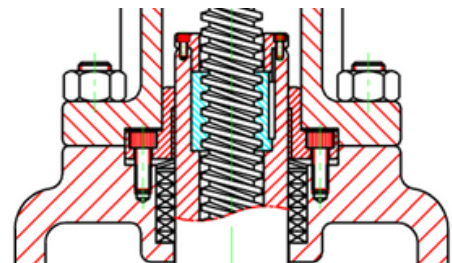
Being piggable allows for easy cleaning and maintenance of the pipeline by allowing a cleaning device, or "pig", to pass through without any restrictions. **PosiWell®** Double Block & Bleed Gate Valves are designed for efficiency and ease of use, ensuring smooth operations and maximum flow. With a piggable full bore design, **PosiWell®** valves offer a seamless solution for industries that require reliable and high-performance valve systems.

Available in both Rising & Non-Rising Stem



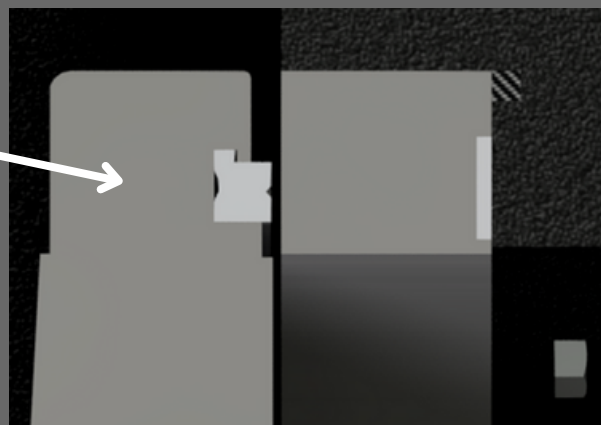
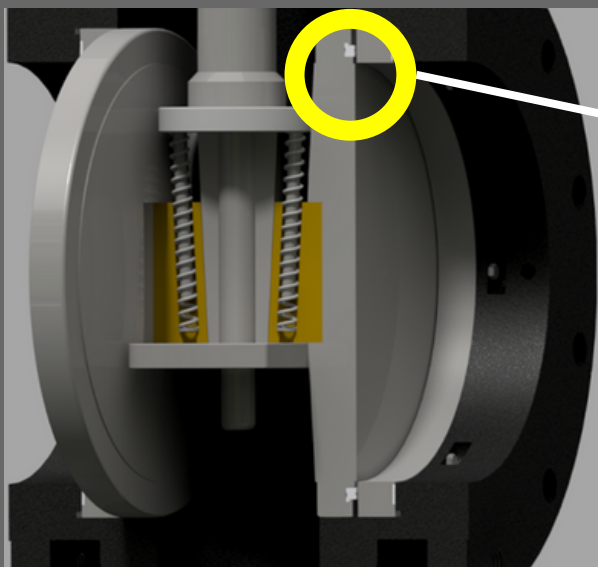
PosiWell® Double Block & Bleed Non-Rising Gate Valves has the same operating principle as standard Rising Stem Valves except stem travels internally in the yoke. This design is used in settings where space is a constraint.

PosiWell® non-rising stem valves maintain all functionalities and ZERO leakage performance.

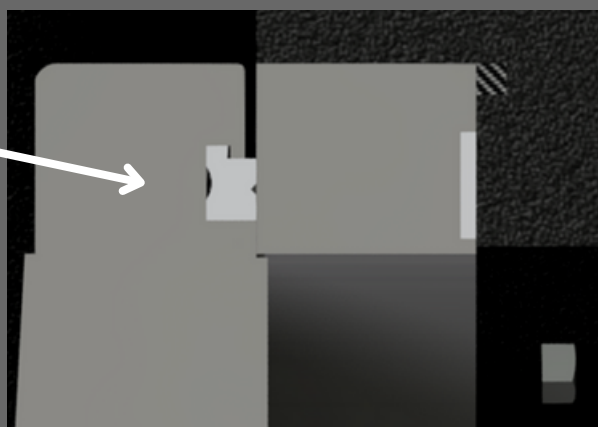
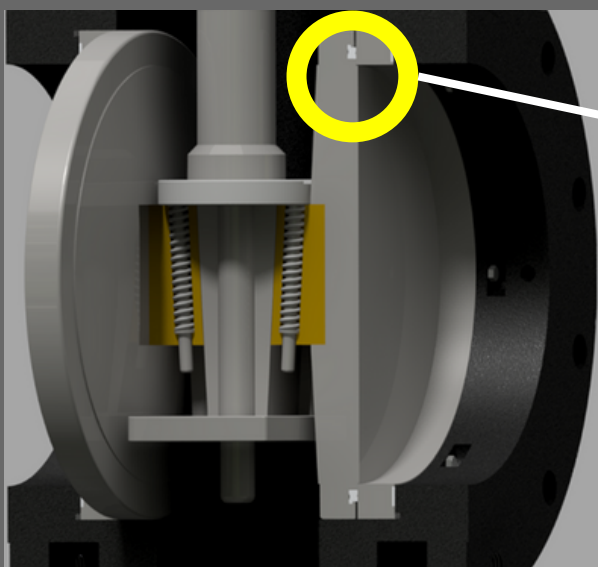


Patented Seat Design

The patented design of **PosiWell®** employs spring-loaded discs to guarantee the retention of seat tightness throughout Thermal Expansion and Contraction phases. This innovative design also ensures that both discs are appropriately retracted prior to initiating their uplifting motion.

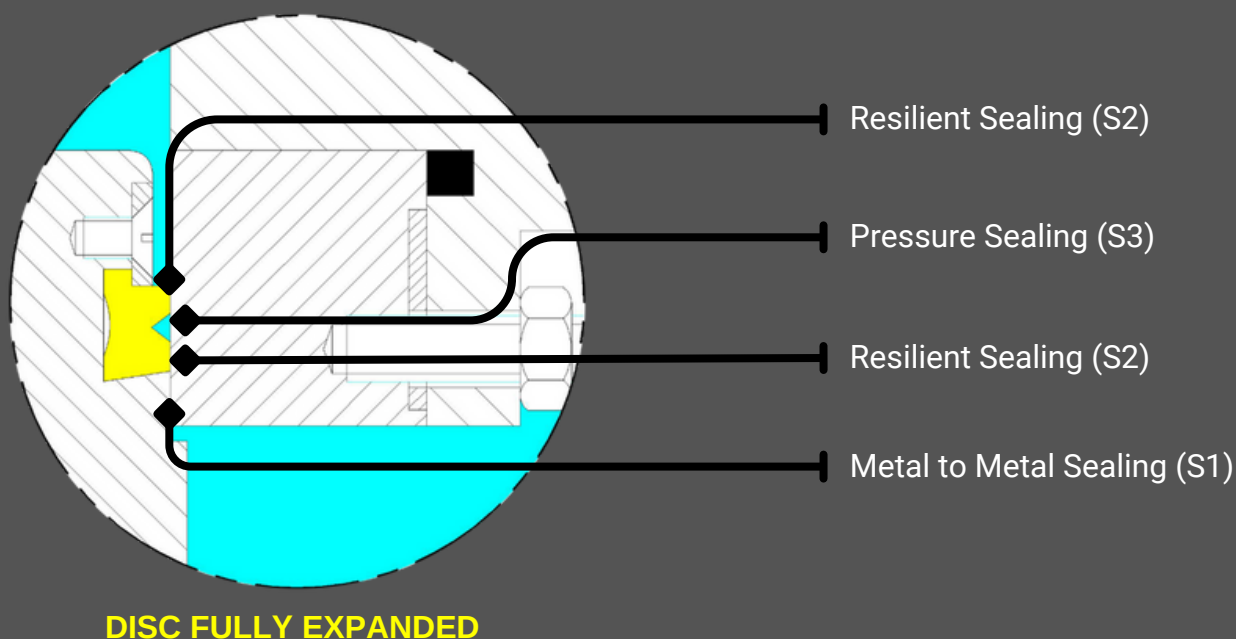
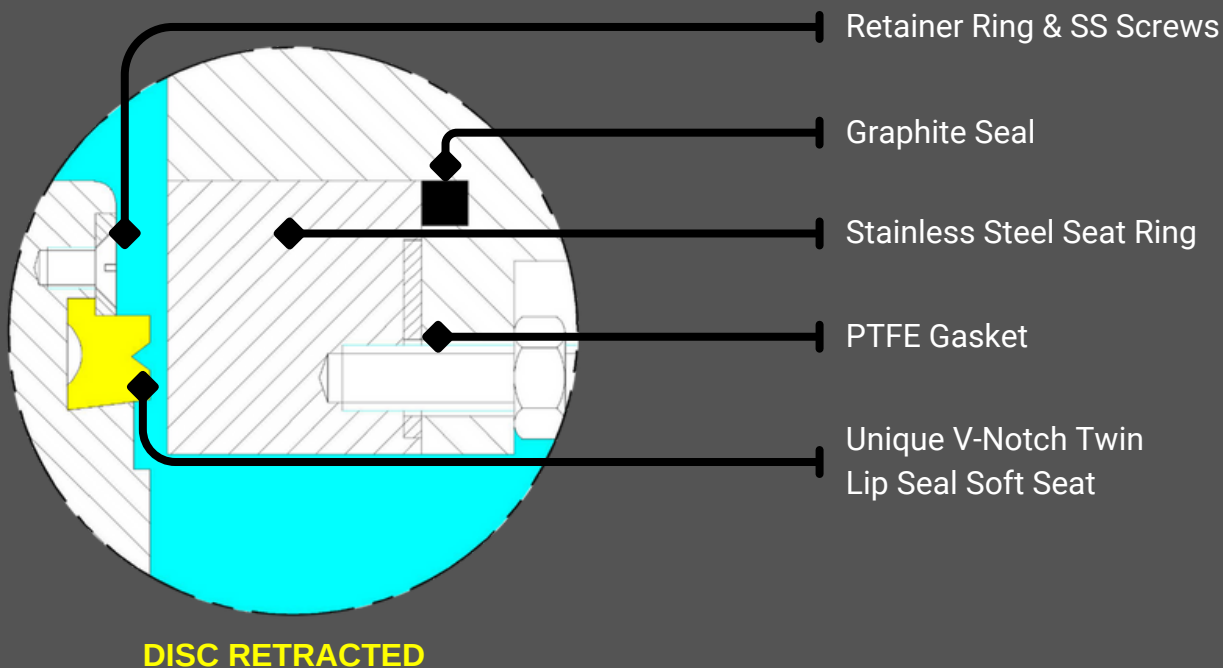


Valve is in closed position, springs are decompressed, discs are resting on the disc shoulders but seats are still retracted and not sealed.



Springs are compressed, discs expanded sealing on soft seat and metal to metal seat achieving bubble tight shut-off to API 6D – DBB/DIB-1 standard.

Patented Seat Design



PosiWell® DBB-DIB valves feature an innovative patented sealing concept (S1, S2, and S3).

The primary seal of the Expanding Discs involves Metal to Metal contact (S1). The secondary seal utilizes a Soft V-notch seat ring with twin lip sealing points (S2) and Pressure Sealing (S3). The concave back of the resilient seat facilitates the expansion and compression of the seat face. Flow pressure efficiently flushes foreign debris before the expanding discs compresses the Resilient & Metal Seat. Moreover, the seat is specifically designed for quick and straightforward in situ replacement.

Features & Benefits

PosiWell® incorporates two soft seats and operates similarly to a gate valve, accompanied by a substantial drain port situated between these seats. **PosiWell®** ensures a bubble-tight zero leakage seal by driving the wedge to expand the disc onto the seat ring. No friction acts on the seat during this process. This sealing mechanism remains impervious to line pressure, can be verified online, and meets both Double Block and Bleed (DBB) as well as Double Isolation and Bleed (DIB) criteria.

Cavity Relief

PosiWell® incorporates a cavity relief valve as a standard feature, recognizing the potential risks associated with pressure buildup within pipelines. Cavity relief is able to relieve either upstream or downstream as specified by the user

Bleed Option

Flushing plays a crucial role in minimizing the risks associated with leakage and system failure. That's why **PosiWell®** includes a sizeable bottom drain valve specifically designed for cavity draining, offering the additional option of an end-flanged configuration



Local Indicator

PosiWell® showcases a distinctive orange visual indicator as a standard feature, which clearly indicates the valve's fully closed or opened position

Enclosed Yoke

PosiWell® engineers the stem to be enclosed within the yoke, a design aimed at eliminating any potential risk of foreign debris causing damage to the stem

Leak Verification

PosiWell® has a stainless steel ball valve installed as a standard for users to verify for leakage

Features & Benefits

PosiWell® Double Block & Bleed Gate Valves features a full-bore design, ensuring maximum flow. Achieve the following with a full bore DBB valve:

- 1) Eliminate the risk of penalties resulting from overdue porting caused by slow discharge.
- 2) Save costs and get lower port due fees and benefit from faster discharge
- 3) Simplified planning and scheduling processes as flow times are shorter.
- 4) Quicker and more efficient vessel turnaround times for tankers, enhancing profitability.
- 5) Piggable - Keep pipelines clean and in good working order.
- 6) Able to down-size the piping design to achieve the same desired flow as DBB plug valves

COMPARISON OF Cv VALUES FOR DBB VALVES																
Cv values		stated in US Gallons of water per minute at 60 degree F														
2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	26"	28"	30"	36"	40"
PosiWell® DBB-DIB Full Bore, Dual expanding discs - Piggable Gate Valves																
298	782	1,257	3,010	5,540	8,655	12,934	17,606	22,994	30,292	37,395	53,848	66,056	73,300	84,140	tba	tba
Brand A Standard Reduced Bore Plug Valves								PUBLISHED CATALOGUE DATA								
200	205	590	1,254	2,420	3,578	4,000	5,500	7,000	7,000	15,700	24,000	n/a	31,000	33,000	48,000	n/a
Brand B Standard DBB Reduced Bore Plug Valves								PUBLISHED CATALOGUE DATA								
202	208	594	1,438	2,428	3,588	4,012	5,500	7,016	10,900	15,730	24,000	n/a	n/a	33,000	48,000	n/a
Brand C Standard Reduced Bore Plug Valves								PUBLISHED CATALOGUE DATA								
234	335	794	1,472	2,430	2,485	4,938	6,145	6,939	10,631	11,261	15,163	n/a	n/a	26,090	51,183	n/a

Product Casting

The body and bonnet of **PosiWell®** valves undergoes zinc phosphate treatment as a standard. Zinc phosphate provides a corrosion resistant coating as well as promotes paint adhesion. Unlike Electroless Nickel Plating (ENP), zinc phosphate do not crack, flake, nor peel.

Internal Components

The wedge, discs, and stem of **PosiWell®** valves are stainless steel, no treatment of plating is required and hence are of no risk of cracking, flaking, nor peeling.

Fire Safe

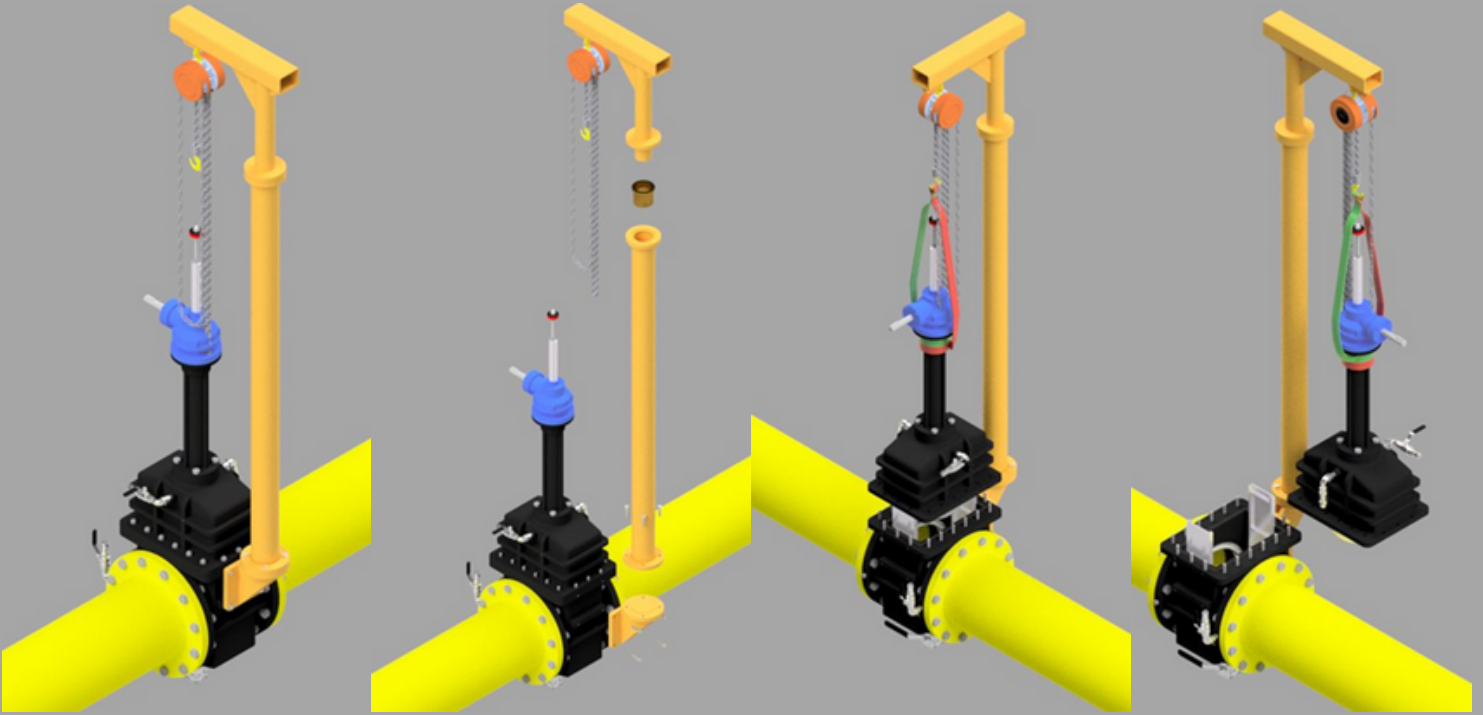
PosiWell® DBB valves are fire safe in accordance and tested to API 6FA. This is achieved by having the primary seal to be metal to metal.

Stem Packing

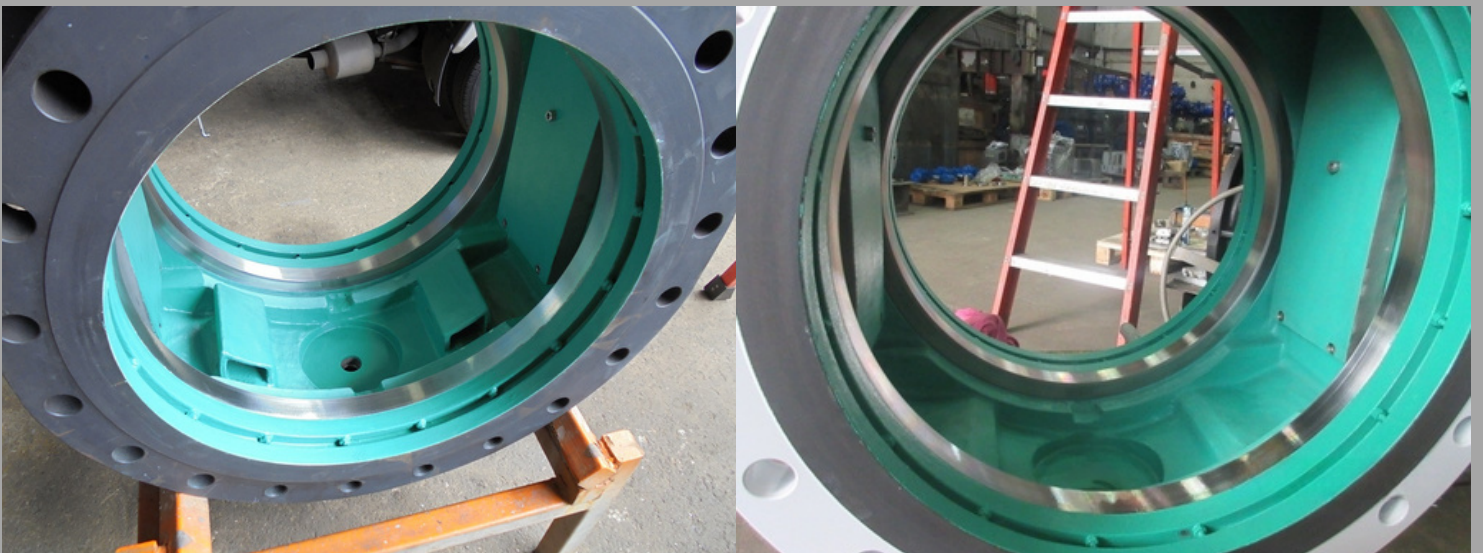
PosiWell® DBB valves uses a live loaded stem packing reinforced with graphite as a standard. This not only helps maintain lowest leakage levels, but also reduces the need for maintenance.

Optional Features

Our team at **PosiWell®** understands the challenges that end-users encounter when performing valve maintenance due to accessibility issues. That's why our **PosiWell®** DBB-DIB valves come standard with a cast-in feature designed to accommodate a specially designed davit crane lifting arm. This innovative solution eliminates the requirement for expensive heavy lifting cranes or crane vessels, particularly in hard-to-reach areas.



When dealing with highly corrosive and erosive chemicals, the **PosiWell®** team can recommend a glass flake coating upon user request. This coating effectively preserves valve performance and mitigates corrosion and cavitation issues caused by chemical exposure.



Optional Features

PosiWell® Double Block & Bleed Gate Valves are engineered for versatility and dynamism. Our team of **PosiWell®** engineers excels at creating customized solutions that precisely match the unique requirements and preferences of each user.



PosiWell® with Proximity Sensors



PosiWell® with Extensions



PosiWell® with Chainwheels



PosiWell® with Limit Switch

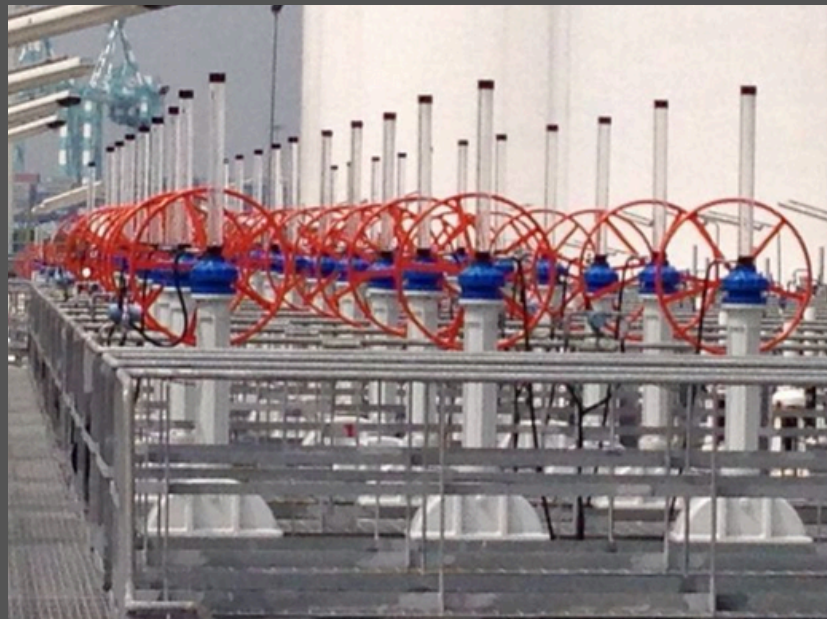
PosiWell® Double Block & Bleed Gate Valves are also capable of mechanical interlocking devices, pneumatic/hydraulic/electric actuation.

Suitable Applications

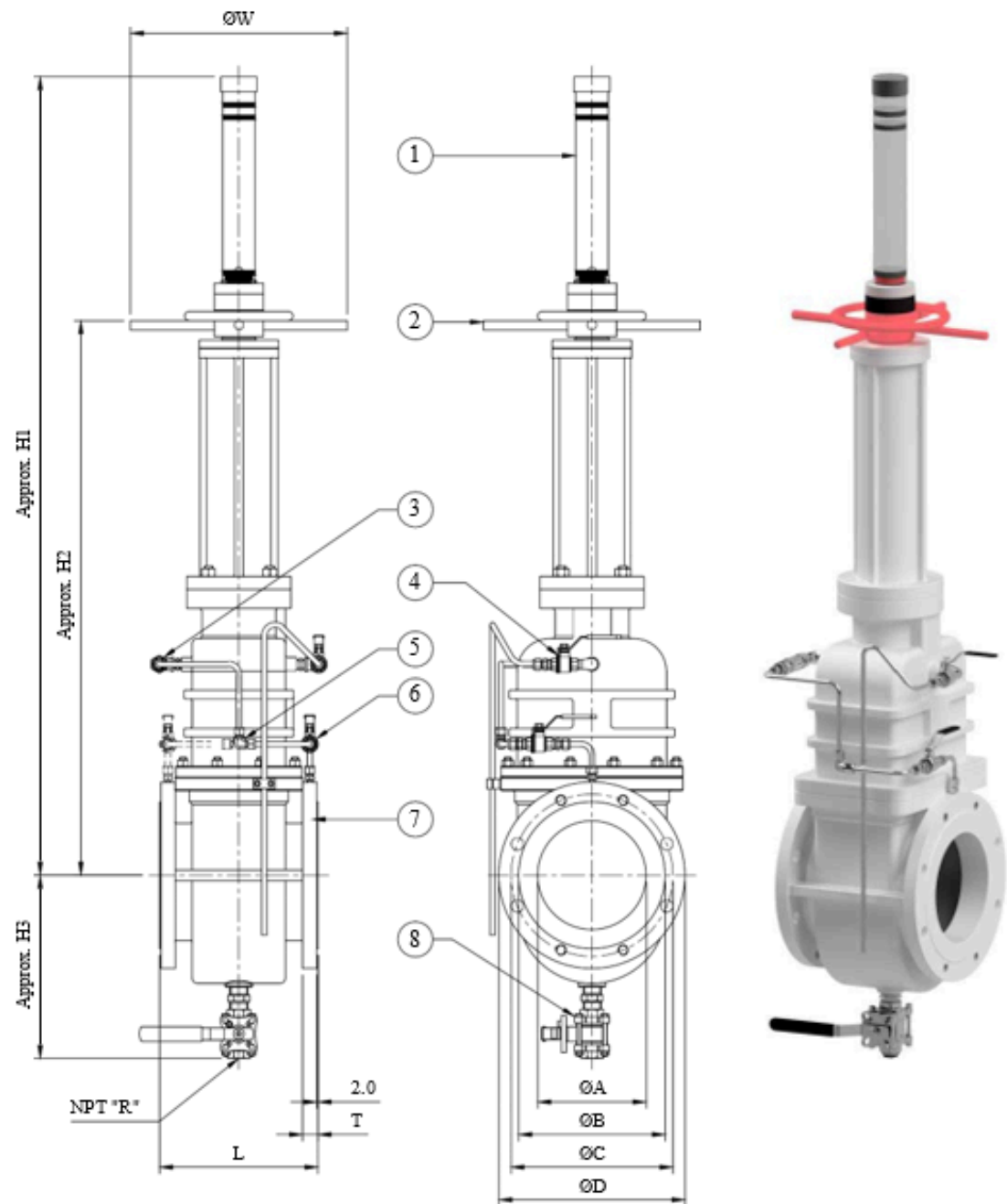
PosiWell® double block and bleed valves find extensive use across various industries due to their superior isolation capabilities. These valves are particularly beneficial in applications requiring a high level of safety and reliability.

We most often see **PosiWell®** valves in these applications:

- Multi Product Manifolds
- Metering Stations
- Tank Storage Isolation
- Hydrant Isolation
- Battery Limit Isolation
- Fluid Transfer Stations
- Commercial & Military grade Jet Fueling Systems
- Any Application Requiring Barrier Against Cross-Contamination
- Any Application Requiring Zero Leakage Performance

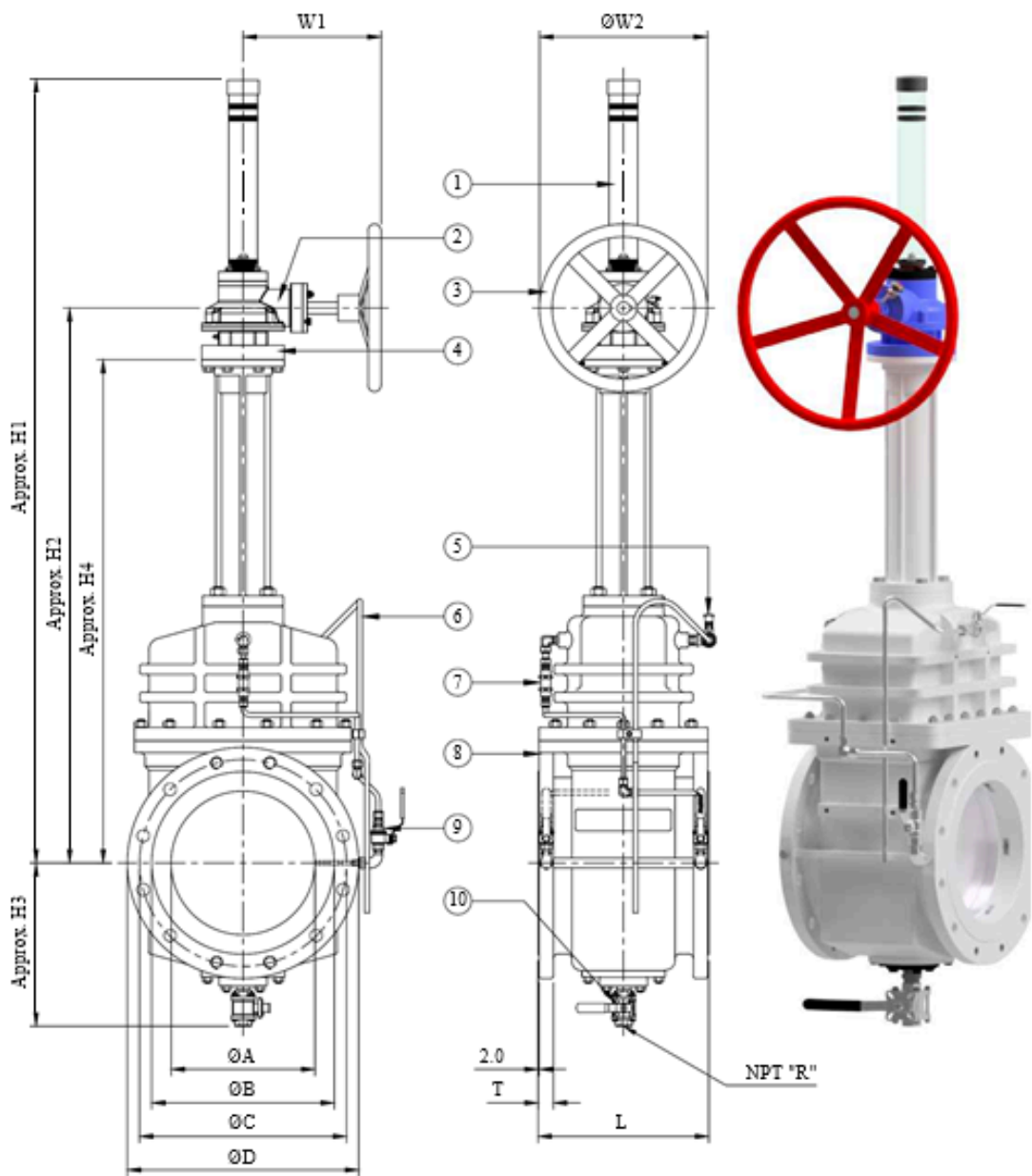


PosiWell® Double Block & Bleed Gate Valves (2" - 10" ASME Class 150)



Valve Size	A	B	C	D	H1	H2	H3	L	R	T	W	Weight (kg)
2"	50	92	120.7	152.4	560	388	220	178	1/2"	15.8	300	28.5
3"	80	127	152.4	190.5	685	479	235	203	1/2"	19.1	350	40.5
4"	100	157.2	190.5	228.6	835	604	258	229	1/2"	23.9	350	66.5
6"	150	215.9	241.3	279.4	1070	780	300	267	3/4"	25.4	400	103
8"	200	269.8	298.5	342.9	1395	1140	327	292	3/4"	28.5	400	209
10"	250	324	362	406.4	1580	1130	393	330	1"	30.3	450	236

PosiWell® Double Block & Bleed Gate Valves (12" - 30" ASME Class 150)



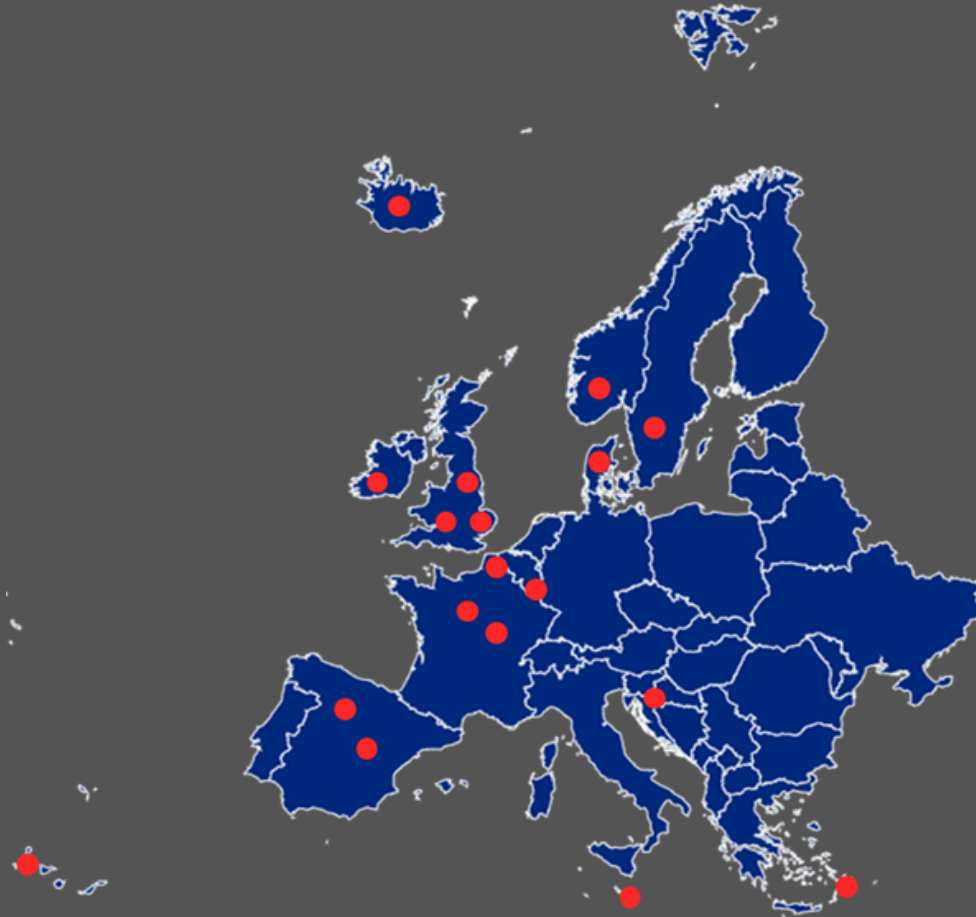
Valve	A	B	C	D	H1	H2	H3	H4	L	R	T	W1	W2	Gearbox	Weight (kg)
12"	300	381	432	483	1690	1265	360	1145	356	1"	31.8	330	350	TGM8	440.5
14"	350	412.8	540	533.4	---	---	---	---	381	1-1/4"	35.1	330	450	TGM8	---
16"	400	470	540	600	2080	1545	440	1410	406	1-1/4"	36.6	360	500	TGM12	711.5
18"	450	533.4	577.9	635	2360	1643	465	1501	432	1-1/4"	39.7	380	500	TGM12	838.5
20"	500	584.2	635	698.5	2628	1772	510	1625	457	1-1/2"	43	380	500	TGM12	1027.5
22"	550	642	692.2	760	2983	2027	570	1883	508	1-1/2"	45	380	600	TGM12	1335
24"	600	692.2	749.3	812.8	3045	2075	565	1902	508	1-1/2"	47.8	440	600	TGM25	1466.5
26"	650	750	806.5	870	3270	2250	605	2117	559	1-1/2"	69	440	600	TGM25	1548.5
28"	700	800.1	863.6	927.1	3400	2320	635	2162	610	1-1/2"	71.4	545	750	TGM50	2042
30"	750	857.3	914.4	984.3	3605	2470	660	2317	610	1-1/2"	74.7	545	800	TGM50	2480





User Reference List

Europe/Americas



Belgium - Gunvor Petroleum Antwerp

Belgium - Evos Ghent

Cyprus - VTTV Vitol

Cyprus - RAF Akrotiri Air Force Base

Croatia - Dubrovnik Airport

Denmark - Oiltanking Copenhagen Airport

France - Petroineos Alkion

French Polynesia - Tahiti Airport

Isle of Grain - BP Air

Ireland - Zenith Terminals

Iceland - Keflavik Airport

Malta - Oiltanking

Norway - Oslo Airport

Spain - Evos Algeciras (ex-Vopak)

Sweden - Vasteras Oil Harbour

UK - London Heathrow Airport

UK- Manchester Airport



User Reference List

Asia & Other Regions

Africa - Tanzania Port Authority	Singapore - Advario (ex-Oiltanking)
Africa - Tanzania Oil	Singapore - Vopak Sebarok
Africa - Tunisia TankMed	Singapore - Vopak Banyan
Australia - Viva Energy	Singapore - Power Seraya
Brazil - Enauta FPSO	Singapore - Republic Singapore Air Force
Fiji - Nadi International Airport	Singapore - Oiltanking Odfjell
Greenland - Kangerlussuaq Airport	Singapore - Changi Airport
Indonesia - Pertamina	Turkey - Tupras Petroleum Refineries
Philippines - Philippines Coastal Storage	UAE - Port of Fujairah
Malaysia - Petronas	UAE - Fujairah VTTI
Malaysia - ATT Tanjung Bin	UAE - Fujairah Oil Terminal
Oman - Oiltanking Oman	USA - Enterprise (ex-Oiltanking)
Singapore - Tankstore	USA - Oiltanking Houston

