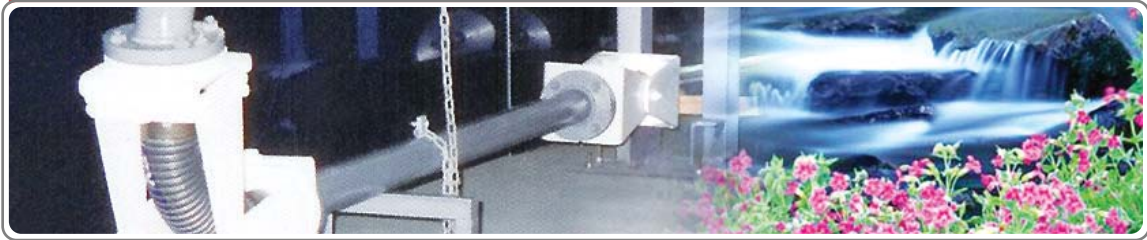


WB produces >>>

1. 3+1" FLOATING ROOF DRAIN SYSTEMS



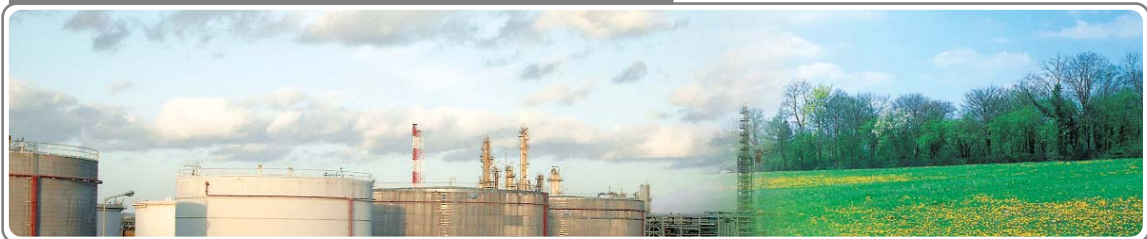
2. ALUMINUM DOME COVERS



3. INTERNAL FLOATING ROOF SYSTEMS



4. EXTERNAL FLOATING ROOF SEAL SYSTEMS



5. TANK FITTING PRODUCTS



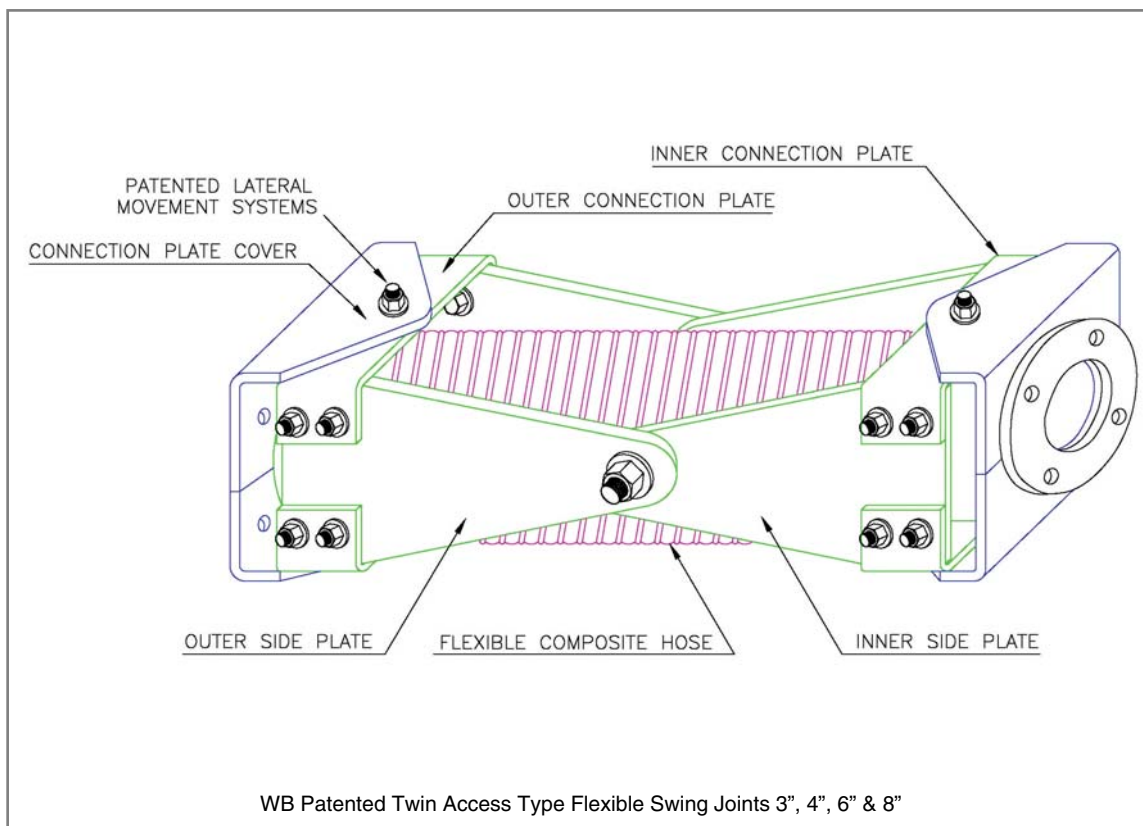
WB, World Best Products, World Best Service, World Best Technology

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• World Leading Designer & Manufacturer



• Operating Condition

1. Stored Fluids

- Almost all Hydrocarbon
- Aromatic content up to 100%
- MTBE and BTX products.

2. Temperature

- -40°C + 100°C

3. Pressure

- The design pressure is 150 PSI
- The test pressure is limited up to 60 PSI

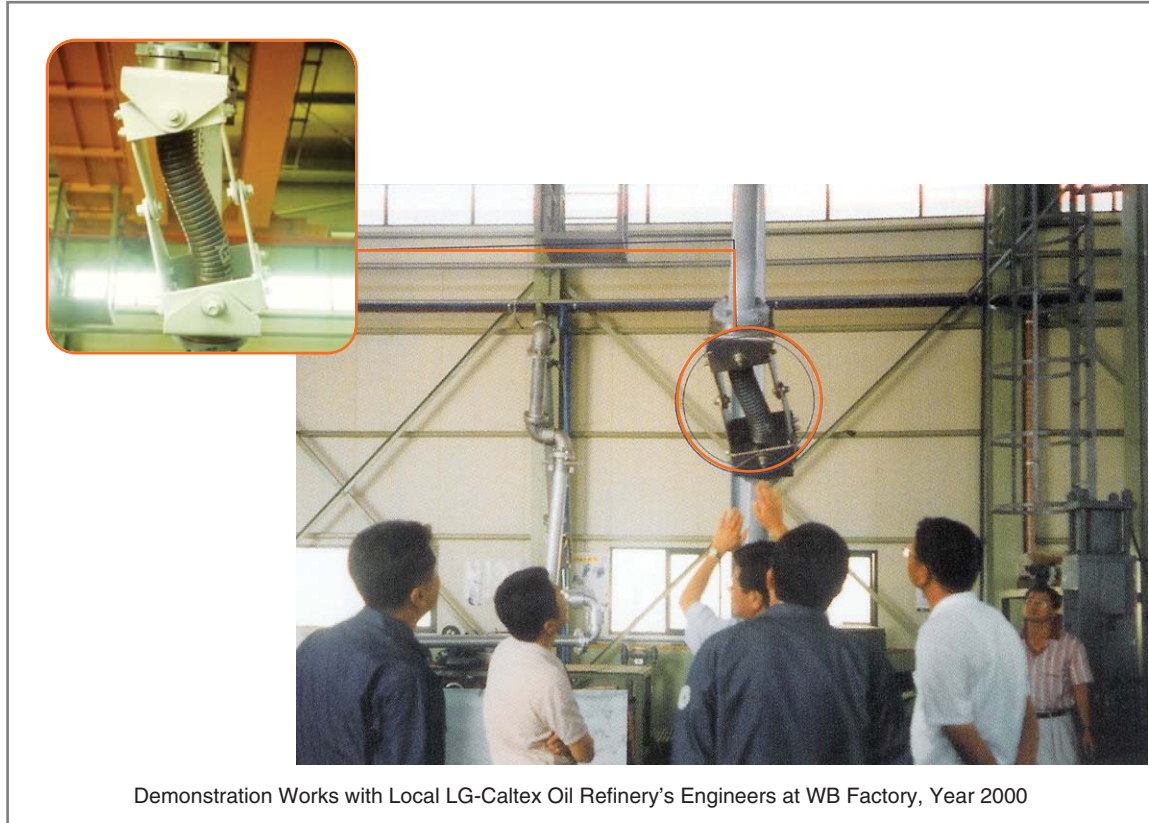


LG-Caltex use WB 6" FSJ on Crude Oil Terminal at Yeosu

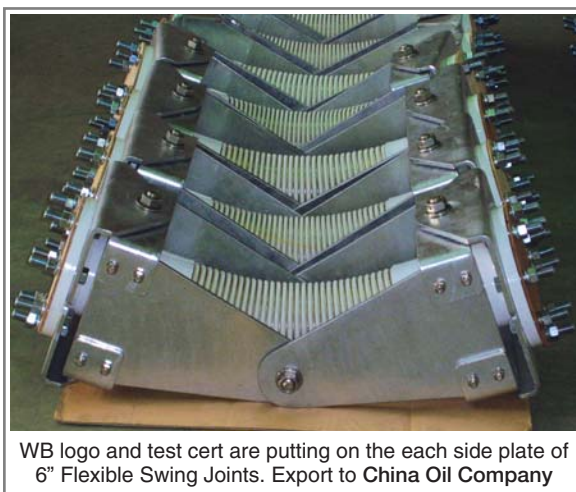


Photo of 6" WBFSJ Drain for Export to Iran Oil Company

• We Guarantee for Your Tanks



• Pictures for Export Packing



• Floating Roof Drain System (3+1" Type)

WB worldwide patented twin access type steel drain systems can be used like a rubber hoses type movement

in your Floating Roof Storage Tanks.

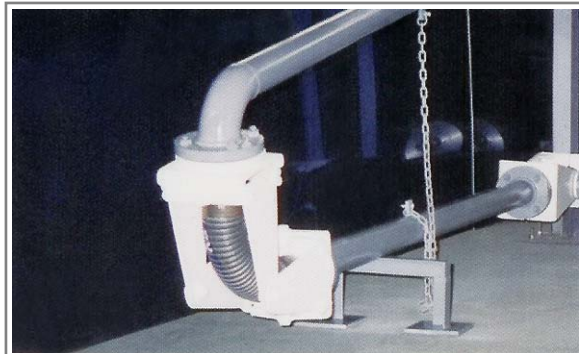
We have achieved this new technology to overcome many other competitors' failure design works and prevent drain hoses & other Bolts broken problems in your floating roof drain systems.

From our extensive research & laboratory test works, the twin access type. **WBFSJ** joints can be allowed at least $\pm 15^\circ$ degree left and right hand side deck's movement works without damage on your whole drain systems.

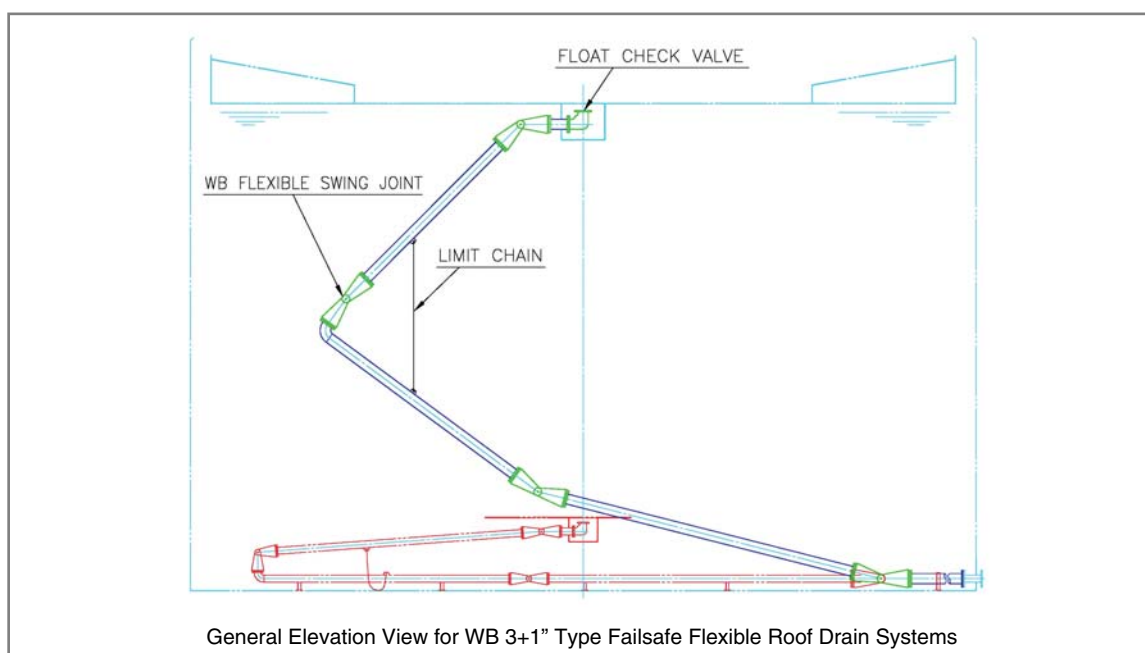
We are very proud of WB's state of the art technology to minimize maintenance works on drain systems to our valuable clients including world oil and petrochemical industries.



Why do we need twin access type joints? This picture shows the flexible hose must be run lateral direction when the floating deck move vertical position.



3+1" Type, the Flexible Swing Joints must allow both vertical and horizontal deck's movement to reduce excessive load transfer from Pontoon Deck.



• Excellent Design Works for All Tank Use

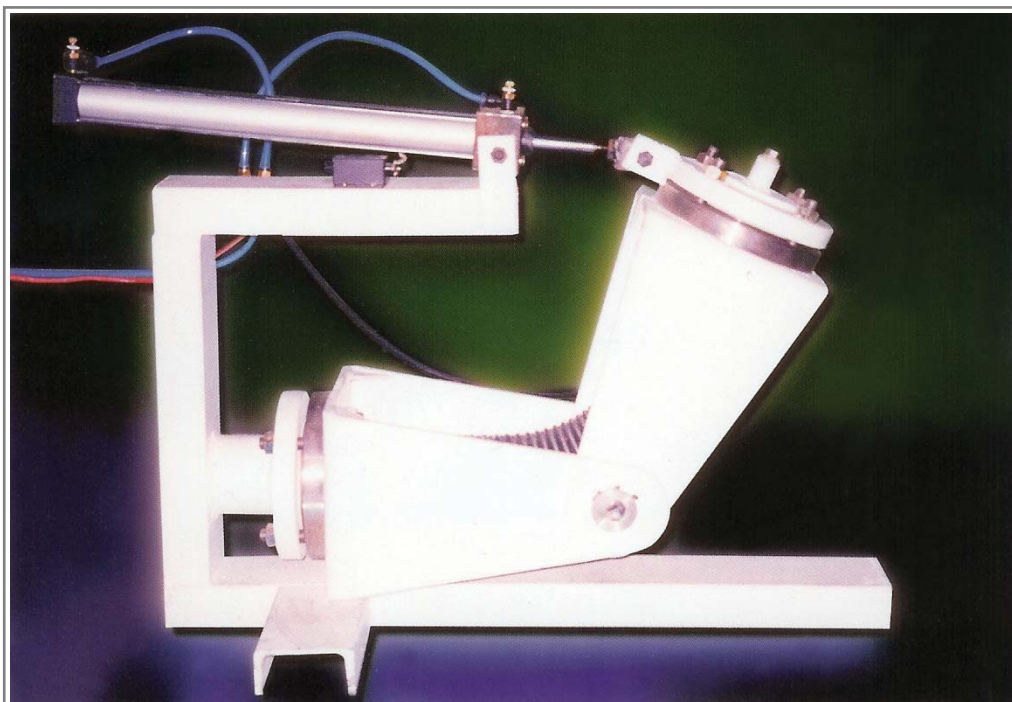
Our patented flexible swing joints can be operated both horizontal load and vertical driving force without any concentrated load transmittal works on the complete drain line, therefore, we recommend you to use our patented drain systems for your new tank building projects and existing tank's replacement works.

One of the critical failures of flexible joints like a competitor's design is continuously cause hoses broken problems when the deck's move-up and down direction including excessive oil pumping pressure from pipeline to the tanks.

It delivers uneven force and pressure on the each swing joints components and cause failure of broken hoses and leakage problems on your drain systems. From our long experience maintenance works from local oil refinery companies, most of drain problems comes from swing joint failure including connecting bolts and hoses broken accident.

• DRAIN SIZE SELECTION CHART

	Size	Temp	Breaking Strength	Unit Weight	Max. Pressure
1	3"	-40 ~ +100°C	600 psi	App. 38kg	150 psi
2	4"	-40 ~ +100°C	600 psi	App. 60kg	150 psi
3	6"	-40 ~ +100°C	600 psi	App. 118kg	150 psi
4	8"	-40 ~ +100°C	600 psi	App. 210kg	150 psi



Extensive Test Finished Under 0.1kg/cm² Inside Water Pressure Over 10,000 Cycles Continuous 90° Degree Repeatable Test.

• Extensive Development and Research Works

WORLD BRIDGE has extensive research and development programs to overcome existing Swing Joint's failure for the roof drain line and eventually prevent oil leakage on the storage tanks and oil terminal industries.

In this connection, now we are developed **Uniform Patented Swing Joints** to solve all the problems including uneven forces transmittal works and survive critical earthquake zone due to the nature of twin access movement works.

Our continuous development & research programs will resolve your tanks troubles and hope to improve **maximum storage with WB patented twin access type swing joints systems**.



Test Photo for the Pressure & Repeatable Movement Test Over 10,000 Cycles. We believe that this type of test will be worst the operating conditions and expect no trouble to use over twenty (20) Years without drain maintenance works.



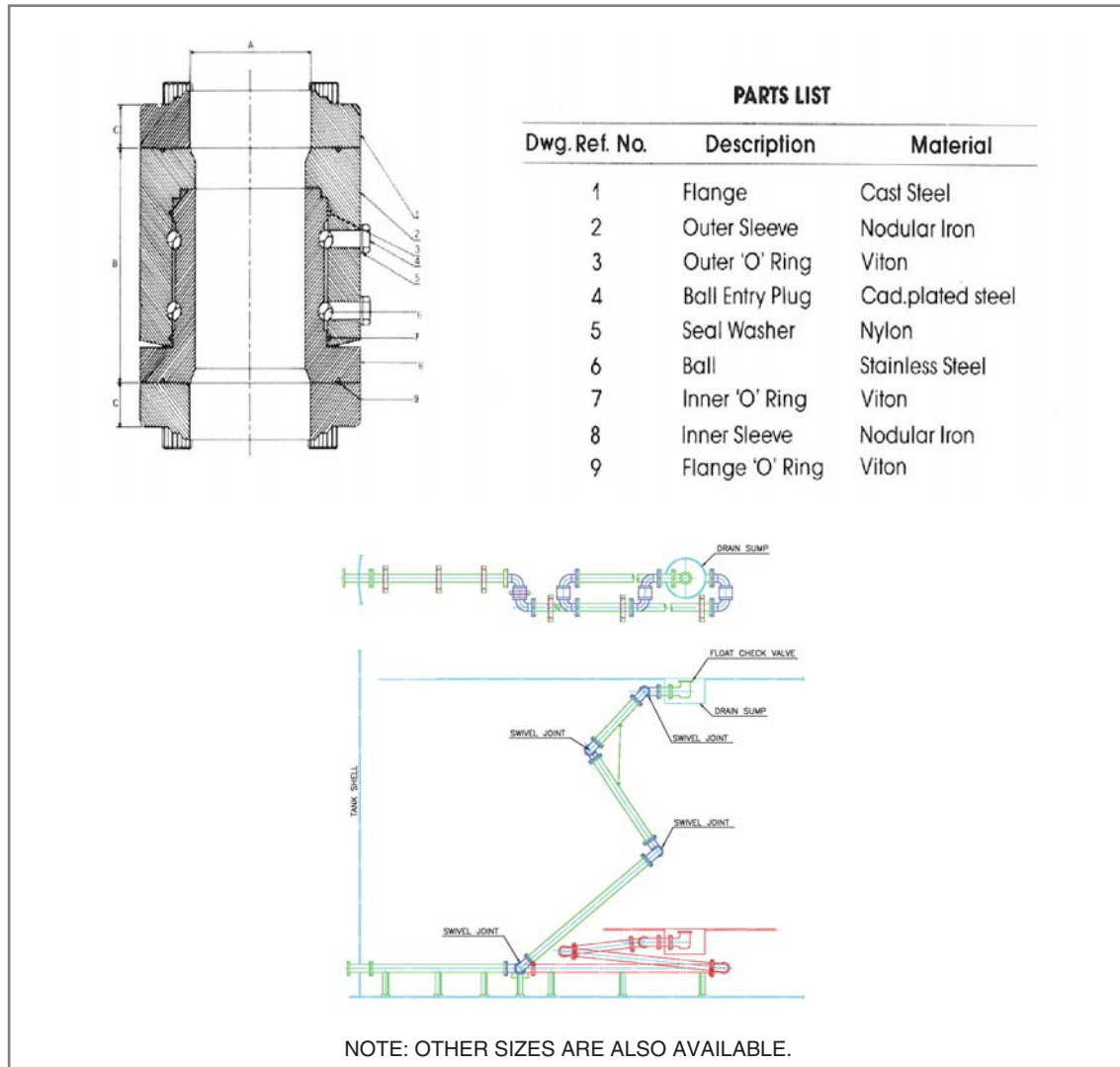
WB, 3+1" Type Flexible Drain Systems with Large Diameter Floating Roof Tank

• Swivel Joint Type Roof Drain System

• TECHNICAL INTRODUCTION

WB Swivel Joints are fully sealed units specifically designed for submerged liquid service such as articulated

pipe drainage systems for floating roof tanks, oil skimmers and suction line system.



• DESIGN FEATURES

• ECONOMICAL DESIGN

Detachable cast steel flanges allows the stocking one basic unit only which it is possible to fabricate any style of swivel joint

• RELIABLE DESIGN

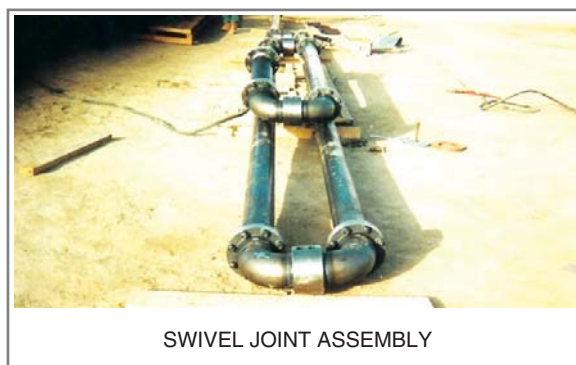
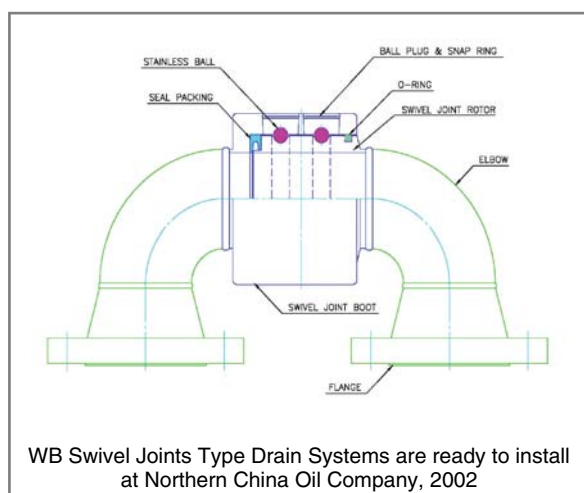
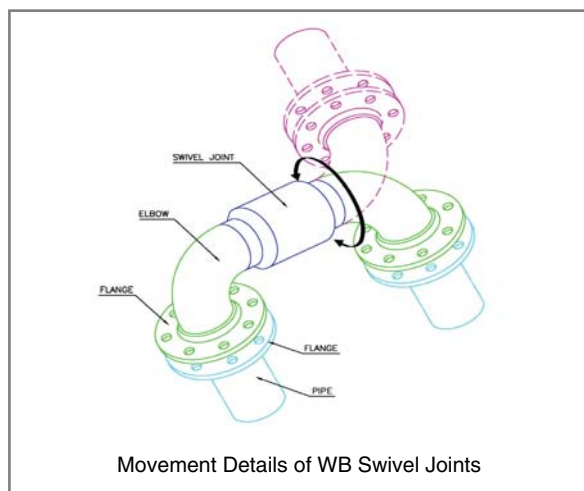
Specially designed for submerged service with Viton sealing, electroless nickel plated machined surfaces and sealed grease lubrication.

• ROBUST DESIGN

High load bearing capacity due to special S.G. Iron material and widely spaced precision raceways each carrying a full complement of large diameter steel balls.

• Swivel Joint Type Roof Drain Systems

SWIVEL DIMENSION INCHES & MILLIMETERS				WEIGHTS
SIZE	"A"	"B"	"C"	
3"	3" 76	5.1/2" 139.7	1" 25.4	36.5 LBS 16.5 KG
4"	4" 101.6	5.1/2" 139.7	1" 25.4	45 LBS 20.5 KG
5"	6"	5.3/4" 146	1.1/8" 28.6	68 LBS 31 KG

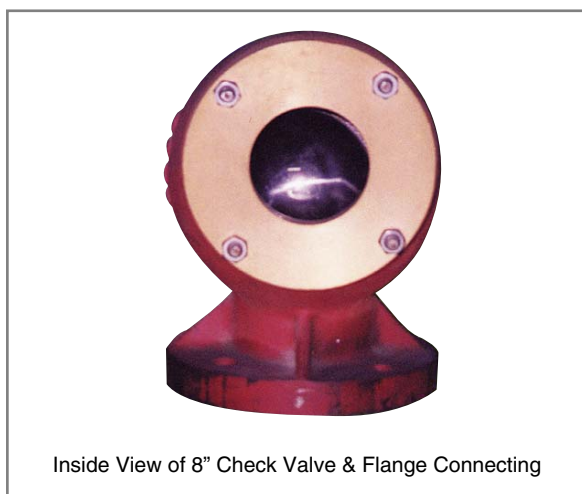


• Float Check Valve Products

The unique WB's Float Check Valve is operated in line with roof drain systems to prevent a possible overflow product from floating roof tank at the time of drain leakage situation. Whether drain line cause leakage, the valve closes automatically inside of drain sump and prevent oil flow from the tank.

• Selection Table

MODEL No	Size (mm/inch)	Weight (KG)	Material (housing/ball)	Remark
1. WBFC-80	80A/3B	30	Cast Iron/Stainless Steel	
2. WBFC-100	100A/4B	35	//	
3. WBFC-150	150A/6B	45	//	
4. WBFC-200	200A/8B	65	//	
5. WBFC-250	250A/10B	80	//	
6. WBFC-300	300A/12B	95	//	



• Detail Description

- A. WB Float Check Valve is designed to operate inside of the drain sump in connection with complete drainage systems on the tank.
- B. When the stainless ball floats inside of the valve, the drain systems will be closed.
So, it prevents overflow product of the drain system to keep oil spillage on the floating tank.

• Float Check Valve for Roof Drain Systems

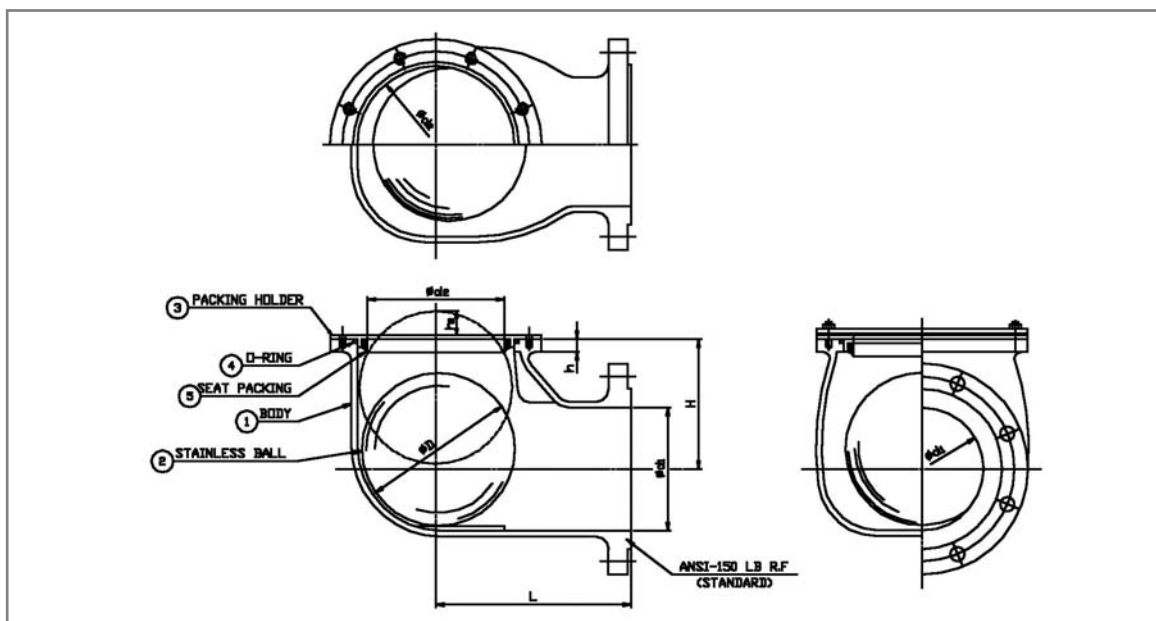


Special Material Flange and Packing Seal for Float Check Valve



8 inch Float Check v/v is installed in Roof Sump

• Detail Dimensions



• Dimensional Size

MODEL No.	Size	d_1	d_2	Packing Holder			L	H	D	h	h_2
				O.D	B.C.D	STUD BOLT					
WBFC-80	3B	80	80	170	150	4-M10	180	115	115	22	-
WBFC-100	4B	100	100	190	170	4-M10	200	115	125	22	-
WBFC-150	6B	150	150	265	240	8-M12	250	160	180	26	6.3
WBFC-200	8B	200	200	315	290	8-M12	300	250	230	26	24.2
WBFC-250	10B	250	250	380	355	8-M12	350	310	300	26	33.1
WBFC-300	12B	300	300	420	420	8-M12	400	360	350	26	50.9