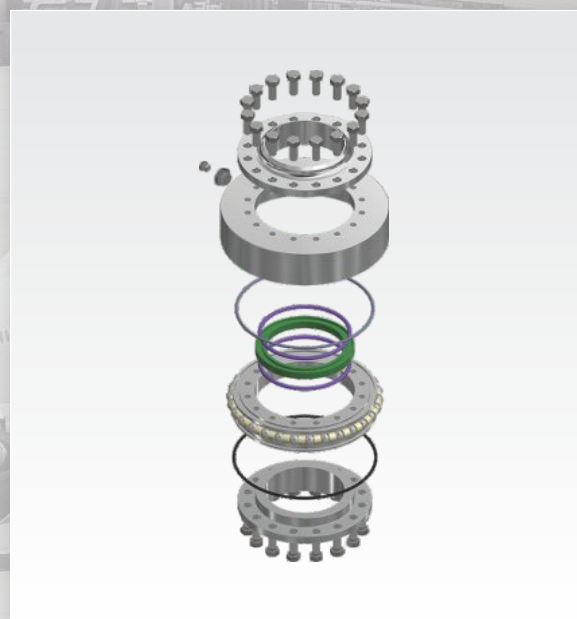
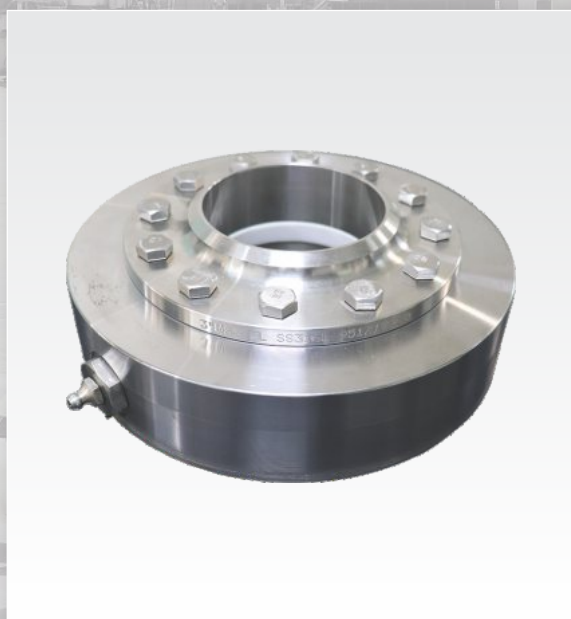
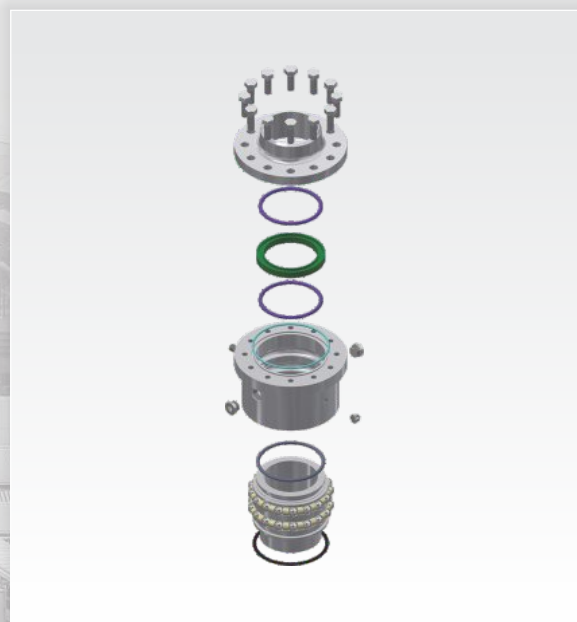


**WOODFIELD**

Safe Hands

## SWIVEL JOINTS



# ABOUT WOODFIELD

Woodfield Systems is a premier design, manufacturing, sales & service organization providing customized bulk fluid handling and safety access solutions for loading and unloading product in the oil & gas, chemical, petrochemical, cryogenic and aviation sector.

Woodfield Systems manufactures loading arms, safety access systems, floating suction unit and metering/processing skid systems integrated into a complete solution to meet the needs of our clients.

Woodfield Systems has a state of the art engineering and manufacturing facility in India, United States and Europe with sales offices across the world. These facilities allow for immediate response to any customer's needs, regardless of their location in the world.

An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, PED:CE and AD 2000-Merkblatt HP0/DIN EN ISO 3834-2 Integrated quality management system and a passionate leadership team, Woodfield Systems continues to keep all our clients and team members "in safe hands"...



[www.woodfieldsystems.com](http://www.woodfieldsystems.com)

## SWIVEL JOINT- "THE HEART OF EVERY LOADING ARM"

Loading arms are articulating rigid pipe work systems specifically designed to handle a plethora of bulk petrochemical, industrial and compressed gas products. They make the connection between plant storage and the transport, be it truck, railcar or barge to allow the product to be transported away or received in.

Loading arms not only carry their own weight and the weight of the product, but they also carry important process equipment such as valves, couplers, purge lines etc. This allows large bore process systems to be used which an operator typically could not manage, or would put them at risk.

Swivel Joints are high precision devices which carry the axial and radial load of the loading arm while at the same time carry the product under pressure and allow to rotate the loading arm and make the important connection. At the same time being able to handle system or ambient temperatures from +230°C to -196°C.

Each **Woodfield Systems Swivel Joint** design is independently tested and certified by TUV to provide confirmation of:

- Leak free extended life at maximum working conditions
- At continuous mechanical load
- At continuous maximum pressure or temperature

### Sealing:

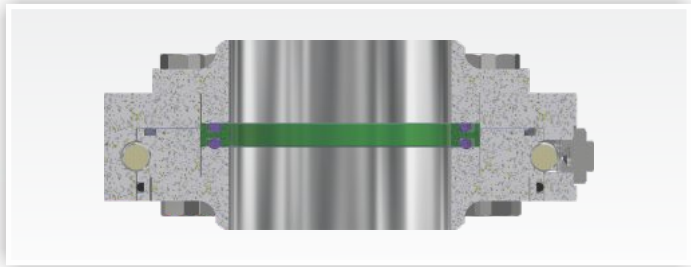
A range of sealing options exist to suit every application. Most seals are interchangeable with other Swivel Joint models in the range.

- Viton, A, B, GFLT
- Nitrile, HNBR
- EPDM
- FEP
- PTFE
- Kalrez

### Materials of Construction:

- Carbon steels
- Stainless steels
- Aluminium
- Exotic Alloys

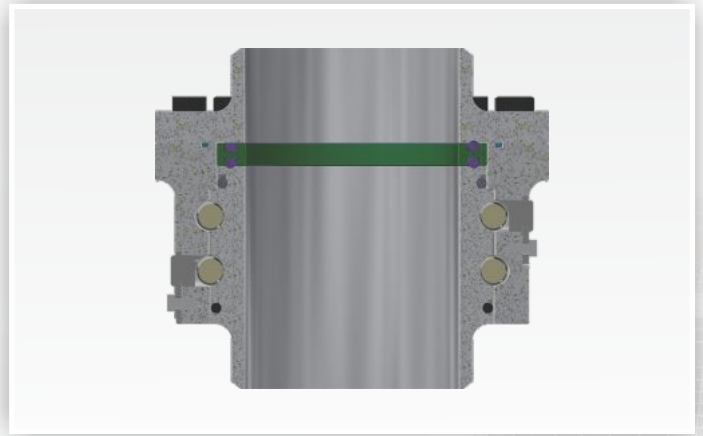




### WSS "SUPER SINGLE"

#### Single Race Dual Split Flange Swivel

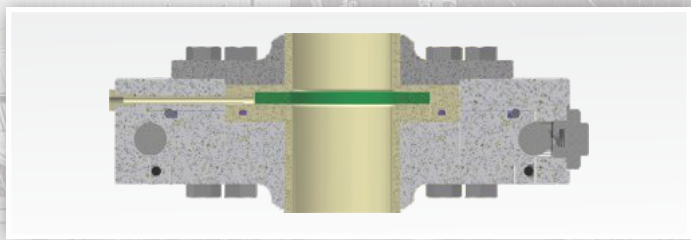
- State of the art design
- Hardened ball raceway for high working loads
- Small overall height
- Single ball raceway Cassette replaceable without cutting and welding
- Cassette made of bearing grade carbon steel
- Product path is formed by the pipe flanges, which are made from a variety of materials to suit the product.
- Leak detection can be provided
- Tested in accordance to German TA Luft
- MOC
  - Cassette is hardened carbon steel
  - Flanges are:
    - A105 Carbon Steel
    - 304L or 316L SS
    - Aluminium
- Special Alloys on request



### WL2

#### Dual Race Dual Split Flange Swivel

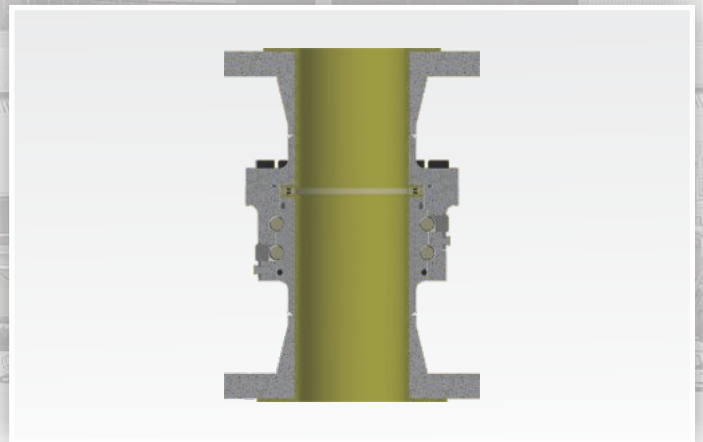
- Proven design over decades. Continuously improved.
- Hardened ball raceway, carbon steel and stainless steel
- Double ball raceway for highest working loads
- Fourfold sealing
- Leak detection port can be used for N2 purging
- External or internal jacket heating where required
- MOC
  - A105 or 350 LF2 Carbon steel
  - 304L or 316L SS
  - 6063 Aluminium
- Special Alloys on request



### WSP "LINED 1"

#### PTFE Lined Single Ball Raceway, Dual Split Flange Swivel Joint.

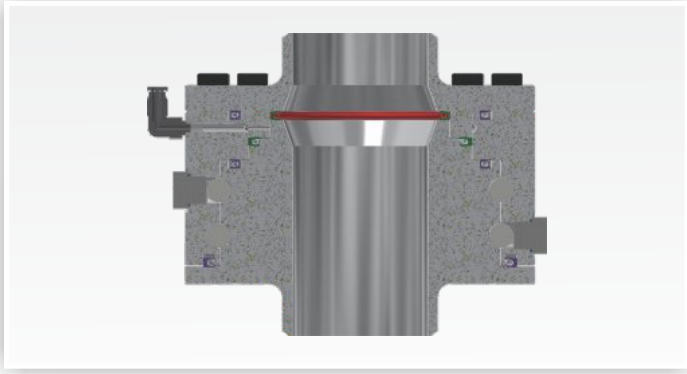
- PTFE lined for high corrosive liquids
- Hardened ball raceway
- For high working loads.
- Small overall height
- Single ball raceway Cassette replaceable without cutting and welding
- Cassette made of bearing grade carbon steel
- Product path is formed by the flanges, which are made from a variety of materials to suit the product.
- Leak detection can be provided option available
- Tested in accordance to German TA Luft
- MOC
  - Cassette is hardened carbon steel
  - Flanges are PTFE lined:
    - A105 Carbon Steel
    - 304L or 316L SS
- Special Alloys on request



### WLP "LINED 2"

#### PTFE Lined Dual Ball Raceway, Single Split Flange Swivel Joint.

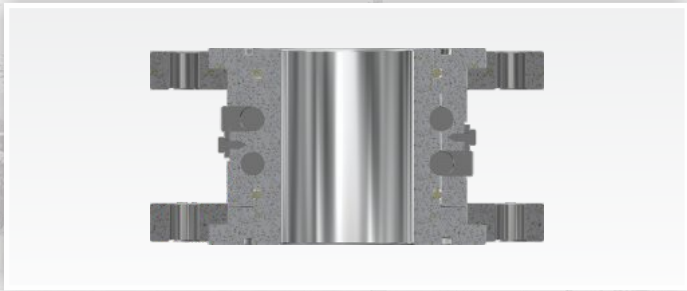
- Proven design over decades. Continuously improved
- Hardened ball raceways, carbon steel and stainless steel
- Two ball raceways for highest working loads
- Secondary sealing available
- Leak detection port can be used for N2 purging
- MOC PTFE lined:
  - A105 Carbon Steel
  - 304L or 316L SS
- Special Alloys on request



**WC2 "CRYO"**

**Dual Race Split Flange Cryogenic Swivel Joint**

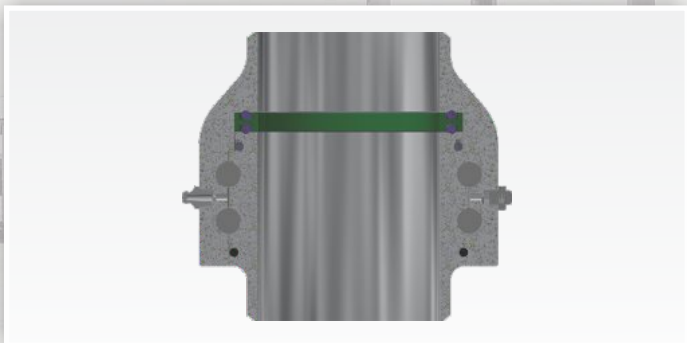
- For cryogenic applications upto -200°C
- Hardened ball raceways
- Two ball raceways for highest working loads
- Fivefold sealing
- Nitrogen purging to keep swivel dry
- SS316, SS304



**WSF "FLANGED"**

**Split Flange Swivel Joint**

- Easy maintenance & replacement
- Hardened ball raceways
- Two ball raceways for highest working loads
- Fourfold sealing
- MOC Carbon steel, Low carbon steel, Stainless steel, Aluminium, special alloys on request.



**WLB "BELL"**

**Two-Piece Swivel Joint**

- Two ball raceways for highest working loads
- Secondary sealing
- MOC
  - A105 or 350 LF2 Carbon Steel
  - 304L or 316L SS
  - 6063 Aluminium
  - Special Alloys on request

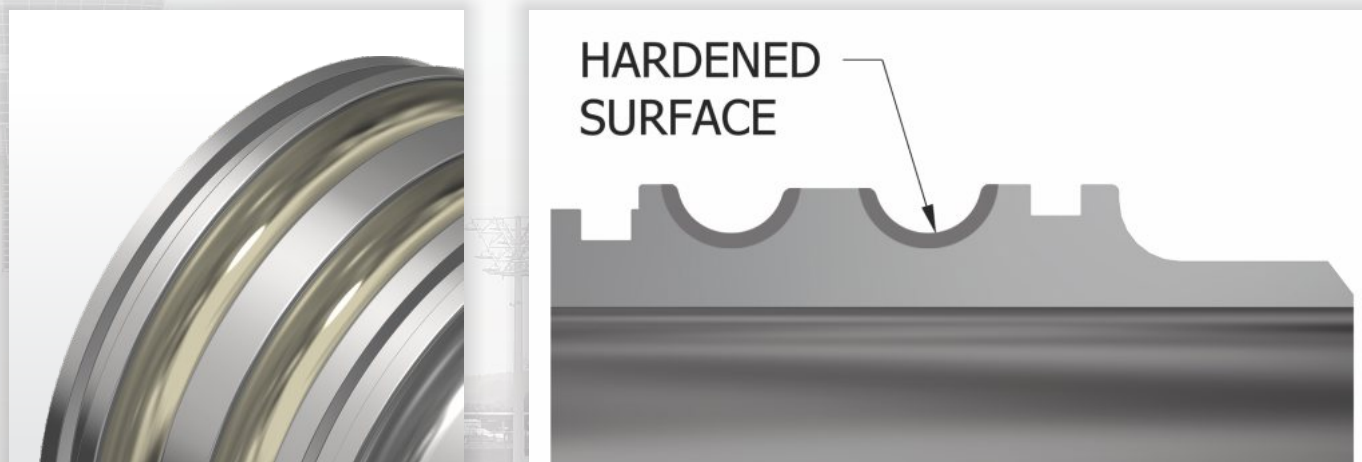
Technical details	
• Sizes	2", 3", 4", 6" for standard applications. Upto 24" for Floating Suction Units. Other sizes on request.
• Max. working pressure	40 bar
• Working temperature	-40°C to +240°C (for standard applications) -198°C [for Cryogenic (LNG) applications]
• MOC	Carbon steel, Low Temp. Carbon steel, Stainless steel, Aluminium and special alloys on request.
• Seal materials	Buna/ Nitrile, Viton, Kalrez, EPDM, FEP Encapsulated special composition on request
• Lifetime tested	100.000 working cycles under load and pressure, passed without mechanical failure.
• Specialities	<ul style="list-style-type: none"> <li>• WL1 similar to WL2</li> <li>• However with one ball raceway for lower working loads</li> <li>• Light weight design</li> <li>• Leak detection with heating and jacketing</li> <li>• Nitrogen purging for leak detection</li> <li>• Chemically compatibility with most of the services</li> </ul>

## The Ball Raceway - most important feature

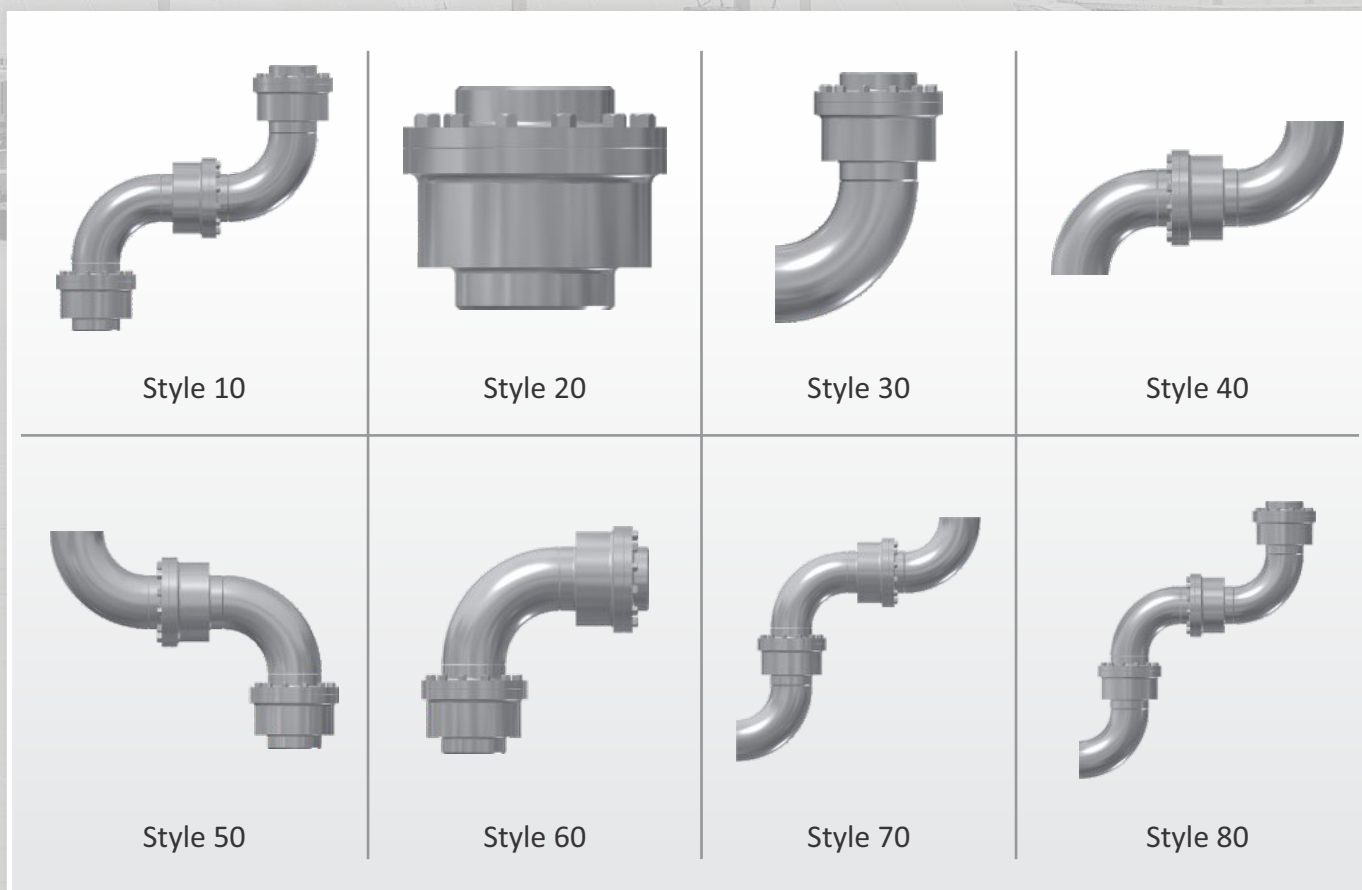
Woodfield's Swivel Joints are designed to fulfill all requirements coming from different and severe applications in the industry. Reliability, environmental safety, low cost of ownership and many years of trouble-free service are mandatory!

To even exceed customers expectations the quality of the ball raceways of our Swivel Joints are of utmost importance. It goes without saying that all ball raceways (on inner and outer ring!) of our Swivel Joints undergo a special hardening process to provide the required load capacity!

Design and testing of all of our Swivel Joints is based on the criteria of the OCIMF (Oil Companies International Marine Forum - Design & Construction Specification).



## International standards - Swivel Joint assembly groups



## Woodfield Systems USA

200 Business Park Boulevard, Columbia, South Carolina 29203. USA.  
US/Canada Toll Free :+1 888 915 6266 | International :+1 803 399 7597  
Email: sales.usa@woodfieldsystems.com

**WOODFIELD**

## Woodfield Systems International

302-A, Nitco Biz Park, Plot No. C-19, Road No.16, Wagle Estate, Thane (W) - 400604. Maharashtra, India.  
Phone: +91-22-6704 0000 | Fax: +91-22-6704 0099 | Email: sales@woodfieldsystems.com

Safe Hands

## Woodfield Systems Europe

Avda. San Francisco Javier, 9 Off. 1129, 41018 Sevilla, Spain  
Tel : +34 955 300 424 | Email : sales.es@woodfieldsystems.com

www.woodfieldsystems.com

# Let Woodfield Systems Complete the Solution



Safety Access Equipment



Skid Solutions



Loading Arms



Metering skid



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