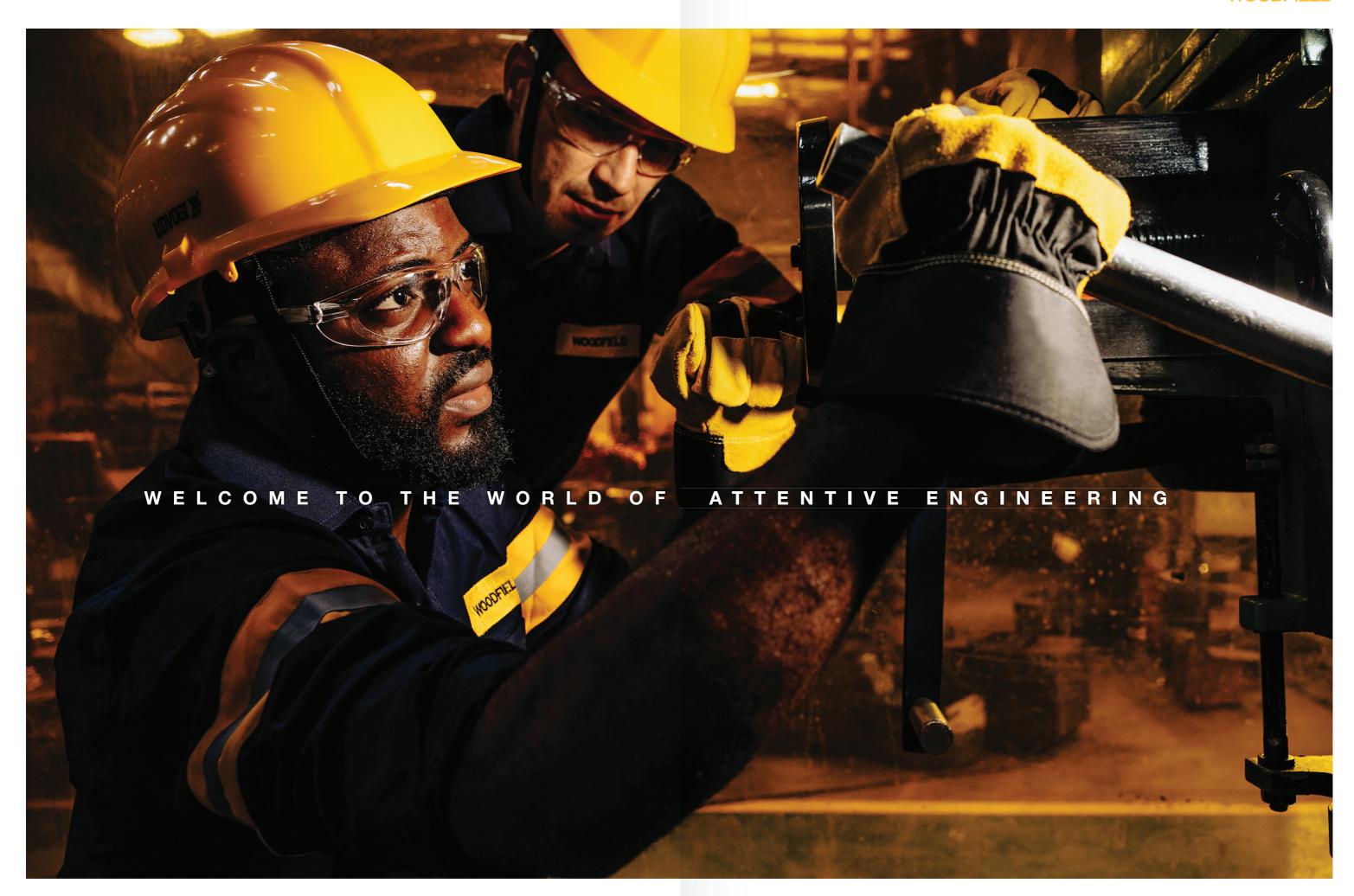


#### WOODFIELD



#### **ABOUT US**



#### VISION

Resolve complexity through ingenuity, precision and collaboration to establish ourselves as leaders in reliable & enduring partnerships.

#### MISSION

To integrate our engineering passion with hands-on expertise, forging essential connections between technology & necessity, efficiency & safety and people & the environment.

#### VALUES

INNOVATE

Explore new ideas and push engineering boundaries

RELIABLE & TRANSPARENT

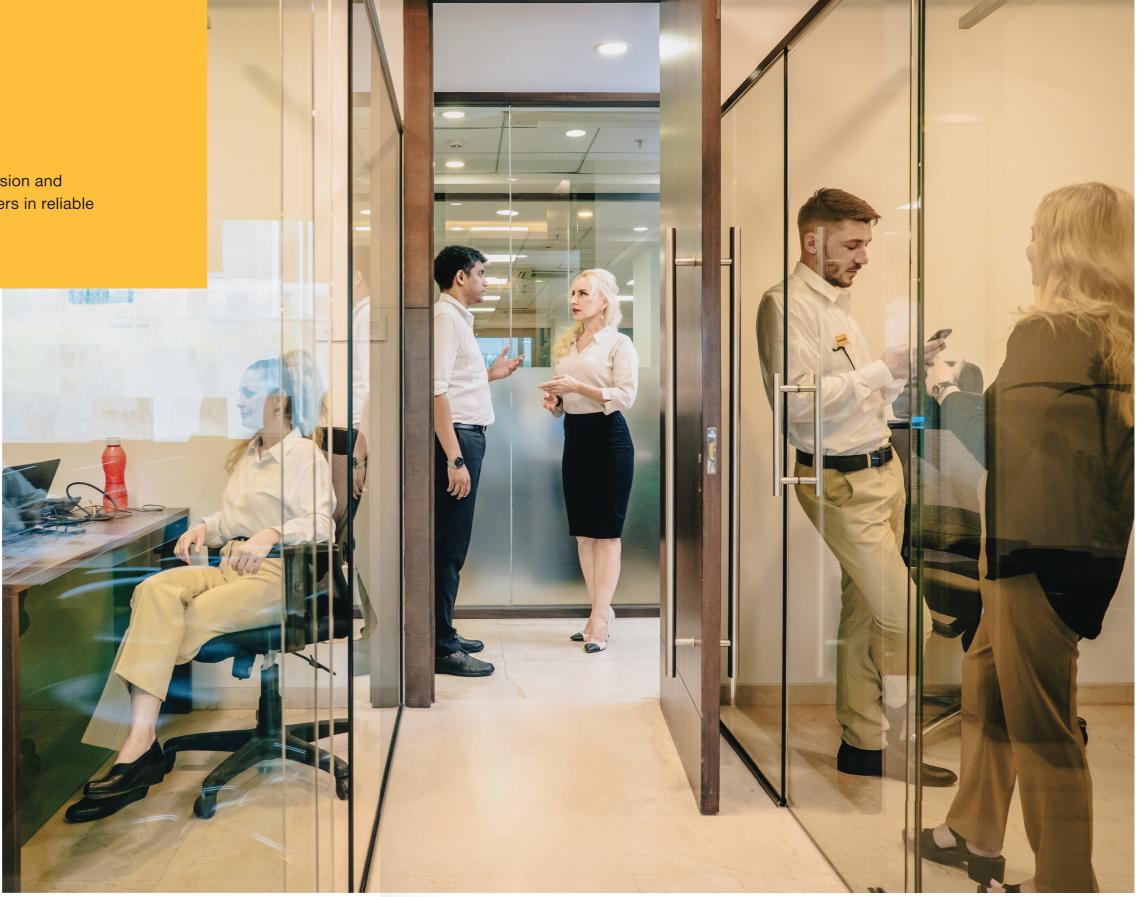
Place a premium on honesty to forge long-lasting and trusted relationships

SAFE & RESPONSIBILE

Demonstrate commitment to human and environmental safety through responsible action

CUSTOMER-CENTRIC

Prioritise customer needs to tailor every interaction & solutions





At Woodfield, 'Hands-On, Switched-On' is not just a phrase. It is our promise of a proactive attitude and unwavering support.

From feed support to detail engineering, our hands-on commitment ensures excellence at every stage.

We are always available globally to address your needs and enable quick response in every gas & fluid handling scenario.

#### **OUR STRENGTHS**



Our commitment to deliver world-class solutions is grounded in decades of engineering, innovation, design and manufacturing excellence. By seamlessly integrating various systems, we devise solutions that fulfil specific needs.

#### **KNOWLEDGE & EXPERIENCE**

Engineered by expert hands, our products uphold a standard of precision and quality that exceeds industry norms. Every detail, from design conception to manufacturing, reflects the skill and commitment of our experienced professionals.

#### **RESEARCH & DEVELOPMENT**

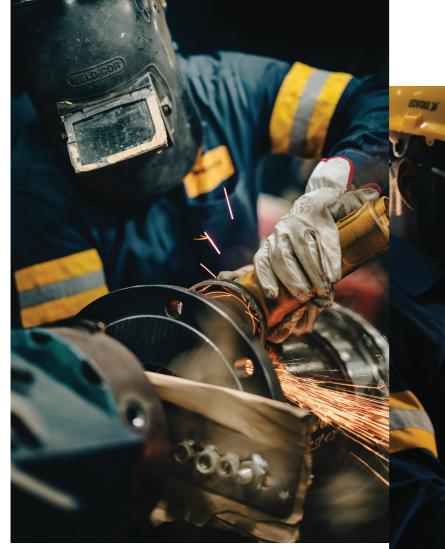
Innovation is the key to staying relevant and future-ready. At the core of our readiness lies how seamlessly we integrate innovation into our operations. Our dedicated R&D team continually strives to enhance product reliability and refine designs for optimum performance. Each new product design undergoes rigorous testing stages, adhering international standards to ensure flawless operation.

#### **DESIGN**

Our commitment to engineering excellence is rooted in our focus on functionality and aesthetics.

A dedicated and highly experienced in-house design team specialises in crafting customised solutions tailored to specific site conditions. We employ modern techniques such as Finite Element Analysis, Simulation, Failure Mode Effect Analysis and Computational Fluid Dynamics. All projects are designed in 3D softwares along with installation site simulation to provide enhanced visualisation assistance to clients.

#### OUR STRENGTHS ■





#### MANUFACTURING

We have state-of-the-art engineering and manufacturing facilities to handle all customer needs. With over 300 technicians and engineers operating in our facilities across the globe, we ensure immediate response regardless of geolocation.

#### CERTIFICATIONS

ISO 9001 ISO 14001 ISO 45001 PED 2014/68/EU ATEX 2014/34/EU AD 2000-Merkblatt HP0 EN ISO 3834-2 TA-Luft TDT

INTERNAL CHECKPOINTS FROM RECEIPT TO DISPATCH OF ALL EQUIPMENT









& traceability

from receipt

to shipment





















DISPATCH OF EQUIPMENT

**100%** calibrated instruments & inspection tools

gauges are calibrated in-house before every use

Shot Blasting, Paint Booth & Radiography facility

All equipment is jointly inspected by production, quality & design engineers before shipment

vacuum packaging all exports

Record Book is maintained

OUR PROCESS







We believe in delivering engineering solutions where experience meets innovation. Our meticulous craftsmanship ensures that each product bears the mark of excellence, which stands the test of time.



















**EXPLORE OUR SOLUTIONS & PRODUCTS** 







# MARINE LOADING & UNLOADING SOLUTIONS

Our products meet the highest standards of safety. Custom-built by experienced experts, these are engineered to function safely and efficiently.

#### **MANUAL OPERATION**

We design and engineer our Apex counterweight arms to ensure effortless manual operation while adhering to the latest OCIMF standards. An operator can connect these arms to the ship using simple ropes, making them ideal for situations that need a simple, low-cost solution or where electrical power is unavailable for running a control system.

#### **CRYOGENIC**

Our structurally supported double counterweight arms adhere to the latest OCIMF design standards. Their operation is based on a rigid pantograph link system, which helps maintain balance accurately while ensuring smooth operation and minimal maintenance. The arms are ideal for cryogenic applications that need the additional safety requirements of an emergency release system. These can be controlled electronically by using a trailing lead or radio pendant. The control systems can be customised to meet a given requirement.

#### **HYDRAULIC OPERATION**

Our double counterweighted arms adhere to the latest OCIMF design standards. Their operation is designed based on a rigid pantograph link system, which maintains accurate balance while ensuring smooth operation and minimal maintenance. They can be operated hydraulically using lever hydraulic, trailing lead or radio remote.

#### ARMS WITH EMERGENCY RELEASE SYSTEM

Our double counterweight arms adhere to the latest OCIMF design standards.

Their operation is based on a rigid pantograph link system, which helps maintain balance accurately while ensuring smooth operation and minimal maintenance.

These arms are designed to be used where additional safety requirements of an Emergency Release System are mandatory.

They can be controlled electro/hydraulically using either a trailing lead or radio.





## SKID **SOLUTIONS**

We custom-design solutions that ensure safe, precise and efficient operation. Our range covers systems for loading & unloading, metering, blending, pumping, chemical dosing and injection.

#### **RAIL AND TRUCK LOADING & UNLOADING**

We offer solutions for the oil & gas, petrochemical and chemical industries. Our fully integrated systems for top or bottom loading & unloading consist of loading arms, flow metres, batch control systems, instrumentation, and other associated piping, electrical, and structural steel components.

#### **LNG TRUCK LOADING & UNLOADING**

Our skid are engineered carefully and tested meticulously to ensure safe and efficient performance. They can be operated manually or automated with the help of a terminal automation system.

#### **LEASE AUTOMATIC CUSTODY** TRANSFER(LACT) METERING

Our custody metering solutions can derive precise and accurate measurements. Their accuracy ranges from 0.05% to 0.5% of the flow. Depending on the kind of application, the metering technology varies from PD, coriolis and turbine to ultrasonic.

#### **GAS METERING**

We offer systems for country/city gas distribution(CGD), country pipeline networks, and other applications that demand highly accurate, repeatable and reliable metering solutions. Our products meet all the latest standards, regulations, recommendations and mandatory custody transfer approvals.

#### **CRYOGENIC FLUID LOADING & UNLOADING**

Our skid for Cryogenic fluids like LNG, Liquid Hydrogen, Liquid Nitrogen and Ethylene are engineered for precision loading & unloading with help of custody metering.

#### LPG BLENDING

We build systems that can accurately maintain the ratio composition of propane and butane as per given specification. Our skids have a fully integrated closed-loop system with an online analyser that can monitor and control the mixing process.

#### TRUCK UNLOADING AND PUMPING

We provide reliable and safe solutions, custom-designed based on specific unloading capacity requirements, process conditions, configuration, service, type of pumps, etc. All our products meet the API 608 standards.

#### **CHEMICAL DOSING AND INJECTION**

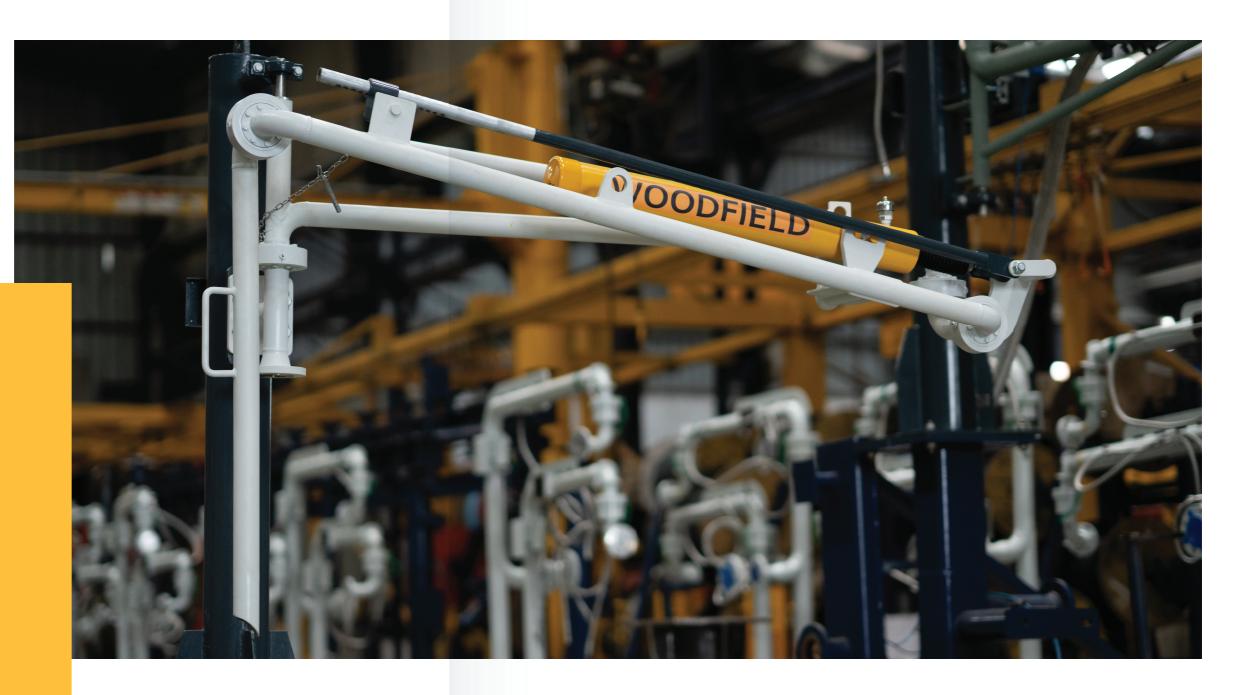
Our customised solutions are meticulously built to accurately dose a preset quantity of chemicals into the process pipeline as per the desired proportion.





# RAIL AND TRUCK LOADING & UNLOADING SOLUTIONS

We carefully design and engineer our products to ensure safe transfer of volatile and hazardous materials like petroleum, compressed gas and chemicals. Our range includes arms for top or bottom loading & unloading applications.



#### **PETROLEUM**

These arms are specially built to handle fuels such as gasoline, lube oil, diesel, kerosene. Our offering comprises products designed for either top or bottom loading & unloading applications.

#### **COMPRESSED GAS**

These arms are carefully engineered to facilitate the precise and safe transfer of liquified gases in pressurised conditions.

Our offering comprises products designed for top or bottom loading and unloading applications.

#### CHEMICAL/INDUSTRIAL

The arms are designed to safely transfer hazardous and non-hazardous chemicals, dairy and food-grade products. Our offering comprises standard and custom-designed arms for top or bottom loading & unloading applications.

#### HEATED

We have solutions to handle temperature-dependent products safely and successfully. Our heated arms are precisely engineered and built to maintain specified temperatures during the transfer. These products have external steam oil jacketing or electric heat tracing. An additional custom insulation jacket reduces heat or energy loss.

#### CRYOGENIC

These arms are state-of-the-art, designed and precisely engineered to ensure maximum safety and ease of operation while transferring cryogenic products such as LNG, Liquid Hydrogen, Liquid Nitrogen & Ethylene. Our offering comprises products designed for top or bottom loading and unloading applications.





We build access systems essential for safe and efficient loading, unloading, venting, and inspecting operations. Our range includes stairs, platforms & gangways for marine, tank trucks, rail wagons and ISO tank containers.



#### **FOLDING STAIRS**

Our reliable and robust products provide safe access from a platform or loading rack to the top of tank trucks, rail cars and ISO tank containers.

These stairs can be manually or power-operated to be lowered during operation and raised to the 'out of the way' stored position on completion of a job.

#### LARGE ACCESS FOLDING STAIRS

Our stairs facilitate safe access to the top-of-vehicle on a road tanker, rail car or ISO tank container without re-spotting the vehicle. These are pneumatically or hydraulically operated and stored in 'out of the way' parking positions after use.

#### **QUICK PLATFORMS**

Our modular platform systems are ideal for conditions that demand quick delivery and hassle-free installation. These are precisely crafted and pre-engineered solutions that do not need field welding. All systems are pre-drilled on all sides to fit any loading situation.

#### OUR OFFERINGS #4 >



We built manual or power-operated gangways to facilitate access to ships and barge.

Once a task is completed, it can be stored in an 'out of the way' parking position.

#### MARINE GANGWAYS

Our products facilitate safe and effortless access during operation and maintenance. Utilising a unique telescopic system, the gangways can adapt to a vessel's tidal movements and stay operational even under severe sea conditions.

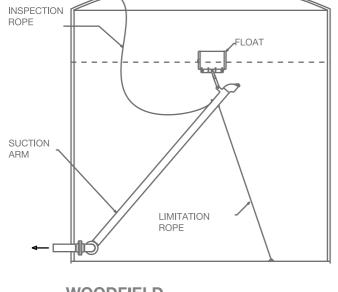
Designed based on the latest technological innovations and practical applications, these gangways have anti-slip walkways, handrails and wide walkways, which allow simultaneous embarking & disembarking.

Produced in collaboration with Prosertek



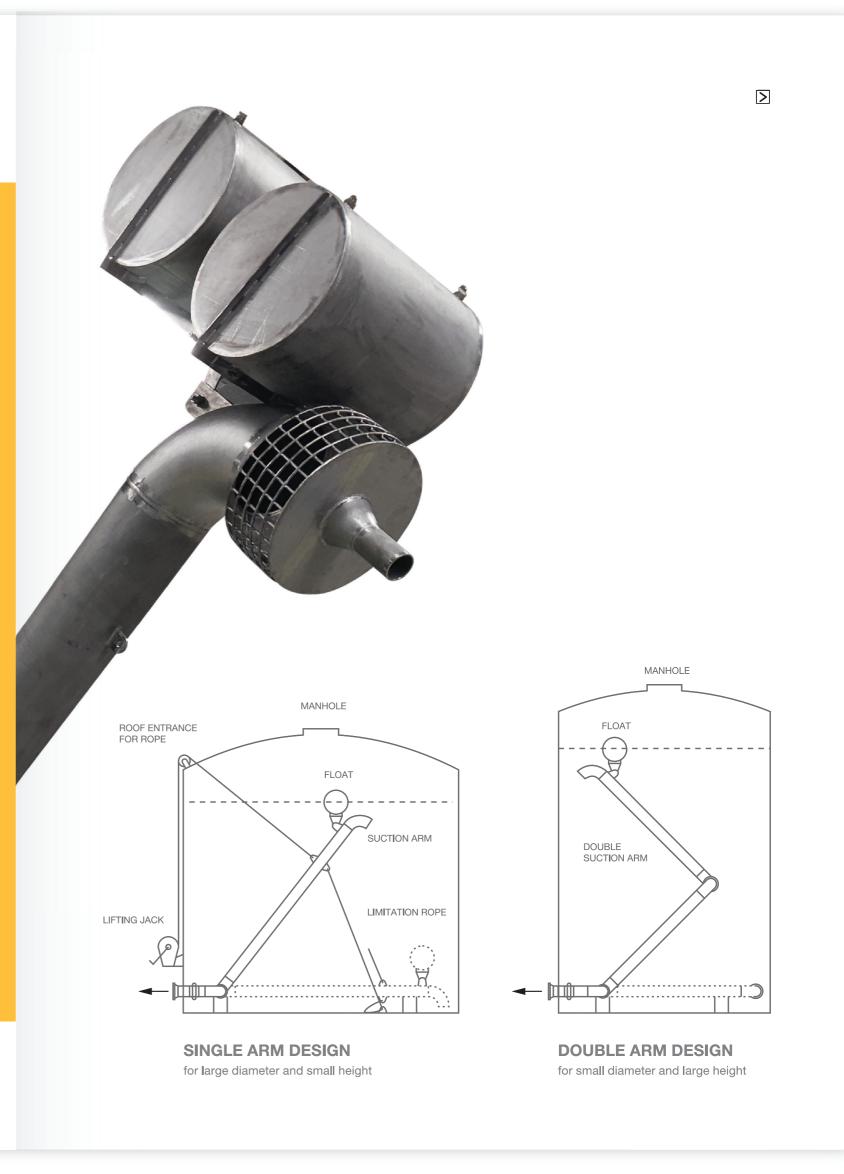
## FLOATING SUCTION SOLUTIONS

We offer single or double-armed floating suction units for horizontal, vertical, above-ground and underground storage tanks. These units draw product from the top of the liquid level, helping maintain clean product quality without additional filtration. Our systems are ideal for petrochemical, chemical and aviation fuel storage tank farms.



WOODFIELD FLOATING SUCTION UNIT





#### **OUR OFFERINGS #6**





# **SWIVEL JOINTS**

Our range of Swivel Joints are suitable for specific applications. These undergo rigorous quality checks and are independently tested and certified by TPIA & the Notified Body, for safety and efficiency.

#### API

Our lightweight cast aluminium swivel joints have dual-ball races for robust & smooth operation. They are long-lasting & low-maintenance. Though standard with Woodfield API Loaded Loading Arms, these can be retrofitted to most existing terminal loading arms.

#### **WSS WOODFIELD SUPER SLIM**

The single-ball race-cassette swivel joints are long-lasting and easy to maintain. They have a super-low profile and are ideal for handling heavy loads effortlessly. We have application-specific solutions for fuels, compressed gases, chemicals and other industrial products.





#### WL2 WOODFIELD DOUBLE RACE

These swivel joints can handle heavy loads with ease and efficiency. Our products are long lasting and low-maintenance. We have application-specific solutions for fuels, compressed gases, chemicals, and other industrial products.





## WL2C WOODFIELD DOUBLE RACE CRYOGENIC

These swivel joints are state of the art engineering product for cryogenic application. Our products are able to handle heavy loads with ease & great efficiency under cryogenic condition. They are long lasting & low-maintenance.







## **DIGITAL CONTROL VALVE**

Our Digital Flow Control Valve (WCLV) is an electro-hydraulic valve that is electrically actuated and hydraulically operated. Paired with batch controllers, these are used in batching operations for loading and unloading tank trucks and rail cars. These valves are ideal for petroleum, petrochemical, and chemical applications.

#### **OPERATION**

WCLV - consist of diaphragm operated Globe valve with two Solenoid valves cone of them configured in normally open (NO) condition and other configured to normally closed (NC) condition, installed in upstream and downstream position respectively. When WCLV, is operated with batch controller, it can be digitally controlled by operation of Solenoid valves with below mentioned stages:

- 1. When NO and NC both solenoids are energized, valve start opening.
- 2. When NC solenoid is de-energized (NO kept energized) valves holds its position.

**APPLICATIONS** 

• Pumping & Unloading

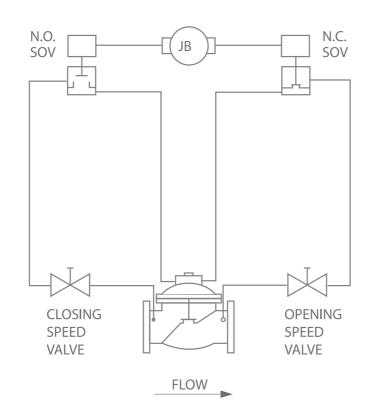
• Truck Loading

Wagon Loading

3. When NO and NC both solenoid de energized, valve is closed.

#### **DESIGN FEATURES**

- Fail safe (to close) design
- Precise multistage operation
- Low pressure drop
- Leakage Class VI sealing





### STANDARD DESIGN FEATURES

- Pressure 40 barg
- Temperature -40°C to 150°C
- Easily removable baskets
- Heavy wall construction meeting ASME requirement
- Machined basket seat to ensure no escape of unfiltered liquid
- Perforated stainless basket with retainer wall
- Low pressure-loss due to more exposed surface area
- Single person maintenance design
- Top mounted Air Eliminator Cab to be provided with same design
- Accessories available as DP gauge
- Used for all petroleum products, chemical and petrochemical products, lubrication oils, etc.
- MATERIAL OF CONSTRUCTION
- Carbon Steel
- · Low temperature Carbon Steel
- Stainless Steel
- NACE / other material on request
- SIZE RANGES
- 2", 150 # / 300#
- · 3", 150# / 300#
- · 4" 150# / 300#
- Other sizes and class on request
- END CONNECTIONS
- · Flanged, Flat face
- · Flanged, Raised face
- · Socket weld, Butt weld
- Threaded connections
- APPLICABLE DESIGN CODES / TESTING
- ASME B31.3, using welders certified to Section IX.
- 100% Radiography / Hydro test



## **STRAINER**

Our basket strainers can prevent the damage caused by foreign particles during fluid transfer. These can hold more process fluid than Y-strainers, which helps lower pressure drops. They are best suited to be used for adhesive fluids or large pipelines with a high-filled basket weight.





## **ACCESSORIES**

#### LOADING VALVE



#### WLV

Our products are specifically designed for top-loading refined fuels and other low viscosity lube oils. They are operated manually in "dead man" style with a spring-loaded handle without detente. An operator has to be present whenever the product is flowing into the tank.

#### API COUPLER



#### WV400

The WV 400 API Coupler is developed based on our decades of experience and understanding of bottom -loading applications. This product is rugged and low-maintenance while delivering efficient performance for years.

#### QUICK DRY COUPLING



#### W-QDC

W-QDC is a two-stage coupling designed and manufactured to ensure safe spillage-free operation and provide positive sealing every time. This coupling is used with hoses and loading arms for transferring products from the terminal to the tanker or vice versa. It is capable of handling various chemical services.

## EMERGENCY RELEASE COUPLING



#### S-ERC (SHEAR PIN TYPE

Non-axial forces are generated on the shear bolts as the tanker moves in case of an emergency. Since these bolts are sheared, they instantly close the two valves present inside the ERC and prevent spillage.



#### C-ERC (CABLE RELEASE TYPE)

Non-axial forces are generated when a tanker moves, in case of an emergency. These forces are transferred to the ERC spring plungers by a cable, which separates them and instantly shuts both valves inside. This helps achieve minimum spillage.

**OUR AFTER-SALES SUPPORT** 





Woodfield Shield, our comprehensive after-sales support programme, is designed to efficiently maintain all active equipment produced by Woodfield Systems. Post handover, a customer can avail of priority technical support from a highly responsive team of experts. The Woodfield Shield team provides on-site and online support and is committed to quick turnaround times. Woodfield Systems also manufactures all the spare parts needed for any equipment in distress. By availing of this program a customer gets:

- A. Access to priority technical support
- B. Quarterly check-ups
- C. Discount on original spare parts

SPARES & SERVICE ENQUIRY shield@woodfieldsystems.com

**OUR NETWORK** 

## **CONNECT WITH US**















PRODUCT ENQUIRY sales@woodfieldsystems.com CORPORATE AFFAIRS info@woodfieldsystems.com

