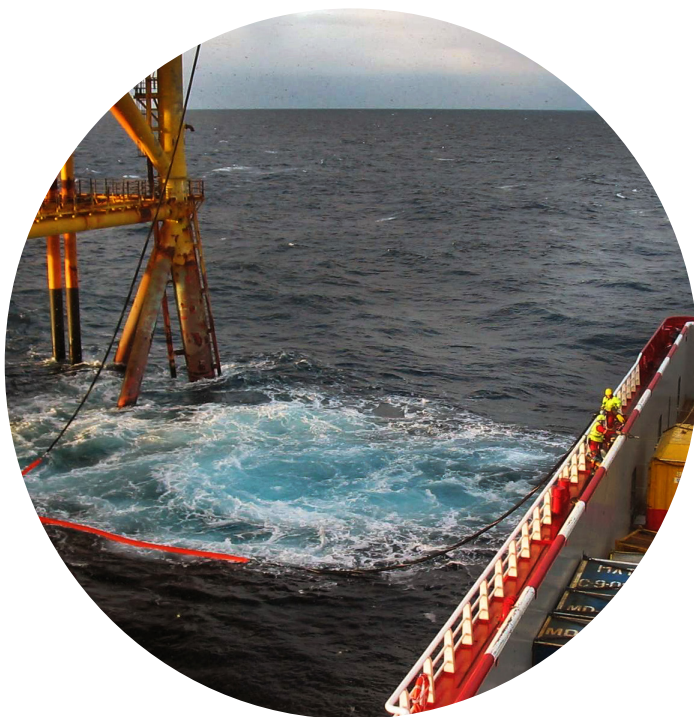


Complete Bulk-loading Solution

flexible solutions



FLUID CONTROL®



Complete Bulk-loading Solution

Bulk-loading hoses are manufactured for use, primarily in the Oil and Gas offshore industry, for the delivery of a wide range of bulk liquids and abrasive powders between supply vessels and drilling rigs/ platforms. Fluid Control provides a range of bulk-loading hoses specially designed for this type application.

The development and design of the Fluid Control Bulk-loading solution is based on our commitment to safety, extensive experience in the design and application of bulk-loading hose in the offshore market.

Optional Design features / Accessories

Typically, the hose assembly comprises of the following safety and anti-pollution components:

- Fluid Control's valved or un-valved weak-link coupling
- Very Low Friction (VLF) Swivel
- Safety lifting hooks
- Hose floatation / (optional buoyancy aids)
- Dry-break hose end couplings
- Hammer-lug unions

We have standardized our bulk-loading hoses to consist of three sections; platform, floating and supply vessel.

The most wear and tear is usually on the platform and supply vessel sections. By using noble metals such as AISI 316 and JM7 on hose inserts, break-away couplings and unions, we can reuse these parts a number of times. A repair then consists only of replacing the worn-out rubber hose.

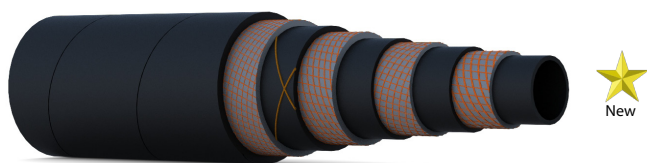
The life span of the metal parts can be up to 5-10 years.

The use of Fluid Control bulk-loading hose solution has proved to be a huge success over the years since its inception, resolving many of the safety and life expectancy problems commonly associated with bunkering hoses.

Benefits

- Slimline design. No flanges or floating element hang-up.
- Simple installation, No special tools needed.
- Easily configured to meet changes in production environments.
- Significantly less downtime.
- Reuse of metal components.
- Certified and traceable components.
- Cost effective solution.





Mudmaster SW 40

Application

Delivery hose for oily abrasive materials, and fuels with aromatic contents up to 50% on oil rigs, oil fields and docks, etc.

Construction

- **Inside:** Inner tube black rubber, smooth, highly resistant to abrasion. DIN 53516 $120 \pm 5\text{mm}^3$
- **Reinforcement:** 6 high tensile synthetic plies with crossing copper wires for hose grounding.
- **Cover:** CR rubber cover, black and smooth, cloth impression, resistant to oil, grease, seawater, ozone and flame resistant

Temperature Range: -30°C up to +80°C

Working Pressure: 40 Bar

Supplied with tough cover outside coating on request.



Tank and Bunkering Hose "Heavy Duty Softwall"

Application

Heavy bunkering hose with 9 tons of tension for oil installations and ships, where there is a requirement for extremely high tear and tensile strength. Suitable for both liquid media and solids. Cover is 3.5 x more durable than conventional rubber. Coil length 61/122m.

Construction

- **Inside:** Black NBR rubber. Resistant to oils with aromatic content up to 55%.
- **Reinforcement:** 4 layer synthetic textile cord with high tensile strength. Max 4% elongation at 24 bar.
- **Cover:** Black Chemivic - Oil, weather, abrasion and ozone resistant. Built-in grounding slit.

Temperature Range: -30°C up to +93°C

Working Pressure: 27 Bar

Supplied with tough cover outside coating on request.



Tank and Bunkering Hose "Softwall"

Application

Heavy bunkering hose for oil installations and ships, where there are requirements for high tear and tensile strength. Suitable for both liquid media and solids. Coil length 61/122m.

Construction

- **Inside:** Black NBR rubber. Resistant to oils with aromatic content up to 55%.
- **Reinforcement:** 4 layer synthetic textile cord with high tensile strength.
- **Cover:** Black CR - Oil, weather, abrasion and ozone resistant. Built-in grounding slit.

Temperature Range: -40°C up to +93°C

Working Pressure: 10, 20 and 40 Bar

Supplied with tough cover outside coating on request.

Available in "Hardwall" 10, 20 and 40 Bar.



Rig Supply Portable Water SW

Application

Supply of non-oily edible foods, fresh water and potable water from supply vessel to offshore installation in pre-treated condition. Hose shall be flushed and cleaned prior to use following good manufacturing procedures.

Construction

- **Tube:** White FDA compliant NR. Thickness approx 2.4 mm.
- **Spirals:** Non
- **Cover:** Orange EPDM. Thickness approx 1.8mm.

Temperature Range: -30°C up to +70°C

Working Pressure: 10 or 20 Bar

Available with spirals and 10 or 20 Bar WP.



Swivel “VLF” Very Low Friction Butt-weld Ends

Application

The swivel is designed for installation on equipment where rotation takes place, or where rotation can occur. A twisted hose will prevent the medium to flow through. Designed for axial loads. Maximum radial load is 200 N/m calculated from the swivel center. Ask for installation instructions for other applications in connection with bulk-loading hoses.

Construction

The swivel is designed to obtain a minimum friction when rotating and to prevent twisted hoses and is specially designed for bulk-loading hoses which will result in a safe and reduced loading time. Maintenance free. Its unique design makes it also tight from the outside, and therefore does not need any lubrication. Can be delivered with thread, flange or hub. Client to decide.

Temperature Range: -40°C up to +150°C

Working Pressure: 60 Bar

Swivel is included in our reuse programs.



Break-away Coupling with Valve

Application

The break-away coupling is designed for installation on equipment where a controlled break is necessary when an overload occurs. For equipment that lead polluting media a break-away coupling with automatic closing-valve is recommended to prevent spills. Our own tests show that spill at a break does not exceed 2 liters at 10 bar.

Construction

Excellent in use for bulkloading systems on offshore installations on ship to ship or ship to shore fluid and bulktransport, which require high demands of safety and environment. The coupling has female NPT thread as standard. Other connections on request.

The coupling comes with or without an automatic closing-valve.

Temperature Range: -40°C up to +150°C

Breaking Point: 2.5, 4.0 or 6.0 tons breaking torque as standard. Other breaking torques on request.

Break-away couplings are part of our reuse program.



Break-away Coupling without Valve

Application

The break-away coupling is designed for installation on equipment where a controlled break is necessary when an overload occurs.

For equipment that lead polluting media a break-away coupling with automatic closing-valve is recommended to prevent spills.

Our own tests show that spill at a break does not exceed 2 liters at 10 bar.

Construction

Excellent in use for bulkloading systems on offshore installations on ship to ship or ship to shore fluid and bulktransport, which require high demands of safety and environment.

The coupling has female NPT thread as standard. Other connections on request. The coupling comes with or without an automatic closing-valve.

Temperature Range: -40°C up to +150°C

Breaking Point: 2.5, 4.0 or 6.0 tons breaking torque as standard. Other breaking torques on request.

Break-away couplings are part of our reuse program.

Benefits of Couplings

- Lower cost, thanks to modular design and reusable coupling.
- Simple installation.
- Compatible with all major flange drilling standards.





Hammer Lug Union, Nickel Aluminium Bronze

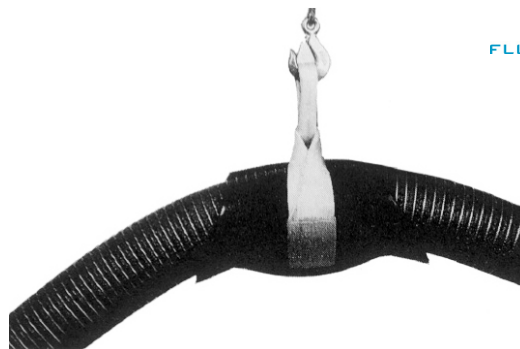
Application

The unions are made according to the same specifications as the standard range. Made of corrosion and spark free material, with approximately the same tensile strength as steel unions.

Material

Copper (Cu) 82%, aluminium (AL) 10%, nickel (Ni) 4%, iron (Fe) 4%.

The bronze units are part of our reuse program.



Hose Bun

Application

For use on hoses, cables etc. when bunkering and loading.

Material

Red polyurethane with yellow polyester wrapping straps.



Hose Lifters - Type "Hook"

Application

For use as a lifting arrangement on bunkering and loading hoses. Covers the requirements for lifting equipment for use in offshore and shipping.

Material

Aluminium bronze (Spark-free material) and steel. Comes with documentation.

The hose lifters are part of our reuse program.



Hose Lifters - Type "Single eye lift"

Application

For use as a lifting arrangement on bunkering and loading hoses. Covers the requirements for lifting equipment for use in offshore and shipping.

Material

Aluminium bronze (Spark-free material) and steel. Comes with documentation.

The hose lifters are part of our reuse program.



Dry Break Coupling 4" (164mm)

Application

Without exception, the most compact, light weight, high flow 4" self sealing coupling system available. Used extensively for offshore ship to rig transfers of fuels and drinking water, aviation fuel bunkering, rail tank loading / discharge, chemicals etc. Rapid, positive connection and disconnection make dry break couplings the standard for barge to ferry re-fuelling and multiple rail tank discharge.

Construction

Aluminium, gunmetal and stainless steel 316L, other on request. FKM (Viton®), NBR (Nitrile), EPDM, Chemraz®, Kalrez®. Other materials on request.

Test Pressure: Working pressure +50%

Working Pressure: PN 10 - PN 25

Dry break couplings are part of our reuse program.



Hose Flotation Elements "Flow Safe"

Application

The flotation elements are a cheaper and simpler alternative to a floating hose for transferring fluids between supply boat and offshore installation. The Flow Safe hose flotation elements help prevent the hose from contact with the vessel and to avoid contact with the propeller.

Construction

Flow Safe hose flotation device is made of BACELL plastic, an incredibly shock absorbent, strong and elastic material with 100% watertight cells.

In spite of its great strengths its own weight very low, and the flotation elements have therefore great buoyancy.

All components of the floating hose are part of the reuse program.



Committed to HSE

Bulk-loading concept is designed to meet the rigorous requirements of the severe physical and environmental conditions associated with offshore bulk-hose handling.

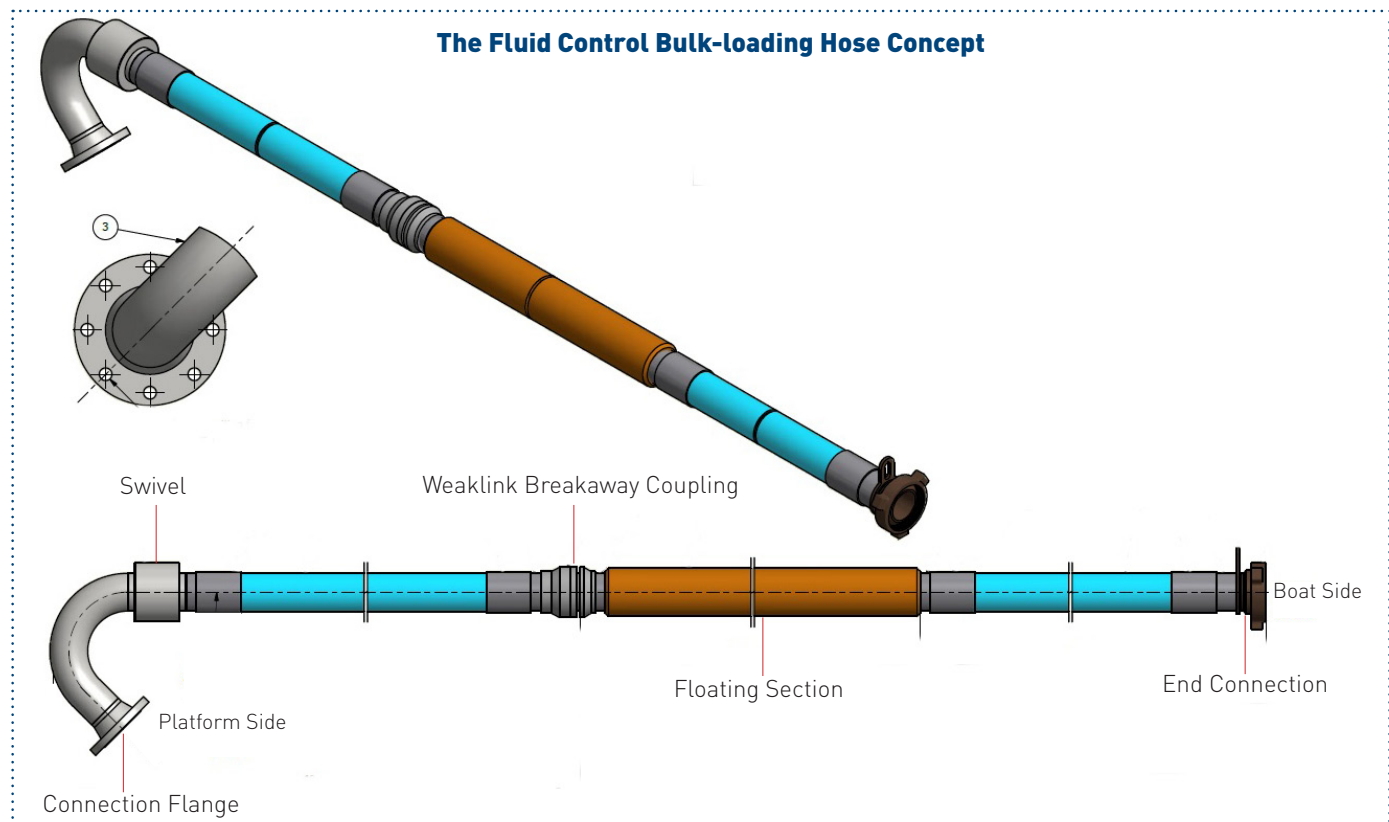
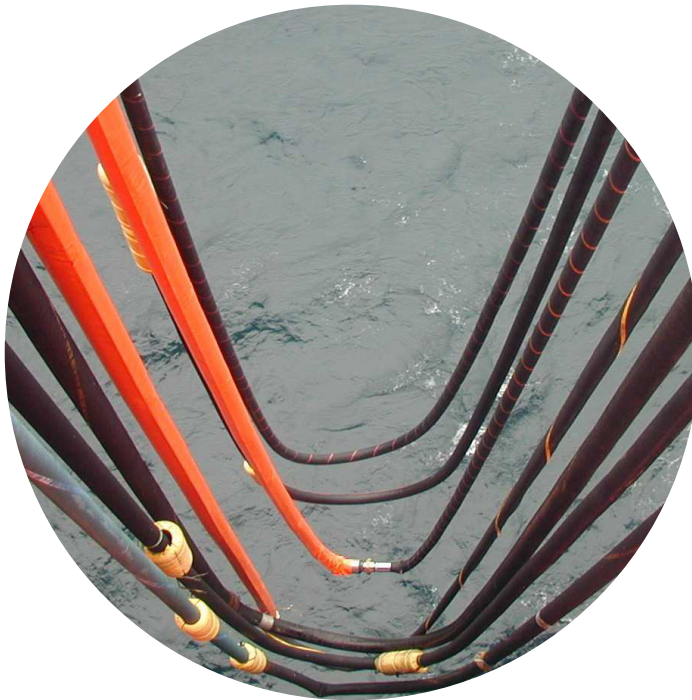
- Low friction swivel prevents twisting of the hose that can damage the hose and cause emissions.
- Break-away joint ensures a controlled break and prevents emissions if the hose is subjected to tension.
- All components of our bulk-loading hose concept have "slim line" design that prevents a hang up.
- High visibility and smooth buoyancy minimizes the risk of getting the hose in the propeller.
- Reuse of all metal parts and components of the floating hose enables us to use high quality materials.

Maintenance Program

We can customize a maintenance program for the bulk-loading hoses with regular periodic inspections to determine whether the hose is suitable for continuing in service. Generally during maintenance, a visual inspection of the hose and couplings is done for loose covers, kinks, bulges or soft spots which might indicate broken or displaced reinforcement; evidences of coupling failure. The hose may then be subjected to a hydrostatic test pressure if this is available.

Benefits

- Maximises the useful life of the Bulk-hose
- Minimises the risk of undesirable incidents and downtime



- flexible solutions -



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