



TODO

**EMICO
WHEATON**

by Gardner Denver



Dry Disconnects

A dry break coupling is a fitting which features an automatic mechanism to seal off both ends of a line when the hose is disconnected. Dry disconnects are used in applications where the loss of fluid or spillage is not viable, due to health and safety regulations, environmental considerations, where cleanliness is a factor or simply because the value of the product or media being transferred is too great to tolerate any loss.

Why is a Dry Break Better than a Standard or Quick Disconnecting Fitting?

Unlike other couplings from the camlock range or quick disconnects range, dry disconnects boast either a minimal 'smear' spill or a true dry disconnection (minimal 'spotting'). This makes this range of fittings some of the best engineered and designed connections available on the market today. When the application demands a no drips, non-spill connection, a dry break coupling is the first and only choice.



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For Safe Fluid Handling

We are proud to present the TODO-MATIC® range of Dry-Break® couplings. More than 30 years of expertise has gone into their design and manufacture.

In sizes from 1" to 6" and a wide range of material options, TODO-MATIC® Dry-Break® couplings offer advanced fluid handling solutions for a diverse range of industries.

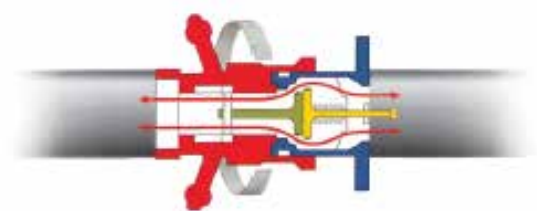
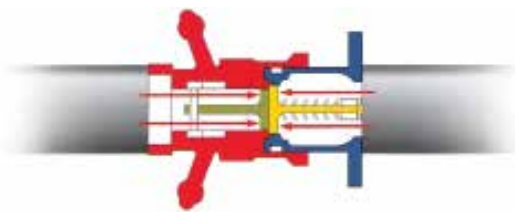
Major offshore exploration, chemical, pharmaceutical and petrochemical companies rely on TODO-MATIC® couplings to safely transfer their most aggressive or valuable products.

Designed for safe and easy use with minimum operator intervention. TODO-MATIC® couplings offer an unbeatable combination of technical, safety and performance features.



How it works

Turning the hose unit 15° clockwise locks the units together. The valves are still closed and are not opened until a further rotation of 90° has been performed and then the product flow is guaranteed. To close the valve and to unlock the units, reverse the procedure.



- Valves open and close automatically on connection and disconnection.
- Simple single action operation, no levers or switches to operate.
- Valves are guaranteed closed prior to disconnection.
- Minimal residual loss on disconnection (e.g. maximum 0.35cc for 2" DN50).
- Will connect and disconnect under pressure and flow where necessary.
- Extremely reliable, very few moving parts.
- Robust construction, no external operational components.
- Available with selectivity system to prevent cross contamination.
- Reduces spillages to virtually zero.
- Dramatically improves both operational and fugitive emission performance.
- Reduces the possibility of human error in transfer operations.



Technical Details

Sizes:	1" (2.5cm) to 6" (15.2cm).
Materials:	Aluminium, gunmetal and stainless steel 316L, other on request.
Seals:	FKM (Viton®), NBR (Nitrile), EPDM, Chemraz®, Kalrez®. Other materials on request.
Working Pressure:	10 bar - 25 bar
Test Pressure:	Working pressure +50%.
Safety Factor:	5:1.
End Connection:	BSP- and NPT-threads, DIN-, ASA-, TW- and TTMA flanges (available for both tank and hose units). Other threads and flanges on request.

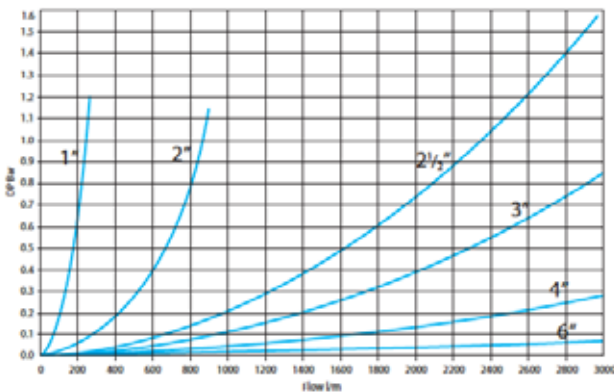
Compatibility: NATO STANAG 3756.

Viton® and Kalrez® are registered trademarks of DuPont Performance Elastomers. Chemraz® is a registered trademark of Green-Tweed.

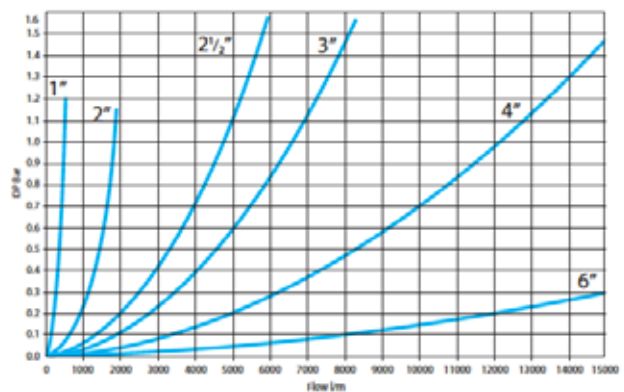


Flow Capacity

TODO-MATIC® DRY-BREAK® couplings offer high flow capacity.
Media: Water
Temperature: 20°C (68°F).



Pressure drop for 1" (2.5cm) to 6" (15.2cm), scale 0-3000 l/min.



Pressure drop for 1" (2.5cm) to 6" (15.2cm), scale 0-15000 l/min.



Certificates / Approvals

- Vd-TÜV type approval, mark TÜ.AGG.162-93 towards ADR, RID, IMDG and VDI-rules 2440, part 3.3.1.3.
- CE-marked, European directives 97/23/EC (PED) and 94/9/EC (ATEX) compliant.
- Manufactured under EN ISO 9001:2008.
- Certified towards ISO 14001:2004.
- Manufactured towards EN 13480 and EN 13445.
- TUV Approval to EN 14432:2006 for Tank Units and Pressure Tight Caps.

The above refers to products manufactured at the Margate, U.K. plant.





TODO-MATIC

Virtually zero spillage

With more than 30 years of experience in the transportation of oil, gas and hazardous chemicals, TODO is exceptionally proud of the TODO-MATIC range of DRY-BREAK couplers.

Trusted around the world to transfer highly valuable and aggressive products in the most testing conditions for loading and off-loading from road or rail, offshore rig supply, ship to shore transfer and more, TODO-MATIC sets the standard for the industry.

Higher profit margins and safety credentials are assured with the TODO-MATIC range's minimal residual loss of product on disconnection and spillage of virtually zero. Less product leakage means more product delivered to your customers and more money for your organisation.

TODO-MATIC couplers are extremely reliable, with very few moving parts and require little operator intervention which reduces the risk of human error. Customers enjoy dramatically improved operational and fugitive emission performance as well as peace of mind that all products meet the highest safety standards including European directives 97/23/EC (PED) and 94/9/EC (ATEX).

1" TODO-MATIC DRY-BREAK

(DN19 - DN32, Ø56 mm)

- Specifically designed for small bore applications
- One-handed operation
- High flow rate
- Minimal release on disconnection
- Additional option of selectivity to prevent product cross-contamination



2" TODO-MATIC DRY-BREAK

(DN40 - DN50, Ø70 mm)

- Suitable for diverse range of applications
- Available in range of materials and configurations
- Provides rapid, safe transfer



2.5" TODO-MATIC DRY-BREAK

- Ideal for road tanker and aviation applications
- Suitable to transfer a variety of liquids and vapours
- Strong integral swivel
- Ergonomic design
- Rugged construction





TODO-MATIC

3" TODO-MATIC DRY-BREAK

- Typically used for rail and road loading/discharge
- Tough construction
- Ergonomic design
- High flow rate
- Zero spillage
- The natural choice for N.A.T.O refuelling standardisation



4" TODO-MATIC DRY-BREAK

(DN100, Ø164 mm)

- The most compact, lightweight high flow 4" selfsealing coupling system on the market
- Applications include:
 - off-shore ship to rig transfer of fuels and drinking water
 - aviation fuel bunkering
 - rail tank loading/discharge
 - chemical transfer
- Rapid connection and disconnection



6" TODO-MATIC DRY-BREAK

- Ideal for ship or barge to shore connection
- Significantly faster transfer than any flange coupling
- Environmental standards compliance
- Provides real turn-around time savings
- Rotating lifting loop as standard



Dust Plugs and Dust Caps

- Prevent ingress of dirt and water
- Sizes: 1" – 6"
- Available in:
 - Stainless steel, brass/gunmetal, aluminium and rubber





TODO-GAS

Designed for the safe transfer of LPG in both liquid and vapour phases

Improve profit margins, environmental credentials and operator safety when transporting liquid petroleum gas with TODO-GAS couplings. Specifically designed for the safe transfer of LPG, particularly propane and butane, TODO-GAS couplings comprise materials ideal for the unique properties of LPG and terminal handling properties.

The unrivalled technology in TODO-GAS couplings provide real savings as connection and disconnection are exceptionally quick, increasing turnaround, and product loss is reduced to

virtually zero. This means more product at the final destination and higher profit margins. The possibility of operator freeze burns is also removed.

Environmental regulations are increasingly important and strict but the TODO-GAS couplings can help you plan for the future. An unrivalled 99% typical reduction in emissions compared to existing thread based coupling means even the most stringent environmental standards in the world are easily matched and future changes are unlikely to affect your organisation.

1" TODO-GAS

(DN19 - DN32, Ø56 mm)

- Suitable for a range of LPG applications
- Heavy duty autogas vehicle refuelling
- Advanced vapour recovery systems
- Easy to connect and disconnect
- Single handed operation
- Ultra-low release on disconnect: 0.15cc per disconnection
- Suitable for indoor fuelling
- Handles up to 200litres/minute (52 USG/MIN)
- Minimal pressure drop



2" TODO-GAS

(DN40 - DN50, Ø71 mm)

- Ideal for bobtails or immediate bulk delivery trucks
- Rugged construction
- Suitable for frequent use
- Can cope with almost any loading equipment configuration
- Ultra low release on disconnect: 0.35cc per disconnection





TODO-GAS

3" TODO-GAS

(DN80, Ø119 mm)

- Unrivalled suitability for larger or high flow rate applications
- Typically used for rail tank loading and discharge
- Handles flows of up to 2,500 litres/minute (658 USG/MIN)
- Two handle operation
- Robust integral swivel
- Designed to withstand regular use at terminal



Dust Plugs and Dust Caps

- Prevent ingress of dirt or water
- Materials:
 - 1" and 2" sizes: rubber
 - 3" size: stainless steel, brass/gunmetal and aluminium



Accessories and Specials

Pressure relief valve for tank unit

- Dissipates trapped fluid pressure into hose unit without spillage
- Allows easy connection



Parking device

- For safe and convenient storing of hose units

Long double handle 2"

- Provides more ergonomic use of couplings





TODO Break-Away

Cut down on accidents, cut down on costs

Save money on damages and fuel spillage while ensuring operator safety with TODO Break-away couplings. This range is designed to remove the possibility of drive away/ pull away incidents when a tanker moves without having first disconnected from the terminal.

With these kinds of incidents happening more often than one might imagine, and with the potential to cause serious damage and put operators at risk,

TODO Break-away couplings mean that human error is no longer a factor. Should the tanker pull away, the coupling automatically senses the issue and closes the valve before allowing the main valve to safely release. This ensures no product is released or spilt and neither the coupler, terminal nor tanker incur any damage.

Take out the risks, choose TODO BREAK-AWAY.

Features

- Exceptionally high flow rate / low pressure drop
- Extremely quick closing time
- Minimum loss of product
- Simple and safe design, with reduced numbers of components
- Easy to handle
- Easy to maintain and repair
- Suitable for a wide range of applications

2" TODO Break-Away (DN50)

- Extremely quick closing time
- Minimum loss of product
- Suitable for a wide range of applications

3" TODO Break-Away (DN80)

- Extremely quick closing time
- Minimum loss of product
- Suitable for a wide range of applications





Collar Release Break-Away

Eliminate spillage

The TODO Collar release Break-Away Coupling is new to the TODO range and offers an alternative to the standard range serving a very different purpose. Like the standard product it has been designed to eliminate spillage and damage associated with drive and/or pull away incidents when loading and unloading hazardous liquids, but with the added benefits of safeguarding loading arms.

When used with loading arms the break-away is engineered to disconnect if the arm travels past the customer designated breakage position. The collar is linked via break cable to the loading arm so that once the break position is reached, the collar splits, shutting the valves off. In addition to reducing any potential environmental impact from a break, the loading arm is safeguarded and potential costly downtime is avoided.

2" & 3" Collar Release Break-Away (DN50) & (DN80)

- High flow rate/low pressure drop
- Operates independently of shut off safety systems and does not require an external power source
- Will release at any angle of pull
- Easy to re-set on site



Marine Break-Away

Eliminate spillage and damage associated with ship and/or barge movement

The TODO Marine Break-Away Coupling has been designed to eliminate spillage and damage associated with ship and/or barge movement when loading and unloading hazardous liquids.

The Marine version of TODO's tried and tested Standard Break-Away Coupling has a more robust design and has been engineered to withstand harsh marine conditions.

The coupler identifies an excessive load, closes the valves and then allows disconnection.

4" Marine Break-Away (DN100)

- High flow/low pressure drop
- Designed to resist axial force so that disconnect only occurs when subjected to straight pull forces
- Operates independently of shut off safety system and does not require an external power source
- Easy to re-set on site





TODO Safety Pressure Tight Cap

Protect your operators and your profits

Designed in close collaboration with leading gas and oil companies, the TODO Safety Pressure Tight Cap is designed with the needs of businesses in mind. Containment security and operational safety are two of the biggest concerns in the industry and both of these are assured with the TODO Safety Pressure Tight Cap.

Companies are assured better safety credentials and operational benefits when using the TODO

Safety Pressure Tight Cap. No other existing closure technology comes close.

The cap will sense when the event of an upstream closure leakage is possible and will hold any pressure necessary until the problem is resolved. If the cap should be removed for any reason, it will quickly decrease the pressure to avoid forceful transfer of the media. This will improve profits and prevent operators from coming to harm.

Features

- Pressure indicator alerts the operator to pressure above 1.0 bar behind the cap & possible failure of upstream closure
- Automatic depressurisation
- Reduces static pressure upstream of the cap
- Removes the possibility of disconnecting the cap whilst under pressure avoiding injury
- Customs / tamper seal feature
- Suitable for use with all commonly used wire and plastic custom seals
- Automatic locking with manual locking available
- Certified closure
- Certified as a full second or third closure depending on the application
- The cap can be used to replace other closure methods such as valves

2" PTC

(DN 50)

- Compact for smaller applications
- Alerts operator to pressure above 1.0 bar
- Prevents disconnection of cap while under pressure to avoid injury
- Certified as a full second or third closure depending on the application

3" PTC

(DN 80)

- Alerts operator to pressure above 1.0 bar
- Prevents disconnection of cap while under pressure to avoid injury
- Certified as a full second or third closure depending on the application

4" PTC

(DN 100)

- Alerts operator to pressure above 1.0 bar
- Prevents disconnection of cap while under pressure to avoid injury
- Certified as a full second or third closure depending on the application



2" (DN 50) PTC

3" (DN 80) PTC

4" (DN 100) PTC



Aviation Couplings

The economical alternative for aviation fuelling

TODO Aviation couplings represent real money savings as well as improved safety features and exceptional ease of use to organisations involved in the aviation industry. With all valves guaranteeing closure before disconnection, reducing spillage, the product is not wasted resulting in higher profit margins.

The TODO Aviation couplings' unrivalled reliability and robust design mean that maintenance and replacement costs are lowered. Meanwhile, simple operation reduces human error and improves turnover time.

The range includes the TODO-45 coupling – the first economic alternative to the ISO 45 under wing hose couplers - and the TODOMATIC aviation hydrant connection.

TODO-45

- Economical alternative to ISO 45 standard hose couplers
- Automatic valve opening on connection and disconnection
- Simple single action operation, no levers or switches
- Guaranteed valve closure prior to disconnection
- Minimal residual loss on disconnection
- Will connect and disconnect under pressure and flow where necessary
- Extremely reliable with very few moving parts
- Robust construction: no external operational components

TODO-MATIC aviation hydrant

- Integral over pressure relief valve.
- Dissipates trapped fluid pressure into hose coupler without spillage
- Allows easy connection
- All TODO-MATIC couplings are available in aviation fuel transfer specifications





TODO Swivel

Improved reliability, improved manoeuvrability

One of the biggest causes of premature hose failure – and therefore maintenance costs and wasted time – is torque stress imparted onto the assembly hose by permitting free hose movement. The leading technology in the TODO Swivel avoids this stress, allowing the hose to relax to its natural rest position, whilst permitting free movement of the hose.

Having been used in the toughest applications worldwide for 20 years, organisations can rest assured that the TODO Swivel will give them ease

of use with the highest safety credentials. Available in a range of materials, sizes and compact in design, it is ideal in a range of applications.

The TODO swivel meets the highest safety requirements worldwide including TDT approval, mark TDT TDTUW-30/09, ADR/RID in Poland, manufactured under EN ISO 9001:2000 and ISO 14001:2004 and OHSAS 18001:2007.

Features

- Simple design
- Low maintenance
- Highly reliable
- Very compact
- High flow rate / low pressure drop
- Features stainless steel bearings and single o-ring seal
- Available in sizes from ¾" (DN19) to 4" (DN100)
- Full range of materials: Aluminium, gunmetal/brass and 316L stainless steel
- FPM (Viton®) seal fitted as standard – full range of elastomeric seals available
- Working pressure: 1", 2", 2½", 3" stainless steel PN25 bar. Others PN 10 bar.

TODO Swivel Range:

- 4" BSP Female – male
- 3" Flange – BSP – male
- 2½" BSP female – male
- 2" BSP male – NPT female
- 1½" BSP male – female
- 1½" BSP male – male
- 1" BSP male – female





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