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TODO® aviation fuel transfer equipment

TODO-45:

This gives, for the first time, an economical alternative to ISO 45 under wing refuelling hose couplers for aviation fuel bunkering and transfers. Although not configured for under wing fuelling, the TODO-45 hose coupler is fully interchangeable with existing connections and suitable for all other transfer operations in the fuel logistics chain.

Hydrant:

The TODO-MATIC® aviation hydrant connection with integral over pressure relief valve. This system dissipates trapped fluid pressure into hose coupler without spillage to allow easy connection.



FEATURES, TODO-45 COUPLER

- Economical alternative to ISO 45 standard hose couplers.
- 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.
- Will connect and disconnect under pressure and flow where necessary.
- Extremely reliable, very few moving parts.
- Robust construction, no external operational components.

1½" SAMPLING & DRAIN UNIT STANAG 3756

TODO 9500 is used in airport hydrant systems as follows:

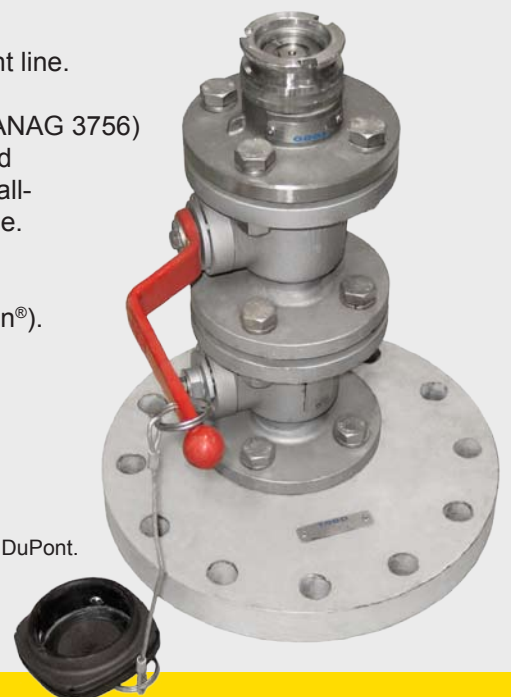
- Sampling
 - installed at a convenient point on a riser from the main hydrant line
- Venting
 - installed at a high point in the hydrant line.
- Draining
 - installed at a low point in the hydrant line.

Equipped with a TODO-MATIC® (STANAG 3756) tank unit with pressure equalizing and relief valve, two 1½" firesafe Argus ball-valves and a 6" ANSI class 300 flange.

Materials: stainless steel.
Seals: FKM (Viton®) and PTFE (Teflon®).
Other materials on request.

Working pressure: PN 25.
Test pressure: PN 37.5.
Safety factor: 5:1.

Viton® and Teflon® is registered trademarks of DuPont.





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TECHNICAL DETAILS TODO-45 COUPLINGS

Sizes:	2½" (DN65).
Materials:	High strength aluminium body, coupling ring in gunmetal, inner parts and bayonet flange in stainless steel and aluminium.
Seals:	FKM (Viton®), Floursilicone. Other materials on request.
Working pressure:	PN 10.
Test pressure:	PN 15.
Safety factor:	5:1.
End connections:	BSP- and NPT-threads. DIN-, ASA-, TW- and TTMA-flanges (available for the tank unit). Other threads and flanges on request.
Compatibility:	ISO 45, MS24484, STANAG 3105, British Areospace Spec. 2C14.

Viton® is a registered trademark of DuPont.

TODO-45 COUPLINGS, PLUGS AND CAPS



Hose unit



Tank unit



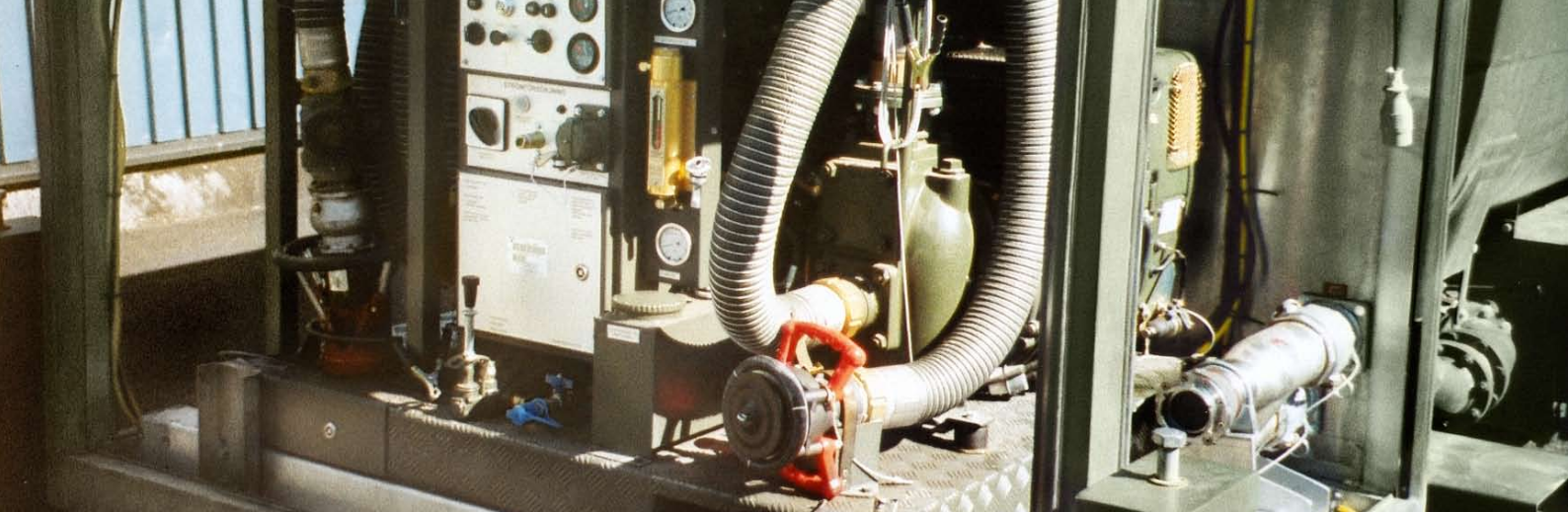
Dust plug



Dust cap

CERTIFICATES / APPROVALS

European directives 97/23/EC (PED) and 94/9/EC (ATEX) compliant.
 Manufactured under EN ISO 9001:2000.



TODO® PRODUCTS OVERVIEW



TODO-MATIC® The first choice for the safe handling of hazardous, valuable or environmentally sensitive media. TODO-MATIC® are available in aluminium, gunmetal and stainless steel 316L with special materials such as hastelloy C276 available to order.
Sizes: 1" (DN 25) to 6" (DN 150).



TODO-GAS® The TODO-GAS® couplings are designed especially for the transfer of LPG in both liquid and vapour phases. The couplings are available in stainless steel and brass / gunmetal with thread or flange connection. Handling and operation are as simple as for the TODO-MATIC® DRY-BREAK® coupling.
Sizes: 1" (DN 25), 2" (DN 50) and 3" (DN 80).



TODO® SAFETY BREAK AWAY couplings Designed specifically to minimise spillage and damage associated with drive / pull away incidents. Also allows rapid removal of the mobile tankage in emergency situations. The coupling automatically senses an excessive load, closes its valves and then permits disconnection. Very high flow rate / low pressure drop. *Sizes: 2" (DN 50) and 3" (DN 80).*



TODO-45 aviation couplings An ISO 45 standard ground unit from TODO® and a special version of the TODO-MATIC® 2½" coupling available for connection to ground units conforming to standard ISO 45. This gives, for the first time, an economical alternative to ISO 45 standard hose couplers for aviation fuel transfers.



PTC - Safety Pressure Tight Cap The TODO® PTC is specifically designed to enhance operator safety and containment security in chemical and gas transport. Designed in close collaboration with leading chemical and gas companies, the PTC offers safety and operational benefits beyond those offered by existing closure technologies. *Sizes: 2" (DN 50) to 4" (DN 100).*



BALL VALVES These lightweight ball valves were the first products to be developed by TODO®. This valve offers obvious weight saving benefits for the road tanker industry but can also be used in a variety of plant applications. A wide selection of end connectors are available and valve changeover is rapid due to the simple sandwich design. All sizes are available with pneumatic actuation in either single or double acting form. *Sizes: 2" (DN 50) to 4" (DN 100).*



FUEL NOZZLES The TODO® fuel delivery nozzles are specifically designed to deliver high volumes with total security. Rugged cast aluminium alloy body, high strength swivel and robust handle all help this nozzle to offer reliable long term performance.
Size: 1½" (DN 40).



API couplings TODO® API hose couplers and tank adaptors are interchangeable with other products manufactured to standard API RP 1004. The TODO® hose coupler is a high pressure design with five claw closure connection for strength and two interlocks for security and safety. The moulded lipseal configuration is used for long leak-free performance. TODO® API tank adaptors are available with or without operating handles or sightglasses.
Size 4" (DN 100).



SWIVELS Developed originally as part of the TODO-MATIC® coupling construction then subsequently as a stand alone product, the TODO® swivel has proved itself in the toughest applications for over 20 years. Used mainly to allow free hose movement without imparting torque stresses to the assembly (one of the biggest causes of premature hose failure). *Sizes: ¾" (DN 19) to 4" (DN 100).*

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