

AIRCRAFT REFUELLING

Equipment and Solutions



ELAFLEX 

ELAFLEX – SAFETY IN YOUR HAND

About us

The **ELAFLEX Group** is the globally leading system supplier of safe and innovative refuelling equipment. We offer highly developed and functional premium products for the aircraft refuelling sector comprising hoses, couplings, overwing nozzles, hose reels, expansion joints and leak monitoring systems, perfectly fitting to refuelers and dispenser vehicles. Together with our **ELAFLEX Group members Aljac, MannTek and SGB** we provide quality products for safe fuelling on the airfield.

Aljac

is a global specialist supplier of safe and innovative aircraft refuelling systems and equipment consisting of a wide range of its own premium products and from internationally respected manufacturers. They offer fuel handling and hydrant equipment, underwing nozzles, bulk meters, hoses, filters, additive injectors, sampling systems, earth bonding, deadman and quality control equipment.

MannTek

is a renown manufacturer of 'DDC' Dry Disconnect Couplings for spill-free handling of liquids. For aircraft refuelling, they manufacture the 'DAC' Dry Aviation Couplings for tank and logistics refuelling and de-icing couplings and sampling units (hydrant valves) for airfields as well as safety breaks for depot applications.

SGB

is a renown manufacturer of dry leak prevention systems to provide environmental and ground water protection. The unique leak monitoring solutions for any double-walled tank/pipe design are offered worldwide.

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EXPERIENCE IN YOUR REACH

We stand for values which are typical of a family-owned company: the spirit of innovation, reliability, continuity and flexibility in thought and action. The collaboration with Aljac and MannTek allows us to further expand our aviation product range and global customer service.

Service to us means supplying a major part of our product range ex various stocks around the world with short lead times. We keep several hundred kilometres of hoses and several thousand couplings, nozzles and expansion joints permanently available ex stock.

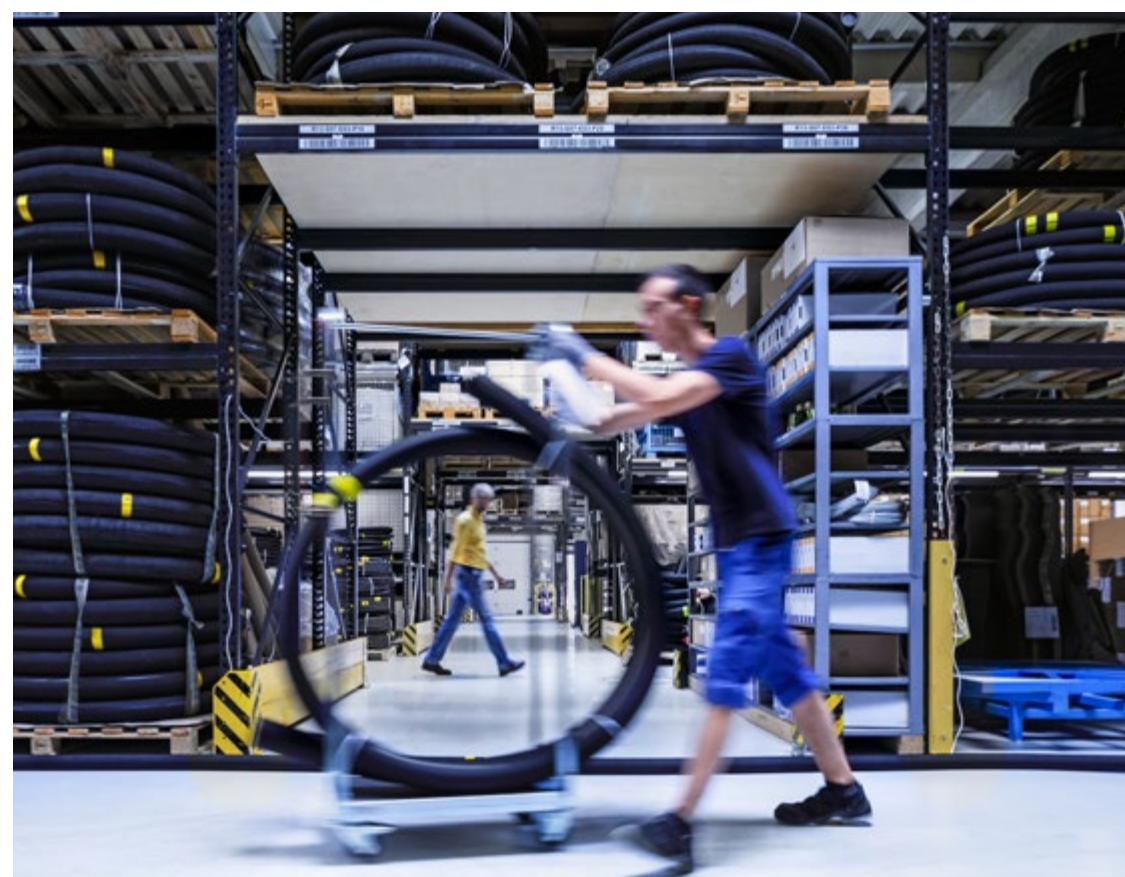
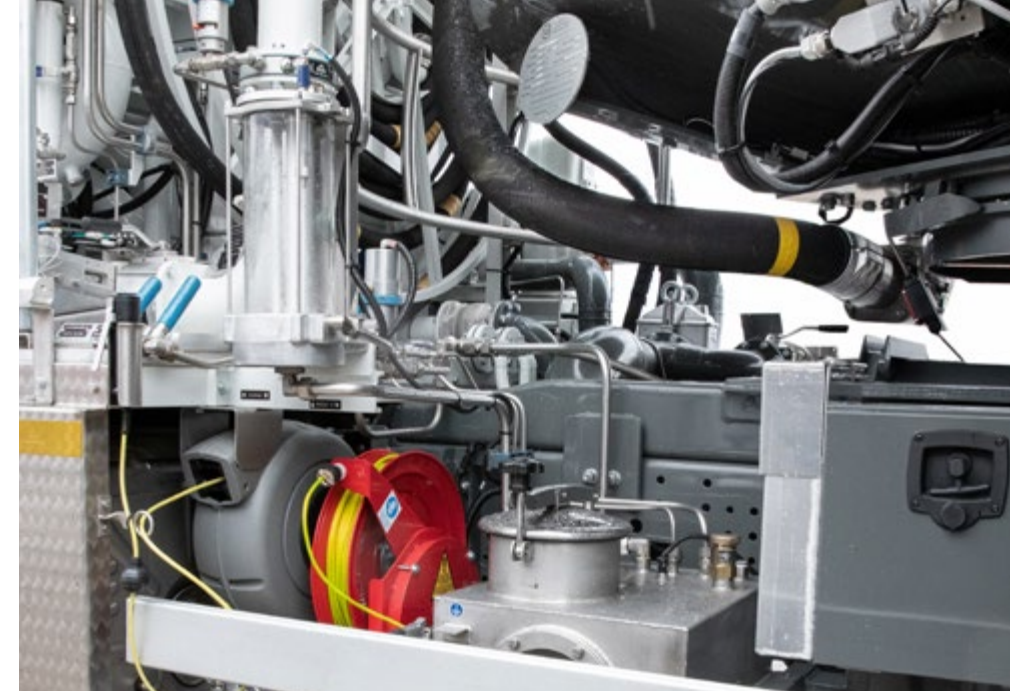
Working closely with operators, major oil companies and standard committees for 70 years, we know what matters for aircraft refuelling equipment.

Our customers appreciate our know-how, quality engineered and durable products. A sound investment both in terms of performance and total lifetime cost benefits.

AVIATION GROUND EQUIPMENT

Refuelling equipment must provide a high level of safety, not only on the airfield itself, but across the entire transport chain to the airport. Operators require that the equipment works reliably and will not contaminate the fuel according to EI 1530.

Our modular system, developed over the years, is important both for efficiency and for safe assembling.



Beginning of the ELAFLEX Aviation Business with the 'Berlin Airlift 1948'

Technical Competence and Customer Service

We aim to provide the most comprehensive range of the highest quality products and services to our clients, and wherever possible deliver equipment ex stock. Our range is one of the widest in the aviation refuelling industry.

As a system supplier of aviation components we ensure compatibility and the possibility to combine complex and special customer design requirements, conforming to the latest aviation standards.

According to your own requirements, we supply either complete assembled products or single components for self-assembly by your trained personnel only.

Quality and Safety – You Can Rely on

ELAFLEX is an ISO 9001 certified supplier, authorised to test according to the European Pressure Equipment Directive and approved to AQAP-2130 for supplies to NATO-forces.

What does that mean to you? Quality and safety are always our top priorities – never the lowest price. This leads to our renown product reliability and durability. Due to local personal advice and close relationship with our customers we are able to understand market issues, and to provide solutions.

This expert knowledge flows into the improvement of our aviation hoses and couplings. 'Yellow Band' hoses are distinguished by their high operational safety requirements, set by standards, and far exceeded these (i.e. with abrasion and kink resistance).

We are participants in international standard bodies, IATA Strategic Partner and stay in close contact with JIG, A4A and operators. This plays a part in contributing to keeping up the official safety requirements for aircraft refuelling hoses. Based on that, our philosophy is to be always better than the standard.





Assembling and Testing

Aircraft refuelling standards and the JIG Guidelines recommend the purchase of complete hose assemblies. We therefore provide aircraft refuelling hoses professionally assembled, and ready for use.

Our hoses are pressure tested twice before delivery, once after production and once after assembly with a test pressure of 40bar.

We check for hose or coupling leaks, bubbles, deformations, twist/torsion, elongation or other abnormalities.

All into-plane hoses (types C and F) have an electrical resistance between 1.000 and 1.000.000 Ohm which is checked after the pressure test.

A material certificate EN 10204 3.1 is issued.

Coding of Tested Hose Assemblies

All our aviation hoses are permanently marked with a batch number. All tested hose assemblies are coded with an additional unique serial number, testing date and test pressure.

The big advantage: Certificates are saved for at least ten years for hose traceability.

Training with the Market Leader

In the specialised sector of aircraft refuelling only authorised staff should make up hose assemblies and test as well as repair and maintain nozzles and couplings.

We offer training sessions for personnel for the assembling and testing of our aviation equipment. A certificate is provided which attests the acquirements.

Our modular assembling system is easy to learn and service friendly for cutting back and reassembling a hose. We provide manuals issued in our catalogue or ELAFLEX information.

Please contact our sales team to enquire about training sessions, which can take place worldwide – at your premises, or at ELAFLEX.

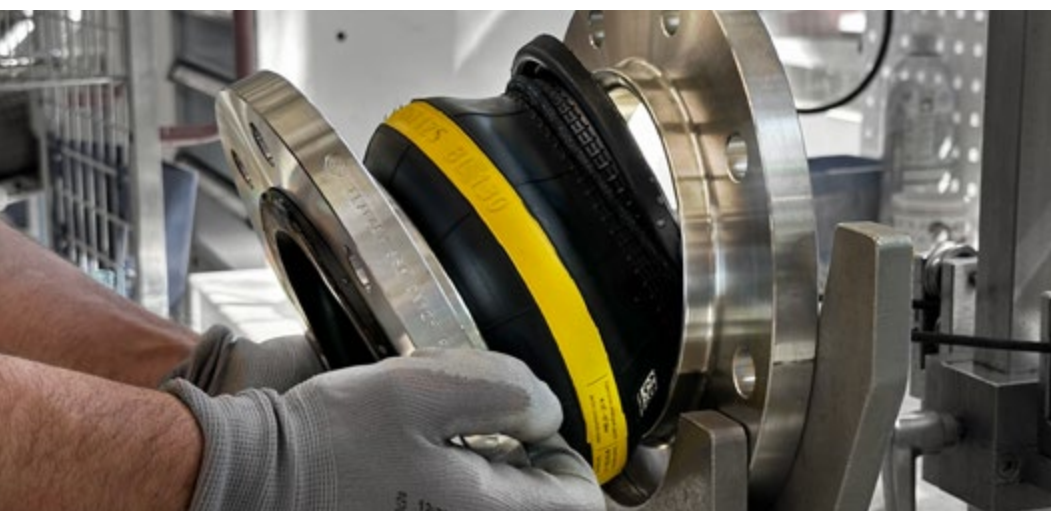
Always Up-To-Date

Within this leaflet, you will find references to detailed product information, manuals and technical data sheets.

On our website, information details, as well as our product configurators, are constantly updated.

The required information is just a few clicks away.

Technical and further information on www.elaflex.com or configure online: elaflex.de/en/configurators



WHY ELAFLEX SHOULD BE YOUR PARTNER

ELAFLEX aircraft refuelling equipment are premium products. Our equipment has become the internationally recognised benchmark. Supplied from one source, companies and operators can avoid mixing up components with metric and imperial size definitions.

Experience and Know-How

- Applications in the aviation sector for over 70 years
- Reliable and renown system supplier with a technical service: professional advice, documentation, testing certification (audited to European Pressure Equipment Directive)
- Development and production to ensure a constant high quality and safety (know-how regarding hoses, couplings, flanges, nozzles or accessories, assembling, certification, testing and distribution)
- ELAFLEX quality philosophy

Comprehensive Product Range and Wide Availability

- Large warehouse of hoses, couplings, flanges, nozzles and accessories, as required free of non-ferrous materials
- Short lead times for standard types or special local requirements
- Global support by ELAFLEX subsidiaries and local distribution partners

Easy Installation and Storage

- Self-assembling and repair of hoses, couplings and nozzles, with standard tools
- Modular system – perfect match of hose dimensions (EN ISO 1825) and couplings (EN 14420) with reusable safety clamps or nozzles
- Clear marking for traceability, Data Matrix Code (DMC)
- Hose ends must be capped when not in use to maintain their outstanding characteristics for years

Nozzles

- Low pressure-drop, flow rates < 400 l/min.
- Repairable
- Colour coding to avoid misfuelling
- Modular designed with sight glass for proper inspections

Durable Marking of Hoses and Couplings

- 'Yellow' or 'Neon' bands every 4 m
- Continuously, embossed marking showing standards, pressure rate, electrical conductivity, manufacturer, batch number and production date. Certificates as per EN 10204 3.1.

Superior Life Time

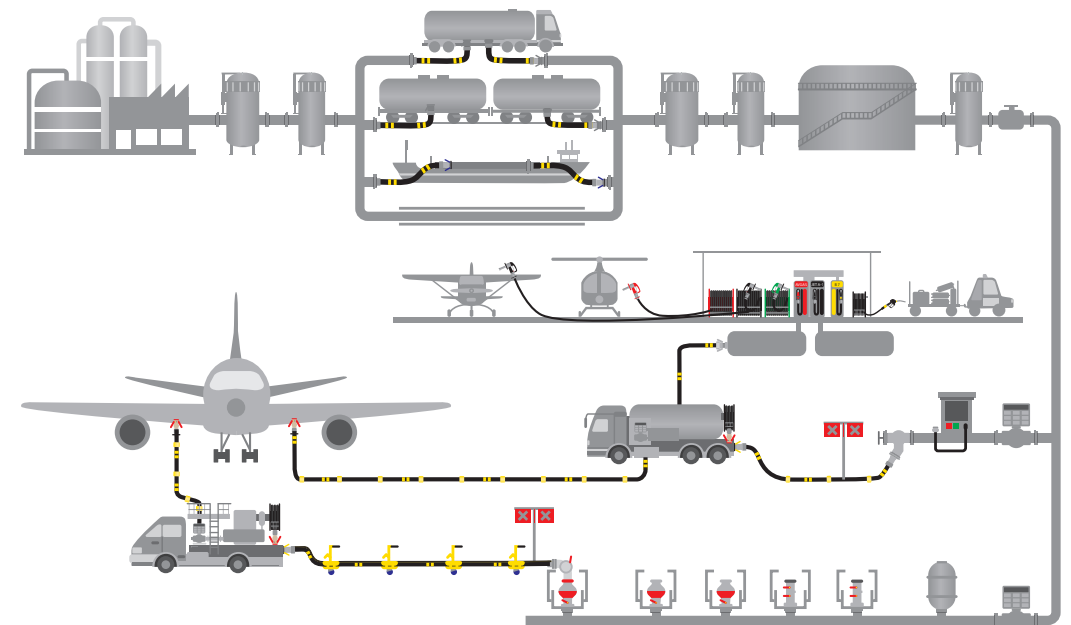
- Hoses and expansion joints made of high quality seamless chloroprene (CR) rubber cover compound
- A proven hose design with braided reinforcements, light weight and user-friendly hoses with burst characteristics that regularly exceed 100 bar
- Nozzles and couplings designed and produced in-house with continuous quality control
- Best Total Cost of Ownership and lower Carbon Footprint, exceeding average service life of nozzles, hoses and couplings
- Permanent testing of raw material properties – before and during production

Bodies and Committees

- IATA Strategic Partner
- Close cooperation with operators, major oil companies and international standard committees and organisations such as A4A and 'Joint Inspection Group' (JIG)

Approved and Certified

- ELAFLEX aircraft hoses are certified by DNV confirming the requirements of EN ISO 1825/EI 1529 (7th edition) and AS 2683:2000
- ATEX approved nozzles





AIRCRAFT REFUELLING HOSES

Our '**YELLOW BAND**' hoses comply with all relevant standards such as the latest EN ISO 1825/EI 1529. Suitable for all JET and AVGAS fuels. Working pressure 20 bar, burst pressure >80 bar. Their construction ensure safe operation and a superior lifetime. They are lightweight and highly flexible (also at low temperatures).

Configure online:
hoseconfigurator.elaflex.de

Our comprehensive aircraft refuelling hose range is type approved by DNV acc. to EN ISO 1825:2011/EI 1529:2014 (7th edition) and AS 2683:2000.

HD-C

Catalogue page 107



Standard type for into-plane (reel and deck hose) and hydrant intake fuelling.

Type 'HD-C' with two textile braids. Lightweight and flexible, for pressure service. Without Helix.

Marking: 2 yellow bands every 4 m and continuous embossing.

VHD-C

Catalogue page 107



VHD WearAdvice®

Stronger type with three textile braids. More stability against kinking and flattening in non-pressure situations.

Type 'VHD-C' for lower bending radii and moderate suction rates. Without Helix.

Type 'VHD WearAdvice®', the first hose with coloured wear indicator as recommended by EI 1529.

Marking: 2 yellow bands every 4 m and continuous embossing.

PHD-F

Catalogue page 107



Special type for into-plane fuelling. Kink resistant due to non metallic plastic helix for both fuelling and defuelling operations. Low bending radii.

Type 'PHD-F' for defuelling.

Marking: 3 yellow bands every 4 m and continuous embossing.

TW-E

Catalogue page 107



Suction-/discharge hard wall hose with galvanised Steel helix. Suitable as bridger hose between truck and trailer. Best solution for riser systems and also for depot applications.

Type 'TW-E' for high suction and lowest bending radius. Not approved for into-plane and hydrant intake fuelling.

Marking: 1 yellow band every 4 m and continuous embossing.

Sensing Hoses



Type 'HD 10 C' suitable as sensing hose (air or fuel) for aircraft dispensers, supplied in differing coil lengths.

Marking with longitudinal yellow stripe.

Size DN 10

Depot Application

Composite hoses, catalogue pages 181 a-d



Quality from our daughter company Dantec (UK)

Additionally available:

Composite hose types 'FWS' (multi-layer thermoplastic hoses with internal and external helix) for loading and unloading of road tankers and storage tanks at depots.

Delivered as complete and tested hose assembly, suitable for aviation fuel.

i 'NEON' Reflecting Hose Marking

for highest safety requirements on the airfield

Most of our hoses are provided with a special 'NEON' reflex marking to increase safety on the airfield, especially in low light situations or even with trolleys mounted. They help to prevent accidents, injuries and damage caused by service vehicles.

'NEON' type with reflecting bands ≤DN 75 (3").
 Optional: Hydrant intake hoses in DN 100 (4") with 'NEON' marking in spiral form.



Special Type

All our aviation hoses are also available as '**LT' Type** (Low Temperature). Unrivalled flexible performance in extremely cold regions such as Scandinavia or Arctic regions.

Produced as a special soft and cold flexible version without cracking at temperatures down to -50°C (-58°F).



THREADED AND FLANGED HOSE COUPLINGS

Safeguarding media purity, ELAFLEX hose couplings with BSP or NPT threads are available in Stainless Steel or tin-plated Brass ('Sn') as recommended by JIG guidelines. They prevent contact of aviation fuel with non-ferrous metals. Assembled with SPANNLOC/SPANNFIX clamps or crimping ferrules. Most types are available ex stock.

SPANNLOC Safety Clamps

guaranteed fit · easy assembling
reusable system · approved

Catalogue pages 297 a - d



SC ... AI
(Standard)

SC ... SS

ELAFLEX hose connectors are engineered in-house and designed to perfectly fit with hose dimensions, enabling safe and correct assembling of the hose tails. Tightness under pressure and pull off values are the same for all ELAFLEX connector types.

Widely used for aircraft hose assemblies.

SPANNLOC: 'SC' bolted safety clamps to EN 14420-3 and VG 85328 of hot stamped Aluminium or Stainless Steel, bolts and nuts of Steel ZnCr or Stainless Steel.

Advantages:

- Self-assembly and repair in the field
- Reusable
- Adjustable
- No special tools needed for assembling
- Compliant with standards, from our own production

SPANNFIX NR

(Non-reattachable type)

'SX...NR' pinned safety clamps to EN 14420-3 of hot stamped Aluminium, locking pin of Stainless Steel.


Advantages:

self-assembly, non-reattachable,
non adjustable, tamper-proof.

Recommended alternatively
instead of crimped couplings.



SX ... NR AI

 Also available:
Reusable pinned
safety clamp type 'SX'

Crimping Ferrules

Catalogue page 297 a

The safety crimping ferrule 'SH' of Stainless Steel 1.4301. Non-reusable, non adjustable. For assembling, crimping machine, crimping parameters and special workshop tools required.



SH ... SS

Flanged Hose Couplings

EN 14420-4 / DIN 28460

with SPANNFIX/SPANNLOC/Ferrules

Catalogue pages 271-285



SF ... SS

Swivelled ('SF') or fixed ('FF') hose flanges to DIN/ASA/TW (AI), usually made of Stainless Steel or Aluminium (if in contact with aviation fuel).

Commonly used as connection for riser systems (platforms), deck or hydrant intake hoses.

Standards: EN 14420-4; flanges to EN 1092-1 or ASA (ANSI B 16.5), DIN 28460 (TW)



FF ... SS

Threaded Hose Couplings

EN 14420-5, with SPANNFIX/SPANNLOC/Ferrules

Catalogue pages 221-229



M ... SS/AI

Female ('M') and male ('V') hose couplings (BSP or NPT thread) with integrated hose tail.

Following the highest safety requirements of the aviation sector, couplings available in Stainless Steel, tin-plated Brass ('Sn' version) – no fuel contamination.



V ... SS/AI

HIFLO AVIATION NOZZLES

Our aviation fueling nozzles for overwing and helicopter services exceed expectations with superior handling. ELAFLEX is best known for its extensive nozzle range, designed to suit a wide array of fuelling/defuelling applications. Available in several types and sizes, our nozzles are manufactured according to current standards or aviation guidelines.

Suitable for various fuel qualities as JET A-1, AVGAS and unleaded (UL 91) fuels.

ZVF 50

Catalogue pages 541 a-d; Information 5.13 E



Most advanced HiFlo aviation nozzle for overwing and helicopter refuelling, free of non-ferrous metals. Ergonomically designed with excellent features:

- Low weight & light lever action incl. LeverAssist®
- Flow rate up to 400 l/min. and sensitive flow control, minimised pressure shock
- Integrated bumpers with clear colour coding to avoid misfuelling: black = JET/red = AVGAS/green = UL
- Improved spout change system with threaded (SIC) or timesaving Push-Twist-Lock (PTL) connection
- Integrated easy rotating swivel
- Optional integrated Sight Glass

Nozzle Boot 'NB-ZVF 50':

For easy installation of ZVF 50 nozzles on board of refuelers and dispensers. Available with different types of sensors for interlock systems. With or without spout retainer for quick spout change.



ZVF 25

Catalogue page 537

HiFlo nozzle, manually operated, free of non-ferrous metals. Size DN 25 (1"). For AVGAS and JET fuels, gasoline, diesel, fuel oil, petroleum & motor oils. Fuel up to 140 l/min. Working pressure up to 3,5 bar (50 psi), with stronger spring EF 362.6 up to 5 bar.



ZVA 25 AF

Catalogue page 525

HiFlo automatic nozzle DN 25 (1"), free of non-ferrous metals, flow rate up to 140 l/min. Working pressure 0,5 - 3,5 bar. Special type up to 5 bar.

For AVGAS and JET A-1, gasoline, diesel, fuel oil and petroleum.



ZVA 32 AF

Catalogue page 529

HiFlo automatic nozzle DN 32 (1¼"), free of non-ferrous metals, flow rate up to 200 l/min. Working pressure 1,5 to 6 bar.

For AVGAS and JET A-1 as well as diesel, light fuel oil, and petroleum.



Patented -
EP 2574597
and US 9051164.

Configure online:
nozzleconfigurator.elaflex.de
Or find our spare parts overview online:
e20.elaflex.de/en

ACCESSORIES AND SPARE PARTS – AVAILABLE EX STOCK

ZVA SLIMLINE 2

Catalogue page 517



Automatic nozzle DN 19, for flow rate max. 80 l/min for general aviation refuelling.

Working pressure 0,5 to 3,5 bar. Special type up to 5 bar. Temperature range -20° to +55°C.

For AVGAS and JET A-1, gasoline, diesel, fuel oil, petroleum & motor oils.

GKG, EKG & ER



All aviation fuelling nozzles available with/without ground cable assemblies (EKG) and dust caps (GKG).

Easy maintenance with spare parts such as spouts (ER) and strainers.

Defuelling rubber spout (SRG 32)

Swivels & Sight Glasses

Catalogue pages 363 + 531



Easy rotating hose swivels available in different materials, sizes, with BSP or NPT threads to ensure easy handling.

Sight glasses to simplify inspection and cleaning. Available for all nozzle types.

'DAC' DRY AVIATION COUPLINGS

MannTek Dry Disconnect Couplings are suitable for wet hose systems under pressure – quickly, safely and without product loss. 'DAC' couplings to ISO 45/STANAG 3105 are specially designed for handling aviation fuel and are used at any point aviation fuel transport. They are available with threaded and flanged connections, for both hose unit and tank unit. Not approved for underwing refuelling.

Configure online:
manntekconfigurator.elaflex.de



For more information
 please see our brochure
 'MannTek – DAC
 Dry Aviation Couplings'

i DAC

Self-locking quick connect/disconnect coupling for aviation fuel to ISO 45 and STANAG 3105 with DN 65 (2½") connection. Max. working pressure 10 bar.

Weight optimised. Weather-resistant and electrically non-conductive robust rubber protection ring. Inner cam curve protected from external impact. Parts in contact with the medium free of non-ferrous metal.

Supplied with ELAFLEX aviation hose assemblies for aviation fuel logistic applications such as loading and unloading of road tankers or loading arms to mobile and stationary tanks.

DAC-M 65 AL

Catalogue page 345

Female coupler (hose unit) to ISO 45/STANAG 3105 with integrated swivel. Male and female threads with BSP, NPT or flanged connection.

Optional with strainer in sightglass housing for easy inspection.



FFBV Full Flow Ball Valves



Ball valves for road tankers and aviation refuelers/dispensers.



DAC-V 65 AL

Catalogue page 347

Male coupler (tank unit) to ISO 45/STANAG 3105 with different flanged connection. Also available with threads.

i Special Equipment



De-icing vehicles equipped with 2" and 2½" 'DDC' Dry Disconnect Couplings and e.g. 'CHS' hose.



Airport hydrant system using **hydrant valves** (draining) at low and high points.

'SBC' Safety Breakaway Couplings from 1" - 12" with integrated shut-off valves to protect hose assemblies and depot loading arms against excessive loads and product spill caused by drive-away incidents. Available with female or male thread (EN ISO 228 or NPT) or flanged (DIN, ASA).

Available Release Systems:

'SBC' Breaking Pin release by lateral force.

'SBC-C' Release by Cable, independent from hose line pressure and lateral force.



SBC ... SS

RUBBER EXPANSION JOINTS

'ERV' Rubber Expansion Joints are components for the installation into pipe systems of i. e. road tankers and depots. They are used to reduce vibration and noise, for the compensation of movements and assembly inaccuracies, as well as pipe insert pieces to facilitate inspections.

Our 'ERV' expansion joints are distinguished by a large axial, lateral and angular range of allowable movements, low reaction forces and low inherent resistance. They are perfect noise dampers and ideally qualified to reduce vibrations – the major part of the piping's structure-borne noise and the low-frequency noise generated by fluids is eliminated. Due to swivelling flanges and smooth bolt holes assembling is easy. A high burst pressure, integrated sealing surfaces with a wire core and a premium quality production are advantages which ensure a long service life.

Special Type 'ERV-G AF' is the first expansion joint that has a lining in compliance with the limit values for fuel-soluble matter, fuel contamination and fuel discolouration according to standard for aviation hoses EN ISO 1825/ EI 1529.

Configure online:
ervconfigurator.elaflex.de



ERV-G AF



Special type 'ERV-G AF' is suitable for piping systems of aviation refuelling or dispensing vehicles, technical specification in accordance to aviation hose standard EN ISO 1825/EI 1529. Suitable for all aviation fuels.

Liner: Special Compound, seamless, abrasion resistant

Reinforcement: PA textile cord

Cover: Chloroprene CR, ozone resistant

Electrically conductive.

Temperature range (depending on medium) -40°C up to +65°C.

Available in DN 80 – 150 mm

i Flanges

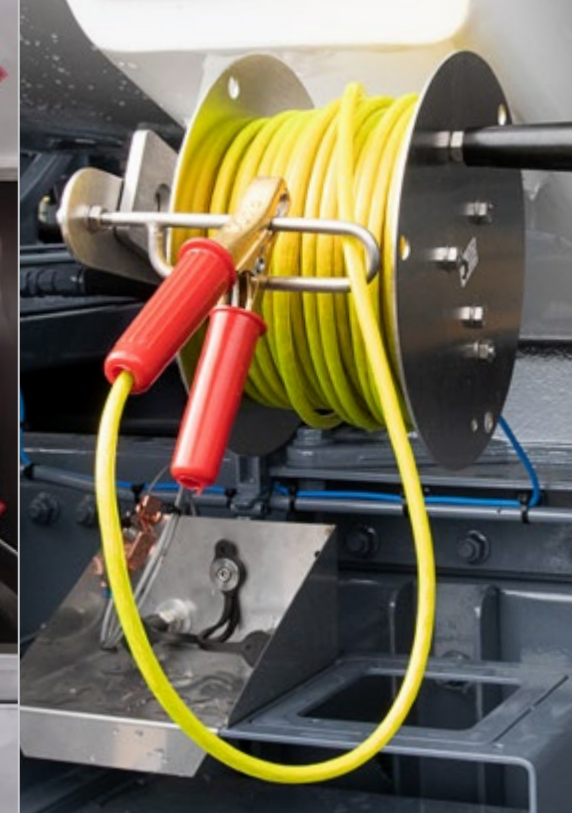


For the choice of flanges a great variety of combinations concerning connection dimensions, materials and coatings is available.

Flanges: To **DIN 28460 'TW'**, **ANSI B 16.5 150/300**, EN 1092-1
BS 10 table D/E/F, VG 95959, JIS 5K/10K/16K, SAE J518c, AS 2129

Flange materials: Zinc plated Steel, hot galvanised Steel, Stainless Steel, Bronze, Aluminium.

Coatings with Rilsan® and PUR painting possible.



HOSE REELS FOR AVIATION

We supply our Hose Reels (HR) as a complete customised package for refuelers, dispensers or stationary refuelling units at airports. All components are manufactured by ELAFLEX, assembled, tested and certified.

They are modular designed to your space requirements and produced to the renown high ELAFLEX quality standard, compliant with CE regulations and meets with European health, safety and environmental standards.

Equipped with our bespoke hoses, couplings or overwing nozzles. Available in different configurations with e.g. manual rewind, spring rewind or electrical rewind system.

Standard Reels or Custom-Made

HR Information 01-06

Materials used in the HR construction are carefully chosen for each application, with options in Polyester Powder Coated Carbon Steel to any colour, Aluminium or Stainless Steel 304 and 316 L in any colour for more demanding conditions.



Bonding Reels

Hose Reel Brochure

ELAFLEX Bonding Reels are utilised as earthing and bonding between refueller or dispenser and aircraft, operated with spring rewind mechanism. High visibility bonding cable, up to 30 m, Ø 6 mm and different types of clamps.

Frame available in Polyester Powder Coated Steel, UV resistant or Stainless Steel or any colour.

Manually operated, please see Aljac Products.



i Advantages of our Hose Reel Package

- Four components – one supplier, one system, one liability, one certificate, one price
- High quality standard, longevity
- Many options, modular designed to suit your space, media and requirements
- Delivery as complete tested system including hoses, couplings and nozzles





HOSE TROLLEYS AND HOSE BEADS

Hose Trolleys and Hose Beads are intended to assist in gliding or easy moving hoses over the airport apron, preventing excess abrasion of the hose cover, and to enhance visibility of the hose during operation.

The Hose Trolley 'HTR-AF' comes with robust free moving wheels to handle heavy duty hydrant intake hoses.

Our 'BD' Hose Beads fulfil all EI 1522 requirements and are made as a two piece click together assembly without any additional components.

Hose Trolleys 'HTR-AF'

For a safe and easy guidance of refuelling hoses on airfields, our Hose Trolley 'HTR-AF' is made by ELAFLEX and suitable for every vehicle. It is brightly coloured to increase visibility on the ground. The height and shape of the hook can be modified according to customer request, available with fixed or swivelled handle for easy hose movement.

Different materials available such as Polyester Powder Carbon Steel, Stainless Steel or Aluminium.



'BD' Hose Beads

We have developed 'BD' Hose Beads for aircraft refuelling hoses and the specific use on airfields. They fulfil all requirements of the EI 1522 standard. These include flame resistance, impact damage tests (100 drop cycles of a filled hose assembly from 2m height), not using small fastening components (i.e. screws, bolts, cable-ties), manufacturer's certificate confirming no generation of incandive discharges (based on IEC 60079-32-2). In addition, a daily visual test of the hose is required by JIG and other guidelines. Spiral wraps often cover a large part of the hose, preventing early recognition of hose weaknesses or damage.

Our 'BD' Hose Beads meet all requirements of the EI 1522 standard and are easy to assemble:

- Available in DN 38, 50 and 63
- Notably improved hose handling due to reduced friction
- Protection against hose abrasion
- Highly break resistant
- 'Click-Fix-Design' that does not contain bolts or nuts
- Can be easily assembled and disassembled with ELAFLEX tool EW 39 and standard water pump pliers (required by JIG for the 6-month inspections)

ELAFLEX tool EW 39
for easy disassembling





ALJAC EQUIPMENT

We aim to provide the most comprehensive range of the highest quality products and services to our clients at competitive prices, and wherever possible deliver equipment ex stock. Our range is one of the widest in the aviation refuelling industry and is underpinned by premium quality branded products from internationally respected manufacturers.



CLOSED CIRCUIT SAMPLERS



The accepted method of checking aviation fuel cleanliness is the 'clear and bright' test, often done using a bucket or glass jar. This method risks sample contamination and operator exposure to fuel. The Aljac Closed Circuit Sampler (CCS) has been developed to overcome these problems and actually improves sampling procedures, and as a result it is now an industry standard.

The CCS is available with BSPP or NPT threads and has options for Water Detection and temperature and density checks.

DEADMAN EQUIPMENT



The Aljac Deadman Handswitch and accessories provide intrinsically safe electric control, usually connected to a pneumatically operated valve, this is now the most widely used method of controlling aircraft refuelling from either bowisers, hydrant dispensers, or fixed systems and tanker loading and offloading operations.

Holding the handswitch begins operation while releasing the handswitch invokes the 'deadman' principle and will close down the operation, terminating flow. Because the handswitch is the point of control, it must be reliable and robust to survive the most arduous operating conditions because a failure could have catastrophic consequences.

BONDING REELS



When transferring flammable liquids or powders at high flow rates it is essential that adjacent system components are electrically connected, or bonded, in order to reduce the risk from potentially explosive static electrical discharges. Traditionally this connection has been achieved using a bonding clip and cable stowed on an electrically conductive reel.

Aljac Bonding Reels are manufactured from Stainless Steel and available in 15m and 40m sizes. Bonding cable and a variety of bonding clips are also available.

EATON'S CARTER® AIRCRAFT FUELLING NOZZLES



Eaton's Carter® product line includes several underwing refuelling nozzle models developed following many years of experience in the aviation fuelling industry. All nozzles share a family of accessories and are designed with high durability and low maintenance in mind, they all have a number of interlock mechanisms to ensure safe use and all meet current industry standards. All nozzles are highly configurable to ensure they meet individual users needs.

EATON'S CARTER® HYDRANT INTAKE COUPLERS



Eaton's Carter® Hydrant Couplers are 4-inch API designs and are intended to be used for air-reference pressure control systems on Airport Hydrant Dispenser Vehicles. All models meet the requirements of EI 1584 4th Edition.

The API connectors are designed for ease of use and maintenance with minimum number of seals and a field replaceable nose seal. All have collar interlock mechanisms and a range of options are available such as tall or short lifting handles.

EATON'S CARTER® HYDRANT PIT VALVES



Eaton's Carter® Hydrant Pit Valves are a family of valves that meet all the requirements of 4th Edition EI 1584, including the breakaway and strength requirements.

The range includes lanyard, air or dual air/lanyard operated pilot valves and a remote mounted dual air/lanyard operated pilot which is designed to reduce CAPEX and maintenance costs, this design is unique to Eaton. These valves are designed to reduce maintenance and have a replaceable API adaptor ring.



ALJAC EQUIPMENT



LARGE SAMPLING SYSTEMS



Aljac manufactures a range of large sampling systems designed for applications where large volume samples are required or where the sampling station is some distance from the sample point.

The 80/160 litre range is often mounted adjacent to large bulk storage tanks where large sump volumes require regular sampling.

Bespoke systems incorporating a flush tank and sampler are available for remote installations, these meet the requirements of JIG 2, Appendix 10.

QUALITY CONTROL AND GAMMON EQUIPMENT



A wide range of products to ensure the delivery of clean and dry fuel into aircraft. Products include, but not limited to:

- Hydrometers and thermometers for measuring the density and temperature of the fuel.
- MicrobMonitor2 test kits for monitoring microbiological contamination levels.
- Gammon Millipore test kits for checking particulate contamination.
- Sample cans for the safe storage and transport of JET A-1.

SATAM POSITIVE DISPLACEMENT BULK METERS



Positive displacement (PD) flow meters for use in most fuelling applications within the Aviation and Industrial markets.

The ZC17 series bulkmeter is available in a range of sizes from 2 inch up to 8 inch with flow rates up to 5500 Litres/Minute and with Ductile Iron, Aluminium or Steel manifolds.

The ZC17 Meters are available with mechanical or electronic registers and can be fitted with pulse transmitters to allow for connection to other electronic systems.

MASTERLOAD.IQ AND LCR.IQ



The next generation of electronic registers designed with the operators in mind.

The iQ registers are fully configurable by the end user and can be connected to a range of sensors to get the most out of the system. High resolution back lit display with smart keys and large buttons to improve usability in the field.

Bluetooth, WiFi and cellular connections allow for easy data transfer when required.

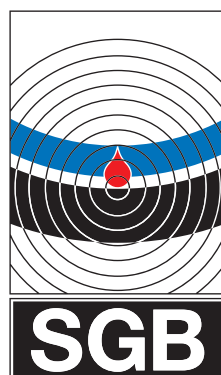
HAMMONDS® ADDITIVE INJECTION UNITS



Hammonds® additive injection units operate without the need for an air or electrical supply, making them suitable for use in remote locations, hazardous areas and for vehicle or trolley mounting.

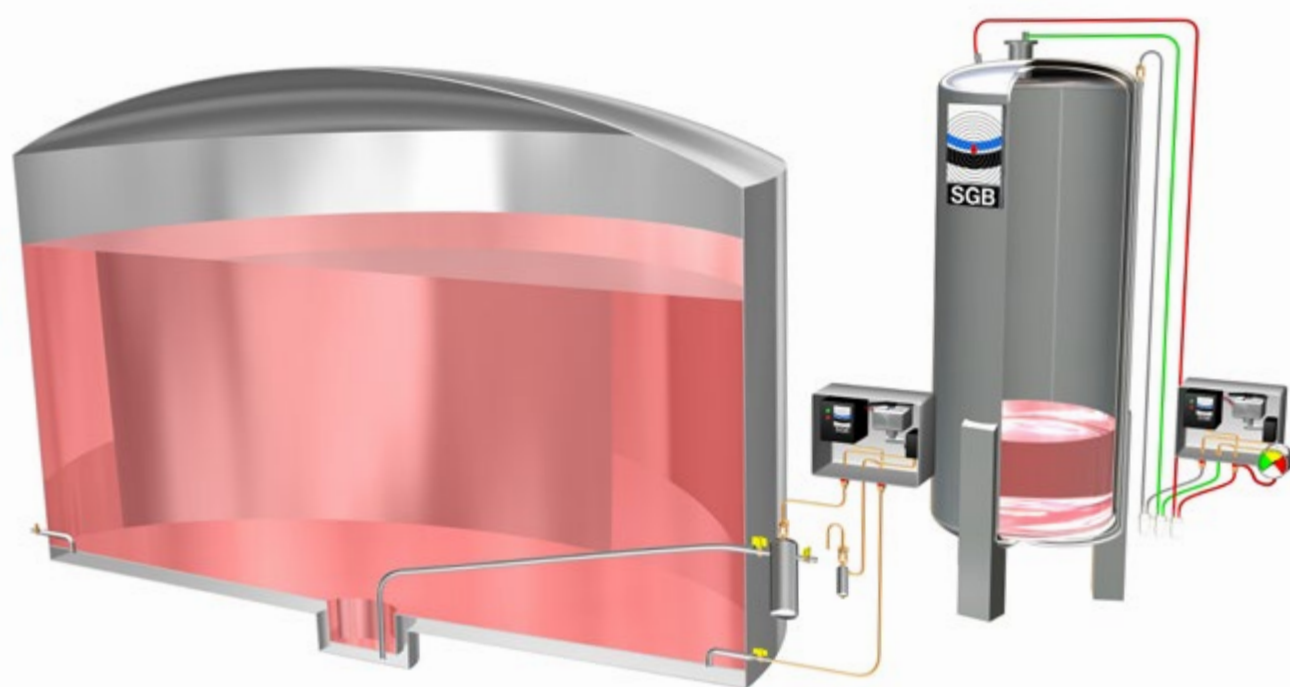
The system is based on a fluid motor powered by product flow in the pipeline, it can drive up to four additive injection pumps of various sizes allowing a wide range of injection rates to be achieved.

Several different material options are available and Aljac can install systems into custom skids or trailers.



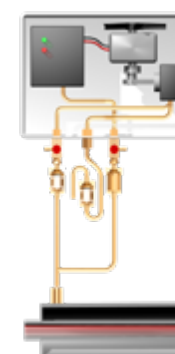
SGB LEAK PREVENTION TECHNOLOGY

SGB leak detectors monitor permanently and reliably double-walled tanks and pipes by differential pressure. Leaks are detected and indicated at the earliest possible stage. The applied pressures prevent stored or conveyed product from entering the environment. Since 1962, several hundred thousand SGB leak detection systems are in operation and attest expert knowledge and innovative strength. The unique wide product range offers leak monitoring solutions for any double-walled tank and pipe design, especially in the aviation sector.



Monitoring High Feed and Overpressures

The **VLR 410 PMMVS** is the only approved vacuum leak detector to monitor pipes with a feed or overpressure of up to 90 bar.



Advanced Feature PMMVS:
Protected
Manometer
Solenoid Valve
Service Indication

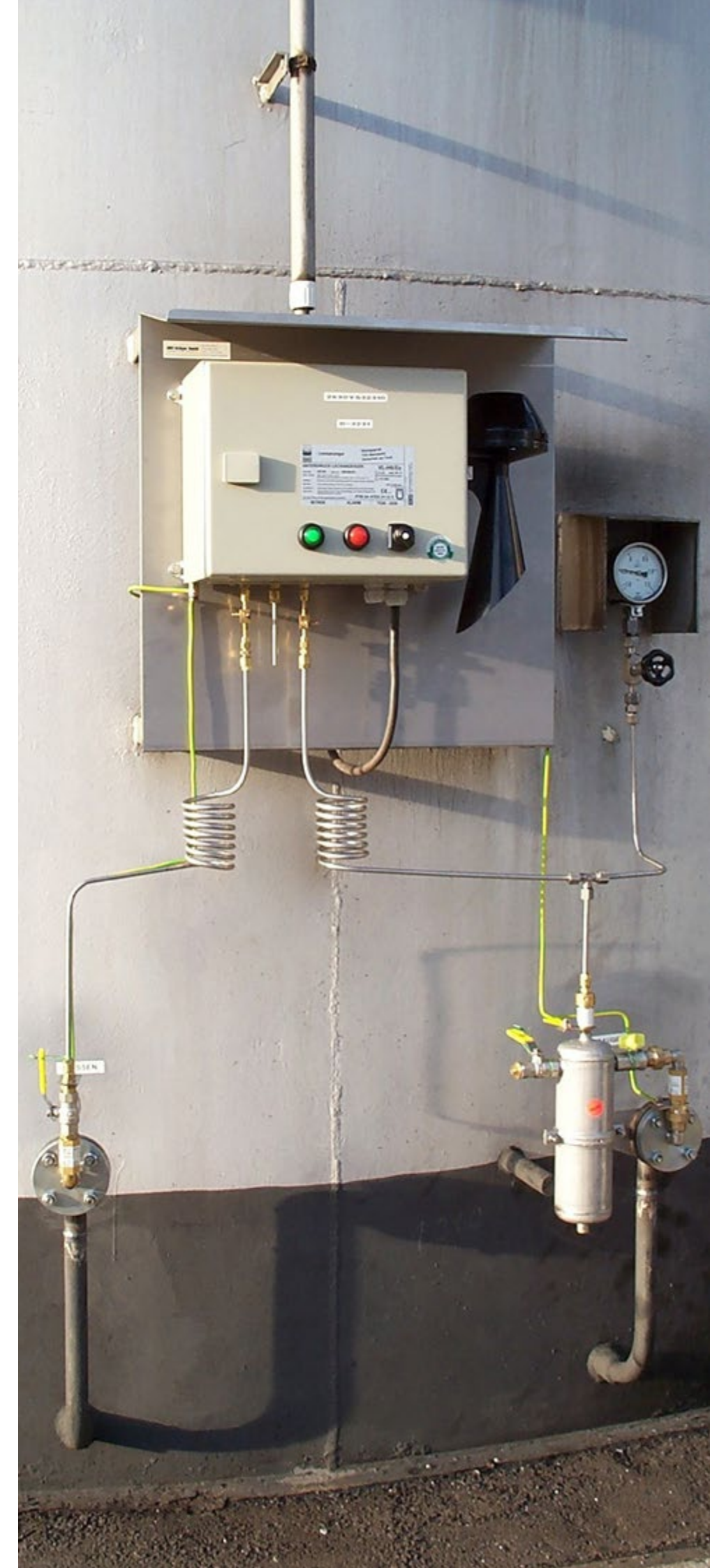
VACUUM LEAK DETECTOR

The vacuum leak detector **VLXE 330 Ex M** is used for monitoring double-walled tanks and pipe systems.

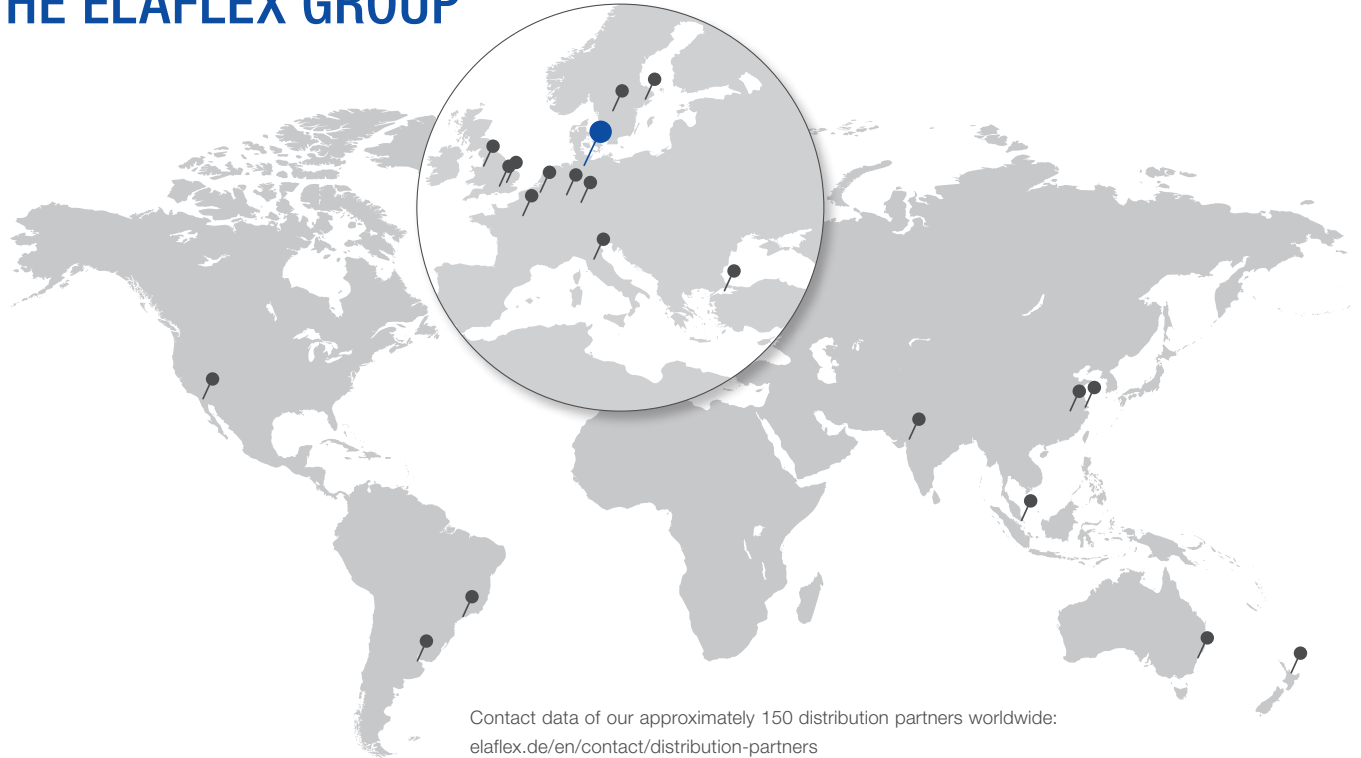
This system fulfils the highest EN 13160 class I requirements. It is suitable for installation in Ex-zone I or II, equipped with an integrated pump, integrated heating, a digital manometer, and detonation flame arresters.



Power supply: 100–240 VAC | 24 VDC
Temperature range: -40 °C to +55 °C
Housing: weatherproof, stainless steel, IP66
Pneumatic connections: stainless steel or brass compression ferrule / flared union / Swagelok



THE ELAFLEX GROUP



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