

Dr.-Ing. Ulrich Esterer GmbH & Co. KG

**YOUR MISSION IS OUR BUSINESS**

# Dr.-Ing. Ulrich Esterer GmbH & Co. Fahrzeugaufbauten und Anlagen KG



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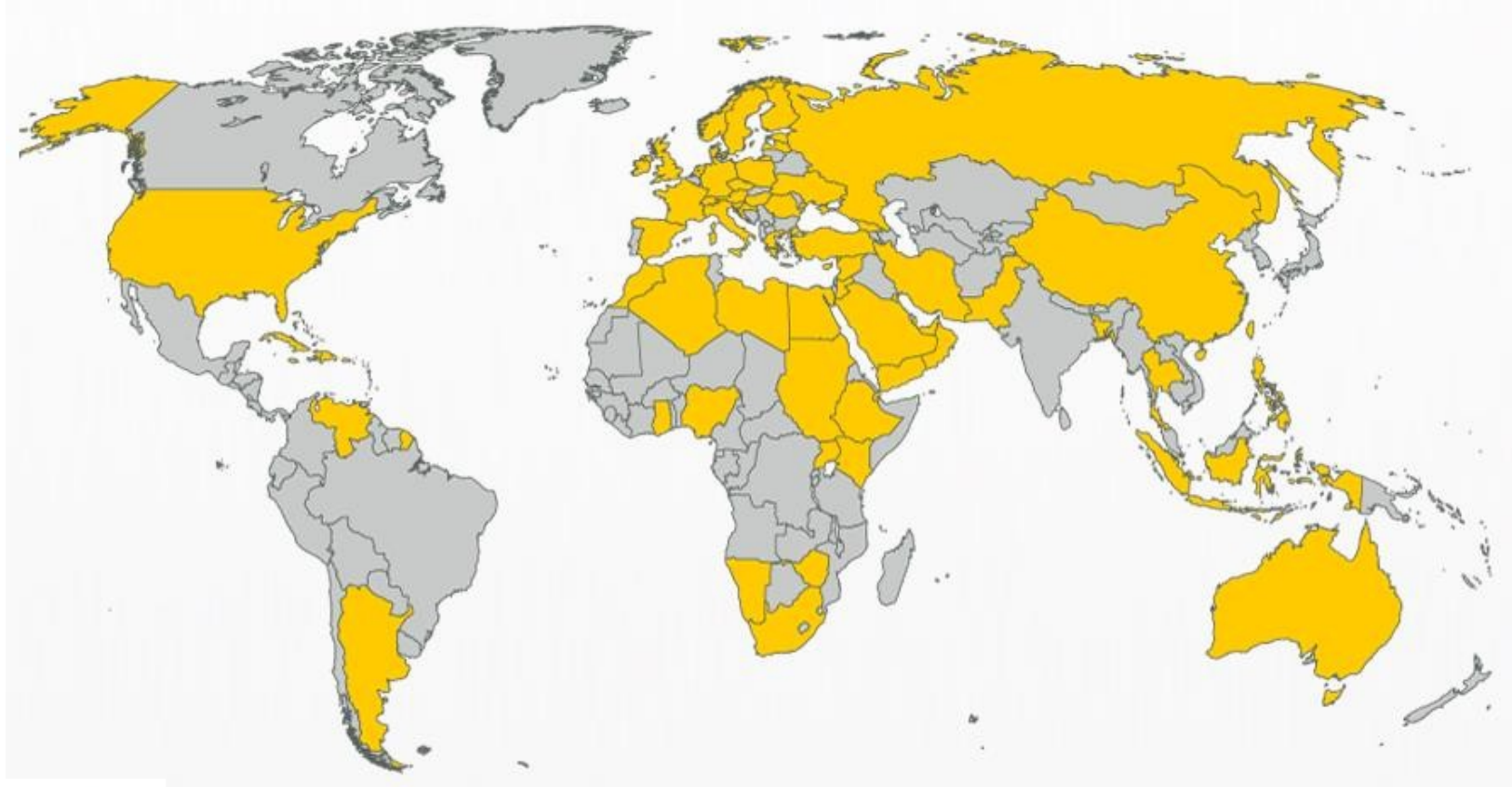
Established:	1955
Location:	Helsa / Kassel
Legal status:	Limited liability company
Turnover 2014:	35 Mio. EUR
Employees:	170
ISO 9001/2 certified:	since 1994
Export quota:	60 %
Products:	Road tanks – since 1955 Refuelers – since 1970
Customers:	approx. 70 countries

# Esterer International

## In use throughout the world



Esterer is represented in **over 70 countries** with **more than 1800 airfield refueler units** delivered. Countries which are using Esterer products marked in yellow.



Certified EU trade partner



# Esterer Facilities

## All functions under one roof



4 production halls, tank production, paint shop, service & testing facility, training center, Sales & marketing, research & development, technical department & overall administration, After Sales warehouse and international Service





# Esterer Production

Highly standardized state of the art facility



Modular production system – unique within the industry  
Standardized processes for reproducible quality  
Stringent quality management  
Skilled, certified workers to guarantee a high level of professionalism



# History

## Road tanks – over 60 years of excellence



For 60 years ESTERER has provided reliable, high-quality road tanks at a cost-performance ratio that our customers highly appreciate. Established in a time when business was sealed with a handshake, led by visionary courage that, still today, ESTERER has the advantage of being one step ahead of the market.

1961: First participation in IAA Motor Show





## Products today

### Road tanks – number one in our market



Mineral oil and diesel transport  
250 units per annum  
40% market share in home market Germany



product  
design  
award

2010

## History

Refuellers – in Service for more that 40 years



## Individual Reliable Trusted

Since the 1970s, ESTERER supplies refueler trucks to customers word-wide. ESTERER always meets the most stringent requirements. To reach this quality level, detailed knowledge of the international market requirements is as basic as the knowledge of climatic conditions and specific customer needs which have a considerable influence on the design of the truck components. All functional and safety equipment must operate with the highest level of safety and reliability over the years.

**Specialist for aluminum** tanks with all required tank type approvals

**Certified body builder by OEM**, with officially approved flexible tank support

**Frame contracts** to major international oil companies

Highest **retention rate** in the industry

**Consultant to the government**, EU regulation departments and suppliers



# Civil Refuelers today

## Up to 100 units annual production



**Rigid Refueler**

**Hydrant Dispenser**



**Semi-Trailer Refueler**





# Civil Refueler today

## Preferred Supplier to international Oil Companies



# Civil Refuelers today

## Customized solutions in all ground equipment



**Pit Cleaner**

**Pit Flusher**

**Carts**





# Military Refueler

About 600 units supplied to internat. governments



ESTERER MILITARY AIRCRAFT REFUELLERS

REFUELING  
TECHNOLOGY  
MADE IN GERMANY



# Refuelers today

## Main functions



In fueling an aircraft three main function are covered by a refueler:

1. Filtration  
(water defense system)

Method: Filter Monitor  
Filter Water Separator

Performance control: Differential pressure gage

# Refuelers today

## Main functions



In fueling an aircraft three main function are covered by a refueler:

1. Filtration  
Method: (water defense system) Filter Monitor Filter Water Separator

Performance control: Differential pressure gage

2. Pressure control  
Method: Hose end pressure valve

Secondary control: In line pressure control valve (venturi)



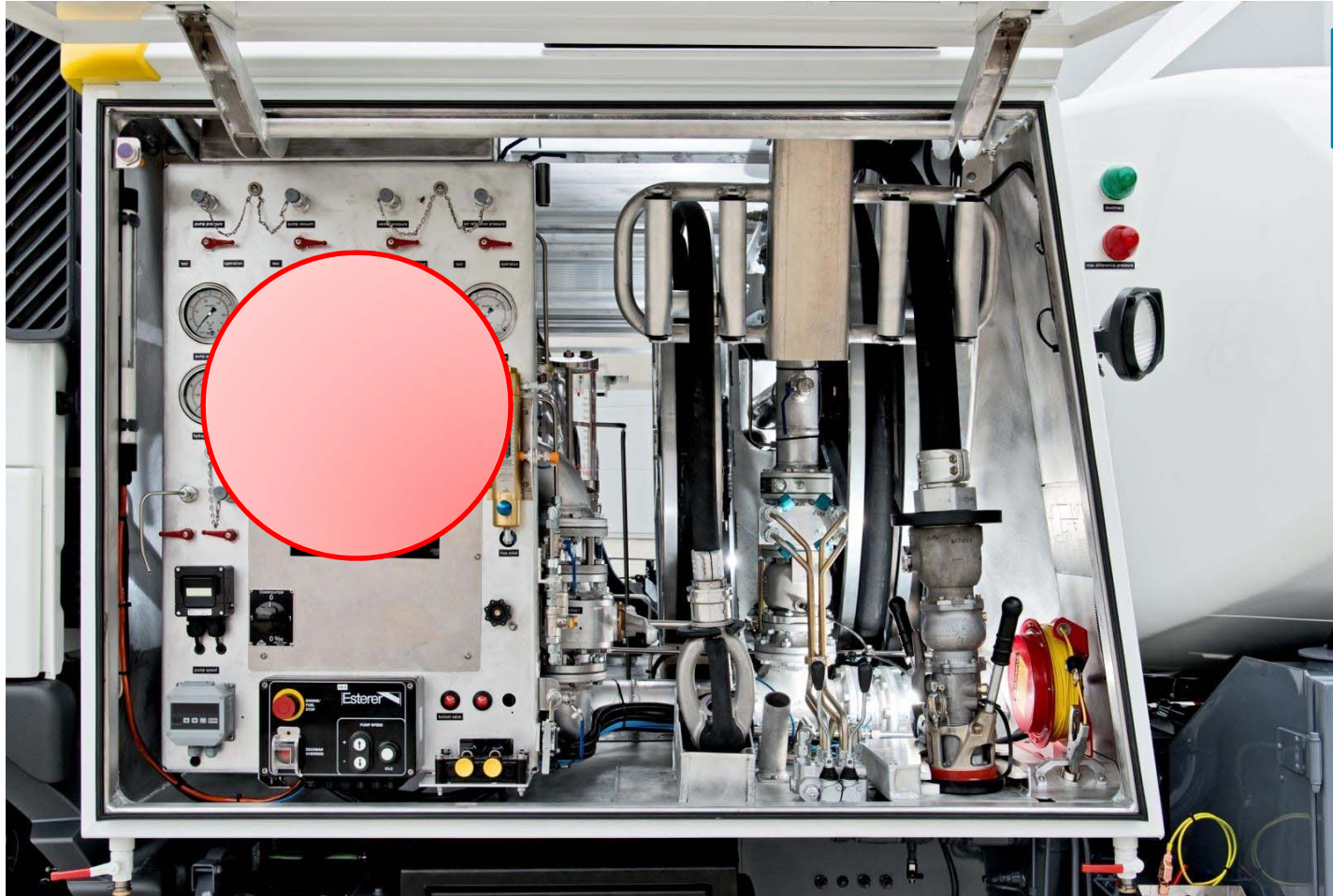


# Refuelers today

## Fueling cabinet - functions



Fueling cabinet for overwing and underwing operation:



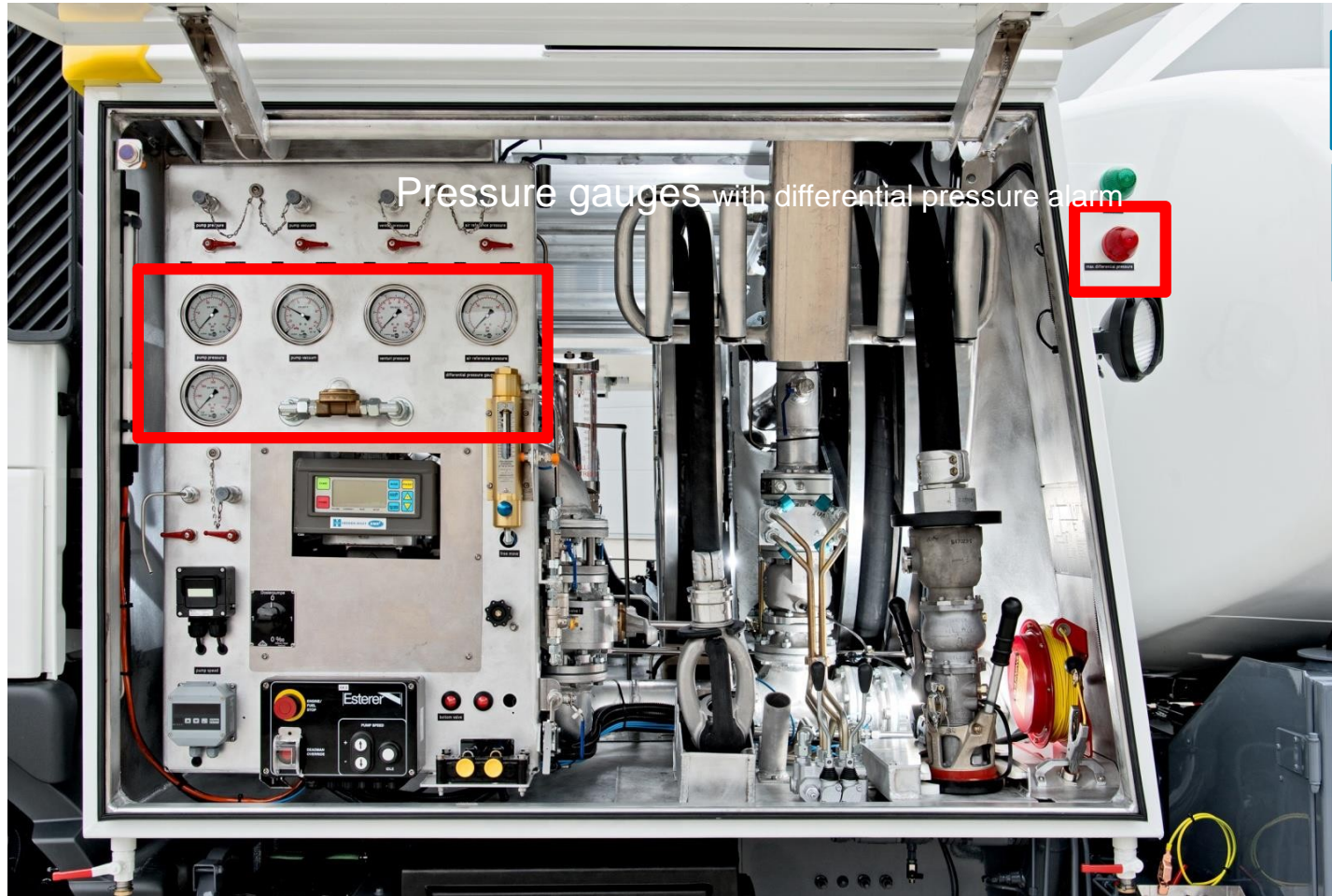
Filter  
with access from  
service side

# Refuelers today

## Fueling cabinet - functions



Fueling cabinet for overwing and underwing operation:



Pressure gauges with differential pressure alarm

Filter  
with access from  
service side

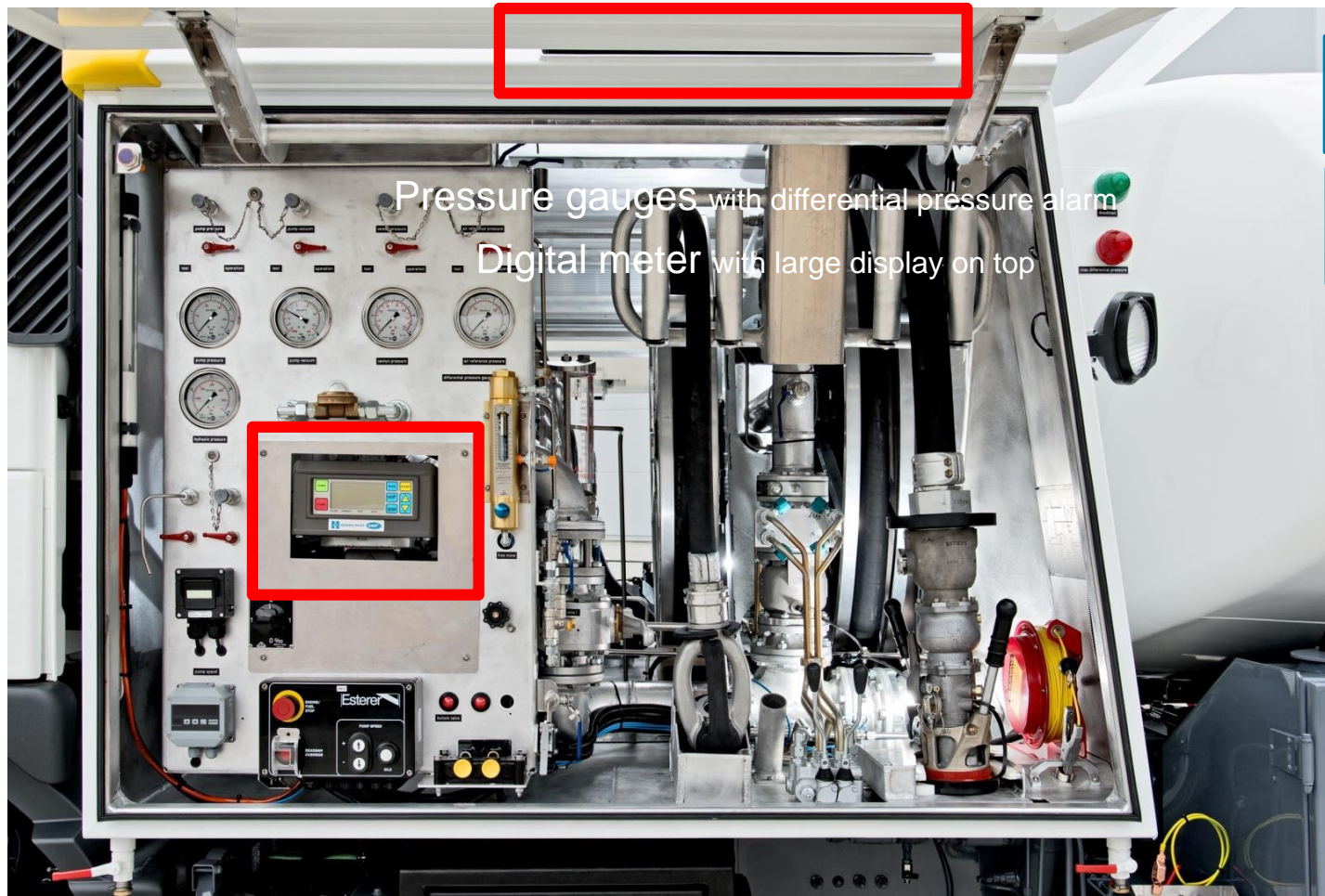


# Refuelers today

## Fueling cabinet - functions



Fueling cabinet for overwing and underwing operation:



Pressure gauges with differential pressure alarm

Digital meter with large display on top

- Filter with access from service side
- 
-

# Refuelers today

## Main safety features



Every refueler has three main safety features incorporated:

1. Interlock system                      Each step of the **fueling process is controlled by sensors** in order to make sure, the fueling process is in accordance with required procedure  
In case of **false operation a fueling can not be initiated**, the vehicle cannot be moved.

# Refuelers today

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2. Deadman system                      During fueling of an aircraft the **operator needs to signal alertness** by pressing a hand switch each 90 seconds, within 30 seconds, **otherwise the fueling process stops**.



# Refuelers today

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3. Bonding reel                              As the **fueling process creates electrostatic charging** a **grounding cables** needs to be attached to the plane during fueling. The correct usage of the bonding is **controlled by the interlock system**.

# Refuelers today

## Fueling cabinet – safety features



Fueling cabinet for overwing and underwing operation:



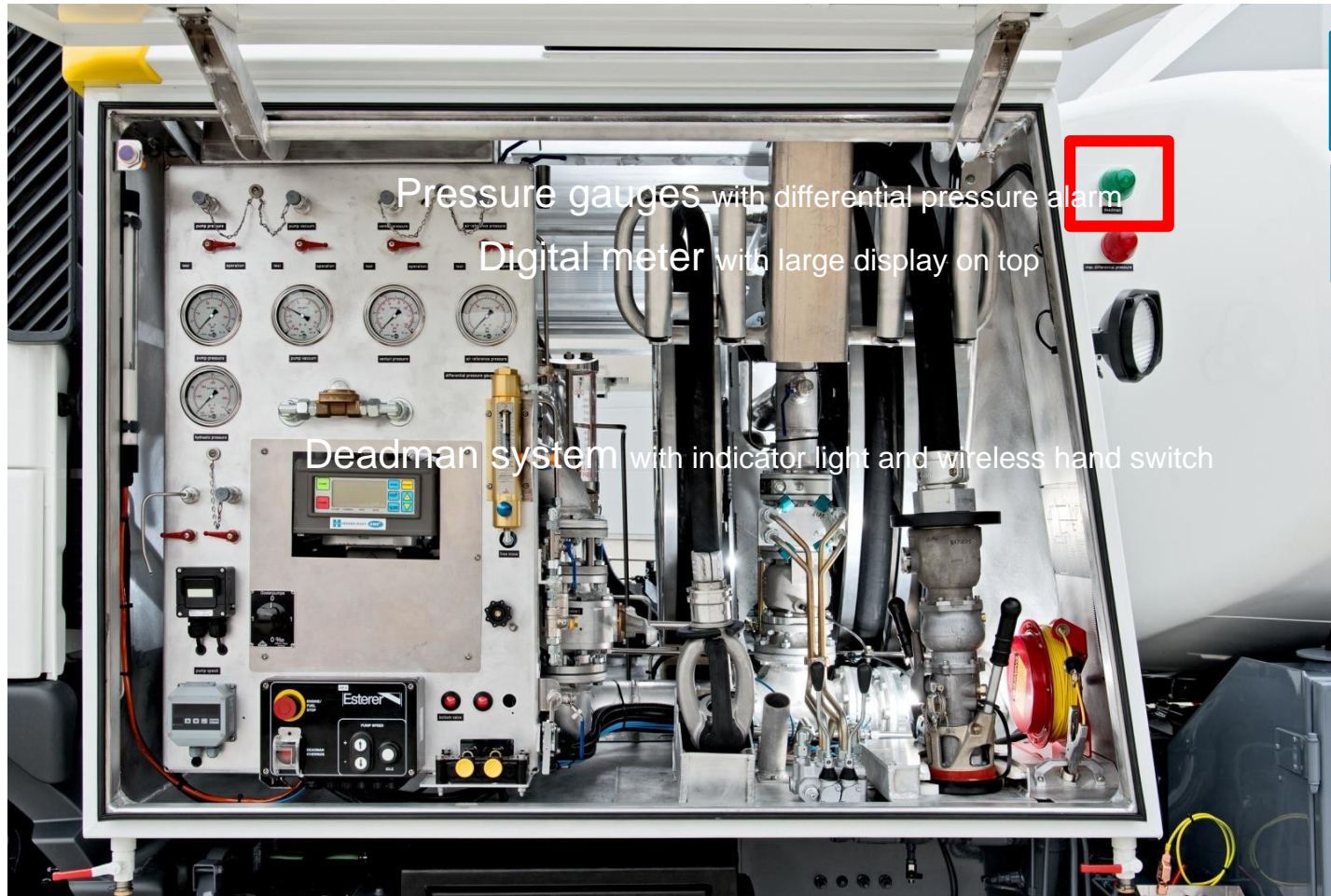
- Filter  
with access from  
service side
- pressure alarm  
display on top
- Interlock system  
inside chassis cabinet
-

# Refuelers today

## Fueling cabinet – safety features



Fueling cabinet for overwing and underwing operation:



Pressure gauges with differential pressure alarm

Digital meter with large display on top

Deadman system with indicator light and wireless hand switch



- Filter with access from service side
- 
- Interlok system inside chassis cabinet
- 
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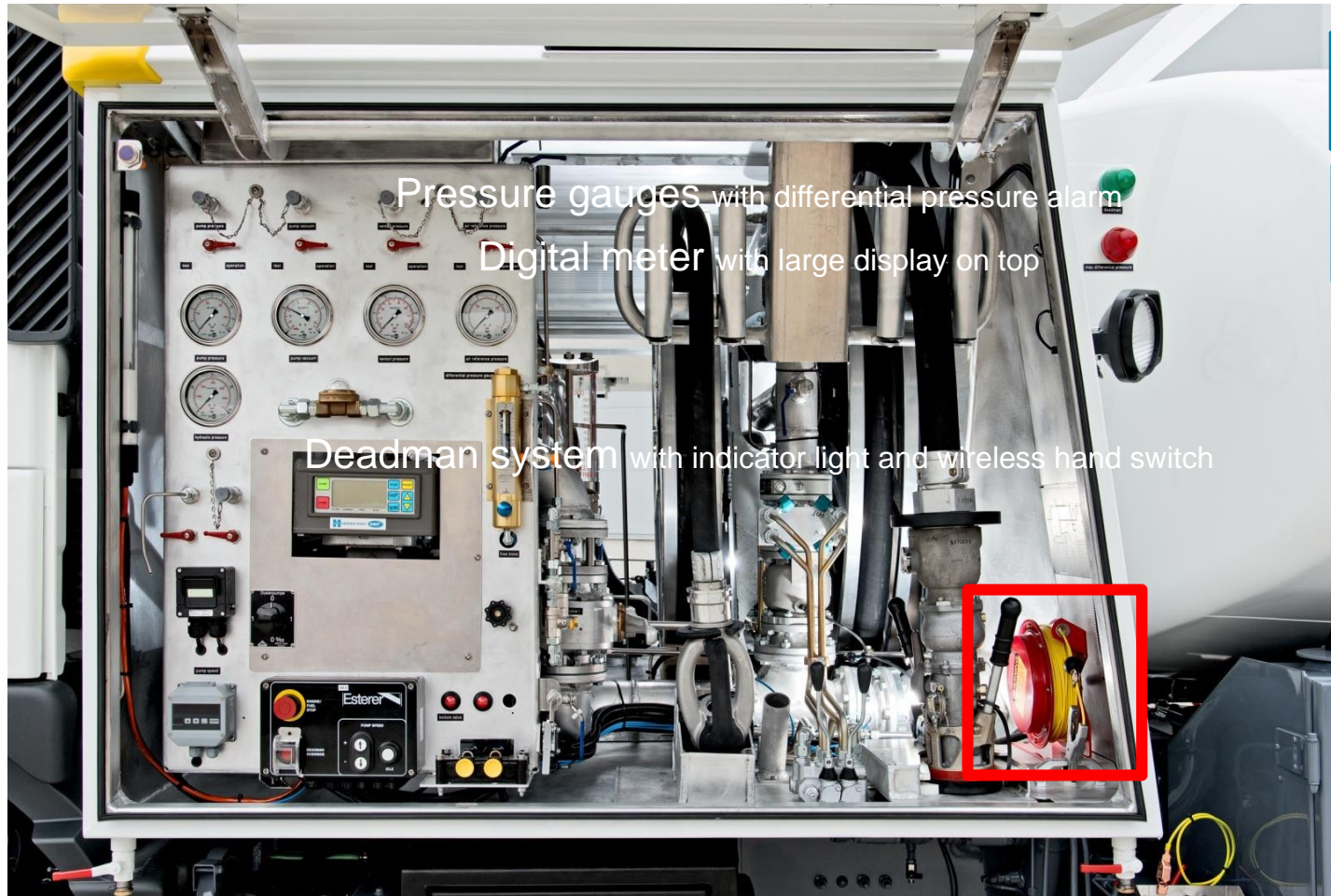


# Refuelers today

## Fueling cabinet – safety features



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Pressure gauges with differential pressure alarm

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Filter  
with access from  
service side



Interlok system  
inside chassis cabinet

Bonding reel





# Products today

## Applicable international regulations



### **JIG** Joined Inspection Group:

Clear guidelines for requirements on refueling, safety, fuel quality control etc.

### **EN 12312/5 and EN1951:** European machinery directive

Norm for machines such as aviation equipment with regards to function, safety etc.

### **ATEX:** *ATmosphères EXplosibles* (NFPA : American equivalent)

EU directive describing what equipment and work environment is allowed in an environment with an explosive atmosphere.

### **MID 22014/32/EU:** Measuring Instruments Directive

→ Esterer owns 14 different type approvals of measuring systems on refuelers

### **ADR:** EU regulation for transportation of dangerous goods on public roads

→ Esterer owns 6 different type approvals for tanks according to latest standards (2015)

### **EI1581/1583** Energy Institute: Norm for filters regarding contamination and shut off

### **EN ISO 1825 (EN1361) and EI1529** for aviation hoses concerning pressure test and quality



# Products today

## Esterer typical solutions



Esterer always builds according to latest standards.

1. Sample

### **JIG bulletin 66 (11/2013) Vehicle defuel circuit**

Directive: defueling must be decoupled from fueling system

2. Sample

### **Reduction of Emission during fueling**

Dispenser: Start / Stop mechanism

Refueler: Electronic regulation of the engine speed to drive the pump in optimal relation to fueling pressure required

## Products today

### 24 hour service



A high level of **operational availability** over the entire service life of a refueler can only be achieved with the help of an **efficient after-sales service**. We have provided the optimum basis for this:

- **Comprehensive operations manual**, technical documentation and spare parts lists, prepared individually for each truck
- Specialists to support the customer with **troubleshooting over the phone**
- Extensive **spare parts inventory**
- Express dispatch with custom clearance
- **Flying service team**
- **Training center** for technical training

# Esterer certifies first Service Partner

## APSCO – The Arabian Petroleum Supply Co



With the aim to provide **faster and efficient service** to our customers, we have extended the technical and professional expertise within the refueling business. With the **exchange of knowledge and extensive training**, APSCO is now a certified service partner to Esterer in **Saudi Arabia and GCC**.

Mr. Assam Qari  
Mr. Khairy Haddad





# Esterer and APSCO – Best Industry Match

## Customer benefits



### Why APSCO:

- Operating more than 30 airports and Helipads across the kingdom
- More than 180 fueling equipment
- More than 500 Aviation Staff
- Ranked 28th in term of global Aviation Supply

