



Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-762.901(9)
Form Title: Storage Tank Equipment
Registration Form
Effective Date: July 2019
Incorporated in Rule 62-762.851, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: FUEL SOLUTION SRL Contact Name: CLAUDIO RAPACCHIA
Company Address: Via Mediana, 18 City, State: ATRI, ITALY Zip: 64032
E-mail: info@fuelsolution.it Contact Number: +393917606937
Product Name: 4-FUEL (Above-ground storage tanks for Diesel supply)
Model Number(s): 4F model-300;540;838;1170;2000;2330;3000 Product Type: Skid Mounted Diesel tanks
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), F.A.C.: Chapter 62-762

Write a brief description of equipment registration request including product limitations:

The tanks are for private use, intended for farms, transport and logistics companies. As approved for Italy and Europe, there are no limitations of use. Specific limitations regarding installation distances, positioning and product identification may be applied according rules of each state.

NOT TO BE USED WITH BIODIESEL

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Technical information and drawings included?	☒	☐	☐
5. Installation instructions included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?	☒	☐	☐
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?	☒	☐	☐
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☐	☒	☐
9. Has the product been approved or registered in other countries or states? (If so provide list)	☒	☐	☐
10. Any requirements for company-certified installers or trainers?	☐	☒	☐
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- _____	☐	☒	☐
12. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☒	☐

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

Skid mounted self banded tanks with 13gpm dispensing unit 120V/60Hz, ready to use, plug and play system. The tanks are for private use, intended for farms, transport and logistics companies. Specific limitations regarding installation distances, positioning and product identification may be applied according to all Federal, State, and local regulations.

plied according rules of each state.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Claudio Rapacchia CEO of Fuel Solution srl
Printed Name and Title

FUEL SOLUTION SRL
Via Mediana, 18
64032 Fontanelle di Atri (TE)
P.IVA 01937680670
Signature: [Signature]
e-mail: fuelsolutionsrl@gmail.com
Pec: fuelsolution@pec-legal.it

09/16/2021
Date

For Department Use Only:

Date Application Received: 9/16/2021 Application complete: Yes ☐ No ☐

EQ- 965 Date of complete or incomplete letter sent: 9/17/2021 Date Equipment Requires Renewal: September 17, 2026

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-762.851(2), F.A.C.



4-FUEL TANK 838 DIESEL



EQUIPMENT & FEATURES

Horizontal cylindrical mono-skin tanks manufactured by using shell plates and dished ends made of carbon steel quality S235JR , watertight electro-welded (submerged arc welding process), provided with anti-roll supports, primed with a rust preventing layer and externally treated with two coats of primer and a final finish of two coatings of synthetic metallic GREY paint. Tanks are delivered pressure-tested and ready-to-use.

Tanks are equipped with:

-Collection basin able to hold 50% of total quantity of the tank. It is complete with lifting plates, grounding connection point, drain plug for routine cleaning/ maintenance;

- **Fuel Transfer Unit 15 GPM Diesel Transfer Pump** (120V/60Hz, 650 Watt, 7.5 Amp, Duty Cycle: 20 minutes on/off, 3450 RPM, 48.5 lbs, IP55 rated), with 3-Digit Mechanical Meter (in gallons) dispensing hose (length 13 ft.) and Automatic nozzle.

Included accessories:

- Discharge or cleaning hose with a 1 inch zinc plug;
- Upper hose for a level probe;
- Plug for the connection of the earth cable;
- Gangway 16 inch diameter, complete with oil gasket and tight bolted cover;
- Anti petrol gasket with a 3 inch opening with a lockable bayonet fastening and a 90% load limiting valve;
- Aspiration system with a no return valve with a calibrated spring and a closing ball valve and strainer;
- Exhaust with a terminal brass fire barrier;
- Mechanical level indicator and float.

Features:

- Nominal capacity: 838 gal
- Tank total length(including containment dike) 7,21 ft
- Tank total width(including containment dike) 4,92 ft
- Tank total height (including fuel transfer pump) 6,66 ft
- Tank total weight: 1085 lbs

	Dichiarazione CE di Conformità Manuale di Uso e Manutenzione		DOC
	DCECUM31-ASFT	rev.02 del 26-08-2019	Pag. 3/9

Sede operativa RIDART S.R.L.

Via Adua 17 – 21040 Gazzada Schianno (VA)

Tel. +39 0332 463301

Fax +39 0332 873065

commerciale@ridart.it
Sede legale RIDART S.R.L.

Via A. da Brescia, 2

21013 Gallarate (VA)

C.C.I.A.A. Varese 183072

C.F e P.IVA 01454770122

DECLARATION OF CONFORMITY EU
DICHIARAZIONE DI CONFORMITA' UE



Manufacturer's name

Nome del costruttore

RIDART S.R.L.

Manufacturer's address

Indirizzo del costruttore

Via Adua 17 - Gazzada Schianno (VA)

Herewith declares under own exclusive responsibility conformity of the Products

Dichiara sotto la propria responsabilità esclusiva la conformità del prodotto

Product description:

Descrizione del prodotto

ACCESSORI per SERBATOI
ACCESSORIES for TANKS

Fig. 21 A ; 55 B ; 70 ; 70 A ; 70 B ; 70 C ; 70 bis ; 80 AL
80 OT ; 90 ; 90 AL ; 90 C ; 135 ; 137 ; 190 ; 198 ; 440 ; 444
445 ; 446 ; 2000 ; 2015 ; 1510
(s.n. 2017)

Marking

Marcatura


II 2 G

Certificate Number edit by TUV Rheinland,

Notified Body Number 0035

Numero certificato emesso da TUV Rheinland,

Organismo Notificato Numero 0035

557/Ex-Ab 2167/14

Technical File Number

Numero Fascicolo Tecnico

RIDART 05/14 ATEX

In accordance with applicable regulations below:

Soddisfa la seguente Direttiva:

EU Directive / Direttiva UE: **2014/34/UE - ATEX**

As in accordance to the European Harmonized Standards applied when the certificate was issued:

In quanto conforme alle Norme Europee Armonizzate applicabili alla data di emissione del certificato sopra indicato:

EN 13463-1:2009; EN 1127-1:2011; EN13463-5:2011;

Gazzada Schianno lì 30 Marzo 2020

firma
Daide Meneghini (CEO)

	Dichiarazione CE di Conformità Manuale di Uso e Manutenzione		DOC
	DCECUM31-ASFT	rev.02 del 26-08-2019	Pag. 4/9

INSTALLATION, USE, MAINTENANCE and SAFETY INSTRUCTIONS

ACCESSORIES for TANKS

TECHNICAL FILE: RIDART 05/14 ATEX (557/Ex-Ab 2167/14)

FIGURE	PRODUCT NUMBER	DESCRIPTION
21 A	092615 ; 092625 ; 092626	CHECK VALVE
55 B	092210 ; 092215 ; 092220 ; 092225	VALVE ADJUSTABLE ANTI-SIPHON
70	086498 ; 086500 ; 086510	FILLER PLUG NECK
70 A	086520 ; 086540	FILLER PLUG NECK ALUMINIUM
70 B	086504 ; 086505	QUICK PLUG ALLUMINIO
70 C	-	-
70 bis	086499 ; 086499A ; 086502 ; 086513	QUICK PLUG BRASS ALUMINIUM
80 AL	086550 ; 086555 ; 086560	QUICK PLUG ALUMINIUM
80 OT	086440 ; 086570	QUICK PLUG BRASS
90	086650	RING QUICK
90 AL	086450 ; 086651	RING QUICK ALUMINIUM
90 C	-	-
135	092300 ; 092301	SEAT METRIC ROD
137	-	-
190	086950	VENT
198	094445 ; 094446	ATTIVE CARBONS VENT
440	092380 ; 092390 ; 092410	OVERFILL VALVE
444 F	094978 ; 094978 S ; 094979	OVERFILL VALVE
445	094980	OVERFILL VALVE
446	446-50 AL ; 446-50 SS ; 446-80 AL	OVERFILL VALVE
2000	MB50 ; MB100 ; MB50 SS ; MB100 SS	LINK
2015	VK50-1 ; VK100-1 ; VK50-1 SS ; VK100-1 SS	CAP
1510	1510-01	VALVE ANTI-SIPHON

FEATURES

Mechanical safety device to be installed on fuel plants or chemical products (technical data sheet available on our website).

INSTALLATION and POSITIONING

Use device where is required, refer to the specific approval of the Italian “Ministero degli Interni” and the system diagrams available on our web site.

MAINTENANCE

Frequency depends on product's using and foreign bodies in the pipe. If is possible removing and cleaning flame arrestor at least once every 12 months, intensify the maintenance in heavy using, carefully remove all external bodies and deposits, inside and outside of the safety device, check the proper functioning of moving parts and replace if necessary any seals and springs when their effectiveness and efficiency decrease.

For any questions call the manufacturer:

RIDART S.R.L.

21045 Gazzada Schianno (VA) Italy

Tel. (+39) 0332 463301

Email: commerciale@ridart.it

Web: www.ridart.it e www.ridart.it/support



X - Danger Explosion!

Failure to follow the instructions contained in this section may lead to severe damage to people and environment! These instructions do not disregard the proper use of the equipment and the instruction manual of generic instructions.

	Dichiarazione CE di Conformità Manuale di Uso e Manutenzione		DOC
	DCECUM31-ASFT	rev.02 del 26-08-2019	Pag. 5/9

GENERAL

All RIDART's equipment are not sources of ignition in normal operation or in malfunction conditions, you have to respect these following instructions:

- Correct installation.
- Use only into the operating range defined in the Product Data Sheet
- Use all additional instructions.
- Use only RIDART and authorized spare parts.
- Make no changes to the systems.

ELECTRICAL CONTINUITY

All RIDART's equipment are made to ensure the electrical conductivity.

The user and the installer must take care to ensure continuity with the system and the grounding in accordance with legal requirements including in TR 50404.



TEMPERATURE CLASS

The equipment surface temperature depends on the temperature of the fluid conveyed. The maximum temperature of the fluid must be less than allowed maximum surface area of use.

ATTENTION! For use in areas with gas the maximum surface temperature is defined on the documents for the implementation of the Directive 99/92/EC and complies with the following convention. The sunlight or close to other heat sources may cause an increase in the surface temperature.

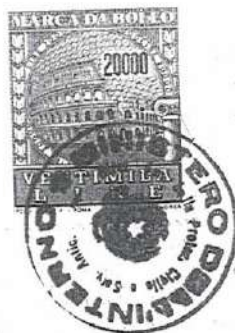
Temperature Class	Max Surface Temp. (C°)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

CLEANING and MAINTENANCE

The equipment must be properly stored, handled and maintained in order to prevent the external material in and the dust deposition between the moving parts. The maintenance activities must be carried out by specialist personnel, done as defined in the manual of general instructions with right tools like in Appendix A of the UNI EN 1127-1 and without explosive atmosphere.

WARRANTY

- Products are warranted for one year (from invoice's data) against all manufacturing defects that we recognized.
- Any product 's modifications or tampering will lose your warranty and equipment's effectiveness and efficiency, please don't do it.
- Any extra compensation cannot be demand, if we don't install equipment or for any other reason.



Roma, 29 AGO. 1998 19

*Ministero dell'Interno*DIREZIONE GENERALE DELLA PROTEZIONE CIVILE
E DEI SERVIZI ANTINCENDI**SERVIZIO TECNICO CENTRALE**Ispettorato attività e norm. spec.
di prevenzione incendiDivisione _____ Ser. _____
Prot. N° NS 4055 Allegati _____
4113 sott.

Ma Soc. DEMO S.r.l.

Pianura Vomanó Zona Industriale

S.S. 150, 1

64024 NOTARESCO (TE)

Riusposta al Foglio del
Div. _____ Ser. _____ N° _____OGGETTO: Soc. DEMO S.r.l. - Approvazione di tipo relativa ai
contenitori-distributori rimovibili per carburanti liquidi
di cat. "C", marca "DEMO" nelle versioni:

"TF 1200" con capacità geometrica massima litri 1168;

"TF 2000" con capacità geometrica massima litri 2094;

"TF 3000" con capacità geometrica massima litri 3042;

"TF 5000" con capacità geometrica massima litri 5443;

"TF 7000" con capacità geometrica massima litri 7133;

"TF 9000" con capacità geometrica massima litri 8922.

Gruppo erogatore: PIUSI MOD. BY-PASS 55 FILTER o in
alternativa PIUSI MOD. E-80, installati in
apposita cassetta di contenimento.e,p.c.: All'Ufficio Centrale Metrico del
Ministero dell'Industria del
Commercio e dell'Artigianato
Via Antonio Bosio, 15
00161 R O M AAlla Direzione del Centro Studi
ed Esperienze
Piazza Scilla n°2
00178 Capannelle - R O M A

Questo Ministero ha esaminato l'istanza presentata da codesta Società intesa ad ottenere l'approvazione di tipo ai sensi del Titolo I, punto XVII del D.M. 31 luglio 1934 e successive modificazioni e del D.M. 19.03.1990 relativa ai contenitori-distributori rimovibili indicati in oggetto.

Rome, 29 August 1998

Ministry of Home AffairsDIRECTORATE-GENERAL FOR CIVIL
PROTECTION

AND FIRE-FIGHTING SERVICES

CENTRAL TECHNICAL SERVICE

Inspectorate for activities and specific fire prevention
regulations

To: the company DEMO S.r.l.

Pianura Vomano Zona Industriale

S.S. 150, 1

64024 Notaresco (Teramo) - Italy

Division

Section

Reply to Sheet dated

Reg. No. NS 4055

Annexes

Division

Section

No.

4113 sott.

Reference: Company DEMO S.r.l. - Type Approval for category "C" removable liquid fuel containers-dispensers, brand "DEMO" in the following versions:

"TF 1200" with a maximum geometric capacity of 1168 litres;

"TF 2000" with a maximum geometric capacity of 2094 litres;

"TF 3000" with a maximum geometric capacity of 3042 litres;

"TF 5000" with a maximum geometric capacity of 5443 litres;

"TF 7000" with a maximum geometric capacity of 7133 litres;

"TF 9000" with a maximum geometric capacity of 8922 litres.

Dispensing unit: PIUSI MOD. BY-PASS 55 FILTER or alternatively

PIUSI MOD. E-80, installed in a specific containment box.

and, for information to: Ufficio Centrale Metrico
(Central Metrological Office) of
the Italian Ministry of Industry
Trade and Crafts
Via Antonio Bosio, 15
00161 ROME

To the Management of the "Centro
Studi ed Esperienze" (Centre for
Studies and Experience)
Piazza Scilla n. 02
00178 Capannelle - ROME

This Ministry has examined the application submitted by this Company to obtain type approval pursuant to Title I, item XVII of the Italian Ministerial Decree D. M. dated 31 July 1934 and subsequent amendments and Ministerial Decree D.M. 19.03.1990 relating to the removable containers-distributors as mentioned above.

In this regard, considering the submitted documentation, taking into account what has been reported with test certificate No.

3704/1366/80/37/44 and test report No. 3737/44 dated 26 June 1998 by the "Centro Studi ed Esperienze", this Ministry APPROVES, for fire prevention purposes, the prototype of the removable liquid fuel containers-distributors cat. "C" branded "DEMO" in the versions: "TF 1200", "TF 2000", "TF 3000", "TF 5000", "TF 7000", and "TF 9000" equipped with dispensing unit branded "PIUSI MOD. BY-PASS 55 FILTER" or alternatively branded "PIUSI MOD. E-80" installed in a specific containment box.

The temporary installation of the aforesaid equipment shall be carried out in compliance with all current safety regulations on fire prevention and in accordance with the indications in the aforesaid test documentation, which must therefore be considered an integral part of this deed.

This type approval is valid for a period of five years from the date of this deed, under the express condition that the equipment in question conforms to the prototype tested.

Furthermore, all legal obligations are recalled, which are incumbent on the holder of the Type Approval Act and on all subjects concerned in accordance with the Italian Civil Code, the Criminal Code and the above-mentioned decrees.

The Metrological Office of the Italian Ministry of Industry, Trade and Crafts is also informed of the above, for the fulfilment of its duties.

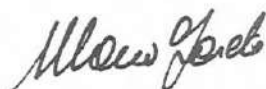
THE CHIEF INSPECTOR GENERAL
(Mr. Salvatore FIADINI)
[signature]

NOTE: THIS DEED IS REPRODUCIBLE ONLY IN ITS ENTIRETY.

Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021





PROCURA DELLA REPUBBLICA
presso il Tribunale di Teramo

Apostille

(Convention de la Haye du 5 octobre 1961)

1. Stato: Italia
Il presente atto pubblico
2. E' stato sottoscritto da Marco Faieta
3. Operante in qualità di Notaio
4. E' munito del sigillo/timbro di Faieta Marco di Elio Notaio in Pineto

Attestato

5. In Teramo
7. dal dr

6. Il 28 LUG 2021

IL SOST. PROCURATORE DELLA REPUBBLICA
(Dott. Laura Colica)

8. col numero 257/2021 Reg. Leg.
9. Sigillo/Timbro

10. Firma

IL SOST. PROCURATORE DELLA REPUBBLICA
(Dott. Laura Colica)





Ministero dell'Interno
DIREZIONE GENERALE DELLA PROTEZIONE CIVILE
E DEI SERVIZI ANTINCENDI

CENTRO STUDI ED ESPERIENZE
LABORATORIO DI MACCHINE E TERMOTECNICA

Divisione _____ *Sec.* _____
Prot. N.° 1520 *Allegati* _____

23 GIU 1998
Roma, _____ 19 _____

Al _____ la Demo S.r.l. _____
_____ Z.I. Pianura Vomano S.S. 150, n°1 _____
_____ 64024 Notaresco (TE) _____

Risposta al Foglio del _____
Dir. _____ *Sec.* _____ *N.°* _____

OGGETTO: _____
Contenitori distributori mobili per carburanti liquidi di cat. C marca
DEMO versioni "TF 1200 - TF 2000 - TF 3000 - TF 5000 - TF 7000 - TF 9000".

Si trasmette in allegato la certificazione relativa ai dispositivi in oggetto.

IL DIRETTORE
(Mauro MARCHINI)





26 GIU 1998

Roma, 19

Ministero dell'Interno

DIREZIONE GENERALE DELLA PROTEZIONE CIVILE
E DEI SERVIZI ANTINCENDI

CENTRO STUDI ED ESPERIENZE
LABORATORIO DI MACCHINE E TERMOTECNICA

Al Ministero Interno - D.G.P.C.S.A. - S.T.C.

Ispettorato Attività e Normative

Speciali di Prevenzione Incendi

Divisione: _____ Sez. _____
Prot. N° 1520 Allegato: _____

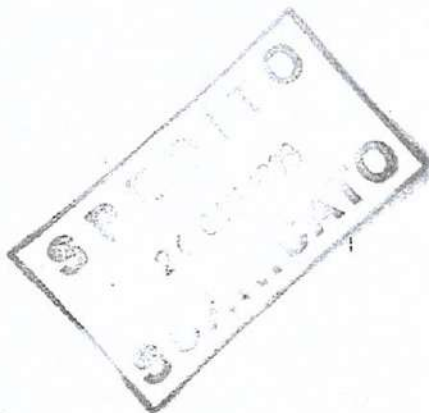
Risposta al Foglio del _____
Div. _____ Sez. _____ N° _____

OGGETTO: Ditta Demo S.r.l.

Contentori - distributori mobili per carburanti liquidi di categoria "C"
marca DEMO versioni "TF 1200 - TF 2000 - TF 3000 - TF 5000 - TF 7000 - TF 9000".

Ai fini della approvazione di tipo, si trasmettono in allegato n° 1 copia conforme della certificazione di prova inerente i dispositivi in oggetto e n° 1 copia della documentazione tecnica relativa agli stessi.

IL DIRETTORE
(Mauro MARCHINI)



[Handwritten signature]



Ministero dell'Interno

DIREZIONE GENERALE DELLA PROTEZIONE CIVILE

E DEI SERVIZI ANTINCENDI

CENTRO STUDI ED ESPERIENZE

LABORATORIO DI MACCHINE E TERMOTECNICA

CERTIFICAZIONE DI PROVA N. 3704/1366
80/37/44



In relazione alla domanda presentata da:

DEMO S.r.l. Zona Industriale Pianura Vomano S.S. 150, n. 1 - 64024 NOTARESCO (TE), ai sensi della L. 26.07.1965, n. 966, per l'accertamento della rispondenza alla normativa di prevenzione incendi dei contenitori/distributori mobili per carburanti liquidi di categoria "C":

- Marca: DEMO S.r.l.
- Versioni:
 - TF 1200 con capacità geometrica massima litri 1148;
 - TF 2000 con capacità geometrica massima litri 2094;
 - TF 3000 con capacità geometrica massima litri 3042;
 - TF 5000 con capacità geometrica massima litri 5443;
 - TF 7000 con capacità geometrica massima litri 7133;
 - TF 9000 con capacità geometrica massima litri 8922.

con gruppi erogatori PIUSI mod. BY-PASS 55 FILTER o mod. E-80, installati in apposita cassetta di contenimento.

SI CERTIFICA

che i contenitori/distributori mobili sopra indicati sono stati sottoposti a prove di Laboratorio (Resoconto di Prova n. 3737/44 del 26 GIU. 1998) e sono risultati rispondenti alla normativa di sicurezza di cui alle disposizioni:

D.M. 31.07.1934 titolo I n. XVII e D.M. 19.03.1990.

La validità della presente certificazione è relativa ai soli apparecchi sottoposti a prova.

L'approvazione, ai fini della prevenzione incendi, è di competenza del Ministero dell'Interno, al quale deve essere inoltrata apposita istanza.

Roma. 26 GIU. 1998

IL DIRETTORE DEL LABORATORIO
(Dott. Ing. Maurizio D'ADDATO)

Allegati: resoconto di prova



Ministero dell'Interno

DIREZIONE GENERALE DELLA PROTEZIONE CIVILE

E DEI SERVIZI ANTINCENDI

CENTRO STUDI ED ESPERIENZE

LABORATORIO DI MACCHINE E TERMOTECNICA

Prat. N. 3737/44

Richiedente: DEMO S.r.l.

Indirizzo: Zona Industriale Pianura Vomano S.S. 150, n. 1 - 64024 NOTARESCO (TE)

Apparecchi presentati: contenitori/distributori mobili per carburanti liquidi di categoria "C", nelle versioni:

TF 1200 con capacità geometrica massima litri 1148;
TF 2000 con capacità geometrica massima litri 2094;
TF 3000 con capacità geometrica massima litri 3042;
TF 5000 con capacità geometrica massima litri 5443;
TF 7000 con capacità geometrica massima litri 7133;
TF 9000 con capacità geometrica massima litri 8922.

con gruppi erogatori PIUSI mod. BY-PASS 55 FILTER e mod. E-80, installati in apposita cassetta di contenimento.

Prove richieste: prove tendenti ad accertare la sicurezza antincendi nell'impiego delle apparecchiature ai sensi del D.M. 31.07.1934 titolo I n. XVII e D.M. 19.03.1990.

RESOCONTO DI PROVA

Generalità:

Le apparecchiature sono costituite da un serbatoio di tipo cilindrico ad asse orizzontale della capacità massima di litri 9000 e da un gruppo elettropompa con contatore, tubo e pistola di erogazione, posto su un lato del serbatoio.

Il gruppo elettropompa è contenuto in apposito armadio dotato di portello anteriore.

A fianco del gruppo erogatore è posta una scatola con grado di protezione IP 55, per le connessioni elettriche e per l'alimentazione a bassa tensione del dispositivo di controllo minimo livello, ubicato nel serbatoio stesso.

Il presente resoconto di prova consta di N. 7 pagine e non può essere riprodotto e/o mostrato a terzi se non integralmente..

Rome, 26 June 1998

Ministry of Home Affairs
DIRECTORATE-GENERAL FOR CIVIL PROTECTION
AND FIRE-FIGHTING SERVICES

CENTRO STUDI ED ESPERIENZE
MACHINE AND THERMOTECHNICS LABORATORY

To: Demo S.r.l.
Z. I. Pianura Vomano S.S. 150, 1
64024 Notaresco (Teramo) - Italy

Division
Reg. No. 1520

Section
Annexes

Reply to Sheet dated
Division Section No.

Reference: Mobile containers-dispensers for liquid fuels of cat. C brand DEMO versions "TF 1200 - TF 2000 - TF 3000 - TF 5000 - TF 7000 - TF 9000".



Please find attached the certification for the above devices.

THE DIRECTOR
(Mauro MARCHINI)
[signature]

[Stamp: SENT on 26 June 1998 DISCHARGED]

Rome, 26 June 1998

Ministry of Home Affairs
DIRECTORATE-GENERAL FOR CIVIL PROTECTION
AND FIRE-FIGHTING SERVICES

CENTRO STUDI ED ESPERIENZE
MACHINE AND THERMOTECHNICS LABORATORY

To: Ministry of Home Affairs - D.G.P.C.S.A. -
S.T.C.

Inspectorate for Special Fire-Prevention
Activities and Standards

Division
Reg. No. 1520

Section
Annexes

Reply to Sheet dated
Division Section No.

Reference: Company Demo S.r.l.
Mobile containers-dispensers for liquid fuels of cat. "C" brand DEMO
versions "TF 1200 - TF 2000 - TF 3000 - TF 5000 - TF 7000 - TF 9000".

For the purpose of type approval, we enclose one (1) conformed copy of the test certificate for the
devices in question and one (1) copy of the technical documentation relating to them.

THE DIRECTOR
(Mauro MARCHINI)
[signature]

[Stamp: SENT on 26 June 1998 DISCHARGED]

Ministry of Home Affairs

DIRECTORATE-GENERAL FOR CIVIL PROTECTION

AND FIRE-FIGHTING SERVICES

CENTRO STUDI ED ESPERIENZE

MACHINE AND THERMOTECNICS LABORATORY

TEST CERTIFICATION NO. 3704/1366 80/37/44

With reference to the application submitted by:

DEMO S.r.l. Zona Industriale Pianura Vomano S.S. 150, n. 1 - 64024 NOTARESCO (TE),
pursuant to Law 26.07.1965, No. 966, for the verification of compliance with fire prevention
regulations of mobile containers/distributors for liquid fuels of category "C":

- Brand: DEMO S.r.l.
- Versions: TF 1200 with a maximum geometric capacity of 1148 litres;
TF 2000 with a maximum geometric capacity of 2094 litres;
TF 3000 with a maximum geometric capacity of 3042 litres;
TF 5000 with a maximum geometric capacity of 5443 litres;
TF 7000 with a maximum geometric capacity of 7133 litres;
TF 9000 with a maximum geometric capacity of 8922 litres.

with PIUSI dispensing units model BY-PASS 55 FILTER or model E-80, installed in
a specific containment box.

THIS IS TO CERTIFY

that the above-mentioned mobile containers/dispensers have been subjected to laboratory tests (Test
Report no. 3737/44 dated 26 June 1998) and have been found to comply with the safety regulations
as per the following provisions:

Ministerial Decree D.M. 31.07.1934 Title I No. XVII and Ministerial Decree D.M. 19.03.1990.

The validity of this certification is relative only to the equipment tested.

Approval for the purposes of fire prevention is the responsibility of the Ministry of Home Affairs,
to which a specific application must be submitted.

Rome, 26 June 1998

THE DIRECTOR OF THE LABORATORY

(Mr. Maurizio D'ADDATO)

[signature]

Attachments: Test Report

Ministry of Home Affairs

DIRECTORATE-GENERAL FOR CIVIL PROTECTION
AND FIRE-FIGHTING SERVICES

CENTRO STUDI ED ESPERIENZE

MACHINE AND THERMOTECHNICS LABORATORY

File No. 3737/44

Applicant: DEMO S.r.l.

Address: Zona Industriale Pianura Vomano S.S. 150, n. 1- 64024 NOTARESCO (TE)

Appliances presented: Mobile containers/distributors for category "C" liquid fuels in the following versions:

TF 1200 with a maximum geometric capacity of 1148 litres;
TF 2000 with a maximum geometric capacity of 2094 litres;
TF 3000 with a maximum geometric capacity of 3042 litres;
TF 5000 with a maximum geometric capacity of 5443 litres;
TF 7000 with a maximum geometric capacity of 7133 litres;
TF 9000 with a maximum geometric capacity of 8922 litres.

with PIUSI dispensing units model BY-PASS 55 FILTER and model E-80, installed in a specific containment box.

Required tests: tests aimed at ascertaining the fire safety in the use of the equipment in accordance with Ministerial Decree D.M. 31.07.1934 Title I No. XVII and Ministerial Decree D.M. 19.03.1990.

TEST REPORT

Generalities:

The equipment consists of a cylindrical tank with horizontal axis with a maximum capacity of 9,000 litres and an electric pump unit with meter, pipe and dispensing nozzle, located on one side of the tank.

The electric pump unit is contained in a special cabinet with a front door.

Next to the dispensing unit there is a box with IP 55 protection degree, for the electrical connections and for the low voltage power supply of the minimum level control device, located in the tank itself.

This test report consists of 7 pages and may not be reproduced and/or shown to third parties except in its entirety.

The tanks are made of FE 360 B carbon steel sheet, in accordance with EN 10025 and are optionally equipped with a containment basin and a weather protection roof.

CONSTRUCTIVE EXAMINATION

TANK:

The distributor containers consist of the following:

Version TF 1200

- Metal tank with horizontal axis with a geometric capacity of 1148 litres, diameter 950 mm, length of plating 1500 mm, total length 1710 mm, thickness of metal sheets 3 mm.
- Metal containment basin with a useful capacity of 1100 litres with dimensions of 2100 x 1200 x 470 mm (LxWxH) including a drainage plug for rainwater drainage, a coupling system to the tank support saddles, arrangement for fixing the roof by means of bolts and connections for grounding.
- Metal protection roof with galvanised trapezoidal sheet metal and square tubular iron support profiles, prepared for anchoring to the containment basin by bolting.

Version TF 2000

- Metal tank with horizontal axis with a geometric capacity of 2094 litres, diameter 1100 mm, length of plating 2050 mm, total length 2300 mm, thickness of metal sheets 3 mm.
- Metal containment basin with a useful capacity of 1600 litres with dimensions of 2500 x 1400 x 470 mm (LxWxH) including a drainage plug for rainwater drainage, a coupling system to the tank support saddles, arrangement for fixing the roof by means of bolts and connections for grounding.
- Metal protection roof with galvanised trapezoidal sheet metal and square tubular iron support profiles, prepared for anchoring to the containment basin by bolting.

Version TF 3000

- Metal tank with horizontal axis with a geometric capacity of 3042 litres, diameter 1430 mm, length of plating 1750 mm, total length 2050 mm, thickness of metal sheets 3 mm.
- Metal containment basin with a useful capacity of 2000 litres with dimensions of 2500 x 1730 x 470 mm (LxWxH) including a drainage plug for rainwater drainage, a coupling system to the tank support saddles, arrangement for fixing the roof by means of bolts and connections for grounding.
- Metal protection roof with galvanised trapezoidal sheet metal and square tubular iron support profiles, prepared for anchoring to the containment basin by bolting.

Version TF 5000

- Metal tank with horizontal axis with a geometric capacity of 5443 litres, diameter 1700 mm, length of plating 2250 mm, total length 2570 mm, thickness of metal sheets 3 mm.
- Metal containment basin with a useful capacity of 2750 litres with dimensions of 3000 x 2000 x 470 mm (LxWxH) including a drainage plug for rainwater drainage, a coupling system to the tank support saddles, arrangement for fixing the roof by means of bolts and connections for grounding.
- Metal protection roof with galvanised corrugated sheet metal and square tubular iron support profiles, prepared for anchoring to the containment basin by bolting.
- Service ladder to facilitate access to the manhole.

Version TF 7000

- Metal tank with horizontal axis with a geometric capacity of 7133 litres, diameter 1700 mm, length of plating 3000 mm, total length 3320 mm, thickness of metal sheets 3 mm.
- Metal containment basin with a useful capacity of 3600 litres with dimensions of 3900 x 2000 x 470 mm (LxWxH) including a drainage plug for rainwater drainage, a coupling system to the tank support saddles, arrangement for fixing the roof by means of bolts and connections for grounding.
- Metal protection roof with galvanised trapezoidal sheet metal and square tubular iron support profiles, prepared for anchoring to the containment basin by bolting.
- Service ladder to facilitate access to the manhole.

Version TF 9000

- Metal tank with horizontal axis with a geometric capacity of 8922 litres, diameter 1800 mm, length of plating 3300 mm, total length 3680 mm, thickness of metal sheets 3 mm.
- Metal containment basin with a useful capacity of 4510 litres with dimensions of 4100 x 2000 x 550 mm (LxWxH) including a drainage plug for rainwater drainage, a coupling system to the tank support saddles, arrangement for fixing the roof by means of bolts and connections for grounding.
- Metal protection roof with galvanised trapezoidal sheet metal and square tubular iron support profiles, prepared for anchoring to the containment basin by bolting.
- Service ladder to facilitate access to the manhole.

At the top of the tanks there is a 400 mm manhole, flanged and bolted with an interposed seal. The following components are located on the top of the manhole cover:

- 3" inlet;
- vent and end flame cutter.

In the lower part of the manhole cover, a load limiting valve is located on the loading pipe.

The tanks are also equipped with the following parts:

- Lifting and securing hook for transport;
- Supporting saddles;
- Suction pipe $\varnothing = 1"$;
- Non-return valve;
- Pump blocking device at minimum level;
- Drain plug;
- Electrical panel;
- Grounding;
- Clock-type level indicator;
- Service ladder (except for TF 1200, TF 2000 and TF 3000 versions).

DISPENSER UNIT:

- PIUSI electric pump unit model BY-PASS 55 FILTER including meter, pipe and dispensing gun, or alternatively
- PIUSI electric pump unit model BY-PASS 55 FILTER including meter, pipe and dispensing gun.

A spring-loaded check valve calibrated for pressures of 0.10 bar is positioned on the suction pipe, acting as an anti-siphoning device.

ELECTRICAL SYSTEM:

- Electric pump version BY-PASS 55 FILTER:
 - single-phase asynchronous electric motor type MEC63-B3, power 370 W, voltage 230 V-50 Hz, 2800 rpm, class F insulation, class F resin-impregnated windings, IP 55 protection, equipped with thermal probe.
- Electric pump version E-80:
 - single-phase asynchronous electric motor type MEC63-B3, power 500 W, voltage 230 V-50 Hz, 1440 rpm, class F insulation, class F resin-impregnated windings, IP 55 protection, equipped with thermal probe.
- Power supply cable compliant with CEI 20-22 standard.

DATA DETECTOR SYSTEM:

The PIUSI electric pump version BY-PASS 55 FILTER has the following meter:

- PIUSI volumetric meter model K33, with oscillating disc, aluminium body and tambourine displays (3 for the resettable partial litre counter and 6 for the non-resettable totaliser).

The PIUSI electric pump version E-80 has the following meter:

- PIUSI volumetric meter model K44, with oscillating disc, aluminium body and tambourine displays (4 for the resettable partial litre counter and 8 for the non-resettable totaliser).

HYDRAULIC SYSTEM:

- Both pumps are rotary, self-priming volumetric pumps with cast iron vanes, including bypass and built-in filter; pump body made of cast iron, rotor made of synthesized steel and vanes made of filled delrin;
- Flexible delivery hoses KLEBER INDUSTRIES type HYDRO K 30 or alternatively PIRELLI by ITR treg type RUBBER OIL ROSE CARBOPRESS 10 BAR – R > 1M Ω , including brass end fittings;
- PIUSI automatic dispensing gun model HUSKY in the versions AUTOMATIC 60 (for the electric pump BY-PASS 55 FILTER) and AUTOMATIC 80 (for the electric pump E-80);
- Inlet pipe fitted with RIDART quick couplings by Meneghini D. & C. fig. 90 and fig. 70 (C.S.E. cert. dated 17 March 1994, No. 3704/735/26/35/12-R), or alternatively fig. 137 and fig. 138;
- Pressure relief valve RIDART by Meneghini D. & C. fig. 440 (C.S.E. cert. dated 17 March 1994, No. 3704/735/26/35/12-R);
- Suction pipe fitted with a spring-loaded check valve calibrated for pressures of 0.10 bar;
- Equilibrium pipe fitted with end flame cutter RIDART by Meneghini D. & C. fig. 190 (C.S.E. cert. dated 17 March 1994, No. 3704/735/26/35/12-R).

LABORATORY TESTS

Measurement of maximum geometric capacity of tanks:

The geometric capacity of the tank of each piece of equipment is as follows:

- Version TF 1200 maximum geometric capacity 1148 litres;
- Version TF 2000 maximum geometric capacity 2094 litres;
- Version TF 3000 maximum geometric capacity 3042 litres;
- Version TF 5000 maximum geometric capacity 5443 litres;
- Version TF 7000 maximum geometric capacity 7133 litres;
- Version TF 9000 maximum geometric capacity 8922 litres.

Measurement of the geometric capacity of containment basins:

The geometric capacity of the containment basin of each individual piece of equipment is as follows:

- Version for container/distributor TF 1200 capacity 1100 litres;
- Version for container/distributor TF 2000 capacity 1600 litres;
- Version for container/distributor TF 3000 capacity 2000 litres;
- Version for container/distributor TF 5000 capacity 2750 litres;
- Version for container/distributor TF 7000 capacity 3600 litres;
- Version for container/distributor TF 9000 capacity 4510 litres.

Measurement of tank metal sheet thickness:

By means of a GILARDONI digital ultrasonic thickness gauge, mode DG-35, the thickness of the metal sheets used for the construction of the tanks was measured.

The average thickness of the measurements carried out for each tank is shown below:

- Version TF 1200 average metal sheet thickness 3 mm;
- Version TF 2000 average metal sheet thickness 3 mm;
- Version TF 3000 average metal sheet thickness 3 mm;
- Version TF 5000 average metal sheet thickness 3 mm;
- Version TF 7000 average metal sheet thickness 3 mm;
- Version TF 9000 average metal sheet thickness 3 mm.

Tightness test of the tanks at a hydraulic pressure of 1 bar for 30 minutes, carried out with water.
Outcome: POSITIVE

Vertical drop test from a height of 1.5 metres carried out with empty tanks.

Outcome: After the drop, visual inspection did not reveal any tears in the areas deformed by the impact.

Tightness test of the tanks at a hydraulic pressure of 1 bar for 30 minutes, carried out with water, after the drop as described above.

Outcome: POSITIVE

Measurement of the internal pressures of the dispensing units and their tightness at a hydraulic pressure of 5 bar for 10 minutes.



The above tests have not been performed as they have already been carried out on the individual units with positive results at the C.S.E. with the procedures described below:

- PIUSI electric pump unit model BY-PASS 55 FILTER (test certification dated 1st August 1995, No. 3704/1257/79/31/123);
- PIUSI electric pump unit model E-80 (test certification dated 28 July 1989, No. 3704/793/299/131/73 and subsequent renewal of certificate dated 15 June 1995, No. 3704/793/78/31/73-R).

Inspection of gun-type valves.

The two gun-type valves supplied with the equipment were alternately mounted on a special pump and were subjected to increasing pressures up to a maximum of 20 bar and the pressure at which the spontaneous opening of the internal valve occurred was checked, i.e. opening without a manual operation.

Outcome: For both valves there was no spontaneous opening of the internal valve at none of the test pressures.

Check on the operation blockage of the dispensing unit.

The dispensing units were operated regularly by simulating repeated liquid shortages by total suction of the product (complete emptying).

Outcome: As soon as a lack of liquid occurred, the float device was triggered causing the interruption of the power supply and consequent blocking of the motor/pump unit.

Check on the anti-siphon system.

The device adopted, consisting of a check valve with calibrated spring, was hydraulically tested to check the opening pressure.

Outcome: The opening pressure measured was 0.10 bar and is therefore sufficient to maintain the liquid head above.

REMARKS:

- The container must be transported unloaded;
- The earthing between the container and the tanker must be equipped with a stable interlocking device;
- The external protection of the tanks, containment basins, and protective canopies is carried out by painting with epoxy primer and finishing with synthetic enamel.

NOTES:

- Above, to the left of the cabinet containing the motor/pump unit, there is a plate with the manufacturer's trademark, model and year of construction;
- The tanks are optionally equipped with a containment basin and canopy for protection from weather conditions.

Rome, 26 June 1998

THE TEST SPECIALISTS

Mr. Mario LANCIA

Mr. Fabio GUARNIERI

THE DIRECTOR OF THE LABORATORY
(Mr. Maurizio D'ADDATO)
[signature]



Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021





PROCURA DELLA REPUBBLICA
presso il Tribunale di Teramo

Apostille

(Convention de la Haye du 5 octobre 1961)

1. Stato: Italia

Il presente atto pubblico

2. E' stato sottoscritto da Marco Faieta

3. Operante in qualità di Notaio

4. E' munito del sigillo/timbro di Faieta Marco di Elio Notaio in
Pineto

Attestato

5. In Teramo

6. Il 28 LUG 2021

7. dal dr

IL SOST. PROCURATORE DELLA REPUBBLICA
(Dott. Laura Colica)

8. col numero 256/2021 Reg. Leg.

9. Sigillo/Timbro

10. Firma



IL SOST. PROCURATORE DELLA REPUBBLICA
(Dott. Laura Colica)



Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

To the Company DEMO SERBATOI S.r.l.
Z.I. Contrada Stampalone s.n.c.
64036 Cellino Attanasio (TE)

REFERENCE: Change of ownership of Type Approval DCPST/A7/7441/AT/09245 dated 19 June 2013.

Reference is made to the application transmitted by the Company "DEMO SERBATOI S.r.l.", received on 20 October 2016 with protocol No. 12713/DCPREV, whose legal representative is Mr. Claudio Rapacchia, intended to obtain the change of ownership of the act of Type Approval DCPST/A7/7441/AT/09245 dated 19 June 2013 and related certifications, following the lease of the company "DEMO S.r.l.".

In this regard:

Given the related contract drawn up by the notary Mr. Roberto LAURO, registered in Giulianova on 10 February 2015 and certifying the business lease;

Given the certification of the notary Mr. Roberto LAURO that the company "DEMO S.r.l.", with headquarters in Zona Industriale Contrada Stampalone s.n.c. located in Cellino Attanasio (TE), is enrolled in the Register of Enterprises of Teramo No. 00774770671 with R.E.A. TE-95052 and that the Company "DEMO SERBATOI S.r.l." (undertaking the rent of company) is enrolled in the Register of Enterprises of Teramo No. 01914100670 with R.E.A. TE - 163837;

This Ministry, in taking note of the above-mentioned variation, communicates that the Type Approval deeds specified below together with the relevant certifications issued to the firm "DEMO S.r.l." remain valid in their original draft and in compliance with all the specifications contained therein, the laws and regulations in force. Moreover, with this transfer they are intended to be headed to the Company "DEMO SERBATOI S.r.l.".

This deed, headed to DEMO SERBATOI S.r.l., consists of 2 pages and cannot be reproduced and/or shown to third parties if not in full.

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

- 2 -

PRODUCT AND TRADE NAME		APPROVAL DETAILS
Removable containers/dispensers for liquid fuels of category C		Type Approval DCPST/A7/7441/AT/09245 dated 19 June 2013; Certification No. 3704/1366 - 37/44 dated 26 June 1998 Certification No. 3704/1366 - 37/44A dated 4 May 2001 Certification No. 3704/1366 - 37/44B dated 3 October 2003 Certification No. 3704/1366 - 37/44C dated 9 July 2007 Certification No. 3704/1366 - 37/44D dated 15 October 2008
BRAND:	DEMO SERBATOI S.R.L.	
Models:	"TF 1200" with geometric capacity of 1,148 liters, "TF 2000" with geometric capacity of 2,094 liters, "TF 3000" with geometric capacity of 3,042 liters, "TF 3000A" with geometric capacity of 3,030 liters, "TF 5000" with geometric capacity of 5,443 liters, "TF 5000A" with geometric capacity of 5,067 liters, "TF 7000" with geometric capacity of 7,133 liters, "TF 7000A" with geometric capacity of 6,964 liters, "TF 9000" with geometric capacity of 8,922 liters;	
each including one of the following dispensing units:		
BRAND:	PIUSI	
Versions:	BY-PASS 55 FILTER; E80; PANTHER 56, PANTHER 72; BP 2000, DOUBLE PUMP with 12 or 24 Volts; "SERVICE 80", "SERVICE 80 MC 30", "SERVICE 120", "SERVICE 120 MC30", "SELF SERVICE 70 MC", "SELF SERVICE 70 MC F", "SELF SERVICE 70 MC F P", "SELF SERVICE 70 MC FM", "SELF SERVICE 100 MC", "SELF SERVICE 100 MC F", "SELF SERVICE 100 MC F P", "SELF SERVICE 100 MC FM", "SELF SERVICE 70 K44", "SELF SERVICE 70 K44 F", "SELF SERVICE 100 K44", "SELF SERVICE 100 K44 F", "SELF SERVICE 70 MC F 230/50", "SELF SERVICE 100 MC F 230/50", "SELF SERVICE TANK 70 MC 230/50", "SELF SERVICE TANK 100 MC 230/50", "SELF SERVICE TANK 70 FM 230/50", "SELF SERVICE TANK 100 FM 230/50", "SELF SERVICE TANK 70 K44", and "SELF SERVICE TANK 100 K44; CUBE 50/K33, CUBE 50/MC30; CUBE 56/MC, CUBE 70/33, CUBE 70/MC;	
BRAND:	PAVARINI COMPONENTS S.p.A.	
Versions:	PA1 230-70; PA2 230-80; PA2 230-100; PICK-UP 230-60; (all powered at 230 VAC)	
BRAND:	TO.M.E.S.	
Versions:	TOM 56, TOM 78, SELF 55, SELF 80; ROLL - MATIC 60, ROLL - MATIC 80	
The following is also included for the above-mentioned dispensing units: - Adoption, for the versions powered at 12 or 24 Volts, of a new electric panel; - Installation, in addition to the existing units, for the versions intended for the distribution of diesel fuel mixed with water and equipped with a dispensing unit operating at 230 or 400 VAC, of a PIUSI branded electric pump, PANTHER 56 version, for mixing of the product contained in the tank; - Completion of the distinguishing mark of the equipment intended for the distribution of diesel oil mixed with water will be with the letters "GB", positioned after the number that distinguishes the version; One of the following manhole safety devices is also envisaged as an alternative to those previously installed: - quick couplings SILEA s.r.l. item 502 and item 503; - load limiting valve SILEA s.r.l. item 568; - end flame cutter SILEA s.r.l. item 604;		

Digital signature
CHECKED: THE MANAGER
(Mr. Mauro CACIOLAI)

Digital signature
THE CENTRAL DIRECTOR
PULITO

D.V.D. Mr. Fedele MAIOCCO

This deed, headed to DEMO SERBATOI S.r.l., consists of 2 pages and cannot be reproduced and/or shown to third parties if not in full.

Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021





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presso il Tribunale di Teramo

Apostille

(Convention de la Haye du 5 octobre 1961)

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4. E' munito del sigillo/timbro di Faieta Marco di Elio Notaio in
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Attestato

5. In Teramo

6. Il 28 LUG 2021

7. dal dr

IL SOST. PROCURATORE DELLA REPUBBLICA
(Dott. Laura Colica)

8. col numero 255/2021 Reg. Leg.

9. Sigillo/Timbro

10. Firma

IL SOST. PROCURATORE DELLA REPUBBLICA
(Dott. Laura Colica)





Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

GIVEN the Italian ministerial decree dated 31 July 1934 bearing "Approval of safety rules for processing, storage, use, or sale of mineral oils, and for the transportation of the same oils";

GIVEN the decree of the Italian Ministry of Home Affairs dated 22 November 2017 about the "Approval of the technical rule of fire prevention for the installation and operation of containers-distributors, for private use, for dispensing of liquid fuel of category C;

GIVEN the Type Approval deed issued by this Ministry DCPST/A7/7441/AT/09245 dated 19 June 2013;

GIVEN the application submitted by the company "DEMO SERBATOI S.r.l." with registered office in Zona Industriale C.da Stampalone, Cellino Attanasio (TE) – 64036, acquired with prot. No. DCPREV 7342 dated 30 May 2018, intended to obtain renewal of the above-mentioned Type Approval;

GIVEN the Certifications No. 3704/1366 - 37/44 dated 26 June 1998, No. 3704/1366 - 37/44A dated 4 May 2001 issued by the Centro Studi ed Esperienze of C.N.VV.F. and No. 3704/1366 - 37/44B dated 3 October 2003, No. 3704/1366 - 37/44C dated 9 July 2007, No. 3704/1366 - 37/44D dated 15 October 2008,
issued by Area VII of the Central Management for Prevention and Technical Safety;

GIVEN the Company's declaration, containing a commitment to build the category "C" removable liquid fuel containers and dispensers in question, maintaining all the technical and/or functional characteristics of the certified prototypes unchanged;

GIVEN the declaration of the Company certifying that the specified containers-dispensers are made up of components provided with CE marking, in accordance with the applicable directives, as prescribed in Article 4 of Annex 1 of the Italian Ministerial Decree D.M. dated 22 November 2017.

This deed, headed to DEMO SERBATOI S.r.l., consists of 3 pages and cannot be reproduced and/or shown to third parties if not in full.

RENEWAL IS HEREBY GIVEN

for the purposes of fire prevention, of the Type Approval DCPST/A7/7441/AT/09245 dated 19 June 2013, in the name of the Company "**DEMO SERBATOI S.r.l.**", for the **containers - distributors** of liquid fuels category "C", shown below:

BRAND:	DEMO
Versions:	"TF 1200" with geometric capacity of 1,148 liters, "TF 2000" with geometric capacity of 2,094 liters, "TF 3000" with geometric capacity of 3,042 liters, "TF 3000A" with geometric capacity of 3,030 liters, "TF 5000" with geometric capacity of 5,443 liters, "TF 5000A" with geometric capacity of 5,067 liters, "TF 7000" with geometric capacity of 7,133 liters, "TF 7000A" with geometric capacity of 6,964 liters, "TF 9000" with geometric capacity of 8,922 liters.

each including one of the following distributors:

BRAND:	PIUSI
Versions:	BY-PASS 55 FILTER; E80; PANTHER 56, PANTHER 72; BP 2000, DOUBLE PUMP at 12 or 24 Volts;
BRAND:	PIUSI
Models:	"SERVICE "
Versions:	"SERVICE 80", "SERVICE 80 MC 30", "SERVICE 120", "SERVICE 120 MC30";
BRAND:	PIUSI
Models:	" SELF SERVICE "
Versions:	"SELF SERVICE 70 MC", "SELF SERVICE 70 MC F", "SELF SERVICE 70 MC F P", "SELF SERVICE 70 MC FM", "SELF SERVICE 100 MC", "SELF SERVICE 100 MC F", "SELF SERVICE 100 MC F P", "SELF SERVICE 100 MC FM", "SELF SERVICE 70 K44", "SELF SERVICE 70 K44 F", "SELF SERVICE 100 K44", "SELF SERVICE 100 K44 F", "SELF SERVICE 70 MC F 230/50", "SELF SERVICE 100 MC F 230/50", "SELF SERVICE TANK 70 MC 230/50", "SELF SERVICE TANK 100 MC 230/50", "SELF SERVICE TANK 70 FM 230/50", "SELF SERVICE TANK 100 FM 230/50", "SELF SERVICE TANK 70 K44", and "SELF SERVICE TANK 100 K44";
BRAND:	PIUSI
Models:	CUBE 50
Versions:	CUBE 50/K33, CUBE 50/MC30;
BRAND:	PIUSI
Models:	CUBE 56/33
Versions:	CUBE 56/MC, CUBE 70/33, CUBE 70/MC;
BRAND:	ADAM PUMPS S.p.A.
Versions:	PA1 230-70; LIGHTPUMP-80; LIGHTPUMP-100; PICK-UP 230-60; (all powered at 230 VAC)
BRAND:	TO.ME.S.
Versions:	TOM 56, TOM 78; SELF 55, SELF 80; ROLL - MATIC 60, ROLL - MATIC 80;

This deed, headed to DEMO SERBATOI S.r.l., consists of 3 pages and cannot be reproduced and/or shown to third parties if not in full.

In addition, the following is included for the above-mentioned dispenser units:

- adoption, for 12 or 24 Volt powered versions, of a new electric panel;
- installation, in addition to the existing units, in the versions intended for the distribution of diesel fuel mixed with water and equipped with a dispensing unit operating at 230 or 400 VAC, of an electric pump branded PIUSI version PANTHER 56, for regular mixing of the product contained in the tank;
- completion of the distinguishing mark of the equipment intended for the distribution of diesel oil mixed with water will be with the letters "GB", positioned after the number that distinguishes the version;
- One of the following **manhole safety devices** is also envisaged as an alternative to those previously installed:
 - quick couplings SILEA s.r.l. item 502 and item 503;
 - load limiting valve SILEA s.r.l. item 568;
 - end flame cutter SILEA s.r.l. item 604.

The installation of the aforesaid equipment must be carried out in compliance with all the safety regulations in force.

Each model homologous to those indicated above may be marketed if accompanied by a declaration drawn up by the holder of this deed, pursuant to art. 47 of the Italian Presidential Decree DPR No. 445/2000, specifically referring to and certifying conformity with the corresponding prototype of removable container-distributor for category "C" liquid fuels as per this Type Approval **DCPST/A7/7342/AT/09245**.

The Type Approval number must be shown on the identification plate attached to the distributor container and complying with paragraph 4.2 of Annex 1 of the Italian Ministerial Decree D.M. dated 22 November 2017.

This deed is valid until **28 August 2023**.

The holder of this deed of renewal of Type Approval and the parties concerned, in any case, are reminded of all legal obligations arising from the application of the aforementioned Ministerial Decrees.

Type Approval

DCPST/A7/7342/AT/09245

Digital signature
CHECKED: THE MANAGER
(Mr. Mauro CACIOLAI)

Digital signature
THE CENTRAL DIRECTOR
LITTERIO

The Instructing Officer
D.V.D. Mr. Fedele MAIOCCO

Amount	€ 16.00	Date of Issue	30 May 2018
TAX STAMP IDENTIFIER			
0	1	1	6
0	7	1	1
2	4	5	9
5	7		

Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021

A handwritten signature in dark ink, appearing to read 'Marco Faieta', is written over a circular notary seal. The seal features a central star-like emblem and the text 'FAIETA MARCO DI ELLIO' around the perimeter.

Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021

A handwritten signature in dark ink, appearing to read 'Marco Faieta', is written over a circular notary seal. The seal features a central star-like emblem and the text 'FAIETA MARCO DI ELLIO' around the perimeter.



Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

CERTIFICATION No. 3704/1366 - 37/44E

Given the application submitted by the company **DEMO SERBATOI S.r.l.** with registered office in Contrada Stampallone - Zona Industriale, 64036 Cellino Attanasio (TE), submitted pursuant to the Italian Legislative Decree D.lgs. dated 8 March 2006, art.14 paragraph 2, to ascertain compliance with fire prevention regulations for category "C" liquid fuel containers-distributors;

Given the technical documentation submitted by the Company;

Given the Test Report No. 3737/44E, issued by the Office for Passive Protection, Active Protection, Merchandise Sector, and Laboratories;

IT IS HEREBY CERTIFIED

that the containers-distributors for liquid fuel of category "C":

Brand: **"DEMO SERBATOI"**;

Models: **"TF-9000 A"** with maximum geometrical capacity of 8,878 liters;

provided with the following distributors:

Brand: PIUSI Models (12/24 Volts):

- "BY-PASS 55 FILTER"; "E 80"; "PANTHER 56"; "PANTHER 72"; "BP 2000"; "DOUBLE PUMP";

Models "SERVICE":

- "SERVICE 80"; "SERVICE 80 MC30"; "SERVICE 120"; "SERVICE 120 MC 30";

Models "SELF SERVICE":

- "SELF SERVICE 70 MC"; "SELF SERVICE 70 MC F"; "SELF SERVICE 70 MC FM"; "SELF SERVICE 100 MC"; "SELF SERVICE 100 MC F"; "SELF SERVICE 100 MC FP"; "SELF SERVICE 100 MC FM"; "SELF SERVICE 70 K44"; "SELF SERVICE 70 K44 F"; "SELF SERVICE 100 K44"; "SELF SERVICE 100 K44 F"; "SELF SERVICE 70 MC F 230/50"; "SELF SERVICE 100 MC F 230/50"; "SELF SERVICE TANK 70 MC 230/50"; "SELF SERVICE TANK 100 MC 230/50"; "SELF SERVICE TANK 70 FM 230/50"; "SELF SERVICE TANK 100 FM 230/50"; "SELF SERVICE TANK 70 KK44"; "SELF SERVICE TANK 100 K44";

Models "CUBE 50":

- "CUBE 50/MC"; "CUBE 50/MC30";

This deed, headed to DEMO SERBATOI S.r.l., consists of 2 pages and cannot be reproduced and/or shown to third parties if not in full.

Models "CUBE 56/33":

- "CUBE 56-MC", "CUBE 70/33", "CUBE 70/MC";

Brand: ADAM PUMPS

Models: "PA1 230-70", "LIGHTPUMP-80", "LIGHTPUMP -100", "PICK-UP 230-60";

Brand: TO.ME.S.

Models: "TOM 56", "TOM 78", "SELF 55", "SELF 80", "ROLLMATIC 60", "ROLLMATIC 80".

are compliant with the fire safety regulations set forth in:

- D.M. 31.07.1934 TITLE I No. XVII, D.M. 22 November 2017;

The validity of this certification relates only to the equipment tested and does not concern other safety aspects provided for by laws and regulations in force, where applicable.

Authorization for marketing is the responsibility of the Ministry of Home Affairs, Department of Fire Brigades, Public Rescue and Civil Defense - Central Management for Prevention and Technical Safety, to which the appropriate application for Type Approval must be submitted.

Moreover, this certificate cannot be submitted to public administration bodies or private managers of public services, pursuant to Law 183 of 12 November 2011, art. 15, paragraph 1, letter a), 02.

Digital signature

THE MANAGER

(Mr. Marcello LOMBARDINI)

Digital signature

The Sector Manager

(Mr. Piergiacomo CANCELLIERE)

Annex: Test Report No. 3737/44E



Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021





Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

TEST REPORT No. 3737/44E dated 10 May 2019

Applicant: DEMO SERBATOI S.r.l.

Address: Contrada Stampallone - Zona industriale, 64036 Cellino Attanasio (TE)

Appliances submitted:

Containers-dispensers for liquid fuels of category "C", brand "**DEMO SERBATOI**", in the models: "**TF-9000 A**" with maximum geometric capacity of 8,878 liters;

with one of the following dispensers installed:

Brand: PIUSI

Models (12/24 Volts):

- "BY-PASS 55 FILTER"; "E 80", "PANTHER 56", "PANTHER 72", "BP 2000", "BIPOMPA";

Models "SERVICE":

- "SERVICE 80", "SERVICE 80 MC30", "SERVICE 120", "SERVICE 120 MC 30";

Models "SELF SERVICE":

- "SELF SERVICE 70 MC", "SELF SERVICE 70 MC F", "SELF SERVICE 70 MC FM", "SELF SERVICE 100 MC", "SELF SERVICE 100 MC F", "SELF SERVICE 100 MC FP", "SELF SERVICE 100 MC FM", "SELF SERVICE 70 K44", "SELF SERVICE 70 K44 F", "SELF SERVICE 100 K44", "SELF SERVICE 100 K44 F"; "SELF SERVICE 70 MC F 230/50", "SELF SERVICE 100 MC F 230/50", "SELF SERVICE TANK 70 MC 230/50", "SELF SERVICE TANK 100 MC 230/50", "SELF SERVICE TANK 70 FM 230/50", "SELF SERVICE TANK 100 FM 230/50", "SELF SERVICE TANK 70 KK44", "SELF SERVICE TANK 100 K44";

Models "CUBE 50":

- "CUBE 50/MC", "CUBE 50/MC30";

Models "CUBE 56/33":

- "CUBE 56-MC", "CUBE 70/33", "CUBE 70/MC";

Brand: ADAM PUMPS

Models: "PA1 230-70", "LIGHTPUMP-80", "LIGHTPUMP -100", "PICK-UP 230-60";

Brand: TO.ME.S.

Models: "TOM 56", "TOM 78", "SELF 55", "SELF 80", "ROLLMATIC 60", "ROLLMATIC 80".

Required Tests: Tests aimed at ascertaining the fire safety in the use of the equipment in accordance with the Italian Ministerial Decree D.M. 31.07.1934 Title I No. XVII, D.M. 22 November 2017.

TEST REPORT

1) General:

The equipment presented consists of a cylindrical tank with a horizontal axis with a maximum capacity of 9000 liters and a dispenser with meter, pipe and dispensing gun, placed on one side of the tank and protected by a special cabinet, or a dispenser, equipped with its own plating, placed on a special support, also placed on one side of the tank.

Next to the dispensing unit or inside its plating, there is a box with IP 55 protection degree, for the electrical connections and for low voltage supply of the minimum level control device, located in the tank (with float).

The tanks are made of carbon steel sheet S235JR, according to EN 10025 and EN 10111, with a thickness of 3 mm and are equipped with containment basin and roof for protection from atmospheric agents.

2) Construction characteristics

The construction characteristics and technical data given in this paragraph have been supplied by the manufacturer of the equipment.

2.1 Containers

The distributor containers consist of:

Model "TF-9000 A"

- Metal tank with horizontal axis with a geometric capacity of 8,878 liters, diameter of 2,050 mm, length of plating 2,430 mm, total length of 2,884 mm, and thickness of the metal sheets of 3 mm;
- Metallic containment basin with a useful capacity of about 9,931 liters having dimensions 3,370 x 2,430 x 1,220 mm (WxDxH) including a drainage plug for rainwater drainage, tank hooking system, predisposition to the fixing of the roof by means of bolts and connections for grounding;
Metal protection roof with galvanized corrugated sheet metal and supporting profiles made of square tubular iron rods, prepared for anchorage to the containment basin by bolting.
- Service ladder, with protective handrail to facilitate accessibility to the manhole.

In the upper part of the tanks there is a manhole of 400 mm of pressed type flanged and bolted with interposition of sealing gasket.

The following are welded to the top of the manhole cover:

- a 3" loading port socket;

At the bottom of the manhole cover, a socket for the 90% load relief valve is welded to the loading pipe.

The tank is also equipped with the following parts:

- A lifting and securing eyebolt for transportation;
- Ground support saddles;
- Suction pipe $\varnothing = 1"$ including a ball shut-off valve;

- A pipe connection $\varnothing = 1 \frac{1}{2}$ " for venting and end flame cutter;
- Check valve with calibrated spring;
- Minimum level switch support rod;
- Minimum level pump blocking device $\varnothing = 1$ ";
- A pipe connection $\varnothing = 1 \frac{1}{2}$ " for clock-style level indicator;
- Drain plug $\varnothing = 1$ ";
- Electrical control panel;
- Grounding;
- Service ladder.

2.2 Dispenser units:

Two types of dispensing units are alternatively installed on the containers-distributors:

- one type contained in a special containment box;
- one type equipped with its own plating.

Brand: ADAM PUMPS

Models: PA1 230/70, LIGHTPUMPS 80, LIGHTPUMPS 100, PICK- UP 230/60.

Dispensing units contained in a special containment box:

Brand: PIUSI

Models a 12/24V: E 80, BY-PASS 55 FILTER, PANTHER 56, PANTHER 72, BP 2000, BPOMPA.

Brand: TOMES

Models:

- TOM 56, TOM 78, SELF 55, SELF 80, ROLLMATIC 60, ROLLMATTC 80.

Units equipped with their own plating:

Brand: PIUSI

Models:

- CUBE 56/33, CUBE 56-MC, CUBE 70/33, CUBE 70 MC, CUBE 50/K33, CUBE 50 MC50;
- SELF SERVICE 70 MC, SELF SERVICE 70 MC F, SELF SERVICE 70 MC FP, SELF SERVICE 70 MC FM, SELF SERVICE 70 K44, SELF SERVICE 70 K44 F, SELF SERVICE 100 MC, SELF SERVICE 100 MC F, SELF SERVICE 100 MC FP, SELF SERVICE 100 MC FM, SELF SERVICE 100 K44 e SELF SERVICE 100 K44 EF;
- SELF SERVICE 70 MC F 230/50, SELF SERVICE 100 MC F 230/50, SELF SERVICE TANK 70 MC 230/50, SELF SERVICE TANK 100 MC 230/50, SELF SERVICE TANK 70 FM 230/50, SELF SERVICE TANK. 100 FM 230/50, SELF SERVICE TANK 70 K44 e SELF SERVICE TANK 100 K44;
- SERVICE 80, SERVICE 80 MC30, SERVICE 120, SERVICE 120 MC30.

Dispensing guns

Brand: PIUSI

Models: Automatic 60, Automatic 80, Automatic 120.

2.3 Safety devices installed on the manhole

The following safety devices are installed on the manhole, with certification attesting their suitability for use as shown below:

- Loading piping equipped with RIDART quick couplings by Meneghini D. & C. 137 and 138 or

alternatively quick couplings SILEA S.r.l. 502 and 503 (manufacturer's declaration of conformity to Directive 94/9/EC);

- Load relief valve RIDART by Meneghini D. & C. 440 or alternatively load relief valve SILEA S.r.l. item 568 (manufacturer's declaration of conformity to Directive 94/9/EC);

2.4 Safety device installed on the tank

- Equilibrium pipe equipped with end flame cutter RIDART by Meneghini D. & C. 190 or alternatively SILEA item 604 (manufacturer's declaration of conformity to Directive 94/9/EC).

A check valve with spring calibrated for pressures of 0.10 bar is installed on the suction pipe, acting as an anti-siphon device.

3) LABORATORY TESTS

The following sample, representative of the presented series, has been tested:

- Model TF-9000 A

3.1 Measurement of maximum geometric capacity of the tank:

The geometric capacity of the tank of each equipment, calculated using design data, is as follows:

- Model TF-9000 A, maximum geometric capacity 8,878 liters;

3.2 Measurement of the geometric capacity of the containment basin at 110%:

The geometric capacity of the containment basin for each piece of equipment, calculated using the design data, is as shown below:

- Version for container/distributor TF-9000 A capacity 9,931 liters;

3.3 Detection of tank metal sheet thickness:

By means of a digital ultrasonic thickness gauge GILARDONI model DG-51, the thickness of the metal sheets used for the construction of the tanks was measured.

The following table shows the measurements taken on the plating, on the front and rear bottom of the tank.

Measurement Id	Plating	Rear Bottom	Front bottom	
1	2.95	2.96	2.98	
2	2.95	2.94	2.97	
3	2.96	2.92	2.95	
4	2.95	2.93	2.94	
5	2.94	2.94	2.91	
6	2.92	2.91	2.91	
7	2.96	2.90	2.91	
8	2.95	2.91	2.94	
9	2.94	2.92	2.92	
10	2.91	2.94	2.94	TOTAL
Average	2.94	2.93	2.94	2.94
Minimum	2.91	2.90	2.91	2.90
Maximum	2.96	2.96	2.98	2.98

- The measurements taken are in accordance with the tolerance specifications indicated in the drawings.

3.4 Tank tightness test at a hydraulic pressure of 0,1 MPa (1 bar) for 30 minutes, performed with



water.

The tanks were pressurized by means of a hydraulic pump at a pressure of 0.1 MPa (1 bar) for 30 minutes.

OUTCOME: There were no leaks from the pressurized tanks or between filaments during the 30 minutes.

3.5 Vertical drop test from a height of 1.5 meters performed with empty tanks.

The mobile dispensing tanks were taken to a height of 1.5 meters and dropped and then examined.

OUTCOME: After the drop, visual inspection did not reveal any tears in the areas deformed by the impact.

3.6 Testing of tanks for leakage at a hydraulic pressure of 0.1 MPa (1 bar) for 30 minutes, performed with water, after the fall as described above.

The tanks were pressurized by a hydraulic pump at 0.1 MPa (1 bar) for 30 minutes after the 1.5 meter drop test.

OUTCOME: No leaks or filament leakage occurred from the pressurized tanks during the 30 minutes.

3.7 Checking the containment basin for leaks, performed with water.

The containment basin was filled up to the top with water.

OUTCOME: During the filling of the basin there were no leaks or between filaments.

3.8 Measurement of the internal pressures of the nozzles, holding them at a hydraulic pressure of 0.5 MPa (5 bar) for 10 minutes, and checking the pistol taps.

The above tests were not carried out as the individual dispensers are certified as suitable for use.

3.9 Check on the functioning block of the dispenser unit.

The dispensers were made to work regularly by simulating repeated lack of liquid for total suction of the product (complete emptying).

OUTCOME: As soon as a lack of liquid occurred, the float device acted causing the interruption of the power supply and the consequent blockage of the motor/pump unit.

3.10 Check on anti-siphon system.

The adopted device, consisting of a check valve with calibrated spring, has been hydraulically tested to check the opening pressure.

OUTCOME: The opening pressure was 0.01 Mpa (0.10 bar) and is therefore sufficient to maintain the overlying liquid head.

4) REMARKS:

- The container must be transported unloaded;
- The earthing between the container and the tank truck must be equipped with a stable interlocking device;
- A plate shall be placed on the front bottom of the container, on the side or top of the dispensing unit, showing the name and address of the manufacturer, the model, serial number, year of construction, maximum capacity, thickness and material of the container, test pressure, and the details of the Type Approval;
- The tanks are equipped with a containment basin and a roof for protection from weather conditions;
- The electric pump control and protection panel is provided with a declaration of conformity to the legislative provisions that implement the Machine Directive 2006/42/EEC, the Low Voltage Directive 2006/95/EEC, and the Electromagnetic Compatibility Directive 2004/108/EEC.

The Test Officer
Mr. Stefano PAPALEO
[signature]

Checked
The Sector Manager
D.V.D. Piergiacomo CANCELLIERE
[signature]



Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

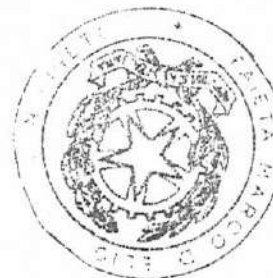
Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021





Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

CERTIFICATION No. 3704/1671 37/122

GIVEN the application submitted by the company "DEMO SERBATOI S.r.l." with registered office in Zona Industriale C.da Stampallone, Cellino Attanasio (TE) — 64036, Note Prot. No. 689 dated 18 January 2018, pursuant to the Italian Legislative Decree D.Lgs. dated 8 March 2006 No. 139, art.14, paragraph 2, aimed at the technical characterization for fire prevention of containers-distributors with vertical axis, double wall, for liquid fuels category "C", brand "DEMO SERBATOI S.r.l.", models TFDC, in the versions: "995, 1600, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 9000 provided with one of the distributors specified;

GIVEN the Italian Ministerial Decree dated 31 July 1934 regarding the "Approval of safety regulations for the processing, storage, use or sale of mineral oils, and for the transportation of such oils";

GIVEN the decree of the Italian Ministry of Home Affairs dated 22 November 2017 about the "Approval of the technical rule of fire prevention for the installation and operation of containers-distributors, for private use, for dispensing of liquid fuel of category C;

GIVEN the documentation submitted by the Company;

GIVEN the declaration of the Company stating that the equipment specified above consists of components bearing the CE marking pursuant to the applicable directives, as prescribed in Article 4 of Annex 1 of the Italian Ministerial Decree D.M. dated 22 November 2017;

GIVEN the Test Report No. 3737/122, issued by the Office for Passive Protection, Active Protection, Merchandise Sector and Laboratories, on the same date as this Certification.

CERTIFICATION No. 3704/1671 37/122

IT IS CERTIFIED HEREBY

that, for the purpose of fire prevention, the containers-dispensers with vertical axis and double wall for liquid fuels of category "C" specified below:

BRAND:	DEMO SERBATOI S.r.l.
Version:	"TFDC 995" maximum capacity 997 liters; "TFDC 1600" maximum capacity 1,772 liters; "TFDC 2000" maximum capacity 2,399 liters; "TFDC 3000" maximum capacity 3,393 liters; "TFDC 4000" maximum capacity 4,540 liters; "TFDC 4980" maximum capacity 4,986 liters; "TFDC 5000" maximum capacity 5,282 liters; "TFDC 6000" maximum capacity 6,025 liters; "TFDC 7000" maximum capacity 7,117 liters; "TFDC 8000" maximum capacity 8,106 liters; "TFDC 9000" maximum capacity 8,897 liters.

each including one of the following distributors:

BRAND:	PIUSI
Models:	PANTHER 56, PANTHER 72, E/80, E120; CUBE 56 220V, CUBE 56 12 V; SELF SERVICE 70 MC TANK, SELF SERVICE 70 FM TANK, SELF SERVICE 100 MC TANK, SELF SERVICE 100 FM TANK, SELF SERVICE 70 MCF, SELF SERVICE 70 FM, SELF SERVICE 100 MCF, SELF SERVICE 100 FM, SELF SERVICE 70 K44 TANK, SELF SERVICE 70 K44, SELF SERVICE 100 K44 TANK, SELF SERVICE 100 K44, SELF SERVICE 70 K44 TANK PULSER, SELF SERVICE 70 K44 PULSER, SELF SERVICE 100 K44 TANK PULSER, SELF SERVICE 100 K44 PULSER; CUBE 70 MC, CUBE 70 MC 120 UT; BI-PUMP 12/24V, ST-BYPASS 3000 12V;

sono rispondenti alle normative di sicurezza antincendio di cui alle disposizioni: D.M. 31.07.1934 titolo I n. XVII e del D.M. 22 novembre 2017.

La validità del presente certificato è relativa ai soli contenitori-distributori ad asse verticale e a doppia parete, omologhi a quelli sottoposti a prova secondo le procedure di cui al Rapporto di Prova No. 3737/122 e non riguarda altri aspetti di sicurezza previsti da leggi e regolamenti vigenti.

This deed, headed to DEMO SERBATOI S.r.l., consists of 2 pages and cannot be reproduced and/or shown to third parties if not in full.

L'autorizzazione alla commercializzazione è di competenza del Ministero dell'Interno, Dipartimento dei Vigili del Fuoco, del Soccorso Pubblico e della Difesa Civile - Direzione Centrale per la Prevenzione e la Sicurezza Tecnica, al quale deve essere inoltrata apposi la istanza per l'Approvazione di Tipo. Il presente certificato, inoltre, ai sensi della Legge 183 del 12/11/2011, art. 15, comma 1, lett. a), 02, non può essere prodotto agli organi della pubblica amministrazione o ai privati gestori di pubblici servizi.

Digital signature
THE OFFICER
(Mr. Mauro CACIOLAI)

Amount	€ 16.00					Date of Issue					17 January 2018				
TAX STAMP IDENTIFIER															
0	1	1	6	0	7	1	1	2	4	5	9	5	7		

The Investigating Officer
D.V.D. Mr. Fedele MAIOCCO

This deed, headed to DEMO SERBATOI S.r.l., consists of 2 pages and cannot be reproduced and/or shown to third parties if not in full.



Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

TEST REPORT No. 3737/122

Applicant: DEMO SERBATOI S.r.l.

Address: Cellino Attanasio (TE) — 64036 - Zona Industriale C.da Stampallone

Appliances presented: containers-distributors with vertical axis, double wall, TFDC product range, for liquid fuel of category "C", brand "DEMO SERBATOI S.r.l.", versions:

Model	Geometrical Capacity (Liters)
TFDC 995	997
TFDC 1600	1,772
TFDC 2000	2,399
TFDC 3000	3,393
TFDC 4000	4,540
TFDC 5000	5,282
TFDC 6000	6,025
TFDC 7000	7,117
TFDC 8000	8,106
TFDC 9000	8,897

provided with one of the following distributors:

BRAND:	PIUSI
Models:	PANTHER 56, PANTHER 72, E/80, E120; CUBE 56 220V, CUBE 56 12 V; SELF SERVICE 70 MC TANK, SELF SERVICE 70 FM TANK, SELF SERVICE 100 MC TANK, SELF SERVICE 100 FM TANK, SELF SERVICE 70 MCF, SELF SERVICE 70 FM, SELF SERVICE 100 MCF, SELF SERVICE 100 FM, SELF SERVICE 70 K44 TANK, SELF SERVICE 70 K44, SELF SERVICE 100 K44 TANK, SELF SERVICE 100 K44, SELF SERVICE 70 K44 TANK PULSER, SELF SERVICE 70 K44 PULSER, SELF SERVICE 100 K44 TANK PULSER, SELF SERVICE 100 K44 PULSER; CUBE 70MC, CUBE 70MC 120 UT.; BI-PUMP 12/24V, ST-BYPASS 3000 12V;



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DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

All pump units and devices are approved by the Italian Ministry of Home Affairs, pursuant to the Italian Ministerial Decree D.M. 31 July 1934.

Tests required: tests to ensure fire safety in the use of equipment pursuant to the Italian Ministerial Decree D.M. 31 July 1934, title I No. XVII and D.M. 22 November 2017.

TEST REPORT

1) GENERAL

The containers-distributors of the **TFDC** product range consists of a cylindrical tank with **vertical axis**, **double wall** (with both walls made of carbon steel S235JR in accordance with UNI EN 10025), with a maximum capacity of 9000 liters and an electric pump unit with meter, pipe and dispensing nozzle, housed in a special container cabinet with a front door on one side of the tank and dispensing devices with their own self-supporting structure.

For the versions with a cabinet, a box with IP 55 protection degree is placed next to the electric pump unit, for the electrical connections and for the low voltage supply of the minimum level control device, inserted inside the tank by means of a support rod.

The tanks are made of carbon steel sheet S255JR (UNI EN 10025) according to the regulations in force.

2) CONSTRUCTION CHARACTERISTICS

The construction characteristics and technical data given in this paragraph have been supplied by the equipment manufacturer.

The cylindrical tanks with vertical axis and double wall will have capacities and dimensions depending on the model.

2.1 Models, Capacities, Thicknesses and Dimensions

The dimensional characteristics of the tanks are shown in the following table:



Ministero dell'Interno

Italian Ministry of Home Affairs

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
OFFICE FOR PASSIVE PROTECTION, ACTIVE PROTECTION, PRODUCT SECTOR, AND LABORATORIES

DIMENSION TABLE OF CONTAINERS

Model	Geometrical Capacity (liters)	Filling at 90% (liters)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)
TFDC 995	997	897	1,100	1,120	1,677
TFDC 1600	1,772	1,595	1,270	1,300	1,806
TFDC 2000	2,399	2,159	1,270	1,300	2,300
TFDC 3000	3,393	3,054	1,600	1,620	2,080
TFDC 4000	4,540	4,086	1,950	1,970	1,905
TFDC 5000	5,282	4,754	1,950	1,970	2,156
TFDC 6000	6,025	5,422	1,950	1,970	2,400
TFDC 7000	7,117	6,405	2,250	2,270	2,250
TFDC 8000	8,106	7,295	2,250	2,270	2,503
TFDC 9000	8,897	8,007	2,250	2,270	2,700

The types and characteristics of the bottoms used are shown in the following table:

MODEL	EXTERNAL DIAMETER OF BOTTOMS	THICKNESS OF BOTTOMS	INTERNAL DIAMETER OF BOTTOMS (D)	VOLUME OF INTERNAL BOTTOMS (vf)	LENGTH OF INTERNAL PLATING	THICKNESS OF INTERNAL PLATING
TFDC-995	1100	3	1094	78	885	3
TFDC-1600	1270	3	1264	108	1240	3
TFDC-2000	1270	3	1264	108	1740	3
TFDC-3000	1600	3	1594	210	1490	3
TFDC-4000	1950	3	1944	430	1240	3
TFDC-5000	1950	3	1944	450	1490	3
TFDC-6000	1950	3	1944	430	1740	3
TFDC-7000	2250	3	2244	612	1490	3
TFDC-8000	2250	3	2244	612	1740	3
TFDC-9000	2250	3	2244	612	1940	3

The version of containers in the TFDC product range consist of the following:

Version TFDC 995

- Internal chamber: metal tank with vertical axis and geometric capacity of 997 liters with Diameter of 1,100 mm, plating height of 885 mm, total height of 1,677 mm, and metal sheet thickness of 3 mm;



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- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 1600

- Internal chamber: metal tank with vertical axis and geometric capacity of 1,772 liters with Diameter of 1,270 mm, plating height of 1,240 mm, total height of 1,806 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 2000

- Internal chamber: metal tank with vertical axis and geometric capacity of 2,399 liters with Diameter of 1,270 mm, plating height of 1,740 mm, total height of 2,300 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 3000

- Internal chamber: metal tank with vertical axis and geometric capacity of 3,393 liters with



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Diameter of 1,600 mm, plating height of 1,490 mm, total height of 2,080 mm and metal sheet thickness of 3 mm;

- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 4000

- Internal chamber: metal tank with vertical axis and geometric capacity of 4,540 liters with Diameter of 1,950 mm, plating height of 1,240 mm, total height of 1,905 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 5000

- Internal chamber: metal tank with vertical axis and geometric capacity of 5,282 liters with Diameter of 1,950 mm, plating height of 1,490 mm, total height of 2,156 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.



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Version TFDC 6000

- Internal chamber: metal tank with vertical axis and geometric capacity of 6,025 liters with Diameter of 1,950 mm, plating height of 1,740 mm, total height of 2,400 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 7000

- Internal chamber: metal tank with vertical axis and geometric capacity of 7,117 liters with Diameter of 2,250 mm, plating height of 1,490 mm, total height of 2,250 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 8000

- Internal chamber: metal tank with vertical axis and geometric capacity of 8,106 liters with Diameter of 2,250 mm, plating height of 1,740 mm, total height of 2,503 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load

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limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

Version TFDC 9000

- Internal chamber: metal tank with vertical axis and geometric capacity of 8,897 liters with Diameter of 2,250 mm, plating height of 1,940 mm, total height of 2,700 mm and metal sheet thickness of 3 mm;
- External chamber: for protection made of metal with vertical axis, for collection of any leakage, consisting of a flat bottom and its ferrule thickness of 2 mm, welded on the internal chamber, with interposition of spacer profiles, top sealed flush with the plating weld with full square profile, to ensure the seal. Although not with full coverage, (in fact, only the upper bottom is left "uncovered" and it will never come into contact with the liquid contained as the 90% load limiting device with which it is equipped ensures that the product level remains well below it), the external safety chamber has in any case such a volume as to be able to contain the entire content referred to the geometric capacity of the tank of the internal chamber.

In the upper part of the tanks there is a 400 mm manhole, flanged and bolted with a gasket. On the cover of the manhole, on the upper side, there is a 3" loading mouth with a through-hole, under which a 90% load limiting valve is mounted. The manhole is housed in a 500 mm x 500 mm steel spillway sump with a hinged, lockable, leak-proof top cover.

2.2 The tanks shall also be equipped with the following technical details:

- no-load lifting hooks;
- 3 support feet for versions TEDC-995-1600-2000-3000-4000-5000-6000;
- 4 support feet for versions TFDC-7000-8000-9000;
- mechanical level indicator with float;
- support rod with probe for blocking pump at minimum level;
- air vent with brass wire end flame cutter;
- support tubes for lifting, vacuum handling and positioning;
- internal 1" diameter suction pipe;
- check valve with calibrated spring;
- interspace drainage plug;
- electric panel;
- visual indicator to check for possible leaks in the cavity;
- connection for earth cable;



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- service ladder.

2.3 Distributors

The distributor or electric pump unit for fuel transfer shall be equipped with flexible piping and supply piping, and be fitted with a liter-counter device.

The electric pump unit is also enclosed in a special box made of painted metal sheet with a closing door including a key and lock.

In all models of container-distributors in the range, the components for supplying the motor of the dispenser unit (remote control switch), the transformer for low voltage supply of the minimum level control device and the terminal boards for electrical connections are contained in a box with IP 55 protection degree. The hydraulic connections to the tank of the suction line, both of the electric pump units and of the distributors, are made by means of rigid steel piping with a check valve with a calibrated spring that acts as an anti-siphon device.

The distributors or electric pump units adopted are as follows:

BRAND:	PIUSI
Models:	PANTHER 56, PANTHER 72, F/80, E120; CUBE 56 220V, CUBE 56 12 V; SELF SERVICE 70 MC TANK, SELF SERVICE 70 FM TANK, SELF SERVICE 100 MC TANK, SELF SERVICE 100 FM TANK, SELF SERVICE 70 MCF, SELF SERVICE 70 FM, SELF SERVICE 100 MCF, SELF SERVICE 100 FM, SELF SERVICE 70 K44 TANK, SELF SERVICE 70 K44, SELF SERVICE 100 K44 TANK, SELF SERVICE 100 K44, SELF SERVICE 70 K44 TANK PULSER, SELF SERVICE 70 K44 PULSER, SELF SERVICE 100 K44 TANK PULSER, SELF SERVICE 100 K44 PULSER: CUBE 70MC, CUBE 70MC 120 UT.; BI-PUMP 12/24V, ST-BYPASS 3000 12V;

2.3.1. Description of safety devices and hydraulic systems connecting the dispensing units

- All pumps are rotary, volumetric self-priming with cast iron vanes, including by-pass and built-in filter;
- Pump body in cast iron, rotor in synthesized steel and vanes in loaded delrin;
- Mechanical counter with three and four digits, model PIUSI K35 and K44;
- A safety tap is mounted on all dispensing units for maintenance operations;
- PIUSI automatic dispensing gun in the AUTOMATIC 60, AUTOMATIC 80 and AUTOMATIC 120 versions;



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- Loading piping equipped with RIDART quick couplings by Meneghini D.&C. 137 and 138 or alternatively quick couplings SILEA S.r.l. item 502 and item 503;
- Load relief valve RIDART by Meneghini D.&C. 440 or alternatively load relief valve SILEA S.r.l. item 568;
- All dispensing units are connected to an internal suction pipe, including a vacuum check valve, with spring calibrated pressure equal to 0,10 bar, having the function of anti-siphoning device and glass filter with metal wire for impurities;
- Equilibrium pipe equipped with end flame cutter RIDART by Meneghini D.&C. 190 or alternatively SILEA S.r.l. item 604.

3) LABORATORY TESTS

The following representative samples of the TFDC range presented were tested:

Model
TFDC 3000
TFDC 6000
TFDC 9000

3.1 Measurement of maximum geometrical capacity of containers:

The geometrical capacity of the container for each piece of equipment, calculated using the design data, was as follows:

Model	Geometrical Capacity (liters)
TFDC 3000	3,393
TFDC 6000	6,025
TFDC 9000	8,897

3.2 Measurement of metal sheet thickness of containers:

By means of a GILARDONI digital ultrasonic thickness gauge mod. DG-40, the thickness of the metal sheets used to make the containers was measured.

The series of measurements carried out for each individual container is shown in the following tables:



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MEASUREMENT OF TANK THICKNESS		MEASUREMENTS MADE (mm)									
Tank model: TFDC 3.000 - 3,393 Liters		1	2	3	4	5	6	7	8	9	10
	Plating	3.1	3.0	3.0	3.1	3.0	3.1	3.2	3.1	3.1	3.0
	Bottoms	3.2	3.0	3.1	3.0	3.2	3.0	3.1	3.0	3.1	3.0

MEASUREMENT OF TANK THICKNESS		MEASUREMENTS MADE (mm)									
Tank model: TFDC 6.000 - 6,025 Liters		1	2	3	4	5	6	7	8	9	10
	Plating	3.1	3.2	3.0	3.1	3.0	3.0	3.0	3.1	3.2	3.1
	Bottoms	3.0	3.0	3.1	3.0	3.1	3.0	3.1	3.2	3.1	3.0

MEASUREMENT OF TANK THICKNESS		MEASUREMENTS MADE (mm)									
Tank model: TFDC 9.000 - 8,897 Liters		1	2	3	4	5	6	7	8	9	10
	Plating	3.0	3.1	3.0	3.0	3.1	3.2	3.1	3.2	3.0	3.1
	Bottoms	3.1	3.1	3.2	3.1	3.0	3.2	3.1	3.0	3.0	3.1

3.3 Leak test of the containers at a hydraulic pressure of 0.1 Mpa (1 bar) for 30 minutes, performed with water.

The containers were pressurized by a hydraulic pump at 0.1 MPa (1 bar) for 30 minutes.

OUTCOME: No water leaks occurred from the pressurized containers during the 30 minutes.

3.4 Leak test of container cavities at a pressure of 0.04 Mpa (0.4 bar) for 30 minutes, performed with air.

The containers' cavities were pressurized by a compressor at 0.4 MPa (0.4 bar) for 30 minutes.

OUTCOME: There were no pressure variations from the containers under pressure during the 30 minutes.

3.5 Vertical drop test from a height of 1.5 metres carried out with empty tanks.

The mobile dispensing tanks were taken to a height of 1.5 meters and dropped and then examined.

OUTCOME: After the drop, visual inspection did not reveal any tears in the areas deformed by the impact.

3.6 Verification of container tightness at a hydraulic pressure of 0.1 Mpa (1 bar) for 30 minutes, performed with water, after the drop as described above.

The containers were pressurized by a hydraulic pump at 0.1 MPa (1 bar) for 30 minutes after the 1.5 meter drop test.

OUTCOME: During the 30 minutes the containers under pressure did not leak.



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3.7 Sealing test of container cavities at a pressure of 0.04 MPa (0.4 bar) for 30 minutes, performed with air.

The container cavities were pressurized by a compressor at 0.4 MPa (0.4 bar) for 30 minutes.
OUTCOME: There were no pressure variations from the pressurized containers during the 30 minutes.

3.8 Check on the operation blockage of the dispensing unit.

The dispensing units were operated regularly by simulating repeated liquid shortages by total suction of the product (complete emptying).

OUTCOME: As soon as a lack of liquid occurred, the float device was triggered causing the interruption of the power supply and consequent blocking of the motor/pump unit.

3.9 Check on the anti-siphon system.

The device adopted, consisting of a check valve with calibrated spring, was hydraulically tested to check the opening pressure.

OUTCOME: The opening pressure measured was 0.02 Mpa (0.20 bar) and is therefore sufficient to maintain the liquid head above.

4) REMARKS:

- The containers-distributors are made of components provided with CE marking in accordance with the applicable directives as prescribed in art. 4 of Annex 1 of the Italian Ministerial Decree D.M. 22 November 2017;
- The container must be transported unloaded;
- The earthing between the container and the tanker must be equipped with a stable interlocking device;
- An identification plate is placed on the front bottom of the container, punched in a visible position, showing: the name and address of the manufacturer, the year of construction and serial number, the geometric capacity, thickness and material of the tank, the tank test pressure, the details of the approval (D.M. 22/11/2017 - paragraph 4.2.).

THE TEST OFFICER
DVD Mr. Fedele MAIOCCO

Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021



Marco Faieta



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021

Marco Faieta





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DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
CENTRO STUDI ED ESPERIENZE

CERTIFICATION No. 3704/1366-37/134 dated 27 March 2020

GIVEN the application submitted by the company "DEMO SERBATOI S.r.l." with registered office in Zona Industriale Contrada Stampalone - 64036 CELLINO ATTANASIO (TE), Note Prot. No. 2810 dated 21 February 2020, pursuant to the Italian Legislative Decree D. Lgs. dated 8 March 2006 No. 139, art. 14, paragraph 2, aimed at the technical characterization for fire prevention of containers-distributors with horizontal axis, single wall, for liquid fuels category "C", brand "DEMO SERBATOI S.r.l.", models TF, in the versions: TF1200, TF2000, TF3000A, TF5000A, TF5000B, TF7000A, TF9000, TF9000A, provided with one of the distributors specified;

GIVEN the Italian Ministerial Decree dated 31 July 1934 regarding the "Approval of safety regulations for the processing, storage, use or sale of mineral oils, and for the transportation of such oils";

GIVEN the decree of the Italian Ministry of Home Affairs dated 22 November 2017 about the "Approval of the technical rule of fire prevention for the installation and operation of containers-distributors, for private use, for dispensing of liquid fuel of category C;

GIVEN the certification 3704/1366-37/44 dated 26 June 1998, 3704/1366-37/44A dated 4 May 2001, 3704/1366-37/44B dated 3 October 2003, 3704/1366-37/44C dated 9 July 2007, 3704/1366-37/44D dated 15 October 2008, having examined the documentation submitted by the Company, to update the technical file of the approved TF distribution containers;

GIVEN the declaration of the Company stating that the equipment specified above consists of components bearing the CE marking pursuant to the applicable directives, as prescribed in Article 4 of Annex 3 of the Italian Ministerial Decree D.M. dated 22 November 2017;

[stamp: Fire Brigade Department, Public Rescue, and Civil Defense DCPREV OFFICIAL
REGISTER - OUTPUT Prot. No. 0005285 dated 15 April 2020]

IT IS CERTIFIED HEREBY

that, for the purposes of fire prevention, the **single-wall, horizontal-axis dispensers-containers** for category "C" liquid fuels indicated below:

BRAND:	DEMO SERBATOI S.r.l.
Versions:	TF1200 with maximum capacity of 1,140 liters; TF2000 with maximum capacity of 2,061 liters; TF3000A with maximum capacity of 2,994 liters; TF5000A with maximum capacity of 5,068 liters; TF5000B with maximum capacity of 4,992 liters; TF7000A with maximum capacity of 6,888 liters; TF9000 with maximum capacity of 8,910 liters; TF9000A with maximum capacity of 8,878 liters;

each including the following containment basins at 110%

BRAND:	DEMO SERBATOI S.r.l.
Versions:	TF1200 with maximum capacity of 1,355 liters; TF2000 with maximum capacity of 2,270 liters; TF3000A with maximum capacity of 3,445 liters; TF5000A with maximum capacity of 5,740 liters; TF5000B with maximum capacity of 5,740 liters; TF7000A with maximum capacity of 7,701 liters; TF9000 with maximum capacity of 9,918 liters; TF9000A with maximum capacity of 9,931 liters;

each including one of the following distributors:

BRAND:	TO.ME.S. S.r.l.,
Models:	- "TOM 56" and "TOM 78"; - "SELF 55" and "SELF 80"; - "ROLL-MATIC 60" and "ROLL-MATIC 80";

BRAND:	PIUSI
Versions:	"CUBE" in the versions "CUBE 50/K33" e "CUBE 50/MC30", "CUBE 56/33", "CUBE 56/MC", "CUBE 70/33", "CUBE 70/MC"; "SERVICE" in the versions "SERVICE 80", "SERVICE 80 MC30", "SERVICE 120", "SERVICE 120 MC30"; "SELF SERVICE" in the versions "SELF SERVICE 70 MC", "SELF SERVICE 70 MC F", "SELF SERVICE 70 MC FP", "SELF SERVICE 70 MC FM", "SELF SERVICE 70 K44", "SELF SERVICE 70 K44 F", "SELF SERVICE 100 MC", "SELF SERVICE 100 MC F", "SELF SERVICE 100 MC FP", "SELF SERVICE 100 MC FM", "SELF SERVICE 100 K44", "SELF SERVICE 100 K44 F", "SELF SERVICE 70 MC F 230/50", "SELF SERVICE 100 MC F 230/50"; "SELF SERVICE TANK" in the versions "SELF SERVICE TANK 70 MC 230/50", "SELF SERVICE TANK 70 FNI 230/50", "SELF SERVICE TANK 100 MC 230/50", "SELF SERVICE TANK 100 FM 230/50", "SELF SERVICE TANK 100 K44", "SELF SERVICE TANK 70 K44"; "PANTHER" in the versions "PANTHER 56", "PANTHER 72"; "BY-PASS 55 FILTER", "E 80", "BP 2000", "BIPOMPA at 12 or 24 Volts"

BRAND:	ADAM PUMPS s.p.a.,
Models:	"PA 1230-70", "LIGHTPUMP - 80", "LIGHT PUMP-100", "PICK-UP 230-60".

are compliant with the fire safety regulations set out in the provisions: D.M. 31.07.1934 title I n. XVII and D.M. 22 November 2017.

The validity of the certificate also starts from the date of the digitally signed document and has no expiry date, except in cases where significant technical-constructive changes are made with respect to the certified prototypes.

For the purposes of authorization to market, a special application must be submitted for the issue of Type Approval to the competent Office of the Study and Experience Centre of the Central Directorate for Prevention and Technical Safety - Department of Fire Brigades, Public Rescue and Civil Defense of the Ministry of the Home Affairs.

Digital signature

THE MANAGER
(Mr. Marcello LOMBARDINI)

Amount	€ 16.00					Date of Issue				18 February 2020						
TAX STAMP IDENTIFIER																
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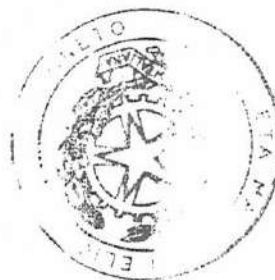
The Sector Manager
D.V.D. Mr. Andrea GATTUSO



Affidavit

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CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
CENTRO STUDI ED ESPERIENZE

GIVEN the Italian Ministerial Decree dated 31 July 1934 regarding the "Approval of safety regulations for the processing, storage, use or sale of mineral oils, and for the transportation of such oils";

GIVEN the decree of the Italian Ministry of Home Affairs dated 22 November 2017 about the "Approval of the technical rule of fire prevention for the installation and operation of containers-distributors, for private use, for dispensing of liquid fuel of category C;

GIVEN the application submitted by the company "DEMO SERBATOI S.r.l." with registered office in Contrada Stampalone, Zona Industriale - 64036 CELLINO ATTANASIO (TE), acquired with prot. No. 5346/DCPREV dated 17 April 2020, for the granting of type approval for the commercial authorization of single-wall horizontal containers-distributors for liquid fuels of category "C" brand "DEMO SERBATOI S.r.l." series TF;

GIVEN the declaration by the Company containing a commitment to constructing the aforesaid category "C" liquid fuel containers-distributors without altering any of the technical and functional characteristics of the certified prototypes, consisting, where applicable, of components bearing the CE marking in accordance with the applicable directives, as prescribed by art. 4 of Attachment I of Ministerial Decree D.M. dated 22 November 2017;

GIVEN the certification No. 3704/1366 - 37/134 dated 27 March 2020, issued by the Centro Studi ed Esperienze of the Central Directorate for Prevention and Technical Safety, specifically authorized by the Ministry of Home Affairs pursuant to Ministerial Decree D.M. dated 26 March 1985;

IT IS HEREBY APPROVED

that, for the purposes of fire prevention, the **single-wall, horizontal-axis dispensers-containers** for category "C" liquid fuels of the company "DEMO SERBATOI S.r.l." series TF, in the versions specified below:

Brand	Versions	
DEMO SERBATOI	Tanks TF1200 maximum capacity 1,140 liters TF2000 maximum capacity 2,061 liters TF3000A maximum capacity 2,994 liters TF5000A maximum capacity 5,068 liters TF5000B maximum capacity 4,992 liters TF7000A maximum capacity 6,888 liters TF9000 maximum capacity 8,910 liters TF9000A maximum capacity 8,878 liters	Containment basins TF1200 maximum capacity 1,355 liters TF2000 maximum capacity 2,270 liters TF3000A maximum capacity 3,445 liters TF5000A maximum capacity 5,740liters TF5000B maximum capacity 5,740liters TF7000A maximum capacity 7,701liters TF9000 maximum capacity 9,918 liters TF9000A maximum capacity 9,931 liters

each including one of the following **distributors and/or safety components** installed:

Brand	Versions
PIUSI	CUBE 50/K33, CUBE 50/MC30, CUBE 56/33, CUBE 56/MC, CUBE 70/33, CUBE 70/MC SERVICE 80, SERVICE 80 MC30, SERVICE 120, SERVICE 120 MC30 SELF SERVICE 70 MC, SELF SERVICE 70 MC F, SELF SERVICE 70 MC FP, SELF SERVICE 70 MC FM, SELF SERVICE 70 K44, SELF SERVICE 70 K44 F, SELF SERVICE 100 MC, SELF SERVICE 100 MC F, SELF SERVICE 100 MC FP, SELF SERVICE 100 MC FM, SELF SERVICE 100 K44, SELF SERVICE 100 K44 F, SELF SERVICE 70 MC F 230/50, SELF SERVICE 100 MC F 230/50 SELF SERVICE TANK 70 MC 230/50, SELF SERVICE TANK 70 FM 230/50, SELF SERVICE TANK 100 MC 230/50, SELF SERVICE TANK 100 FM 230/50, SELF SERVICE TANK 100 K44, SELF SERVICE TANK 70 K44 PANTHER 56, PANTHER 72 BY-PASS 55 FILTER, E 80, BP 2000, BIPOMPA at 12/24 Volts
TO.ME.S.	TOM 56, TOM 78 SELF 55, SELF 80 ROLL-MATIC 60, ROLL-MATIC 80
ADAM PUMPS	PA1230-70, LIGHTPUMP-80, LIGHTPUMP-100, PICK-UP 230-60

The installation of the aforesaid equipment must be carried out in compliance with all current safety regulations.

Each container-distributor homologous to those mentioned above may be put on the market if it is equipped with:

- 3 -

- Declaration drawn up, pursuant to art. 47 of Presidential Decree D.P.R. No. 445/2000, by the holder of this deed certifying conformity specifically referred to the corresponding prototype of container-dispenser for liquid fuels of category "C" with Type Approval code **DCPST/A7/5603/AT/09245**;
- Installation, use and maintenance manual (item 4.2 letter b of Annex 1 of the Ministerial Decree D.M. 22 November 2017).

The above code must be shown on the nameplate attached to the container-distributor, in accordance with item 4.2 letter c) of Annex 1 of the Ministerial Decree D.M. 22 November 2017.

The type approval **is valid for five years** from the date of issue of the digitally signed document.

To the holder of this deed, and to the subjects in any case concerned, all legal obligations arising from the application of the aforementioned Ministerial Decrees are recalled.

Type Approval
DCPST/A7/5603/AT/09245

Digital signature

CHECKED: THE MANAGER
(Mr. Marcello LOMBARDINI)

Digital signature

The Sector Manager
D.V. Mr. Andrea GATTUSO

Digital signature

THE CENTRAL DIRECTOR
CAVRIANI

Amount	€ 16.00					Date of Issue					18 February 2020				
TAX STAMP IDENTIFIER															
0	1	1	6	0	7	1	1	2	4	5	9	5	7		

Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

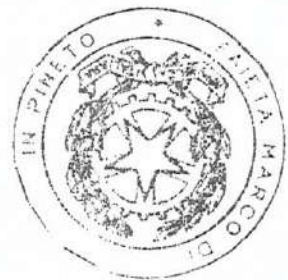
Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021





Ministero dell'Interno

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
CENTRO STUDI ED ESPERIENZE



Distributors and/or safety components installed		Type Approval DCPST/A7/5603/AT/09245 dated 19 June 2020 Certification 3704/1366-37/134 dated 27 March 2020
Brand	Versions	
PIUSI	BY-PASS 55 FILTER, BP 2000, BIPOMPA 12/24V CUBE 50/K33, CUBE 50/MC 30, CUBE 56/33, CUBE 56/MC, CUBE 70/33, CUBE 70/MC E80 PANTHER 56, PANTHER 72 SERVICE 80, SERVICE 80 MC 30, SERVICE 120, SERVICE 120 MC 30 SELF SERVICE 70 MC, SELF SERVICE 70 MC F, SELF SERVICE 70 MC F P, SELF SERVICE 70 MC FM, SELF SERVICE 70 K44, SELF SERVICE 70 K44 F, SELF SERVICE 70 MC F 230/50, SELF SERVICE 100 MC, SELF SERVICE 100 MC F, SELF SERVICE 100 MC F P, SELF SERVICE 100 MC FM, SELF SERVICE 100 K44, SELF SERVICE 100 K44 F, SELF SERVICE 100 MC F 230/50 SELF SERVICE TANK 70 MC 230/50, SELF SERVICE TANK 70 FM 230/50, SELF SERVICE TANK 70 K44, SELF SERVICE TANK 100 MC 230/50, SELF SERVICE TANK 100 FM 230/50, SELF SERVICE TANK 100 K44	
TO.ME.S.	TOM 56, TOM 78 SELF 55, SELF 80 ROLL-MATIC 60, ROLL-MATIC 80	
ADAM PUMPS	PA1 230-70, PICK-UP 230-60 LIGHTPUMP-80, LIGHTPUMP-100,	



Ministero dell'Interno

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
CENTRO STUDI ED ESPERIENZE

Trade name 2		Certification data
Double-wall horizontal containers		Certification 3704/1671-37/141 dated 21 October 2020
Brand	Versions	
 FUEL SOLUTION	TFDC 995 maximum capacity 997 liters TFDC 1600 maximum capacity 1,772 liters TFDC 2000 maximum capacity 2,399 liters TFDC 3000 maximum capacity 3,393 liters TFDC 4000 maximum capacity 4,540 liters TFDC 4980 maximum capacity 4,986 liters TFDC 5000 maximum capacity 5,282 liters TFDC 6000 maximum capacity 6,025 liters TFDC 7000 maximum capacity 7,117 liters TFDC 8000 maximum capacity 8,106 liters TFDC 9000 maximum capacity 8,897 liters	
Distributors and/or safety components installed		
Brand	Versions	
PIUSI	BI-POMPA 12/24V E 80, E120 CUBE 56 220V, CUBE 56 12V, CUBE 70 MC, CUBE 70 MC 120 UT PANTHER 56, PANTHER 72 SELF SERVICE 70 FM, SELF SERVICE 70 K44, SELF SERVICE 70 K44 PULSER, SELF SERVICE 70 MC F, SELF SERVICE 100 FM, SELF SERVICE 100 K44, SELF SERVICE 70 K44 PULSER, SELF SERVICE 100 MC F SELF SERVICE 70 FM TANK, SERVICE 70 K44 TANK, SELF SERVICE 70 K44 TANK PULSER, SELF SERVICE 70 MC TANK, SELF SERVICE 100 FM TANK, SELF SERVICE 100 K44 TANK, SELF SERVICE 100 K44 PULSER, SELF SERVICE 100 MC TANK ST-BYPASS 3000 12V	
AFRISO EURO-INDEX	LAG-14 ER	



Ministero dell'Interno

DEPARTMENT OF FIRE BRIGADES, PUBLIC RESCUE AND CIVIL DEFENSE
CENTRAL MANAGEMENT FOR PREVENTION AND TECHNICAL SAFETY
CENTRO STUDI ED ESPERIENZE

Having taken note of the declarations in lieu of affidavit referred to in protocols Nos. 11636/DCPREV dated 10 September 2020 and 14182/DCPREV dated 28 October 2020, this Office informs that, starting from 6 August 2020, the type approval and certifications relating to the above products must continue to be considered valid, for all purposes, in their original drafts, in compliance with all the specifications contained therein and be referred to the company in question (successor or new name).

For the purposes of product marketing, this document must accompany the above-mentioned type approval until the end of the expiry date indicated therein.

Digital signature pursuant to the Law
THE CENTRAL DIRECTOR
(CAVRIANI)



Digital signature pursuant to the Law
THE MANAGER
(Mr. Marcello LOMBARDINI)

Digital signature pursuant to the Law
The Sector Manager
(Mr. Andrea GATTUSO)

Affidavit

I Marco Faieta, public notary resident in Pineto, registered by the Notary District of Teramo and Pescara, certify that the document in Italian is fully correspondent to the original deed that I have given back to whom is interested of and that the translation in English is fully true and corresponding to the Italian text.

Pineto, July 19, 2021



Dichiarazione di autentica

Io Marco Faieta, notaio residente in Pineto, iscritto presso il Distretto Notarile Riunito di Teramo e Pescara, certifico che il documento scritto in italiano è copia conforme all'originale che ho restituito all'interessato e che la traduzione in inglese è pienamente conforme all'originale in italiano.

Pineto, 19 luglio 2021



**NORMA
EUROPEA**

Serbatoi di acciaio prefabbricati
Parte 2: Serbatoi orizzontali cilindrici a singola e a doppia parete
per depositi fuori-terra di liquidi infiammabili e non infiammabili
che possono inquinare l'acqua

UNI EN 12285-2

GIUGNO 2005

Workshop fabricated steel tanks

Part 2: Horizontal cylindrical single skin and double skin tanks for the aboveground storage of flammable and non-flammable water polluting liquids

La norma specifica i requisiti per i serbatoi prefabbricati in acciaio, a singola e a doppia parete per depositi fuori-terra di liquidi inquinanti per l'acqua (sia infiammabili che non infiammabili).

TESTO INGLESE

La presente norma è la versione ufficiale in lingua inglese della norma europea EN 12285-2 (edizione febbraio 2005).

ICS 23.020.10

UNI
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UNI EN 12285-2:2005



Pagina I

PREMESSA NAZIONALE

La presente norma costituisce il recepimento, in lingua inglese, della norma europea EN 12285-2 (edizione febbraio 2005), che assume così lo status di norma nazionale italiana.

La presente norma è stata elaborata sotto la competenza dell'ente federato all'UNI

CTI - Comitato Termotecnico Italiano

La presente norma è stata ratificata dal Presidente dell'UNI, con delibera del 19 aprile 2005.

Le norme UNI sono elaborate cercando di tenere conto dei punti di vista di tutte le parti interessate e di conciliare ogni aspetto conflittuale, per rappresentare il reale stato dell'arte della materia ed il necessario grado di consenso.

Chiunque ritenesse, a seguito dell'applicazione di questa norma, di poter fornire suggerimenti per un suo miglioramento o per un suo adeguamento ad uno stato dell'arte in evoluzione è pregato di inviare i propri contributi all'UNI, Ente Nazionale Italiano di Unificazione, che li terrà in considerazione per l'eventuale revisione della norma stessa.

Le norme UNI sono revisionate, quando necessario, con la pubblicazione di nuove edizioni o di aggiornamenti.

È importante pertanto che gli utilizzatori delle stesse si accertino di essere in possesso dell'ultima edizione e degli eventuali aggiornamenti.

Si invitano inoltre gli utilizzatori a verificare l'esistenza di norme UNI corrispondenti alle norme EN o ISO ove citate nei riferimenti normativi.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12285-2

February 2005

ICS 23.020.10

English version

Workshop fabricated steel tanks - Part 2: Horizontal cylindrical
single skin and double skin tanks for the aboveground storage of
flammable and non-flammable water polluting liquids

Réservoirs en aciers fabriqués en atelier - Partie 2:
Réservoirs horizontaux à simple et double paroi pour le
stockage aérien des liquides inflammables et non
inflammables polluant l'eau

Werksgefertigte Tanks aus Stahl - Teil 2: Liegende
zylindrische ein- und doppelwandige Tanks zur
oberirdischen Lagerung von brennbaren und
nichtbrennbaren wassergefährdenden Flüssigkeiten

This European Standard was approved by CEN on 17 December 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 12285-2:2005 (E)

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EN 12285-2:2005 (E)

Foreword

This document (EN 12285-2:2005) has been prepared by Technical Committee CEN/TC 221 "Shop fabricated metallic tanks and equipment for storage tanks and for service stations", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2005, and conflicting national standards shall be withdrawn at the latest by November 2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of Construction Products Directive (CPD)¹⁾.

For the relationship with this Directive, see informative Annex ZA, which is an integral Part of this document.

By application of this document presumption is given, that the Essential Safety Requirements of the CPD are met.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1) Directive 89/106/EEC of the European Parliament and the Council of 21 December 1988 on the approximation of the laws of the Member States concerning Construction products (OJEC L 40).

Introduction

This document is part of a family of standards involving shop fabricated tanks and equipment for storage tanks and for service stations (compare listing below and bibliography). Normal ambient temperatures considered in this document are -20 °C to +50 °C. Where temperatures are outside this range it could become necessary to consider further requirements. These could include temperature control measures or material control (see 4.2.2).

CEN/TC 221

Shop fabricated metallic tanks
and
equipment for storage tanks and for service stations

SC 1 Tanks

Underground tanks
(EN 12285-1)

Aboveground tanks
(EN 12285-2)

SC 2 Equipment

Leak detection systems
(EN 13160-1 to -7)

Overfill prevention devices
(EN 13616)

Tank contents gauges
(EN 13352)

Petrol filling stations
(EN 13617-1 to -4,
EN 13012, EN 14125)

EN 12285-2:2005 (E)

1 Scope

This document specifies the requirements for metallic shop fabricated cylindrical, horizontal steel tanks, single and double skin for the aboveground storage of water polluting liquids (both flammable and non-flammable) within the following limits:

- from 800 mm up to 3 000 mm nominal diameter and,
- up to a maximum overall length of 6 times the nominal diameter and,
- for liquids with a maximum density of up to 1,9 kg/l and,
- with an operating pressure (P_o) of maximum 1,5 bar (abs.) and,
- where double skin tanks with a vacuum leak detection system are used the cinematic viscosity of the stored media shall not exceed $5 \times 10^{-3} \text{ m}^2/\text{s}$.

This document is applicable for normal ambient temperature conditions (- 20 °C to + 50 °C). Where temperatures are outside this range, additional requirements need to be taken into account.

This document is not applicable for the storage of liquids having dangerous good classes listed in Table 1 because of the special dangers involved.

Table 1 — List of dangerous goods the storage of which are not covered by this document

UN-classification	Storage media
Class 1	Explosives
Class 4.2	Substances liable to spontaneous combustion
Class 4.3	Substances which in contact with water emit flammable gases
Class 5.2	Organic peroxides
Class 6.2	Infectious substances
Class 7	Radioactive material, hydrocyanic or hydrocyanic solvent liquids, metalcarbonyls, hydrofluoracid, bromide liquids

NOTE The classifications referred to are those adopted by the United Nations Committee of Experts on the Transport of Dangerous Goods (not to be interpreted as tank classes described in 3.1.4).

This document does not cover the installation of tanks which might be subject to local regulations involving pollution control.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 287-1, *Qualification test of welders — Fusion welding — Part 1: Steels*

EN 288-2, *Specification and approval of welding procedures for metallic materials — Part 2: Welding procedures specification for arc welding*

EN 10025-2, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10051:1991 + A1:1997, *Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels — Tolerances on dimensions and shape (includes amendment A1:1997)*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 12285-1:2003, *Workshop fabricated steel tanks — Part 1: Horizontal cylindrical single skin and double skin tanks for the underground storage of flammable and non-flammable water polluting liquids*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN ISO 898-1, *Mechanical properties of fasteners of carbon steel and alloy steel — Part 1: Bolts, screws and studs (ISO 898-1:1999)*

EN ISO 15607, *Specification and qualification of welding procedures for metallic materials — Part 1: General rules (ISO 15607:2003)*

EN ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2004)*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1

tank

workshop fabricated cylindrical containment for the storage of liquids. It is made of steel, equipped with dished ends and consists of one or more compartments

3.1.2

aboveground tank

tank which is not buried in the ground; (a tank installed in a basement is an aboveground tank)

3.1.3

compartment

single storage fluid space within a tank

3.1.4

tank classes

as defined in Table 2

EN 12285-2:2005 (E)

Table 2 — Tank classes

Tank class	Description
Class A	for liquids with density up to 1,1 kg/l
Class B	for liquids with density up to 1,9 kg/l
Class C	for liquids with density up to 1,9 kg/l and explosion pressure shockproof under atmospheric conditions (see also 3.1.5)

3.1.5

explosion pressure shockproof tank

tank which is designed to withstand an internal explosion without leakage; permanent deformations are permissible. Where the atmospheric pressure is 1 bar the maximum explosion pressure is measured at 10 bar (abs.)

3.1.6

tank type

for the purpose of this document two tank types are distinguished:

Type S: Single skin

Type D: Double skin

3.1.7

operating pressure (P_o)

pressure inside the tank above the liquid during operating conditions

3.1.8

test pressure (P_{t1})

pressure to which the tank or compartment is subjected for testing

3.1.9

interstitial test pressure (P_{t2})

pressure to which the interstitial space between the skins is subjected for testing. It is only applicable for double skin tanks

3.1.10

nominal volume

storage capacity for which the tank is sold

3.1.11

actual volume

total internal capacity of the tank which is equal to or greater than the nominal volume

NOTE The safe working capacity of the tank should normally not exceed 95 % of the nominal volume for mineral oil products. For other liquids the safe working capacity conforms to Equation (1).

$$f = \frac{100}{1 + 35\delta} \quad (1)$$

where

f is the percentage of nominal volume (%);
 δ is the thermal expansion coefficient of the liquid (K).

3.2 Symbols and abbreviations

For the purpose of this document, the following symbols apply.

Dimensions in mm

a Weld thickness

b_1 Width of the saddle

b_2 Width of compensation plate

d_1 External nominal diameter of the tank

d_2 Inside diameter of the manhole

d_3 Diameter of the manhole cover

e_1 Distance between centre of the saddle and the end of the cylindrical part of the tank

h_1 Length of the straight flange of the dished end

k_1 Length of the saddle base

k_p Pitch circle diameter of manway bolts

l_c Length of the compartment of a tank without dished ends

l_o Overall length of the tank

l_z Length of the tank without dished ends

n_1 Distance of the saddle foot to the bottom of the tank

r_1 Crown radius of dished ends

r_2 Knuckle radius of dished ends

r_3 Knuckle radius of the outer dished end

s_1 Nominal thickness of inner skin and inner dished ends

s_2 Interstitial space

s_3 Nominal thickness of outer skin

s_4 Nominal thickness of outer dished ends

s_5 Nominal thickness of compartment dished ends

s_6 Nominal thickness of manhole flange and cover

s_7 Plate thickness of manhole body

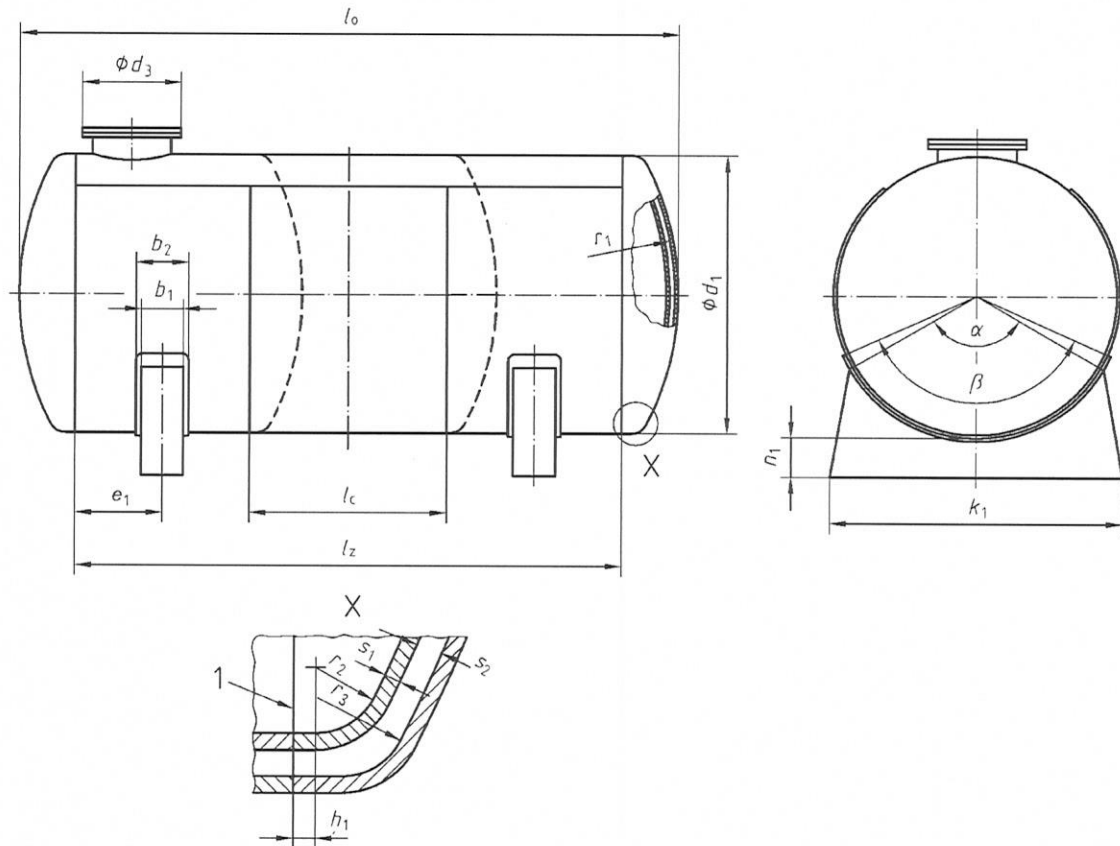
EN 12285-2:2005 (E)

α Angle of the saddle

β Angle of the compensation plate

γ Incline angle for T-joint welding

δ Thermal expansion coefficient of the liquid



Key

1 Weld

Figure 1 — Example of double skin aboveground tank, symbols

4 Requirements

4.1 Designation and purchaser's specification

Example for designation: A tank according to this document with a nominal volume of 50 m³ and a nominal diameter $d_1 = 2\,500$ mm, tank class B and type D

Tank EN 12285-2/50/2500/B/D

In addition to the above details the manufacturer shall obtain from the purchaser the following requirements:

- a) number of compartments and their volumes;
- b) material specification or liquid to be stored;
- c) kind of internal and/or external coating, if relevant.

4.2 Materials

4.2.1 General

The manufacturer shall select the tank material in accordance with the purchaser's specific requirements or provide information with the tank concerning the suitability of the tank material for the storage media (e.g. by reference to EN 12285-1:2003, Annex B).

4.2.2 Materials for shell, dished ends and manholes

Steel according to EN 10025-2, EN 10028-2, EN 10028-7 or EN 10088-1 may be used if the mechanical properties are at least equal to those of S 235 JR according to EN 10025-2.

In cases where low temperatures have to be considered (below - 20 °C) at least steel grade S 235 J2G3 according to EN 10025-2 or equal shall be used and in this case wall-thicknesses shall be 6 mm minimum.

4.2.3 Materials for tank fittings

Materials used for the fabrication of tank fittings if welded to the tank shall be compatible with the tank material.

4.2.4 Consumables

All welding rods/wires and other consumables shall be compatible with the basic material.

4.2.5 Material inspection documentation

Material inspection documents for shell plates and dished ends made of carbon steel according to EN 10025-2 shall be in accordance with 3.2 of EN 10204:2004 (Test report "type 2.2"), for all other steel qualities they shall be in accordance with 4.1 of EN 10204:2004 (Inspection certificate 3.1 "type 3.1").

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4.3 Design

4.3.1 Forms of construction

Tanks shall be manufactured by using shell plates and dished ends.

4.3.2 Single skin tanks

Single skin tanks shall form an impermeable containment; they also constitute the inner skin of a double skin tank.

4.3.3 Double skin tanks

For double skin tanks, an outer skin is welded around the inner tank, which forms an impermeable self contained tank. The outer skin shall cover at least 95 % of the nominal volume of the inner tank.

There shall be at least two sockets for the leak detection system and these shall be located at the highest point of the interstitial space.

The interstitial space shall be connected to a leak detection system in order to permanently monitor the integrity of the tank. For leak detection systems see EN 13160-1 to -7.

Double wall tanks designed for use with a pressure leak detection system shall have stiffening rings in accordance with 7.12 of EN 12285-1:2003 or alternative designs which shall have no lesser performance.

4.3.4 Dished ends

Dished ends shall be used for external ends of tanks and to separate compartments.

The following dimensions shall apply:

$$r_1 \leq d_1$$
$$r_2 \geq d_1 / 30$$

4.3.5 Compartments

The nominal wall thickness of dished ends separating the compartments (compartment dished ends) are given in Table 3. For classes A and B a different form of dished ends separating the compartments is possible, where $r_1 = d_1$, but without knuckle radius r_2 and without straight flange.

A compartment dished end with a knuckle radius and a straight flange is equivalent to a reinforcement ring at the same position.

4.3.6 Dimensions

4.3.6.1 Material thickness

The nominal wall thickness of inner tank shell, outer tank shell and dished ends shall be declared by the manufacturer in rounded millimetres, and shall be at least as given in Table 3.

Table 3 — Nominal wall thickness for inner and outer skin tanks, dished ends and compartment dished end

Dimensions in millimetres

Tank classes	Class A		Class B		Class C	
Nominal diameter of the tank d_1	Nominal shell thickness ^a					
	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin
800 up to 1 600	5	3	5	3	5	3
1 601 up to 2 000	6	3	6	3	6	3
2 001 up to 2 500	6	4	7	4	7	4
2 501 up to 3 000	7	4	9	4	9	4
Nominal diameter of the tank d_1	Nominal wall thickness of dished ends					
	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin	s_1 inner skin	s_3 outer skin
800 up to 1 600	5	3	5	3	5	3
1 601 up to 2 000	6	3	6	3	6	3
2 001 up to 2 500	6	5	7	5	7	5
2 501 up to 3 000	7	5	9	5	9	5
Nominal diameter of the tank d_1	Nominal wall thickness of compartment dished ends					
	s_5		s_5		s_5	
800 up to 1 600	5		5		10	
1 601 up to 2 000	6		6		14	
2 001 up to 2 500	6		7		16	
2 501 up to 3 000	7		9		18	

^a If loose saddles are used see also Table 7.

4.3.6.2 Outer skin

4.3.6.2.1 Circumferential angle

The outer skin shall enclose at least 300° of the circumference of the tank, leaving not more than 60° on the top uncovered.

In cases where the manhole diameter exceeds $d_1/2$, the manhole shall be provided with an outer skin.

4.3.6.2.2 Interstitial space

The interstitial space gap should be as small as practically possible but suitable for the leak detection system to function.

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4.4 Tolerances

4.4.1 The overall length of the inner tank

The tolerance on the overall length of the tank shall be $\pm 1\%$ of the real length stated by the manufacturer.

4.4.2 Wall thickness

The minimum thickness of dished ends after forming shall be at least 92 % of the nominal wall thickness as given in Table 3. Shell plate thickness shall conform to EN 10051:1991+A1:1997, Table 2.

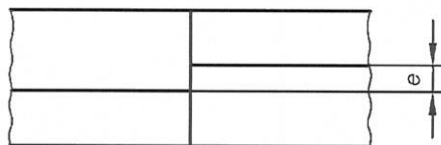
4.4.3 Circumference of dished ends

For the dished ends, the tolerances shall be $\begin{matrix} +6 \\ 0 \end{matrix}$ mm for $d_1 \leq 2\,000$ mm, and $\begin{matrix} +10 \\ 0 \end{matrix}$ mm for $d_1 > 2\,000$ mm based on the calculated circumference of d_1 .

4.5 Shell plate arrangement

Cross seams shall not be allowed. Longitudinal welds shall not be allowed in the bottom half of the tank.

Shell plate joints shall be offset, having a minimum distance e of five times the wall thickness but not less than 25 mm.



Key

e Minimum distance

Figure 2 — Shell plate arrangement for inner and outer skin

4.6 Manholes and inspection covers

Unless otherwise specified by the purchaser, the tanks shall be equipped with at least one inspection cover per compartment. In cases where inspection covers are not allowed, the tanks shall have one manhole of at least $d_2 = 600$ mm and no part of a compartment shall be more than 10 m from a manhole. Single skin tanks shall always have a manhole.

The manufacturer shall decide whether manholes (inspection covers, nozzles) shall be of set-through or set-on-type. Nozzles and flanges shall either be welded inside and outside, or by full penetration.

For the dimensions of the manholes and its components see Table 4.

Gaskets shall be provided and suitable for their purpose.

Table 4 — Dimensions of manhole components

Inside diameter d_2 mm	Plate thick- ness of manhole body s_7 mm	Diameter of cover d_3 mm	Pitch circle diameter k_p mm	Bolt hole diameter mm	Flange thickness and cover thickness s_6 mm		Thread size	Number
					Class A	Class B and C		
600 ^a	6	720	680	18	12	16	M 16	32
800	7	920	880		12	20		44
1 000 ^b	7	1 120	1 080		--	20		48

^a If a manhole is required and no specification is given by the purchaser this diameter shall be used.

^b For tanks of Class C inside diameters of the manhole (d_2) exceeding 800 mm are not permitted.

Instead of the manhole covers shown in the Figure 3 and dimensioned in Table 4, ribbed or embossed covers may be used in Class A-tanks with a plate thickness at least equal to the thickness of the inner tank s_1 . A ribbed or embossed cover shall withstand the test pressure P_{t1} (see Table 9).

Inspection openings shall only be used for tanks of Class A with $d_1 \leq 1\,250$ mm and tanks of Classes B and C with $d_1 \leq 1\,000$ mm. The diameter of the inspection cover shall not be larger than 300 mm and not smaller than 120 mm, and the thickness of the inspection cover shall be equal to the minimum thickness of the inner tank.

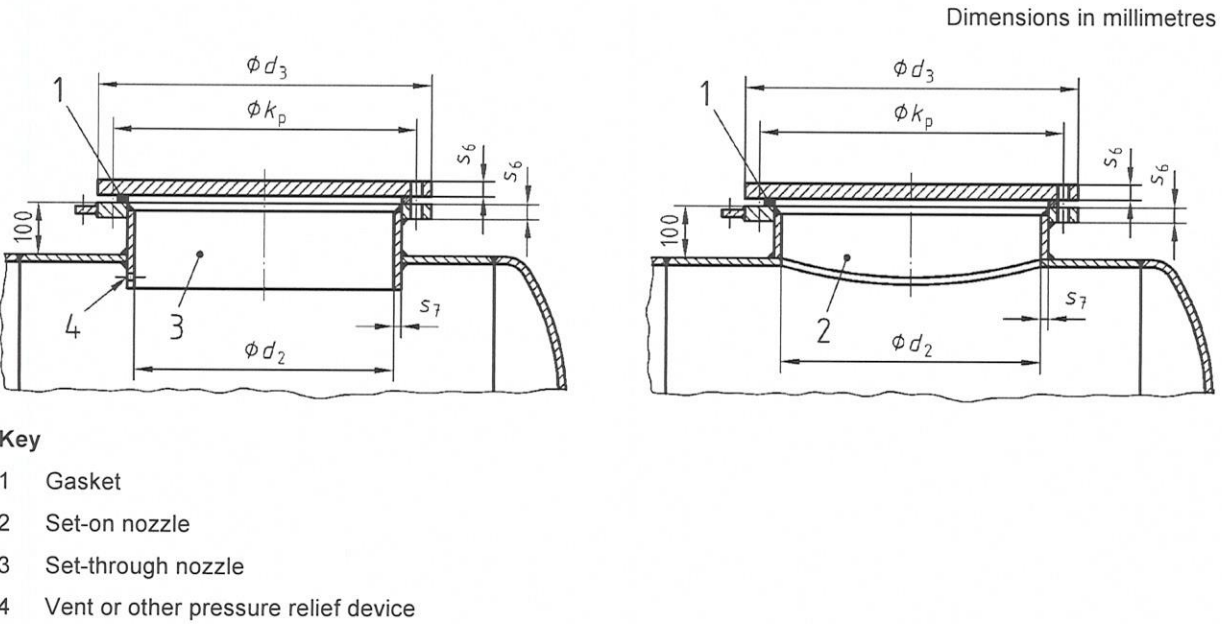


Figure 3 — Examples for manholes

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4.7 Structural bolts

Bolts used shall be in accordance with EN ISO 898-1, with a property Class being at least 4.6. The material chosen shall be compatible with the tank material.

4.8 Tank fittings, pipes and nozzles

Tank fittings, pipes and nozzles, for double wall tanks shall be situated on the manhole cover or in the single skin top of the tank. For tanks of Class C only the set-through nozzles shall be used. For set-through-nozzles a vent of 10 mm diameter or equivalent opening shall be provided in the manhole neck at the highest practical point.

A penetration of the double skin shall not be allowed (exception: nozzles for leak detection system). Fittings and all other openings shall have a minimum distance of 50 mm from welded seams.

4.9 Saddles, supports

4.9.1 General

When supplied by the manufacturer, saddles shall either be welded to the tank (in accordance with 4.9.2) or as an option may also be supplied as loose saddles (in accordance with 4.9.3), in which case the compensation plates need always to be welded at the tank.

Figure 4 shows an example for a saddle support arrangement.

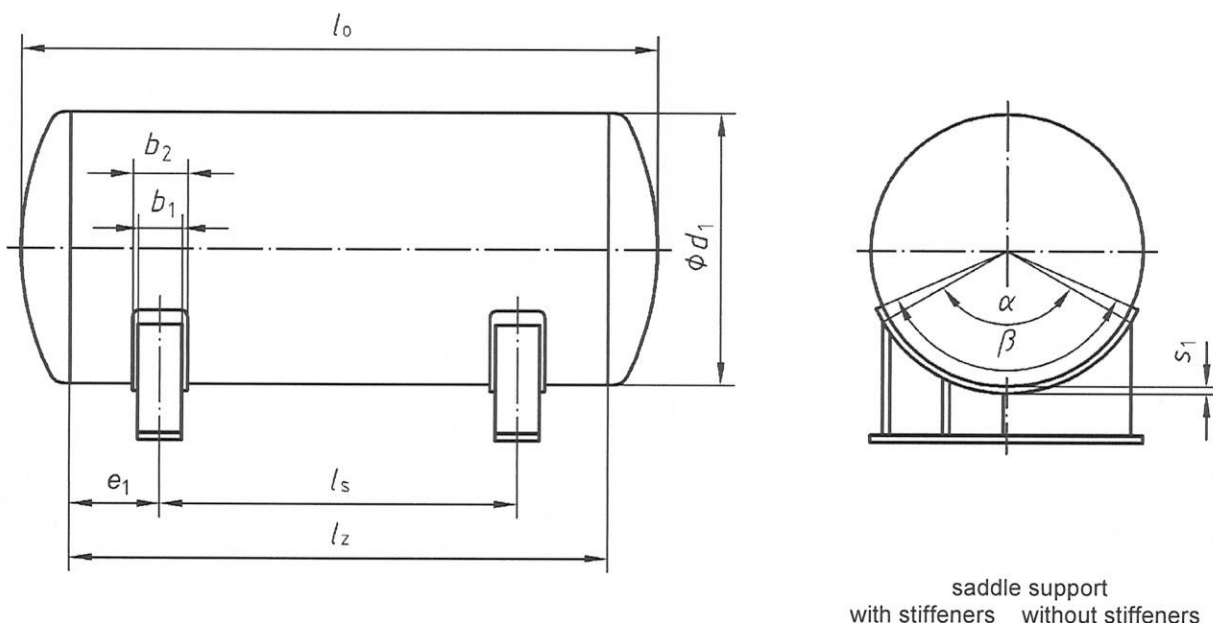


Figure 4 — Example for a saddle support arrangement

4.9.2 Welded saddles

The dimensions of welded saddles and their components shall be as given in Tables 5 and 6.

Narrow saddles are suitable for all surfaces with a minimum ground carrying capacity of 1,9 N/mm². For surfaces having a minimum ground carrying capacity of 0,15 N/mm² broad saddles shall be used where appropriate.

Table 5 — Dimensions of welded saddles

Diameter of the inner shell of the tank in mm	Narrow saddles		Broad saddles	
	Saddle width b_1 in mm	Angle α in degrees	Saddle width b_1 in mm	Angle α in degrees
800 to 1 600	150	120	350	120
1 601 to 2 000	200	125	600	120
2 001 to 2 500	250	150	950	120
2 501 to 3 000	300	150	1 350	120

Table 6 — Dimensions of saddle components

	Narrow saddles	Broad saddles
Angle of compensation plate ^a (β)	$\alpha + 12^\circ$	132°
Width of compensation plate ^a (b_2)	$b_1 + (10 \times s_1)$	$b_1 + 50 \text{ mm}$
Thickness of compensation plate	s_1	s_1
Minimum length of saddle base plate (k_1)	$0,75 \times d_1$	$0,75 \times d_1$
Location of the saddle centreline from the circumferential weld shell/dished end (e_1)	$(0,25 \times d_1) \begin{smallmatrix} 0 \\ -25 \end{smallmatrix} \text{ mm}$	$b_1/2 + 100 \text{ mm}$
Minimum height of saddles (n_1)	100 mm	100 mm
Minimum thickness of base plate, body plate, supporting plates and side plates of the saddle	s_1	s_1

^a Compensation plate corners to be rounded off with a minimum radius of 25 mm.

4.9.3 Loose saddles

The dimensions of loose saddles shall be as given in Table 7, those for their components are the same as those for narrow saddles in Table 6.

Table 7 — Loose saddles

Diameter of the inner shell of the tank in mm	Tank Class A			Tank Classes B and C		
	Saddle width (b_1) in mm	Angle (α) in degrees	Nominal plate thickness of shell above the saddle in mm	Saddle width (b_1) in mm	Angle (α) in degrees	Nominal plate thickness of shell above the saddle in mm
800 to 1 600	200	120	5	350	120	5
1 601 to 2 000	350	120	6	500	120	7 ^a
2 001 to 2 500	625	120	7 ^a	625	120	10 ^a
2 501 to 3 000	750	120	9 ^a	750	120	12 ^a

^a For tanks of these diameters the nominal shell thickness above the saddle shall be increased from the values given for s_1 in Table 3 to those given here.

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Loose saddles are suitable for all surfaces with a minimum ground carrying capacity of 1,9 N/mm².

4.10 Lifting lugs

Each tank shall be provided with lifting lugs. The number of lifting lugs shall be at least 1 for a tank up to 20 m³ nominal volume and not less than 2 above 20 m³. The lug(s) shall be positioned to enable the tank to be lifted in horizontal position.

Lifting lugs fully welded to the tanks shall be provided in sufficient size and quantity to enable the empty tank to be lifted without permanent deformation of the tank.

The lifting lugs shall be provided with a lifting hole of at least 60 mm diameter.

In order to prevent deformation and for maintaining integrity of the coating, a compensation plate shall be provided.

4.11 Fabrication

4.11.1 Plate preparation

The plate edges shall be visually examined for laminations by the manufacturer. Where such faults are found the plate shall be deemed unsuitable for fabrication of the tank.

4.11.2 Shell plate forming

All plates shall be formed to the required curvature over the full width or length of the plate as might be applicable. The manufacturer shall ensure that there is continuity of curvature at the longitudinal butt welds.

4.11.3 Types of joints

The types of welded joints shall be in accordance with Table 8. All internal attachments shall be continuously welded.

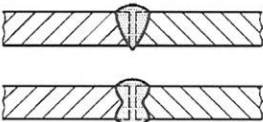
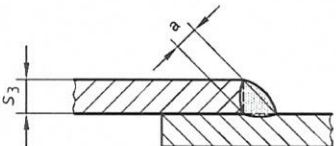
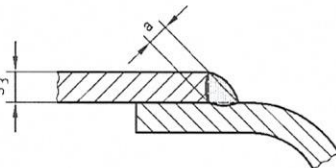
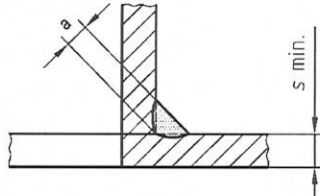
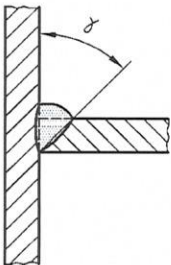
4.11.4 Welding procedures, welders qualification

Welding procedures shall be in accordance with EN ISO 15607, EN 288-2, EN ISO 15614-1 and welders qualifications shall be in accordance with EN 287-1.

4.11.5 Stainless steel tanks

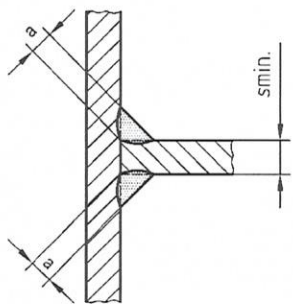
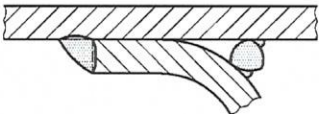
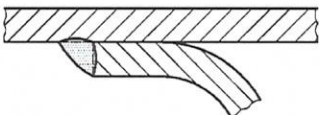
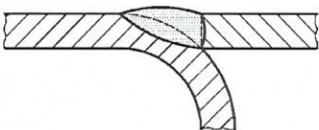
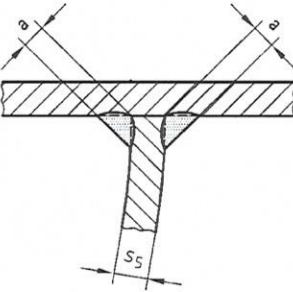
All carbon contamination shall be removed from stainless tanks. This can be carried out for example by pickling and passivating.

Table 8 — Types of welded joints

No.	Types of welded joints	Class of tanks and liquid (liquid-touched wall)
1	Square butt joint 	For Class A, B and C and all liquids For inner skin Plate misalignment shall not exceed $0,3 s_1$ respectively $0,3 s_3$ or 2 mm
2a	Joggled butt joint 	For Class A and hydrocarbon liquids For double and single skin tanks Not permissible with inner coating
2b	Joggled butt joint 	For Class A, B and C
3a	Overlap joint 	For Class A, B and C For outer skin $a = 0,7 s_3$
3b	Overlap joint 	For Class A, B and C For outer skin $a = 0,7 s_3$
4	Fillet weld in T-joint 	For Class A, B and C For nozzles in the outer skin $a = 0,7 s_{min}$ s_{min}: thickness of the thinner plate
5	Fillet weld (full penetration) in T-joint 	For Class A, B and C For manholes, nozzles and inspection covers $\gamma = 45^\circ$

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Table 8 (concluded)

6	Double fillet weld in T-joint 	For Class A, B and C For manholes, nozzles and stiffening rings $a = 0,7 s_{\min}$ $s_{\min}$: thickness of the thinner plate
7a	Fillet weld in overlap joint 	For Class A, B and C For compartment dished ends with knuckle radius
7b	Fillet weld in overlap joint 	For Class A, B and C For compartment dished ends with knuckle radius Not permissible with inner coating
8	Butt joint 	For Class A and B For compartment dished ends with knuckle radius Not permissible with inner coating
9	Double fillet weld in T-joint 	For Class A and B For compartment dished ends without knuckle radius $a = 0,7 s_5$

4.11.6 Internal and external coating

All coatings when applied by the tank manufacturer shall be in accordance with the coating manufacturer's instructions. Where the temperature of a carbon steel tank can fall below normal operating temperatures and the tank is used for products without corrosion inhibitors, the tank shall be provided with internal protection.

4.12 Dangerous substances

Materials used in the production of steel tanks shall not release any dangerous substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the country of destination.

Steel tanks would not normally be expected to release any dangerous substances but the manufacturer may use a protective coating that contains a substance that shall be declared to comply with this clause.

4.13 Reaction to fire

Uncoated steel tanks are classified in Class A1 without further testing according to Commission Decision 94/611/EC as amended. Steel tanks coated with a substance containing in excess of 1 % organic content shall be subject to material test according to EN 13501-1.

4.14 Durability

Steel tanks shall be deemed to be durable for a reasonable economic working life if they comply with requirements of this document.

5 Testing assessment and sampling methods

Pressure testing

Single skin and inner tanks of double skin tanks shall be tested using a hydrostatic test or an air pressure test in accordance with health and safety conditions. The interstitial space shall be tested to the prescribed test pressure using the leak detection medium. The test pressures are given in Table 9.

Table 9 — Test pressure P_{t1} and P_{t2}

Test	Test medium	Pressure in bar		
		Tank class		
		A	B	C
		Test pressure P_{t1} and P_{t2}	Test pressure P_{t1} and P_{t2}	Test pressure P_{t1} and P_{t2}
Prototype test	air	0,75	2,0	---
	liquid	0,75	2,0	13,5
Leak tightness test of tank	air	0,3	0,3	---
	liquid	0,75	2,0	2,0
Leak tightness test of interstitial space	air or liquid	0,4	0,6	0,6

6 Evaluation of conformity

6.1 General

The compliance of a metallic shop fabricated cylindrical horizontal steel tank with the requirements of this document and with the stated values (including classes) shall be demonstrated by:

— initial type testing;

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— factory production control by the manufacturer, including product assessment.

For the purposes of testing, tanks may be grouped into classes (see 3.1.4 and 4.3.6.1), where it is considered that the characteristics are the same for each class.

6.2 Type testing

6.2.1 Initial type testing

Initial type testing shall be performed to show conformity with this document. Tests previously performed in accordance with the provisions of this document (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, initial type testing shall be performed at the beginning of the production of a new tank type (unless a member of the same class) or at the beginning of a new method of production (where this may affect the stated properties).

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of conformity with other product standards, these characteristics need not be reassessed (but see 6.3.3).

NOTE Tank components CE marked in accordance with appropriate harmonised European specifications may be presumed to have the performances stated with the CE marking, although this does not replace the responsibility on the tank designer to ensure that the tank as a whole is correctly designed and its component products (e. g. saddles) have the necessary performance values to meet the design.

All characteristics in Clauses 4 and 5 shall be subject to initial type testing with the exception of 4.12 which may be assessed indirectly by controlling the content of the substance concerned and 4.13 where CWFT rules apply.

6.2.2 Further type testing

Whenever a change occurs in the tank design or the production process which would change significantly one or more of the characteristics, the type tests shall be repeated for the appropriate characteristic(s).

6.2.3 Sampling, testing and compliance criteria

The number of tanks to be tested (or assessed) shall be in accordance with Table 10.

Table 10 — Number of units and compliance criteria for initial and further testing

Characteristic	Requirement clause	Assessment method	Number of units	Compliance criteria
Internal pressure	4.3.6	5	1 for each class	no leakage
Mechanical resistance and stability Load bearing capacity	4.3.6.1	4.2.5	each tank and saddle	conformity with – the material standards – 4.2.1 – 4.4, 4.5, 4.9
Mechanical resistance and stability Load bearing capacity	4.11.3	4.11.4	1 for each class	EN 287-1
Reaction to fire	4.13	4.2.5	each tank	conformity with the material standard

The results of all type tests shall be recorded and held by the manufacturer for at least 5 years.

6.3 Factory production control (FPC)

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

An FPC system conforming to the requirements of EN ISO 9001, and made specific to the requirements of this document, is considered to satisfy the above requirements.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturer's FPC procedures.

6.3.2 Equipment

Testing - All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

Manufacturing - All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the manufacturing process. Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity.

6.3.4 Product testing and evaluation

The manufacturer shall establish procedures to ensure that the stated values of all of the characteristics are maintained.

Table 11 — Minimum frequency of testing for product testing and evaluation as part of FPC

Property	Clause, indicating the relevant test method (if any)	Threshold value (if any) and tolerances	Minimum number of samples / tests	Minimum frequency of tests
Mechanical stability				
– dimensions	4.3.1	4.4	–	each tank
– material control	4.2			
Internal pressure (testing)	5	–	–	each tank/ compartment
Permeability (welding)	visible check	–	–	each tank

6.3.5 Non-conforming products

The manufacturer shall have written procedures which specify how non-conforming products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures.

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7 Handling and installation

7.1 Handling

The tank manufacturer shall provide information as to the safe handling of the tank.

7.2 Installation

The tank manufacturer shall provide installation advice.

8 Marking and labelling of the tank

8.1 Marking of the tank

Each tank shall be marked using a durable label which shall be corrosion resistant and resistant to the stored product. The label shall be fixed to the tank on or close to the manhole, if fitted, of the tank. The design of the label shall be such that it shall not be confused with a regulatory marking.

The label shall contain the following information as a minimum:

- name and address of manufacturer;
- year of manufacture;
- serial number of tank;
- EN 12285-2;
- nominal volume;
- diameter;
- class;
- tank type;
- tank material;
- type of coatings (optional);
- weight of empty tank;
- type of leak detection system or liquid (when supplied).

An example for marking is given in Figure 5.

In addition each compartment shall be provided with a label indicating the nominal volume in m³ of that compartment.

Tank-Manufacture Ltd. , 12 A-street, 12345 B-town, C-country – 2004 – serial number xyz 1234-5							
Tank	Nominal volume in m ³	Diameter in mm	Class	Tank type	Range of temperature	Number of compartments	Weight of empty tank
EN 12285-2	50	2 500	B	D	-20 °C to 50 °C	1	9 900 kg

Figure 5 — Example for marking

8.2 Tank certificate

A tank certificate stating at least the information included in 8.1 shall be provided by the manufacturer.

8.3 Documentation

The manufacturer shall provide documentation showing all important dimensions, compartments and connections.

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Annex ZA
(informative)

**Clauses of this European Standard addressing the provisions of the
EU Construction Products Directive**

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/131 "Pipes, tanks and ancillaries not in contact with water intended for human consumption" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the steel tanks covered by this annex for their intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING: Other requirements and other EU Directives, not affecting the fitness for intended use, may be applicable to the construction products falling within the scope of this standard.

NOTE 1 In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through <http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm>).

This annex has the same scope as Clause 1 of this standard with regard to the steel tanks covered. It establishes the conditions for the CE marking of steel tanks intended for the use indicated below and shows the relevant clauses applicable (see Table ZA.1).

Construction Product: steel tanks

Intended uses: above ground storage of storage of fuel intended for the supply of building heating/cooling systems and of water not intended for human consumption.

The requirement on a certain characteristic is not applicable in those Member States where there are no regulatory requirements on that characteristic for the intended end use of the product. In this case, manufacturers placing their products on the market of these Member States are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

Table ZA.1 — Relevant clauses

Essential characteristics	Requirement clauses in this (or another) European Standard	Levels and/or classes	Notes
Reaction to fire	4.13	Class A.1	CWFT (uncoated steel)
Mechanical resistance and stability – wall thickness – welding	4.3.6.1 4.11.4		class pass/fail
Internal pressure	5		class
Permeability	4.11.4, 5		pass/fail
Release of dangerous substances	4.1.2		less than ... ppm (normally NPD unless protective coating used)
Durability (against corrosion)	4.14		pass/fail

ZA.2 Procedure(s) for the attestation of conformity of steel tanks

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity of steel tanks indicated in Table ZA.1, in accordance with the Decision of the Commission 99/472/EC dated 1999-07-17, as given in Annex III of the mandate, are shown in Table ZA.2 for the intended uses and relevant level(s) and classes.

Table ZA.2 — Attestation of conformity systems

Product	Intended use	Level(s) or class(es)	Attestation of conformity systems
Steel tanks	In installations for the transport/disposal/storage of water not intended for human consumption	none	4
	In installations for the transport/distribution/storage of fuel intended for the supply of building heating/cooling systems	none	3
	In installations in areas subject to resistance to fire regulations used for the transport/distribution/storage of fuel intended for the supply of building heating/cooling systems	Class A.1 CWFT (uncoated steel)	1
System 1: See Directive 89/106/EEC (CPD) Annex III.2.(i), without audit testing of samples			
System 3: See Directive 89/106/EEC (CPD) Annex III.2.(ii), second possibility			
System 4: See Directive 89/106/EEC (CPD) Annex III.2.(ii), third possibility			

The attestation of conformity of the steel tanks in Table ZA.1 shall be according to the evaluation of conformity procedures indicated in Table ZA.3 resulting from the application of the clauses of this European Standard indicated therein.

EN 12285-2:2005 (E)

Table ZA.3a — Assignment of evaluation of conformity tasks (for system 3)

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all characteristics of Table ZA.1	6.3
	Initial type testing by the manufacturer	Parameters related to all characteristics of Table ZA.1	6.2.1
	Initial type testing by a notified test laboratory	Parameters related to all characteristics of Table ZA.1	6.2.1
NOTE Although some tanks may be attestation system 1, for installation in areas subject to resistance to fire regulations, uncoated steel tanks are Class A.1 and as such there would be no activity for a certification body to carry out. Such tanks would therefore become system 3 with the manufacturer responsible for the Class A.1 declaration.			

Table ZA.3b — Assignment of evaluation of conformity tasks (for system 4)

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all characteristics of Table ZA.1	6.3
	Initial type testing by the manufacturer	Parameters related to all characteristics of Table ZA.1	6.2.1

ZA.2.2 EC Certificate and Declaration of conformity

(In case of products with system 1): When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity (EC Certificate of conformity), which entitles the manufacturer to affix the CE marking. The certificate shall include:

- name, address and identification number of the certification body;
- name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;
- description of the product (type, identification, use, ...);
- provisions to which the product conforms (i.e. Annex ZA of this European Standard)
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- the number of the certificate;
- conditions and period of validity of the certificate, where applicable;
- name of, and position held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up a declaration of conformity (EC Declaration of conformity) including the following:

- name and address of the manufacturer, or his authorised representative established in the EEA;
- name and address of the certification body;

- description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (i.e. Annex ZA of this European Standard);
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- number of the accompanying EC Certificate of conformity;
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

(In case of products under system 3): When compliance with the conditions of this annex is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

- name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;
- description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (i.e. Annex ZA of this European Standard)
- particular conditions applicable to the use of the product, (e.g. provisions for use under certain conditions);
- name and address of the notified laboratory(ies);
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

(In case of products under system 4): When compliance with this annex is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

- name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;
- description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (i.e. Annex ZA of this European Standard)
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

The above mentioned declaration and certificate shall be presented in the official language or languages of the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the steel tank. The following information shall accompany the CE marking symbol:

- identification number of the certification body (only for products under systems 1);

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- name or identifying mark and registered address of the producer;
- the last two digits of the year in which the marking is affixed;
- number of the EC Certificate of conformity or factory production control certificate (if relevant);
- reference to EN 12285-2;
- description of the product: - Steel tank for the above ground storage of domestic heating oils and diesel fuels and water not intended for human consumption;
- information on those relevant essential characteristics listed in Table ZA.1 which are to be declared:
 - Reaction to fire: Class;
 - Wall thickness: Class;
 - Welding: Pass/fail;
 - Internal pressure test: Pass/fail;
 - Release of dangerous substances: ppm (normally NPD unless protective coating used);
 - Durability: Pass/fail;
- declared values and, where relevant, level or class (including "pass" for pass/fail requirements, where necessary) to declare for each essential characteristic as indicated in "Notes" in Table ZA.1;
- "No performance determined" for characteristics where this is relevant.

The "No performance determined" (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

Figure ZA.1 gives an example of the information to be given on the product, label, packaging and/or commercial documents.

 01234	<i>CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.</i> <i>Identification number of the certification body (where relevant)</i>
AnyCo Ltd, PO Box 21, B-1050 05 01234-CPD-00234	<i>Name or identifying mark and registered address of the producer</i> <i>Last two digits of the year in which the marking was affixed</i> <i>Certificate number (where relevant)</i>
EN 12285-2 steel tank: above ground storage of fuel intended for the supply of building heating/cooling systems. Wall thickness: Class A Dangerous substance NPD	<i>No. of European Standard</i> <i>Description of product and information on regulated characteristics</i>
In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation. NOTE European legislation without national derogations need not be mentioned.	

Figure ZA.1 — Example CE marking information for a system 3 product

EN 12285-2:2005 (E)

Bibliography

- [1] EN 10028-2, *Flat products made of steels for pressure purposes — Part 2: Non-alloy and alloy steels with specified elevated temperature properties*
- [2] EN 10028-7, *Flat products made of steels for pressure purposes — Part 7: Stainless steels*
- [3] EN 10088-1, *Stainless steels — Part 1: List of stainless steels*
- [4] EN 13012, *Petrol filling stations — Construction and performance of automatic nozzles for use on fuel dispensers*
- [5] EN 13160-1, *Leak detection systems — Part 1: General principles*
- [6] EN 13160-2, *Leak detection systems — Part 2: Pressure and vacuum systems*
- [7] EN 13160-3, *Leak detection systems — Part 3: Liquid systems for tanks*
- [8] EN 13160-4, *Leak detection systems — Part 4: Liquid and/or vapour sensor systems for use in leakage containments or interstitial spaces*
- [9] prEN 13160-5, *Leak detection systems — Part 5: Tank gauge leak detection systems*
- [10] EN 13160-6, *Leak detection systems — Part 6: Sensors in monitoring wells*
- [11] EN 13160-7, *Leak detection systems — Part 7: General requirements and test methods for interstitial spaces, leak protecting linings and leak protecting jackets*
- [12] EN 13352, *Specification for the performance of automatic tank contents gauges*
- [13] EN 13616, *Overfill prevention devices for static tanks for liquid petroleum fuels*
- [14] EN 13617-1, *Petrol filling stations — Part 1: Safety requirements for construction and performance of metering pumps, dispensers and remote pumping units*
- [15] EN 13617-2, *Petrol filling stations — Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers*
- [16] EN 13617-3, *Petrol filling stations — Part 3: Construction and performance of shear valves*
- [17] EN 13617-4, *Petrol filling stations — Part 4: Safety requirements for construction and performance of swivels for use on metering pumps and dispensers*
- [18] prEN 14125, *Thermoplastic and flexible metal pipework for underground installation at petrol stations*
- [19] EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2000)*

CALIBRATION TABLE FOR CYLINDRICAL TANK WITH
HORIZONTAL AXIS

THE DATA BELOW IS ONLY THEORETICAL AND MAY VARY BY ± 3%
4F838

Plant Tank
Capacity 780 gal
Diameter 150 cm
Lenght Shaping 150 cm
17 cm

Height cm) Volume (gal)									
Height	Volume	Height	Volume	Height	Volume	Height	Volume	Height	Volume
1	0,528	2	1,849	3	3,434	4	5,283	5	7,397
6	9,510	7	12,152	8	14,794	9	17,700	10	20,605
11	23,775	12	26,946	13	30,644	14	34,078	15	37,777
16	41,739	17	45,702	18	49,664	19	53,891	20	58,118
21	62,609	22	67,100	23	71,591	24	76,346	25	81,101
26	85,856	27	90,875	28	95,894	29	101,178	30	106,197
31	111,481	32	116,764	33	122,312	34	127,859	35	133,407
36	138,954	37	144,766	38	150,314	39	156,126	40	162,202
41	168,013	42	174,089	43	179,901	44	186,241	45	192,317
46	198,393	47	204,733	48	210,809	49	217,149	50	223,490
51	230,094	52	236,434	53	242,774	54	249,378	55	255,983
56	262,587	57	269,191	58	275,796	59	282,400	60	289,004
61	295,608	62	302,477	63	309,081	64	315,950	65	322,554
66	329,422	67	336,291	68	343,159	69	349,764	70	356,632
71	363,501	72	370,369	73	377,238	74	384,106	75	390,975
76	397,843	77	404,712	78	411,580	79	418,448	80	425,053
81	431,921	82	438,790	83	445,658	84	452,527	85	459,131
86	465,999	87	472,604	88	479,472	89	486,076	90	492,945
91	499,549	92	506,154	93	512,758	94	519,362	95	525,966
96	532,307	97	538,911	98	545,251	99	551,855	100	558,195
101	564,536	102	570,876	103	576,952	104	583,292	105	589,368
106	595,444	107	601,520	108	607,596	109	613,672	110	619,483
111	625,295	112	631,107	113	636,919	114	642,466	115	648,278
116	653,826	117	659,109	118	664,657	119	669,940	120	675,224
121	680,243	122	685,526	123	690,546	124	695,301	125	700,320
126	705,075	127	709,566	128	714,321	129	718,812	130	723,039
131	727,266	132	731,492	133	735,719	134	739,417	135	743,380
136	747,078	137	750,513	138	753,947	139	757,381	140	760,551
141	763,457	142	766,363	143	769,005	144	771,382	145	773,760
146	775,873	147	777,722	148	779,043	149	780,364	150	780,892



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MANUALE USO E MANUTENZIONE/

USER AND MAINTENANCE MANUAL

Direttiva Macchine 2006/42/CE /

Machinery Directive 2006/42/EC

SERBATOI EROGATORI /

DISPENSING TANKS

TANK-FUEL



Modelli / Models TF 1200 – TF 2000 – TF 3000A – TF 5000A – TF 5000B – TF 7000A – TF 9000 – TF 9000A



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STORICO DELLE REVISIONI

Indice		Revisione no. / Data				
Capitolo	0	1	2020	2	26/01/2021	
	1	1	2020	2	26/01/2021	
	2	1	2020	2	26/01/2021	
	3	1	2020	2	26/01/2021	
	4	1	2020	2	26/01/2021	
	5	1	2020	2	26/01/2021	
	6	1	2020	2	26/01/2021	
	7	1	2020	2	26/01/2021	
	8	1	2020	2	26/01/2021	
	9	1	2020	2	26/01/2021	
	10	1	2020	2	26/01/2021	
	11	1	2020	2	26/01/2021	
	12	1	2020	2	26/01/2021	

APPROVAZIONE

Nome	Società o Ruolo
	Fuel Solution



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1 Premesse



1.1 Conseguenze in caso di inosservanza

Il fabbricante FUEL SOLUTION declina ogni responsabilità nei seguenti casi:

- manipolazione negligente delle apparecchiature;
- manutenzione insufficiente e/o non in conformità con le istruzioni riportate nel presente manuale;
- manutenzione e/o azioni inadeguate effettuate da personale sprovvisto della necessaria istruzione e dell'attrezzatura adeguata;
- impiego non appropriato;
- modifiche non apportate da personale specializzato autorizzato dallo stesso fabbricante.



Qualsiasi modifica e/o sostituzione di componenti con componenti di differenti caratteristiche tecniche, deve essere sottoposta al parere e al benessere del fabbricante

1.2 Struttura del manuale

Il Manuale d'Istruzioni è costituito da una copertina, un indice, da una serie di capitoli e di allegati.

Nella copertina sono riportati i dati identificativi della macchina nonché i modelli, e infine, una fotografia generale della macchina, per agevolare il lettore nell'identificare la macchina ed il relativo manuale.

A partire dalla prima pagina dell'indice, vi è la tabella di revisione del Manuale d'uso e manutenzione e delle sue parti, che correla il livello di revisione dell'intero Manuale con quello dell'indice e dei capitoli componenti, e riporta la data di emissione dell'intero Manuale con un certo livello di revisione.

Questo documento presuppone che nell'ambiente, ove sia stata destinata la macchina, vengano osservate le vigenti norme di sicurezza e igiene del lavoro, nonché le indicazioni di installazioni che sono esaustivamente indicate nel capitolo sull'installazione.

Le istruzioni, i disegni e la documentazione contenuti nel presente Manuale sono di natura tecnica riservata, di stretta proprietà del fabbricante e non possono essere riprodotti in alcun modo, né integralmente, né parzialmente salvo esplicita autorizzazione dello stesso fabbricante.

Il cliente ha inoltre la responsabilità di assicurarsi che, nel caso il presente documento subisca modifiche da parte del fabbricante, solo le versioni aggiornate del Manuale siano effettivamente presenti nei punti di utilizzo.

1.3 Come leggere il manuale d'uso e manutenzione

Il Manuale è stato suddiviso in capitoli autonomi, ciascuno dei quali è rivolto ad una specifica figura di operatore, per il quale sono state definite le competenze, necessarie ad operare sulla macchina in condizioni di sicurezza.

A tale scopo all'inizio di ogni capitolo, una tabella riporta i pittogrammi rappresentanti le figure professionali a cui le informazioni sono rivolte.

Per facilitare la comprensione del testo, si usano termini, abbreviazioni e pittogrammi, il cui significato è indicato al [PARAGRAFO 1.8 Glossario pittogrammi](#)

1.4 Scopo del manuale

Il manuale è stato realizzato in conformità alle prescrizioni della Direttiva Macchine, Direttiva Bassa Tensione e Compatibilità Elettromagnetica e intende riassumere le istruzioni per la manutenzione e l'uso sicuro della macchina denominata "Serbatoi Erogatori Tank Fuel".

Nel proseguo del presente manuale con il termine "macchina" si intende il serbatoio erogatore.



Il fabbricante Fuel Solution è responsabile delle sole opere realizzate e di eventuali danni derivanti dal suo funzionamento.

Il manuale ha lo scopo di fornire tutte le informazioni necessarie per:

- la corretta sensibilizzazione degli operatori alle problematiche della sicurezza;
- la conoscenza approfondita del funzionamento della macchina e dei suoi limiti di utilizzo;
- il corretto uso della macchina in condizioni di sicurezza;
- effettuare interventi di manutenzione sulla macchina, in modo corretto e sicuro;
- eseguire le verifiche funzionali necessarie per mantenere la macchina efficiente nel tempo;
- eseguire la verifica di messa in servizio della macchina.



Gli utilizzatori hanno l'obbligo, secondo le norme vigenti, di leggere attentamente il contenuto di questo Manuale di Istruzioni e di farlo leggere ai manutentori addetti, per le parti che a loro competono.



Il tempo impiegato allo scopo sarà largamente ricompensato dal corretto funzionamento della macchina e da un suo utilizzo in condizioni di sicurezza.



Questo documento presuppone che nei luoghi, ove è stata destinata la macchina vengano osservate le vigenti norme di sicurezza e igiene del lavoro.

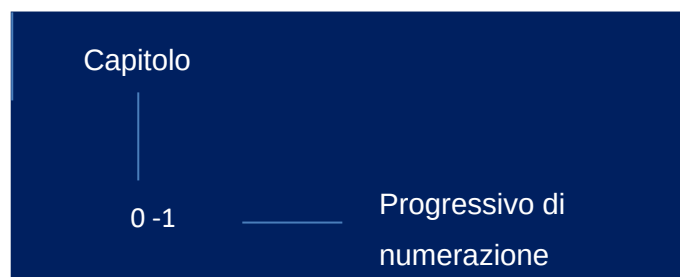


Il cliente ha inoltre la responsabilità di assicurarsi che, nel caso il presente documento subisca modifiche da parte del fabbricante, solo le versioni aggiornate del Manuale siano effettivamente presenti nei punti di utilizzo.

Le istruzioni, i disegni e la documentazione contenuti nel presente Manuale sono di natura tecnica riservata, di stretta proprietà del fabbricante e non possono essere riprodotti in alcun modo, né integralmente, né parzialmente.

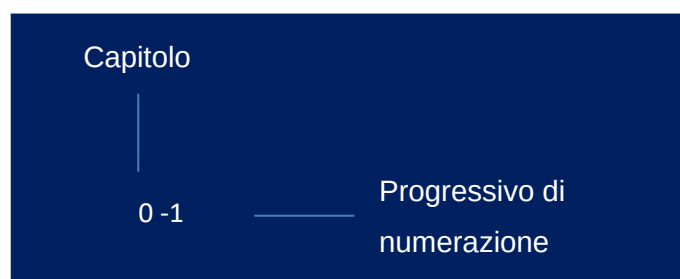
1.4.1 Numerazione Figure

Ogni Figura è numerata progressivamente ed è composta come segue:



1.4.2 Numerazione Tabelle

Ogni tabella è numerata progressivamente ed è composta come segue:



1.4.3 Unità di misura

Le unità di misura utilizzate sono quelle previste dal Sistema Internazionale (SI):

Grandezza fisica	Simbolo	Nome dell'unità SI	Simbolo dell'unità SI
Lunghezza	l	metro	M
Massa	m	chilogrammo	kg
Temperatura termodinamica	T	kelvin	K
Volume	V	Metro cubo	m ³

1.5 Conservazione del manuale d'uso e manutenzione

Il Manuale va conservato integro e deve accompagnare la macchina in tutti i passaggi di proprietà che la medesima potrà avere nella sua vita.

La conservazione deve essere favorita maneggiandolo con cura, con le mani pulite, e non depositandolo su superfici sporche che possano comprometterne la lettura in tutte le sue parti.

Non debbono essere asportate, strappate o arbitrariamente modificate delle parti.

Il Manuale va archiviato in un ambiente protetto da umidità e calore e nelle prossime vicinanze della macchina a cui si riferisce.

1.6 Metodologia di aggiornamento del manuale d'uso e manutenzione

In caso di modifiche alla macchina concordate con il fabbricante e che comportino la modifica di uno o più capitoli del Manuale, sarà cura del fabbricante inviare i capitoli aggiornati interessati dalla modifica.

È responsabilità dell'utilizzatore, seguendo le indicazioni che accompagnano la documentazione aggiornata, sostituire in tutte le copie possedute i vecchi capitoli con i nuovi.

Il fabbricante declina ogni responsabilità riguardante guasti, incidenti o inconvenienti vari dovuti all'inosservanza delle prescrizioni contenute nel presente manuale. Inoltre, il fabbricante non si ritiene responsabile per l'esecuzione di modifiche, varianti, e/o modifiche alla macchina non autorizzate dal fabbricante stesso.

1.7 Destinatari

Il manuale è parte integrante della macchina e deve essere conservato con cura fino allo smantellamento finale della stessa.

Il manuale deve essere utilizzato da tutti gli addetti nel suo ciclo vitale.

- TECNICO INSTALLATORE;
- OPERATORI;
- MANUTENTORI ELETTRICI;
- MANUTENTORI MECCANICI.

La macchina ha un uso destinato ad un utilizzo esclusivo e non generalizzato, per cui deve essere affidato solamente a figure qualificate, in particolare che:

- siano fisicamente e psichicamente idonee alla conduzione della macchina;
- siano state giudicate idonee dal datore di lavoro a svolgere il compito affidatogli;
- conoscano le procedure di emergenza e la loro attuazione;
- siano istruite formate ad utilizzare la macchina;
- abbiano ricevuto la formazione e le qualifiche obbligatorie in accordo alla legislazione vigente, in materia di igiene e sicurezza sul lavoro.

Per ulteriori informazioni relativamente alla qualifica dei destinatari VEDI PARAGRAFO 1.8.2 Pittogrammi e tipologia di operatore.

1.8 Glossario e pittogrammi

Nel presente paragrafo si elencano i termini tecnici utilizzati nel presente manuale ed i pittogrammi con il relativo significato utilizzati per indicare la qualifica dell'operatore cui le informazioni esposte sono rivolte. Il loro impiego

permette di fornire rapidamente ed in modo univoco le informazioni necessarie alla corretta utilizzazione della macchina in condizioni di sicurezza.

1.8.1 Glossario

PERICOLO

Una potenziale fonte di lesione o danno alla salute.

ZONA PERICOLOSA

Qualsiasi zona all'interno e/o in prossimità della macchina in cui la presenza di una persona costituisca un rischio per la sicurezza e la salute di detta persona.

PERSONA ESPOSTA

Qualsiasi persona che si trovi interamente o in parte in una zona pericolosa.

OPERATORE

La o le persone incaricate di utilizzare la macchina

RISCHIO

Combinazione della probabilità e della gravità di una lesione o di un danno per la salute che possano insorgere in una situazione pericolosa.

RIPARO

Elemento della macchina utilizzato specificatamente per garantire la protezione tramite una barriera materiale.

DISPOSITIVO DI PROTEZIONE

Dispositivo (diverso da un riparo) che riduce il rischio, da solo o associato ad un riparo.

USO PREVISTO

L'uso della macchina conformemente alle informazioni fornite nelle istruzioni per l'uso.

USO SCORRETTO RAGIONEVOLMENTE PREVEDIBILE

Uso della macchina in un modo diverso da quello indicato nelle istruzioni per l'uso, ma che può derivare dal comportamento umano facilmente prevedibile.

QUALIFICA DELL'OPERATORE

Livello minimo delle competenze che deve possedere l'operatore per svolgere l'operazione descritta.

NUMERO DI OPERATORI

Numero di operatori adeguato a svolgere in modo ottimale e in sicurezza l'operazione descritta e derivante da una attenta analisi svolta dal fabbricante, per cui l'utilizzatore di un numero diverso di addetti potrebbe impedire di ottenere il risultato atteso o mettere in pericolo la sicurezza del personale coinvolto.

RISCHIO RESIDUO

Rischi che permangono, malgrado siano state adottate le misure di protezione integrate nella progettazione della macchina e malgrado le protezioni e le misure di protezione complementari adottate.

1.8.1 Pittogrammi e tipologie di operatore

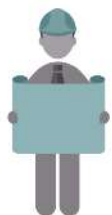
Questo documento utilizza le seguenti convenzioni tipografiche:

I pittogrammi di notifica appaiono in **grassetto**, **MAIUSCOLO e azzurro**. Le citazioni appaiono in *italico*.

La Tabella 1-1 riassume i pittogrammi utilizzati per identificare le tipologie di operatore

Tabella 1-1 Pittogrammi tipologie di operatore

	Manutentore Elettrico Operatore qualificato informato e istruito dal datore di lavoro in accordo alla legislazione vigente in materia di salute, sicurezza e igiene sul lavoro (art.71 D.lgs. 81/08) e a conoscenza delle istruzioni riportate sul presente manuale. Operatività: manutenzione elettrica ordinaria, pulizia, ricerca guasti, impostazione parametri strumenti.
	Manutentore meccanico Operatore qualificato informato e istruito dal datore di lavoro in accordo alla legislazione vigente in materia di salute, sicurezza e igiene sul lavoro (art.71 D.lgs. 81/08) Operatività: manutenzione meccanica ordinaria, pulizia, ricerca guasti, impostazione parametri strumenti.
	Operatore Personale di reparto incaricato, informato e istruito dal datore di lavoro in accordo alla legislazione vigente in materia di salute, sicurezza e igiene sul lavoro (art.71 D.lgs. 81/08) Operatività: conduzione macchina.

	Assistente ricambi fabbricante Persona addetta del fabbricante. Operatività: gestione richiesta e consegna ricambi per manutenzione.
	Tecnico installatore Operatore qualificato, informato e istruito e AUTORIZZATO dal fabbricante in accordo alla legislazione vigente in materia di salute, sicurezza e igiene sul lavoro (art.71 D.lgs. 81/08). Operatività: Installazione, manutenzione straordinaria, regolazioni, messa in servizio.
	Ispettore Organismo notificato Tecnico incaricato dall'organismo notificato, se necessario, al fine di eseguire la verifica funzionale necessaria all'ottenimento della certificazione.

La Tabella 1-2 riassume i pittogrammi utilizzati nel presente manuale:

Tabella 1-2 Pittogrammi di notifica

	Attenzione Indica le istruzioni che solo se correttamente seguite evitano situazioni di rischio per le persone, informa sui pericoli e su come evitarli, suggerisce procedure comportamentali.
	Avvertenza Indica le situazioni che possono causare rischio per il sistema di sicurezza o per il prodotto in lavorazione e/o per l'ambiente.
	Nota Bene Indica le notizie utili per la consultazione del manuale e per il buon funzionamento della macchina.

1.9 Segnaletica di sicurezza applicata alla macchina

- I pittogrammi contenuti in un triangolo indicano **PERICOLO**.
- I pittogrammi contenuti in un cerchio impongono un **DIVIETO/OBBLIGO**.

Tabella 1-3 Segnaletica di sicurezza

	Rischio elettrico: Indica il pericolo di scossa elettrica.
	Pericolo carichi sospesi
	Nel caso remoto in cui si dovesse sviluppare un incendio causato da un corto circuito dell'apparecchiatura elettrica a bordo della macchina, è assolutamente vietato utilizzare acqua per lo spegnimento delle fiamme: in questo caso, occorre adoperare gli estintori appropriati presenti nel luogo di lavoro.
	È vietato rimuovere le protezioni
	Durante le attività di manutenzione della macchina è necessario porre sulle parti accessibili cartelli di divieto di accesso per lavori in corso o manutenzione in corso.
	Durante il funzionamento del sistema, secondo quanto previsto dal presente documento e nelle operazioni di manutenzione, è vietato l'accesso alle persone non autorizzate
	È obbligatorio indossare le calzature di sicurezza.

	È obbligatorio indossare guanti protettivi
	E' obbligatorio indossare il casco protettivo

1.10 Struttura del manuale d'uso e manutenzione

Questo documento è diviso nei seguenti capitoli:

- Capitolo 1 “Premesse”;
- Capitolo 2 “Dichiarazione di conformità”
- Capitolo 3 “Targhetta identificativa”;
- Capitolo 4 “Prefazione”
- Capitolo 5 “Prescrizioni”;
- Capitolo 6 “Descrizione tecnica”;
- Capitolo 7 “Installazione, movimentazione, posizionamento e messa in funzione”;
- Capitolo 8 “Manutenzione”;
- Capitolo 9 “Demolizione”;
- Capitolo 10 “Valutazione dei rischi”;
- Capitolo 11 “Avvertenze finali”;
- Capitolo 12 “Allegati”.

1.11 Idioma

Il manuale d'uso ed istruzioni è stato redatto nell'idioma d'origine e di scolarizzazione degli operatori, manutentori e verificatori che sono addetti ad utilizzare il serbatoio erogatore automatico ovvero in lingua italiana.



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2 Dichiarazione di conformità

Dichiarazione di Conformità CE
(In accordo con l'allegato IIA della Direttiva 2006/42/CE)



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sotto la propria ed esclusiva responsabilità

DICHIARA

CHE LA MACCHINA

Modello	Tank Fuel TF1X (orizzontali con vasca)
Tipo	Serbatoi erogatori di gasolio Tank Fuel
Matricola	TF
Anno di costruzione	
Uso previsto	Erogazione gasolio

È conforme a quanto prescritto dalle seguenti disposizioni legislative vigenti:

- **Direttiva Europea 2006/42/CE relativa alle macchine**
- **Direttiva Europea 2014/30/UE concernente il ravvicinamento delle legislazioni degli stati membri relative alla compatibilità elettromagnetica**

Riferimento alle principali norme armonizzate utilizzate:

NORMA	TITOLO
EN ISO 12100:2010	Sicurezza del macchinario – Principi generali di progettazione – Valutazione del rischio e riduzione del rischio
ISO/TR 14121-2:2013	Sicurezza del macchinario – Valutazione del rischio – Parte 2: Guida pratica ed esempi di metodi
EN 60204-1:2006/AC:2010	Sicurezza del macchinario – Equipaggiamento elettrico delle macchine Parte 1: Regole generali
EN ISO 14122-3:2016	Sicurezza del macchinario – Mezzi di accesso permanenti al macchinario – Parte 3: Scale, scale a castello e parapetti
EN ISO 14122-4:2016	Sicurezza del macchinario – Mezzi di accesso permanenti al macchinario. – Parte 4: Scale fisse
ISO 14120:2015	Sicurezza del macchinario – Ripari – Requisiti generali per la progettazione e la costruzione di ripari fissi e mobili
EN 61000-6-4:2007/A1:2011	Compatibilità elettromagnetica (EMC) – Parte 6-4: Norme generiche – Emissione per ambienti industriali
EN 61000-6-2:2005/AC:2005	Compatibilità elettromagnetica (EMC) – Parte 6-2: Norme generiche – Immunità per ambienti industriali

e autorizza

Dipartimento **Ufficio Tecnico**
Società **Fuel Solution S.r.l.**
Indirizzo **Via Mediana, 18 - 64023, Atri (TE)**

a costituire il fascicolo tecnico per suo conto

Data _____

Legale Rappresentante

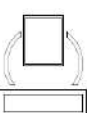
Nome: **Claudio**
Cognome: **Rapacchia**
Firma

3 Targhetta identificativa

Come previsto dalla Direttiva Macchine 2006/42/CE e dal D.M. 22/11/2017, ogni serbatoio è munito di una targhetta identificativa in alluminio, fissata sul serbatoio mediante apposizione di rivetti a strappo.

La targa identificativa riporta:

- I dati del costruttore
- Dati e caratteristiche del serbatoio
- Riferimenti di omologazione
- Logo CE

 Fuel Solution s.r.l. Via Mediana, 18 64032 Atri (TE) Italy Tel. 0861/668551 - fax 0861/650980 www.demo-serbatoi.com info@demo-serbatoi.com 		
Omologazione Ministero dell'Interno		
1 PRESSIONE BAR (Pressure)		3mm SPESSORE (Thickness)
ANNO (Year)		S235JR MATERIALE (Material)
TF N° FABBRICA (Serial Number)	Kg PESO A VUOTO (Empty weight)	CAPACITA' LT (Capacity)

L'utente è responsabile della perfetta conservazione della targhetta identificativa del prodotto. In caso di deterioramento della stessa è necessario richiedere un duplicato direttamente al costruttore

4 Prefazione



Invitiamo a leggere attentamente le istruzioni d'uso e manutenzione di seguito riportate, prima della messa in servizio del "CONTENITORE DISTRIBUTORE".

E' importante non mettere in funzione la macchina prima dell'arrivo del tecnico responsabile preventivamente ed opportunamente selezionato.

	Le informazioni riportate in questo manuale devono essere scrupolosamente rispettate.
	Gli utilizzatori hanno l'obbligo, secondo le norme vigenti, di leggere attentamente il contenuto di questo Manuale di Istruzioni e di farlo leggere ai manutentori addetti, per le parti che a loro competono.

Il "CONTENITORE DISTRIBUTORE" è già collaudato all'origine, si dovrà realizzare quindi, solo il posizionamento e la connessione elettrica presso il luogo di lavoro.

IN CASO DI NECESSITA' RIVOLGERSI AL SERVIZIO ASSISTENZA TECNICA DELLA



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5 Prescrizioni



- È vietato utilizzare l'apparecchiatura senza prima avere letto attentamente e compreso le istruzioni per l'uso contenute nel presente manuale;
- Prima di installare la macchina, il cliente deve assicurare che il pavimento, dove verrà installata sia livellato, che ne possa sopportare il peso (vedere targhetta identificativa), che vi siano le predisposizioni tecnologiche e che ci sia sufficiente luce ambiente o illuminazione adeguata. Per maggiori informazioni si vedano i disegni meccanici;
- È fatto obbligo all'utilizzatore, prima dell'istallazione, di verificare che l'impianto elettrico di rete al quale la macchina verrà collegata corrisponda alla tensione di targa, e che sia fornito di una buona messa a terra;
- L'operatore deve aver cura o fare in modo che lo spazio e il pavimento intorno alla macchina siano ben illuminati e sempre puliti, così da evitare scivolamenti e conseguenti urti e/ o cadute. Lasciare liberi gli spazi per la manutenzione;
- Per l'allacciamento all'impianto di terra (spina o occhiello), rispettare le leggi del paese nel quale la macchina viene installata;
- Il personale addetto alla movimentazione della macchina e delle attrezzature deve sempre indossare guanti da lavoro, scarpe antinfortunistiche ed occhiali protettivi;
- È vietato camminare o salire sulla struttura portante dell'apparecchiatura;
- È vietato avvicinare oggetti che possano esplodere, incendiare o comunque divenire pericolosi per persone o cose;
- L'organizzazione delle attività lavorative nelle quali è impiegata la macchina, deve essere conforme alle norme di sicurezza vigenti, deve garantire l'interdizione all'apparecchiatura a persone diverse dall'utilizzatore, ai minori di anni diciotto, ad oggetti estranei od animali;
- È vietato utilizzare l'apparecchiatura per usi diversi da quelli prestabiliti;
- La macchina deve essere utilizzata da personale in possesso di condizioni psicofisiche adatte (ad esempio in grado di vedere, non epilettico, non soggetto all'uso di psicofarmaci, ecc...);
- E' vietato introdurre parti del corpo (es. mani, dita, ecc...), tra le zone in movimento;
- È vietato modificare, alterare o manomettere in alcun modo gli elementi mobili, i ripari, i dispositivi di protezione;
- È vietato azionare l'apparecchiatura senza essersi accertati che tutti i dispositivi di sicurezza siano funzionanti e correttamente installati;
- Le operazioni di assistenza e la manutenzione della macchina devono essere eseguite solo da un manutentore elettrico abilitato o manutentore meccanico addestrato e abilitato che è a conoscenza delle prescrizioni di sicurezza e del contenuto di questo manuale;

- Non rimuovere, deteriorare o nascondere le etichette di avvertimento, ma osservarle e rispettare le indicazioni;
- In caso d'illeggibilità o deterioramento delle etichette, devono essere sostituite; in caso di mancanza richiedere a FUEL SOLUTION srl;
- Ricordarsi che dopo ogni intervento di pulizia, lubrificazione, regolazione e manutenzione, si devono ripristinare: tutte le sicurezze; rimontare e/o chiudere tutti i carter di protezione;
- I segnali di allarme macchina devono essere rigorosamente rispettati;
- Al termine della vita della macchina, non disperderla nell'ambiente ma rivolgersi ad agenzie di smaltimento rifiuti meccanici;
- La macchina non deve essere installata in zone ATEX.

6 Descrizione tecnica



I serbatoi erogatori denominati anche contenitori distributori, serie TANK FUEL, sono delle apparecchiature, “macchine”, appositamente studiate per il contenimento e l'erogazione di combustibili liquidi di categoria “C” (“liquidi aventi un punto di infiammabilità da oltre 65° C sino a 125° C. Rientrano nella categoria “C” anche i liquidi combustibili con punto di infiammabilità inferiore a 65°C, ma non sotto i 55°C”, secondo DM 22/11/2017). Le apparecchiature sono costituite da un serbatoio di tipo cilindrico ad asse orizzontale corredato di bacino di contenimento con capacità utile pari al 110% del contenuto del serbatoio, una tettoia opzionale, un gruppo elettropompa con contatore, tubo e pistola di erogazione, alloggiati in apposito contenitore dotato di portello anteriore posto su un lato del serbatoio stesso. Dentro il contenitore, a fianco del gruppo elettropompa, è posizionata una scatola con grado di protezione IP 55, che racchiude tutte le connessioni elettriche.

6.1 Caratteristiche tecniche

Vengono di seguito riportate le caratteristiche principali dei serbatoi, bacini di contenimento.

Tabella 6-1 Tipologia serbatoi e caratteristiche geometriche

TIPO	CAPACITA' GEOMETRICA (litri)	DIAMETRO ESTERNO (mm)	LUNGHEZZA TOTALE (mm)	DIMENSIONI BACINO DI CONTENIMENTO 110% (PxLxH mm) - (CAPACITA' L)	PESO TEORICO A VUOTO (kg)
TF 1200	1.140	950	1.694	1.200x2.100x530	1.335
TF 2000	2.061	1.270	1.722	1.400x2.200x737	2.270
					375
					480

TF 3000A	2.994	1.500	1.818	1.650x2.400x870	3.445	610
TF 5000A	5.068	1.800	2.150	2.250x2.430x1.050	5.740	815
TF 5000B	4.992	1.800	2.120	2.250x2.430x1.050	5.740	815
TF 7000A	6.888	1.800	2.870	2.250x3.260x1.050	7.701	991
TF 9000	8.910	1.800	3.670	2.160x4.100x1.120	9.918	1.140
TF9000A	8.878	2.050	2.884	2.430x3.350x1.220	9.931	1.160

6.2 Serbatoi e accessori

I serbatoi ed i bacini di contenimento sono realizzati in acciaio al carbonio di qualità S235JR, dello spessore di 3 mm, assemblati mediante saldatura automatizzata a filo continuo in atmosfera controllata.

Le superfici esterne vengono trattate con il seguente ciclo:

- Sgrassaggio accurato
- Applicazione di smalto a mano unica (antiruggine + finitura) con adesione diretta su lamiera colori Grigio RAL 9006 o Blu RAL 5015.

I serbatoi sono corredati dai seguenti accessori:

- piedi di sostegno;
- scarico di fondo;
- tubazione di aspirazione da 1" con valvola di non ritorno con molla tarata;
- filtro in aspirazione;
- valvola di sicurezza a sfera da 1" per chiusura totale;
- passo d'uomo con diametro da 400 mm tipo gasolio sul quale son montati una bocca di carico da 3" con attacco rapido a baionetta in ottone e valvola limitatrice di carico al 90 %;
- dispositivo di blocco pompa al minimo livello;
- quadro elettrico e messa a terra;
- scaletta di servizio a partire da 2000 L;
- vasca/bacino di contenimento al 110% in lamiera, completo di drenaggio per l'acqua piovana, attachi di messa a terra e predisposizione di montaggio tettoia;
- tettoia di protezione superiore realizzata con telaio tubolare e copertura in lamiera grecata zincata;
- sfiato da 1"-1/2 con cappello tagliafiamma in ottone;

- attacco da 1"-1/2 con indicatore di livello meccanico.

6.3 Gruppi erogatori

I contenitori distributori possono essere dotati di uno dei seguenti erogatori:

MARCA:	PIUSI
Versioni:	BY-PASS 55 FILTER; E80; PANTHER 56, PANTHER 72; BP 2000, BIPOMPA a 12 o 24 volt;
MARCA:	PIUSI
Modelli:	"SERVICE "
Versioni:	"SERVICE 80", "SERVICE 80 MC 30", "SERVICE 120", "SERVICE 120 MC30";
MARCA:	PIUSI
Modelli:	"SELF SERVICE "
Versioni:	"SELF SERVICE 70 MC", "SELF SERVICE 70 MC F", "SELF SERVICE 70 MC F P", "SELF SERVICE 70 MC FM", "SELF SERVICE 100 MC", "SELF SERVICE 100 MC F", "SELF SERVICE 100 MC F P", "SELF SERVICE 100 MC FM", "SELF SERVICE 70 K44", "SELF SERVICE 70 K44 F", "SELF SERVICE 100 K44", "SELF SERVICE 100 K44 F", "SELF SERVICE 70 MC F 230/50", "SELF SERVICE 100 MC F 230/50", "SELF SERVICE TANK 70 MC 230/50", "SELF SERVICE TANK 100 MC 230/50", "SELF SERVICE TANK 70 FM 230/50", "SELF SERVICE TANK 100 FM 230/50", "SELF SERVICE TANK 70 K44" e "SELF SERVICE TANK 100 K44";
MARCA:	PIUSI
Modelli:	CUBE 50
Versioni:	CUBE 50/K33, CUBE 50/MC30;
MARCA:	PIUSI
Modelli:	CUBE 56/33
Versioni:	CUBE 56/MC, CUBE 70/33, CUBE 70/MC;
MARCA:	ADAM PUMPS S.p.A.
Versioni:	PA1 230-70; LIGHTPUMP-80; LIGHTPUMP-100; PICK-UP 230-60; (tutte alimentate a 230 V in c.a.)
MARCA:	T.O.M.E.S.
Versioni:	TOM 56, TOM 78; SELF 55, SELF 80; ROLL - MATIC 60, ROLL - MATIC 80;

Figura 6-1 Tipologia gruppi erogatori

I gruppi di erogazione sono composti da:

- Gruppo con elettropompa volumetrica autoadescante;
- Contatore volumetrico;
- Pistola erogatrice;
- Tubo metri 4 raccordato da 1" il tutto contenuto in apposito armadio con chiusura a chiave.

7 Installazione, movimentazione, posizionamento e messa in funzione



Nel presente capitolo sono definite le procedure per il trasporto, il posizionamento, l'installazione e la messa in funzione della macchina.

La movimentazione, il posizionamento e la messa in funzione deve essere effettuata da personale specializzato, o comunque da parte di personale tecnico competente che ha ricevuto tutte le informazioni necessarie per un utilizzo corretto dell'apparecchiatura.

Il sollevamento dei componenti costituenti le apparecchiature dovrà essere effettuato come di seguito descritto.

TIPO	CAPACITA' GEOMETRICA (litri)	DIAMETRO ESTERNO (mm)	LUNGHEZZA TOTALE (mm)	DIMENSIONI BACINO DI CONTENIMENTO 110% (PxLxH mm) - (CAPACITA' lt)	PESO TEORICO A VUOTO (kg)
TF 1200	1.140	950	1.694	1.200x2.100x530	1.335
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TF9000A	8.878	2.050	2.884	2.430x3.350x1.220	9.931

L'apparecchiatura deve essere posizionata in una zona adeguata, tenendo in considerazione i seguenti fattori:



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- **Stabilità:** scegliere una zona sufficientemente stabile onde evitare cadute e/o ribaltamenti.
- **Utilizzo:** premesso che questa apparecchiatura viene utilizzata esclusivamente per l'erogazione di combustibili liquidi, è necessario quindi prevedere le relative operazioni di carico e scarico studiando le apposite aree di manovra.
- **Fonti di rischio circostanti:** posizionare il contenitore lontano dalle eventuali potenziali fonti di rischio come il calore, elettricità, urti ecc.
- **Facile accesso:** l'apparecchiatura deve essere posizionata in modo tale da facilitare le operazioni di manutenzione, ispezione, riparazione ecc...

Una volta scelta la zona di posizionamento dell'apparecchiatura, si procederà nelle seguenti operazioni.

1) Posizionamento del serbatoio

Sollevare il serbatoio e il bacino di contenimento mediante adeguato mezzo di sollevamento, per una altezza pari e sufficiente per la movimentazione. Il sollevamento deve essere effettuato utilizzando esclusivamente l'apposito gancio posto sulla parte superiore del serbatoio, mediante cinghie o catene adeguate. Eseguire le manovre di sollevamento, movimentazione e posizionamento a serbatoio vuoto.

2) Montaggio tettoia (opzionale)

La tettoia per motivi di trasporto viene fornita smontata.

Sollevare la tettoia, per una altezza pari e sufficiente per eseguire il montaggio dei quattro tubolari montanti utilizzando adeguato mezzo di sollevamento. Il sollevamento deve essere effettuato utilizzando cinghie, catene e/o sostegni adeguati.

Una volta montati i quattro montanti, sollevare il tutto per una altezza pari e sufficiente per posizionare la parte inferiore dei quattro pilastri in prossimità dei supporti, posti lateralmente al bacino di contenimento.

3) Montaggio accessori

- Sfilato da 1" 1/2: avvitare il tubo zincato con cappellotto tagliafiamma sul manicotto posteriore situato nella parte superiore della cisterna (lo sfiato deve avere un'altezza dal piano di calpestio non inferiore a mt. 2,4).
- Indicatore di livello da 1" 1/2: avvitare l'indicatore di livello sul manicotto affianco allo sfiato situato nella parte superiore della cisterna, avendo cura di leggere le istruzioni riportate sulla confezione.

4) Collegamenti elettrici

Al termine del montaggio e posizionamento dovranno essere eseguiti i relativi collegamenti di:

- Messa a terra: collegare l'apparecchiatura ad un dispersore di terra sfruttando gli apposti attacchi posti sul bacino di contenimento.
- Alimentazione energia elettrica: eseguire il collegamento all'energia elettrica (alimentazione 220 V) sfruttando l'apposita presa in dotazione all'apparecchiatura.

5) Riempimento o carico del serbatoio

Le operazioni di carico dovranno essere effettuate da personale opportunamente istruito e dovrà avvenire nel seguente modo:

- Togliere tensione all'impianto
- Avvicinarsi in prossimità del passo d'uomo del serbatoio, utilizzando l'apposita scaletta in dotazione (per le versioni dove previste) e aprire il tappo di carico.
- Infilare nella bocca di carico l'apposito erogatore dell'autocisterna.
- Allontanarsi dalla bocca di carico.
- Eseguire il rifornimento

Al termine del rifornimento sarà possibile riavvicinarsi alla bocca di carico ed eseguire a ritroso tutte le operazioni sopra indicate.

Una volta riempito il serbatoio sarà possibile sganciare la pistola erogatrice e utilizzare l'apparecchiatura per i relativi rifornimenti

	Il fabbricante non è responsabile di eventuali danni a cose, persone ed animali in caso di non rispetto delle indicazioni sopra riportate.
	Attenzione il serbatoio è dotato di un dispositivo di controllo del minimo livello, il quale non permetterà l'azionamento del gruppo elettropompa, quando il livello del liquido scenderà al di sotto di questo valore minimo

8 Manutenzione



Gli interventi di manutenzione devono essere eseguiti da **personale autorizzato e qualificato**.

Il personale tecnico meccanico ed elettrico addetto alla manutenzione della macchina, oltre a dover essere adeguatamente formato all'uso della stessa e ad aver letto il presente manuale di uso e manutenzione, deve conoscere le leggi in vigore in materia di prevenzione degli infortuni



Le operazioni di manutenzione devono essere sempre eseguite in conformità con le indicazioni riportate sul presente manuale.

In caso di incertezze o problemi durante l'esecuzione di un intervento di manutenzione, rivolgersi al fabbricante.

Utilizzare **dispositivi di protezione** adeguati alle operazioni da svolgere, in particolare:



Calzature di protezione



Guanti protettivi



Casco di protezione

Per effettuare qualsiasi tipo di intervento occorre sempre attenersi alle seguenti norme di sicurezza:

- La pulizia e la manutenzione delle apparecchiature deve essere effettuata a quadro **spento: TOGLIERE LA TENSIONE ALL'IMPIANTO SEMPRE**

- Prima di iniziare qualsiasi tipo di intervento esporre ben in vista un cartello **“MACCHINA IN MANUTENZIONE”** e delimitare o recintare l'area di lavoro;
- L'operatore deve aver cura o fare in modo che lo spazio e il pavimento intorno alla macchina siano ben illuminati a tali da evitare scivolamenti con conseguenti cadute e/o urti. Lasciare liberi gli spazi per la manutenzione
- **Non fumare e non usare fiamme libere** in vicinanza di materiali infiammabili, come olio, gomma, plastica, ecc;
- Adottare tutti i sistemi di prevenzione infortuni (DPI), quando si effettuano le riparazioni sulla macchina, che devono essere sempre effettuate da personale esperto (tecnici qualificati);
- Non eseguire smontaggi se prima non si è provveduto ad attrezzarsi adeguatamente e se i ricambi non sono ancora disponibili;
- Prima di accingersi ad effettuare riparazioni o sostituzioni di componenti della meccanica si dovrà prestare la massima attenzione a come questi sono montati per comprenderne il funzionamento;
- Una manutenzione periodica allunga la "VITA" della macchina. Non aspettare che la stessa si rompa per effettuare la riparazione, si rischia di allungare i tempi di **"FERMO MACCHINA"**.

8.1 Note sulla manutenzione

È necessario effettuare interventi ciclici in funzione dello stato d'uso della macchina nonché delle ore di lavoro accumulate. Infatti, più la macchina è sottoposta a stress di lavoro più repentina dev'essere la sua manutenzione.

L'addetto alla manutenzione deve verificare lo stato d'uso della macchina in generale e dei suoi componenti, valutando se bisogna effettuare la sostituzione dei pezzi o sottoporli a regolare manutenzione o riparazione.

Ad ogni buon fine qui di seguito riportiamo una tabella (Tabella 8-1) di riferimento, puramente indicativa, della manutenzione programmata del serbatoio.

Polvere, trasporto, movimentazione non adeguata, prolungata esposizione alle intemperie possono ridurre notevolmente la vita degli organi interessati (gruppo pompa, erogatore, motore elettrico ecc...). Spetta al manutentore la decisione, di volta in volta, di sostituire, riparare o sottoporre a manutenzione un componente della macchina.

La cultura tecnica e l'esperienza acquisite nel tempo dal manutentore nonché le esigenze aziendali sapranno suggerire la scelta più opportuna. Campanelli d'allarme possono essere: l'insorgere di nuovi rumori, stridolii improvvisi, vibrazioni della struttura della macchina, surriscaldamento del motore elettrico.

Per i primi tre mesi di vita della macchina è consigliabile effettuare controlli manutentivi e di semplice ispezione settimanalmente.

Questo capitolo tratta le operazioni necessarie per mantenere in perfetta efficienza l'apparecchiatura in oggetto. Si ricorda che le operazioni di re-areazione e di manutenzione ordinaria e straordinaria, devono essere effettuate da personale qualificato, o richiedendo l'assistenza tecnica della casa. Per queste apparecchiature non è facile prevedere un piano di manutenzione ordinaria qui di seguito vengono riportati una serie di interventi per la risoluzione di piccoli problemi.



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8.1.1 Problemi derivanti da intasamenti

Nel caso si verifichi una diminuzione o annullamento di portata dall'erogatore ci potrebbero essere problemi di intasamento. L'apparecchiatura è dotata di due filtri in aspirazione, uno posto subito a valle della valvola di intercettazione posta sotto il serbatoio, e l'altro posto all'interno della pompa (vedi DIs. pompa). Per eseguire la pulizia o sostituzione di questi filtri è necessario chiudere la valvola di intercettazione posta sotto il serbatoio. Una volta chiusa questa valvola si potranno smontare i filtri e pulirli con aria compressa o sostituirli nel caso non siano recuperabili.

8.1.2 Problemi derivanti da perdite

Nel caso si individuano delle perdite localizzate in prossimità di connessioni e/o giunzioni filettate, verificare che le connessioni siano opportunamente strette.

Nel caso si verifichi che una connessione necessiti di una nuova guarnitura si proceda nel seguente modo:

- Chiudere la valvola di intercettazione
- svitare la connessione in oggetto;
- pulire le rimanenze della vecchia guarnitura;
- guarnire la connessione filettata;
- rimontare la connessione sull'impianto;
- riaprire la valvola di intercettazione.

Qualora i problemi persistano contattate la casa costruttrice

NOTA BENE: Verificare costantemente lo stato d'uso delle tubazioni flessibili

8.1.3 Problemi di natura elettrica

La risoluzione di problemi di natura elettrica deve essere effettuata da personale qualificato o da tecnici della casa costruttrice. (Vedi Schema impianto elettrico).

Per eventuali problemi e suggerimenti Vi preghiamo di contattare al più presto la ditta costruttrice.



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Tabella 8-1 Programma manutenzioni

DESCRIZIONE	SETTIMANALE	QUINDICINALE	MENSILE	SEMESTRALE	ANNUALE
Pompa	A		C	B	
Erogatore			A	B	
Tubazioni	A				
Valvole			A		
Motori elettrici		C	D/E		
Tenuta serbatoio		A			
Filtri			A		
Check-up generale					A

Legenda: A = controllo B = usura C = rumorosità D = assorbimento E = temperatura

9 Demolizione

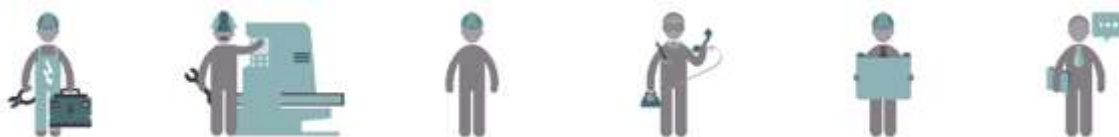


All'atto della demolizione è necessario separare le parti in materiale plastico dalle parti in metallo, dalla componentistica elettrica, nonché dall'olio, gasolio, grassi lubrificanti, per essere inviate alle apposite aziende che si occupano della "RACCOLTA DIFFERENZIATA", nel rispetto della normativa vigente in materia di smaltimento rifiuti.

I rifiuti prodotti dalla sostituzione di alcuni componenti sono rifiuti RAEE e pertanto vanno adeguatamente trattati come rifiuti speciali in base al [D.Lgs 14 marzo 2014, n. 49](#).

Nota: Nel consegnarla alle agenzie di smaltimento rifiuti ferrosi, movimentare la macchina come descritto nel capitolo 7.

10 Valutazione dei rischi



Norme: UNI EN ISO 12100:2010; EN 60204-1

DEFINIZIONI UNI EN ISO 12100:2010

- **Danno:** lesione fisica o danno alla salute;
- **Pericolo:** potenziale sorgente di danno;
- **Situazione pericolosa:** circostanza nella quale una persona è esposta ad almeno un rischio;
- **Rischio:** combinazione della probabilità di accadimento di un danno e della gravità di quel danno;
- **Rischio residuo:** rischio restante dopo aver adottato le misure di protezione;
- **Rischio tollerabile:** rischio accettato in seguito alla ponderazione del rischio

10.1 Rischi residui

Il fabbricante ha profuso il massimo sforzo affinché la macchina sia intrinsecamente sicura. Tutti i rischi sono stati eliminati e/o mitigati fino ad un livello tollerabile come stabilito dalla normativa vigente in materia di salute e sicurezza sul lavoro. Per ogni zona della macchina, per i rischi mitigati viene indicato il rischio residuo.

Zona pericolosa	Rischio residuo
Componenti alimentati in AC	Pericolo di contatti diretti e indiretti (rischio elettrico) causato da perdita di isolamento di un componente, allentamento di una connessione, perdita di grado IP a valle della manutenzione errata.
Presa alimentazione Serbatoio	Pericolo di contatti diretti e indiretti (rischio elettrico) causato da perdita di isolamento di un componente, allentamento di una connessione, perdita di grado IP a valle della manutenzione errata.
Scaletta di servizio (Ove presente)	Rischio di scivolamento dalla scaletta di servizio durante le operazioni di carico/riempimento, manutenzione. Indossare DPI (dispositivi di protezione individuale): calzature di sicurezza e casco di protezione
Zona adiacente al serbatoio durante fase di sollevamento	Pericolo di caduta dall'alto del serbatoio durante le operazioni di sollevamento, trasporto, carico e scarico. Indossare DPI (dispositivi di protezione individuale): guanti protettivi, calzature di sicurezza, casco di protezione.



È QUINDI VIETATO E PERICOLOSO:

- aggirarsi intorno al passo duomo, alla scaletta e a tutta la carpenteria circostante ai contenitori erogatori, con capelli lunghi, cravatte, collane, polsini sporgenti;
- eseguire movimentazione e sollevamenti dei contenitori erogatori, senza i relativi dispositivi di protezione individuale (guanti, elmetto, scarpe antinfortunistica ecc..);
- eseguire lavori, riparazioni, movimentazioni, lasciando sotto tensione l'apparecchiatura;
- fumare e usare fiamme libere nelle immediate vicinanze;
- esporre l'apparecchiatura a elevati fonti di calore

10.2 Materiali

I materiali utilizzati per la costruzione della macchina o i prodotti impiegati ed originati durante la sua utilizzazione non presentano rischi per la sicurezza e la salute delle persone esposte o utilizzatrici della linea

10.3 Principi di integrazione della sicurezza

In base alla loro costruzione i contenitori erogatori serie TF sono adatti a funzionare, ad essere regolati e a subire manutenzioni senza che tali operazioni, se effettuate nelle condizioni previste dal fabbricante, espongano a rischi le persone.

Per la scelta delle soluzioni più opportune il fabbricante ha applicato i seguenti principi:

- Eliminare o ridurre i rischi nel migliore modo possibile (integrazione della sicurezza nella progettazione e nella costruzione);
- Adottare le misure di protezione necessarie nei confronti dei rischi che non possono essere eliminati;

Informare gli utilizzatori dei rischi residui dovuti all'incompleta efficacia delle misure di protezione adottate, indicare cioè, se è richiesta una formazione particolare e segnalare se è necessario prevedere un dispositivo di protezione individuale (DPI).

10.4 Avvertenza all'operatore

L'operatore addetto all'uso della macchina deve comunicare tempestivamente al suo superiore di grado es. direttore dei lavori o responsabile di cantiere, eventuali anomalie riscontrate durante l'uso della macchina che possono danneggiare o compromettere la sicurezza propria o di altri.

10.5 Prevenzione incendi

Il contenitore distributore ha un limitato rischio d'incendio e di emissioni di sostanze nocive, viste le precauzioni adottate nella progettazione.

Evitare che fiamme libere, o elevate temperature vengano a contatto con le pareti della macchina.

In prossimità di ogni contenitore-distributore deve essere garantita la presenza di almeno due estintori portatili a polvere oppure a CO₂ con capacità estinguente non inferiore a 21A-89B. Nel caso in cui la capacità complessiva del deposito di distribuzione sia superiore a 6 m³, deve essere garantita anche la presenza di un estintore carrellato con capacità estinguente non inferiore a B3, raggiungibile con un percorso effettivo non superiore a 20m rispetto al contenitore-distributore più lontano.

10.6 Protezioni

La macchina è provvista di protezioni, fissate con viti, che difendono l'operatore da contatti accidentali con gli organi in movimento.



È fatto divieto la rimozione delle protezioni installate sulla macchina.

10.7 Divieti

AVVICINARSI ALL'APPARECCHIATURA IN FUNZIONE CON:

- FIAMME LIBERE
- SIGARETTE ACCESE
- FONTI DI CALORE IN GENERE
- CORPI APPUNTITI
- ABITI ABBONDANTI

11 Avvertenze finali



La messa in opera e la manutenzione deve essere eseguita da personale specializzato, tenendo in considerazione le prescrizioni di sicurezza.

Prima di iniziare il lavoro togliere tensione e fare le opportune verifiche di sicurezza. Durante il servizio delle apparecchiature elettriche di manovra:

- Inevitabilmente ci sono determinate parti elettriche che restano in bassa tensione pericolosa;
- In caso di corto circuito si possono produrre gas ionizzati e caldi;
- Non è consentito togliere il coperchio della scatola del salvamotore;
- È proibito intervenire direttamente sui contatti.

Se non sono rispettate le norme di cui sopra le conseguenze potrebbero essere gravi (pericolo di morte), così come gravi i danni materiali.



Il fabbricante non è responsabile di eventuali danni a cose, persone ed animali in caso di non rispetto delle indicazioni sopra riportate.



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12 Allegati

VERIFICA PERIODICA DEL MACCHINARIO

IDENTIFICAZIONE _____

DATA	STATO DI CONSERVAZIONE	INTERVENTI EFFETTUATI	VERIFICATORE

NOTE:

PROCEDURA DI EROGAZIONE:

FUNZIONAMENTO AUTOMATICO:

Prima di collegare la rete 220V

assicurarsi che:

1. Il contatto del dispositivo di comando sia in posizione di chiuso (dispositivo schiacciato, contatto aperto)
2. L'interruttore della pompa sia posizionato su 0.
3. Collegare la presa alla rete 220V.
4. Riarmare il dispositivo di comando
 - a questo punto il quadro effettua il reset, tutte e tre le spie motore, gasolio terminato, presenza rete, lampeggiano 4 volte;
 - la spia di presenza rete rimane accesa, mentre le altre 2 spie si spengono.
5. Pigiare il pulsante A (partenza motore in automatico).
 - la spia motore si accende.
6. Pigiare l'interruttore della pompa (posizionarlo su 1)
 - terminata l'erogazione spegnere l'interruttore della pompa (posizionarlo su 0) successivamente spegnere tutto pigiando il DISPOSITIVO DI COMANDO.
 - alla successiva erogazione, ripetere le operazioni dal punto 4 rispettando quanto indicato nei punti precedenti da 1 a 3.

A GASOLIO TERMINATO

Il sistema è dotato di un dispositivo di minimo livello che toglie alimentazione alla pompa evitando che il motore possa girare senza aspirare gasolio. La spia gasolio terminato si accende e la spia presenza rete 220 V rimane accesa

7. Pigiare l'interruttore della pompa (posizionarlo su 0) successivamente spegnere tutto pigiando il DISPOSITIVO DI COMANDO.
 8. Riempire il serbatoio di gasolio.
 9. Per ripristinare il sistema e procedere all'erogazione ripetere le operazioni dal punto 1 al punto 6.
- MALFUNZIONAMENTO DELLA Sonda DI MINIMO LIVELLO**
(spia gasolio terminato accesa)
- ATTENZIONE !!! QUESTA PROCEDURA E' DA EFFETTUARSI SOLO IN CASO DI EFFETTIVA NECESSITA' E COMUNQUE, PROVVEDERE A CONTATTARE IMMEDIATAMENTE LA CASA COSTRUTTRICE PER L'EVENTUALE SOSTITUZIONE DEL COMPONENTE NON FUNZIONANTE E' possibile procedere all'erogazione
10. Ripetere le operazioni da 1 a 4.
 11. Pigiare e tenere schiacciato il pulsante M (partenza motore in manuale) al rilascio del pulsante M, per motivi di sicurezza, il motore si blocca
 12. Pigiando ancora e tenendo schiacciato il pulsante M il motore riparte
 13. Terminata l'erogazione spegnere l'interruttore della pompa (posizionarlo su 0) successivamente spegnere tutto pigiando il DISPOSITIVO DI COMANDO.

DICHIARAZIONE DI CONFORMITA'

(In accordo con l'allegato IIA della Direttiva 2006/42/CE)



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sotto la propria ed esclusiva responsabilità

**DICHIARA
CHE LA MACCHINA**

Modello	Tank Fuel TF1X (orizzontali con vasca)
Tipo	Serbatoi erogatori di gasolio Tank Fuel
Matricola	TF1X
Anno di costruzione	2021
Uso previsto	Erogazione gasolio

È conforme a quanto prescritto dalle seguenti disposizioni legislative vigenti:

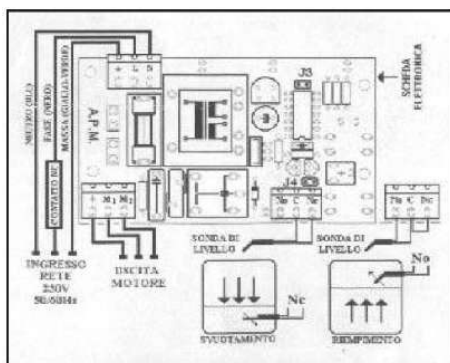
- Direttiva Europea 2006/42/CE relativa alle macchine
- Direttiva Europea 2014/30/UE concernente il ravvicinamento delle legislazioni degli stati membri relative alla compatibilità elettromagnetica



SCHEMA DI COLLEGAMENTO

ATTENZIONE: TOGLIERE L'ALIMENTAZIONE PRIMA DI APRIRE IL QUADRO PER EFFETTUARE MANUTENZIONE.

I collegamenti interni o eventuali sostituzioni di fusibili e/o termiche devono essere effettuati da un tecnico specializzato. Il circuito deve essere alimentato da un quadro elettrico a monte, opportunamente protetto.



COLLAUDO

Fuel solution S.r.l. dichiara di avere realizzato il prodotto secondo le specifiche riportate in prima pagina e certifica il funzionamento con questa dichiarazione, a testimonianza del monitoraggio costante del prodotto in termini di qualità.

GARANZIA ED ASSISTENZA

Il prodotto è coperto da 2 anni di garanzia dalla data di fabbricazione per eventuali carenze di funzionamento.

La garanzia è estesa unicamente al ripristino delle caratteristiche del prodotto e non copre eventuali danni a persone o cose.

Inoltre, la garanzia non è applicata agli apparecchi danneggiati per imperizia, incidente, negligenza dell'acquirente o in seguito a fenomeni estranei al normale funzionamento (mutamenti di tensione nella rete elettrica a cui l'apparecchio è collegato, scariche induttive e/o elettrostatiche, scariche provocate da fulmini, cadute, immersioni nei liquidi o esposizione a umidità).

Per ogni eventuale problema, contattare direttamente i ns. uffici.



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ELENCO COMPONENTI

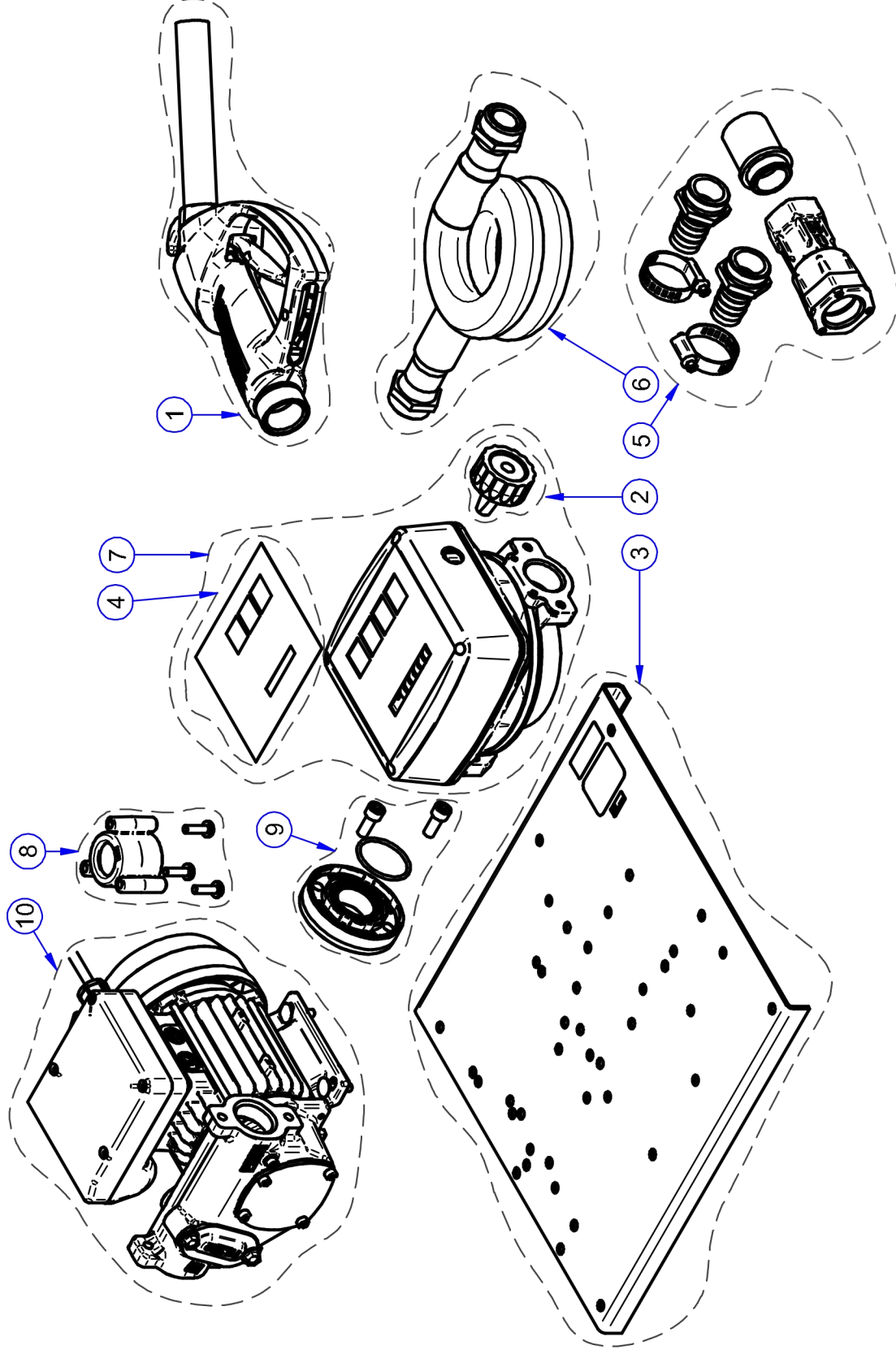
- 1 - GRUPPO DI EROGAZIONE
- 2 - SERBATOIO
- 3 - BACINO DI CONTENIMENTO 110%
- 4 - SCALETTA DI SERVIZIO
- 5 - DRENAGGIO ACQUA
- 6 - TAPPO DI CARICO CON VALVOLA LIMITATRICE DI CARICO 90% + TAPPO RAPIDO A BAIONETTA
- 7 - SFIATO CON TERMINALE TEAGLIAFIAMMA IN OTTONE H 2,4 mt
- 8 - INDICATORE DI LIVELLO A GALLEGGIANTE
- 9 - TUBOLARI DI APPOGGIO E FISSAGGIO A TERRA
- 10 - ATTACCO PER COLLEGAMENTO CAVO DI TERRA
- 11 - TARGA DATI DI IDENTIFICAZIONE
- 12 - GOLFARE DI SOLLEVAMENTO A VUOTO
- 12 - CORRIMANO DI PROTEZIONE
- 14 - PASSO D'UOMO BULLONATO
- P - POMPA + MOTORE ELTRICO
- K - CONTALITRI
- Q - QUADRO ELETTRICO +SONDA MINIMO LIVELLO
- T - TUBO DI EROGAZIONE
- N - PISTOLA AUTOMATICA



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ST WITH METER

CODE:
LR_A00094

LAST RELEASE:



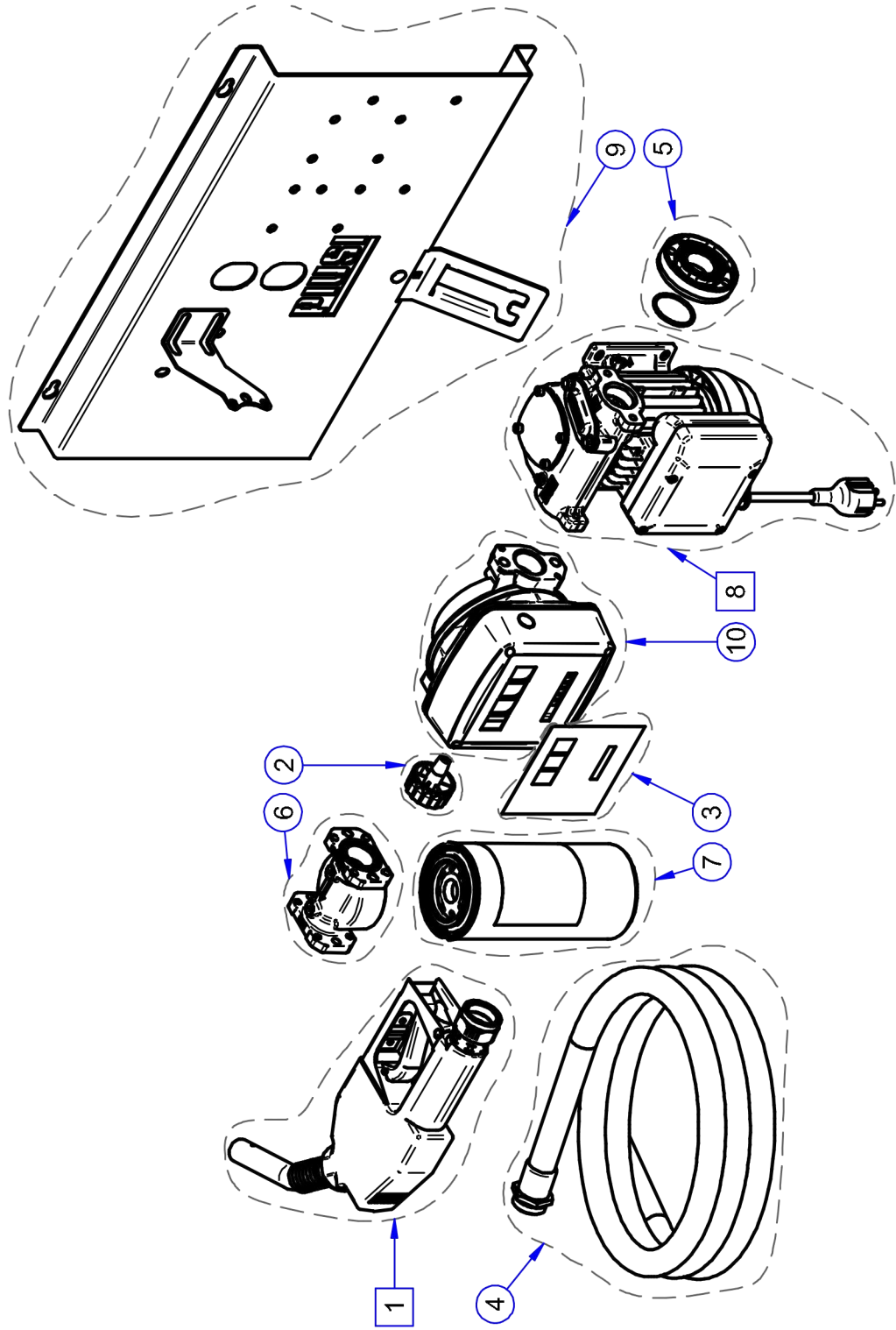
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ST WITH METER AND FILTER

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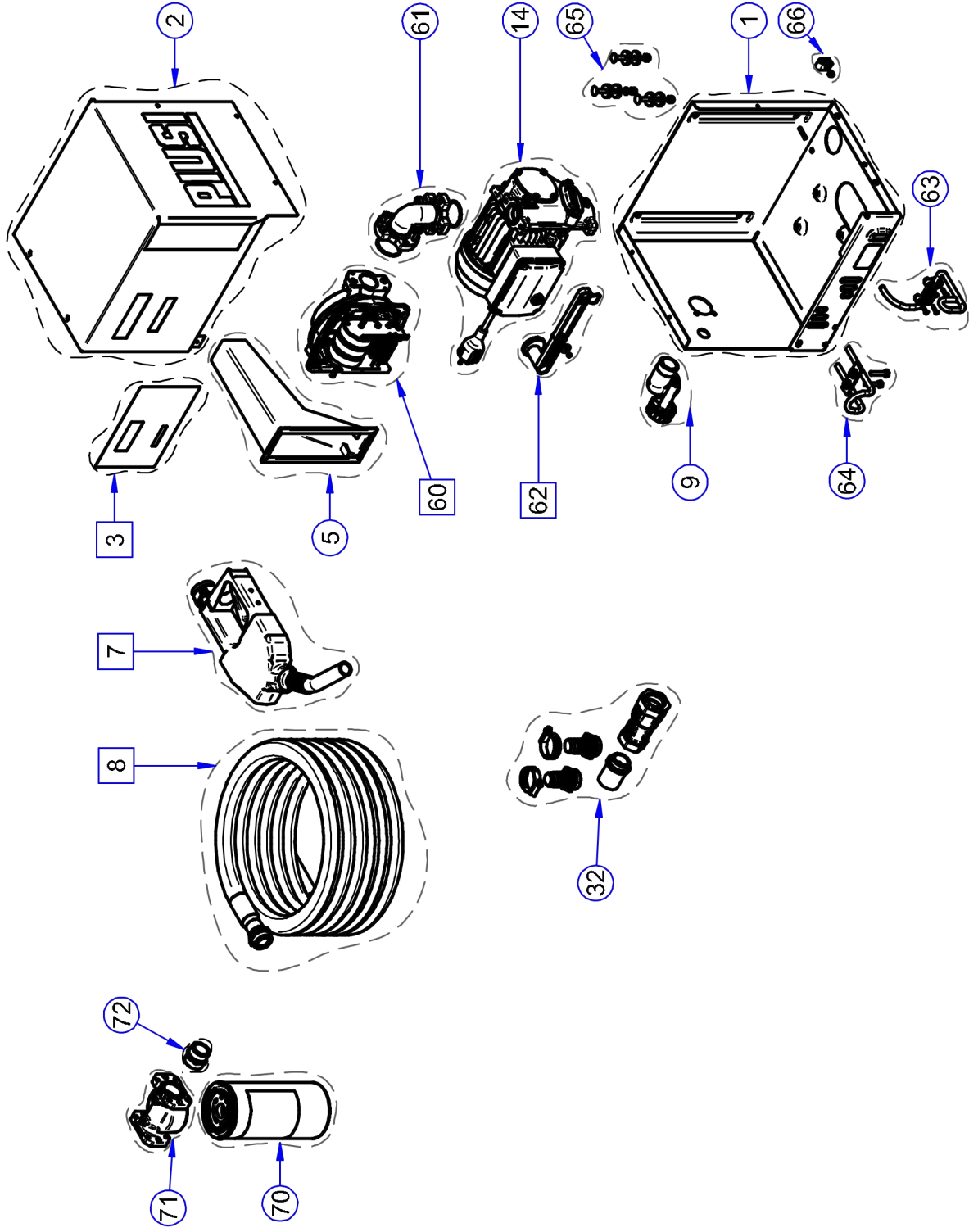
LAST RELEASE:



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CUBE 56

CODE:
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LAST RELEASE:



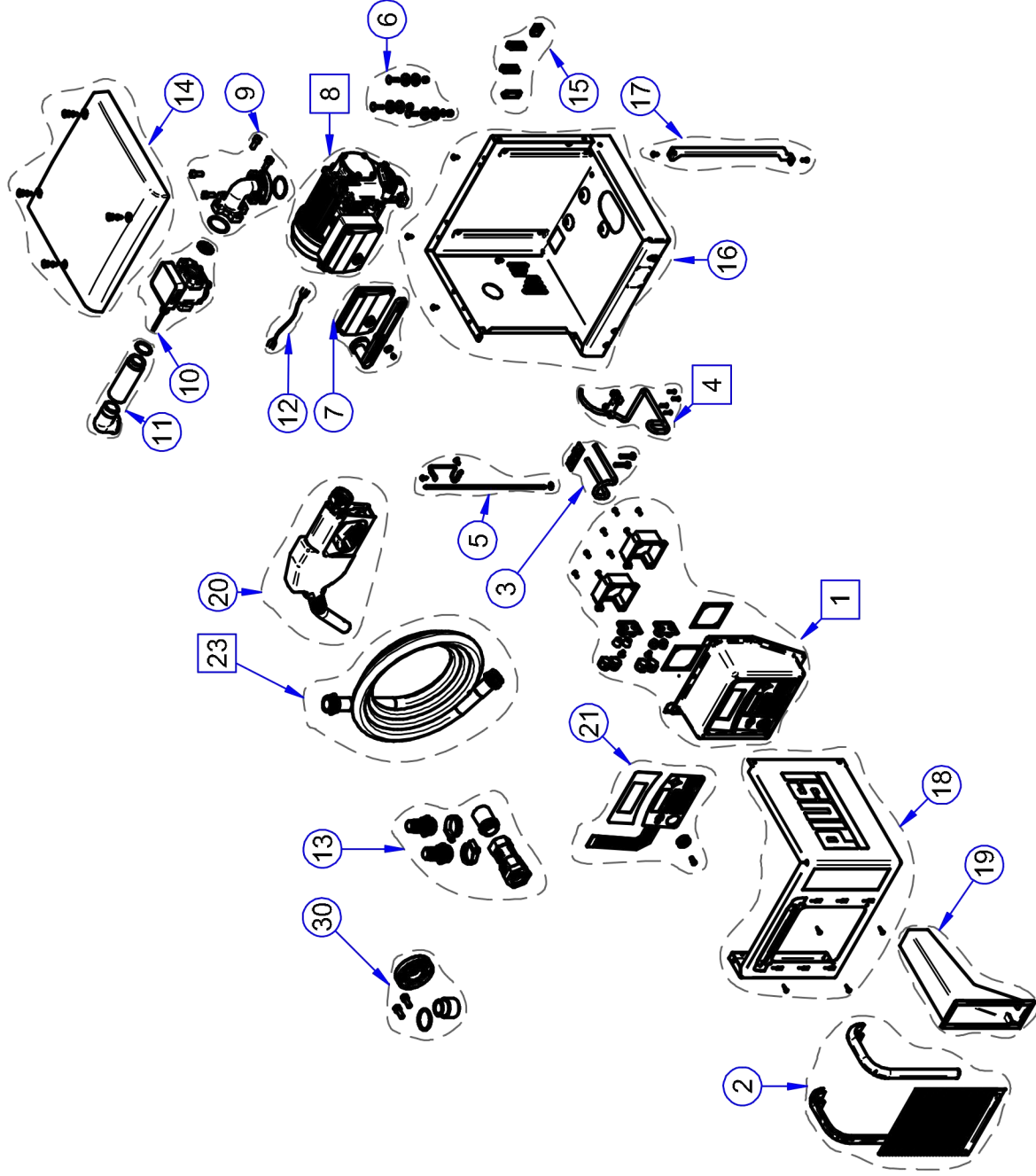
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CUBE MC DISPENSER

CODE:

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LAST RELEASE:



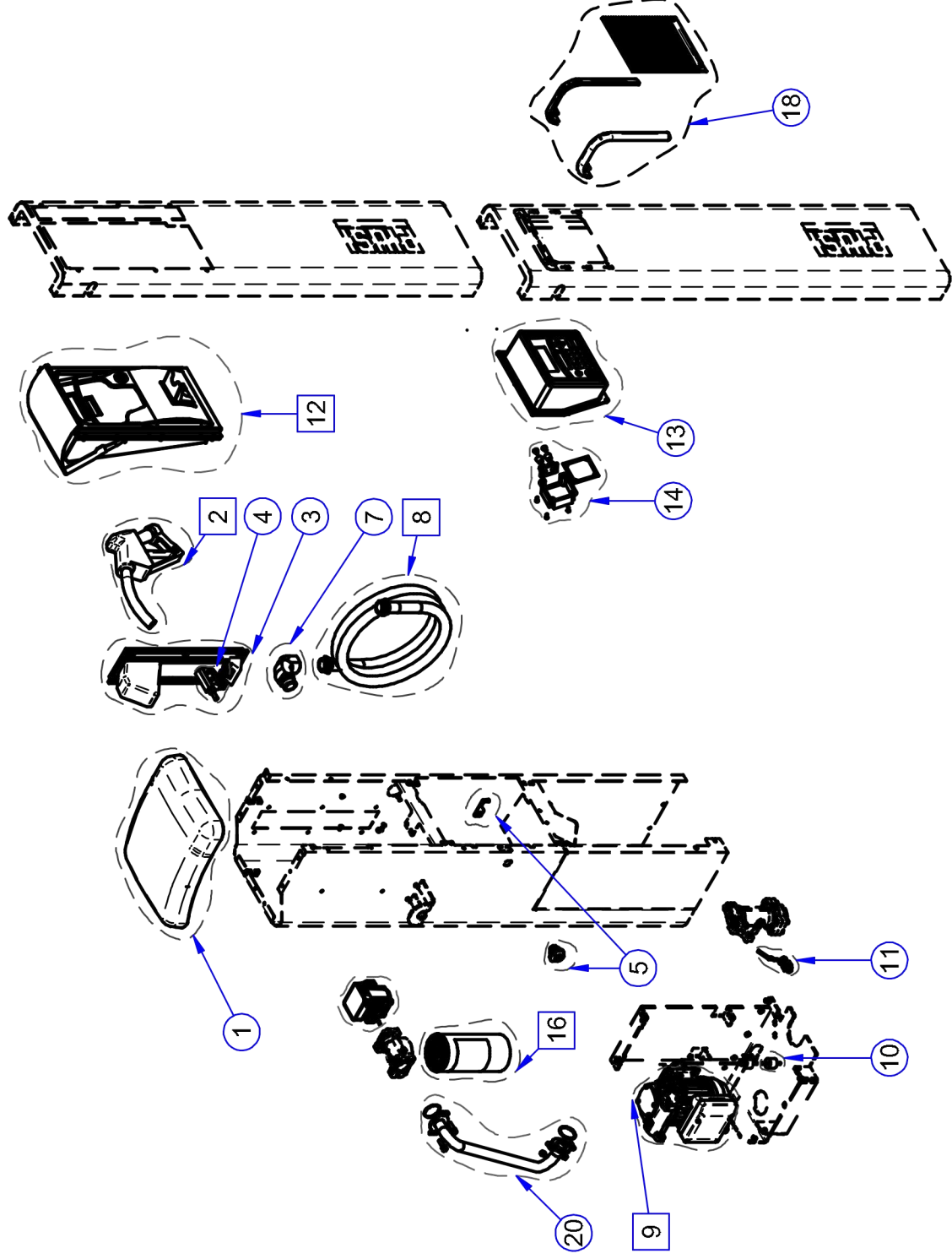
DESCRIPTION:

SELF SERVICE MC-FM

CODE:

LR_A00036

LAST RELEASE:





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Handbook revisions matrix

Index		Revision no. / Date			
Chapters	0	1	2020	2	26/01/2021
	1	1	2020	2	26/01/2021
	2	1	2020	2	26/01/2021
	3	1	2020	2	26/01/2021
	4	1	2020	2	26/01/2021
	5	1	2020	2	26/01/2021
	6	1	2020	2	26/01/2021
	7	1	2020	2	26/01/2021
	8	1	2020	2	26/01/2021
	9	1	2020	2	26/01/2021
	10	1	2020	2	26/01/2021
	11	1	2020	2	26/01/2021
	12	1	2020	2	26/01/2021

Approvals

Name	Company
	Fuel Solution



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1 Premises



1.1 Consequences in case of non-compliance

The manufacturer FUEL SOLUTION declines all responsibility in the following cases:

- negligent handling of equipment;
- insufficient maintenance and / or not in compliance with the instructions given in this manual;
- inadequate maintenance and / or actions carried out by personnel lacking the necessary education and adequate equipment;
- inappropriate use;
- modifications not made by specialized personnel authorized by the same manufacturer.



Any modification and / or replacement of components with components of different technical characteristics must be submitted to the manufacturer's opinion and approval.

1.2 Structure of the handbook

The handbook consists of a cover, an index, a series of chapters and attachments.

The cover shows the identification data of the machine as well as the models, and finally, a general photograph of the machine, to facilitate the reader in identifying the machine and its manual.

Starting from the first page, there is the revision table of the Use and Maintenance Manual and its parts, which correlates the revision level of the entire Manual with that of the index and component chapters and reports the date of issue of the entire Manual with a certain level of revision.

This document assumes that in the environment, where the machine was intended, the current safety and hygiene regulations in force are observed, as well as the installation instructions which are exhaustively indicated in the installation chapter.

The instructions, drawings and documentation contained in this Manual are of a confidential technical nature, strictly owned by the manufacturer and may not be reproduced in any way, neither in full nor in part, unless explicitly authorized by the same manufacturer.

The customer is also responsible for ensuring that, if this document is modified by the manufacturer, only the updated versions of the Manual are present at the points of use.

1.3 How to read the handbook

The Manual is divided into autonomous chapters, each of which is targeted to a specific figure of an operator, for which you have defined the skills necessary to operate on the partly completed machine safety.

For this purpose, at the beginning of each chapter, a table shows the pictograms representing the professional figures to whom the information is addressed.

To facilitate the understanding of the text, terms, abbreviations and pictograms are used, the meaning of which is indicated in [Chapter 1.8 Glossary and pictograms](#)

1.4 Purpose of handbook

The handbook was created by the requirements of the Machinery Directive, Low Voltage Directive and Electromagnetic Compatibility and intends to summarize the instructions for the maintenance and safe use of the machine called "Tank Fuel Dispensers".

In the rest of this handbook the term "machine" refers to the "tank fuel dispenser".



The Fuel Solution manufacturer is responsible only for the works carried out and for any damage resulting from its operation.

This instruction handbook is an integral part of machinery and provide all the information you need to:

- proper awareness of operators to safety issues;
- working conditions and its functional limits;
- the proper use of the machine in safe conditions;
- carry out the functional tests to keep the machine efficient during the time;
- carry out maintenance work in a correct and safe mode;
- carry out the machine commissioning check.



The heads of the departments in a company, where this partly completed machine will be installed, have the obligation, by regulations in force, to carefully read the contents of this Instruction Manual and make read it to tenants and maintenance workers, for the parts that they compete.



The time taken for the purpose will be largely compensated by the correct operation of the machine and its use in conditions of safety.



This document assumes that in the plants the machinery will be put in operation, safety and hygiene regulations are being observed.

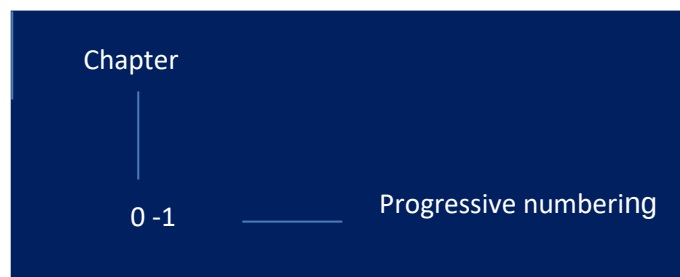


The customer is also responsible for ensuring that, if this document is modified by the manufacturer, only the updated versions of the Manual are present at the points of use.

Instructions, drawings and documentation contained in this manual are property of the supplier and cannot be reproduced in any way, nor whole, or in part.

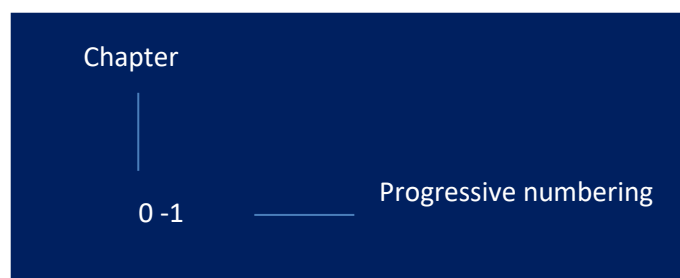
1.4.1 Figure numbering

Each figure is progressively numbered as follows:



1.4.2 Table numbering

Each table is progressively numbered, as follows:



1.4.3 Units of measurement

These units are those provided for in the International System of Units (IS).

Physical dimension	Symbol	Name of the unit IS	Symbol of the unit IS
Lenght	l	meter	M
Mass	m	kilogram	kg
Temperature	T	kelvin	K
Volume	V	Cubic meter	m ³

1.5 Handbook storage

The handbook should be kept with care and must accompany the machinery. It must be carefully stored and handled, with clean hands and avoiding dirty surfaces.

Do not remove, rip, or arbitrarily modify the handbook parts.



The handbook must be stored in protected environment without humidity and heat and it must be near to the partly completed machinery it refers to.

1.6 Methodology for updating the handbook

In case of modifies to the machinery installed by the customer and which involves the change of one or more chapters of the handbook, in agreement with the customer, the manufacturer will take care to send the modified chapters together with the chapter's revision table to the involved handbook users.

Following the indications which accompany the updated documentation, is users' liability to replace in all the owned handbook copies the old chapters, the first page and the index with the new ones having at the last revision number.

The manufacturer declines all responsibility for failures, accidents, or various problems due to non-compliance with the requirements contained in this manual. Furthermore, the manufacturer is not responsible for the execution of modifications, variants, and/or modifications to the machine not authorized by the manufacturer himself.

1.7 Recipients

The manual is an integral part of the machine and must be kept with care until its final dismantling.

The handbook must be used by all employees in its life cycle.

- INSTALLER TECHNICIAN;
- CONDUCTOR;
- MAINTENANCE ELECTRICIAN;
- MECHANICAL MAINTENANCE.

The machinery is designed for industrial application, not for generalized use.

Its use can be given only to trained personnel who:

- is physically and mentally able to perform job which have technical difficulties;
- Have been properly instructed in the use and maintenance of the machine;
- They are acquainted with the emergency procedures and their implementation;
- have the ability to operate the specific type of equipment;
- have received training and compulsory qualifications in accordance with current legislation, on occupational health and safety.

For further information regarding the qualification of the recipients [SEE CHAPTER 1.8.1 Pictograms and type of operator](#).

1.8 Glossary and pictograms

This paragraph lists the uncommon terms or with a different meaning of the ordinary.

The following explains the abbreviations used and the meaning of the pictograms to indicate the qualification of the machine operator and the state, their use allows you to have quickly and unambiguously the information necessary for a correct use of the partly completed machine in a safe condition.

1.8.1 Glossary

DANGER

A potential source of injury or damage to health.

DANGER ZONE

Any zone within and/or in the vicinity of partly completed machinery in which the presence of a person constitutes a risk to the health and safety of the said person.

EXPOSED PERSON

Any person who is wholly or partially in a danger zone.

OPERATOR

The person or persons responsible for installing, operating, adjusting, maintaining, cleaning, repairing or moving machinery and carry out maintenance.

RISK

Combination of the probability and severity of an injury or damage to health that can arise in a hazardous situation.

SHELTER

Part of the machinery used specifically to provide protection by means of a physical barrier;

PROTECTION DEVICE

Device which reduces the risk, either alone or associated with a shelter.

INTENDED USE

The use of the machinery in accordance with the information provided in the instructions for use.

REASONABLY FORESEEABLE MISUSE

Using the machinery in a manner different from that stated in the instructions for use, but which may result from readily predictable human behaviour.

OPERATOR QUALIFICATION

Minimum level of expertise that an operator must have to perform the operation described.

NUMBER OF OPERATORS

Appropriate number of operators to carry out the optimal operation described and derived from a careful analysis carried out by the manufacturer, so the use of a different number of employees could prevent you from getting the expected result or endanger the safety of the personnel involved.

RESIDUAL RISK

Risks that remain despite the inherent adopted protection measures integrated into the partly completed machinery design, and despite the protections and complementary protective measures adopted.

1.9.1 Pictograms concerning the status of operator

This document uses the following typographical conventions:

Notification pictograms appear in **bold, UPPERCASE and blue**. Quotations appear in *italics*.

In the following table are listed the pictograms concerning the status of operator and the related description.

Table 1-1 Pictograms concerning the status of operator

	Maintenance electrician Qualified operator informed and instructed by the employer in accordance with current legislation on health, safety and hygiene at work and familiar with the instructions contained in this manual. Operation: ordinary electrical maintenance, cleaning, troubleshooting, setting instrument parameters.
	Mechanical maintenance Qualified operator informed and instructed by the employer in accordance with current legislation on health, safety and hygiene at work. Operation: ordinary mechanical maintenance, cleaning, troubleshooting, setting instrument parameters.
	Conductor Ward personnel appointed, informed and trained by the employer in accordance with current legislation on health, safety and hygiene at work. Operation: machine operation.

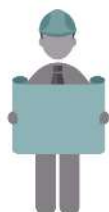
	Spare parts assistant manufacturer Person in charge of the manufacturer. Operation: management of requests and delivery of spare parts for maintenance.
	Installer technician Qualified operator informed and instructed and AUTHORIZED by the manufacturer in accordance with current legislation on health, safety and hygiene at work. Operation: Installation, extraordinary maintenance, adjustments, commissioning.
	Notified Body Inspector Technician appointed by the notified body, if necessary, in order to perform the functional verification necessary to obtain the certification.

Table 1-2 summarizes the pictograms used in this handbook:

Table 1-2 Notification pictograms

	Warning! Indicates the instructions that only if correctly followed can avoid situations of risk for people, informs about the dangers and how to avoid them, suggests behavioral procedures.
	Instructions Indicates the situations that may cause risk to the safety system or to the product being processed and / or to the environment.

	Please note Indicates useful information for consulting the manual and for correct machine operation.
---	---

1.9 Safety signs applied to the machinery

- Pictograms in a triangle indicate **DANGER**.
- The pictograms contained in a circle impose a **PROHIBITION / OBLIGATION**.

Table 1-3 Signs of safety

	Electrical Hazard: Indicates the danger of electric shock.
	Suspended loads danger.
	In the unlikely event that a fire should develop due to a short circuit in the electrical equipment on board the machine, it is absolutely forbidden to use water to extinguish the flames: in this case, the appropriate fire extinguishers must be used in the workplace.
	It is forbidden to remove the protections.
	During machine maintenance activities, access prohibition signs must be placed on the accessible parts due to work in progress or maintenance in progress.
	During system operation, in accordance with the provisions of this document and during maintenance operations, access to unauthorized persons is prohibited.

	It is mandatory to wear safety shoes.
	It is mandatory to wear protective gloves.
	It is mandatory to wear a head protection.

1.10 Structure of the handbook

This document is divided into the following chapters:

- Chapter 1 “Premises”;
- Chapter 2 “Declaration of conformity”
- Chapter 3 “Name plate”;
- Chapter 4 “Foreword”
- Chapter 5 “Requirements”;
- Chapter 6 “Technical description”;
- Chapter 7 “Installation, handling, positioning and commissioning”;
- Chapter 8 “Maintenance”;
- Chapter 9 “Dismalting”;
- Chapter 10 “Risk assesment”;
- Chapter 11 “Final warnings”;
- Chapter 12 “Attached”.

1.11 Language

The user and instruction manual were drawn up in the language of origin and education of the operators, maintenance technicians and inspectors who are assigned to use the automatic dispensing tank or in English.



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2 Declaration of conformity CE

Declaration of Conformity CE
(According to Annex IIA of Machinery Directive 2006/42/CE)



Fuel Solution S.r.l.

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hereby under its own and exclusive responsibility

DECLARES

THAT THE MACHINERY

Model	Tank Fuel TF1X
Type	Diesel Tank Fuel
Serial Number	TF
Year of construction	
Intended use	Diesel dispenser

Is in conformity with the essential requirements of health and safety and to the following European Directives:

- **Directive 2006/42/CE Machinery**
- **Directive 2014/30/UE Electromagnetic Compatibility**

in conformity with the applicable requirements of the following harmonized standards:

STANDARD	TITLE
EN ISO 12100:2010	Safety of machinery – General principles for design – Risk assessment and risk reduction
ISO/TR 14121-2:2013	Safety of machinery – Risk assessment – Part 2: Practical guidance and examples of methods
EN 60204-1:2006/AC:2010	Safety of machinery – Electrical equipment of machinery – Part 1: General requirements
EN ISO 14122-3:2016	Safety machinery – Permanent means of access to machinery – Part 3: Stairs, stepladders and guard-rails
EN ISO 14122-4:2016	Safety machinery – Permanent means of access to machinery – Part 4: Fixed ladders
ISO 14120:2015	Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards
EN 61000-6-4:2014-02	Electromagnetic compatibility (EMC) -Part. 4-6: Testing and measurements techniques
EN 61000-6-2:2019-02	Electromagnetic compatibility (EMC) -Part. 6-2: General standards – immunity standard for industrial environments

and Authorize

Departments **Technical Office**
Company **Fuel Solution S.r.l.**
Address **Via Mediana, 18 - 64023, Atri (TE)**

to constitute the technical file on his behalf

Date _____

Legal Representative

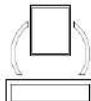
Name: **Claudio**
Surname: **Rapacchia**
Sign

3 Name plate

As required by the Machinery Directive 2006/42 / EC and by the Ministerial Decree 22/11/2017, each tank is equipped with an aluminium identification plate, fixed on the tank by affixing tear-off rivets.

The name plate shows:

- The manufacturer's data
- Data and characteristics of the tank
- Approval references
- Mark CE

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Omologazione Ministero dell'Interno		
1 PRESSIONE BAR (Pressure)		3mm SPESSORE (Thickness)
ANNO (Year)		S235JR MATERIALE (Material)
TF N° FABBRICA (Serial Number)	Kg PESO A VUOTO (Empty weight)	CAPACITA' LT (Capacity)

The user is responsible for the perfect conservation of the product name plate. In case of deterioration of the same, a duplicate must be requested directly from the manufacturer.

4 Foreword



We invite you to carefully read the user's and maintenance instructions below, before commissioning the "DISTRIBUTOR CONTAINER"

It is important not to put the machine into operation before the arrival of the technician responsible in advance and suitably selected.

	The information in this manual must be strictly respected
	Users are obliged, in accordance with the rules in force, to read the contents of this Instruction Manual carefully and to have it read to the maintenance workers, for the parts that are their responsibility.

The "DISTRIBUTOR CONTAINER" is already tested at the origin, therefore, only the positioning and electrical connection at the workplace will have to be realized.

IF YOU NEED TO CONTACT THE TECHNICAL ASSISTANCE SERVICE OF THE



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5 Requirements



- It is forbidden to use the equipment without first having carefully read and understood the instructions for use contained in this manual;
- Before installing the equipment, the customer must ensure that the floor, where it will be installed, is level, can withstand its weight (see identification plate), that there are technological conditions and that there is sufficient ambient light or adequate lighting. For more information see the mechanical drawings;
- Before installation, the user shall be required to verify that the electrical network to which the equipment is to be connected corresponds to the plate voltage and that good grounding is provided;
- The user must take care or ensure that the space and floor around the machine are well lit and always clean, to avoid slipping and resulting impacts and/or falls. Leave the maintenance spaces free;
- For connection to the ground installation (plug or eyelid), comply with the laws of the country where the equipment is installed;
- Workers handling machinery and equipment must always wear work gloves, anti-accident shoes and protective glasses;
- It shall be forbidden to walk or climb the supporting structure of the equipment;
- It shall be forbidden to approach objects which may explode, burn or otherwise become dangerous to persons or things;
- The organization of the work activities in which the machinery is used must comply with the safety standards in force, must ensure that equipment is forbidden from persons other than the user, from minors, from foreign objects or animals;
- It is forbidden to use equipment for uses other than those specified;
- The machine must be used by personnel with appropriate psychophysical conditions (e.g. able to see, not epileptic, not subject to the use of psychopharmaceuticals, etc.);
- It is forbidden to introduce body parts (e.g. hands, fingers, etc...), between moving areas;
- It shall be forbidden to modify, alter or tamper in any way with movable components, guards, protective devices
- It shall be forbidden to operate the equipment without checking that all safety devices are functioning and correctly installed
- Machinery maintenance and servicing operations shall only be carried out by an authorized electrical maintainer or a trained and qualified mechanical maintainer who is informed of the safety requirements and contents of this manual;
- Do not remove, deteriorate or hide the warning labels, but observe them and comply with the instructions;

- In the event of illegibility or deterioration of labels, they must be replaced; in the event of failure, request FUEL SOLUTION srl;
- Remember that after each cleaning, lubrication, adjustment and maintenance operation, all safety must be restored; all protective papers must be removed and/or closed;
- The machine alarm signals shall be strictly observed;
- At the end of the life of the machine, do not disperse it in the environment but turn to mechanical waste disposal agencies;
- The machine must not be installed in ATEX areas.

6 Technical description



The dispensing tanks, also called distributor containers, series TANK FUEL, are equipment, "machines", specially designed for the containment and delivery of liquid fuels of category "C" (liquids having a point of flammability from more than 65 °C to 125 °C. They also belong to category "C" Fuel liquids with an ignition point below 65 °C but not below 55°C", according to DM 22/11/2017).

Equipment consists of a cylindrical horizontal-axis tank equipped with a containment basin with a useful capacity equal to 110% of the contents of the tank, an optional roof, an electric pump unit with counter, tube and dispenser gun, housed in a dedicated container equipped with a front door placed on one side of the tank itself.

Inside the container, next to the pump assembly, is placed a box with IP 55 protection, which contains all electrical connections.

6.1 Technical characteristics

The main characteristics of tanks and basins are described below:

Table 6-1 Tank type and geometric characteristics

TYPE	GEOMETRIC CAPACITY (Litres)	EXTERNAL DIAMETER (mm)	TOTAL LENGHT (mm)	BASIN DIMENSIONS 110% (PxLxH mm) - (Capacity' L)		EMPTY WEIGHT (kg)
TF 1200	1.140	950	1.694	1.200x2.100x530	1.335	375
TF 2000	2.061	1.270	1.722	1.400x2.200x737	2.270	480
TF 3000A	2.994	1.500	1.818	1.650x2.400x870	3.445	610

TF 5000A	5.068	1.800	2.150	2.250x2.430x1.050	5.740	815
TF 5000B	4.992	1.800	2.120	2.250x2.430x1.050	5.740	815
TF 7000A	6.888	1.800	2.870	2.250x3.260x1.050	7.701	991
TF 9000	8.910	1.800	3.670	2.160x4.100x1.120	9.918	1.140
TF9000A	8.878	2.050	2.884	2.430x3.350x1.220	9.931	1.160

6.2 Tanks and accessories

Containment tanks and basins are made of quality S235JR carbon steel, of the thickness of 3 mm, assembled by means of continuous automatic welding in a controlled atmosphere.

The external surfaces are treated with the following cycle:

- accurate weighing;
- application of single-hand enamel (anti-rust + finish) with direct adherence to the colour plate RAL 9006 or RAL 5015.

The tanks are equipped with the following accessories:

- support feet;
- bottom drain cap;
- aspiration tube from 1" with non return valve with calibrated spring;
- suction filter;
- one ball safety valve for total closure;
- man-hole step with a diameter of 400 mm type of gas oil on which a 3 hole load mouth is mounted with quick coupling to brass bayonet and load limiter valve at 90%;
- pump locking device at minimum level;
- electric panel and ground;
- service ladder starting from 2000 L;
- containment basin at 110% in sheet, complete with drainage for rainwater, attached to the ground and roof mounting;
- upper protective roof made of the tubular frame and cover in zinc-plated shaped sheet;
- stripped of 1"-1/2 with brass sheath cap;
- attach from 1"-1/2 with mechanical level indicator.

6.3 Dispensing groups

Distributor containers may be equipped with one of the following:

MAKK	PIUSI
Models	BY-PASS 55 FILTER; E80; PANTHER 56, PANTHER 72; BP 2000, BIPOMPA a 12 o 24 volt;
MAKK	PIUSI
Models	"SERVICE "
Versions	"SERVICE 80", "SERVICE 80 MC 30", "SERVICE 120", "SERVICE 120 MC30";
MAKK	PIUSI
Models	" SELF SERVICE "
Versions	"SELF SERVICE 70 MC", "SELF SERVICE 70 MC F", "SELF SERVICE 70 MC F P", "SELF SERVICE 70 MC FM", "SELF SERVICE 100 MC", "SELF SERVICE 100 MC F", "SELF SERVICE 100 MC F P", "SELF SERVICE 100 MC FM", "SELF SERVICE 70 K44", "SELF SERVICE 70 K44 F", "SELF SERVICE 100 K44", "SELF SERVICE 100 K44 F", "SELF SERVICE 70 MC F 230/50", "SELF SERVICE 100 MC F 230/50", "SELF SERVICE TANK 70 MC 230/50", "SELF SERVICE TANK 100 MC 230/50", "SELF SERVICE TANK 70 FM 230/50", "SELF SERVICE TANK 100 FM 230/50", "SELF SERVICE TANK 70 K44" e "SELF SERVICE TANK 100 K44";
MAKK	PIUSI
Models	CUBE 50
Versions	CUBE 50/K33, CUBE 50/MC30;
MAKK	PIUSI
Models	CUBE 56/33
Versions	CUBE 56/MC, CUBE 70/33, CUBE 70/MC;
MAKK	ADAM PUMPS S.p.A.
Models	PA1 230-70; LIGHTPUMP-80; LIGHTPUMP-100; PICK-UP 230-60; (tutte alimentate a 230 Vin c.a.)
MAKK	TO.M.E.S.
Models	TOM 56, TOM 78; SELF 55, SELF 80; ROLL - MATIC 60, ROLL - MATIC 80;

Figure 6-1 Type of dispensing groups

The dispensing groups shall consist of:

- Group with self-priming volumetric pump;
- Volume counter;
- Auxiliary nozzle;
- Tube four meters connected by 1"all contained in special cabinet with lock.

7 Installation, handling, positioning and commissioning



This chapter defines the procedures for the transport, positioning, installation and commissioning of the machine.

The handling, positioning and commissioning must be carried out by specialised workers or, in any case, by competent technical personnel who have received all the information necessary for the correct use of the equipment.

The lifting of the constituent components of the equipment shall be carried out as described below.

TYPE	GEOMETRIC CAPACITY (Litres)	EXTERNAL DIAMETER (mm)	TOTAL LENGHT (mm)	BASIN DIMENSIONS 110% (PXLXH mm) - (CAPACITY' L)	EMPTY WEIGHT (kg)	
TF 1200	1.140	950	1.694	1.200x2.100x530	1.335	375
TF 2000	2.061	1.270	1.722	1.400x2.200x737	2.270	480
TF 3000A	2.994	1.500	1.818	1.650x2.400x870	3.445	610
TF 5000A	5.068	1.800	2.150	2.250x2.430x1.050	5.740	815
TF 5000B	4.992	1.800	2.120	2.250x2.430x1.050	5.740	815
TF 7000A	6.888	1.800	2.870	2.250x3.260x1.050	7.701	991
TF 9000	8.910	1.800	3.670	2.160x4.100x1.120	9.918	1.140
TF9000A	8.878	2.050	2.884	2.430x3.350x1.220	9.931	1.160

The equipment shall be in an appropriate area, taking into account the following factors:

- **Stability:** choose an area sufficiently stable to avoid falling and/or tipping;
- **Use:** provided that this equipment is used exclusively for the supply of liquid fuels, it is therefore necessary to provide for the relevant loading and unloading operations by studying the appropriate operating areas;
- **Environmental sources of risk:** place the container away from potential sources of risk such as heat, electricity, impacts, etc.



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- **Easy access:** equipment must be positioned in such a way as to facilitate maintenance, inspection, repair, etc.

1) Position of tank

Lift the reservoir and containment basin by an appropriate means of lifting, for an equal height and sufficient for handling. Lifting shall be carried out using only the appropriate hook placed on the top of the tank using appropriate straps or chains. Execute lifting, handling and positioning maneuvers with an empty tank.

2) Roof mounting

The roof for transport purposes is provided disassembled.

Raise the roof, for an equal height and sufficient to carry out the assembly of the four vertical tubes using an appropriate means of raising. Lifting shall be carried out using appropriate straps, chains and/or supports.

Once the four mountings are mounted, raise them all to an equal height and sufficient to place the bottom of the four pillars near the supports, placed laterally to the containment basin.

3) Assembly accessories

- sphere 1"-1/2: screw the gypsum tube with a flame-retardant cap onto the rear sleeve situated at the top of the tank (the nozzle shall be of a height from the foot plane not less than mt.2,4).
- Electrical power supply: connect to electricity (power supply 220 V) using the appropriate equipment supply.

4) Electrical connections

At the end of assembly and positioning, the relevant electrical connections shall be made:

- Ground: connect the equipment to a ground disperser using the appropriate attachments placed on the containment basin.
- Electrical power supply: connect to electricity (220 V power supply) using the appropriate equipment socket

5) Tank filling or loading

Loading operations shall be carried out by suitably trained personnel and shall be carried out as follows:

- Remove tension to the plant;
- Approach the manhole of the tank, using the appropriate ladder (for versions where provided) and open the load cap;
- Insert the appropriate dispenser of the tanker into the cargo mouth;
- Step away from the cargo mouth.
- Perform refuelling.

At the end of the refuelling it will be possible to approach the loading mouth again and perform all the above operations backwards.

Once the tank is filled you will be able to unload the dispenser nozzle and use the equipment for its refuelling.

	The manufacturer shall not be liable for any damage to property, persons or animals in the event of non-compliance with the above indications.
	Attention the tank is equipped with a control device of the minimum level, which will not allow the operation of the electric pump group, when the level of liquid will fall below this minimum value

8 Maintenance



Maintenance operations must be carried out by **authorised and qualified workers**.

The technical and electrical staff responsible for the maintenance of the machinery, in addition to being adequately trained for the use of the machinery and having read this user and maintenance manual must be familiar with the laws in force on accident prevention.

	Maintenance operations shall always be carried out by the instructions in this manual.
---	--

In case of uncertainties or problems during the execution of a maintenance operation, contact the manufacturer.

Use of **appropriate protective devices** to the operations to be carried out, in particular:



Wear safety footwear



Wear protective gloves



Wear head protection

In order to carry out any type of intervention, the following safety standards must always be complied with:

- Cleaning and maintenance of the equipment must be carried out with the frame off: **Always switch off the tension.**
- Before starting any type of intervention, display a "**MACHINE IN HANDLING**" sign in plain view and delineate or enclose the work area;
- The operator must take care or ensure that the space and floor around the machinery are well lit to avoid slipping with consequent falls and/or impacts. Leave the maintenance spaces free.
- **Do not smoke** or use free flames near flammable materials such as oil, rubber, plastics, etc.
- Adopt all accident prevention systems (PPE), when repairs are carried out on the machine, which must always be carried out by qualified personnel (technicians);
- Do not dismantle if adequate equipment has not been provided before and if spare parts are not yet available;
- Before starting repairs or replacements of mechanical components, care should be taken how they are assembled to understand their operation;
- Periodic maintenance prolongs the "life" of the machine. Do not wait for it to break to make the repair, you risk lengthening the times of "**MACHINE DOWN**".

8.1 Maintenance notes

It is necessary to perform cyclical interventions depending on the state of use of the machine as well as the accumulated working hours. In fact, the more the machine is subjected to work stress the more sudden it must be its maintenance.

The maintenance worker shall check the state of use of the machinery in general and its components, assessing whether the replacement of the parts or their regular maintenance or repair is necessary.

For any good purpose, here is a table (Table 8.1) of reference, purely indicative, of the scheduled maintenance of the tank.

Dust, transport, inadequate handling, prolonged exposure to the weather can significantly reduce the life of the organs concerned (pump group, dispenser, electric motor, etc.). The decision to replace, repair or maintain a component of the machine is the responsibility of the operator from time to time.

The technical culture and experience acquired over time by the maintainer as well as the company's needs will suggest the most appropriate choice. Alarm bells can be: the emergence of new noises, sudden screams, vibrations of the machine structure, overheating of the electric motor

For the first three months of life of the machine it is recommended to carry out maintenance checks and simple inspection weekly.

This chapter deals with the operations necessary to maintain the equipment in question in perfect efficiency. It is recalled that routine and extraordinary re-ventilation and maintenance operations must be carried out by qualified personnel, or by requesting technical assistance from the home. For this equipment it is not easy to foresee an ordinary maintenance plan below a series of interventions for solving small problems are reported.

8.1.1 Problems arising from intakes

If there is a decrease or cancellation of flow from the provider there may be bottleneck problems. The equipment is equipped with two filters in suction, one place directly downstream of the interception valve placed under the tank, and the other place inside the pump (see DIs. pump). To clean or replace these filters it is necessary to close the interception valve placed under the tank. Once this valve is closed, the filters can be removed and cleaned with compressed air or replaced if they are not recoverable.

8.1.2 Problems arising from losses

In the case of localized losses in the vicinity of threaded connections and/or joints, check that connections are appropriately tightened.

If it is found that a connection needs a new healing, proceed as follows:

- Close the shut-off valve;
- disable the connection in question;
- clean the remains of the old gaskets;
- return threaded connection
- reconnect the connection to the installation;
- reopen the shut-off valve.

If problems persist contact the building company.

NOTE: Constantly check the state of use of flexible pipes.

8.1.3 Electrical problems

The resolution of electrical problems shall be carried out by qualified personnel or by technicians of the manufacturer. (See electrical system diagram).

For any problems and suggestions please contact the building company as soon as possible.



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Table 8-1 Maintenance Program

DESCRIPTION	WEEKLY	FORTNIGHTLY	MONTHLY	HALF-YEARLY	ANNUAL
Pump	A		C	B	
Dispenser			A	B	
Pipe	A				
Valve			A		
Electric motor		C	D/E		
Holding Tank		A			
Filters			A		
General Check-up					A

Legend: A = control B = wear C = noise D = absorption E = temperature

9 Dismalting



When dismantling is necessary to separate the plastic parts, metal parts and electrical components, which should be sent to waste collection in compliance with the current building code.

As regards the metal mass of the machinery, for proper recycling by melting, it is sufficient to the subdivision between the ferrous parts and those of other metals or alloys.

10 Risk assessment



Standards: UNI EN ISO 12100:2010; EN 60204-1:2006

DEFINITION from UNI EN ISO 12100:2010

- **Damage:** physical injury or damage to health;
- **Danger:** potential source of damage;
- **Dangerous situation:** the fact that a person is exposed to at least one risk;;
- **Risk:** a combination of the probability of occurrence of damage and the severity of that damage;
- **Residual Risk:** residual risk after taking protective measures;
- **Tolerable risk:** risk accepted following risk weighting.

10.1 Residual risk

The manufacturer has been every effort to design this machine as far as it was possible intrinsically safe.

The areas with residual risk are shown in

Table 10-1 The residual risks are highlighted on the machine with warning pictogram.

Table 10-1 Hazardous area and residual risk

Dangerous area	Residual risk
Components powered in AC	Danger of indirect/direct contact (electrical risk) caused by loss of insulation of a component, loosening of connection, loss of IP degree downstream of incorrect maintenance.
Power supply tank	Danger of indirect/direct contact (electrical risk) caused by loss of insulation of a component, loosening of connection, loss of IP degree downstream of incorrect maintenance.
Service ladder (if present)	Slide risk from the service ladder during loading/filling operations, maintenance. Wear PPE (personal protective equipment): safety shoes and head protection
Adjacent area during tank lifting	Risk of falling from the top of the tank during lifting, transport, loading and unloading operations. Wear PPE (personal protective equipment): protective gloves, safety shoes, head protection



IT'S FORBIDDEN AND DANGEROUS:

- stand around the step of man, the ladder and all the carpentry surrounding the dispensing containers wearing ties, necklaces, protruding wrists;
- carry out handling and lifting of dispensing tank without the personal protective equipment (gloves, head protection, safety shoes, etc.);
- perform work, repairs, movements, leaving the equipment under tension;
- smoke and use free flames in the immediate surroundings of the tank;
- expose the equipment to high heat sources.

10.2 Materials

Materials used for the construction of the machine or products used and originated during its use do not present a risk to the safety and health of exposed or line users.

10.3 Principles of safety integration

Based on their construction, TF series dispensers are suitable for operation, adjustment and maintenance without these operations, if carried out under the conditions laid down by the manufacturer, putting persons at risk.

For choose of the most appropriate solutions, the manufacturer has applied the following principles:

- Delete or reduce risks as far as possible (integration of safety into design and construction);

- Take the necessary protective measures against risks which cannot be delated.

Inform users of the residual risks due to the incomplete effectiveness of the protective measures taken, for example indicate whether special training is required and indicate whether it is necessary to provide for a personal protective equipment.

10.4 Warning to the operator

The operator in charge of the use of the machine must promptly notify his superior, e.g. works manager or site manager, of any anomalies found during the use of the machinery that may damage or compromise the safety of his own or other.

10.5 Fire prevention

The tank- dispensers has a limited risk of fire and emissions of harmful substances, given the precautions taken in the design.

Prevent open flames, or high temperatures, from coming into contact with the walls of the machine.

In the near of each tank-dispenser, the presence of at least two portable powder or CO₂ fire extinguishers with extinguishing capacity not less than 21A-89B must be guaranteed.

In the event that the total capacity of the distribution depot is greater than 6 m³, the presence of a rounded fire extinguisher with extinguishing capacity not less than B3 must also be guaranteed, reachable with an effective path not exceeding 20 m compared to the farthest container-distributor.

10.6 Protection

The machine is equipped with protections, fixed with screws, which defend the operator from accidental contact with moving parts.



It is forbidden to remove the protections installed on the machine.

10.7 Prohibitions

It is forbidden to approach the equipment in operation with:

- OPEN FLAMES
- UNATTENDED CIGARETTES
- HEAT SOURCES
- POINTED BODIES
- DRESSES

11 Final warnings



Commissioning and maintenance must be carried out by specialized personnel, considering safety requirements.

Before starting the work remove tension and make the appropriate safety checks. During the service of electrical manoeuvring equipment:

- Inevitably there are certain electrical parts that remain in low dangerous voltage;
- In the event of a short circuit, ionized and hot gases can be produced;
- It is not allowed to remove the lid of the engine's salvage box;
- It is forbidden to intervene directly on contacts.

If the above rules are not respected, the consequences could be serious (danger of death), as well as serious material damage.



The manufacturer is not responsible for any damage to property, persons and animals in the event of non-compliance with the above indications.

12 Attached

PERIODIC VERIFICATION OF THE MACHINERY

IDENTIFICATION _____

DATE	CONSERVATION STATUS	OPERATIONS CARRIED OUT	AUDITOR

NOTE:

DISPENSING PROCEDURE:

AUTOMATIC OPERATION:

Before connecting 220 V network make sure that:

1. The contact of the control device is in a closed position (crushed device, open contact).
2. The pump switch is positioned on 0.
3. Connect the socket to the 220V network.
4. Rearm the control device:
 - at this point the picture resets, all three engine lights, finished diesel, network presence, flash 4 times;
 - the network presence light remains on, while the other 2 lights turn off.
5. Press button A (motor start automatically).
 - the engine light turns on.
6. Press the pump switch (place it on 1)
 - after dispensing turn off the pump switch (place it on 0) then turn everything off by pressing the CONTROL DEVICE.
 - at the next dispensing, repeat the operations from point 4 in accordance with the above points 1 to 3.

FINISHED DIESEL

The system is equipped with a minimum level device that takes power away from the pump preventing the engine from running without vacuuming diesel. The finished diesel light turns on and the 220 V network presence light remains ON.

7. Press the pump switch (place it on 0) then turn everything off by pressing the CONTROL DEVICE.
8. Filling the tank with diesel.
9. to restore the system and dispense repeat steps 1 through 6.

MINIMUM LEVEL PROBE MALFUNCTION

(finished diesel light on)

Attention!!! THIS PROCEDURE IS TO BE CARRIED OUT ONLY IN CASE OF ACTUAL NEED AND IN ANY CASE, CONTACT THE MANUFACTURER IMMEDIATELY FOR THE POSSIBLE REPLACEMENT OF THE NON-WORKING COMPONENT.

It is possible to proceed with the dispensing of

10. Repeat steps 1 through 4

11. Press and hold the M button (manual engine start) when the M button is released, for safety reasons, the engine freezes.

12. Pressing again and holding the M button crushes the engine starts again.

13. Once the dispensing is complete turn off the pump switch (place it on 0) then turn everything off by pressing the CONTROL DEVICE.

DECLARATION ON CONFORMITY

(According to Annex IIA of Machinery Directive 2006/42/CE)



Fuel Solution S.r.l.

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hereby under its own and exclusive responsibility

**DECLARES
THAT THE MACHINERY**

Model	Tank Fuel TF1X (horizontal with tub)
Type	Tank Fuel diesel dispensing tanks
Serial Number	TF1X
Year of construction	2021
Intended use	Diesel dispenser

Is in conformity with the essential requirements of health and safety and to the following European Directives:

- Directive 2006/42/CE Machinery
- Direttiva Europea 2014/30/UE Electromagnetic Compatibility

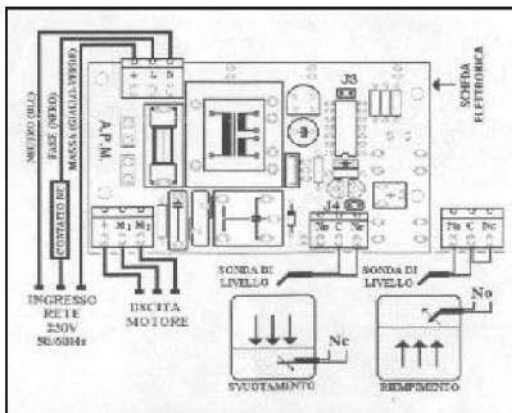


LINKING SCHEME

WARNING: REMOVE THE POWER SUPPLY BEFORE OPENING THE PANEL FOR MAINTENANCE.

Internal connections or any replacements of fuses and/or thermal must be made by a specialized technician.

The circuit must be powered by an upstream electrical panel, appropriately protected.



TESTING

Fuel solution S.r.l. declares to have realized the product according to the specifications reported on the front page and certifies the operation with this declaration, as evidence of the constant monitoring of the product in terms of quality.

GUARANTEE AND ASSISTANCE

The product is covered by a 2-year warranty from the date of manufacture for any lack of operation.

The warranty is extended only to the restoration of the characteristics of the product and does not cover any damage to persons or property.

In addition, the warranty is not applied to appliances damaged by incompetence, accident, negligence of the purchaser or as a result of phenomena unrelated to normal operation (voltage changes in the electrical network to which the appliance is connected, inductive and/or electrostatic discharges, discharges caused by lightning, falls, immersion in liquids or exposure to moisture).

For any problems, contact our Offices.



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LIST OF COMPONENTS

- 1 - BREWING GROUP
- 2 - TANK
- 3 - BASIN 110%
- 4 - SERVICE LADDER
- 5 - DRAINAGE WATER
- 6 - FILLING CAP WITH FILLING RELIEF VALVE 90% + BAYONET QUICK CAP
- 7 - VENT WITH BRASS FLAME CUT TERMINAL H 2,4 mt
- 8 - FLOAT LEVEL INDICATOR
- 9 - SUPPORT AND GROUND FIXING TUBES
- 10 - CONNECTION FOR EARTH CABLE CONNECTION
- 11 - NAME PLATE
- 12 - GRIP POINT FOR EMPTY LIFTING
- 12 - PROTECTION HANDRAIL
- 14 - BOLTED MANHOLE
- P - PUMP + ELECTRIC MOTOR
- K - FLOW METER
- Q - ELECTRICAL CABINET + MINIMUM LEVEL PROBE
- T - DELIVERY PIPE
- N - AUTOMATIC NOZZLE

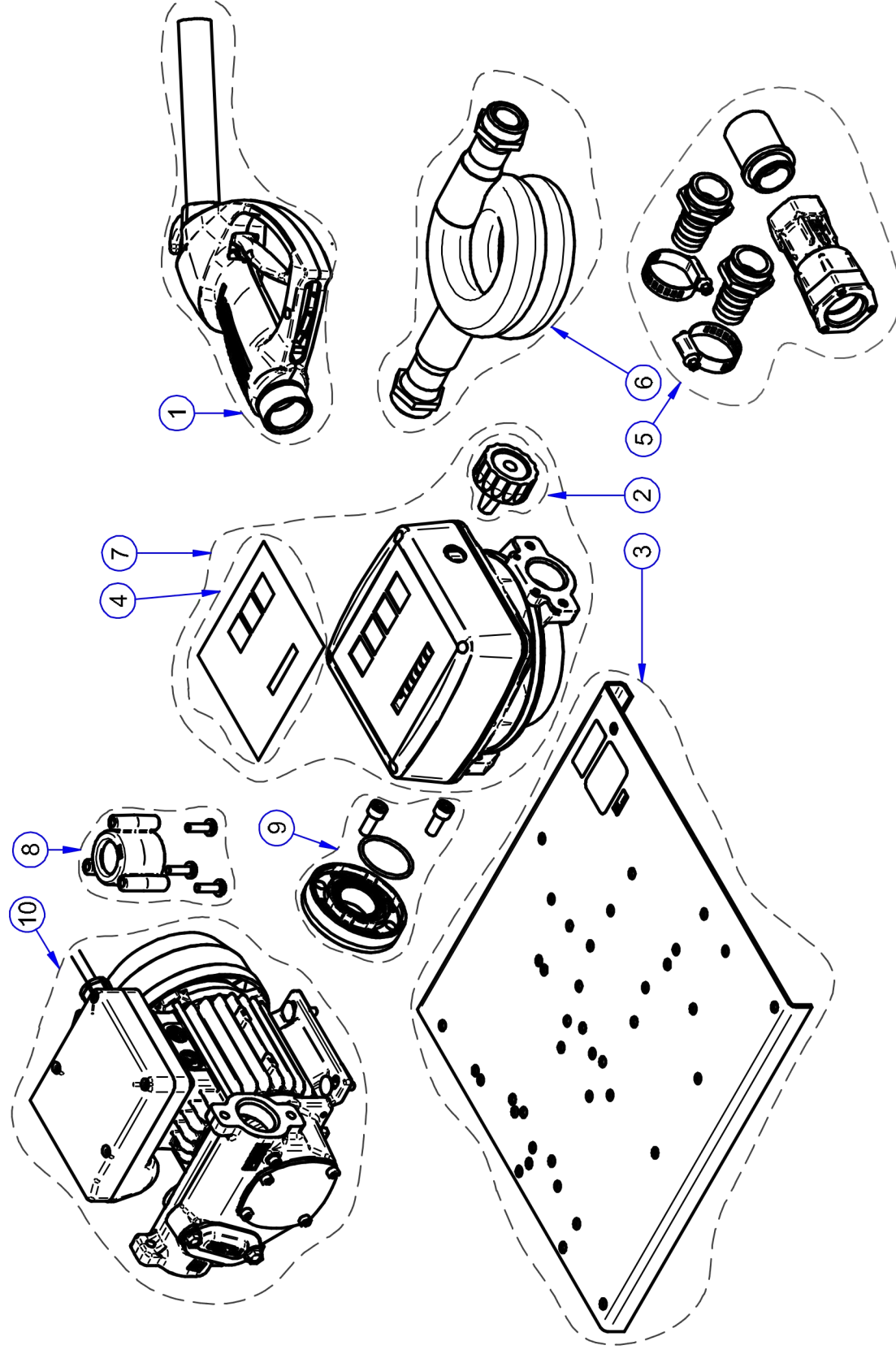


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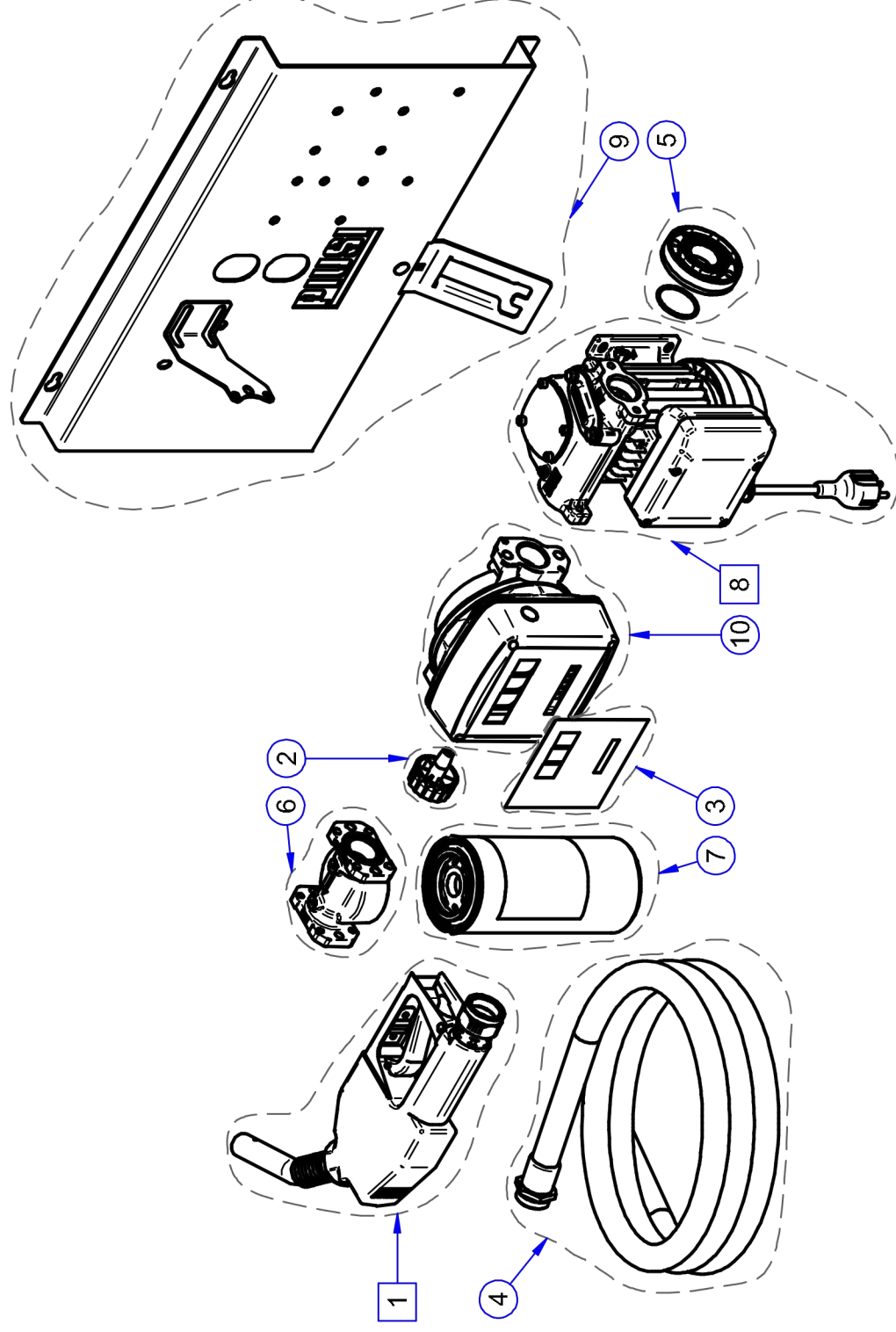
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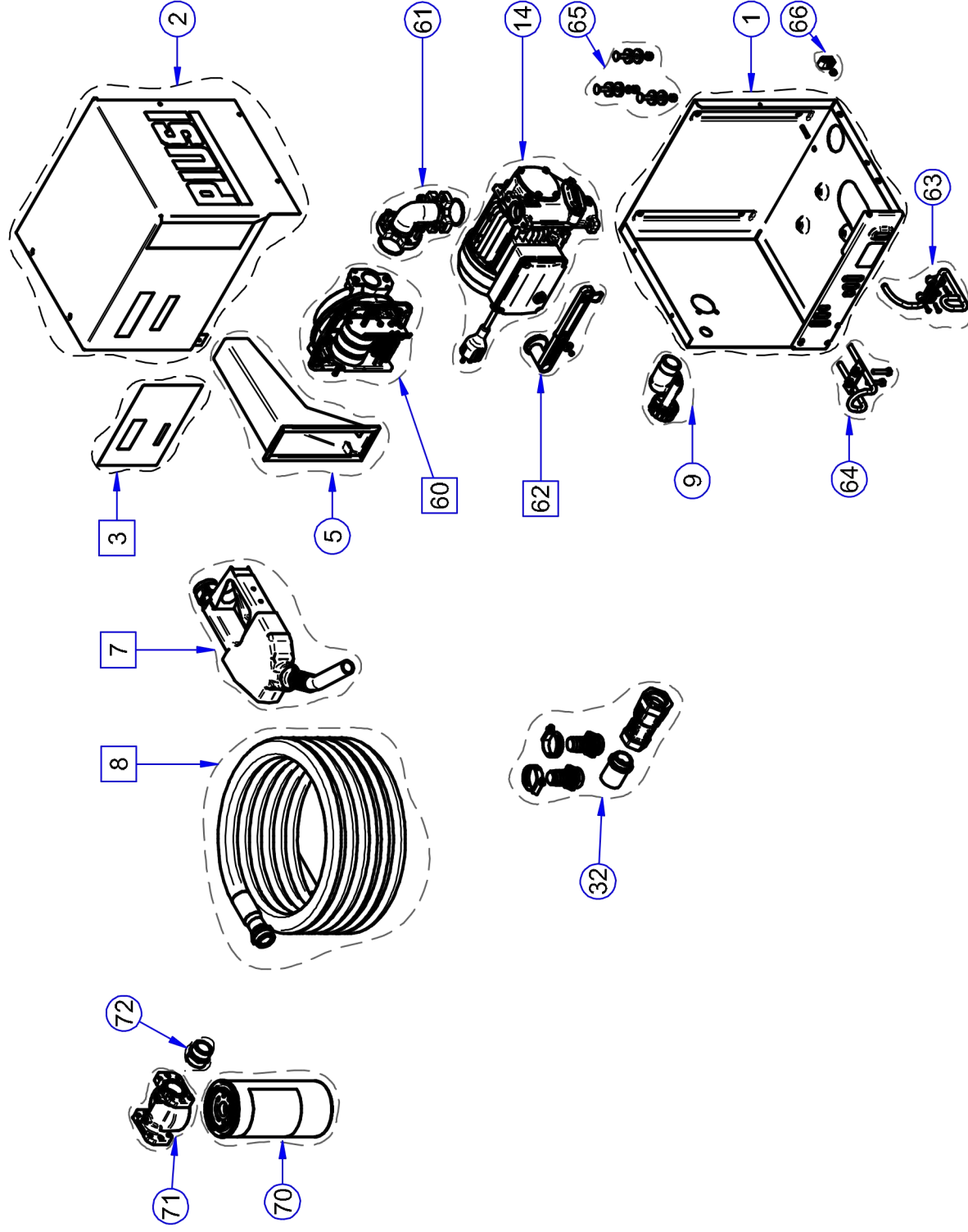
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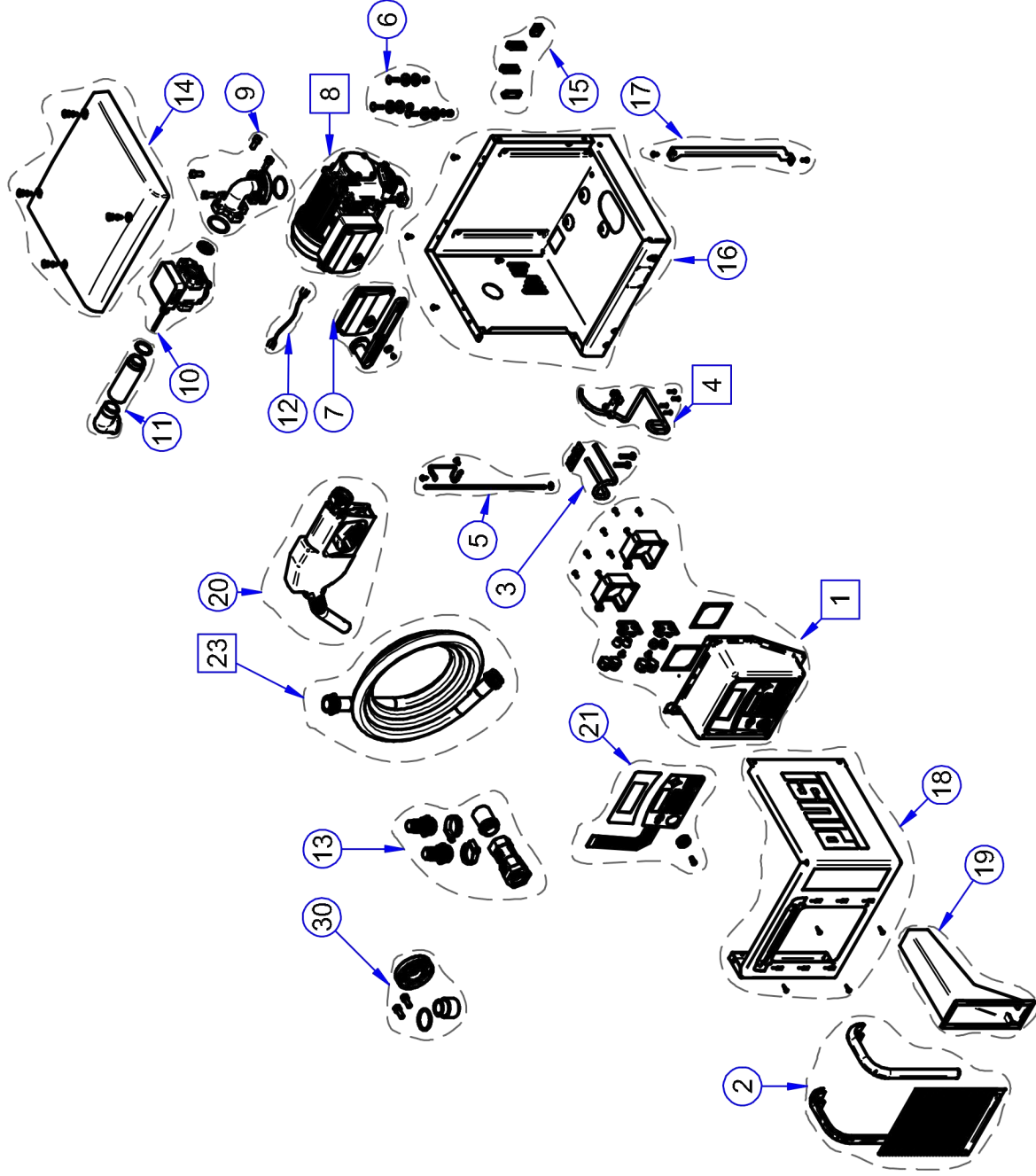
DESCRIPTION:

CUBE MC DISPENSER

CODE:

LR_A00002

LAST RELEASE:



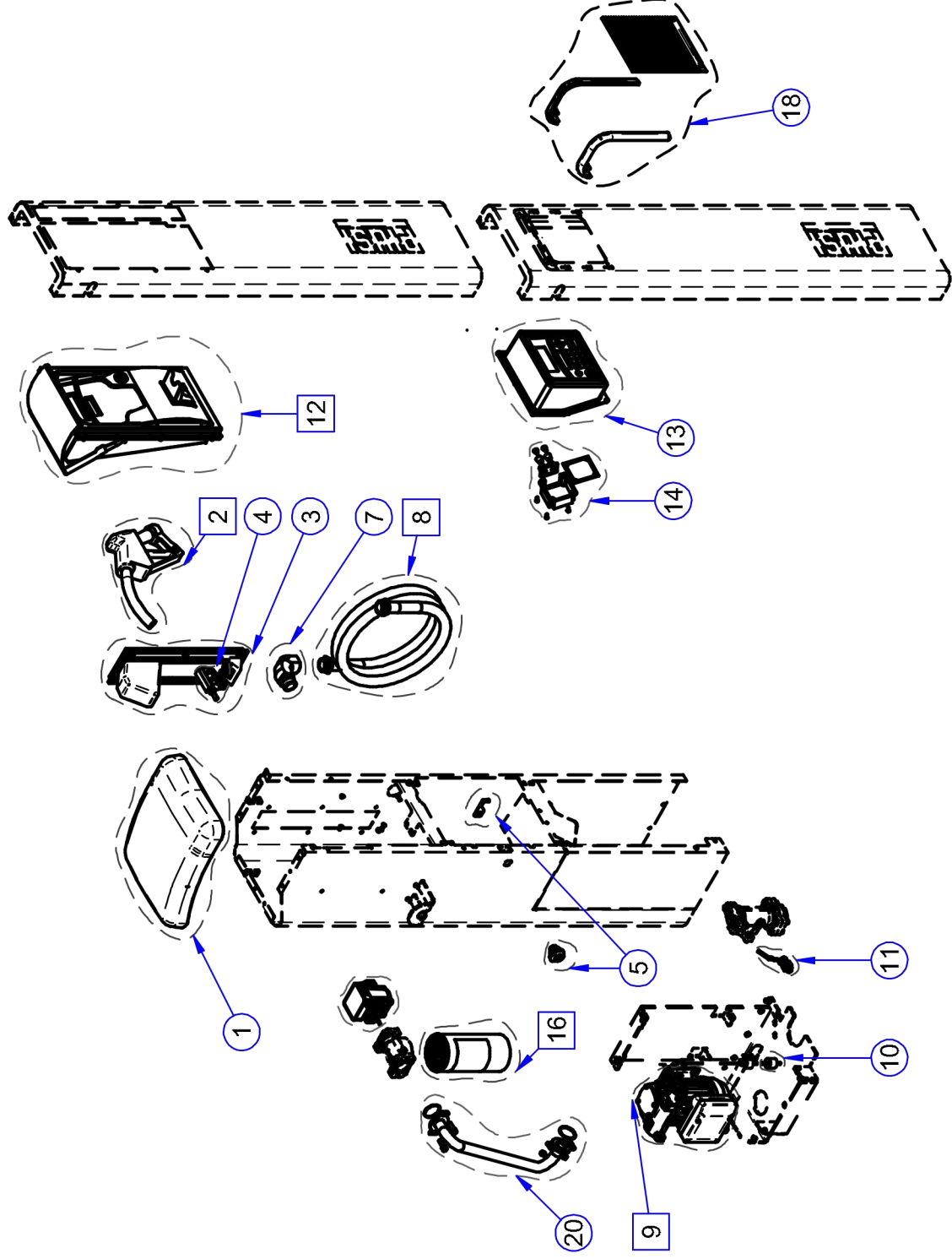
DESCRIPTION:

SELF SERVICE MC-FM

CODE:

LR_A00036

LAST RELEASE:





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NOTE

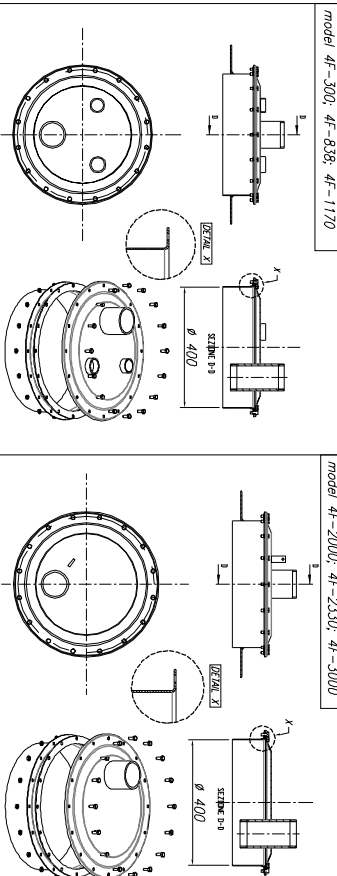


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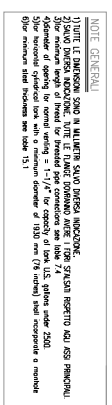
NOTE



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model 4F-2000; 4F-2330; 4F-3000



DISPENSER FOR DIESEL
WITH ELECTRIC DIESEL PUMP AC 120V 60 Hz
unit measurement: gallons

[illegible]