

SABO ESPAÑOLA

Foam and Firefighting Equipment



FireDos dosing systems

FOAM AND FIREFIGHTING EQUIPMENT

FireDos dosing systems



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GENERAL FEATURES

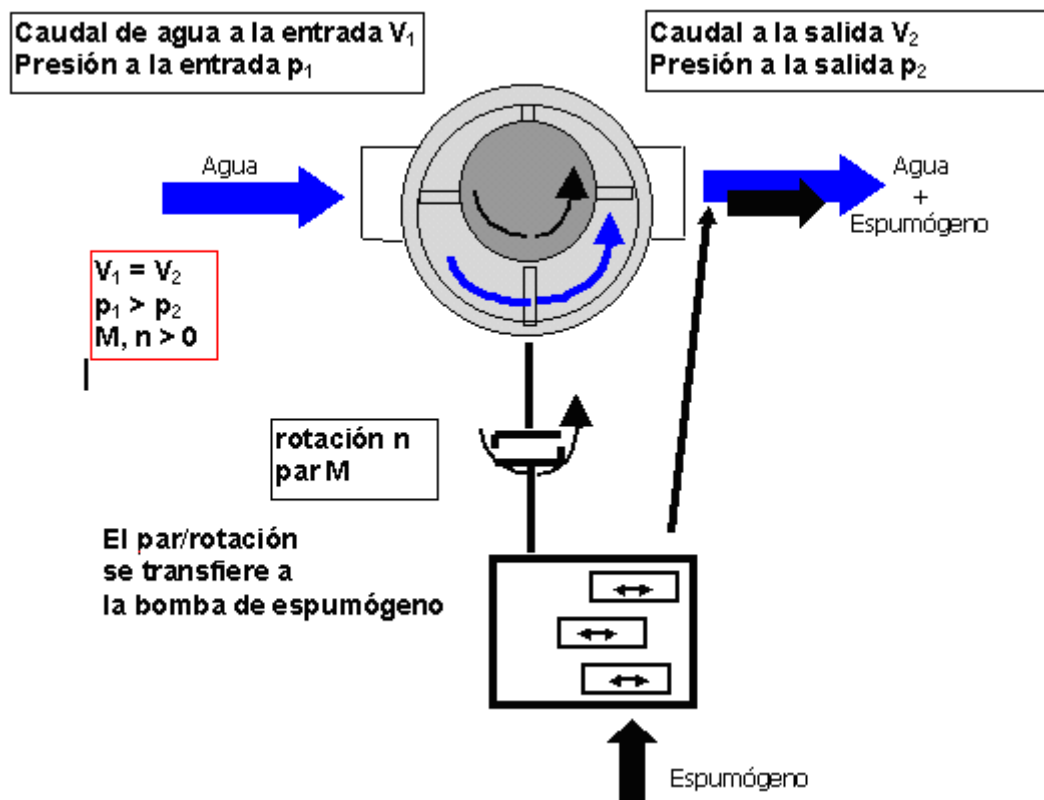
Function-principle of *FireDos*[®] units

"Dosing without external energy"

The water engine takes the pressure energy it requires as driving energy out of the fluid which passes it.

The water engine transforms the energy of the pressure into work, that is a rotating movement and a torque.

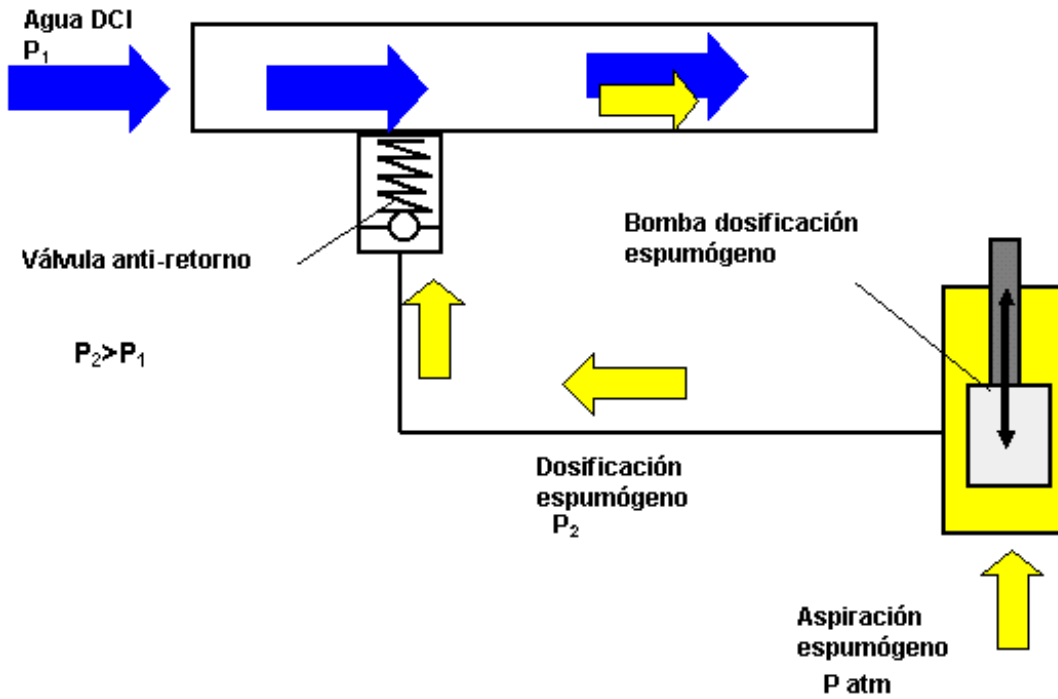
The results are an unavoidable pressure drop, a torque and a rotation proportional to the water flow.



The torque / rotation is transmitted by a mechanical claw coupling, and an additional variable gear for *FireDos* units with stepless adjustable mixing rate, to the foam agent dosing pump.

The foam concentrate pump requires the driving torque / the driving rotation:

1. to increase the pressure of the foam concentrate above the pressure niveau of the driving water flow.
2. to realise a vacuum for suction/intake of the foam concentrate.
3. to surmount the inertia of the foam concentrate.
4. to compensate pressure losses of the flowing foam concentrate.
5. to surmount the friction work in the foam agent dosing pump.



The *FireDos* dosing pump does not require any driving or regulating energy other than the existing pressure energy of the driving water flow

DESCRIPTION OF THE SYSTEM

FireDos[®]-systems serve for the generation of a foam agent-water-solution. They have a fixed or an adjustable mixing ratio between the water and the foam agent. Variations in water pressure, pipe lengths, viscosities or in the water flow rate will not influence this mixing ratio.

The **FireDos**[®]-system mainly consists of seven components :

1. Water motor
2. Dosing pump (foam pump)
3. Mechanical coupling (in version with variable mixing ratio)
4. Truss
5. Air bleeding system
6. Pipe system
7. Suction line

1. The water motor

The fire extinguishing water flows through the water motor. The mechanism inside the water motor uses differences of the water pressure and converts this energie into either a stroke or a rotation. The water motor of the **FireDos**[®]-system is available in eight different sizes. They make it possible to cover wide ranges of flow rates.

- Water motor 500 (flow rate 60 - 500 l/min)
- Water motor 1000 (flow rate 180 - 1000 l/min)
- Water motor 1600 (flow rate 180 - 1600 l/min)
- Water motor 2500 (flow rate 250 - 2500 l/min)
- Water motor 4000 (flow rate 500 - 4000 l/min)
- Water motor 6000 (flow rate 500 - 6000 l/min)
- Water motor 8000 (flow rate 600 - 8000 l/min)
- Water motor 10000 (flow rate 800 - 10000 l/min)
- Water motor 20000 (flow rate 800 - 20000 l/min)

2. The dosing pump

The dosing pump primes the foam liquid out of its storage tank into the fire extinguishing water, which flows through the water motor. The mixture happens in the outlet of the water motor. The dosing pump has to overcome the pressure losses of the suction- and the dosing lines. Furtheron it has to build up the pressure which is needed to inject the foam agent into the fire extinguishing water.

2.1 Piston pump (-PP)

The **FireDos**[®]-systems which use a piston pump mark out with a very low starting flow rate and a very precise mixing ratio. In the pressure range of up to 16 bar the back pressure against the piston pump has nearly no influence on the mixing ratio. **FireDos**[®]-systems with piston pumps

are mainly suitable for low viscous foam agents. Piston pumps require the system to be mounted horizontally. On the other hand the position of the water motor itself can be turned in order to have a vertical water flow through it. As piston pumps are not always self priming, there should be a positive level difference between the storage tank for the foam agent and the **FireDos**[®]-system.

3. The mechanical coupling

The mechanical coupling is the connection between the water motor and the dosing / foam pump. It transfers the torque. **FireDos**[®]-systems with piston- or rotary pump have a cushioned claw coupling fitted.

FireDos[®]-systems with an adjustable dosing head have a spur gear fitted instead.

4. The truss

FireDos[®]-systems with a piston- or a rotatory pump have a truss fitted. Both water motor and dosing pump are mounted on it. The truss can be used to mount the **FireDos**[®]-system. On the truss a protection is fitted which covers the mechanical coupling. It prevents from injuries caused by the rotating coupling.

5. The air bleeding system

All **FireDos**[®]-systems have an air bleeding system fitted. The air bleeding system is necessary in the case that there should be air within the suction hose of the dosing pump or within the dosing pump itself.

FireDos[®]-versions for the use in sprinkler systems work with a manual air bleeding valve. It is assumed that the system, once put into operation, will remain under pressure. The deaeration has to be made once only. On the other hand **FireDos**[®]-versions for mobile, fixed or demountable use have automatic air bleeding valves fitted. Mobile versions e.g. are used in different places. Usually they draw the foam agent out of drums with a capacity of 10 to 30 litres. Every time an empty drum has to be replaced, the suction side of the dosing pump has to be deaerated. Therefore an automatic air bleeding valve is fitted.

6. The pipe system

The pipe system consists of a dosing line (6.1), through which the foam agent is injected into the fire extinguishing water. Furtheron of a suction line (6.2), through which the foam agent is drawn out of the storage tank by the dosing pump and finally of a flushing line (6.1) which allows the dosing pump and the dosing line to be rinsed after operation. The flushing water is taken from the fire extinguishing water.

Furtheron the dosing line includes a check valve, as well as the flushing line includes a water filter.

THE **FIREDOS**[®] - TYPOLOGY

1. *The figures behind FD (= FireDos)*

This figures describe the maximum possible water-flow in the main system. The water-flow is given in litres per minute (l/min).

Example : *FireDos FD 1000..* works up to a maximum water-flow of 1000 l/min, the *FD 2500..* up to 2500 l/min.

2. *The figure behind ‘/’*

This figure describes the dosing-rate in percentage (%).

Example : *FD .../3..* gives an admixture of **3 %**, a *FD.../ 1..* gives **1 %**.

It is also possible to state two dosing-rates, for example *FD/ 1 / 3..* .This describes a unit with two pumps. One with an admixture of **1 %**, the other with **3 %**. Generally, it is also possible to have adjustable pumps. In this case the type descriptor shows the dosing- range: *FD .../ 0,3 - 3..* .This means that the dosing-rate is adjustable from **0,3 % to 3 %**.

3. *The two letters behind the dosing-rate*

These letters describe the type of the used pump :

- **PP** = **Piston Pump**
- **RP** = **Rotor Pump**
- **APP** = **Adjustable Piston Pump**

Please note that it is also possible to have two different types of pumps in one **FireDos**-unit.

Example : *FD.../...-PP / RP...*

This means that the **FireDos**-unit has **one Piston Pump** and **one Rotor Pump** fitted.

4. *Last letter*

This letter describes the version of the **FireDos**-unit.

Four different versions are available (see next page) :

- **...-S** = for **Sprinkler-** and other **Stationary** systems
- **...-F** = for **Fixed** installations in mobile systems (e.g. fire fighting trucks)
- **...-M** = **Mobile** units
- **...-D** = **Demountable** unit

Example : A *FD 1000 / 3-PP-S* is a **FireDos**-unit for a water-flow of max. **1000** l/min in the main system. It has a fixed dosing-rate of **3 %** and has a **Piston Pump** fitted. The unit is suitable for **Sprinkler**-systems.

Equipment of the four different *FireDos*-versions

Type	Sprinkler	Fixed	Mobile	Demountable
Flushing system	x	x	x	x
Manual air bleeding valve	x			
Automatic air bleeding valve		x	x	x
3-way valve for selection of suction from tank or suction from separate suction pipe in a drum		x		x
Hose nipple for connection to tank	x	x		x
Quick coupling for suction pipe		x	x	x
Suction pipe		x	x	x
Bottom bracket			x	x
Handle			x	x
Fire brigade-coupling at the watermotor			x	
Quick coupling and a set of Fire brigade-couplings				x
Quick coupling between foam pump and hose nipple for tank				x

x : included in equipment

Short guide for choosing one of the four different *FireDos*-versions

- (-S) Sprinkler :** For sprinkler installations with only one fixed connection to the tank. This connection must always be filled with liquid down to the pump (when choosing this version the liquid tank must be at the same level or above the inlet of the liquid pump).
- (-F) Fixed :** For fixed installations, mainly on fire trucks, with connection to a fixed liquid tank. As this version has an automatic air bleeding valve, the connection to the liquid tank doesn't need to be filled constantly. This version is suitable when you want to choose suction between a fixed liquid tank and a separate drum.
- (-M) Mobile :** For mobile use with a suction pipe.
- (-D) Demountable :** For demountable installations, for example on fire trucks and container systems. It is basically a fixed unit with additional quick couplings. It is suitable when you want to have the possibility to quickly change the unit into mobile use.

STANDARDS AND APROVALS (*DEPENDING THE MODEL*)

STANDARDS

- EN 13565-1 “Sistemas fijos de lucha contra incendios. Sistemas espumantes. Parte 1: Requisitos y métodos de ensayo de los componentes”.
- NFPA 11 “Norma para espumas de baja, media y alta expansión”.
- DIN 14493-100 “Stationary foam extinguishing systems; Part 100: Requirements and testing of foam extinguishing equipment for heavy and medium foams.”
- DIN 14493 “Stationary foam extinguishing systems; light foam extinguishing systems.”

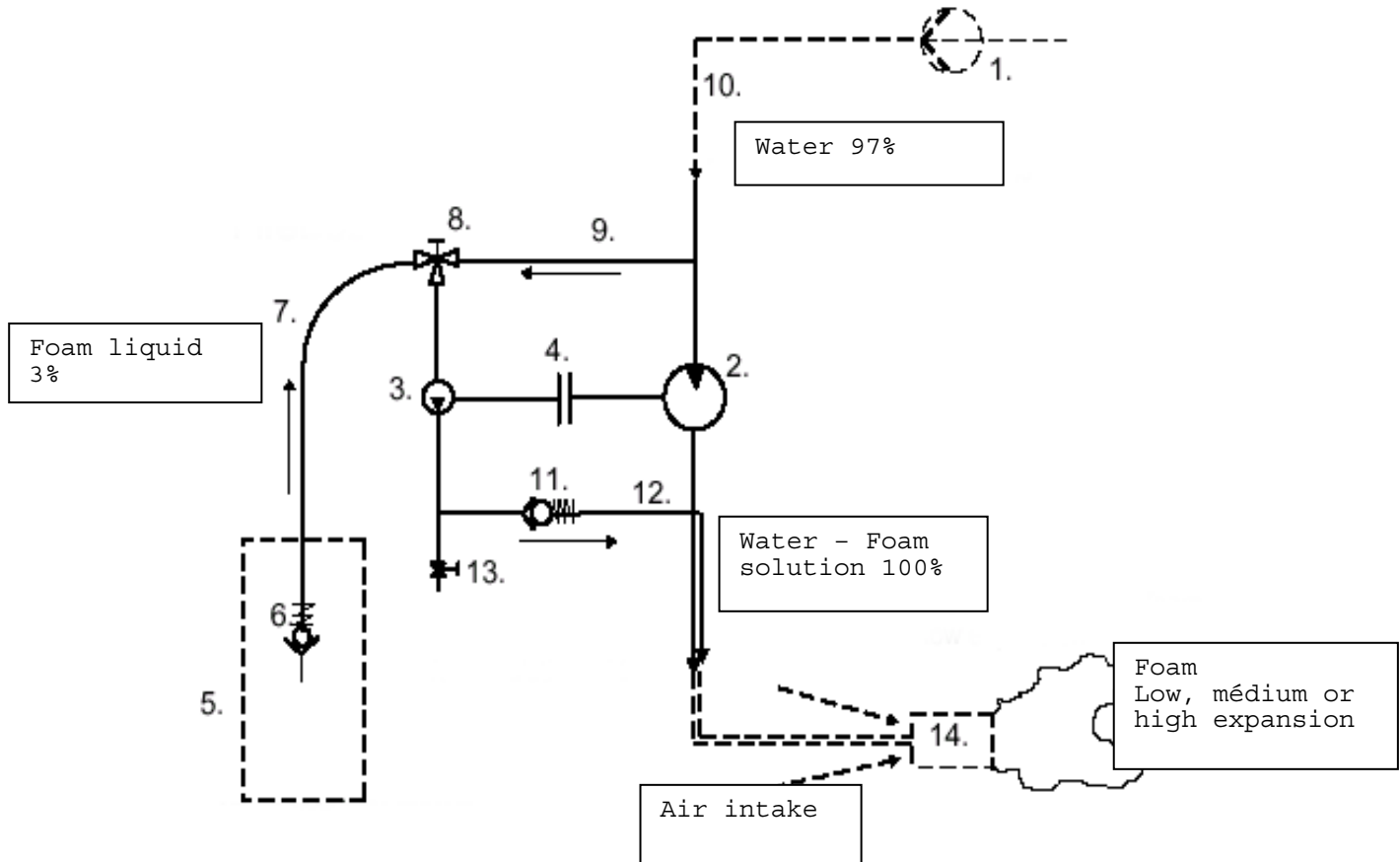
APROVALS

	<p>“FM APROVAL, FACTORY MUTUAL APROVAL”</p>
	<p>“VdS APROVAL, VdS CEA 4001, VdS 2108 y VdS2109”</p>
	<p>“GOST- R, APROBACIÓN RUSA”</p>
	<p>“GL APROVAL (GERMANISCHER LLOYD) APROBACIÓN MARINA”</p>
	<p>“PAVUS APROVAL, APROBACIÓN REPÚBLICA CHECA”</p>
	<p>“KFI APROVAL, KOREAN FIRE INSTITUT”</p>

For more information contact to our Sales/Technical Department.

AVAILABLE CONFIGURATIONS

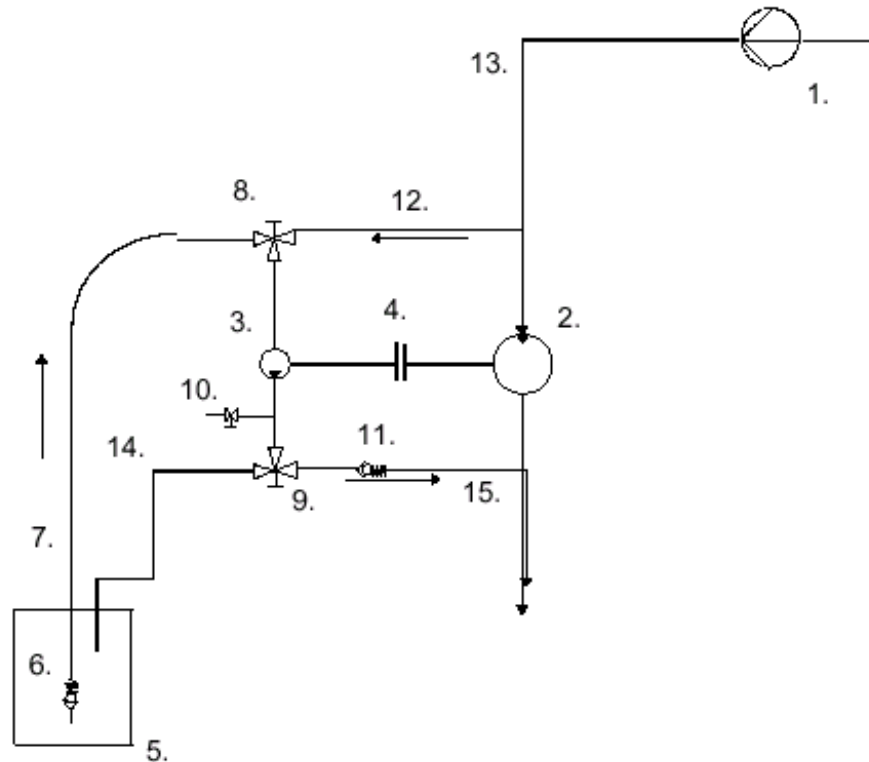
Typical elements of a foam installation (3%) with a FireDos unit



1. water supply
2. water engine
3. foam pump
4. clutch
5. foam tank
6. foot valve
7. foam suction line

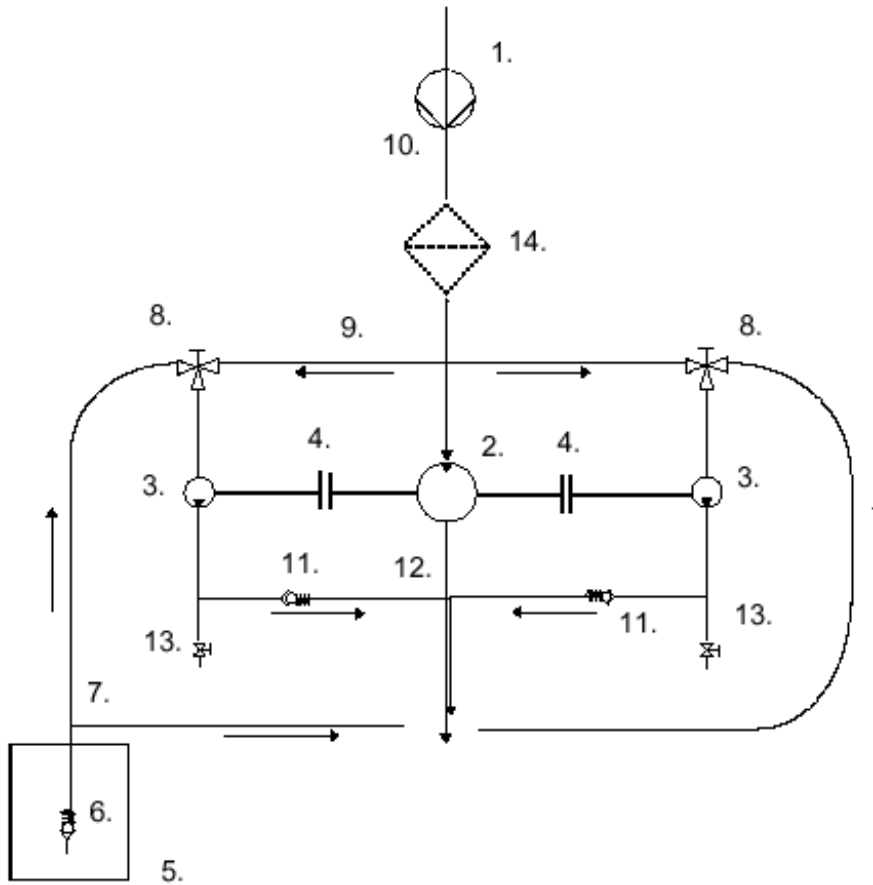
8. 3 way valve (suction/flushing)
9. flushing line
10. main water supply
11. check valve
12. foam injection line
13. air bleeding valve
14. foam generator

FireDos with two three way valves. "Zentex" version



- | | |
|---------------------------------------|--|
| 1. water supply | 9. three way valve (injection/recycling) |
| 2. water engine | 10. air bleeding valve |
| 3. foam pump | 11. check valve |
| 4. clutch | 12. flushing line |
| 5. foam tank | 13. línea principal de agua |
| 6. foot valve | 14. foam recycling line |
| 7. foam suction line | 15. foam injection line |
| 8. three way valve (suction/flushing) | |

FireDos with dual admixture



- | | |
|-----------------|---------------------------------------|
| 1. water supply | 7. foam suction line |
| 2. water motor | 8. three way valve (suction/flushing) |
| 3. foam pump | 9. flushing line |
| 4. clutch | 10. main water line |
| 5. foam tank | 11. check valve |
| 6. foot valve | 12. pressure/dosing line |
| | 13. air bleeding valve |

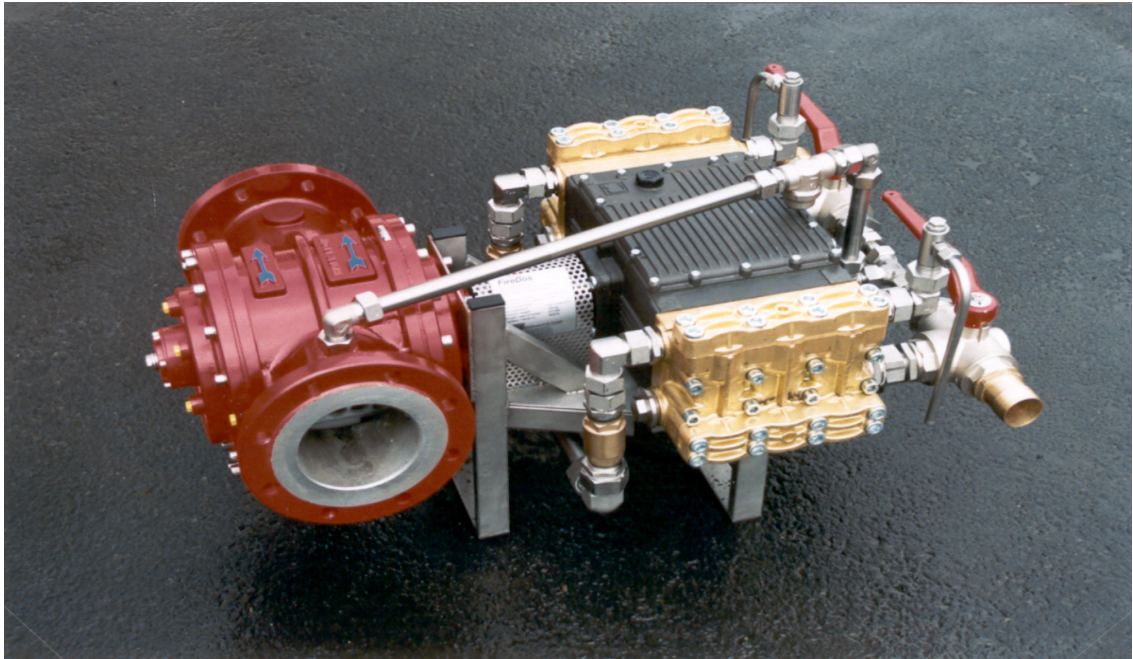
TECHNICAL DATA SHEET FOR FireDos UNITS

For the updated technical datasheets of the FireDos units, please check our web site:

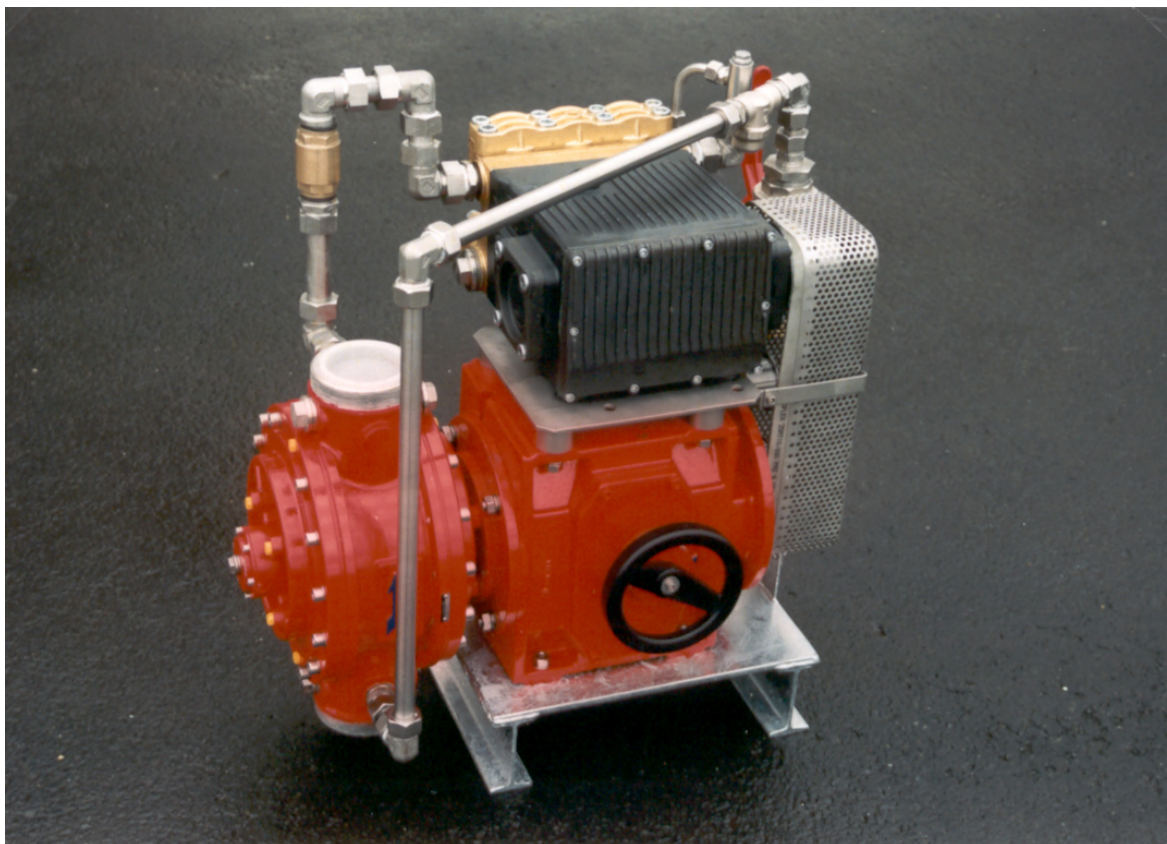
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If you do not find the version you need, or the parameters are out of the range you require, please contact our commercial department (comercial@sabo-esp.com) and we will take care of your request.

PICTURES OF the FireDos UNITS



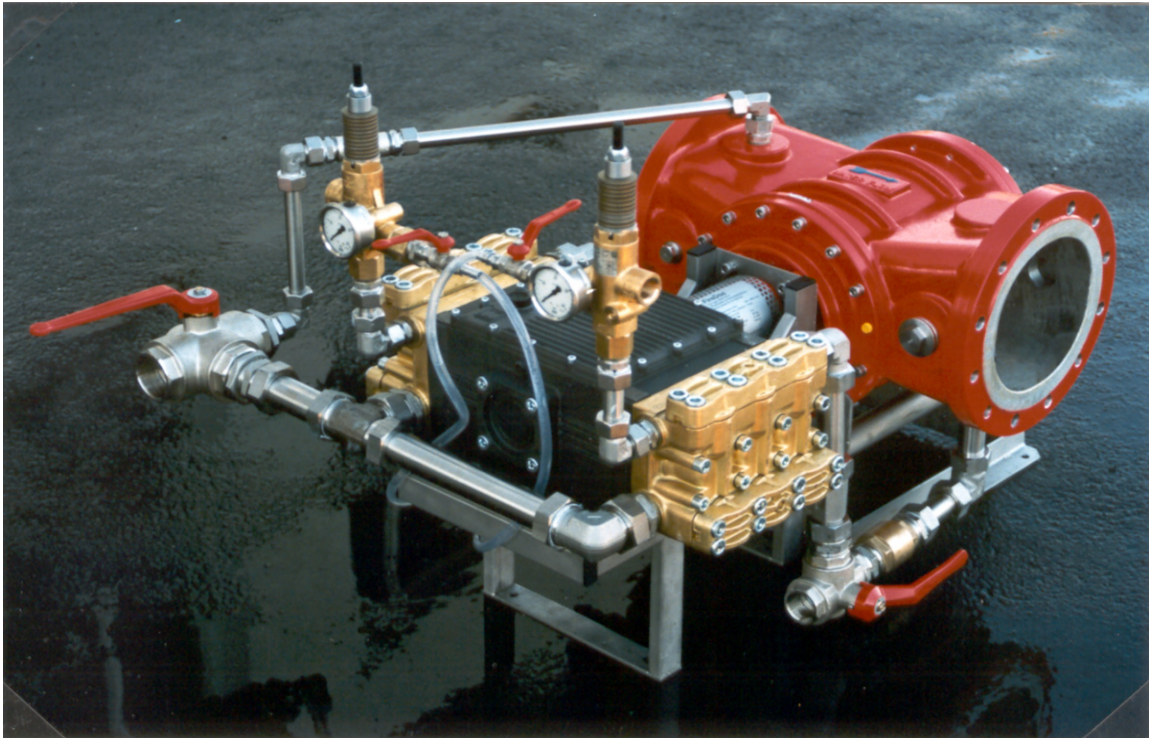
FireDos FD4000/3/3-PP-F



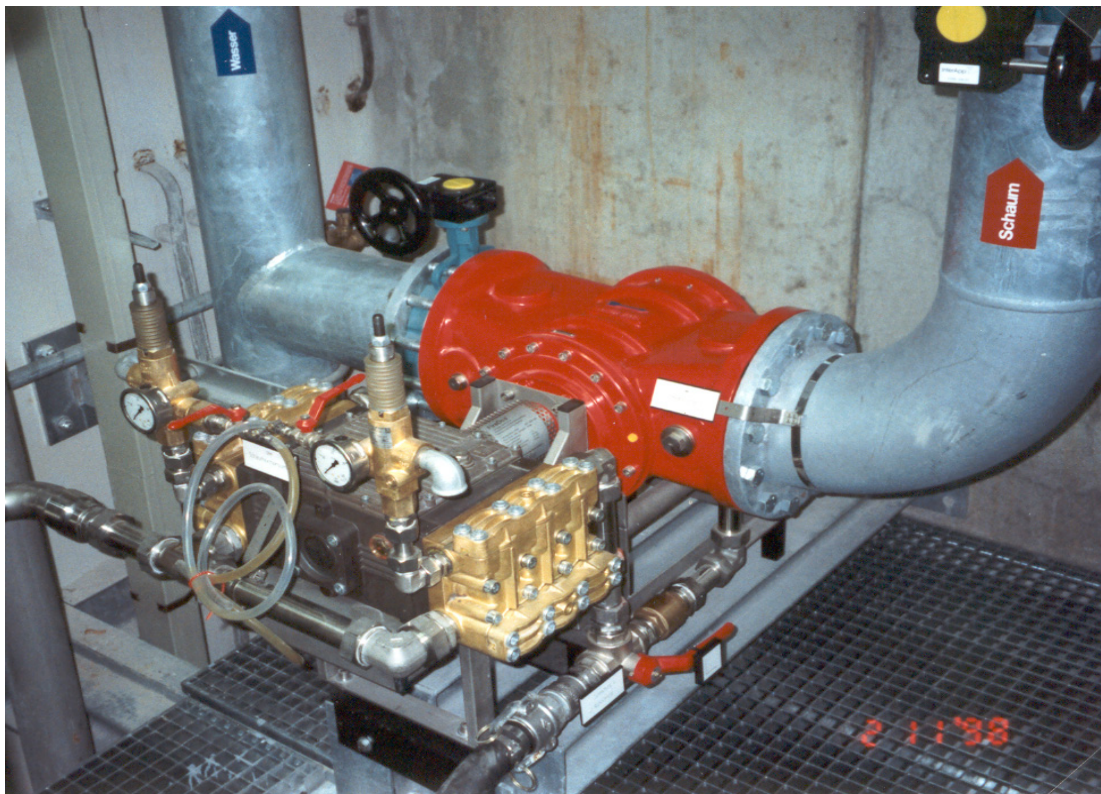
FireDos FD2500/0,6-6-APP-F versión compacta

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FireDos FD6000/3-PP-S



FireDos FD6000/3-PP-S

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FD 10.000/3-PP-S versión en bronce para protección tanques hidrocarburos.



FD 10.000/3-PP-S versión en bronce para protección tanques hidrocarburos.

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FD 6000/3-PP-S



FD 6000/3-PP-S version en bronce para instalación protección pantalán.

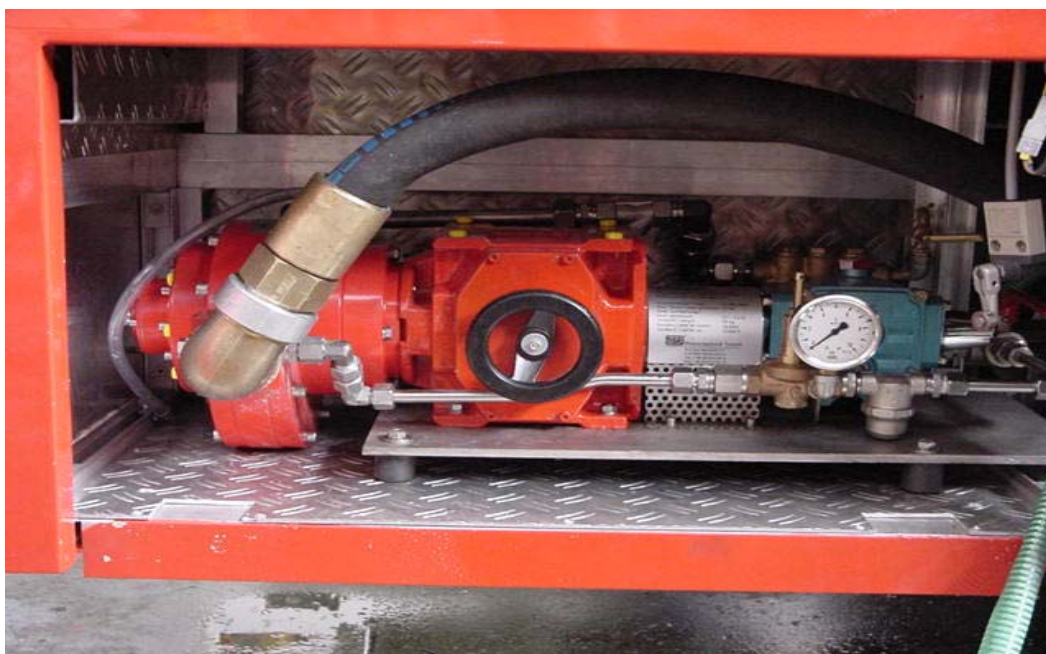
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FD 250/ 0,3-3-APP-S para vehículo Bombers de la Generalitat



FD 250/ 0,3-3-APP-S para vehículo Bombers de la Generalitat

REFERENCE LIST

CODE	Mod. FIRE-DOS	DESTINATION
1	1 Mod.FD 1.000/3-PP-S	SIERRASUR (GRANADA)
2	1 Mod.FD 1.000/3-PP-S	ESTEVE QUÍMICA (GELRÀ - GIRONA)
3	1 Mod.FD 400/3-PP-S	TUBACEX (GUERNICA - VIZCAYA)
4	1 Mod.FD 1.000/3-PP-S Zentex	TUBACEX (GUERNICA - VIZCAYA)
5	1 Mod.FD 400/6-PP	PUIG (BARCELONA)
6	1 Mod.FD 2.500/3-PP-S	COMPAÑÍA LOGÍSTICA DE HIDROCARBUROS,S.A. (PUERTOLLANO - CIUDAD REAL)
7	1 Mod.FD 6.000/6-PP Sea water	BASF ESPAÑOLA (TARRAGONA)
8	1 Mod.FD 6.000/6-PP-S Sea water	BASF ESPAÑOLA (TARRAGONA)
9	1 Mod.FD 6.000/6-PP-S Sea water	BASF ESPAÑOLA (TARRAGONA)
10	1 Mod.FD 2.500/3-PP-S	GREVA (GRANADA)
11	1 Mod.FD 1.000/3-PP-S	ECOIMSA - PORT ECOREL (BARCELONA)
12	1 Mod.FD 6.000/3-PP-S	CAPEA (HUELVA)
13	1 Mod.FD 1.000/3-PP-S	LABORATORIOS MENARINI (PALLAFOLS - GIRONA)
14	1 Mod.FD 1.000/3-PP-S Zentex	FACTORÍA DISA LA HONDURA (PUERTO DEL ROSARIO - FUERTEVENTURA)
15	1 Mod.FD 6.000/3-PP-S Zentex	CAPEA (BARCELONA)
16	1 Mod.FD 400/3-PP-S	CHUBB PARSI, S.A. (TARRAGONA)
17	1 Mod.FD 2.500/3-PP-S Zentex	REPSOL QUÍMICA (PUERTOLLANO)
18	1 Mod.FD 6.000/3-PP-S Zentex	JOTUN IBÉRICA, S.A. (CASTELLBISBAL - BARCELONA)
19	1 Mod.FD 1.000/3-PP-S Zentex	CARBUROS METÁLICOS (SANT CELONI - BARCELONA)

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CODE	Mod. FIRE-DOS	DESTINATION
20	1 Mod.FD 400/3-PP-S Zentex	MONTAJES INDUSTRIALES LLECA, S.A. (BARCELONA)
21	1 Mod.FD 200/0-3-3-APP-F	DEGUSSA HÜLS, S.A. (MONTORNÈS DEL VALLÈS - BARCELONA)
22	1 Mod.FD 200/0-3-3-APP-F	DEGUSSA HÜLS, S.A. (MONTORNÈS DEL VALLÈS - BARCELONA)
23	1 Mod.FD 200/0-3-3-APP-F	DEGUSSA HÜLS, S.A. (MONTORNÈS DEL VALLÈS - BARCELONA)
24	1 Mod.FD 1.000/3-PP-S	ELF ATOCHEM ESPAÑA, S.A. (EL PRAT DE LLOBREGAT - BARCELONA)
25	1 Mod.FD 2.500/3-PP-S	VICASA AZUQUECA (TOLEDO)
26	1 Mod.FD 4.000/3-PP-S Zentex	TERMINALES PORTUARIAS, S.A. (BARCELONA)
27	1 Mod.FD 400/3-PP-S	COMPAÑÍA LOGÍSTICA DE HIDROCARBUROS, S.A. (SOMORROSTRO - VIZCAYA)
28	1 Mod.FD 6.000/3-PP-S Zentex	ICI IBÉRICA, S.A. (VILAFRANCA DEL PENEDES - BARCELONA)
29	1 Mod.FD 6.000/3-PP-S Zentex	ICI IBÉRICA, S.A. (VILAFRANCA DEL PENEDES - BARCELONA)
30	1 Mod.FD 10.000/3-PP-S Sea water	EURONERGO, S.L.-PLANTA EURONERGO (TARRAGONA)
31	1 Mod.FD 10.000/3-PP-S Sea water	EURONERGO, S.L.-PLANTA EURONERGO (TARRAGONA)
32	1 Mod.FD 2.500/3-PP-S Zentex	SUGAIN, S.A.L.
33	1 Mod.FD 1.000/3-PP-S Zentex	ALBERT LLUCH (EL PRAT DE LLOBREGAT - BARCELONA)
34	1 Mod.FD 400/3-PP-S	GIMPEX (PETREL - ALICANTE)
35	1 Mod.FD 10.000/3-PP-S Sea water	DECAL PANAMÁ, S.A.

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CODE	Mod. FIRE-DOS	DESTINATION
36	1 Mod.FD 10.000/3-PP-S Sea water	DECAL PANAMÁ, S.A.
37	1 Mod.FD 2.500/3-PP-S Zentex	COMPAÑÍA LOGÍSTICA DE HIDROCARBUROS, S.A. - MAÓ (MENORCA)
38	1Mod.FD 1.000/3-PP-S Zentex	RANKE QUÍMICA, S.L.(SANT ANDREU DE LA BARCA - BARCELONA)
39	1Mod.FD 1.000/3-PP-S Zentex	IDEC SECURITY FIRE 06, S.L. (BADAJOZ)
40	1 Mod.FD 2.500/3-PP-S Zentex	COMPAÑÍA LOGÍSTICA DE HIDROCARBUROS,S.A. - AEROPUERTO DE GIRONA (GIRONA)
41	1 Mod.FD 250/0-3-3-APP-F	PROTEC-FIRE, S.A.
42	1 Mod.FD 250/0-3-3-APP-F	PROTEC-FIRE, S.A.
43	1 Mod.FD 250/0-3-3-APP-F	PROTEC-FIRE, S.A.
44	1 Mod.FD 250/0-3-3-APP-F	PROTEC-FIRE, S.A.
45	1 Mod.FD 250/0-3-3-APP-F	PROTEC-FIRE, S.A.
46	1 Mod.FD 2.500/3-PP-S Zentex	GAS Y ELECTRICIDAD, S.A.(GESA ENDESA) (MENORCA)
47	1 Mod.FD 4.000/3-PP-S Zentex	INTERQUISA (SAN ROQUE - CÁDIZ)
48	1 Mod.FD 500/3-PP-S Zentex	INTERQUISA (SAN ROQUE - CÁDIZ)
49	1 Mod.FD 500/3-PP-S Zentex	INTERQUISA (SAN ROQUE - CÁDIZ)
50	1 Mod.FD 7.000/3-PP-S Zentex	PETRESA (CÁDIZ)

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CODE	Mod. FIRE-DOS	DESTINATION
51	1 Mod.FD 1.000/3-PP-S Zentex	CASA TARRADELLAS (GURB-VIC - BARCELONA)
52	1 Mod.FD 1.000/3-PP-S Zentex	CASA TARRADELLAS (GURB-VIC - BARCELONA)
53	1 Mod.FD 250/0-3-3- APP-F	ITURRI,S.A. (BARCELONA)
54	1 Mod.FD 200/0-3-3- APP-F Firesorb	STOCKHAUSEN IBERIA, S.A. (BARCELONA)
55	1 Mod.FD 200/0-3-3- APP-F Firesorb	STOCKHAUSEN IBERIA, S.A.(BARCELONA)
56	1 Mod.FD 200/0-3-3- APP-F Firesorb	STOCKHAUSEN IBERIA, S.A.(BARCELONA)
57	1 Mod.FD 200/0-3-3- APP-F Firesorb	STOCKHAUSEN IBERIA, S.A.(BARCELONA)
58	1 Mod.FD 2.500/3-PP-S Zentex	RISI (DAGANZO - MADRID)
59	1 Mod.FD 1.000/3-PP-S Zentex	BACARDÍ ESPAÑA, S.A.(MÁLAGA)
60	1 Mod.FD 500/3-PP-S Zentex	ARCH (BENIPARELL - VALENCIA)
61	1 Mod.FD 4.000/3-PP.-F Zentex	PROTEC-FIRE, S.A.
62	1 Mod.FD 2.500/3-PP-S Zentex	FAURECIA, S.A. (OURENSE)
63	1 Mod.FD 1.000/6-PP-S Zentex.Sea water	PROTEC-FIRE, S.A.
64	1 Mod.FD 1.000/6-PP-S Zentex.Sea water	PROTEC.FIRE, S.A.

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CODE	Mod. FIRE-DOS	DESTINATION
65	1 Mod.FD 2.500/6-PP-S Zentex	TERMINALES PORTUARIAS, S.A. (BARCELONA)
66	1 Mod.FD 1.000/6-PP-S Zentex	RITRAMA, S.A. (BARBERA DEL VALLES - BARCELONA)
67	1 Mod.FD 1.000/6-PP-S Zentex.Sea water	TERMINALES PORTUARIAS, S.A.
68	1 Mod.FD 200/3-PP-S Zentex	GAS Y ELECTRICIDAD GENERACIÓN ,S.A.(MAÓ – MENORCA - ILLES BALEARS)
69	1 Mod.FD 2.500/3-PP-S Zentex	OPTIROC ARLITA (LOS HUEROS - MADRID)
70	1 Mod.FD 1.000/3-PP-S Zentex	CASA GAILLARD (PALMA DE MALLORCA)
71	1 Mod.FD 2.500/3-PP-S Zentex	INDUSTRIAS EUROTEx (VISO DEL ALCOR - SEVILLA)
72	1 Mod.FD 6.000/3-PP-S Zentex	NAVES FOGARS (FOGARS DE LA SELVA - GIRONA)
73	1 Mod.FD 4.000/3-PP-S Zentex	COMPañÍA LOGÍSTICA DE HIDROCARBUROS,S.A.-I.A. (SANTURCE - VIZCAYA)
74	1 Mod.FD 2.500/3-PP-S	MASADecOR (SANT ANTONI DE VILAMAJOR - BARCELONA)
75	1 Mod.FD 1.600/3-PP-S	SUÑER (ALZIRA-VALÈNCIA)
76	1 Mod.FD 2.500/3-PP-S Zentex	COMPañÍA LOGÍSTICA DE HIDROCARBUROS, S.A.(TERMINAL PORTUARIA DE A CORUÑA)
77	1 Mod.FD 1.000/3-PP-S Zentex	COMPañÍA LOGÍSTICA DE HIDROCARBUROS, S.A.(TERMINAL PORTUARIA DE A CORUÑA)
78	1 Mod.FD 2.500/3-PP-S Zentex.Sea water	ENDESA (CEUTA)
79	1 Mod.FD 2.500/3-PP-S Zentex.Sea water	ENDESA (MELILLA)
80	1 Mod.FD 4.000/3-PP-S Zentex versión	LAUSON MARDON SUÑER (VALÈNCIA)

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CODE	Mod. FIRE-DOS	DESTINATION
81	1 Mod.FD 2.500/3-PP-S Zentex	INDUSTRIAL QUÍMICA LACEM (CASTELLGALÍ – MANRESA - BARCELONA)
82	1 Mod.FD 1.600/3-PP-S Zentex	DALAI METAL ESPAÑA (VIGO - PONTEVEDRA)
83	1 Mod.FD 250/3-PP-S Zentex	AISMALIBAR (MONTCADA I REIXAC - BARCELONA)
84	1 Mod.FD 2.500/3-PP-S Zentex	CEPSA AVIACIÓN-AEROPUERTO DE FUERTEVENTURA (FUERTEVENTURA - CANARIAS)
85	1 Mod.FD 7.500/3-PP-S Zentex	MEROIL,S.A. (BARCELONA)
86	1 Mod.FD 7.500/3-PP-S Zentex	DECAL BRASIL LTDA. (PORTO SUAPE-PERNAMBUCO-BRASIL)
87	1 Mod.FD 1.000/3-PP-S Zentex	DECAL BRASIL LTDA. (PORTO SUAPE-PERNAMBUCO-BRASIL)
88	1 Mod.FD500/3-PP-S Zentex	TECNOLOGÍA Y PROYECTOS ORFEO,S.L.(BARCELONA)
89	1 Mod.FD2500/3-PP-S Zentex	SANDOZ INDUSTRIAL PRODUCTS,S.A.(Les Franqueses del Vallès)
90	1 Mod.FD4000/3-PP-S Zentex	ASTUR-PHARMA (Llanora-Asturias)
91	1 Mod.FD4000/3-PP-S Zentex	ASTUR-PHARMA (Llanora-Asturias)
92	1 Mod.FD4000/3-PP-S Zentex	CEPSA PORTUGUESA DE PETRÓLEOS,S.A. (Matosinhos-Portugal)
93	1 Mod.FD2500/3-PP-S Zentex	CEPSA PORTUGUESA DE PETRÓLEOS,S.A. (Matosinhos-Portugal)
94	1 Mod.FD2500/3-PP-S Zentex	CEPSA PORTUGUESA DE PETRÓLEOS,S.A. (Matosinhos-Portugal)
95	1 Mod.FD250/3-PP-S Zentex	CEPSA PORTUGUESA DE PETRÓLEOS,S.A. (Matosinhos-Portugal)

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CODE	Mod. FIRE-DOS	DESTINATION
96	1 Mod.FD7500/3-PP-S Zentex	NUEVA PLANTA DE CEFICAR (Motril-Granada)
97	1Mod.FD250/3-PP-S Zentex	IALEC,S.L.(Maliaño-Cantabria)
98	1 Mod.FD1600/3-PP-S Zentex	FORT INSTALACIONES PETROLERAS,S.L.(Parets del Vallès- Barcelona)
99	1 Mod.FD600/3-PP-S Versión especial para altas temperaturas	CHEMTROL PROYECTOS Y SISTEMAS,S.L. (Madrid)
100	1 Mod.FD250/3-PP-S Zentex	RODABIL,S.A.(Zamudio-Vizcaya)
101	1 Mod.FD1000/3-PP-S Zentex	RODABIL,S.A.(Zamudio-Vizcaya)
102	1 Mod.FD2500/3-PP-S Zentex	RODABIL,S.A. (Zamudio-Vizcaya)
103	1 Mod.FD1000/3-PP-S Zentex	INTERBON (Burgos)
104	1 Mod.FD1000/3-PP-S Zentex-Agua salada	TERMINALES PORTUARIAS,S.A.(VALÈNCIA)
105	1 Mod.FD1600/3-PP-S Zentex-Agua salada	TERMINALES PORTUARIAS,S.A.(VALÈNCIA)
106	1 Mod.FD2500/3-PP-S Zentex-Agua salada	TERMINALES PORTUARIAS,S.A.(VALÈNCIA)
107	1 Mod.FD1600/3-PP-S Zentex versión	ALTOSA (Tomelloso-Ciudad Real)
108	1 Mod.FD1600/3-PP-S Zentex versión	A.Q.L.PROTECCIÓN,S.L.(Barcelona)
109	1 Mod.FD 6000/3-PP-S Zentex versión	I.N.T.A.(Torrejón de Ardoz-Madrid)

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CODE	Mod. FIRE-DOS	DESTINATION
110	1 Mod.FD500/3-PP-S Zentex versión	DESGUACE MALVAROSA (Ribarroja-València)
111	1 Mod.FD250/3-PP-S Versión Zentex y agua de mar	UTE FIAT para PUERTO DE SAGUNTO(València)
112	1 Mod.FD500/3-PP-S Versión Zentex y agua de mar	UTE FIAT para PUERTO DE SAGUNTO(València)
113	1 Mod.FD500/3-PP-S Versión Zentex y agua de mar	UTE FIAT para PUERTO DE SAGUNTO(València)
114	1 Mod.FD500/6-PP-S Versión Zentex	PINTURAS ISAVAL (Ribarroja del Túria-València)
115	1 Mod.FD1000/2-PP-S Versión agua de mar	TYCO MARINE SERVICES KOREA CO.,LTD. (Corea)
116	1 Mod.FD2500/2-PP-S Versión agua de mar	TYCO MARINE SERVICES KOREA CO.,LTD.(Corea)
117	1 Mod.FD2500/3-PP-S Zentex	C.T.C.C.CAS TRESORER 1
118	1 Mod.FD2500/3-PP-S Zentex	TESEIN,S.A. para ESTACIÓN DE UNIÓN FENOSA (MADRID)
119	1 Mod.FD10.000/3-PP-S Zentex	EXTIMBAL,S.L.para OB BUNGE EXTINCIÓN CARTAGENA
120	1 Mod.FD10.000/3-PP-S Zentex	EXTIMBAL,S.L.para OB BUNGE EXTINCIÓN CARTAGENA
121	1 Mod.FD10.000/3-PP-S Zentex	EXTIMBAL,S.L.para OB BUNGE EXTINCIÓN CARTAGENA
122	1 Mod.FD10.000/3-PP-S Zentex	EXTIMBAL,S.L.para OB BUNGE EXTINCIÓN ZIERBANA
123	1 Mod.FD10.000/3-PP-S Zentex	EXTIMBAL,S.L.para OB BUNGE EXTINCIÓN ZIERBANA

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CODE	Mod. FIRE-DOS	DESTINATION
124	1 Mod.FD10.000/3-PP-S Zentex	EXTIMBAL,S.L.para OB BUNGE EXTINCIÓN ZIERBANA
125	1 Mod.FD2500/3-PP-S Zentex	ZIBAGA,S.A.
126	1 Mod.FD1600/3-PP-S Zentex	TECNOLOGÍA Y PROYECTOS ORFEO,S.L. para DEQUISA-Sabiñanigo (Huesca)
127	1 Mod.FD1000/3-PP-S Zentex	BACARDÍ ESPAÑA,S.A.(MÁLAGA-ESPAÑA)
128	1 Mod.FD1000/3-PP-S Zentex	SERVICIOS Y CONSULTORÍA IBEREXT,S.L.
129	1 Mod.FD2500/6-PP-S Zentex	SERVICIOS Y CONSULTORÍA IBEREXT, S.L.
130	1 Mod.FD2500/3-PP-S Zentex	TESEIN, S.A. para SUBESTACIÓN DE UNIÓN FENOSA (Madrid)
131	1 Mod.FD1000/6-PP-S Zentex	EUROMEYSH,S.L. (SEAT Martorell-Barcelona)
132	1 Mod.FD2500/3-PP-S Zentex	SUBESTACIÓN FENOSA (CERRO DE LA PLATA-MADRID)
133	1 Mod.FD1000/6-PP-S Zentex	VISA SEGURIDAD,S.A. (Donostia-Guipúzcoa)
134	1 Mod.FD1600/3-PP-S Zentex	AQL PROTECCIÓN,S.A. (Molins de Rei-Barcelona)
135	1 Mod.FD4000/3-PP-S Zentex Aigua salada	TERMINALES PORTUARIAS,S.L.
136	1 Mod.FD1600/3-PP-S Zentex	ENERGIS VALORACIÓN DE RESIDUOS,S.A.(Albox-Almería)
137	1 Mod.FD500/3-PP-S Zentex	SIEMENS,S.A. para BASE AÉREA DE ZARAGOZA
139	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A. para SUBESTACIÓN DE UNIÓN FENOSA

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CODE	Mod. FIRE-DOS	DESTINATION
140	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A.. para SUBESTACIÓN DE UNIÓN FENOSA
141	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A.. para SUBESTACIÓN DE UNIÓN FENOSA
142	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A.. para SUBESTACIÓN DE UNIÓN FENOSA
143	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A. para SUBESTACIÓN DE UNIÓN FENOSA.
144	1 Mod.FD500/3-PP-S Zentex	KELAN,S.I. para EROSKI ZUBIETA
145	1 Mod.FD1000/3-PP-S	KELAN,S.L. para EROSKI VITORIA
146	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A.
147	1 Mod.FD1600/3-PP-S Zentex	SERVICIOS Y CONSULTORÍA IBEREXT,S.L.. para HELLA,S.A. (Tres Cantos-Madrid)
148	1 Mod.FD4000/3-PP-S Zentex	IMASA,INGENIERÍA Y PROYECTOS,S.A. para C.L.H.-I.A.EL MUSEL-GIJÓN
149	1 Mod.FD250/3-PP-S Zentex	PRS INSTALACIONES,S.L. para HOLCIN, SL. (Lorca-Murcia)
150	1 Mod.FD4000/3-PP-S Zentex	FLAMESA,S.L. para ENERGIS VALORIZACIÓN DE RESIDUOS,S.A. (Albox-Almería)
151	1 Mod.FD500/3-PP-S Zentex	KELAN,S.L. (Guernica-Bizaia)
15	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A.
153	1 Mod.FD2500/3-PP-S Zentex	SOLUZIONA SEGURIDAD,S.A.
154	1 Mod.FD2500/3-PP-S Zentex	GRUPO CONTROL FIRE,S.A. para SUBESTACIÓN UNIÓN FENOSA MANUEL BECERRA (Madrid)

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CODE	Mod. FIRE-DOS	DESTINATION
155	1 Mod.FD250/3-PP-S Zentex	SIEMENS,S.A. para HOLCIM JEREZ (CÁDIZ)
156	1 Mod.FD1600/6-PP-S Zentex	INGENIERÍA Y TÉCNICAS DE CONTROL,S.L. para QUÍMICAS MEROÑO (Pozo del Estrecho-Murcia)
157	1 Mod.FD 10.000/3-PP-S Zentex Agua salada	FELGUERA-IHI,S.A. Las Rozas (Madrid)
158	1 Mod.FD2500/3-PP-S Zentex	MCR SERVICIOS DE SEGURIDAD,S.L.para PROYECO (Ciudad Real)
159	1 Mod.FD2500/3-PP-S Zentex	MARVAL SEGURIDAD INTEGRAL,S.L. para SUBESTACIÓN LOS PRADOS DE UNIÓN FENOSA (TOLEDO)
160	1 Mod.FD1600/3-PP-S Zentex	AXIMA SISTEMAS E INSTALACIONES,S.A. Para REPSOL PETRÓLEO (Pobla de Mafumet-Tarragona)
161	1 Mod.FD1000/3-PP-S Zentex	EULEN,S.A.(Madrid) para CTR MEDITERRÁENO (Vall d'Alba-Castelló)
162	1 Mod.FD600/3-PP-S Zentex	FIRECONSULT,S.L. (Madrid)
163	1 Mod.FD2500/3-PP-S Zentex	ELECTRICIDAD LOSA,S.L. para SUBESTACIÓN UNIÓN FENOSA (Madrid)
164	1 Mod.FD2500/3-PP-S Zentex	INMAREPRO,S.L. (Madrid) para SOLUZIONA PROSPERIDAD (Madrid)
165	1 Mod.FD4.000/3-PP-S Zentex	ETECAM ,S.L. para BASE MILITAR DE ALMAGRO (CIUDAD REAL)
166	1 Mod.FD4.000/3-PP-S Zentex	ETECAM,S.L. para BASE MILITAR DE ALMAGRO (CIUDAD REAL)
167	1 Mod.FD2500/3-PP-S Zentex	MARVAL SEGURIDAD INTEGRAL,S.L. (Santa Olaja de la Ribera-León)
168	1 Mod.FD4.000/3-PP-S Zentex	AXIMA SISTEMAS E INSTALACIONES,S.L.para A.P.PLUS (Cerdanyola del Vallès-Barcelona)

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CODE	Mod. FIRE-DOS	DESTINATION
169	1 Mod.FD2500/3-PP-S Zentex	GRUPO CONTROL FIRE,S.L. para UFD CANILLEJAS (Madrid)
170	1 Mod.FD2500/3-PP-S Zentex	GRUPO CONTROL FIRE,S.L. para SUBESTACIÓN UNIÓN FENOSA en Arganda del Rey-Madrid
171	1 Mod.FD2500/3-PP-S Zentex	ELECTRICIDAD LOSA,S.L.(Santa Olaja de la Ribera-León)
172	1 Mod.FD2500/3-PP-S Zentex	INMAREPRO,S.L.(San Fernando de Henares-Madrid)
173	1 Mod.FD2500/3-PP-S Zentex.	MARVAL SEGURIDAD INTEGRAL,S.L. (Santa Olaja de la Ribera-León)
174	1 Mod.FD1600/3-PP-S Zentex	SECURITAS SISTEMAS DE SEGURIDAD,S.A. para S.T.PIQUEÑAS
175	1 Mod.FD2500/3-PP-S Zentex	ELECTRICIDAD LOSA,S.L.para SUBESTACIÓN UNIÓN FENOSA (Madrid)