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Hytrans Systems

HFS HYDROSUB 150



**MOBILE WATER SUPPLY
FLOODING**

**2017
BROCHURE**

MOBILE WATER SUPPLY

&

FLOODING SOLUTION

HFS HYDROSUB 150

Hydraulic driven portable submersible floating pump.

Quick access to any open water source at any distance up to 60 metres. Powered by a diesel hydraulic powerpack.

Handling facilities: hookloader lift-off connections, hoisting eye/pockets, fork pockets. Equipped with 6 cylinder turbo diesel Volvo engine.

Fixed hydraulic displacement pump. Maximum operating pressure of 350 bar. Hydraulic driven support winch with pulling force of 400 kg and equipped with 60 metres steel cable.



Hytrans S

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olution @ City of New York

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GENERAL DESCRIPTION





The HydroSub 150 pump unit consists of a portable hydraulic driven submersible pump, complete with floating device. Outlet 6" Storz coupling.

Powered by a 6-cylinder turbocharged diesel engine.

Type HFS-3000 standard version 3500 lpm @ 10 bar OR type HFS-3000 Hi-Flow version 8000 lpm @ 2.1 bar.

Bronze pump housing, alu-bronz impeller, stainless steel frame

PORTABILITY



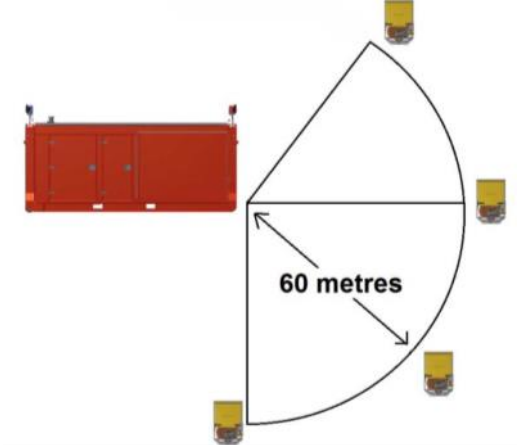
The limited weight of the submersible pump of approximately 125kg provides the ability for two persons to place (throw) the pump in the water. The pump is equipped with wheels and four handles to enable a four person lift.

SUBMERSIBLE / FLOATING



The submergibility and floating features guarantees operation with cleanest possible water, not affected by the water level or by waves. Even in cases where water is being pumped from very shallow locations and consequently the risk of cavitation exists, the pump will still maintain its operation.

ACCESSABILITY / OPERATIONAL SPEED



The portability and the 60 meter hydraulic hose length guarantees access to almost all open waters, providing a very speedy water supply without any capacity loss or time loss due to draft problems at a reach of up to 60 meter or with a lift of up to 60 meter.

HYDRAULIC TRANSMISSION



The hydraulic transmission consists of a high-efficient axial-piston hydraulic pump. Hydraulic transmission components, powering a hydraulic motor attached to the centrifugal water pump. Hydraulic system pressure maximum 350 bar.

OPERATION



The capacity is engine speed controlled on the instrument panel. The unit is equipped with an advanced control system.

The ergonomically designed control panel uses IQAN technology for easy operation.

All vital parameters are measured and automatically maintained, such as oil pressure, oil temperature, fuel level, motor temperature, etc.

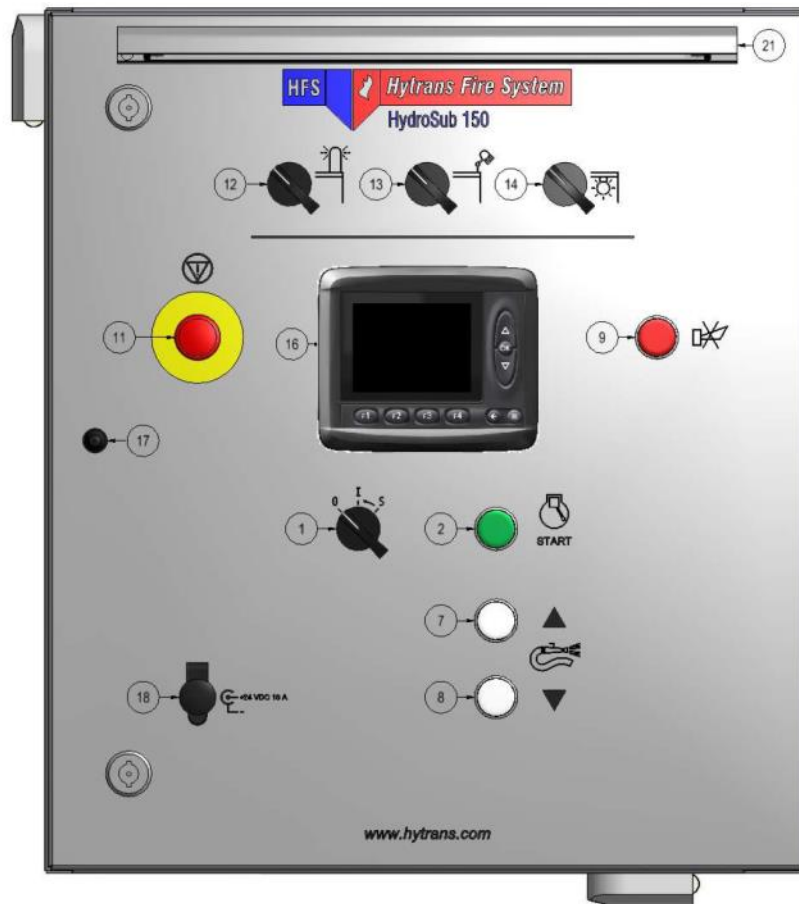
The display also shows the calculated water output.

Audible and visible alarms are generated when a parameter falls outside its maximum or minimum settings.

If alarms are ignored for a prolonged time, the unit will automatically regulate itself to a safe to operate output performance level and as such prevent the unit from being damaged permanently.



CONTROL PANEL



- | | | | |
|---|---|----|-------------------------------------|
| 1 | Rotary switch 0-I-S
"off/ on/ system start". | 11 | Pushbutton "Emergency stop". |
| 2 | Pushbutton "Start engine". | 12 | Rotary switch "Obstacle light". |
| 7 | Pushbutton "▲", increase capacity. | 13 | Rotary switch "Work light". |
| 8 | Pushbutton "▼", decrease capacity. | 14 | Rotary switch "Internal lighting". |
| 9 | Pushbutton "Acknowledge alarm". | 16 | Display |
| | | 17 | Switch "control panel illumination" |
| | | 18 | Power socket 24 V 10A |
| | | 21 | Control panel illumination. |

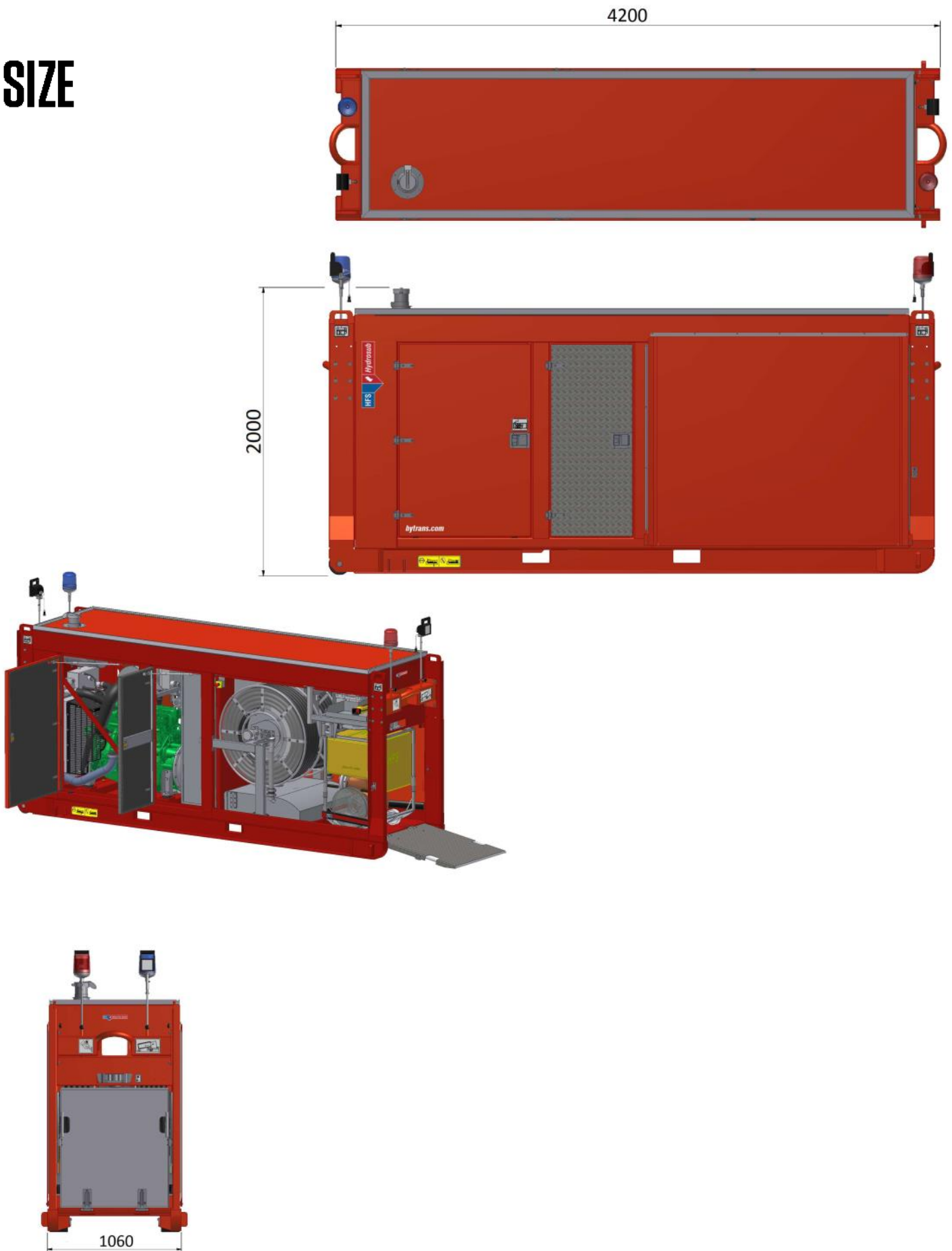


Information

A flashing button indicates that its operation is allowed. Push buttons are operated when continuously lit.

BUTTON OR SWITCH		DESCRIPTION
1	rotary switch 0-I-S "off/ on/ system start".	<p>This is the control system main switch. With this switch, the control system can be started. Turn the display on by turning rotary switch to position "S" and hold it until the control system has been started.</p> <p>If, during operation the rotary switch is turned to "0", the engine will stop. To return to the start menu, turn the rotary switch to position "I".</p> <p>After an emergency stop: Turn to the switch to position "S", before restart is possible.</p>
2	Pushbutton "start engine".	<p>This is the start engine button. (The engine will be pre-heating if necessary)</p>
7/8	Pushbutton "▲"/"▼".	With this buttons the engine speed can be adjusted.
9	Pushbutton "Acknowledge alarm".	<p>With this button, an alarm can be acknowledged If the beeper sounds and the alarm beacon is on, there is an alarm. Turn the alarm off by pressing this button. The alarm will repeat until the cause of the alarm is solved.</p>
11	Pushbutton "emergency stop".	<p>This is the emergency stop. Press this button in emergency situations. The engine will safely shut down. Rotate the emergency stop button to release it. Turn the rotary switch 0-I-S to position "S", before restart is possible.</p>
12	Rotary switch "Obstacle light".	With this switch, the obstacle light can be turned on
13	Rotary switch "work light".	With this switch, the work light can be turned on
14	Rotary switch "internal lighting".	With this switch, the internal lighting can be turned on
16	Display	See 4.5 Operation of the display, page 23
17	Control panel illumination switch.	This is the switch of the control panel illumination. The control panel illumination turns on when the door is open
18	Power socket 24 V 10A	
21	Control panel illumination.	

SIZE

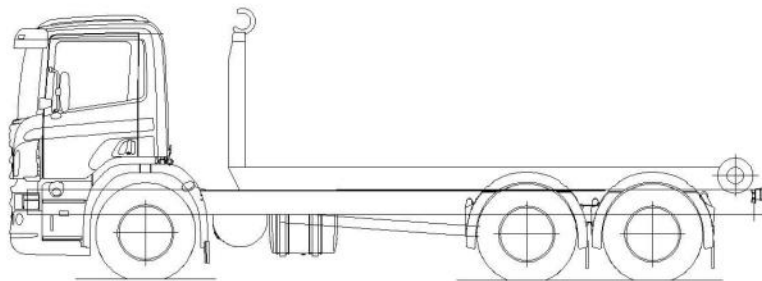




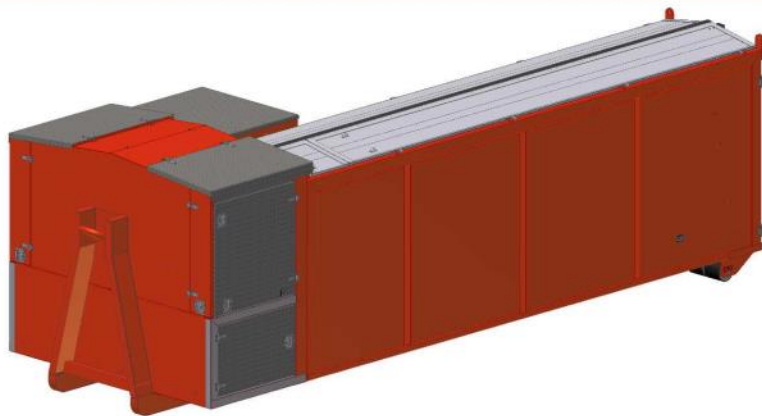
HFS PACKAGE PROPOSAL A4-2000

Combi Container Set:

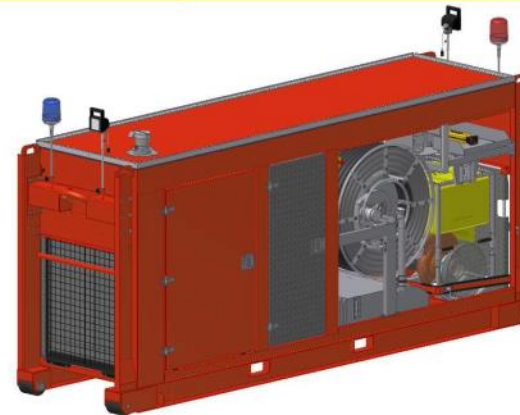
1. HydroSub 150
2. Hose Recovery Unit 200
3. Squeeze ramp
4. 6"Hose (2100 meter)
5. Hardware



26T GVW



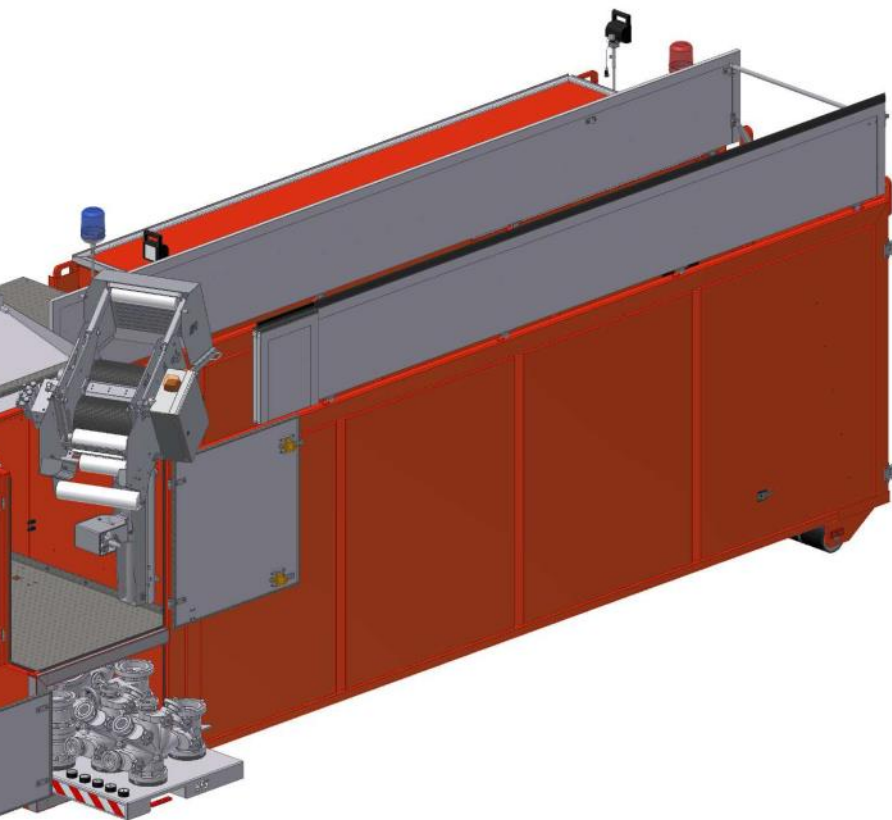
HFS Combi Container 6500 - 1x



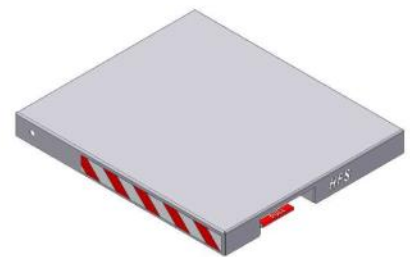
HFS HydroSub 150 - 1x



1x Set of 2000 meter 152mm (6") hose
at lengths of 50 meter
+ 100 meter in short lengths



HFS Hose Recovery Unit 200 - 1x



HFS Sliding tray - 1x



Gate Valve - 4x



Manifold Divider - 2x



Pressure Meter - 5x



Non Return Valve - 1x



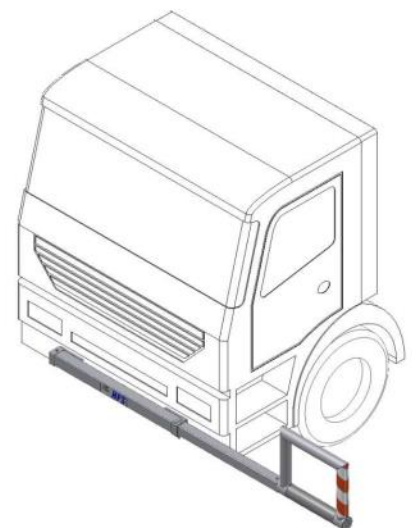
Y-Piece 150/150 - 6x



Coupling Spanner - 10x



Squeeze Ramp - 2x



HFS Bumper Hose Guide Roller 6" - 1x

HFS HYDROSUB 150 SPECIFICATIONS

GENERAL

Manufacturer	Hytrans Systems B.V.
Type	HFS HydroSub 150
Nominal dimensions (LxWxH)	4200mmx1162mmx1840mm
Full Operational Weight	3.000 kg
Auxiliary power supply	110 / 230 Volt 16 Amp.
Max. Hydraulic Working Pressure	350 bar
Nominal capacity	3.000 lpm @11 bar
Ambient Temperature Operation	-10°C - +45°C
Ambient Temperature Storage	-30°C - +60°C

Permitted oblique position

For handling, longitudinal axis	+ 40° / - 40°
For handling, transverse axis	+ 3.5° / - 3.5°
In operation - longitudinal axis (not anchored)	+ 4° / - 4°
In operation, transverse axis	+ 3.5° / - 3.5°

ENGINE

Manufacturer	Volvo
Type	TAD 660 VE
Exhaust emission	EPA Tier3 / EU stage 3A
Number of cylinders	6
Displacement	5.7 litres
Power	147 kW @ 2300 rpm
Fuel consumption Nom / Max	32 / 40 lph
Oil capacity	19 litres
Oil specification	Kroon Oil Dieselfleet CD+LSP 15W40 (Equivalent: Shell Rimula 15W40)
Oil filter	HS4028050011
Air filter cartridge	HS4028030001
Multi belt	HS4028050045

ELECTRICAL SYSTEM

Voltage	24 VDC
Generator	28 V / 80 A
Battery	2 x12V-70Ah

COOLING SYSTEM

Engine cooling	Radiator / Aftercooler
Coolant	Kroon Oil Coolant - SP12 (Equivalent: Shell Glycoshell Longlife)
Coolant capacity	30 litres

FUEL SYSTEM

Fuel	Diesel ASTM - D975 – 1D/2D EN590
Tank Capacity	160 litre
Operating time at Nom. Capacity	Min. 4 hours
Pre fuel filter	HS4028050044
Fuel fine filter	HS4028050043

SUBMERSIBLE PUMP

Type	HFS 3000	
Nominal Capacity Standard Impeller	3.000 lpm	
Nominal Capacity Hi Flow Impeller (optional)	8.000 lpm	
Weight (incl 6" Storz Coupling)	115 kg	
Dimensions	935 x 710 x 580mm (HxLxW)	
Mechanical Seal HFS3000/HSP7		HS6062186518
Mechanical seal Counterpart HFS3000/HSP7		HS6062186520
O-ring set HFS3000 Std.HiFlow		HS61030020
High Pressure Seal HS 3000 Std HiFlow		HS61030021

HYDRAULIC SYSTEM SUBMERSIBLE PUMP

Hydraulic oil	Kroon Oil Perlus Super HVI 32/46 (Equivalent: Shell Tellus T32/46)	
or		
Biodegradable hydraulic oil	Kroon Oil Perlus Biosynth 32/46 (Equivalent: Shell Naturelle HF-E 32/46)	
Oil Capacity	170 litres	
Filter element	1x Filter rating 10 micron	HS30050011
Hydraulic pumps	1x Axial piston pump 110 cc	
Max. Working Pressure	350 bar	
Oil cooler	1x Fan drive 24VDC-0,25kW	

WINCH/REEL HYDRAULICS

Max. Working Pressure	85 bar
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HOSE REELS

Hose length	60 m
Pressure hose	NW 25 max. WP 380 bar
Return hose	NW 32 max. WP 65 bar

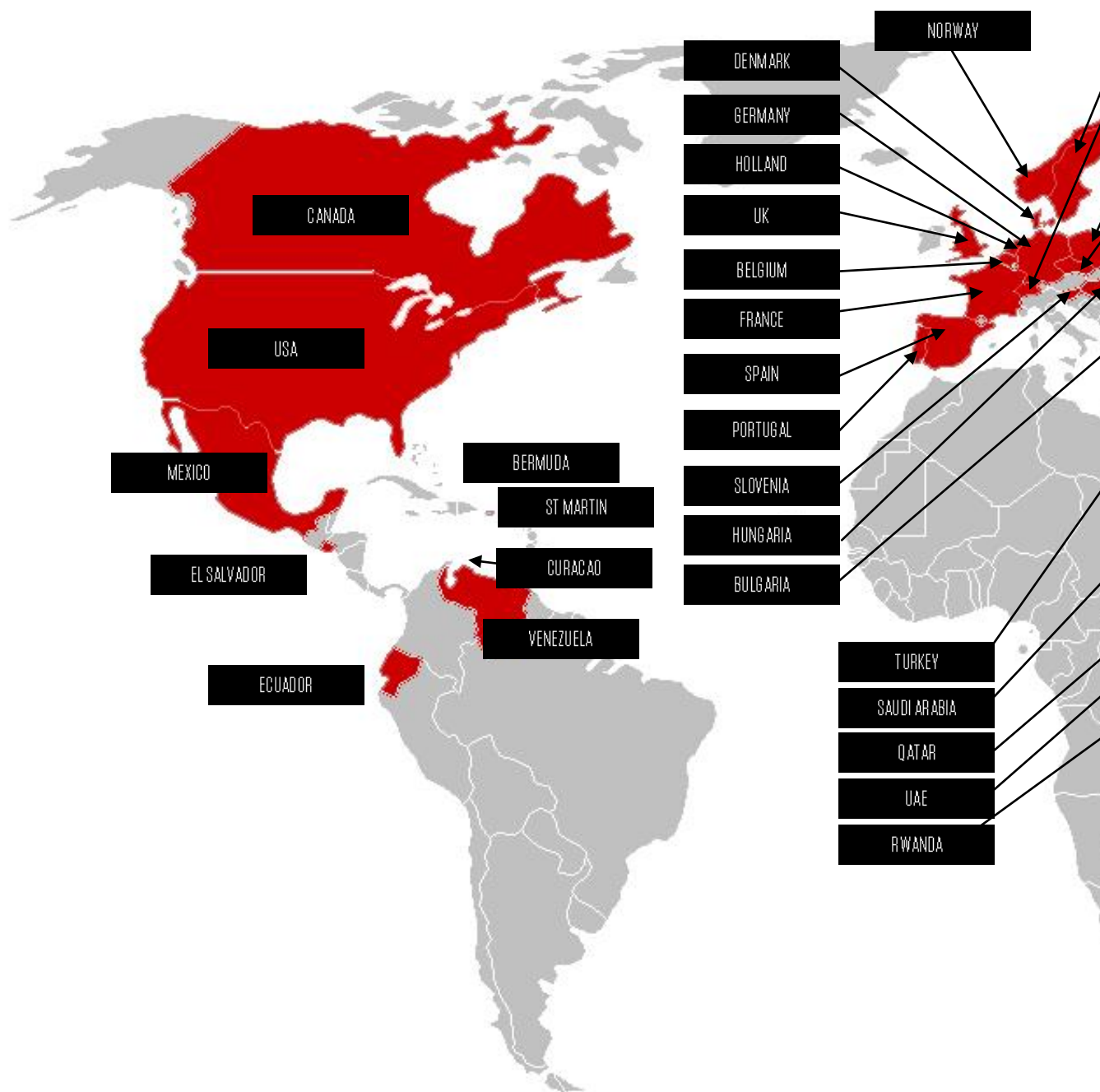
WINCH

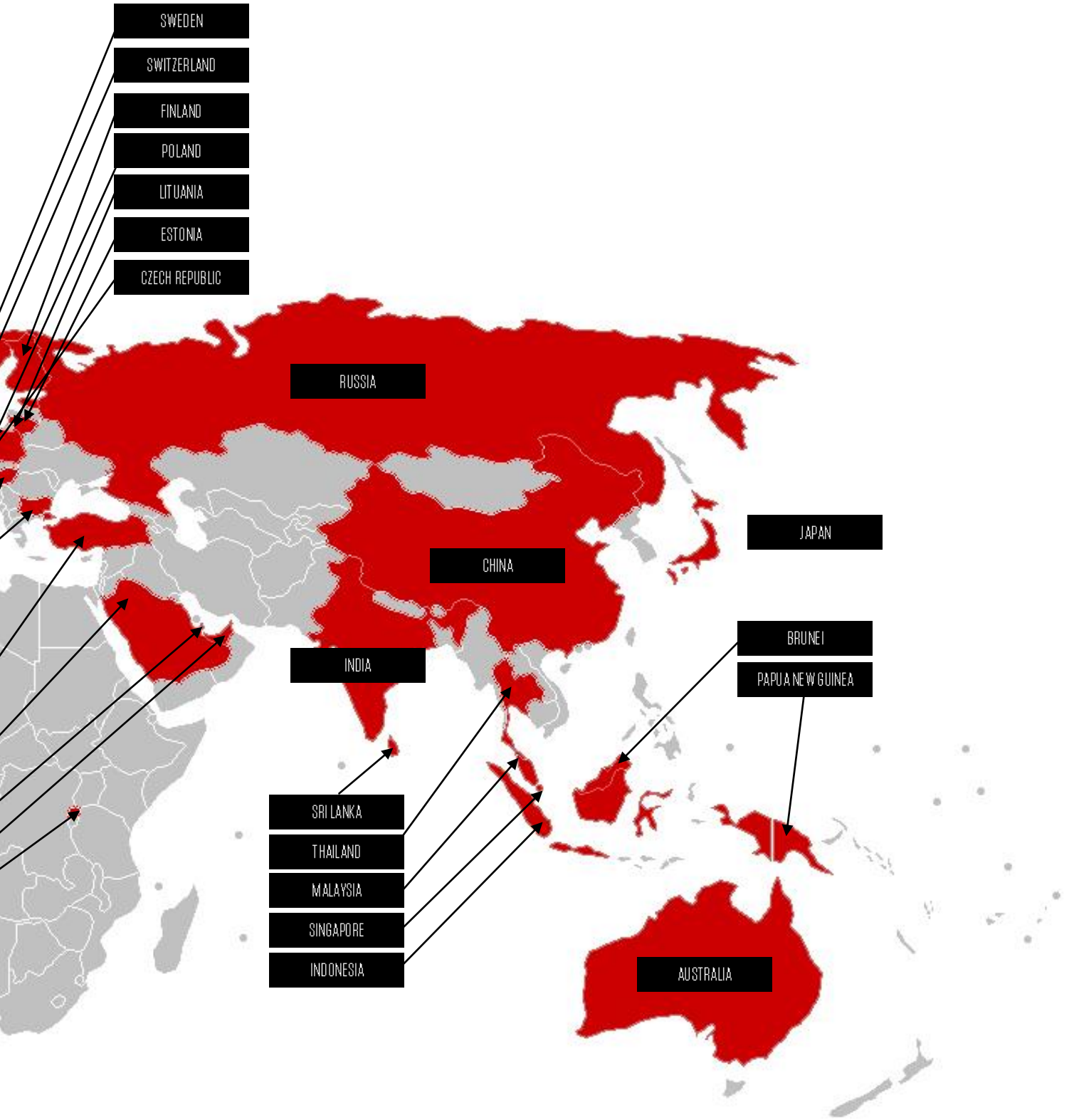
Cable length	60 m / 197 ft
Pulling Force Nom / Max	4000 N / 6000 N on first winding

PRESERVATION FOR RED PARTS

1 ^e coating	Zandleven Monopox ZF Universal primer 70 micron
2 ^e coating	Zandleven Monopox HB coating 80 micron
3 ^e coating	PPG DTM 50 micron Colour RAL 3000 'Hytrans red' Gloss 50% of 7042

HYTRANS FIRE SYSTEM: A WORLD OF REFERENCES





AUSTRALIA

BP Brisbane
Caltex Refinery
Puma Engergy
Scoresby Fire Brigade
Shell Australia

BELGIUM

Fire department of Brussel
Fire department of Aalst
Harbour authority Antwerp
Fire department of Hasselt
Fire department of Gent
The Belgium government, Civil
Defence Department Ministry
of Interior
Fire department of Antwerp
Fire department of
Hoogstraten
Fire department of Aarschot
Fire department of Knokke
Fire department of Roeselare
Fire department of
Dendermonde
Fire department of Turnhout
Fire department of Lommel
Fire department of Genk
Fire department of Brugge
Fire department of Puurs
Fire department of Crisnee
Fire department of Deinze
Fire department of Boom
Electrabel GDS Suez

BERMUDA

Fire department Bermuda.

BULGARIA

Ministry of Interior (12 units)

BRUNEI

Shell Refinery

CANADA

Fire Department of Vancouver

CZECH REPUBLIC

Fire brigade of Ostrava
Fire brigade of Pilsen
Fire brigade of Kladno
Fire brigade of Usti nad Labem
Oil refinery Unipetrol RPA
s.r.o. Litvinov
Fire Brigade of Zbiroh

CHINA

The Chinese Military, several
units as well as the China Fire
Service
Fire Brigade of Dalian
Chinese Army in Jiangsu
Fire Brigade of Fushan

Fire Brigade of Zhejiang
Fire Brigade of Liaoning
Tianjin Industry
Fire Service of Qing Dao
Fire Brigade of Fushan
Fire Brigade of Shenzhen
City of Shenyang
City of Liuzhou
City of Linyi
City of Yantai

CURACAO

Refinery Isla

DENMARK

Fire brigade of Aarhus

ECUADOR

Cuenca Fire Brigade

EL SALVADOR

Refineria Petrolera Acajutla
S.A. – Rasa

ESTONIA

Tallinn Harbour/Rescue Board

FINLAND

Neste Oil Co of Tornio

FRANCE

Fire department of Le Havre
Fire department of Rouen
Fire department of Nantes
Fire department of Lyon
GDF National Gas Company
France, several units
EDF National Electricity
Company
SDIF 77
Areca Tricastin

GERMANY

Fire brigade City of Duisburg
Fire brigade City of Bremen
InfraServ – Hoechst Chemicals,
Gendorf
Erdöl Raffinerie Emsland AG,
BP Germany, Lingen
Nord-West-Ölgesellschaft
mbH, Wilhelmshaven
Wilhelmshavener Raffinerie
Gesellschaft, Wilhelmshaven
Fire brigade city of Mannheim
IGS Chemicals, Gersthofen
Fraport, International Airport
in Frankfurt am Main (several
units)
Ministry of Interior, Rheinland-
Pfalz, Civil Defence Dept (3
units).
Fire Brigade of Flörsheim.

BP Germany, Werk Scholven
Wacker Chemie, Nünchritz
Fire brigade City of Hamburg
Bayern Oil Refinery of Neustad
a.d. Donau
Fire brigade City of Emden
Fire brigade City of Düsseldorf
Fire brigade City of Krefeld
Holborn Europa Refinery,
Hamburg
Fire brigade City of Hannover
Basell Münchsmünster,
several systems
MIRO Raffinerie, Karlsruhe
H&R ChemPharm, Salzbergen
BP Germany, Werk Horst
Landratsamt Pfaffenhofen
Fire brigade City of Magdeburg
Fire brigade City of Essen
Fire brigade City of
Braunschweig
Ministry of Interior Baden –
Württemberg (7 units),
Fire brigade City of Osnabrück
Ministry of Interior Bavaria (6
units)
GDF Suez Germany
Bezirksregierung Düsseldorf

HOLLAND

The Dutch government CIVIL
DEFENCE Dept. Ministry of
Interior.
Dutch Oil & Gas company,
NAM, several Super Large
capacity Systems.
Verbrugge Terminals,.
General Electrics, Bergen op
Zoom
SFS, Rotterdam
Fire Brigade Terneuzen
Fire Brigade Wieringermeer
Sitech Services, Geleen
Safety Region Zeeland
Zeeland Refinery
Shell Pernis

HUNGARY

MOL Refinery

INDIA

Pune Municipal Corporation

INDONESIA

Fire brigade of Jakarta

JAPAN

Fire brigade of Tokyo Japan,
Plus several Hose Recovery
Units in other locations all
over Japan.
Japanese civil defence,

Several Electric Power Companies
Fire department of Akashi
Tokyo Police Department

LITHUANIA

Nota Bene UAB

MALAYSIA

Bomba, Fire department of Malaysia, several complete systems

MEXICO

PEMEX, Petroleos Mexicanos, has chosen on large scale at several locations for the HFS super water supply system
Laguna Verde nuclear power plant

NORWAY

Ocean Rig, fire prot. during maintenance at drilling platforms Offshore.

PAPUA NEW GUINEA

InterOil Refinery

PORTUGAL

City of Lisboa
City of Porto

POLAND

Refinery of Pern

QATAR

Internal Security Force Qatar
Qatar Petroleum
Qatar Civil Defence

RWANDA

UN refugee camps, drinking water supply.

RUSIAN FEDERATION

Ministry of Interior

SAINT MARTIN

Centre de Secours de Saint Martain

SAUDI ARABIA

Saudi Aramco Fire Protection Department

SINGAPORE

SINGAPORE CIVIL DEFENCE FORCE has chosen for several units of the HFS duo-containerised system.

SLOVENIA

Krsko Nuclear Power Plant

SPAIN

Fire Brigade Barcelona
Repsol
Nuclear Power Plant of Asco
Nuclear Power Plant of Vandellos
Port of Tarragona

SRI LANKA

Fire Department of Colombo

SWEDEN

Swedish Fire brigades of Stockholm, Gothenburg, Malmo and Sundsvall in close cooperation with the cities oil industries.
Swedish Civil defence

SWITZERLAND

Fire department of Zug
Fire brigade of Basel
Armasuisse Mr. Streit at Bern +41 313245660
This organisation has just like Holland chosen for large quantities HFS
HydroSubs. (Federal Dept. of Defence, Civil Protection and Sport DDPS)
Industrial Fire Department of Cimo
Industrial Fire Department of Lonza

THAILAND

Thailand Bangkok Fire brigade.
Bangkok, Municipality Agency
Thai Civil Defence

TURKEY

Next to The fire service organisation of the region IZMIR has the City of Istanbul, chosen on large scale for the containerised HFS system.

UNITED STATES OF AMERICA

Several Fire Services in the US amongst them Fire brigade of Berkeley California.
City of New York
Sunoco

UNITED ARAB EMIRATES

The civil defence fire brigade of Abu Dhabi has also chosen

for the containerised version of the HFS equipment.

UNITED KINGDOM

Fire dept. of Shropshire
Fire dep. Of West Yorkshire
ESSO Refinery, Fawley
Homeoffice, has chosen for LARGE QUANTITIES HFS Systems
Ineos Manufacturing Scotland.
Leicestershire Fire & Rescue Service
Highway Agency

VENEZUELA

Refinery PVDSA

HydroSub 150 delivered
to Civil Defence organisations

BELGIUM	12
BULGARIA	12
CZECH REP.	10
ESTONIA	6
GERMANY	25
INDIA	1
JAPAN	6
MALAYSIA	20
NETHERLANDS	193
QATAR	1
RUSSIA	11
SINGAPORE	2
SLOVAKIA	11
SWITZERLAND	56
THAILAND	72
UAE	1
UK	59



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