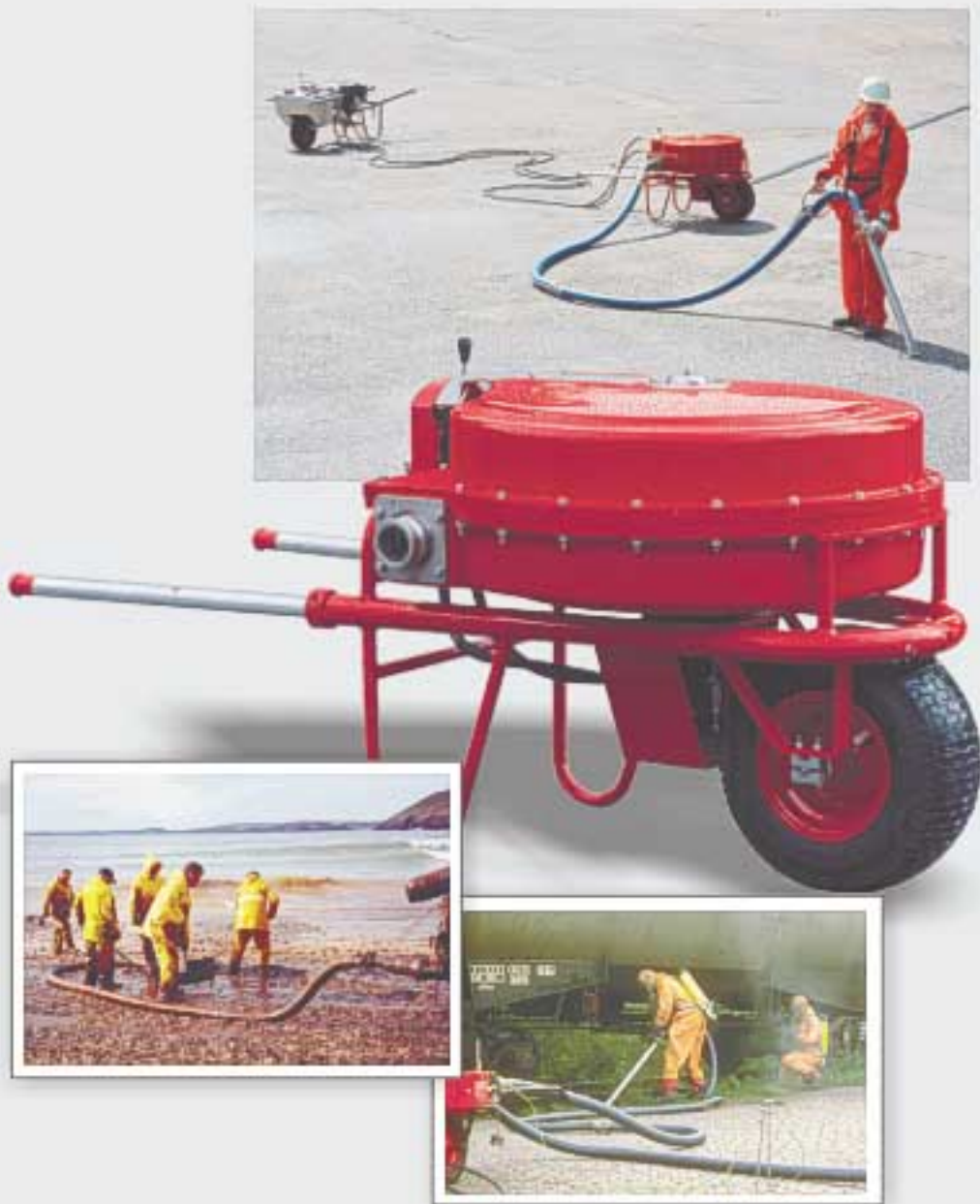


salarollpump®

CLEAN UP SYSTEM FOR OIL AND CHEMICALS



Sala clean up system for oil and chemicals is a unique patented system designed for rescue and clean up of oil spills and other high viscous and polluted liquids. The extremely strong suction (vacuum) and the debris tolerance of 40mm, (1 1/2") solids make it suitable for pumping debris laden viscous oil. The extremely high discharge pressure makes it possible for liquids to flow through a long distance of hose. The combination of handling weight and portability enables the user to deploy the system in remote areas.



First and foremost, the salarollpump delivers "super suction" performance which it owes to a unique design. Sensible design also means sound performance. The salarollpump was developed for clean up of oil spills, chemicals and polluted liquids. It is also used for clean up of oil spills from accidents that occur in the ocean, lakes, rivers and chemical spills from industrial plants, trucks, trains and airports. The combination of handling, weight and portability enables the user to deploy the system in remote areas.

Salarollpump is unique because the pump is a peristaltic type of suction and pressure pump that delivers extremely high vacuum. This makes it possible to lift high viscous liquids from the ground such as bunker oil at temperatures around the freezing point.

The high discharge pressure makes it possible for liquids to flow through a long distance of hose.

No valves obstruct the free flow of pulp through the pump and 40mm, (1 1/2") solids can pass without damaging the pump. Lost protection gloves and other safety items which clog seals or cause damage can pass through the system without any problems.

Should a blockage occur, the hydraulic drive system can be reversed to clear the pump.

The Sala system can also pump corrosive chemicals such as ammonia, nitric, sulfuric acid, chlorine etc.





The salarollpump system can be used for chemical clean up as no mechanical components will come in contact with the discharged media.

The hose inside the pump housing is made of nitril which is resistant to many chemicals. Other hose material can be supplied on request.

Combination of high temperatures and aggressive chemicals may reduce the lifetime of the hose. It is recommended to replace the pump hose after a clean up of aggressive chemicals. The chart below indicates values estimated for normal clean up. The length of the test was decided from an estimated time for a normal rescue situation. In some cases it could be longer.

Importantly, the salarollpump can handle temperatures of 100 degrees C (212 degrees F) and may increase to 130 degrees C (266 degrees F).

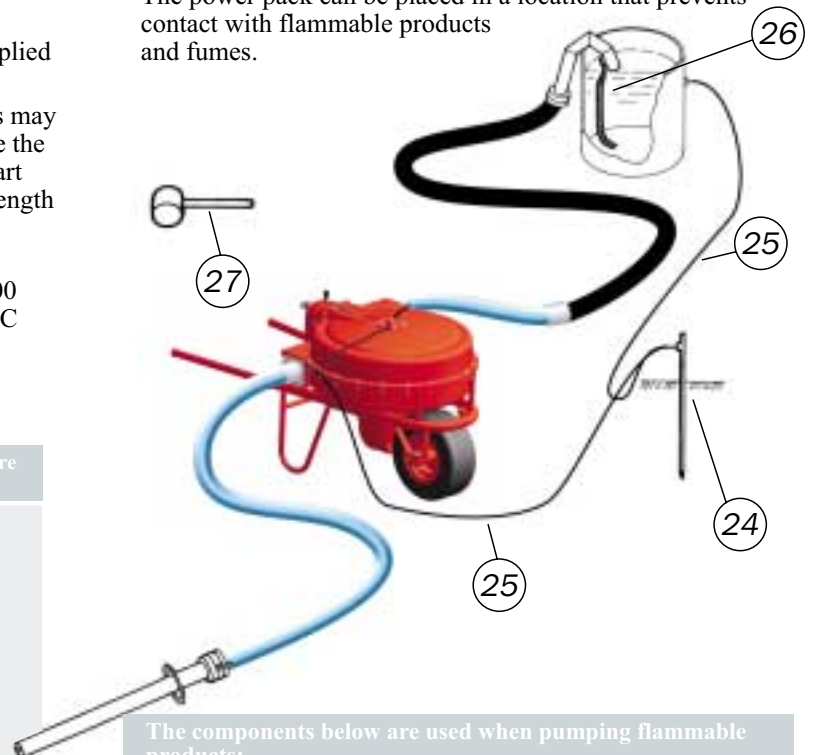
Chemicals which have been tested

Type of chemical	Formula	Concentration	Pumping time hours	Exposure hours
Nitric acid	HNO ₃	56 %	12	18
Caustic soda	NaOH	45 %	12	18
Toluene	C ₆ H ₅ CH ₃	-	10	15
Hydrochloric acid	HCL	30 %	12	18
Phosphoric acid	H ₃ PO ₄	52 %	13	18
Sulphuric acid (warm)	H ₂ SO ₄	95 %	12	18
Hydrogen peroxide	H ₂ O ₂	35 %	12	18
Trichlorethylene	C ₂ HCl ₃	99 %	13,5	18
Hydrofluosilic acid	H ₂ SiF ₆	20 %	12	18
Liquid ammonia	NH ₃	100 %	4,5	5,5

Contact salarollpump for detailed information.

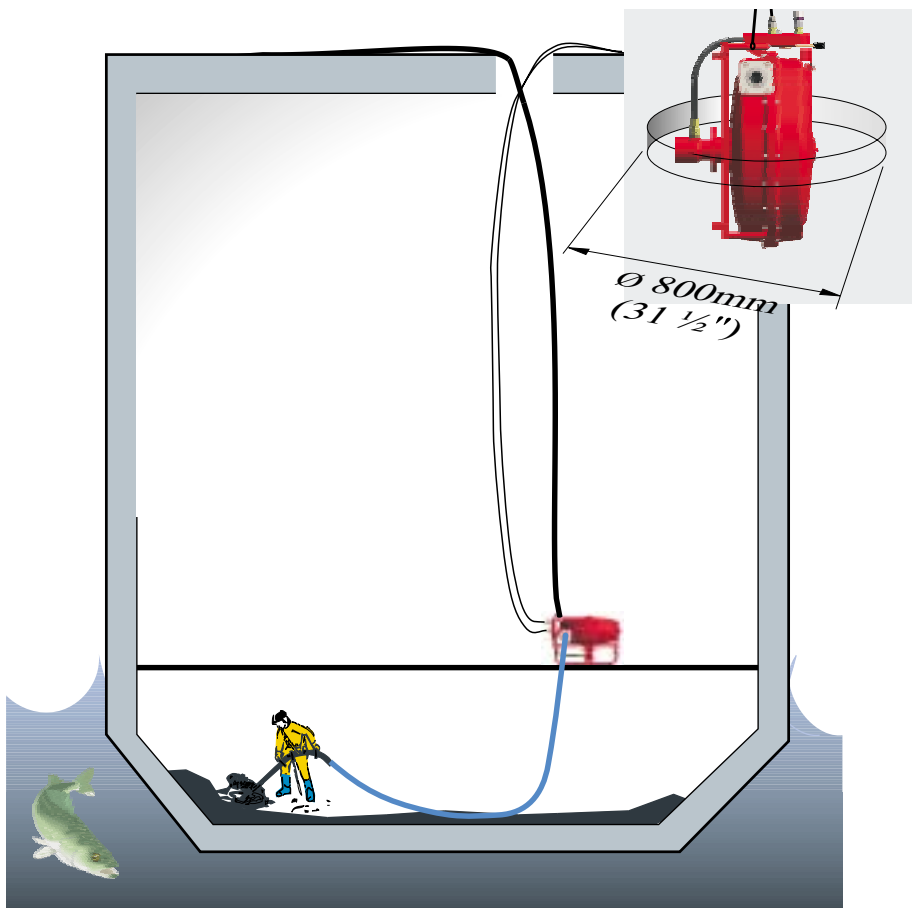
When pumping flammable products the system must be grounded to earth as illustrated below.

The power pack can be placed in a location that prevents contact with flammable products and fumes.



The components below are used when pumping flammable products:

- 24 Equipment for ground connection, length 0,5 m 1
- 25 Copper cable, length 10 m 2
- 26 Copper plate, length 1 m 1
- 27 Plastic hammer 1



Slurry removal from tankers has always been difficult and time consuming. The salarollpump with its exceptional suction and discharge pressure makes it possible to lift high viscous slurry to the top of the manhole opening.

Solid particles up to 40 mm, (1 ½") can pass through without damaging the system. The unique design allows for self-priming and enables the pump to safely run with a completely dry suction, without depending on a by-pass or other easily blocked device.

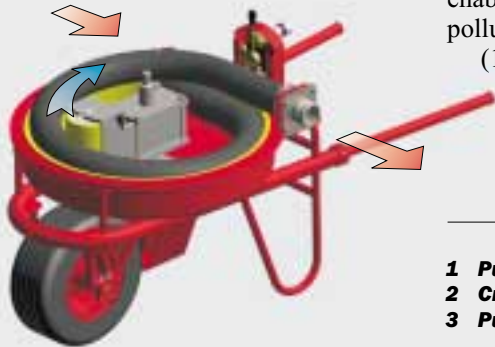
The pump can be fitted to a stationary or portable base for stability and mobility. Independent of position, it works at full capacity and can be lowered through a manhole at 800 mm, (31 ½") diameter.

The system can be used for pumping flammable products. (See page 3.)

THE PUMP UNIT

The salarollpump delivers "super suction" performance which it owes to a unique patented design feature.

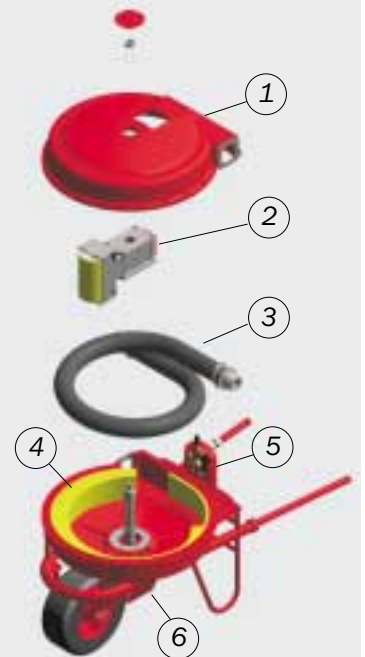
The system is a peristaltic type of suction and pressure pump that delivers a flow rate of 11m³/h, (48 gallons per minute).



Importantly, the heart of the system is a special manufactured hose compressed by a wheel mounted on a rotating arm. The suction is developed when the hose with its own force returns to its round shape.

Discharge pressure is created by the force of the wheel moving the media. The high vacuum and the low speed of the pump enable it to pump most high viscous, polluted liquids and debris over 40mm, (1 1/2") solid. Both the pressure wheel and the inside of the pump housing have a lining of soft material that prevents a solid particle from damaging the pump hose.

- | | |
|---------------------|--------------------------|
| 1 Pump house | 4 Hose support |
| 2 Crank arm | 5 Hydraulic valve |
| 3 Pump hose | 6 Hydraulic motor |



THE POWER PACK



The power pack for the salarollpump is available with a gasoline/diesel engine or electric motor which drives a hydraulic pump. This powers the hydraulic motor mounted on the salarollpump.

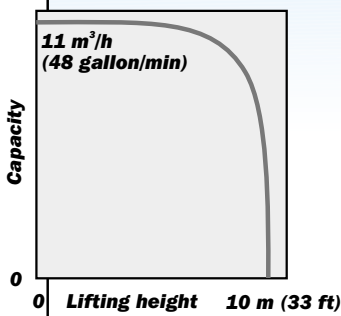
Pumping high viscous media is made easier by reducing the speed of the pump. The pump speed can be reduced by adjusting the hydraulic oil flow to three different output speeds, 15, 30 and 45 rpm. The power pack has two levers and a lever directional label that are used to set the hydraulic oil flow to one of three different

values. The discharge pressure is not affected because the motor or engine is at full power. Additional fine adjustments to the pump speed can be accomplished by setting the throttle on the gas/diesel engine or the over-flow valve on the electric motor.

At delivery, an over flow valve on the hydraulic system is set at 1740 psi/ 120 bar. If the pumping application requires less, the over flow valve can be adjusted down.

PERFORMANCE

SUCTION CAPACITY WATER
Capacity illustrates the ability to lift high viscous media.



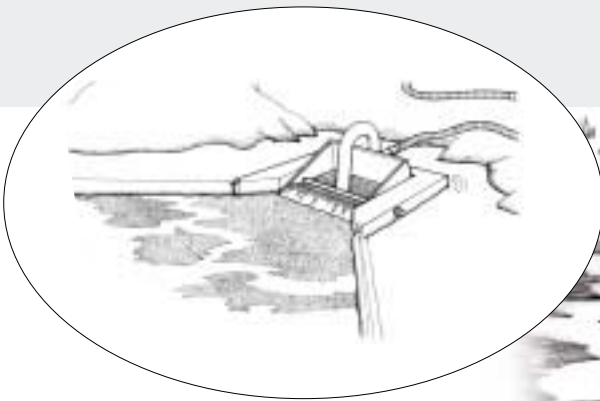
DISCHARGE CAPACITY, WATER
Discharge height 100 m (328 ft)
Capacity 10 m³/h (44 gallon/min)

DISCHARGE CAPACITY, OIL AT 0° C, 500 C-POINT
Length: 500 m (1 640 ft)
Capacity: 5 m³/h (22 gallon/min)
Data given as an example.

SKIMMER

The skimmer manufactured in aluminum is used in shoreline areas.

When oil layer appears thin, optimum efficiency is determined by running the pump at low speed. If the oil layer is thick, the pump can run at a higher speed.



TRANSPORT

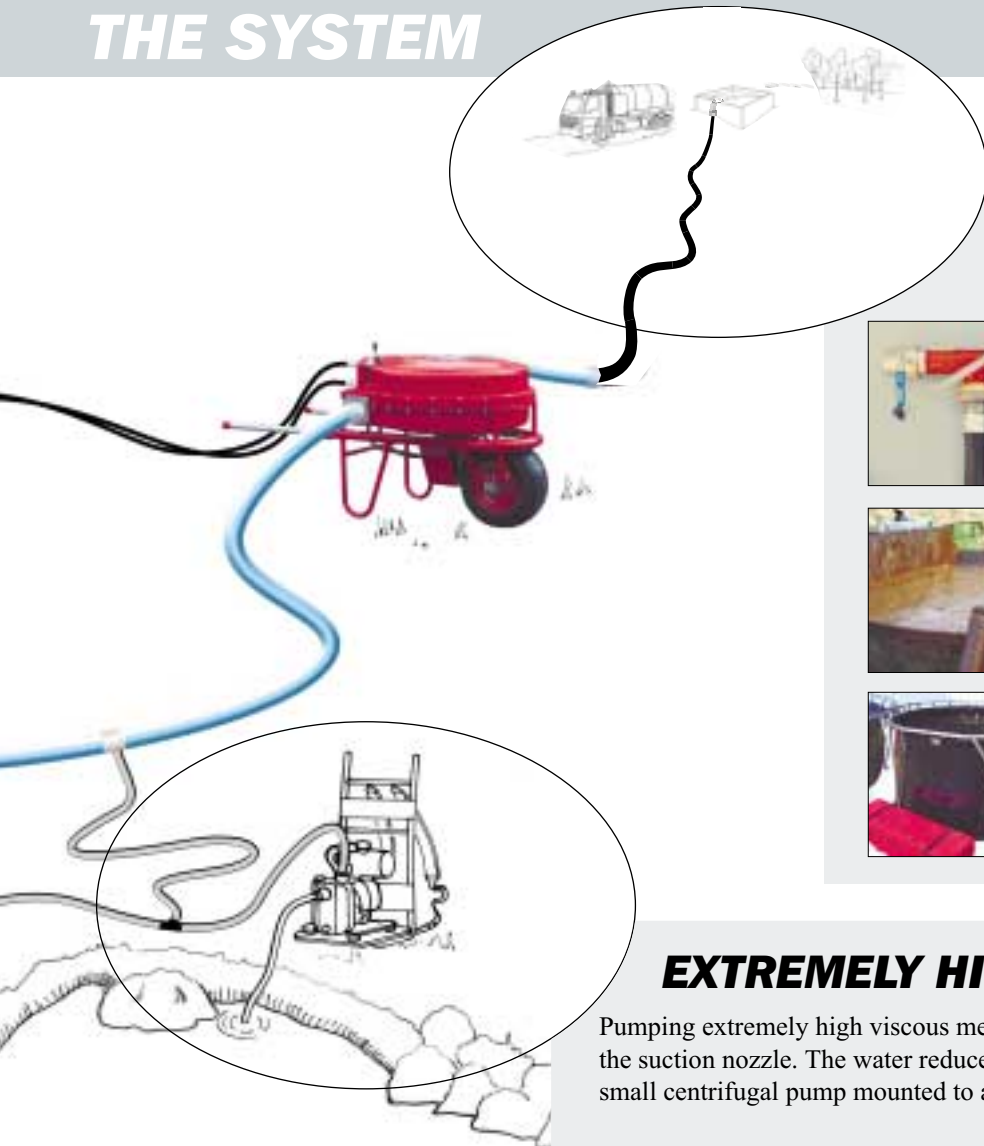
The ease of transporting the salarollpump and powerpack is accomplished by handles that attach to both for lifting in difficult terrain or by wheeling it as a wheelbarrow.

A four-wheel drive scooter or a band driven vehicle attached to a trailer is available to transport the pump and powerpack to the impacted area.

The trailer can also be used for transport of smaller amounts of oil in sacks or barrels to the collecting area.



THE SYSTEM



CONTAINERS



Two way valve for alternating oil containers.



Temporary oil containers at recovery site.



Shut off valve located at the bottom of the containers provides first water separation.

EXTREMELY HIGH VISCOUS MEDIA

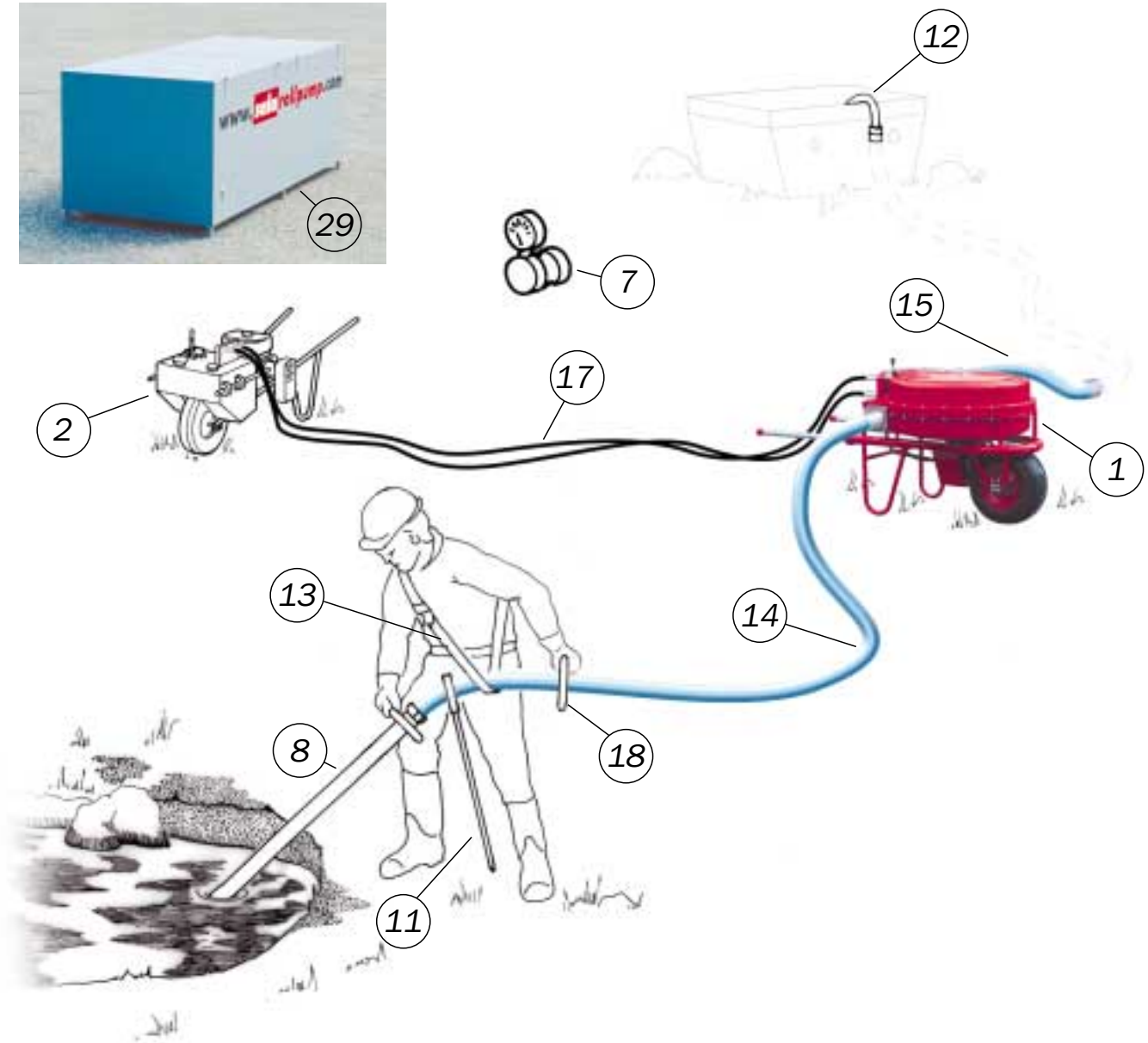
Pumping extremely high viscous media is made easier by injecting water into the suction nozzle. The water reduces the friction between the oil and hose. A small centrifugal pump mounted to a backpack is offered as an accessory.



For transport on roads a trailer is available

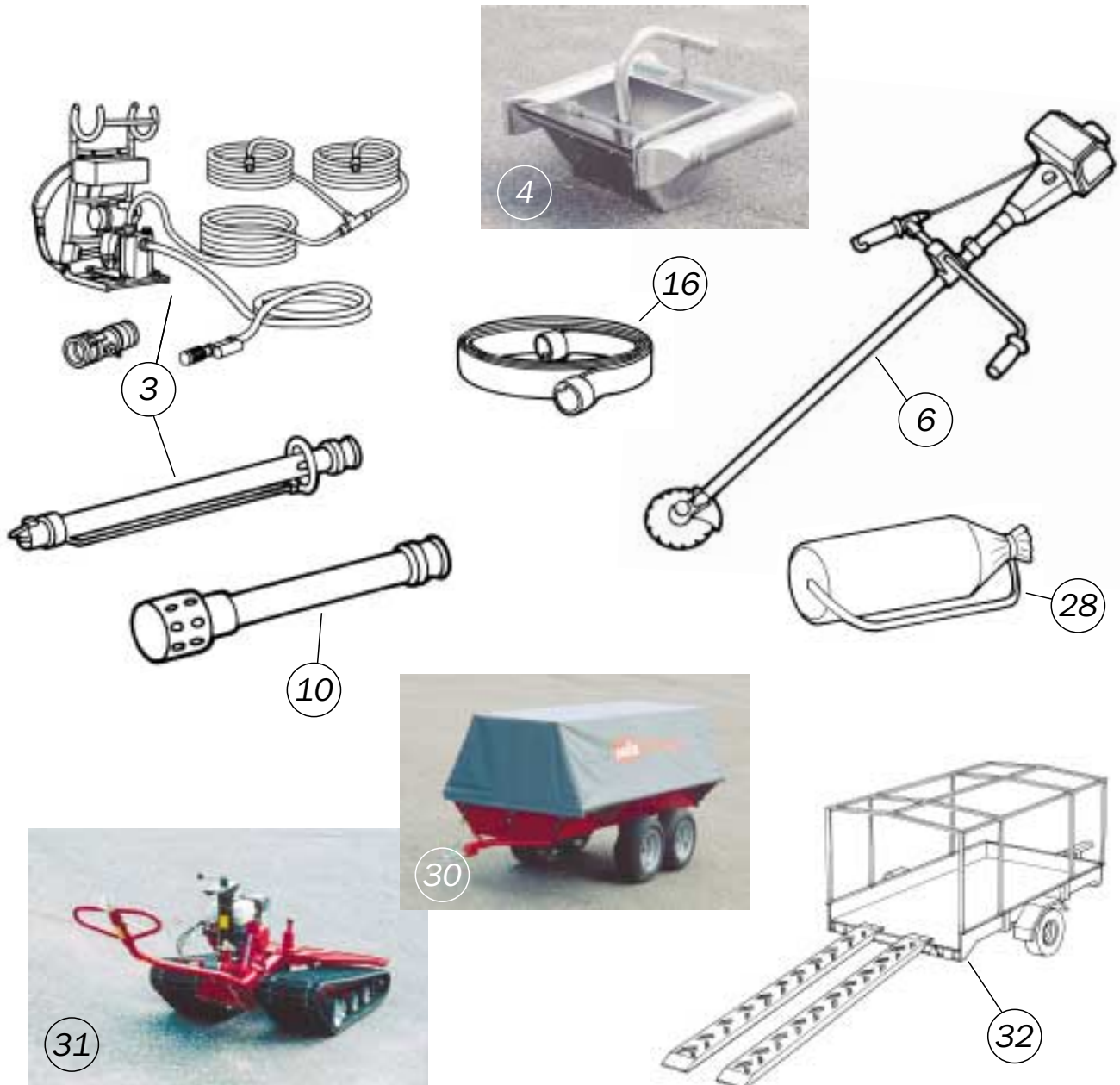


STANDARD SYSTEM



Item Name	Number	Item Name	Number
1 Salarollpump	1	14 Suction hose incl. CAM-couplings	2 pcs length = 3 m/118 in, 1 pcs length = 6 m/236 in
2 Power pack	1	15 Adaptor for pressure hose incl. 1 CAM-coupling, length = 1,5 m/59 in	1
5 Tool bag	1	17 Hydraulic hose, length = 10 m/394 in	2
7 Vacuum gauge	1	18 Handle	1
8 Suction nozzle (aluminium alt.stainless steel) ..	1	29 Transport and storage box	1
11 Support for suction hose. (- " -)	1		
12 Filling pipe (aluminium alt.stainless steel)	1		
13 Harness	1		

ACCESORIES



Item Name.....	Number
3 Water injection	1
4 Skimmer	1
6 Clearing saw.....	1
10 Suction nozzle with bottom filter (aluminium alt.stainless steel).....	1
16 Fire hose, antistatic, lenght = 12,5 m/492 in alternatively 25 m/984 in	1

Item Name	Number
28 Components for pumping of flammable products see page 3, item 24–27	1
30 Trailer for four wheel drive terrain scooter ..	1
31 Band driven vehicle.....	1
32 Trailer.....	1

PUMP



Weight:	120 kg	264 lb
Length:	1 020 mm	40 in
<i>incl. handles*</i>	1 560 mm	61 in
Width:	792 mm	31 in
Height:	776 mm	30 in
Pump hose:		
<i>inside diam.</i>	51 mm	2 in
<i>inside material</i>	nitril	nitril
Capacity:	11 m ³ /hour	48 US gal/min
<i>(water)</i>	<i>(at 45 rpm)</i>	<i>(at 45 rpm)</i>
Max suction:	-1 Bar	- 14.5 PSI
Max discharge-pressure:	10 Bar	145 PSI

*Handles can be inserted.

POWER PACK



GASOLINE DRIVE		
Standard		
Weight:	110 kg	242 lb
Power:	9 hp/6,6 kW	9 hp/6,6 kW
High power		
Weight:	116 kg	255 lb
Power:	13 hp/9,5 kW	13 hp/9,5 kW
DIESEL DRIVE		
Hand start		
Weight:	139 kg	306 lb
Power:	10 hp/7,5 kW	10 hp/7,5 kW
Electric start		
Weight:	152 kg	334 lb
Power:	10 hp/7,4 kW	10 hp/7,4 kW

ELECTRIC DRIVE		
50 hz		
Weight:	136 kg	306 lb
Power:	10,2 hp/7,5 kW	10,2 hp/7,5 kW
60 hz		
Weight:	136 kg	306 lb
Power:	11,7 hp/8,6 kW	11,7 hp/8,6 kW
Length:		
<i>incl. handles*</i>	1 250 mm	49 in
	1 850 mm	73 in
Width:		
	620 mm	24 in
Height:		
<i>incl. handles*</i>	750 mm	30 in
	860 mm	34 in

*Handles can be inserted

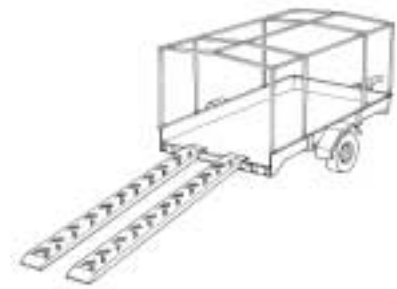
TRAILER FOR

BAND DRIVEN

TRAILER

TERRAIN SCOOTER

VEHICLE



Weight:	220 kg	484 lb
Size of wagon bridge:	1 240 x 2 540 mm	49 x 100 in
Total length:	3 390 mm	133 in
Height:	1 460 mm	57 in

Weight:	330 kg	726 lb
Length:	1 750 mm	69 in
<i>incl. operating handle*</i>	3 150 mm	124 in
Width:	1 150 mm	45 in
Height:	980 mm	39 in
Motor:	5,5 hp	5,5 hp
<i>(petrol)</i>		
Ground pressure:	0,15 kg/cm ²	2.1 lb/in ²
<i>(at 500 kg load)</i>		<i>(at 1.100 lb load)</i>
Speed:	6 km/h	3 ¾ miles/h

* The operating handle can be raised.

Total weight:	1 300 kg	2 866 lb
Service weight:	350 kg	772 lb
Max. load:	950 kg	2 094 lb
Total length:	4 800 mm	189 in
Total width:	2 160 mm	85 in
Size of wagon bridge:	1 700 x 3 250 mm	67 x 128 in
Total height with cover:	1 930 mm	76 in
Tyre dim:	185 SR 14	185 SR 14
Rim base dim:	5,5 J x 14 H2	5,5 J x 14 H2
Tyre pressure:	2,5 kg	36 PSI

TRANSPORT BOX



Weight:	165 kg	363 lb
Length:	2 470 mm	97 in
Width:	1 090 mm	43 in
Height:	1 010 mm	40 in
Weight*:	440 kg	968 lb

*Including complete standard system(see page 8).

SKIMMER



Weight:	34 kg	75 lb
Length:	980 mm	39 in
Width:	1 090 mm	43 in
Height:	740 mm	29 in

WATER INJECTION



Weight:	13kg	28lb
Length:		
Suction hose	3 m	118 in
Pressure hose	10 m	394 in
Pump:	Centrifugal	
Motor:	Gasoline 2-stroke	

SUCTION NOZZLES



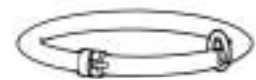
Weight with:

aluminium suction nozzle/couplings
stainless steel suction nozzle/couplings

Dimension inlet/inside diameter:

	standard	with bottom filter	length 3 m/118 in	length 6 m/236 in
aluminium	2,5 kg	5.5 lb	6 kg	13 lb
stainless steel	4 kg	8.8 lb	7 kg	15.5 lb
Dimension inlet/inside diameter:	40x65 mm	1 1/16x2 1/2 in	63 mm	2 1/2 in
		16 holes, 25 mm each		16 holes, 1 in each

SUCTION HOSES



HYDRAULIC HOSE



Length:	10 m	394 in
Weight:	9 kg	20 lb
Dimension:	1/2"	1/2 in

FIRE HOSE



Length:	12,5/25 m	492/984 in
Weight:	8,5/17 kg	19/38 lb
Inside. diam:	63 mm	2 1/2 in

FILLING-



Weight:		
aluminium	1,5 kg	3.3 lb
stainless steel	2,5 kg	5.5 lb

ANTISTATIC

PIPE

RECOMMENDED SPAREPARTS



Pump hose

Weight:	18 kg	40 lb
External diam.:	92 mm	3 5/8 in
Inside diam.:	51 mm	2 in
Length:	2 490 mm	98 in
Hose support	1 kg	2.2 lb
Lubricant	1 kg	2.2 lb

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