



M A N U A L

22804 – 2014-04-03
V5.1

UBP-30S

USON COMBINED SACK COMPACTOR & BALING PRESS



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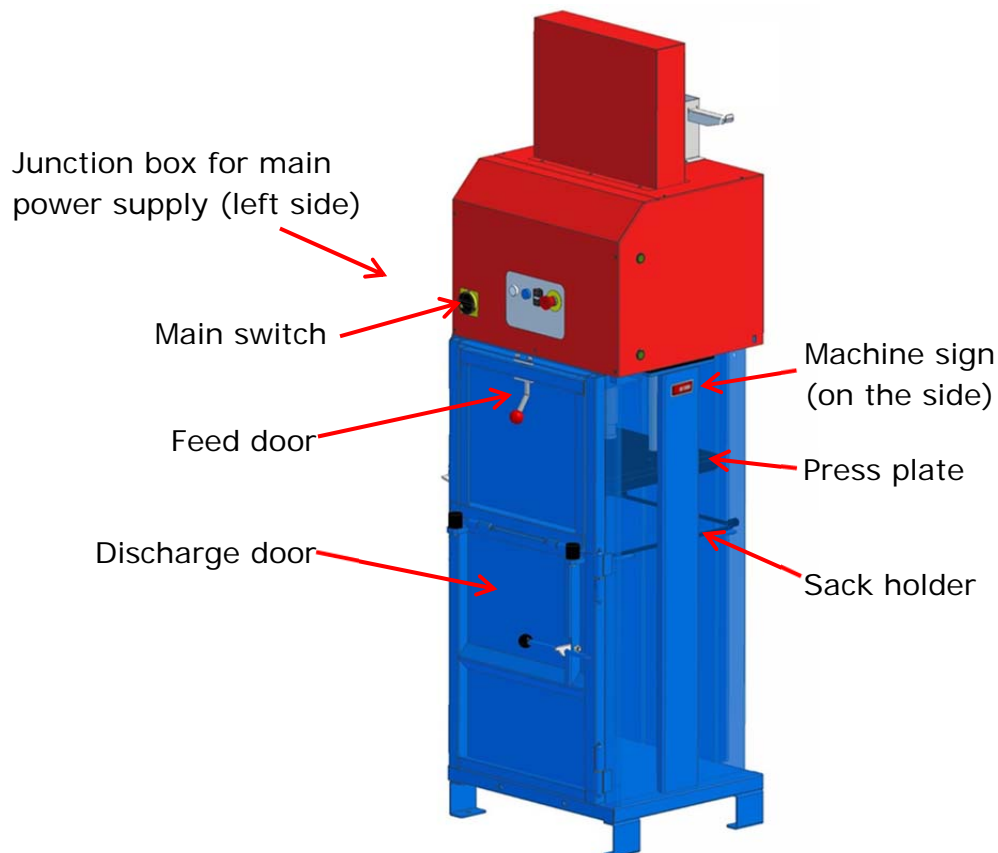
1. Introduction of the Uson Sack Compactor & Baling Press, UBP-30S

1.1. General

The UBP-30S shall be operated by skilled personnel

The UBP-30S is designed for indoor use.

The UBP-30S is designed for compacting dry and general waste. Pressure vessels, food waste or glass shall not be compacted by the UBP-30S.



1.2. Capacity

The UBP-30S has a press power of 6 tons. Through compacting, the volume of the waste is reduced with up to 90% depending of waste fraction.

1.3. Definitions

Dry waste	Recyclable waste such as plastic, paper, cardboard, metal and glass.
General waste	The waste that remains when recyclable waste groups and hazardous waste have been taken out.
Food waste	Any spoiled or unspoiled victual substances, such as fruits, vegetables, dairy products, poultry, meat products, food scraps, food particles and all other materials contaminated by such wastes, generated aboard ship, principally in the galley and dining areas.
Risk	Combination of the probability of occurrence of harm and the severity of that harm. [IEC: 2001-62079]
Hazard	Potential source of harm. [IEC: 2001-62079]
Skilled personnel-skilled person	A person with relevant education and experience to enable him or her to perceive risks and to avoid hazards which operation or maintenance of a product can create. [IEC: 2001-62079 - IEC 195-04-01 and 3.52 of IEC 60204-1, modified]
Certified electrician	Electrician who is certified to do electrical installation on the vessel in question.

NOTICE! The colour and appearance of the product may vary and the product specifications are subject to change without prior notice for reasons of performance enhancement.

2. Before installation

2.1. Storing

The UBP-30S is delivered in wooden crates on wooden pallets. Before delivery it is covered with plastic wrap. The UBP-30S shall be stored indoors in a dry and clean place. For the period of storage the UBP-30S must be kept inside the wooden crate. No extra maintenance is required while the equipment is kept in storage. The UBP-30S shall always be placed in upright position.

2.2. Unpacking-Disposal of packing material

The unpacking of the UBP-30S from the wooden crate does not require any special tools. It is a wooden crate that is nailed on the wooden pallet.

A common tool to unpin those nails shall be used for the purpose of unpacking.

The packing consists mainly of wood, metal nails and plastic wrap. These shall be thrown away after the unpacking of the UBP-30S - either for recycling, or according to the local regulations and rules.

2.3. Items delivered with the UBP-30S

The UBP-30S comes together with instruction manuals and printed material - often positioned inside the packed unit.

Store all printed material and instruction manuals in a safe place!



1 x Top cover
for press unit incl. screws



1 x Extractor hook
for the baling bands



5 x Plastic sacks



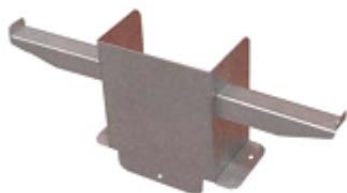
1 x Tube of grease
for the spindle



2 x Rolls of baling bands



Manuals



1 x Baling band holder
including screws



1 x Sack holder
for sack compaction

2.4. Signs and symbols



This symbol indicates the centre of gravity of the UBP-30S

2.5. Transportation

When transporting, the UBP-30S shall be secured in an upright position and never tilted or transported in horizontal position. It can be lifted from the lifting points or transferred with the use of forklift.

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2.6. Firefighting equipment

The UBP-30S consists of a big percentage of steel material. There is no special requirement for extra fire fighting equipment to protect this unit, apart from the ones that are defined by the local regulations and rules for similar types of machinery.

2.7. Warranty

The terms of the warranty and the warranty period is defined in the contractual terms between Uson Marine and the customer.

3. Installation

WARNING! UBP-30S is delivered with safety devices. These must not be bypassed or manipulated. If the safety devices are out of order the UBP-30S must not be used. In the case of electrical break-down call a certified electrician.

3.1. General

For installation on deck, UBP-30S can be fastened using M12-bolts. There are also holes for rear mounting at the back of the UBP-30S. See manual drawing in appendix for detailed information.

At delivery, the top cover for the press unit is placed inside the UBP-30S. Before the mains connection is made, this cover should be fitted on top of the press.

3.2. Mounting the holder for the baling bands

The holder for the baling bands is to be mounted rear on top of the press unit.

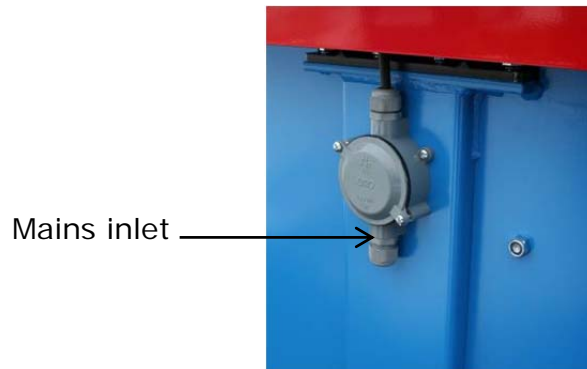


3.3. Electrical connection

WARNING! All electrical connections must be done by certified electrician

NOTE! If the lamps are not lit up after connection, see section 4.6 for instruction!

The UBP-30S is delivered complete with junction box. All internal wiring is already done in the factory. The user shall only connect the main supply cable into the junction box.



For details about the main supply cable please see the relevant electrical drawings in appendix B.

Make sure that the mains fuses are of the delay action type ("Slow Blow") and that the size of the fuse is according to attached manual drawing in appendix.

3.4. Air connection

No air connection is needed for the UBP-30S.

3.5. Commissioning

For commissioning procedures please contact the Uson Marine Group, see appendix.

4. Operation

4.1. Protective equipment

The user must wear protective gloves and ear protection when using or maintaining the UBP-30S. Protective gloves and glasses must be used during disposal of waste.



4.2. Safety

4.2.1. Emergency stop button

The emergency stop button stops the UBP-30S immediately. Operation can also be interrupted by disturbances in the power supply.

After a stop, the emergency stop button is released by pulling the knob out.

Before resetting the emergency stop button, be sure that all possible problems have been fixed

4.2.2. Door safety catch and door lock catch

	<p>Safety catch</p> <p>The door safety catch prevents the door from closing unintentionally. The catch is bolted on the (left) hinge side of the UBP-30S, and will automatically fall down when the door is fully opened. Before closing the door, the catch must be manually pushed sideways.</p> <p>Open the door</p> <p>The door lock catch will lock automatically when the door is closed.</p> <p>To open the door, push the door handle in and lift the catch up and pull out the handle.</p>
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4.2.3. Safety breaker

The feed door and the discharge door are equipped with a safety breaker to prevent the UBP-30S from starting when one of the doors is open.

4.2.4. Electrical safety

The UBP-30S is equipped with all necessary electrical safety devices. All values are set from factory.

4.3. Control panel



MAIN SWITCH



Denomination	Function
Main switch	Main switch
Power lamp	Indicates power supply is correctly made
Ready bale indicator	Indicates that the sack is full
Start/stop button	Press this button to start/stop the UBP-30S
Emergency Stop	Stops the UBP-30S immediately

Please note the following about the Start/Stop lamp:

When lit with a fixed light – everything is OK, the machine is ready for use.

When blinking with a symmetric light – the emergency stop button is pressed

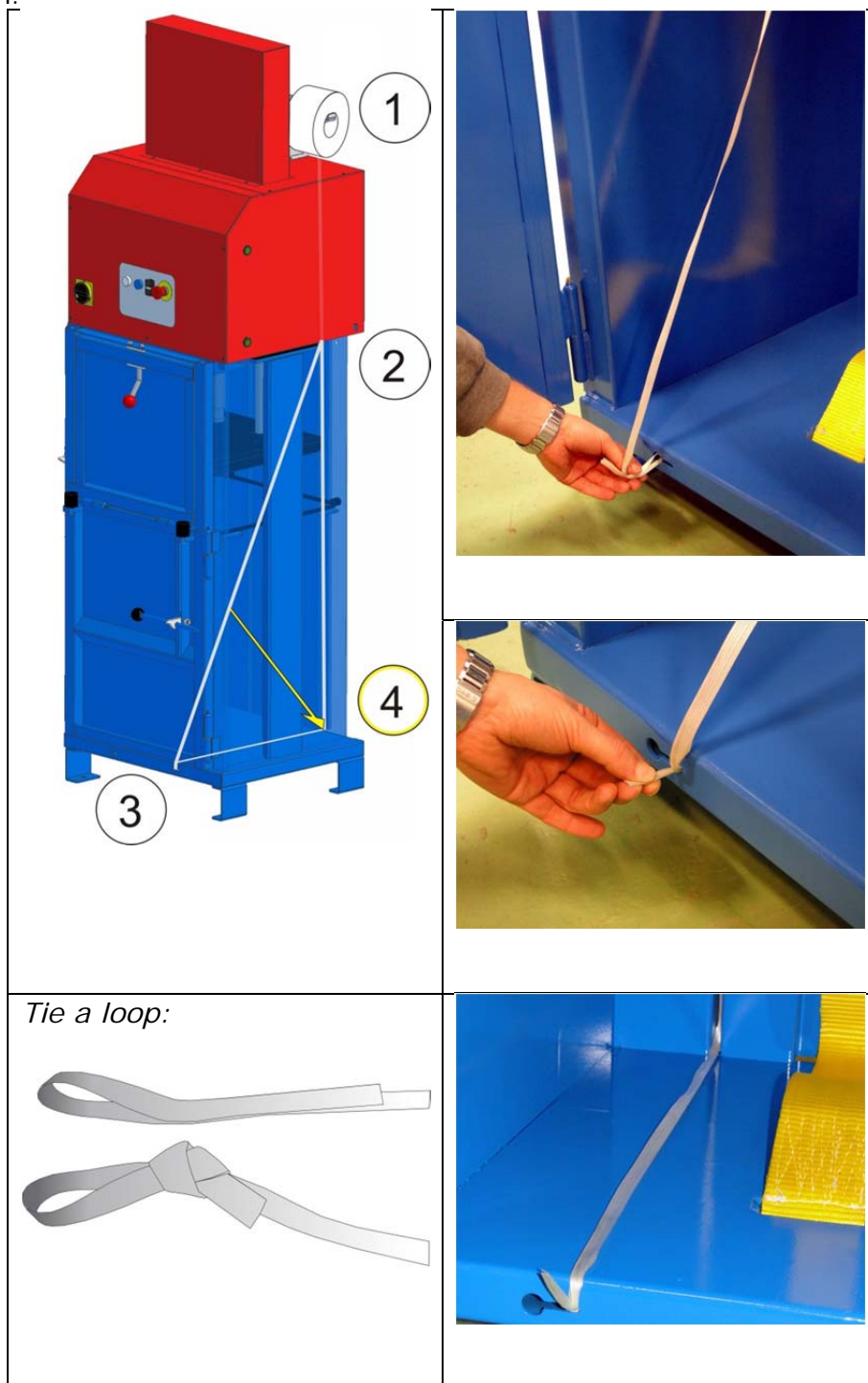
When blinking with an unsymmetrical light – the unit has "over-traveled" i.e. the press plate is in incorrect position, see section 6.

4.4. Mounting the baling bands

Remove the sack holder before mounting the baling bands.

The baling bands are pulled down from the rolls (1), over the strap-guides (2), down along the back of the press and across the press floor to the front of the press (3).

Tie a loop at the end of each baling band and secure it at the hole located at the front of the bottom of the machine. It is important that the band is pushed back in the channel so that it remains stretched (4). This will prevent the band from being pulled down during compaction.



4.5. Installing the plastic sack

It is possible to operate the UBP-30S without a plastic sack, for example when baling cardboard. In this case the sack holder should be left out of the UBP-30S for operation.

Take out the sack holder.

Note that the it is not symmetric. The wide part should be turned forward towards the door.

Fold the sack around the sack holder and put it into the chamber. There are four supports that it rests on.

If using baling bands, they must be in place before putting the sack into the chamber.



Make sure that the sack is properly stretched along the sides of the chamber.

4.6. Starting the press

NOTE! Before starting the press, control that the spindle is properly lubricated!
If necessary, lubricate the spindle, see section 7.2. for details

1. Connect the press to the electrical mains; turn the main switch, the power lamp lights up.
2. If the power lamp is lit the press is ready for use and step 3 and 4 below should be disregarded.
3. Disconnect the press from the mains and switch two phases in the mains inlet (see section 3.3). Reconnect the press to the mains. If the power lamp is lit the press is ready for use and step 4 below should be disregarded.
4. Check that the main fuses are OK and that the amperage is OK. Change any faulty fuses and repeat from step 1.

4.7. Relocating / disconnecting the press

If the press is to be moved the following check is recommended:

1. Before relocation, the press plate should be put in a position some 40 cm from the top. This will make for a safer transportation of the press.
2. Turn off the main switch and disconnect the press from the electrical mains supply. After reconnecting to the mains, repeat the procedure in section 4.6.

Notice! When moving the press, be wary of the high centre of gravity of the press!
When transported, the press should be secured in an upright position.

4.8. Operations cycle

Load the waste into the press chamber through the feed door. When the chamber is filled, close the feed door and push the start button.

1. The press plate moves down and compacts the waste.
 - a. If the chamber is filled up to such a level that the press plate meets the required amount of resistance during compaction the press plate will return up approximately 200mm before again compacting the waste.
2. The press plate stops and returns automatically to its top position after a short delay.
3. Material loading can be resumed.

4.9. Stay-and-hold mode

When the UBP-30S is not in use it should be placed in Stay-and-hold mode. This keeps the material in the chamber compacted under pressure and allows it to settle.

- Press and hold the start button until the lamp flashes.
 - The press plate will now go down into the bottom position and remain there, securing the waste in a compacted state.
- To resume normal operation press the start button and the press plate will return to the top position.

4.10. Full sack/ready bale

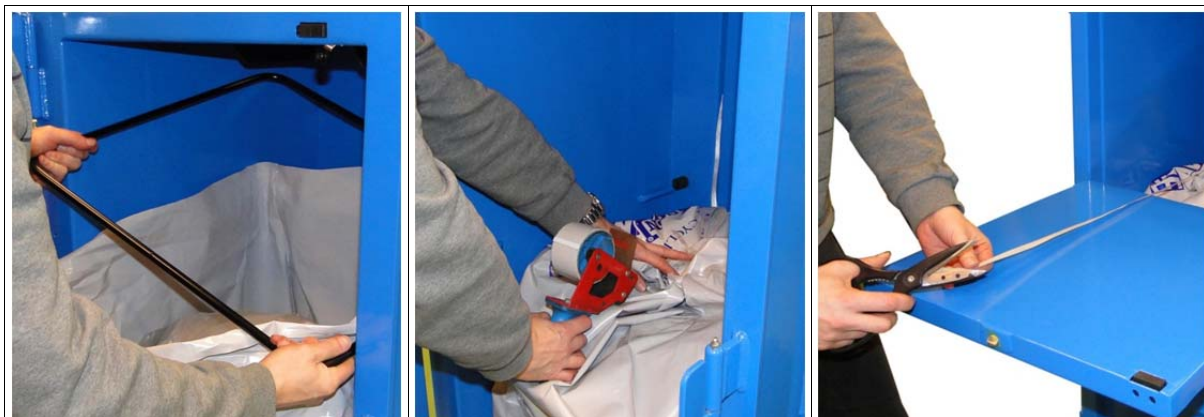
When the amount of waste material equals a full sack/ready bale the press plate stops in its lower position, holding the compacted waste together under pressure.

This is indicated by activation of the ready bale indicator, a blue lamp. When the sack is full/bale is ready, it has to be strapped and removed without delay.

4.11. Strapping and ejecting the sack/bale

When operating the UBP-30S without a plastic sack skip step 2.

1. Press the start button and the press plate moves upwards to its top position.
2. Open the door (only when using a plastic sack).
 - i. Remove the sack holder.
 - ii. Seal the sack with tape.
 - iii. Close the door.
3. Open the feed door.
 - i. Pull out the baling bands to the edge of the feed door + 10-20 cm, see picture.
 - ii. Cut the bands.



4. Pull out the baling bands between the hinges of the feed door, see picture.
 - i. Close the feed door.
5. Press the start button. When the press plate is in compacting position open the door.
6. Pull the baling bands back through the door.
 - i. Tie the upper and lower ends of the baling bands together and tighten them firmly.
7. Move the yellow ejection strap from the hook in the back of the chamber to the hook at the press plate.

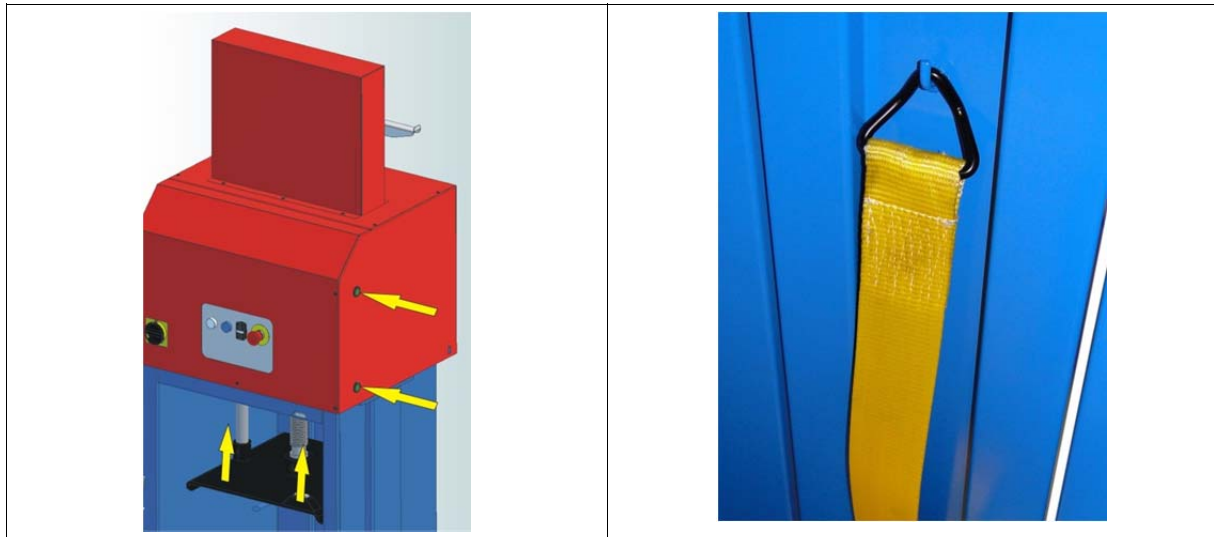


8. Press the two ejection buttons on the side simultaneously, as shown in the picture below, and keep them activated.

Note that the door has to be in open position!

The press plate moves up and the sack is ejected.

9. Reposition the yellow ejection strap to the hook in the back of the chamber.



10. Pull down new baling bands (see section 4.4).
11. Mount a new sack (see section 4.5).
12. Close the door and press the start button. The UBP-30S is ready to resume work.

5. Preventive maintenance

Preventive Maintenance must be done by skilled personnel! Before any type of maintenance work is undertaken, the main switch of the machine must be switched off!

5.1. Daily maintenance and inspection

- Listen for strange/unknown noise.
- When necessary, lubricate locks and hinges.

If any of above stated differs from the normal condition, the UBP-30S must be stopped and the failure repaired before operation is allowed.

5.2. Every 2 weeks

- Check the spindle and grease the spindle if necessary, see section 7.2. for details.

5.3. Every 12 months

- Check the V-belts and adjust the tension if necessary.

5.4. Cleaning

After each sack ejection, any remaining waste material should be removed from the chamber and from the top side of the press plate.

The UBP-30S shall be cleaned with water and mild detergent. Dry the UBP-30S after cleaning. Do not flush the UBP-30S with water.

6. Trouble shooting

Trouble shooting must be done by skilled personnel! Before any type of maintenance work is undertaken, the main switch of the UBP-30S must be switched off!

Fault	Possible cause	Remedy
Motor does not start, the power lamp (white) is not lit	<p>The main switch is not "ON"</p> <p>There is not voltage supplied on all phases or the phases are switched</p> <p>The fuse in the control panel has tripped</p>	<p>Turn the main switch on</p> <p>Check the power supply. This must be done by a certified electrician!</p> <p>Check the fuse F1 and F2 on the electrical diagram. Reset fuse if necessary</p>
<p>Motor does not start, the power lamp (white) lamp is lit but the start/stop button is not lit</p> <p>Motor does not start, the power lamp (white) lamp is lit and the start/stop button is flashing symmetrical</p>	<p>Feed door/Discharge door is open</p> <p>The emergency stop has been pushed</p>	<p>Close the open door</p> <p>Release the emergency stop</p>
Motor does not start, the power lamp (white) lamp is lit and the start/stop button is flashing asymmetrically	Over-travel protection	<p>Check that the machine is run on the correct frequency. If incorrect then contact Uson Marine, see appendix C</p> <p>Check if waste material is affecting the limit switch, located behind the control box.</p>
The motor starts, the press plate does not move	<p>The V-belts slip</p> <p>Waste material rests on the top of the press plate preventing the press plate from moving to its top position</p>	<p>Adjust the tension of the V-belts or change the V-belts (all 3 V-belts) if they are worn out</p> <p>Make sure the V-belts are clean and that they are free from grease</p> <p>Contact Uson Marine, see appendix C</p>
The weight of the bale is low	The V-belts slip	<p>Adjust the tension of the V-belts or change the V-belts (all 3 V-belts) if they are worn out</p> <p>Make sure the V-belts are clean and that they are free from grease</p>
The press plate does not return and the ready bale indicator is not lit	Blue LED lamp is out of order	Change the blue LED lamp
Ready bale indicator flashes	Bale size exceeded	Remove part of the material and resume the operation of the UBP-30S

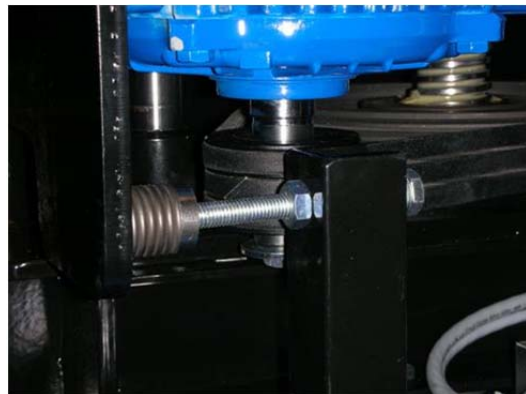
7. Corrective Maintenance

Corrective Maintenance must be done by skilled personnel! Before any type of maintenance work is undertaken, the main switch of the machine must be switched off!

7.1. Checking the tension of the V-belt

To check that the tension of the V-belts is sufficient, twist the belt with 2 fingers. The belt shall be twisted no more than 90 degrees without remarkable resistance. If the belt can be twisted more, the tension must be adjusted as per below.

1. Remove the back cover plate.
2. Release the lock nut.
3. Turn tensioning bolt clockwise. The spring shall be completely compressed.
4. Secure the lock nut.
5. Put the cover plate back.



The V-belts must be of a flat profile (SPZ-profile) without teeth.

7.2. Greasing of the spindle

Regular lubrication of the spindle considerably enhances the performance of the UBP-30S and extends its lifecycle.

1. Take the press plate down to its lower position, stop the UBP-30S and open the discharge door.
2. Apply a string of high-quality grease on the spindle. The grease will be evenly distributed over the spindle when the UBP-30S is started up again.

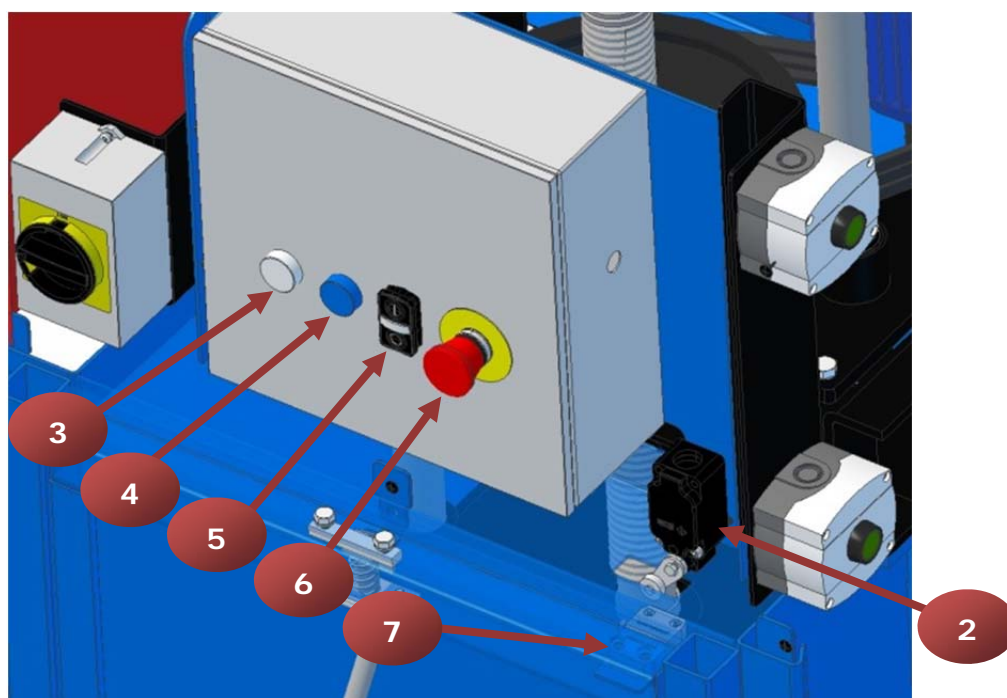
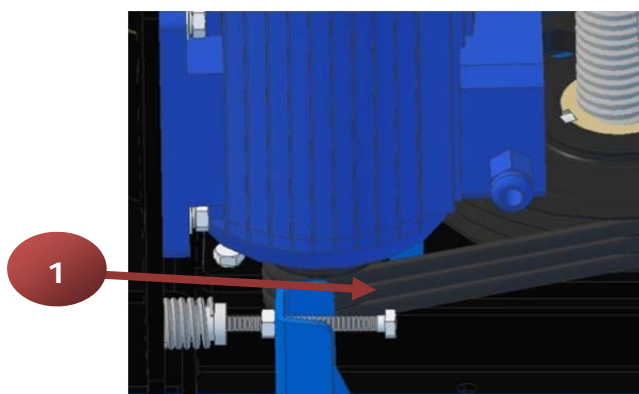


8. Spare parts and consumables

8.1. Spare parts

Following spare parts are recommended for 2 years of operation.

ID	Description	Quantity		Art. No.
1.	V-belt SPZ 1000, set of 3 belts	1	pc	20907
2.	Limit switch FP531	1	pc	20908
3.	Power supply lamp (white)	1	pc	22911
4.	Ready bale indicator, blue lamp	1	pc	22912
5.	Start/stop button	1	pc	22913
6.	Emergency stop	1	pc	20903
7.	Safety breaker	1	pc	22914



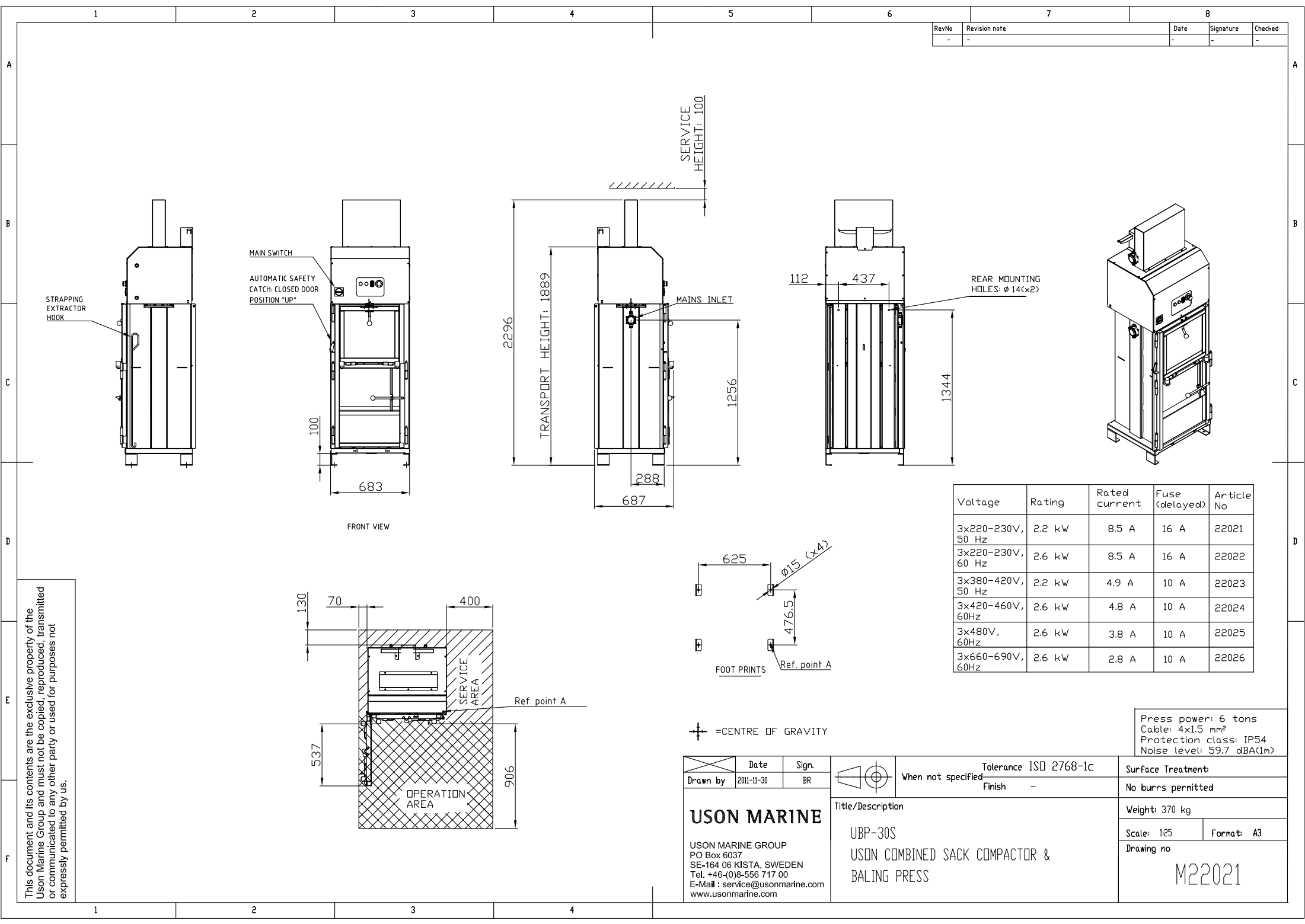
8.2. Consumables

The following consumables are necessary to have in stock to operate the UBP-30S continuously.

ID	Consumable	Quantity	Art. No.
1	Spindle grease	1 can	23917
2	Baling bands. Boxes of 8 rolls of 500 meter	1 box	29021
3	Plastic sacks. Boxes of 50 sacks	1 box	29024

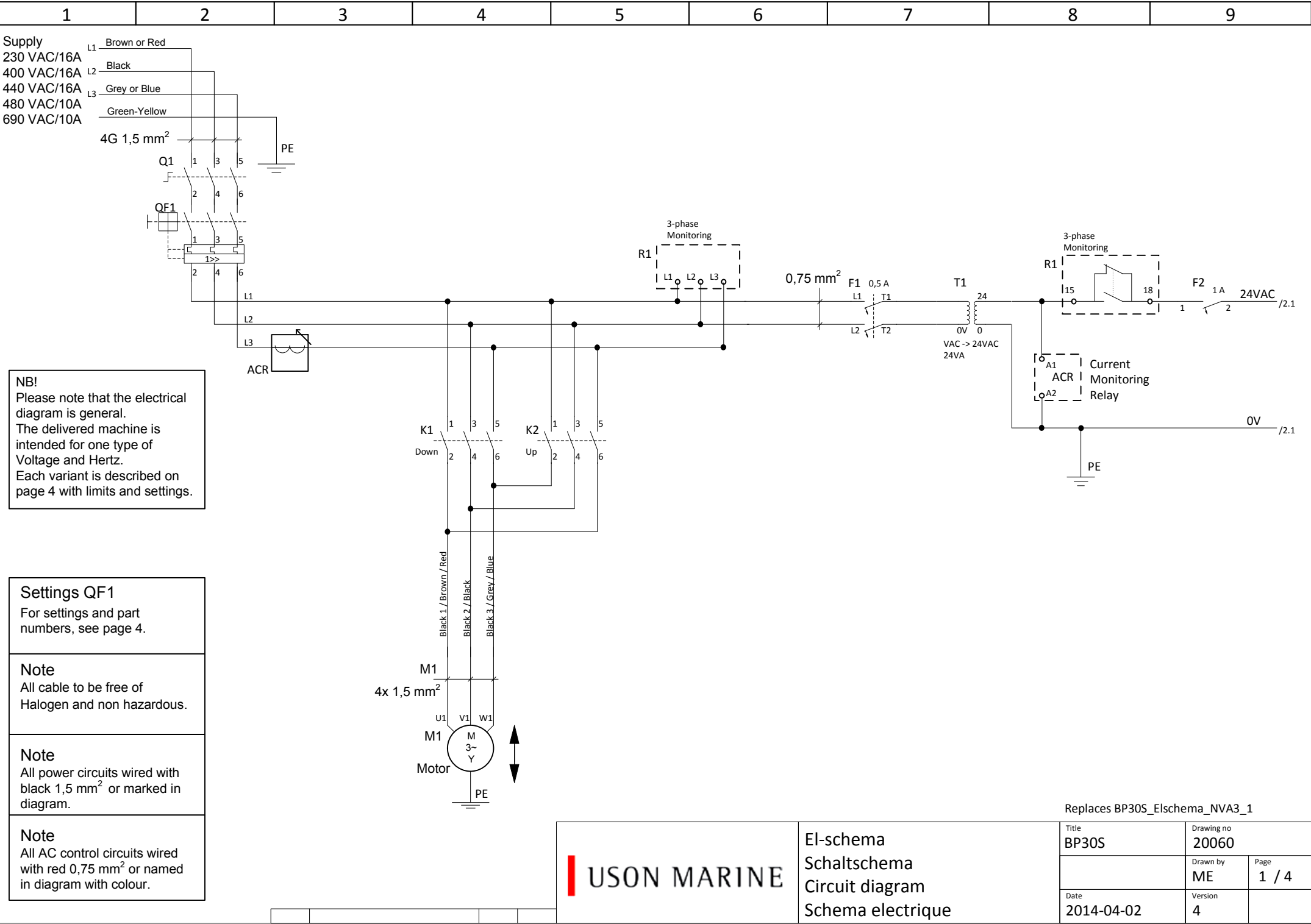
APPENDIX A

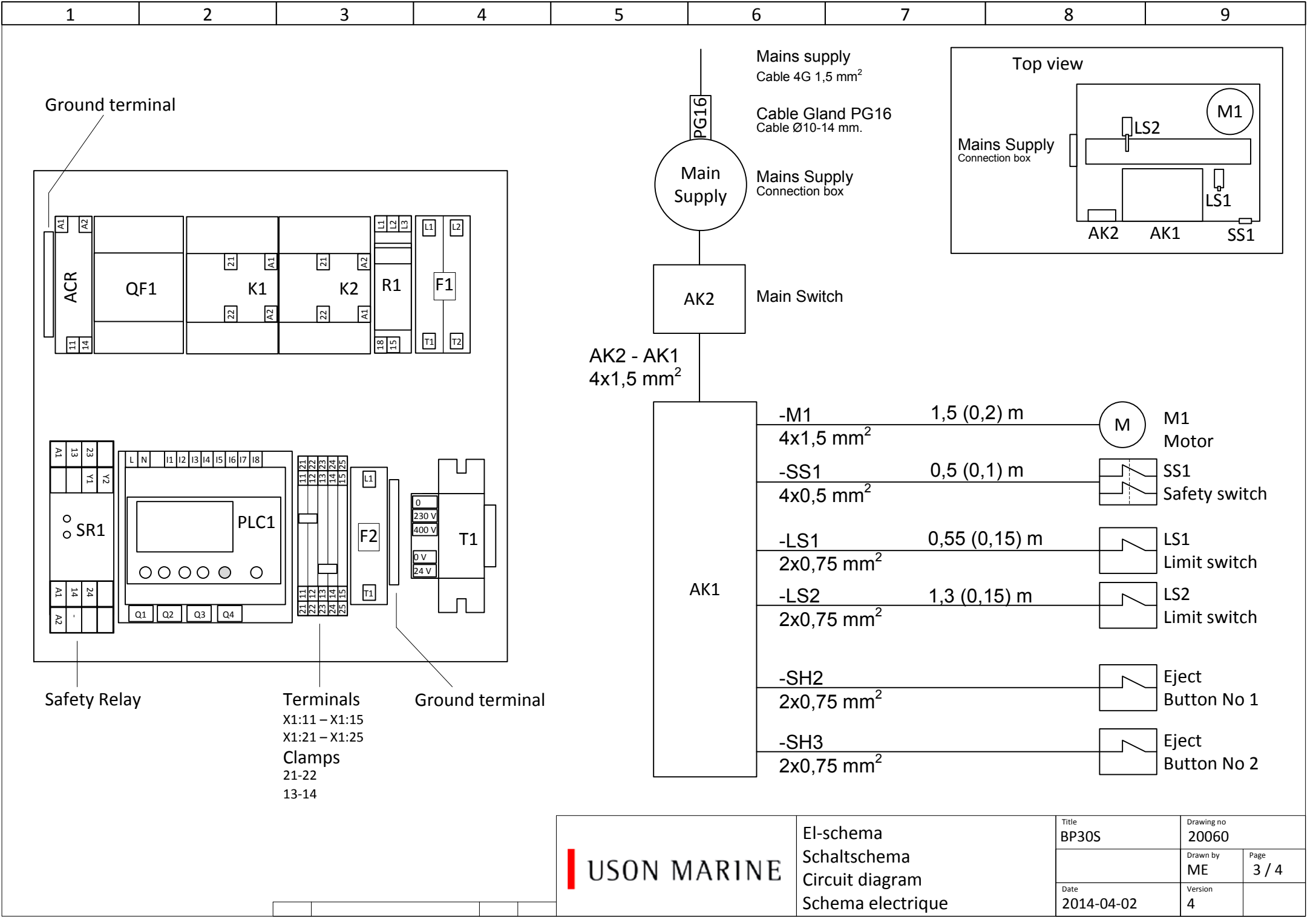
Manual drawing



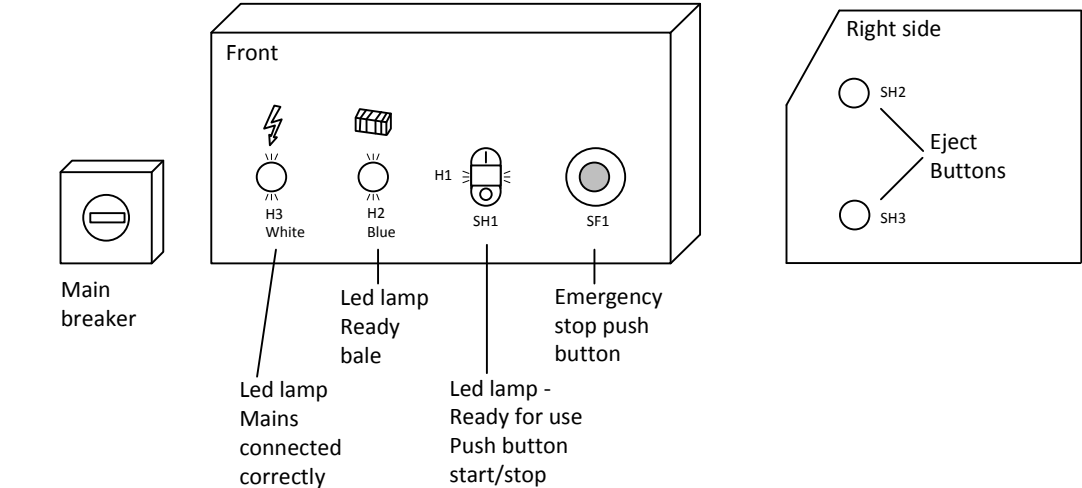
APPENDIX B

Electrical drawing





Bill of Materials		
Electrical Designation	Function	Part number
Q1	Main breaker	3161260
QF1	Motor circuit breaker	See variants
ACR	AC current relay	RM17JC00MW
K1,K2	Contactors 9A 24VAC	LC1D09B7
R1	3-Phase monitoring relay	See variants
F1	2-pole fuse for T1	GB2DB07
F2	1-pole fuse manoeuvre	GB2CB06
T1	Transformer	See variants
PLC1	Logical module (display) Zelio 8in/4out 24VAC	SR2B121B
SR1	Safety relay	XPSAC5121P
SS1	Door switch	XCSDMC7902
SF1	Emergency stop push button	XB4BS84441
SH1/H1	Push button (Start/Led/Stop)	ZB5AW7A1721 + ZB5AW0B11 + ZBE102
SH2/SH3	Push button (Ejection)	3720517+ 3721604+ 3721585
H3	White Led 24 VAC	XB4BVB1
H2	Blue Led 24 VAC	XB4BVB6
LS1	Limit switch FX531 - top	3816210
LS2	Limit switch FR520 - tilt	3816107



Bill of Materials - variants							
Volt – variants		220-240 V	380-420 V	380-420 V	420-460 V	480-520 V	660-690 V
		230 V / 50Hz	400 V / 50Hz	400 V / 60Hz	440 V /60Hz	480 V/ 50Hz	690 V / 50Hz
Electrical Designation							
Transformer	T1	T1:1	T1:1	T1:1	T1:2	T1:3	T1:4
Part number:		02450515	02450515	02450515	02450503	02450505	02450601
Motor circuit breaker	QF1	QF1:1	QF1:2	QF1:2	QF1:2	QF1:3	QF1:3
		6,0-10 A	4,0-6,0 A	4,0-6,0 A	4,0-6,0 A	2,5-4,0 A	2,5-4,0 A
Settings:		8,5 A	4,9 A	4,8 A	4,8 A	3,8 A	2,8 A
Part number:		GV2ME14	GV2ME10	GV2ME10	GV2ME10	GV2ME08	GV2ME08
3-Phase monitoring relay	R1	R1:1	R1:1	R1:1	R1:1	R1:2	R1:3
Part number:		RM4TG20	RM4TG20	RM4TG20	RM4TG20	DPA01C60	DPA01C69

APPENDIX C

Customer contact

USON MARINE

Service & Support

Uson Marine has more than 25 years of experience of waste management in the maritime industry. We custom-make our services and systems for different type of installation and applications, and can provide **worldwide service** through our network of representatives.

We can assist in each stage of the process from design to installation, surveys, commissioning and training of the crew.

Service Agreements

- » Commissioning
- » Training
- » Preventative Maintenance support

Service support

- » Technical documentation
- » Spare parts
- » Consumables

Continuous improvements

- » System upgrades
- » Engineering support
- » Audits/ Surveys

Garbage Management Plan

Rental and leasing

Contact for Service & Support:

Phone: +46 8 556 717 20

E-mail: service@usonmarine.com

www.usonmarine.com

About Uson Marine Group

Uson Marine is a leading provider of sustainable and environmentally friendly waste management systems for the maritime & offshore industry. By using our wide knowledge and experience we assist our clients in complying with current and future regulations, whilst at the same time improving their environmental image and reducing their cost for handling of ship-generated garbage.

Uson Marine Group is located in Sweden, Finland, Norway, The Netherlands and USA.

*effective waste management
demonstrates environmental responsibility!*

APPENDIX D

DNV Verification Report



DET NORSKE VERITAS

Verification Report

Product Assessment

USON MARINE COMBINED SACK COMPACTOR & BALING PRESS, UBP – 30S

This product has been examined and tested by DNV for the purpose of marine and offshore installations. It is not possible to Type approve this product due to the lack of appropriate international and class standards covering this installations. We have therefore tested the UBP-30S for marine and offshore like conditions in a suitable workshop.

Inclination test: UBP-30S was tested for operation at an angle of 22.5 degrees. Test results were satisfactory.

Measuring of press force: 6 tonnes.

Measuring of noise levels: The maximum noise level measured during a normal operation cycle was 59.7 DbA.

Safety functions tested and found satisfactory.

The product manual for UBP-30S, version 2.2 2006-05-24, has been evaluated and found accurate.

UBP-30S meets the requirements for sorting and minimizing of garbage given in DNV Rules for ships 2005 Pt.6 Ch.12 Sec.3 C700-702 class notation Clean Design.

We find Usen Marine UBP-30S fit for purpose.

Anna Berglund
Surveyor
DNV Maritime Sweden
Stockholm 2006-09-28