STENHØJ

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Instruction manual for hydraulic press

FlexiPress

Model H&M
16 – 100 Tons

CONTENTS PAGE

1. GENERAL REFERENCES

The press is constructed for general presswork, such as bending, embossing, punching and assembly. Any other use of the press may be against the regulations in force.

In that connection it is important always to be aware that the material and the tool must not affect the safety system and the stability of the press.

In its present form he press must not be used in connection with food production or work involving a risk of developing poisonous gasses or explosion.

The press is constructed in accordance with the regulations in force at the time of production. Consequently, any modifications affecting the safety system of the press are not allowed.

2. TECHNICAL SAFETY REFERENCES

When handling, please note that the press has a high centre of gravity.

Respect allowable floor load and fasten the press to the floor, if necessary.

If the press is not used in accordance with the regulations in force, or if untrained personnel operate the press, dangerous situations may arise.

The press must only be used when it is in perfect technical condition and when all instructions in the instruction manual are followed.

All safety devices must be available and functioning when the press is in use.

The tools shall be constructed in a way so that the return movement of the press piston does not cause any risk of crushing.

Observe the safety distances.

Check at least once per working shift if the press has got any visible damages or defects.

In the event of any functional interruption, the machine must be stopped immediately and any defects must be repaired.

In that connection please observe that repair/replacements must only be carried out with spare parts, which are identical to those originally applied. The user assumes entire responsibility for any consequential damage occurred on account of the use of unauthorised spare parts.

Work on the electrical system of the press must only be carried out by authorised personnel or by personnel who has received special instructions and is supervised by an authorised person. The work must be performed in accordance with the regulations in force.

Personnel with special knowledge and experience of hydraulic equipment must only carry out work on the hydraulic system of the press.

During the execution of maintenance work, lock the press and make sure that all power supply is switched off.

In the event of fire in the electric supply, CO_2 based extinguishing material must be used. Burning oil must be extinguished with CO_2 based extinguishing material or powder.

3. USED STANDARDS

98/37/EF:	Machinery Directive.
DS 412:	Steel structures
EN 693:	Safety of machinery. Hydraulic Press

4. SOUND LEVEL FOR MOTORIZED PRESSES

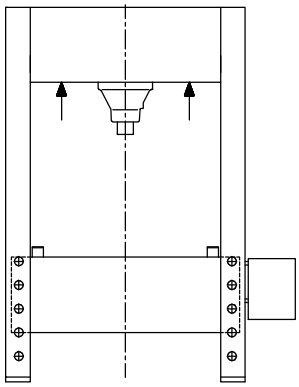
The sound pressure level of the press L_{eq} is measured according to DIN 635-01-KL2.

Press type	16	25	40	60	100	T
Sound level	78	78	77	75	76	dB(A)

Be aware that some tools may increase the total noise level and consequently precautions must be taken to ensure that the operator or other persons are not exposed to harmful influences.

5. UNLOADING

Lift the press with a crane or a forklift.



Pay much attention when lifting the press, as the centre of gravity is high and may cause a risk of overturning.

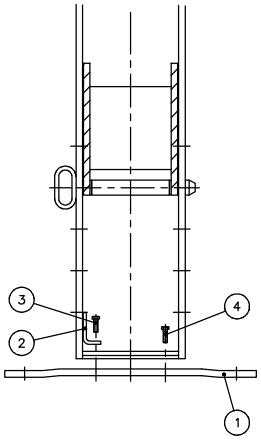
WEIGHT:

Press type:	16	25	40	60	100	T
Net weight	180	250	430	750	1200	kg
Light packing	200	270	450	790	1230	kg
Seaworthy pack.	345	345	545	920	1380	kg

APPLIES ONLY WHEN FEET ARE DELIVERED SEPARATELY:
(Primarily in case of seaworthy packing).

1. Mount feet pos. 1.

2. 2 angle-down stops pos. 2 are mounted diagonally.
   1 in the left side - 1 in the right side of the press.



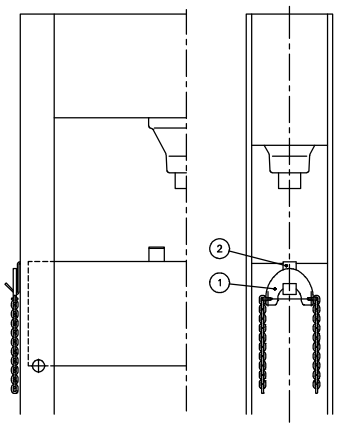
IMPORTANT:

If work with tools or material in the press should influence the stability of the press, make sure that the press is bolted to the floor. Fastening must be done by means of bolts, which are able to take up such influence.

6. HAND PUMP MODEL

6.1 SETTING UP, 2- step hand pump model

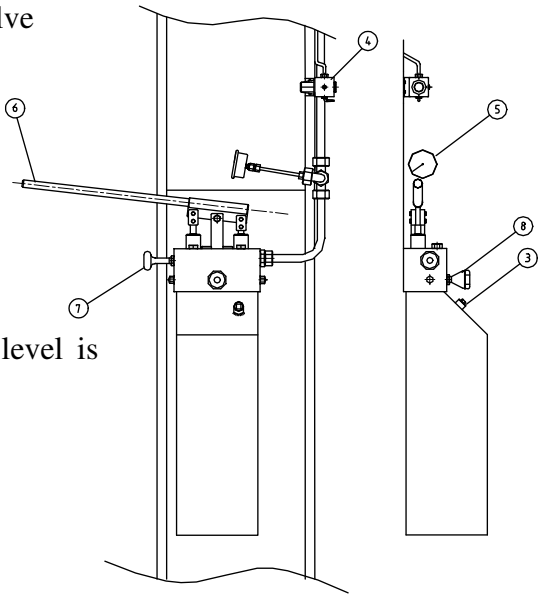
A. Remove strips from supporting pins, straightening blocks, pump lever and box containing:
1 lifting yoke w/chains, Pos. 1
1 rack, Pos. 2
1 box repair paint



B. Place lifting yoke w/chains Pos. 1 on rack Pos. 2 in left side of the press.

C. OIL FILLING: The press is filled with hydraulic oil at the delivery. See oil specification. Before the press is taken in use remove the blue plug in the hand pump pos. 3. Mount in pos. 3 the yellow venting plug. Quantity of oil: approx. 14 litres.

D. CONNECTION OF COMPRESSED AIR:
Connect compressed air to reduction valve Pos. 4 with a 5/16" air hose. On delivery the reduction valve has been pre-set at 3 bar.



E. VENTING: Pump out press piston fully and return 5 or 6 times in order to remove air from cylinder and pipe system.

F. Check oil level.
Remove air filter Pos. 3 and check that the oil level is approx. 50 mm below cover.

THE PRESS IS NOW READY FOR USE.

NOTE: Set reduction valve Pos. 4 so that the press piston can just lift the press table (see under section raising/lowering of press table). Higher pressure will make it difficult to use the press.

6.2 OPERATION, 2- step hand pump model

FlexiPress is mounted with a 2-step hand pump, high pressure/low pressure. The hand pump is supplied with a double set of pistons, resulting in that the press piston moves down moving the pump handle both upwards and downwards.

Shift between low pressure and high pressure is done manually using valve pos. 8.

With low pressure the press piston moves down with maximum speed. Valve pos. 8 must be turned clockwise.

When the press piston hits the product, valve pos.8 must be turned anti clockwise, to turn to high pressure.

Pressure is shown in ton on manometer pos. 5

The press piston is retuned by turning valve pos. 7 anti clockwise . When pressing this valve pos. 7 must be turned clockwise.

Returning of the press piston is done by air pressure, resulting in a fast return speed. Adjustment of air pressure is done with valve Pos.4 (page 8).

Always be sure to use the straightening blocks supplied with the press or other suitable support to avoid any damage to the press table.

If only a single straightening block is used, the allowable load must not exceed 65% of max. pressing force.

IMPORTANT

Please observe that the user is not exposed to any risk of being hit by ejected or falling pieces or tools used in the press.

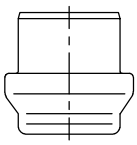
Never make press piston subject to offset loads or overloading.

USE OF NOSE CAP/PRESS PLATE

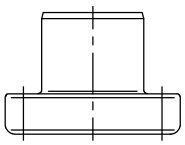
ALWAYS use nose cap for press operations.

The press plate must **ONLY** be used in operations including use of tools.

NOSE CAP



PRESS PLATE



7. RAISING/LOWERING OF PRESS TABLE, 2- step hand pump model

The press table is raised or lowered by means of the press piston and the lifting yoke with chains supplied.

Please be aware of clamping danger when raising and lowering the press table.

LOWERING:

1. Pump to lower the press piston by approx. 50 mm.

2. Push lifting yoke on to nose cap/press plate of piston rod - stretch chains to both sides and attach them to the slits of the transverse reinforcement of press table.

3. Turn Pos.7 clockwise. (See page 8). The press table will lift free of the pins, and the pins can be moved in the wanted position.

4. Pump to lower the press piston until the press table rests on the pins.

5. Dismount chains and lifting yoke.

RAISING:

1. Pump to move the press piston entirely down if required.

2. Push the lifting yoke on to the nose cap/press plate of piston rod - stretch chains to both sides and attach them to the slits of the transverse reinforcement of press table.

3. Turn Pos. 7 anti-clockwise and the press piston will return using air pressure, when the press table is on the right level, turn valve pos. 7 clock-wise, and the return movement stops.

4. Move supporting pins to required position.

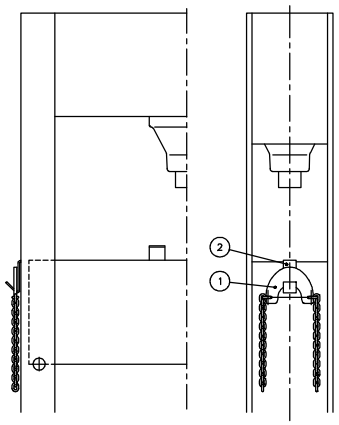
5. Lower press table on to pins and relieve chains by pumping down the press piston.

6. Dismount chains and lifting yoke.

8. MOTORIZED PUMP MODEL

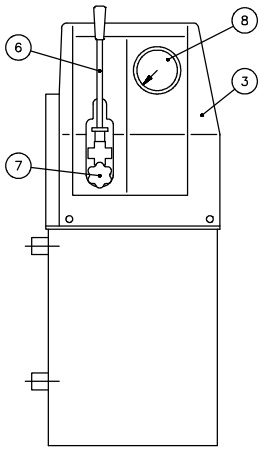
8.1 SETTING UP, motorized pump model

A. Remove strips from supporting pins, straightening blocks and box containing:
1 lifting yoke with chains, pos. 1
1 rack, pos. 2
1 valve hand lever, pos. 6
1 box repair paint



B. Place lifting yoke with chains pos. 1 on rack pos. 2 in left side of the press.

C. OIL FILLING: Remove air filter pos. 4 on the back of the container cover and fill in hydraulic oil, see oil specification. Quantity of oil: approx. 25 l.

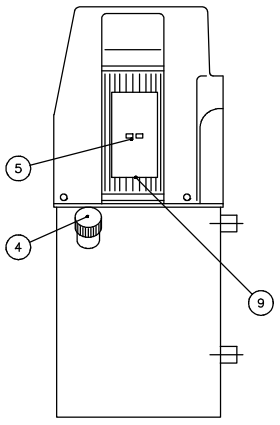


D. POWER CONNECTION: an authorized electrician must connect the motor, pos. 9. Direction of rotation - clockwise seen from the top, as shown by an arrow on end cover.

E. Mount valve hand lever, pos. 6, on to control valve - the hand lever can be mounted in 2 ways - either vertically or horizontally.

F. VENTING: Start the motor on motor starter, pos. 5 and move press piston upwards/downwards 5-6 times at full stroke to remove air from cylinder and pipe system.

G. Check oil level.
Remove air filter, pos. 4 and check that the oil is at the lower part of the filler neck.
MAX. oil level approx. 50 mm below cover.



THE PRESS IS NOW READY FOR USE.

8.2 OPERATION, motorized pump model

The press piston is operated by the control valve, the lever of which has 3 positions, viz. DOWN - STOP - UP.

The press piston is moved downwards by pressing the control lever downwards - when released the lever moves to centre position and the press piston stops.
Moving the control lever upwards returns the press piston.

The pressing force is infinitely variable from MIN. to MAX. by thumbscrew of the pressure adjusting valve, pos. 7, found below the control lever.
The pressing force is readable in tonnage on the pressure gauge, pos. 8.

Always use the straightening blocks supplied or other suitable support to avoid any damage to the press table.

Always use a suitable intermediary layer when pressing direct against a work piece to avoid any damage to the press plate and its clamping holes.

If only a single straightening block is used, the allowable load must not exceed 65% of max. pressing force.

I M P O R T A N T

Please observe that the user is not exposed to any risk of being hit by ejected or falling pieces or tools, which are used in the press.

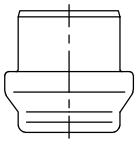
Check every day that the control lever of the pilot valve returns automatically to centre position.
If not, the press must be stopped immediately and the error rectified.

Never make press piston subject to offset loads or overloading.

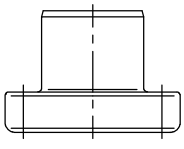
USE OF NOSE CAP/PRESS PLATE

ALWAYS use nose cap for pressing operations.
The press plate must **ONLY** be used in operations including the use of tools.

NOSE CAP



PRESS PLATE



8.3 RAISING/LOWERING OF PRESS TABLE, motorized pump model

The press table is raised or lowered by means of the press piston and the lifting yoke with chains supplied.

Please be aware of clamping danger when raising and lowering the press table.

LOWERING:

1. Pump to lower the press piston by approx. 50 mm.
2. Push lifting yoke on to press plate of piston rod - stretch chains to both sides and attach them to the slits of the transverse reinforcement of press table.
3. Return pump lever to lift press table free of the supporting pins, which are moved to the required position.
4. Lower press piston until press table rests on the pins.
5. Dismount chains and lifting yoke.

RAISING:

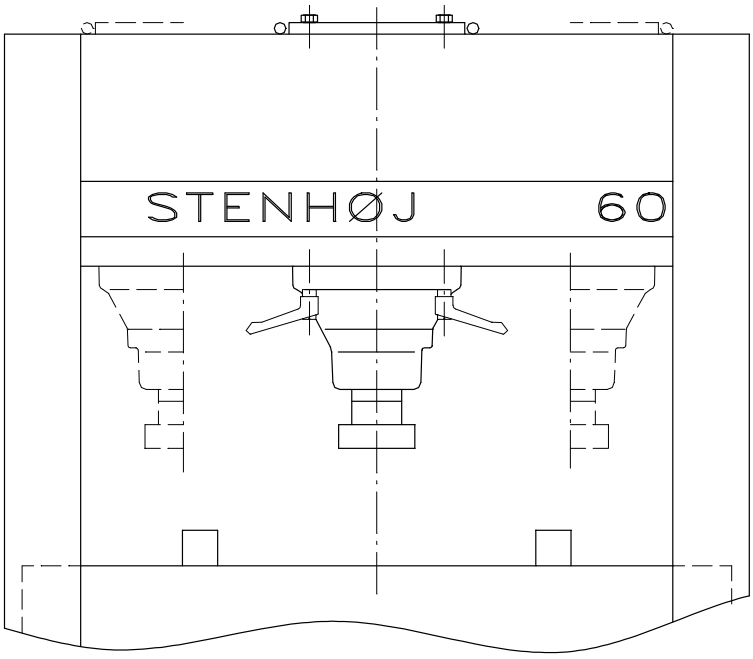
1. Move the press piston entirely down, if required.
2. Push lifting yoke on to press plate of piston rod - stretch chains to both sides and attach them to the slits of the transverse reinforcement of press table.
3. Return press piston until press table reaches required height.
4. Move supporting pins to required position.
5. Lower press table on to pins and relieve chains by moving down the press piston.
6. Dismount chains and lifting yoke.

9. MOVABLE CYLINDER RACK

(Not standard)

IMPORTANT

Please note that the allowable maximum load of the presses, when the cylinder is moved out to either of the sides, is as follows:



10. MAINTENANCE

10.1 HAND PUMP

LUBRICATION:
Lubricate the joints of pump lever according to needs.

10.2 MOTOR PUMP

OIL CHANGE:
As the hydraulic oil will degrade and become impure, it should be changed every second year.

11. OIL SPECIFICATION

The above list states oil products, recommended on normal operation conditions, that means room temperature on ca. 20°C. Other makes are useable if the oil specifications correspond to one of the mentioned.
In case of deviations, please contact STENHØJ HYDRAULIK or your agent for further information.

BP	Energol HLP 32-46	Q8	Haydn 32-46
Shell	Tellus Oil S 32-46	Castrol	Hyspin AWS 32-46
TEXACO	Rando Oil HD-32-46	STATOIL	HydraWay HM32-46

Typical oil specifications:

	32	**46**
Flash point	210°C	220°C
Pour point	-32°C	-32°C
Viscosity at 40°C	31 mm^2/s (cSt)	45mm^2/s(cSt)
Viscosity grade	105	
Neutralization grade	0,4mg KOH/g	0,4mgKOH/g
Foam tendency (ASTM D 892) ved 24°C	0/0ml	0/0ml
Foam tendency (ASTM D 892) ved 93°C	20/0ml	10/0ml
Air release (ASTM D 3427)	1,5	1,0

Health precautions:

Avoid oil contact with the skin. Use protective gloves and oil tight clothes, if necessary. Use eye protectors in case of any risk of splashed oil in the eyes.
Collect and remove any leakage of oil or oil waste in accordance with regulations in force.
Moreover, be aware of the health and environmental regulations, which concern the chosen type of oil.

12. CHANGE OF SEALS IN PRESS CYLINDER

DISMANTLING: See spare parts list for press cylinder. (Page 17)

1. Return the press piston to extreme top position.

2. Dismantle pressure pipe at top of cylinder and pressure pipe/air hose in stuffing box. Do not forget a waste oil tray.

3. Attach a rope sling to cylinder and lift with a tackle or alternatively support the cylinder by a forklift.

4. Dismantle the 4 stay bolts supporting the cylinder and lower it free from the press frame.

5. Drain off any remaining oil from cylinder.

6. Dismantle nose cap, Pos. 8 or press plate Pos. 10.

7. Unscrew cylinder pipe from stuffing box - the cylinder pipe should not stick harder than it can easily be loosened by a band wrench or a chain pipe wrench. If such tools are not available - 2 driving pins can be placed in the 2 holes of the end plate, and in this way a rod can loosen the cylinder. (See measurements on the spare parts drawing).

8. Then lift the piston rod free from the stuffing box.

9. Remove old seals Pos. 1, 5, 6 and 7 and wipe carefully with clean cloth - not with cotton waste.

10. Inspect cylinder inside. Polish the scratches, if any, with fine emery cloth. - **Do not forget** cleaning after polishing. In case of heavy scratches or seizing return cylinder to supplier for repair.

ASSEMBLY:

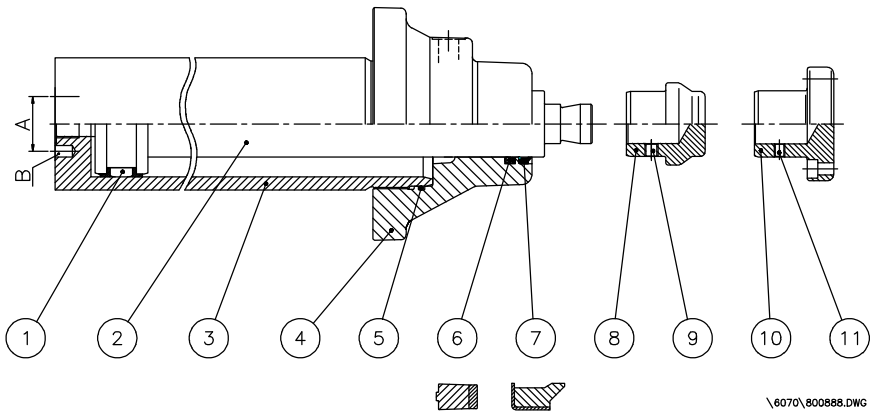
11. Insert new seals Pos. 1, 5, 6 and 7 and assemble cylinder.

12. Reassemble cylinder in the press in reverse order

13. Move press piston upwards/downwards 5 or 6 times to remove air from the system.

14. Check oil level in pump container and refill, if required.

12.1 SPARE PARTS LIST, press cylinder



POS	DESCRIPTION	QTY.	16 T	25 T	40 T	60 T	100 T
	Cylinder complete		801025 s=300	801045 s=300	801046 s=300	801043 s=300	801047 s=300
1	Piston packing	1	304936 ø80/66x16	304937 ø100/86x16	304938 ø125/108x26,5	304939 ø160/143x20	304940 ø200/180x255
[1]) 2	Piston complete	1	820275	820276	820277	820278	820279
[1]) 3	Cylinder	1	810276	810277	810278	810279	810280
4	Stuffing box	1	830199	830200	830201	830202	860203
5	O-ring	1	304196	303211	309976	304773	304774
6	Packing	1	304775	304776	304777	304778	304779
7	Scraper ring	1	300465 50-60-10-7	300467 60-70-10-7	304780 65-75-7/10	300471 85-95-7/10	300472 100-110-7/10
8	Nose cap	1	841314	841315	841316	841317	841318
9	Pivot screw	1	303951	303951	303951	303951	303951
[2]) 10	Press plate	1	841309	841310	841311	841312	841313
11	Pivot screw	1	303951	303951	303951	303955	303955
	Spare parts pack consis. of pos 1,5,6,7	1	841382	841383	841384	841385	841386
A	Hole spacing		42	42	70	70	70
B	Diameter x depth		ø11x12	ø11x12	ø17x15	ø17x15	ø17x15

[1]) In case of special length of stroke, please contact STENHØJ HYDRAULIK informing machine No.

[2]) Press plate is not standard on Classic Press.

13. SPARE PARTS LIST

DESCRIPTION	QTY.	16 T	25 T	40 T	60 T	100 T
Pins	2	4-542810	4-542811	4-542812	4-542866	4-542867
Straightening block	2	3-542817	3-542818	3-542819	3-542820	3-542821
Pressure gauge	1	304569	304571	304573	304575	304577
Pressure gauge: USA	1	304986	304987	304988	304989	304990

13.1 SPARE PARTS LIST, hydraulic hoses

DESCRIPTION	QTY.	16 T	25 T	40 T	60 T	100 T
MOTOR PUMP: Hose for upper side of cyl. (end plate)	1	740855 l=1800	740857 l=860	740859 l=990	740861 l=1300	740863 l=1460
MOTOR PUMP: Hose for lower side of cyl. (stuffing box)	1	740856 l=2300	740858 l=1350	740860 l=1550	740862 l=1870	740864 l=2210
HAND PUMP: Hose for upper side of cyl. (end plate)	1	740958 l=550	740958 l=550	740959 l=600	740961 l=700	740962 l=800

13.2 SPARE PARTS LIST, air-pressure control (hand pump only)

SPARE PARTS LIST FOR PRESSURE CONTROL. Order No. 740941 consisting of:		
ITEM NO.	QTY.	DESCRIPTION
M213715	1	Pressure control
M213746	1	Bushings
M213765	1	Panel nut
304893	1	Wall bracket
301353	2	Hose nipple 1/4” RG x 48
301049	2	Clamping rings
301537	2	Screws M5 x 8

14. Spare part for hand- and foot pump 16T

Spare parts for hand- and foot pump for 16-25 t is not available.
Exchange of hand- and foot pump is only possible as a complete unit.
Order number.

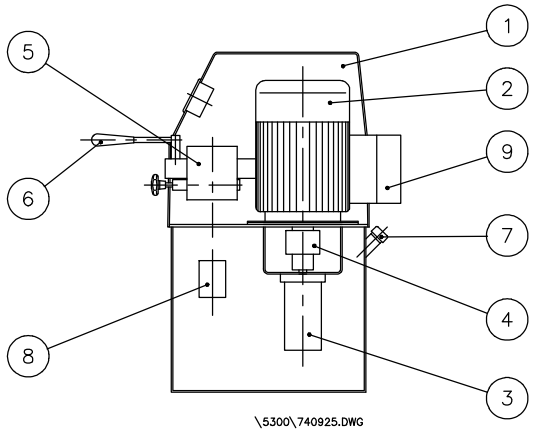
Item no. 16T	Item no. 25T	Description
701039	701087	Hand pump
701040	701040	Foot pump

15. Spare part for hand pump 25 – 100T

Spare parts for hand- and foot pump for 16-25 t is not available.
Exchange of hand- and foot pump is only possible as a complete unit.
Order number.

25T	40T	60T	100T
701087	701087	701087	701087

16. SPARE PARTS LIST, motorised pump unit



SPARE PARTS LIST FOR MOTORIZED PUMP UNIT						
POS.	DESCRIPTION	16 T	25 T	40 T	60 T	100 T
1	Top SCREEN	304812	304812	304812	304812	304812
2	Electric motor 2,5kW	307360	307360	307360	307360	307360
3	Pump AP..	307312	307313	307314	307315	307322
4	Coupling	307391	307391	307391	307391	307391
5	Valve	304976	304976	304976	304976	304976
6	Hand lever f. valve					
7	Filling plug	303761	303761	303761	303761	303761
9	Starter:	The same for all press sizes, but varying with the voltage you are using - see next page.				

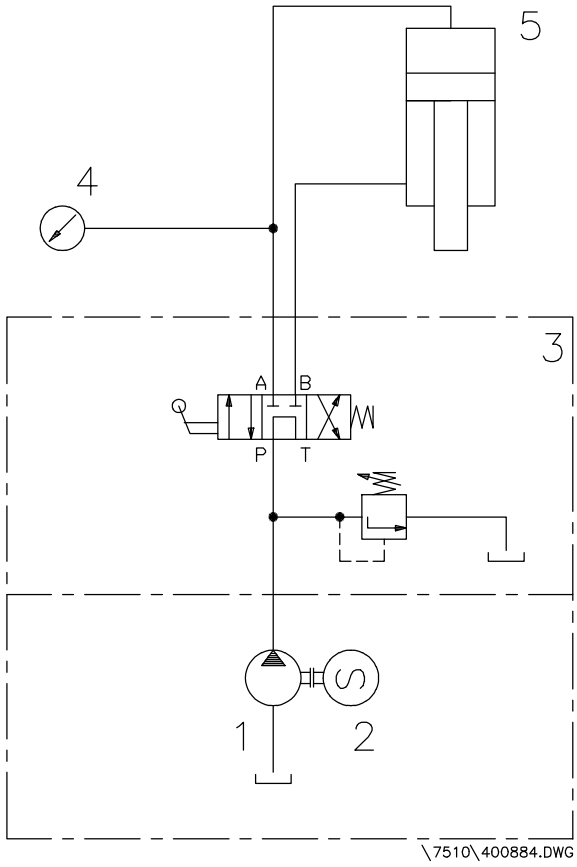
16.1 SPARE PARTS LIST, motor starter

SPARE PARTS LIST FOR MOTOR STARTER/STOP	
ITEM NO.	DESCRIPTION
305608	Terminal box complete f. Parlock motors
307362	Terminal box complete f. MEZ motors

SPARE PARTS LIST FOR CONTACTOR COILS FOR TERMINAL BOX		
DESCRIPTION	ITEM NO.	SUPPLY VOLTAGE
230V-50/60Hz	305562 (f.Parlock) 307363 (f.MEZ)	220V-50Hz 220V-60Hz 230V-50Hz 230V-60Hz 240V-60Hz
400V-50/60Hz	305563 (f.Parlock) 307364 (f.MEZ)	400V-50Hz 440V-60Hz
415V-50/60Hz	305588 (f.Parlock) 307365 (f.MEZ)	415V-50Hz 415V-60Hz

17. HYDRAULIC DIAGRAM, FLEXIPRESS

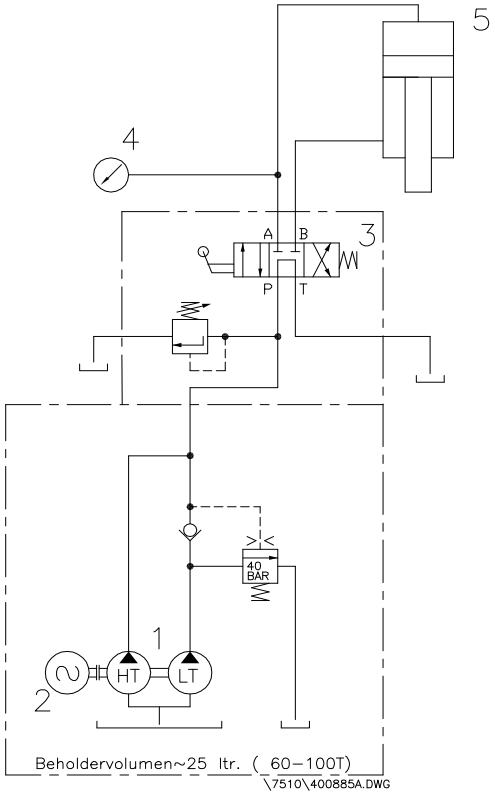
17.1 HYDRAULIC DIAGRAM, motor pump 16, 25 and 40 T



Tank volume: 25 litres

1. Hydraulic pump
2. Electrical motor
3. Control valve with pressure regulation
4. Pressure gauge
5. Pressing cylinder (double-acting)

17.2 HYDRAULIC DIAGRAM, motor pump 60 and 100 T



Tank volume: 25 litres

1. Hydraulic pump (double-acting)
2. Electric motor
3. Control valve with pressure regulation
4. Pressure gauge
5. Pressing cylinder (double-acting)
6. 2-stage valve

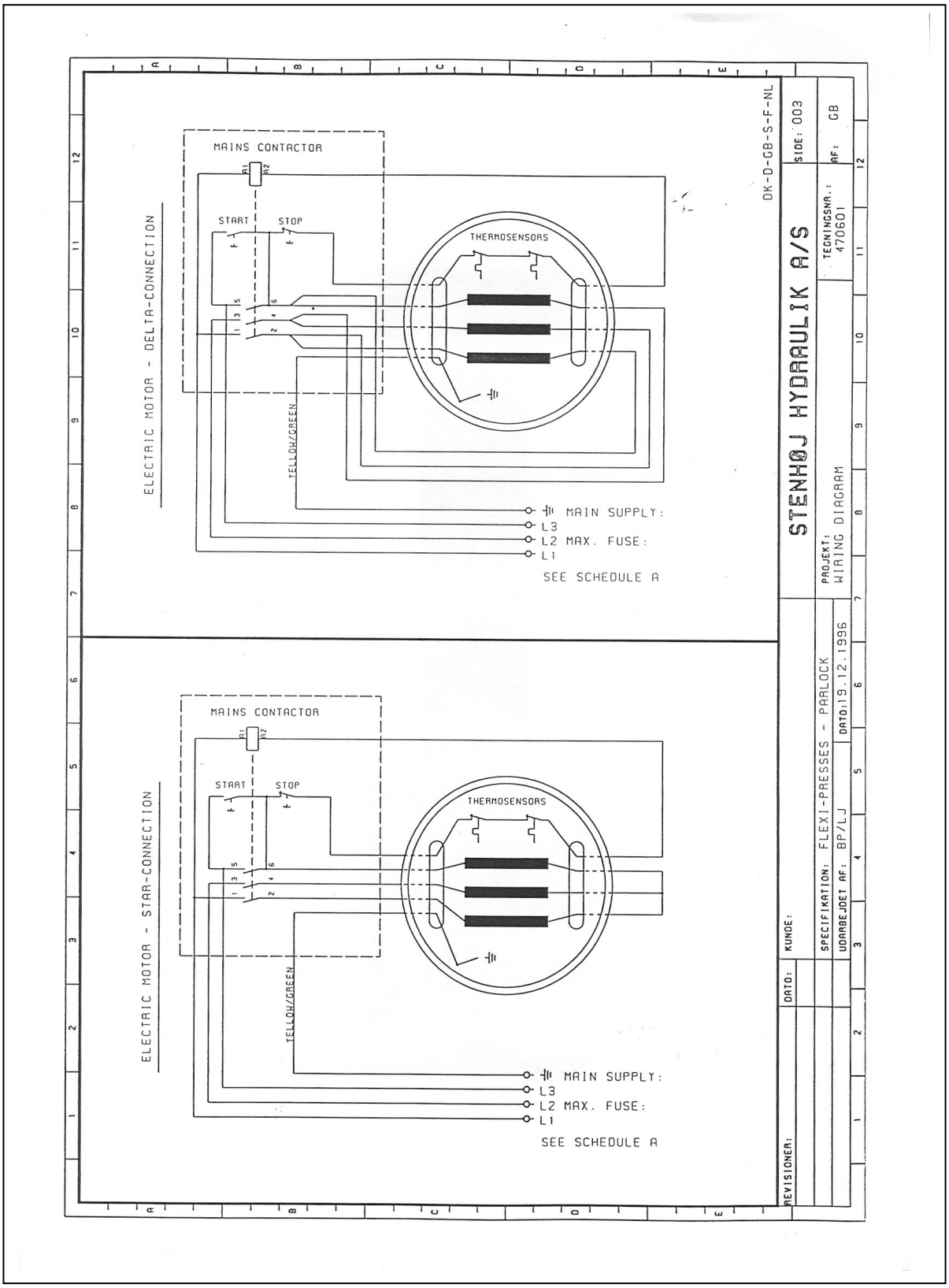
18. ELECTRICAL DATA FOR MOTORIZED FLEXIPRESS

TABLE A ELECTRICAL DATA FOR FLEXIPRESS		
Supply voltage	Max. Back-up Fuse	Motor coupling
3x208V/60Hz+PE	25 AgL	D, triangle
3x220V/50Hz+PE 3x230V/50Hz+PE 3x240V/60Hz+PE 3x230V/60Hz+PE	25 AgL	D, triangle
3x380V/50Hz+PE 3x400V/50Hz+PE 3x440V/60Hz+PE 3x415V/50Hz+PE 3x480V/60Hz+PE	16 AgL	Y, star
3x500V/50Hz+PE 3x575V/60Hz+PE	10 AgL	Y, star

Supply shall take place by means of a plug and a plug box, according to EN60204-1 §5.3.

For further information - please see the electrical diagram on next page.

19. WIRING DIAGRAM



20. DESTRUCTION OF THE PRESS

When the press has served its time and is to be destroyed, the following actions should be taken:

The oil in the pump unit should be drained out and collected in containers suitable for the purpose so that oil spillages are avoided.

Hereafter, the pump unit is dismounted from the press so that it can be emptied completely of oil.
Watch out for oil spillages when hoses and piping between the cylinder and the pump unit are detached as the remaining oil in the cylinders is now released.

If the cylinder is dismantled, it is important to be aware that some cylinders contain a spring. This spring will be released when the cylinder and stuffing box are dismantled.

The press can now be sent for destruction and the oil delivered to an authorized company, which can guarantee its disposal in an environmentally satisfactory way.

21. TECHNICAL DATA, FLEXIPRESS