Tampella

I N D E X

PRESS SECTION

I N D E X

Tampella

I N D E X

LIST OF DRAWINGS

PRESS SECTION SAFETY

The press removes moisture from the sheet with rotating rolls and high nip pressures.

Foot boards, crosswalks, handrails and ladders should be used as directed. Personnel should never be permitted during operation to use crosswalks which are intended for use only for felt change and cleaning during shutdown.

On the press section, and particularly on walkways within the press section, wet and slimy surfaces should be avoided as they present a real hazard.

Felt and roll changes add to the hazards of the press section as, during these changes, many of the walkways and handrails are pivoted to one side or removed completely for clearance, disturbing normal access routes.

The drives must be disconnected and locked out for felt and roll change. Controls should not be activated until all personnel working on the press area are accounted for and their location known.

When overhead cranes are used for felt and roll change, precautions recommended for safe overhead crane operation must be exercised. Personnel working near the top of the press frames should be especially cautious of the overhead crane travel.

Special care must be taken during felt and roll change. Slings, hooks and other lifting devices must be in good condition. Proper lift points must be used with pick-up and transport equipment.

Make sure that after roll and felt change all walkways, handrails, nip guards and other protective devices have been mounted in their proper places.

Feeding the sheet from the press to the dryer section by means of a rope carrier system must be performed with special

Observe roll locking devices for correct function and adjustments.

Do not depend on hydraulic or pneumatic devices to hold the equipment in a raised position while performing maintenance. Use locking devices.

Limit switches are proved to prevent damage to the machine and nearby personnel. Make certain these limit switches are working properly.

Do not walk on the rolls.

Do not start the press section or any device before having made certain that all personnel are outside the hazardous area and that the personnel working near the machine are accounted for before start-up.

During maintenance make sure that pressure has been released from steam, water and air lines.

Wear protective gloves when handling doctor blades, which can be knife sharp.

When actuating high-pressure showers, make certain that they are correctly positioned and that the hazardous area is clear of personnel.

Spacer blocks and eye bolts can cause serious injury to fingers and hands.

Roll change equipment safety:

- Use proper belt slings for lifting from the shell.
- Inspect sling ropes and belts, especially at lifting points, after every lift.
- Sling ropes and belts must not contact sharp edges. Use guards if needed.
- Use special ropes and belts for lifting every roll.

- Exercise caution to keep the sling ropes and belts apart from caustic soda and ammonia.

Accidents on the press section are most commonly due to the following:

- Rope carrier system
- Improper usage of walkways and crosswalk
- Stumbling into equipment lying on walkways
- Guards and handrails have been removed
- Unexpected situations in felt and roll change
- Improper lifting devices
- Miscalculation of available space between parts
- Walking on slowly moving felts
- Unguarded nips
- Unguarded rotating members
- Incorrect storage of wash-up hoses.

Means of improving press safety:

- Checking of correct maintenance and drive points
- Usage of guards and barriers
- Observing safety signs
- Knowledge of alarm system
- Colour codes on alarm system
- Colour codes in hazardous areas
- Study the points concerning felt handling and roll change techniques with special care. It is especially in this section that unexpected situations will arise.

PRESS SECTION, LNP

DIMENSIONING AND BASIC DATA

Type

Long Nip Press (LNP).

Pneumatically loaded, high nip load press unit with large diameter rolls.

Dimensioning basis

The structure of the press unit has been dimensioned according to the nip loadings, design speed and dewatering requirements. The design of the press serves for good runability as well as easy and quick felt and roll change.

Design nip load	2000 PLI
Felt tension	max. 17 PLI

EQUIPMENT AND MATERIALS

Frame:		
Front side LNP-frame		painted steel
Back side LNP-frame		painted steel
Cross machine beams		s/s clad
Machine directional beams		painted steel
Support columns		painted steel
Spacer blocks		s/s
Press roll, plain - dia 1415 mm - water cooling	2 ea + 1 for spare	cast iron, rubber cover
Felt roll - dia 360 mm - length 4800 mm	4 ea + 2 for spare	steel tubing rubber cover
Felt roll (wormed) - dia 360 mm - length 4800 mm	2 ea	steel tubing, rubber cover
Bearing lubrication:		
- press rolls		central lube oil
- felt rolls		grease
- paper carrying rolls		grease

Doctors:		
Felt roll doctor - stationary	1 ea	s/s clad
Felt guide - hand + autom.	1 ea	pneumatic
Felt stretcher	1 ea	air motor oper.
Felt suction box	2 ea	
- turning		manual
- cover material		HD-polyethylene
Water trays of felt conditioning		s/s
Showers:		
Felt suction box lubrication shower - stationary	2 ea	
Felt high pressure cleaning shower - oscillator	1 ea	el. mech.
Roll change equipment - roll removing carriage - lifting beam		
Felt change equipment - hydraulic jacks		
Press roll loading equipment	1 pair	pneumatic bellows

Walkways		
- hanbdrails		s/s-tubing
- supports		steel
- walking surface, crosswalks		galv. steel grating
- walking surface		galv. steel grating
- steps		galv. steel grating
- crosswalks	2 ea	
- ladders		
Shimplates for existing baseplates		steel

Notes:

stainless steel	SIS 2333 (AISI 304)

Existing parts are assumed to be reusable as is. Required conditioning by Purchaser.

PRESS SECTION

Press frames

Completely new LNP (long nip press) framing is provided for large diameter press rolls and for higher nip loadings.

The frame is designed for today's stiff felt qualities. The felt change is fast and easy due to removable blocks and C-frame design. Felt stringing rack is also provided for easy felt change.

Material of framing and loading equipment is carbon steel with painting.

The bottom and top roll are provided with pull-out beam and dolly for fast roll change.

Loading equipment, Dwg RO 866114

The bearing housings of the top roll are fastened to loading arms (6) which are conencted to levers (8) with transfer screws (12). The other ends of the levers (8) are fastened to the frame with pivot pins (22) and the other ends are between loading and relieving bellows. The bellows are of type FIRESTONE.

Maximum nip pressure of LNP press rolls is 2000 PLI. The rolls are crowned 0,75 mm for a starting nip pressure of 1713 PLI. The nip pressure coming from the top roll weight is 453 PLI. See Dwg 462116.
The press is interlocked so that it can be loaded on crawl or run only.

Top roll lifting devices, Dwg RO 866114

The top roll is lifted to top position before felt or roll change by means of air motor (38) and gears (39 and 40). Air motor is of type FENNER RM 310 FG, gear ratio = 9, and worm gears KATSA KV 180 41K.

Lifting is interlocked so that it can be done only if the press lever operating valve is in open position. The extreme roll travel positions are secured by top and bottom limits. Top limit stops the travel of top roll when the nip is 9" open. Bottom limit is adjusted so that distance Z (according to Dwg RA 866371) is as follows:

Bottom bellow change

Dwg RO 866114

When the LNP - bottom bellow has broken drive spacer lever (8) between the bellows to top position like this:

- drive loading lever (6) with gear to top position

- mount some spacer between bearing housings

- drive witht gear to opposite direction as recently, the the spacer lever rises

- now you can change bottom belows

Air motor does not work, when there is no pressure in the bottom bellow. That is why you must loosen bottom bellows coming pipe and put plug into pipe. After that you can put pressure to the pipe and airmotor works.

Press section rolls

Dwg RA 867058

The press is double felted.

The roll shells and journals are made of nodular cast iron. The bearing housings are of cast iron and the bearings are spherical roller bearings. The bearings of the rolls are oil lubricated. (Oil need about 10 l/min/point). Oil viscosity is approx. 320 cSt/40°C.

Roll diameter is 1415 mm and shell length 4700 mm. The rolls are covered with Micro Peeler rubber (hardness 15+3 P & J and thickness of the layer is 20 mm).

The rolls are equipped with internal cooling for eliminating the heat caused by pressing.

Water flows into the rolls from t.s. end through the water joint (JOHNSON SAQ 3500 Super) and a hole drilled through the t.s. shaft. A flange inside the roll in front of the water pipe breaks water flow and distributes water evenly inside the roll. Water flows out from the rolls through small holes on d.s. end into trays fastened to the bearing housings.

Water flow into the roll is regulated so that temperature difference between ingoing and outgoing water is less than 9°F. The ingoing water temperature is about 20-25°C and water need about 70 l/min.

Roll cooling is interlocked so that it starts automatically when the press is started and stops when the press is stopped.

Due to large diameters and heavy wall thicknesses the deflection of the roll is relatively small.

Both top and bottom rolls are alike, roll weight is 25900 kg.

Roll drives

Both rolls are driven by mechanical drive.

Power requirements for 2000 PLI and 520 m/min are as follows:

	NRL kW	RDC kW	RPM
Top roll	200	225	117.0
Bottom roll	200	225	117.0

Bearing mounting, drive side, Dwg RA 867058

- mount the labyrith ring (8) with its V-sealing (72) on the journal by screws (49)

- place V-sealing (73) on the journal.

- mount the water ring (16) with its plate

- check that the V-sealing (72) is well on the labyrinth ring (8)

- install bearing housing cover (4)

- lift the bearing (40) on the journal

- measure the initial clearance with a feeler gauge between the three lowermost rollers and the outer ring sphere until the correct size blade is found and which barely goes through (the roller should not roll over the blade during the measurement)

- push the bearing on the tapered seat and screw a hydraulic nut against the inner ring of the bearing

- connect a hydraulic pump to the hydraulic nut and apply pressure until 0,210...0,280 mm is taken out of the initial radial clearance (after the "take-out" the minimum permissible clearance is 0,160 mm in for a standard fit bearing)

- screw lock nut (44) on the journal and tighten with a spanner wrench until the tab of lock plate aligns with a slot in the nut

- check that the final bearing clearance has remained

- fix lock plate (45) with cap screws. Thread lock wire through the drilled cap screws

- slide bearing housing (2) over the bearing and attach inside cover (4) with cap screws (53)

Note! Oil drainage grooves in housing towards the roll

- install outside bearing housing cover (6) with O-ring and attach with cap screws (53)

- place O-ring (27) in the groove

- mount oil throwing ring (9) with set screws

- fix V-ring (70) with holder (13) and cap screws (52)

Tending side

In addition the guard and water joint have to be mounted.

Bearing dismounting, Dwg RA 867058

Drive side

- remove holder (13) and V-ring (70)

- remove oil throwing ring (9)

- remove bearing housing cover (6)

- remove lock plate (45) and back off the lock nut (44) a few turns, but do not remove it. An uncontrolled dismounting can be hazardous because the bearing might shoot off journal

- connect a hydraulic pump to the hole leading to the circumferential groove around the bearing seat

- apply pressure until the bearing comes loose

- remove the lock nut and bearing with housing

Tending side

The tending side bearing is dismounted in a similar manner as the drive side on after the water joint is removed.

PRESS COMPONENTS

Felt rolls

The felt rolls are for carrying, guiding, stretching and spreading the press felts.

The new felt rolls are designed for a max. felt tension of 17 PLI.

The rolls are made of steel tubing and hard rubber covered. The heads are made of cast iron, head covers and journals of steel. The spherical roller bearings are mounted in cast iron bearing housings.

Two rolls are wormed for felt spreading (the stretcher roll and the top lead-out roll).

Roll diameter is 360 mm and shell length 4800 mm. The rolls are covered with rubber, hardness 3 P & J and layer thickness 5 mm.

More information at part GENERAL ("List of the Rolls").

Moving equipment of felt roll, Dwg 150817

To make felt change easier the top felt lead-in roll is movable.

The roll is moved with transfer screws, gears (KATSA KV 85-12K), intermediate shaft and air motor (FENNER RM 110 FG, gear ratio = 7.

The roll moved with air motor is equipped with scale and indicator. NOTE! THE MOVING SYSTEMS ARE NOT PROVIDED WITH LIMIT SWITCHES. DO NOT DRIVE THE INDICATORS OUT OF THE SCALES!

After felt change these rolls must be moved to their drive positions BEFORE final felt stretching.

Felt guiding

LNP top felt is provided with new hand and auto guide. The guides are located on tending side.

Vertical guide, Dwg RA 867385

The top felt of LNP press have a vertical felt guide. The d.s. end of the roll is in a steady bearing bracket and the t.s. end is on vertically moving arm (2). The holder (1) is fastened to the frame of the machine with pivot pin (9) and transfer screw (6).

1. Auto guide

The movement of the bellow (26) raises the arm and simultaneously the guide roll end. The guide roll moves downwards by the weight of the roll itself. The roll movement is limited with a mechanical stopper that is part of the holder.

The max. guide roll travel by the auto guide is ±50 mm. Roll position can be seen from the scale (20).

2. Hand guide

The hand guide of the top felt is in the same unit as the auto guide.

The tending side holder (1) and roll is manually moved by means of handwheel (8) and screw (6) when adjusting the auto guide to center position.

Hand guide position is seen from the upper scale (14). Max. travel by the hand guide is ±50 mm.

The bellow (26) pressure and movement of guide roll t.s. are controlled by closing control valve (Dwg B 797012-2).

When the felt is coming against t.s., it presses the palm of the air distribution valve and pressure in the bellow increases. It means that the t.s. end of the roll moves in felt running direction and felt goes to the middle of the machine.

FELT STRETCHING

The 3rd press top felt have horizontal felt stretchers, pneumatically operated.

Felt Stretcher

Dwg 363132/2

The stretcher roll moves guided by the rails (1) and is operated by an air motor, GLOBE through a worm screw. The worm reducers on both sides are connected to each other with an intermediate shaft (3) and furthermore to the air motor through a reducer.

The motor is controlled on the press control desk or on a local control located near the stretcher roll.

In the stretcher frame on tending and drive side there is a scale indicating the roll position.

Felt seam straighteners:

In the tending side bearing housing there is a manual worm gear, by means of which the location of the tending side housing can be adjusted.
The seam straightening is done so that the felt is stretched on the side where the seam runs ahead. In this way, the felt is forced to run a longer route so that the seam starts to move backwards.
It is recommended to perform the operation carefully in several successive increments.

Before the felt is put on for the first time, check that:

- The stretcher roll ends are in the same position on scale
- The running direction of the air motor is correct
- The equipment belonging to stretching system is properly lubricated
- The rotation speed of the intermediate shaft is not too high
- Check the running direction of the spreader roll

Felt tension

Max. felt tension is 17 PLI, but normal felt tension is lower, about 10 PLI.

Felt tension measuring system, Dwg 251505

The tension transmitters are located on the d.s. bearing brackets as follows:

- LNP press, top felt: felt roll after guide roll
- LNP press, bottom felt: lead-out roll

The sensor (8) is fastened with a sleeve (3) and screws (12) to the roll bearing housing so that THE ARROW IN THE TRANSMITTER INDICATES TO THE DIRECTION OF THE FORCE CAUSED BY THE FELT. The felt carrying roll movement caused by the felt tension is transmitted through the shaft (6) to the sensor, from which electric signal goes via the amplifier to the indicator in the press control desk.

Max. felt tension is 17 PLI, but normal felt tension is lower, about 10 PLI.

The load cells are of type BOFORS KIS-2/20 kN and the amplifiers of type BOFORS B-2-TF. For closer instructions, see part "Subvendors".

Uhle boxes, Dwg RA 866539

LNP press top felt and bottom felt have one new uhle box of stainless steel construction.

In the uhle boxes the three strips (11) are located so that the width of the suction slots is 9,5 mm or 12,7 mm. The length of the suction slot is adjusted with strips (12 or 13), min. length is 4513 mm and max. length 4932 mm. The strips (11) and (12) are made of HD-polyethylene.

During machine run each uhle box can be turned with handwheel (16) and gear (18) to service position (suction slots are downwards). For cleaning the uhle box is turned to felt running direction after closing the suction valve. The gear is of type KATSA KV 85-24-L-48.

The vacuum gauge (19) is located on t.s. Maximum vacuum in the new uhle boxes is 15" Hg.

Showers

For cleaning of the top felt of LNP new oscillating high pressure showers are delivered. Max. pressure is 14 bar and total water flow 65 LPM.

Oscillating high pressure shower is interlocked to the same control system as the old oscillating showers.

The lubrication showers are for lubricating the cover strips of uhle boxes in felt running direction. Pressure in the shower pipe is 3 bar and total flow 150 LPM.

All showers use fresh water.

Doctor

Felt roll doctor

The outside felt roll of LNP top felt is provided with gravity loaded and manually relieved doctor.

The blade holders are of type LAMORT (LODDING) K 35 A. The blades are made of polyflex. Dimensions of the blade are 5 mm x 75 mm x 4800 mm.

The linear pressure caused at the blade contact point by doctor weight is .8 PLI and the angle between the blade and tangent to the roll at the point of contact is 25^{o}.

The blades are changed from the t.s. end.

FELT CHANGE Dwg 151396

Felt lengths:

	max.	min.	
top	20.050 mm	17.650 mm	18.000 mm = 62'
bottom	19.200 mm	16.000 mm	~~18.300 mm~~ 17.700 = 58'

Special tools for felt change

air operated hydr. pump	1 ea	ENERPAC BPA-14350 VM-3L, PPH-58 EN	
hydraulic jack	2 ea	ENERPAC RLC 302	30.000 kg
hydraulic jack (bottom felt)	1 ea	ENERPAC RC-756	75.000 kg
spacer block (no. 7)	2 ea	Ø = 100, L = 94	
spacer block (no. 8)	1 ea	Ø = 160, L = 356	

LNP press top felt

1. After stopping the presses, cut the old felt after nip and crawl it downstairs
2. Open nip and lift top press roll to service position
3. Wash the press carefully
4. Check rolls, showers, doctors and covers of uhle boxes
5. Check operation of stretcher and felt guide
6. Disconnect lube oil return hose of top roll on t.s.
7. Lift the felt stretcher roll to felt change position with crane
8. Lift the lead-in roll to felt change position
9. Turn palm guide aside
10. Open the swing parts of stairs (at nip level and near the felt guide)
11. Open eye bolts of nip spacers
12. Take the new felt out of its package and check it
13. Lift with hook the top loop of the felt above the machine so that the bottom loop of the felt is at nip level
14. Put the spacer blocks (7) and cylinders (6) between frame and lift frame with hydraulic pump (1) until you can remove the spacers
15. Turn directional valve of hydraulic pump to lowering position and adjust the lowering speed by valve (15). Lower the frame down slowly.
16. Release the cylinders (6) and spacer blocks (7)
17. Pull the felt onto the machine
18. Put the spacer blocks (7) and cylinders (6) between the frame and lift frame with hydraulic pump (1) until you can put back the spacers
19. Lower the frame down slowly and release the cylinders (6) and spacer blocks (7)
20. Connect and fasten the eye bolts of the spacers
21. Close the swing parts of stairs
22. Spread the felt
23. Lift the felt stretching roll back onto its bearing housings and check its straightness
24. Connect the lube oil return hose
25. Lower the top press roll to top position and lead-in roll to drive position with air motors
26. Prestretch the felt a bit

27. Turn the palm guide to operation position
28. Start the felt lubrication showers, close the nip and begin to crawl the felt.

Check the felt guide position

When the felt is evenly wet, do the final felt stretching

LNP press bottom felt

1. After stopping the press section cut the old felt by the side of felt stretcher roll and crawl the felt downstairs
2. Open the nip and lift the top roll to service position with air motor
3. Wash press section
4. Check rolls, showers, doctors and covers of felt suction boxes
5. Check operation of the felt stretcher and guide, and turn the palm guide aside
6. Start the felt change of basement areas as before rebuild of press section. (All new "things" are above floor level)
7. Open the eye bolts of all spacers
8. Remove the stairs (floor-bottom level end bottom level - wire level). Open the swing parts of stairs (at nip level)
9. Lift the top loop of the felt at nip level and push the bottom loop past jack-line of bottom frame lifting beam
10. Put the spacer blocks (7) and cylinders (6) between frame (nip level) and lift top frame with hydraulic pump (1) until you can remove the spacers
11. Turn direction valve of hydraulic pump to lowering position and adjust the lowering speed by valve (15). Lower the frame down slowly

12. Release the cylinders (6) and spacer blocks (7)

13. Put the spacer block (8) and cylinder (9) below the bottom frame lifting beam (see Dwg 151396) and lift the frame with hydraulic pump (1) until you can remove the spacers

14. Pull the felt onto the machine

15. Make felt change of basement area as before rebuild of press section

16. Put back the bottom spacers, lower the bottom frame down slowly and release the cylinder (9) and spacer block (8)

17. Connect and fasten the eye bolts of bottom spacers

18. Put the spacer blocks (7) and cylinders (6) between the frame (nip level) and lift frame with hydraulic pump (1) until you can put back the spacers

19. Lower the frame down slowly and release the cylinders (6) and spacer blocks (7). Connect and fasten the eye bolts of the spacers.

20. Lift back the stairs

21. Spread the felt and run the top roll to top position

22. Prestretch the felt a bit

23. Open felt lubrication shower and start to crawl the felt

24. Check operation of felt guide

25. When the felt is evenly wet, close the nip and do the final stretching.

ROLL CHANGE

LNP press top roll, Dwg RA 867307

Rigging tools needed for the roll change:

Part 8	1 ea	jack, Enerpac - hydraulic hand pump P-392 - 1 ea lifting cylinder RMC-156, 15000 kg (33,000 LBS)
" 7	1 ea	carriage
" 1	1 ea	endless lifting cable, Ø 50 mm (1.968"), circular length 5 m (16.5 FT), WLL, 15000 kg (33,000 LBS)
" 17	1 ea	endless lifting cable, Ø 30 mm (1.18"), circular length 12,4 m (40.7 FT), WLL, 8000 kg (17,600 LBS)
" 12	2 ea	lifting belt, WLL, 17400 kg (38,860 LBS)
" 6	1 ea	tackle, TIRMASTER T-13, cable 15 m (49 FT)
" 11	1 ea	lifting beam, 30000 kg (66,000 LBS)

The weight of the roll with spacer blocks is 26000 kg. (57,320 LBS.)

- Turn swing bridges of walkways aside on t.s. top level
- Lift aside the stair on roll tending side
- Open nip; first all by bellows and then the rest by worm reducers and air motor
- Leave pressure in the lifting bellows (loading arms are left in top position)
- Disconnect oil and water hoses
- Remove the safety guard of t.s. water joint
- Disconnect the drive shaft
- Lock bearing housings with special tools (see Dwg RA 867058)

PHASE 1

- Put sling (17) around roll d.s. lifting groove and hook it up to dolly (see Dwg RA 867307)
- Hook up t.s. journal of the top roll to the house crane with sling (1)

- Place hydraulic jack (10) into dolly and reconnect the jack to one hand pump
- Tighten sling (17) by the hydraulic jacks
- Remove retaining capscrews of the bearing housing
  NOTE: T.s. spacer block follows the bearing housing
- Release the jack slowly and lower also the t.s. end of the roll a little bit to clear t.s. loading arm
- Move the roll towards t.s. until the back hook slings are just about touching the frame. Use tackle (6) for bringing the roll t.s. out.

PHASE 2

- Catch the roll by using the middle hook, the beam (11) and the belts (12) (see Dwg RA 867307)
- Loosen the back and frontside hooks
- Pull the roll totally out of the machine

When installing the roll back into machine, the procedure is reverse. Remember to lock both the bearing housings into operating position.

LNP press bottom roll, Dwg RA 867307

Rigging tools needed for roll change:

Part 8	1 ea	jack, ENERPAC	
		- hydraulic hand pump P-392 ✓	(22,000 LBS)
		- 2 ea lifting cylinder RMC-100, 10000 kg	
" 13	2 ea	roll moving carriage (3 rolls)	
" 3	1 ea	support (1 = 550 mm)	(21.65")
" 2	1 ea	endless lifting cable, circular length 8 mm, WLL 15000 kg, Ø 50 mm, polyester	(.315") (33,000 LBS) (1.969")
" 12	2 ea	lifting belt, WLL 17400 kg, polyester ✓	
" 6	1 ea	tackle, TIRMASTER T-13, cable 15 m ✓	

- turn swing bridge of top walkways aside on t.s.
- Lift aside the handrails on roll tending side
- Lift aside the stair (between bottom and top level)
- Open nip, first all by bellows and then the rest by worm reducers and air motor
- REmove the safety guard of t.s. water joint
- Disconnect oil and water hoses
- Disconnect the drive shaft
- Remove retaining capscrews of t.s. and d.s. spacer blocks
- Put carriages (13) under the d.s. spacer block by means of hand jacks (see detail 1, Dwg RA 867307)
- Put sling (2) around t.s. journal of the roll and hook it up to the house crane. Use support (3) if the top roll is in place

PHASE 1

- Move the roll towards tending side until the back portion of roll face can be lifted by the house crane. Use tackle (6) for bringing the roll t.s. out
  NOTE: Watch that bottom of the roll face clears the press frame

PHASE 2

- Catch the roll by using the middle hook, the beam (11) and the belts (12) (see Dwg 867303)
- Loosen the back and frontside hooks
- Turn the t.s. head of roll towards dryer section until you can lift the roll out of the machine

When installing the roll back into the machine, the procedure is reverse.

CHECK LIST

LNP press:

- check press rolls and clean them
- check operation of top roll pneumatic loading equipment
  . roll moving speeds
  . that roll moves in level
- check operation of roll cooling system
- check roll drives and guards

Felts:

- check felt stretcher
  . position of stretcher roll
  . rotating direction of air motor
  . moving speed of stretcher roll
- check rotation direction of spreader rolls

- felt guides
  . check operation direction of auto guide
  . check that guide makes the whole stroke
  . check air distribution valve
- flush and check direction of felt HP-shower and operation of oscillating device
- check felt lube showers
- check that felt carrying rolls are clean and that they rotate easily
- check operation of doctors of outside felt rolls
- check turning mechanism of Uhle boxes
- check position of Uhle boxes
- check and adjust grease and central oil lubrication systems
- check all interlocks in the press section
- check felt change equipment, e.g. with ropes of the same length as the felts

Test Run of Press without Felts

- check operation of grease lubrication
- check operation of oil lubrication
- make sure that gear boxes are filled with oil and bearings lubricated
- crawl new rolls with drives about 3h (nip is open)
- speed up gradually during 5h to full speed
- close nops and start press on crawling for 3 hours (at first in thread position and later with light loading)
- check operation of roll cooling system
- gradually speed up during 3 hours to full speed
- shower cold water to the press lead-out position
- during test run check gear and bearing temperatures and sounds, operation. roll covering temperatures and drive motor loadings
- test HP-shower operation and interlockings
- stop presses
- take nip impressions, start-up pressures:
  - LNP press 1700 PLI
- install press felts