

[Back](#)

HewSaw SL250 Trio

Operating Instructions



TABLE OF CONTENTS

1.	GENERAL DESCRIPTION	1/1
1.1	Technical data	1/1
1.2	HewSaw terminology	1/4
2.	CONSTRUCTION	2/1
3.	OPERATION	3/1
3.1	Measuring conveyor	3/1
3.2	Log scanner	3/1
3.3	Log positioner	3/1
3.4	Chipper canter	3/2
3.5	Cant scanning conveyor	3/3
3.6	Cant scanner	3/3
3.7	Cant saw	3/3
3.8	Separating conveyor EK2	3/4
3.9	Cant turner	3/5
3.10	Infeed conveyor	3/5
3.11	Rip saw	3/5
4.	SAFETY PRECAUTIONS	4/1
4.1	General	4/1
4.2	Safety devices	4/2
4.2.1	Standstill monitors	4/2
4.2.2	Safety switches	4/2
5.	OPERATING INSTRUCTIONS	5/1
6.	AUTOMATIC FEATURES	6/1
7.	PNEUMATIC SYSTEM	7/1
7.1	Pneumatic valves	7/1
7.2	Adjusting the pressures	7/3
8.	SAW PATTERNS	8/1
8.1	Chipper canter	8/1
8.2	Cant saw	8/1
8.2.1	Circular saw assembly of the cant saw	8/1
8.2.2	Edging assembly of the cant saw	8/2
8.3	Rip saw	8/6
8.3.1	Circular saw assembly of the rip saw	8/6
8.2.1	Edging assembly of the rip saw	8/6
9.	CHANGING THE CUTTING TOOLS AND ASSEMBLIES	9/1
9.1	Changing chipping knives of the chipper canter	9/1
9.2	Lifting the circular saw assemblies	9/1
9.3	Lifting the edging assemblies	9/2
10.	SERVIVE INSTRUCTIONS FOR THE CARBIDE TIP BLADES	10/1
10.1	General	10/1
10.2	How to identify the need for sharpening the carbide tip blade	10/1
10.3	Sharpening the carbide tip blade	10/1
10.4	Servicing and sharpening the carbide tip blade step by step	10/2
10.5	Strob-tooth	10/2
10.6	Finishing blades of the cutter heads	10/2
10.7	Finishing blades of the edging tools	10/2

11.	MAINTENANCE OF EDGING TOOLS	11/1
11.1	General	11/1
11.2	Sharpening the edging knives of the edging units	11/1
12.	CHIPPING HEAD KNIVES	12/1
12.1	General	12/1
12.2	Changing the knives	12/1
12.3	Sharpening the knives	12/3
12.4	Removing the chipper head	12/5
12.5	Installing the chipping knife fastening screws	12/5
13.	ADJUSTING THE MACHINES INTO THE RIGHT WORKING LINE	13/1
13.1	General	13/1
13.2	Adjusting the measuring conveyor	13/1
13.3	Adjusting the log positioner	13/1
13.4	Adjusting the chipper canter	13/2
13.5	Adjusting the cant scanning conveyor	13/6
13.6	Adjusting the cant saw	13/6
13.7	Adjusting the separating conveyor	13/7
13.8	Adjusting the cant turner	13/7
13.9	Adjusting the infeed conveyor	13/10
13.10	Adjusting the rip saw	13/10
13.11	Trial run	13/11
14.	SERVICE	14/1
14.1	General	14/1
14.2	Inspection	14/1
14.2.1	Measuring conveyor	14/1
14.2.2	Log positioner	14/2
14.2.3	Chipper canter	14/2
14.2.4	Cant scanning conveyor	14/3
14.2.5	Cant saw	14/3
14.2.6	Separating conveyor EK2	14/4
14.2.7	Cant turner	14/4
14.2.8	Infeed conveyor	14/5
14.2.9	Rip saw	14/5
14.3	Servicing the gear motors	14/6
14.4	Servicing the infeed wheels	14/6
14.5	Cogged belts of the cant saw and rip saw	14/6
14.6	Installing the tensioning sleeves of the circular saw units	14/7
14.7	Chipper head lead	14/7
14.8	Lubrication instructions	14/8
14.8.1	Lubrication instructions, measuring conveyor	14/8
14.8.2	Lubrication instructions, log positioner	14/11
14.8.3	Lubrication instructions, chipper canter	14/11
14.8.4	Lubrication instructions, cant scanning conveyor	14/16
14.8.5	Lubrication instructions, cant saw	14/20
14.8.6	Lubrication instructions, separating conveyor EK2	14/23
14.8.7	Lubrication instructions, cant turner	14/27
14.8.8	Lubrication instructions, infeed conveyor	14/27
14.8.9	Lubrication instructions, rip saw	14/30
15.	BEARING CLEARANCES	15/1
15.1	Chipper head bearings	15/1
15.2	Circular saw unit bearings of the cant saw and rip saw	15/1
15.3	Edging unit bearings of the cant saw and rip saw	15/1

ENCLOSURES:

1. AXIAL PLAY OF BEARINGS
2. CUT OFF SAW BUCKING REQUIREMENTS
3. EC DECLARATION OF CONFORMITY FOR MACHINERY

HEWSAW SL250 TRIO SAWING LINE

1. GENERAL DESCRIPTION

HewSaw SL250 Trio sawing line consists of log positioning devices, conveyors and three sawing machines (see drawing J647200 on page 1/3). HewSaw sawing line is designed to process logs ranging from 100 mm small end diameter, to 550 mm large end diameter with length 2.4 - 6.2 m. Feeding speed of the sawing line can be adjusted from 50 m/min to 150 m/min.

1.1 Technical data

Measuring conveyor	Dimensions (l x w x h)	20700 x 2800 x 3000 [mm]	
	Weight	11000 kg (estimated)	
	Motors:	1 x 15 kW 4 x 2.2 kW	
Log positioner	Dimensions (l x w x h)	2600 x 3100 x 3600 [mm]	
	Weight	6500 kg (estimated)	
	Motors:	2 x 17.5 kW 2 x 3 kW	
Chipper canter	Dimensions (l x w x h)	6450 x 4100 x 5200 [mm]	
		(Length of lower frame 8600 mm)	
	Weight	40000 kg (estimated)	
	Motors:	Chipper heads	4 x 200 kW
		Infeed	2 x 3 kW, 2 x 11kW, 2 x 7.5 kW
		Outfeed	6 x 5.5 kW
		Blower device	2.2 kW
	Operating voltage	400 V / 50 Hz	
	Cant min	75 x 75 mm	
Cant max	350 x 350 mm		
Cant scanning conveyor	Dimensions (l x w x h)	18000 x 2620 x 2630 [mm]	
	Weight	11000 kg (estimated)	
	Motors:	1 x 11 kW 16 x 2.2 kW	

Cant saw	Dimensions (l x w x h)	5500 x 5600 x 5050 [mm]
	Weight	33000 kg (estimated)
	Motors:	
	Sawing	4 x 200 kW
	Edging	8 x 45 kW
	Infeed	4 x 7.5 kW
	Side guides	2 x 4 kW
	Cant outfeed	2 x 7.5 kW
	Side outfeed	4 x 7.5 kW
	Blower device	2.2 kW
	Operating voltage	400 V / 50 Hz
Cant min	75 x 75 mm	
Cant max	350 x 350 mm	
Saw kerf	4.2 – 5.2 mm	
Separating conveyor EK2	Dimensions (l x w x h)	10700 x 1800 x 3000 [mm]
	Weight	12000 kg (estimated)
	Motors:	
		1 x 11 kW 12 x 2.2 kW
Cant turner	Dimensions (l x w x h)	1100 x 2500 x 3700 [mm]
	Weight	3000 kg (estimated)
Infeed conveyor	Dimensions (l x w x h)	6100 x 2200 x 1750 [mm]
	Weight	4000 kg (estimated)
	Motors:	
		1 x 5.5 kW 6 x 3.0 kW
Rip saw	Dimensions (l x w x h)	4800 x 6000 x 5100 [mm]
	Weight	30000 kg (estimated)
	Motors:	
	Sawing	4 x 200 kW
	Edging	4 x 45 kW
	Infeed	2 x 5.5 kW, 2 x 7.5 kW
	Side guides	2 x 4 kW
	Outfeed	2 x 5.5 kW, 2 x 7.5 kW
	Blower device	2.2 kW
	Operating voltage	400 V / 50 Hz
	Cant min	75 x 75 mm
Cant max	250 x 350 mm	
Saw kerf	3.6 – 5.0 mm	
Board thickness max	50 mm	
Hydraulic power unit	Dimensions (l x w x h)	3300 x 2800 x 2400 [mm]
	Motors:	
		4 x 37 kW 4 x 15 kW

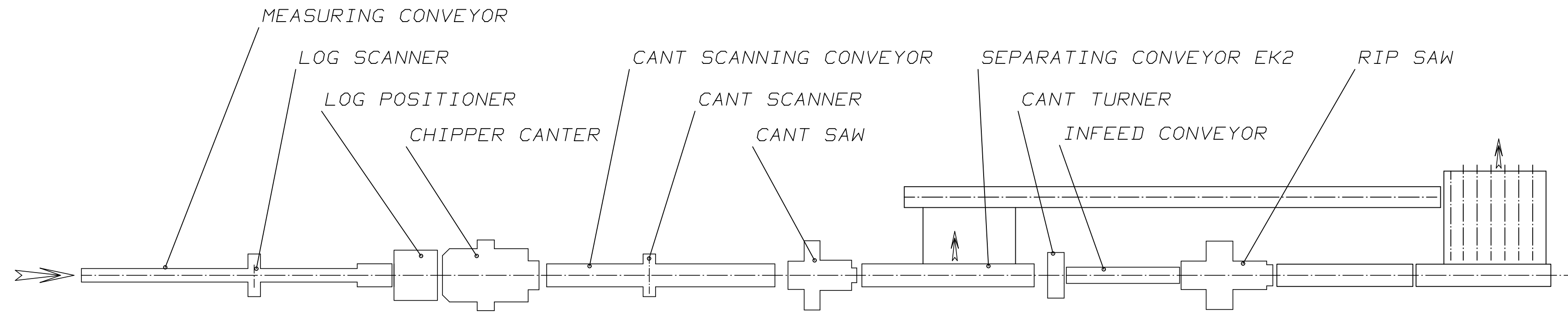
HewSaw® is a trademark of VEISTO GROUP. The design and the name of the sawing line are protected by copyright. No part of this document may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without the prior written permission of VEISTO GROUP. The information in this document is provided for your reference only. The information is not intended to be used as a substitute for the original design or as a basis for any other design. The information is provided as is, without any warranty, express or implied. The information is provided for your reference only. The information is not intended to be used as a substitute for the original design or as a basis for any other design. The information is provided as is, without any warranty, express or implied.

VEISTO GROUP on suomalainen yritys, joka toimii metsäteollisuuden alalla. Yrityksen nimi on VEISTO GROUP. Yrityksen logo on HewSaw®. Yrityksen tuote on metsäteollisuuden laitteita. Yrityksen toiminta-alue on Suomessa ja muualla maailmassa. Yrityksen yhteystiedot löydät verkkosivustolta.

VEISTO GROUP on suomalainen yritys, joka toimii metsäteollisuuden alalla. Yrityksen nimi on VEISTO GROUP. Yrityksen logo on HewSaw®. Yrityksen tuote on metsäteollisuuden laitteita. Yrityksen toiminta-alue on Suomessa ja muualla maailmassa. Yrityksen yhteystiedot löydät verkkosivustolta.

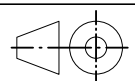


VEISTO GROUP on suomalainen yritys, joka toimii metsäteollisuuden alalla. Yrityksen nimi on VEISTO GROUP. Yrityksen logo on HewSaw®. Yrityksen tuote on metsäteollisuuden laitteita. Yrityksen toiminta-alue on Suomessa ja muualla maailmassa. Yrityksen yhteystiedot löydät verkkosivustolta.

VEISTO GROUP on suomalainen yritys, joka toimii metsäteollisuuden alalla. Yrityksen nimi on VEISTO GROUP. Yrityksen logo on HewSaw®. Yrityksen tuote on metsäteollisuuden laitteita. Yrityksen toiminta-alue on Suomessa ja muualla maailmassa. Yrityksen yhteystiedot löydät verkkosivustolta.



- CURVE
- CURVE POSITION
- X AND Y POSITION OF THE TOP
- SURFACE CHIPPING
- CURVE
- WANY BOARDS
- SIDEBOARD OPTIMISING
- CANT SAWING
- EDGING
- BOARD SEPARATION
- CANT TURNING
- RIP SAWING
- EDGING

HewSaw  **SL250**
VEISTO GROUP
VEISTO OY
TRIO

Scale:	Dr. PL	2005-06-02	Repl./Rep Id:		Weight:
	App.		Ref.		From: H654800
 VEISTO GROUP VEISTO OY	SAWING LINE SL250 TRIO			J647200 DOKUMENTTI	
	OPERATIONAL LAYOUT			Job n:o	
				Dwg n:o J647200	

1.2 HewSaw terminology

To avoid any confusion reading this manual and ordering spare parts, the following is a list of terms used to describe different parts of the HewSaw:

Left and right

Directions looking from the infeed end toward the outfeed end of the machine.

Infeed

Feeding devices in the front end of the machine.

Outfeed

Feeding devices in the rear end of the machine

Infeed wheels

Rubber wheels in the front end of the chipper canter.

Round wood guide

Feeding chains after the infeed wheels in the chipper canter.

Chipper head unit

Unit containing chipper head, electric motor, bed plate and roller guide rail. Left, right, upper and lower chipper head units.

Side chipper heads, left and right

Horizontal chipper heads (horizontal cutter heads). First pair of chipping heads opening the side faces of the log.

Top and bottom chipper heads, upper and lower

Vertical chipper heads (vertical cutter heads). Second pair of chipping heads opening the top and bottom faces of the log.

Chipping knife

Knife mounted to the chipper head cutting the chip loose from the log.

Side guides, left and right

Steel guide plates with driven rolls after the chipper heads holding the cant from the chipped side surfaces. The cant saw and rip saw are also equipped with similar side guides.

Vertical guides

Steel guide plates after the top and bottom chipper heads supporting the cant from the chipped top and bottom surfaces.

Side outfeed rolls

Rolls pulling the lumber from the side surfaces.

Cant outfeed rolls

Cant saw rolls pulling the cant from the top and bottom surfaces.

Circular saw assembly

Rotating sawing tools installed on the sawing arbors. Consist of saw blades and separating spacers.

Separating spacer

Steel spacer assembled between the saw blades. Separating spacers define the thickness of sawing goods.

Edging assembly

Assembly built on the assembly tube containing edging tools, spacers and finishing blades. Edges side boards after cant sawing and rip sawing.

Assembly tube

Steel tube on which saw assembly parts are mounted.

Edging tool

Rotating cutting tools mounted on the edging arbors. Edging tool edges the wane off from the side boards. Consist of edging tool body and edging knives attached with screws.

Finishing blade

Carbide tipped saw blade mounted to the face surface of the chipper head smoothing the chipped surface. Also blade mounted in the edging arbor.

Assembly jig

Steel plate with one or two shaft attached into it. Ease building of sawing and edging assemblies.

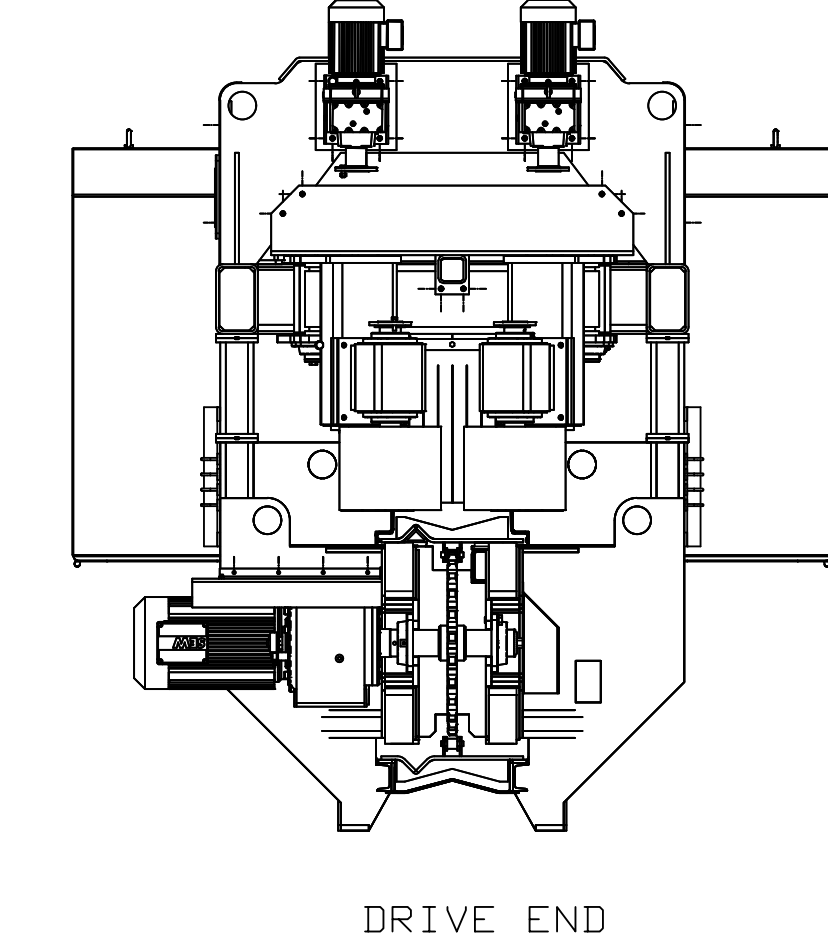
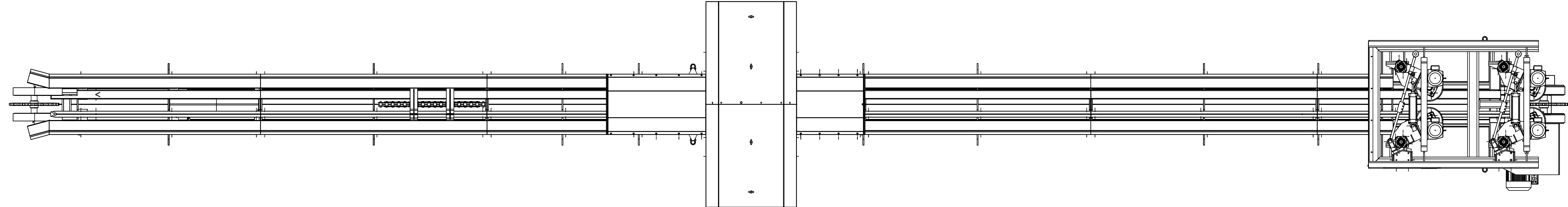
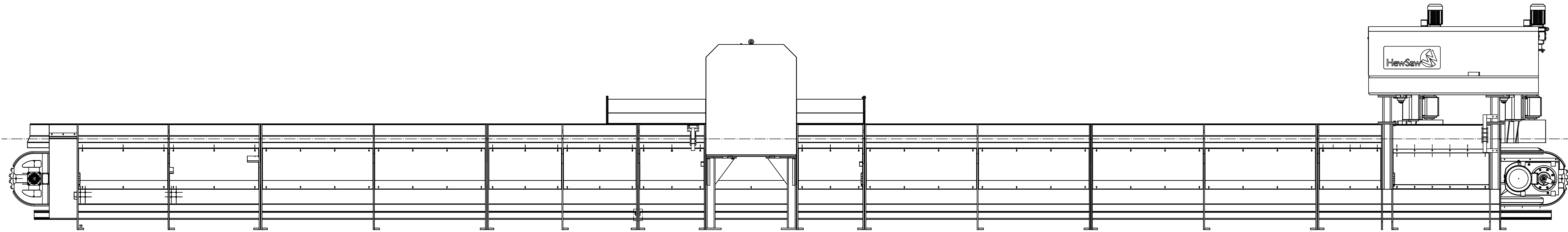
2. CONSTRUCTION

See the assembly drawings of the machines:

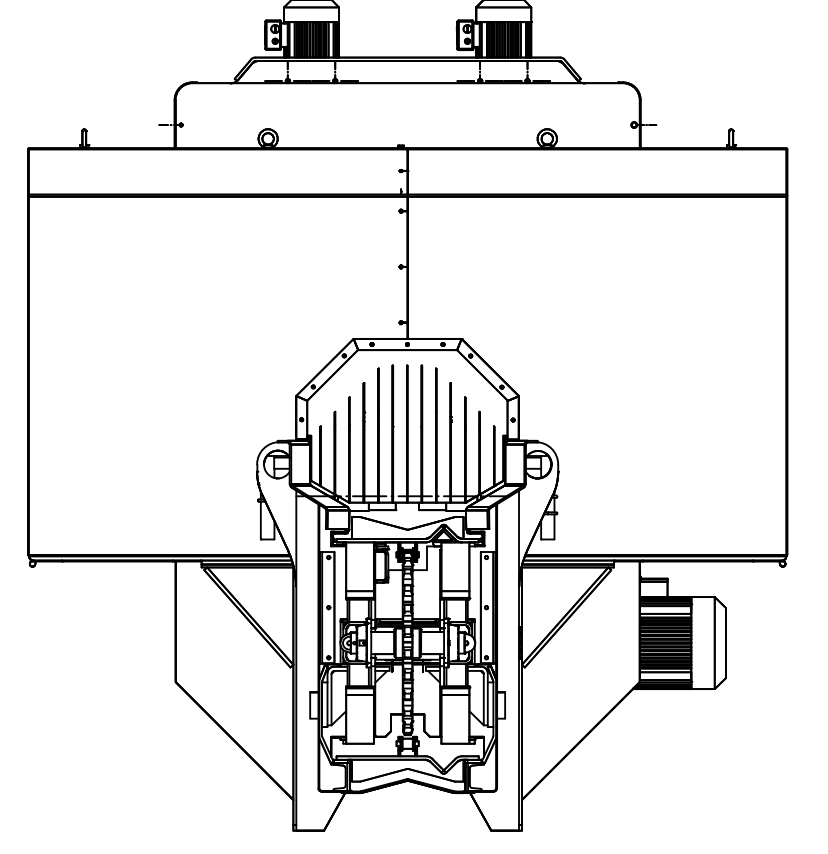
- Measuring conveyor, drawing on page 2/2
- Log positioner, drawing on page 2/3
- Chipper canter, drawing on page 2/4
- Cant scanning conveyor, drawing on page 2/5
- Cant saw, drawing on page 2/6
- Separating conveyor EK2, drawing on page 2/7
- Cant turner, drawing on page 2/8
- Infeed conveyor, drawing on page 2/9
- Rip saw, drawing on page 2/10

VOIKKO GROUP
VOIKKO GROUP
VOIKKO GROUP

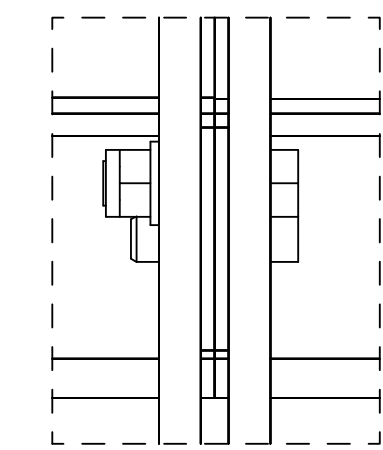
VEISTO GROUP
VEISTO GROUP
VEISTO GROUP



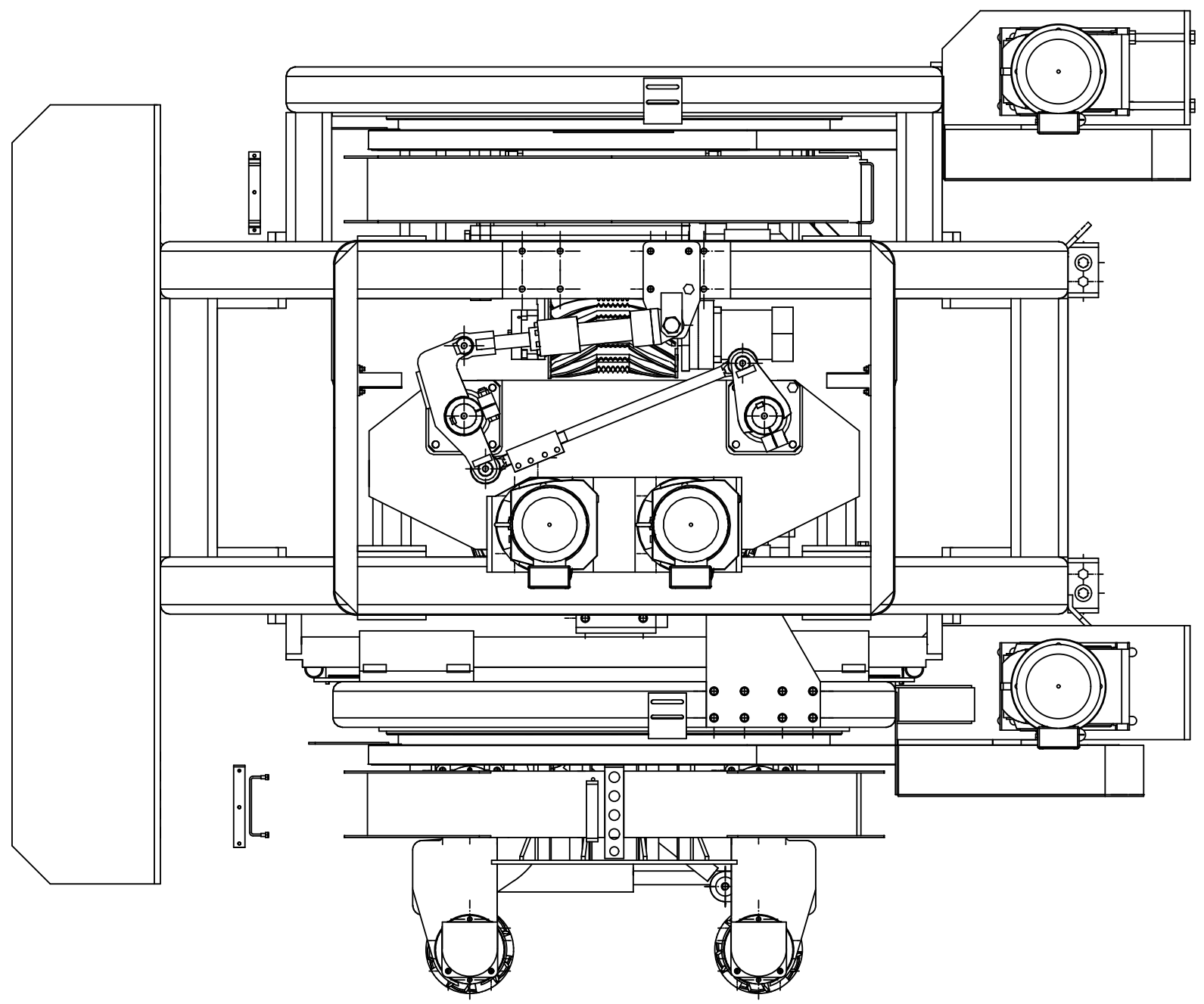
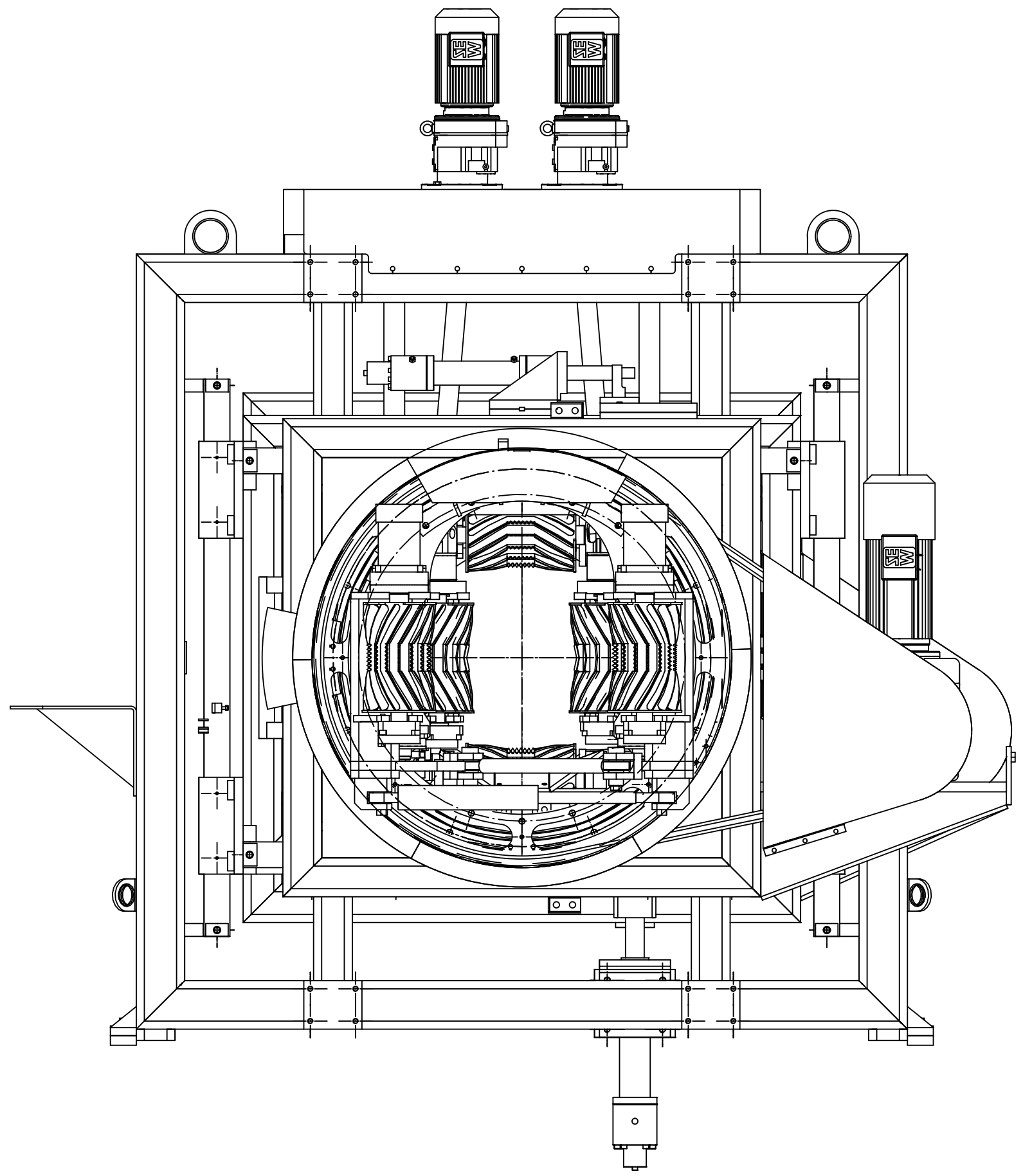
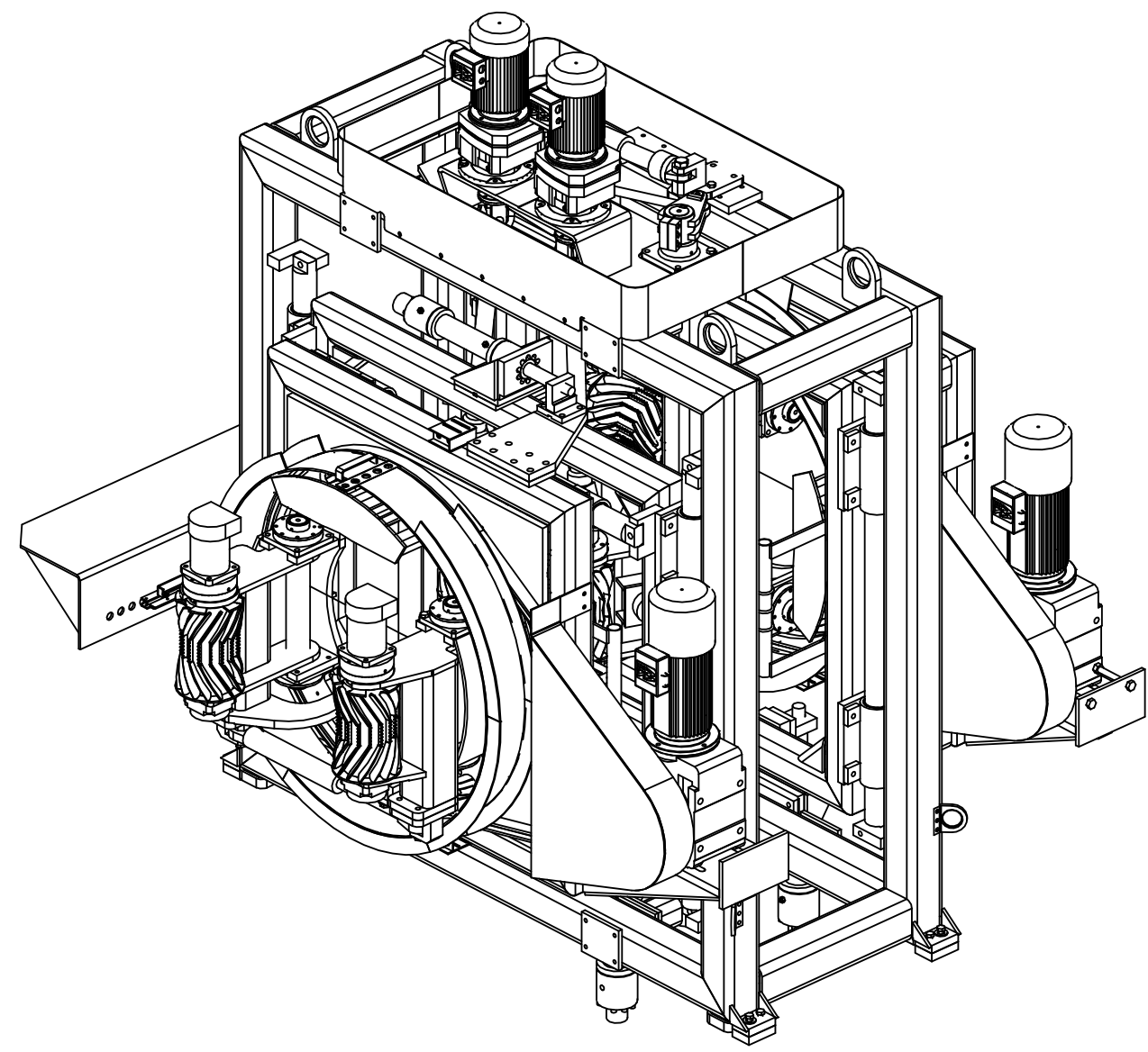
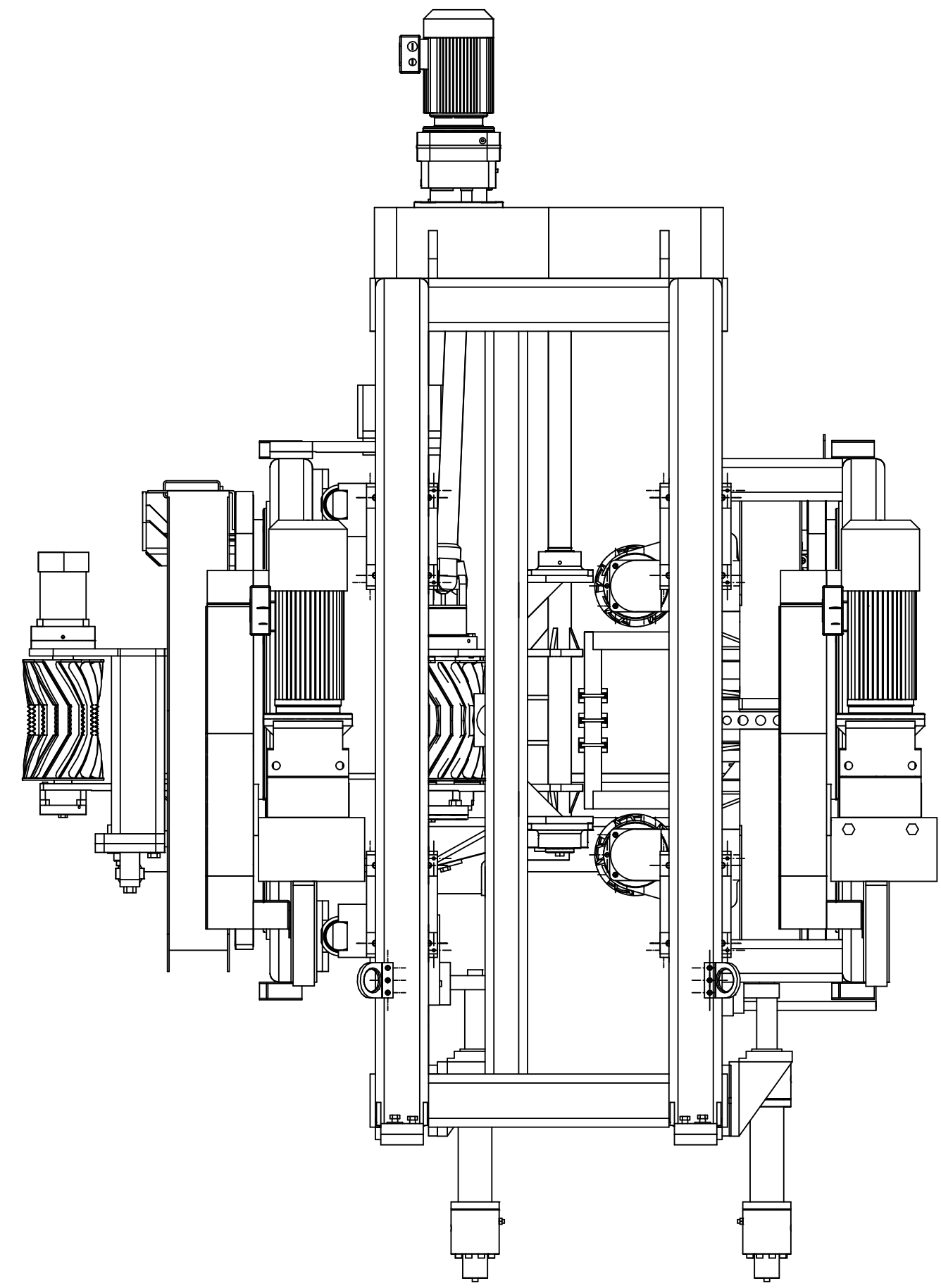
DRIVE END




TAIL END

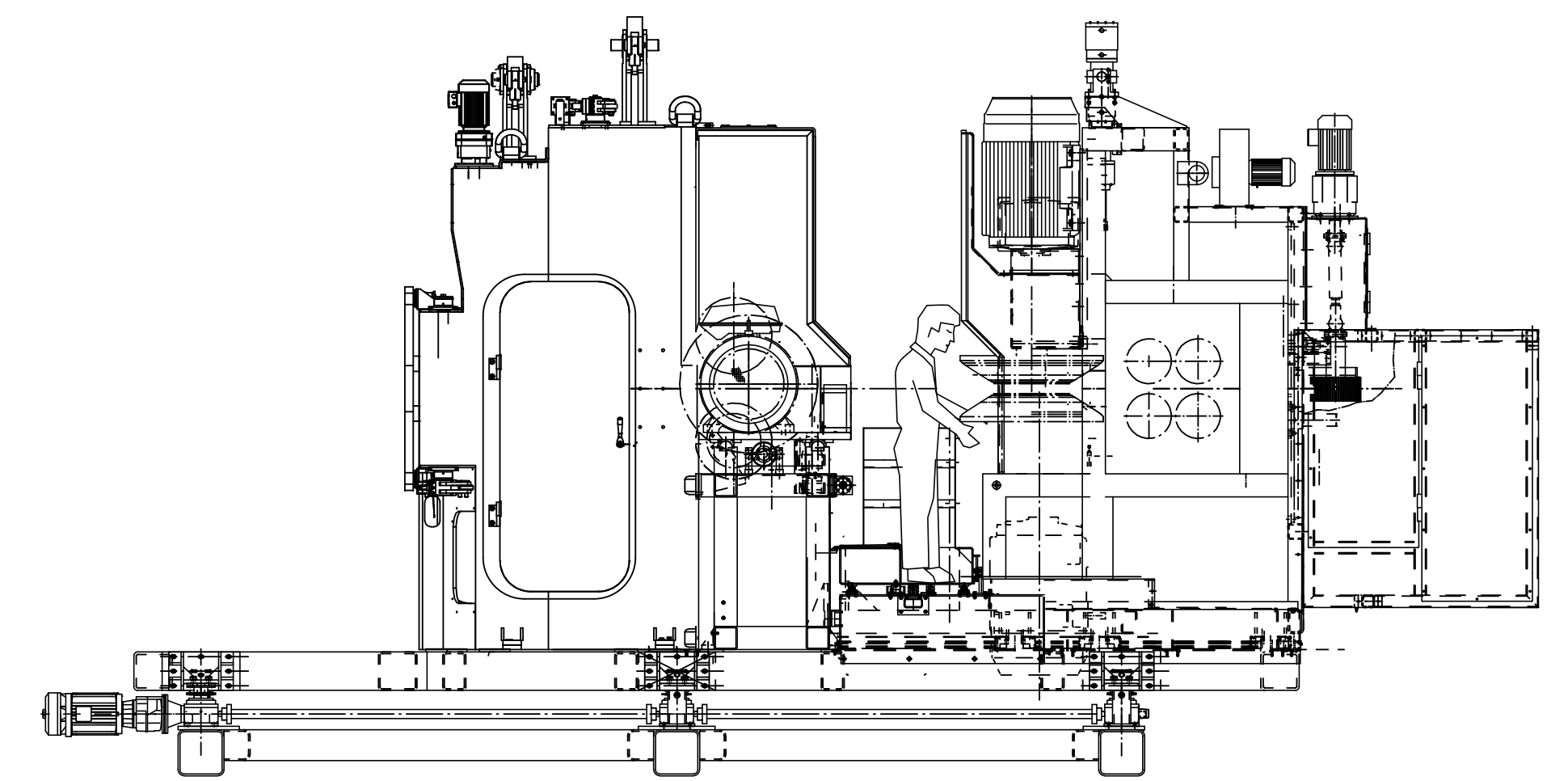
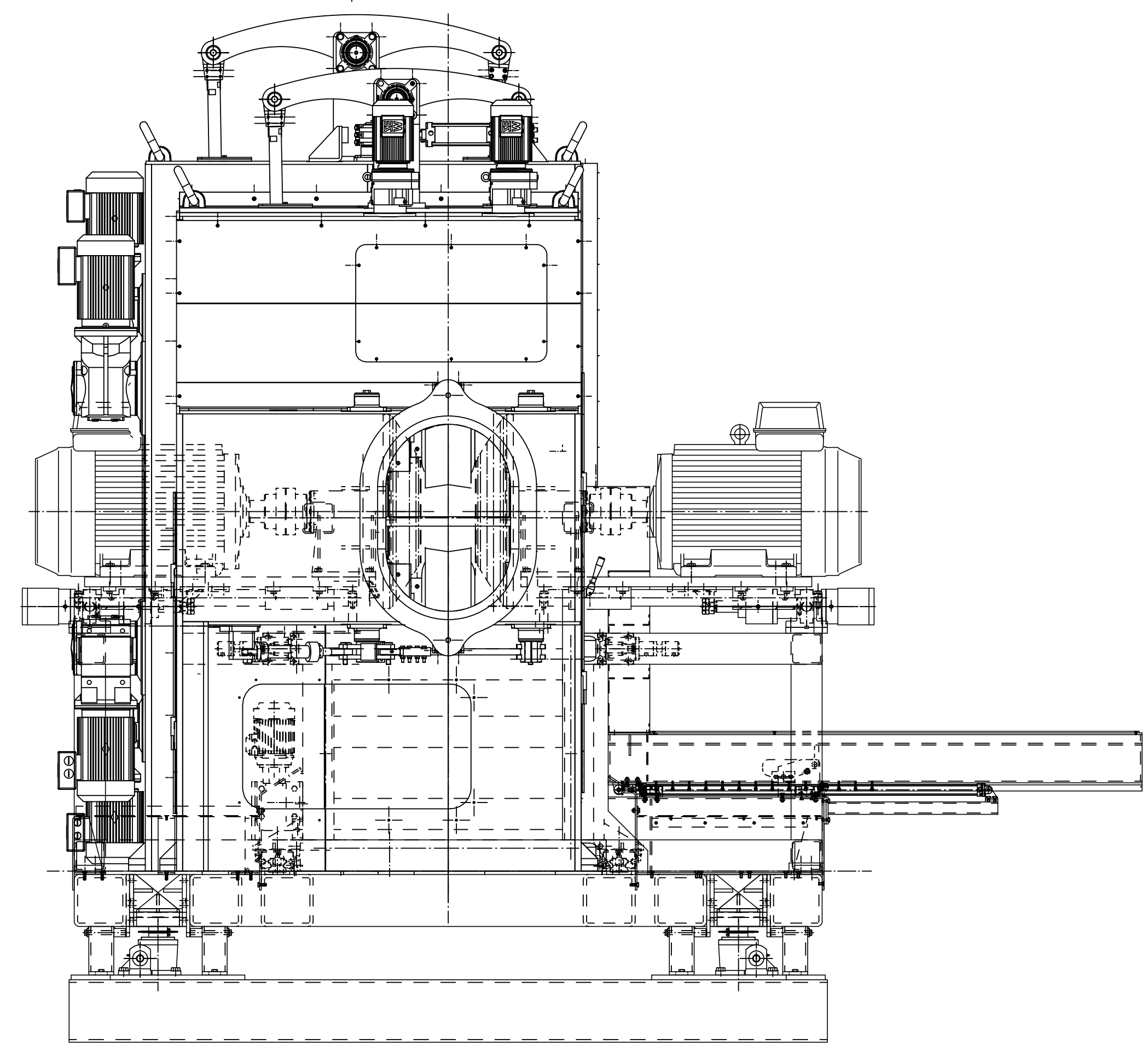
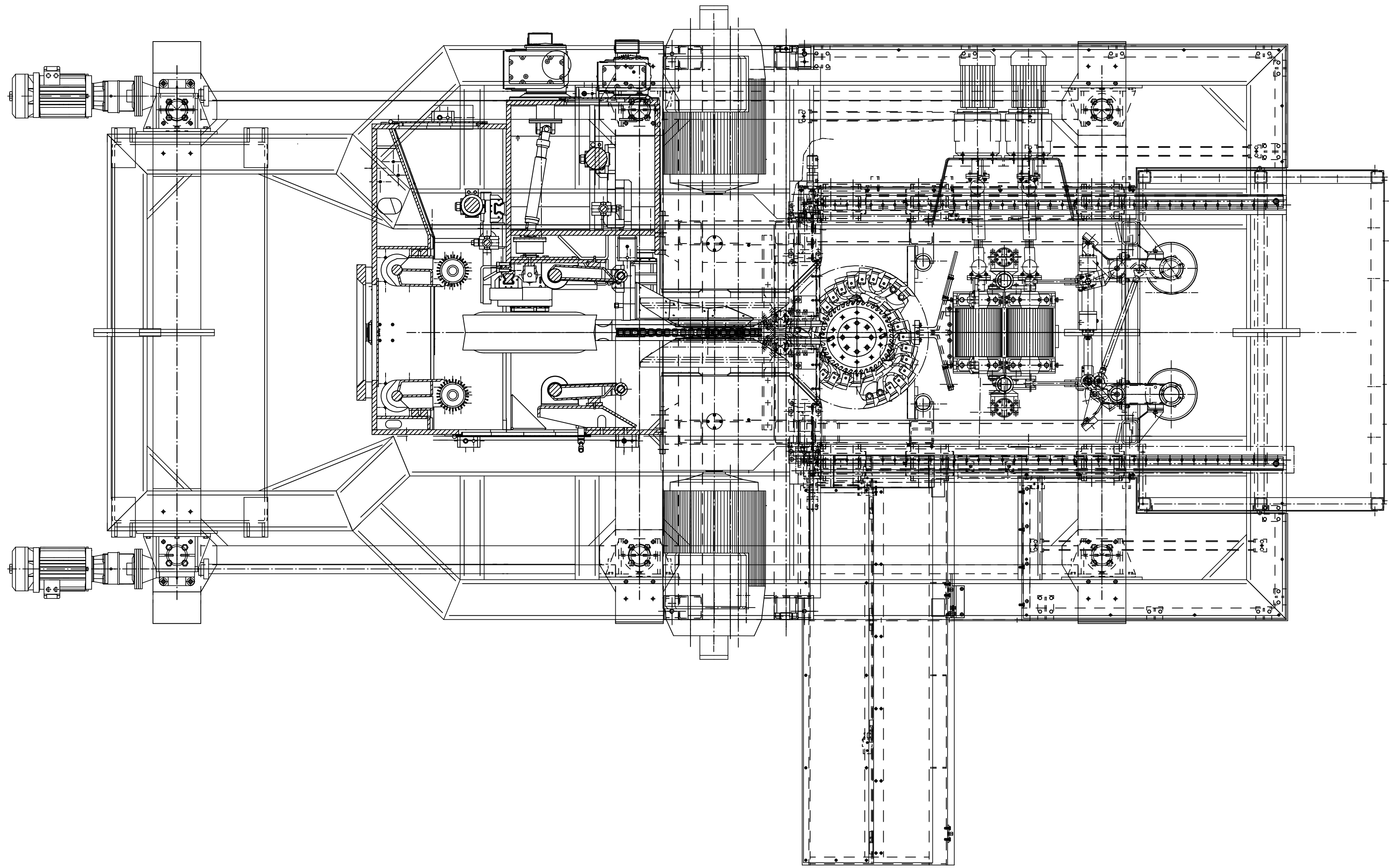
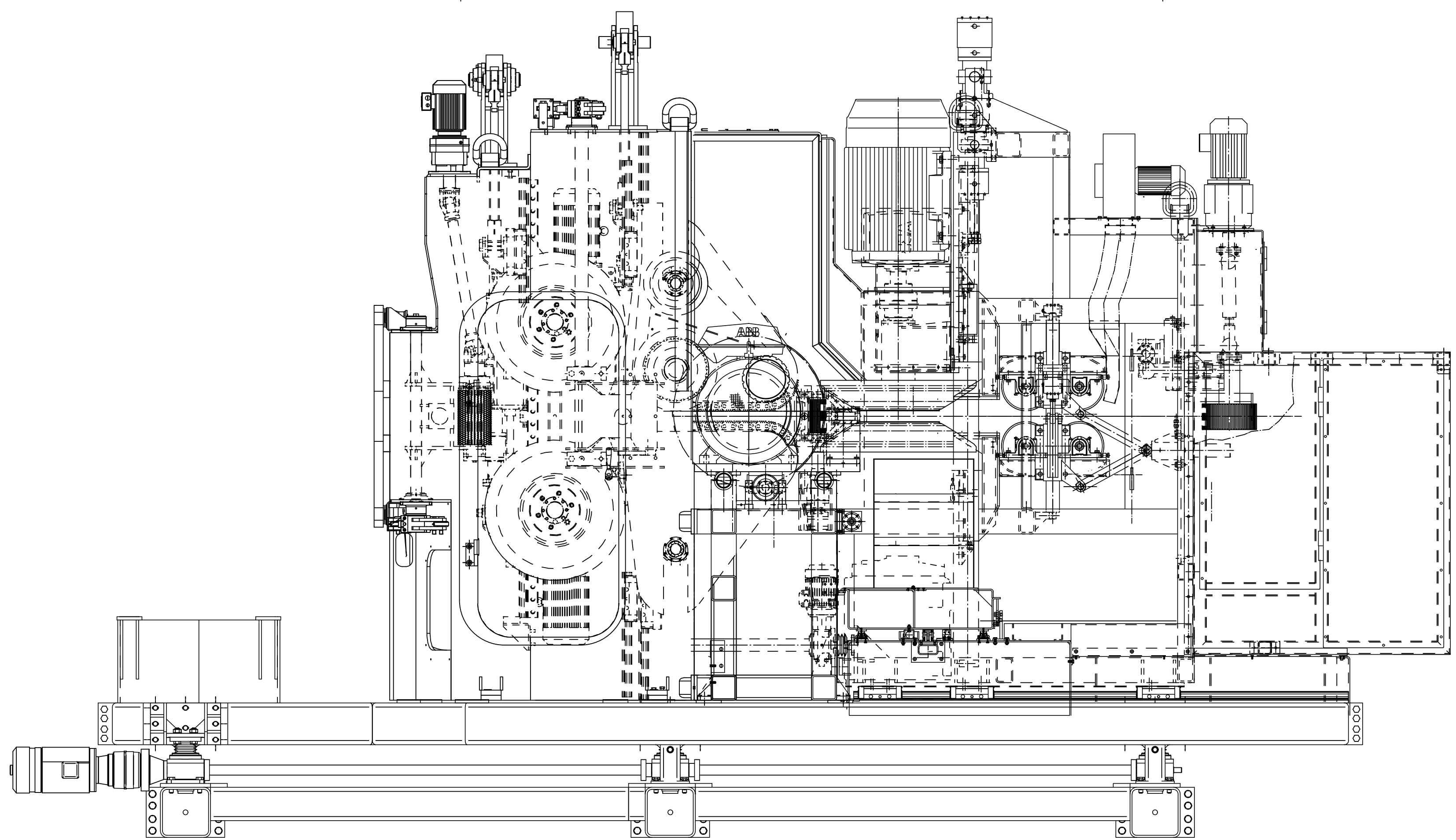


Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kgf
Suhde: 1:25	Piirt.M 1/25	2005-01-21	
Esikuv.	Korvaa/korvattu:		Messa: R056136
	Liitty:		
MEASURING CONVEYOR ASSEMBLY L=20000			R056107 MK
LogIn			Tyy.nro R056107
HewSaw			
VEISTO GROUP			
VEISTO OY			



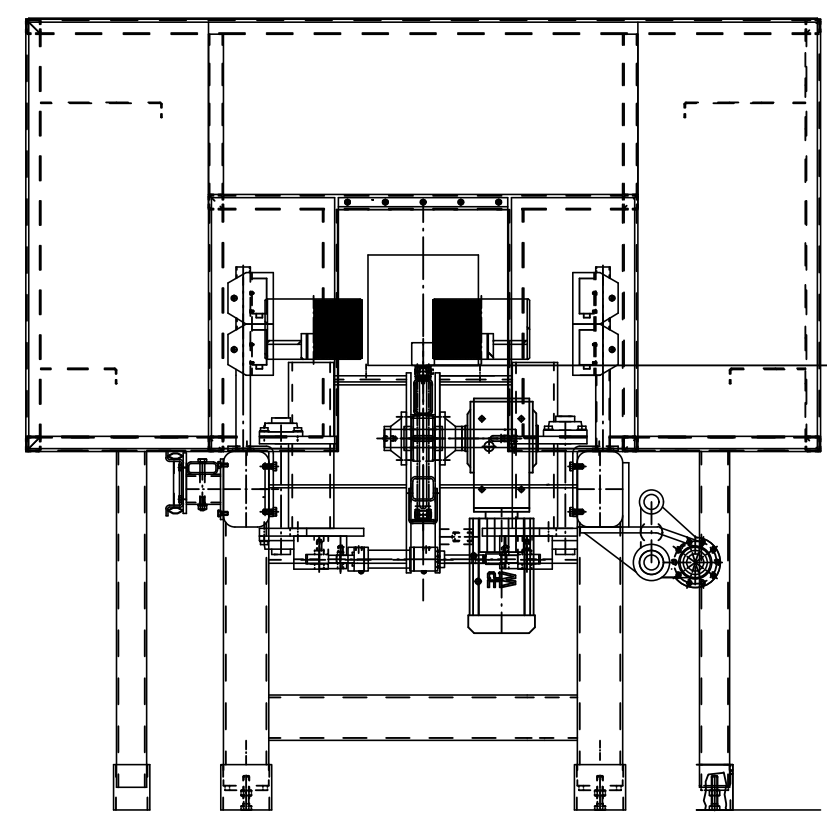
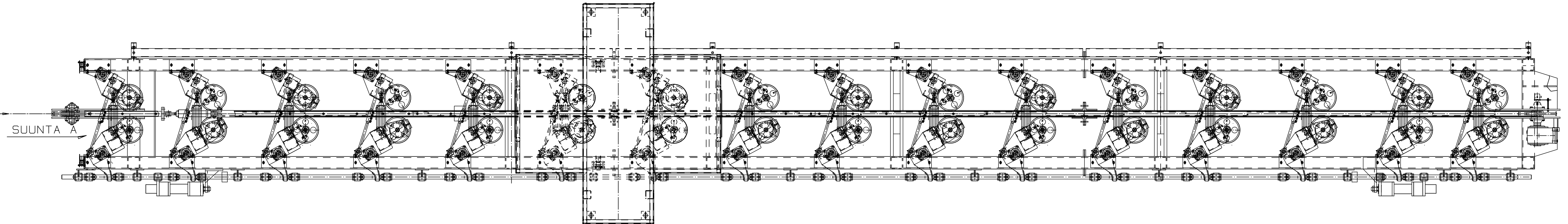
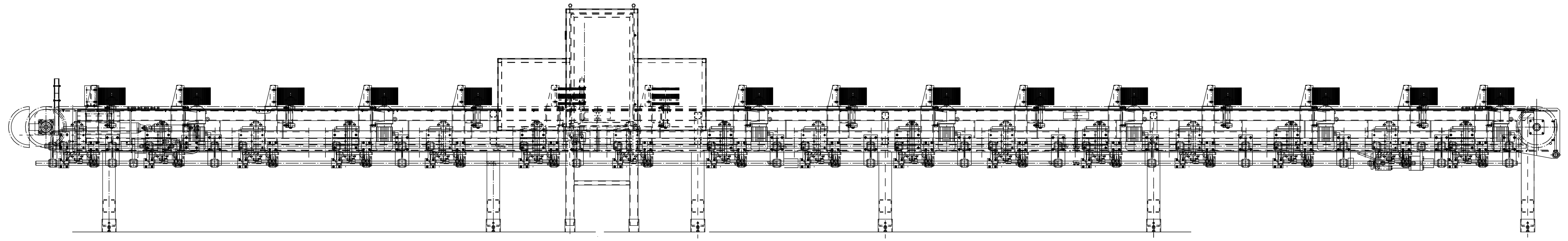
Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kpI
Suhde:	Piirt.VI	2004-11-10	Korvaa/Korvattu:
1 : 15	hyv.	Liittyy: J551600	Massa: R056108 PK
 LOG POSITIONER 2R			Esikuvae: R045011 Työ nro: R056108
VEISTO GROUP VEISTO OY			LogIn

This drawing is the property of VEISTO GROUP. It is not to be reproduced, copied, or distributed without the written consent of VEISTO GROUP. If you are a contractor, you are authorized to use this drawing only for the project for which it was prepared. All other rights are reserved.



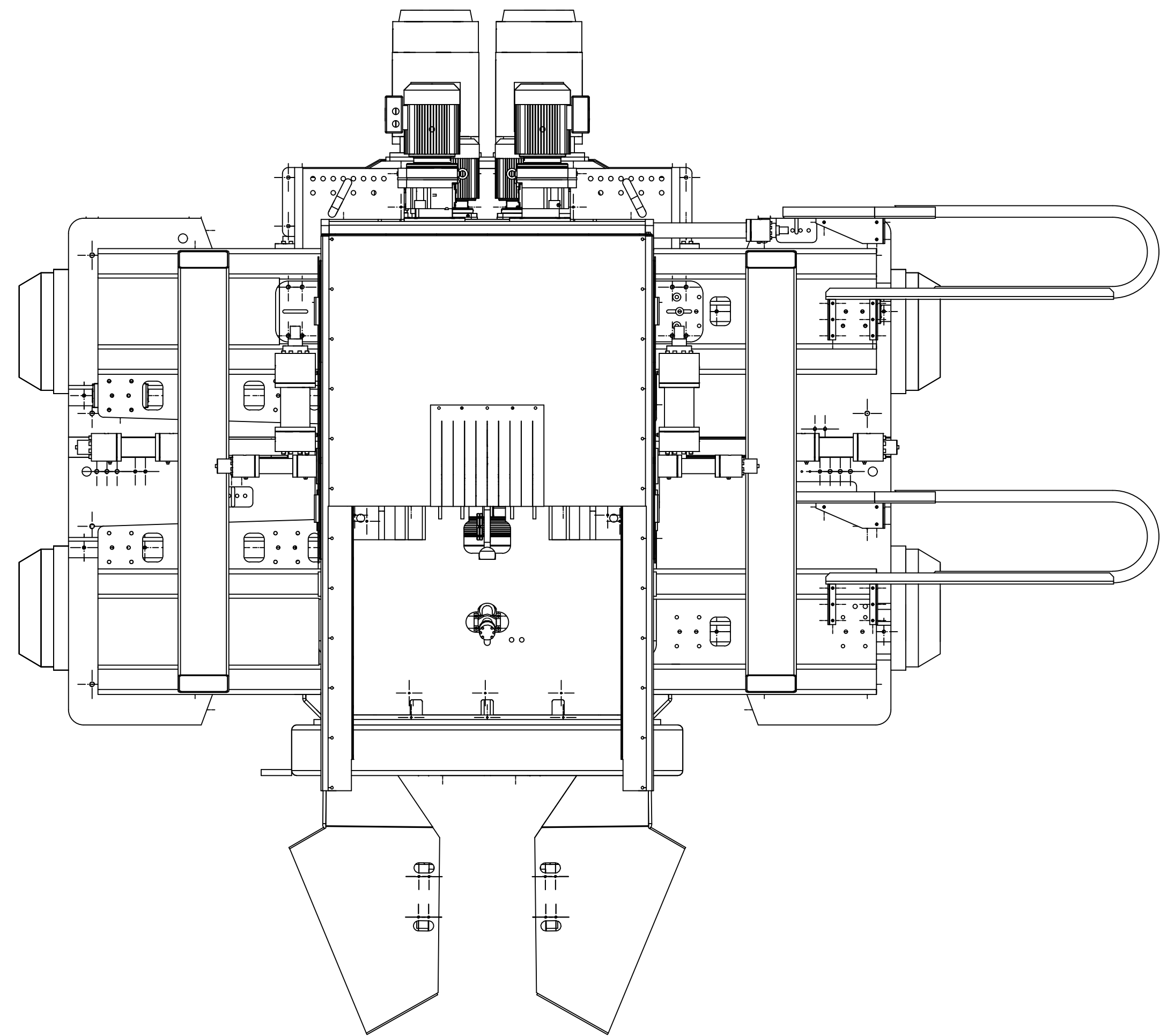
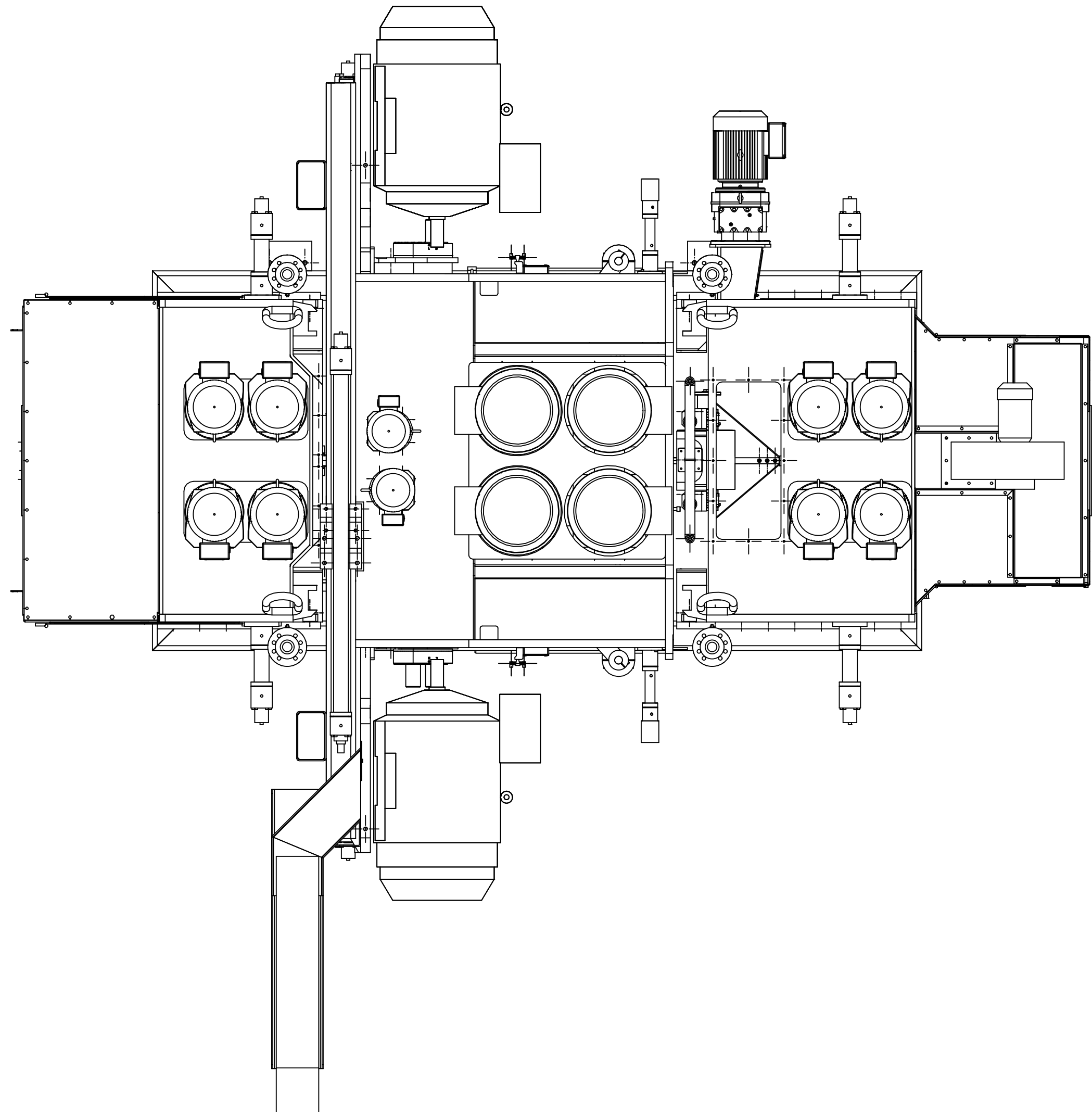
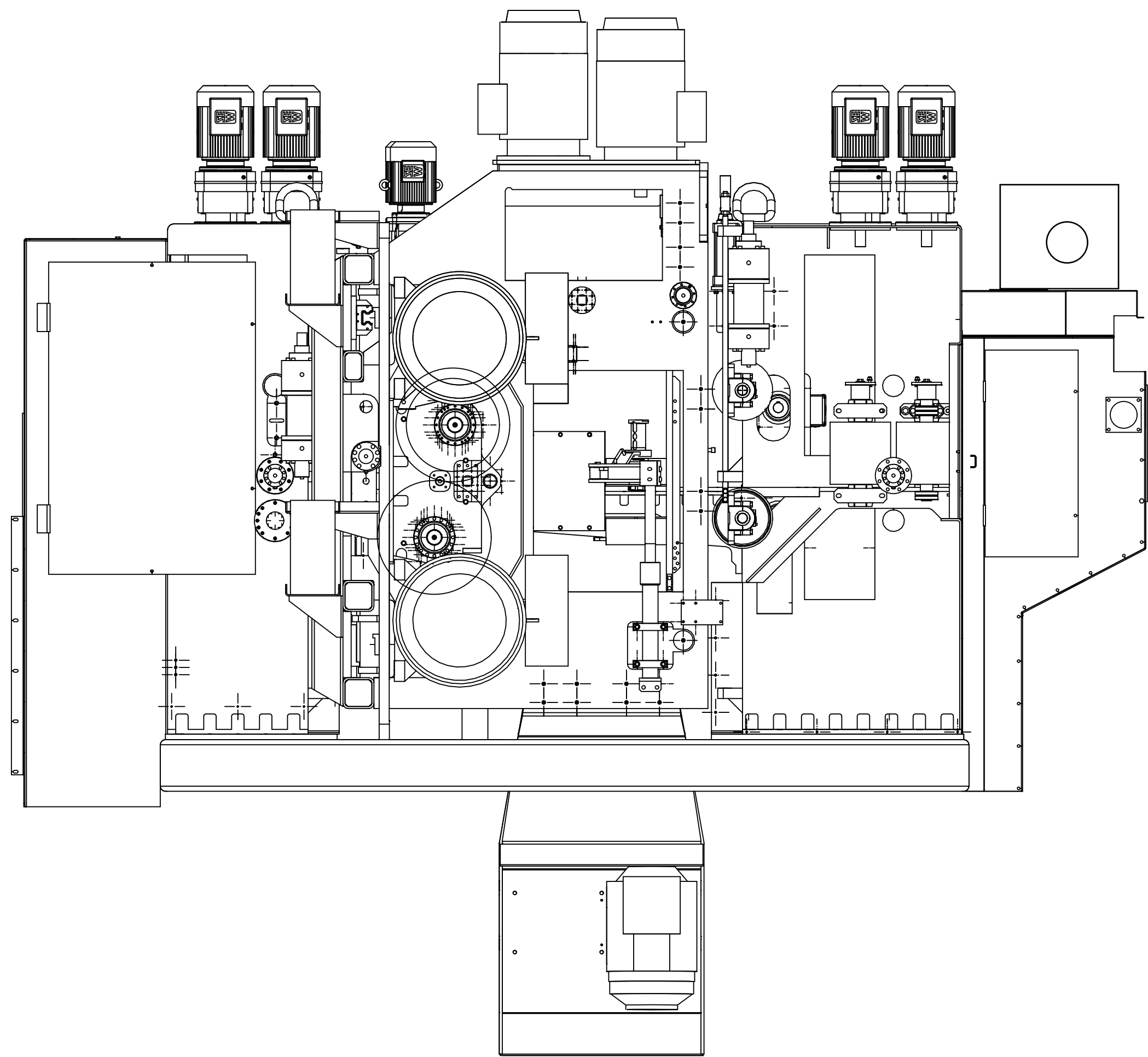
MAINTENANCE OPENING

Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kp.l
Suhde:	Piirrt. OKA	2005-05-25	Korvaa/Korvattu:
1:20	Hv.		Liittyy: J551600
		CHIPPER CANTER SL250 QUARTET/TRIO SL250	Messa: R056109 SL250QUARTET Erikuva: R014074 Työ n:o TDC Piir n:o R056109
VEISTO GROUP VEISTO-KÄÄNTÄJÄ LAITTO OY			



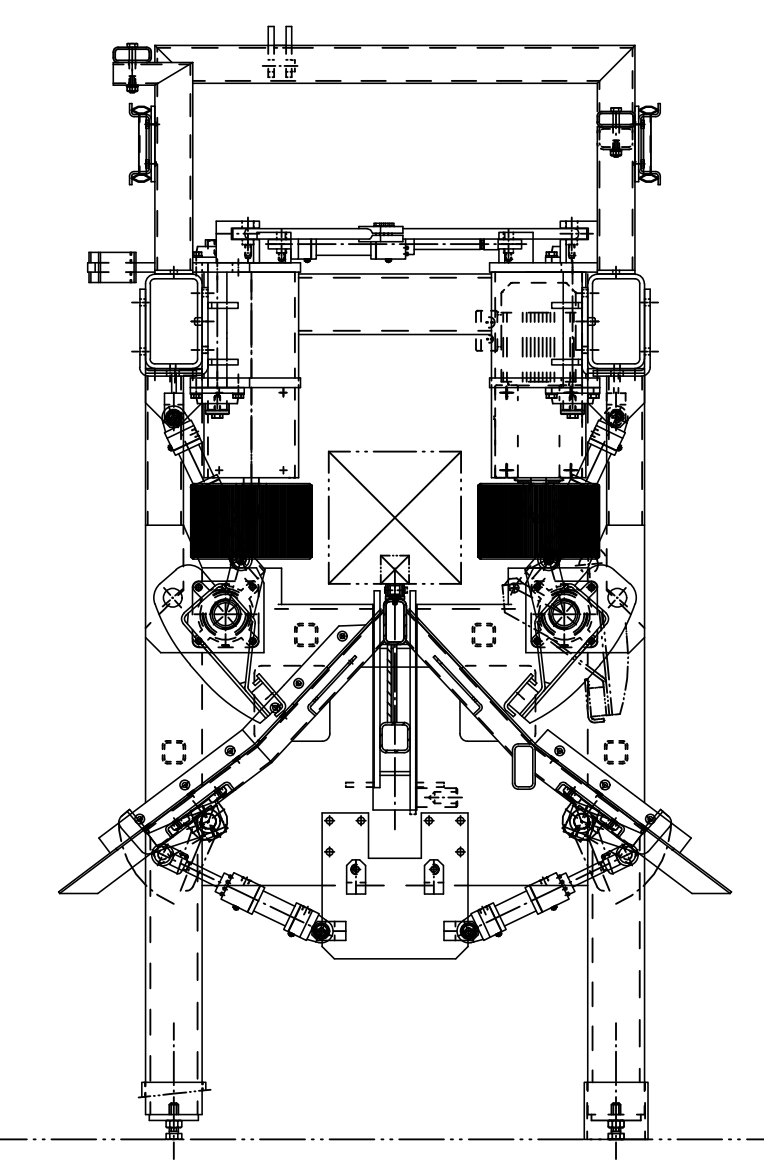
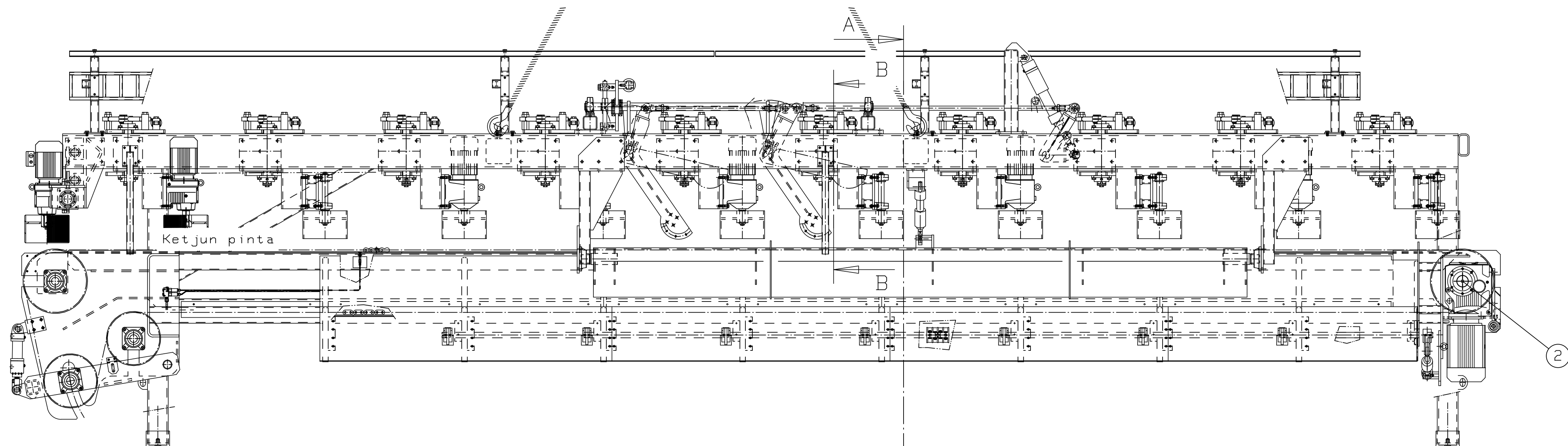
Scale:	Dr. JR	2004-10-26	Repl./ReplId:		Weight:
App.			Ref.	J551600	From: R014075
 VEISTO GROUP VEISTO OY		R056110 R250TR10-K Job n:o			R056110
		CANT SCANNING CONVEYOR SL250			

VEISTO GROUP
TÖÖTAPAKOHAISET VEISTOGRANSSIT: SIS-EN-ISO-13920-Z-22268-1
TARKKUUSELUOKKA p
TARKKUUSELUOKKA p
TARKKUUSELUOKKA n
SIS-EN-ISO-13920-Z-22268-1
TARKKUUSELUOKKA p
TARKKUUSELUOKKA p
TARKKUUSELUOKKA n
SIS-EN-ISO-13920-Z-22268-1
TARKKUUSELUOKKA p
TARKKUUSELUOKKA p
TARKKUUSELUOKKA n

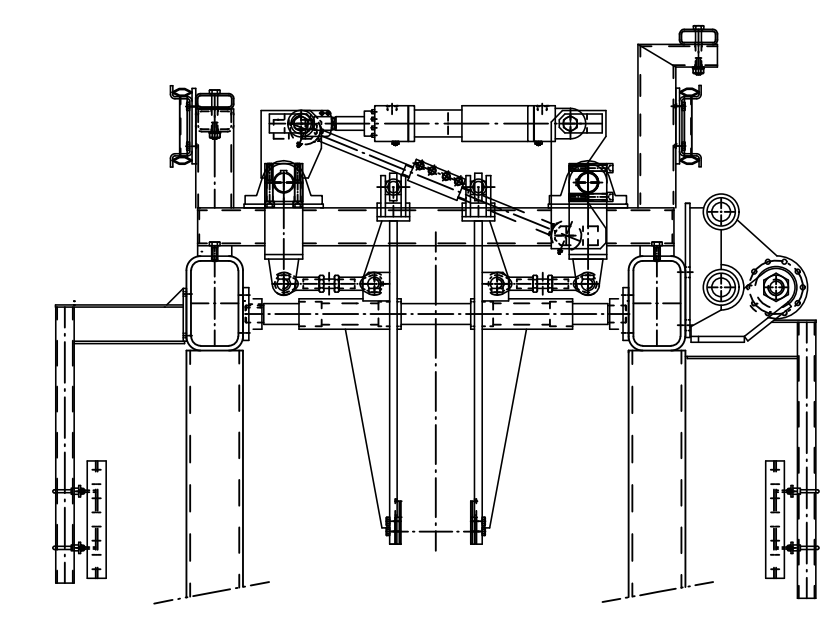
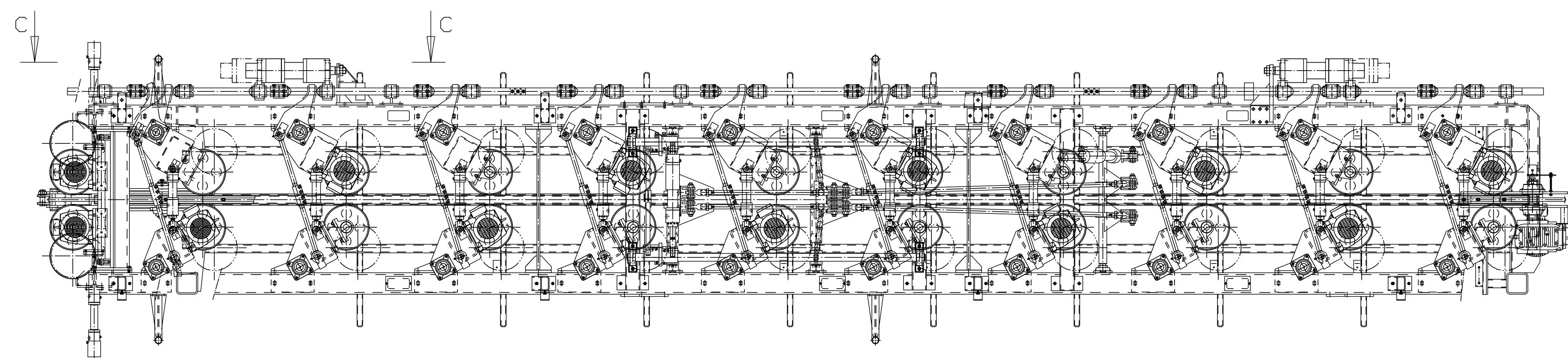


Scale: 1:20	Dr. KK	2005-04-04	Regl./Repld:		Height:
	App.		Ref.		From:
				CANT SAW HEWSAW SL250 TRIO	
				Job no: TDC Draw no: R056111	
SL250 TRIO				R056111	

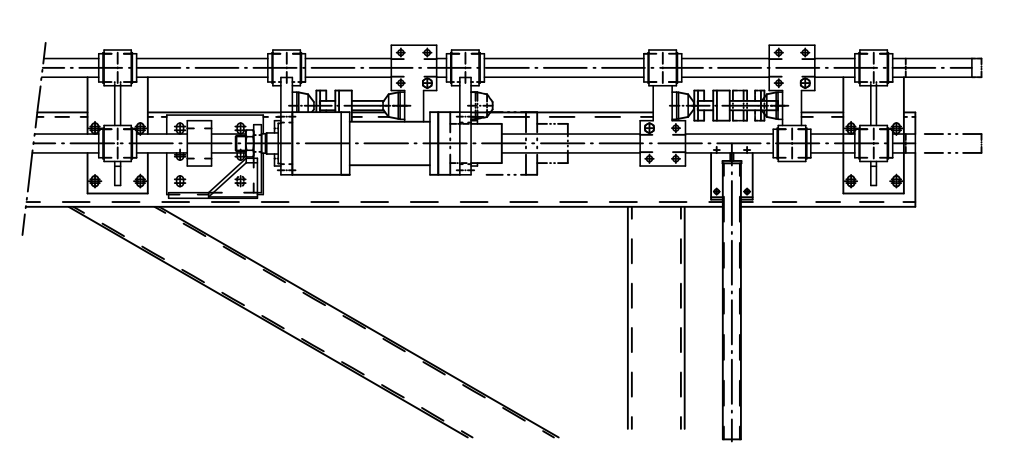
VEISTO GROUP
 VEISTO GROUP OY
 P.O. BOX 100
 FIN-00010 HELSINKI, FINLAND
 TEL: +358 (0)9 2535 1111
 FAX: +358 (0)9 2535 1112
 WWW.VEISTO.COM
 VEISTO GROUP OY
 P.O. BOX 100
 FIN-00010 HELSINKI, FINLAND
 TEL: +358 (0)9 2535 1111
 FAX: +358 (0)9 2535 1112
 WWW.VEISTO.COM



A - A



B - B

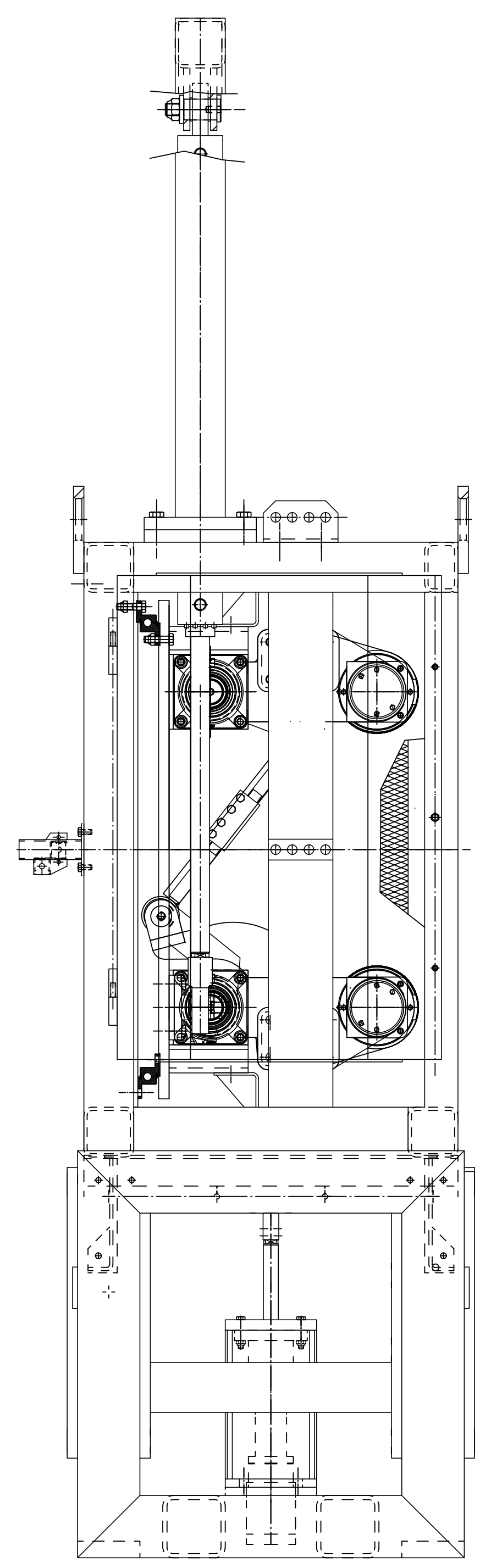
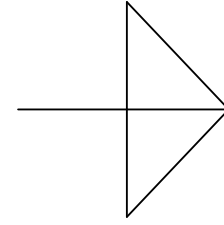
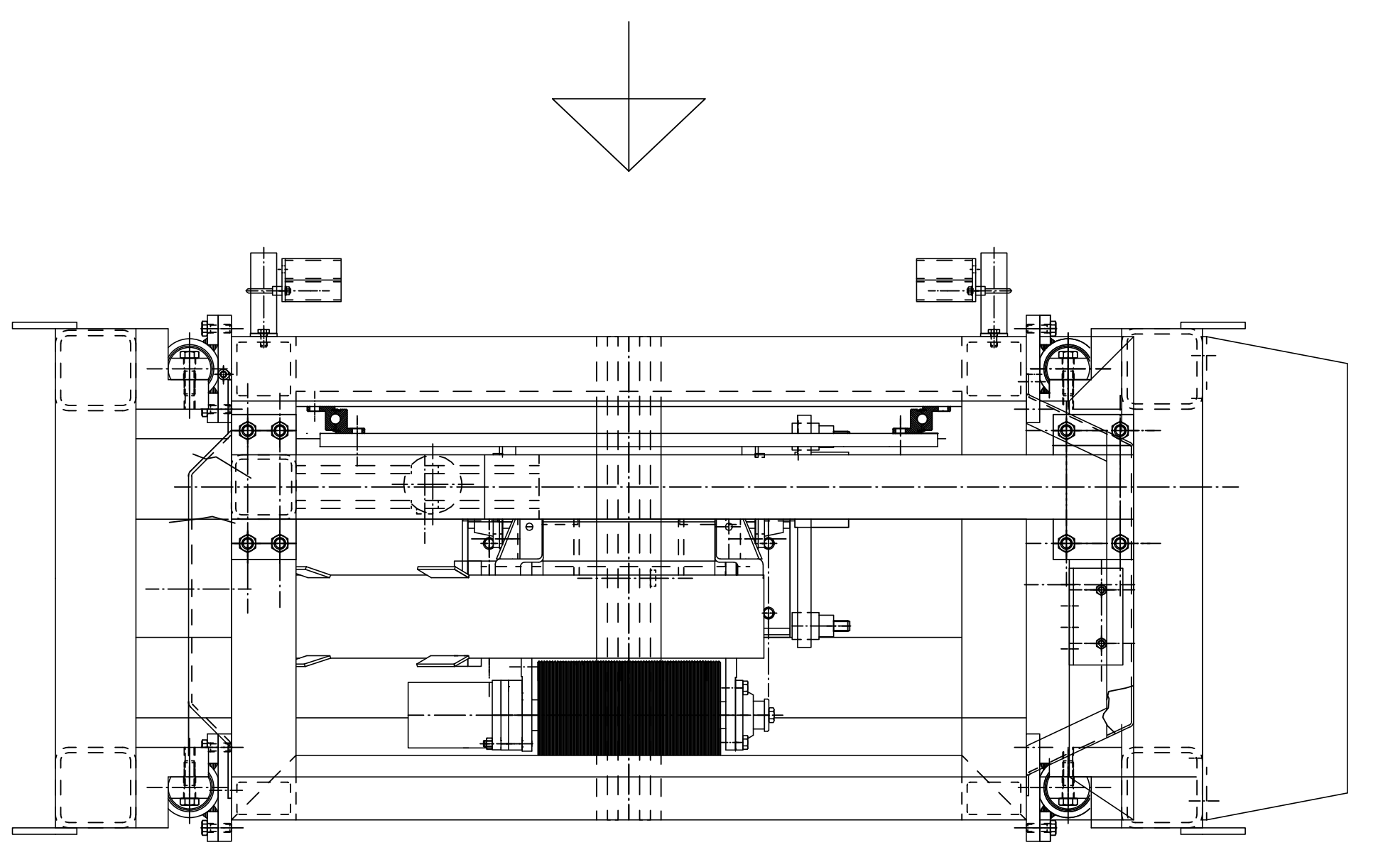
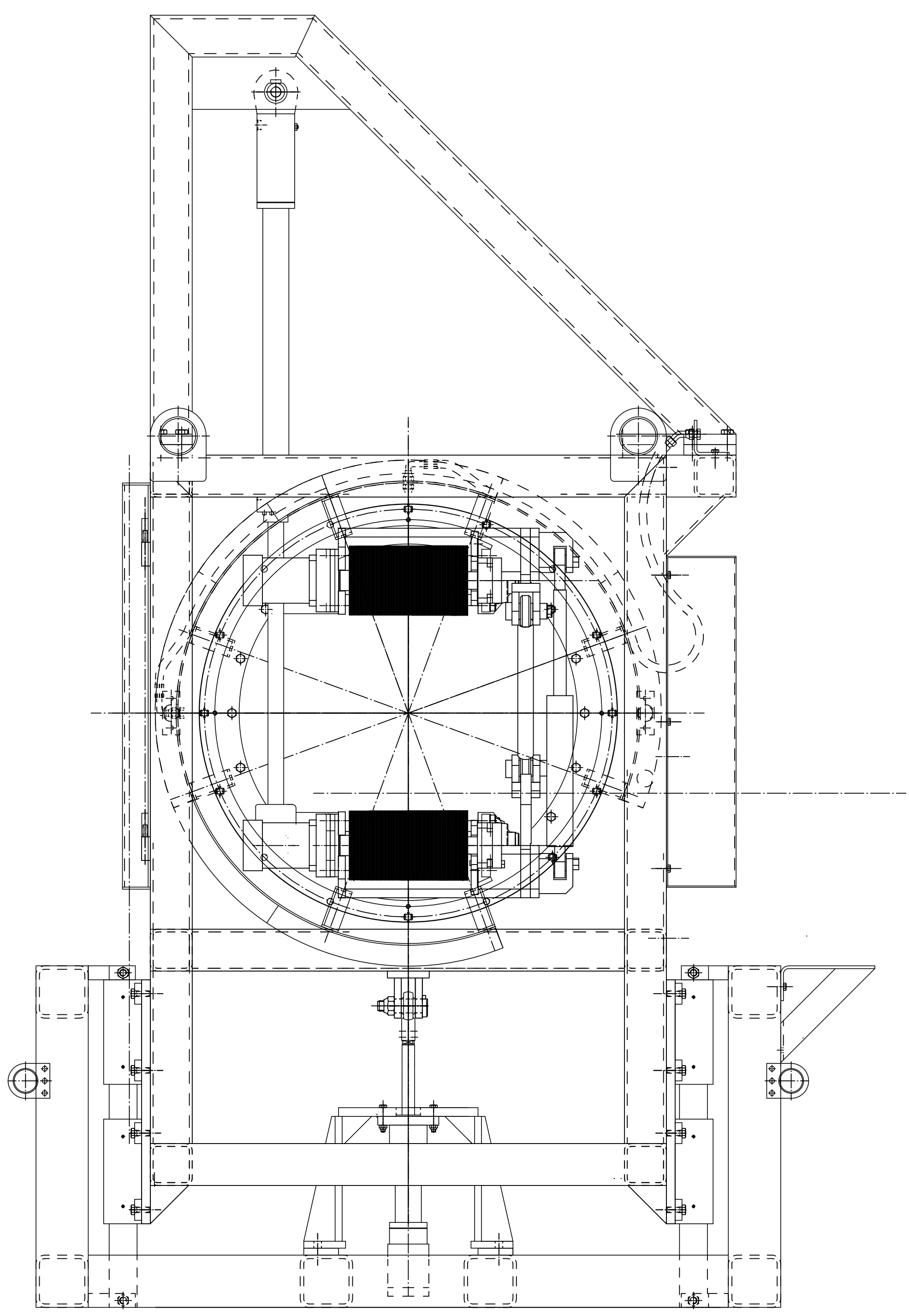


C - C
kään. 180°

Scale: 1:20	Dr. VAT App.	2005-01-19	Repl./Repld: Ref.		Weight: From:
 VEISTO GROUP VEISTO OY				R056112 EK Job no	R056112 Job no
SEPARATING CONVEYOR EK2 SL250 TRIO				R056112	

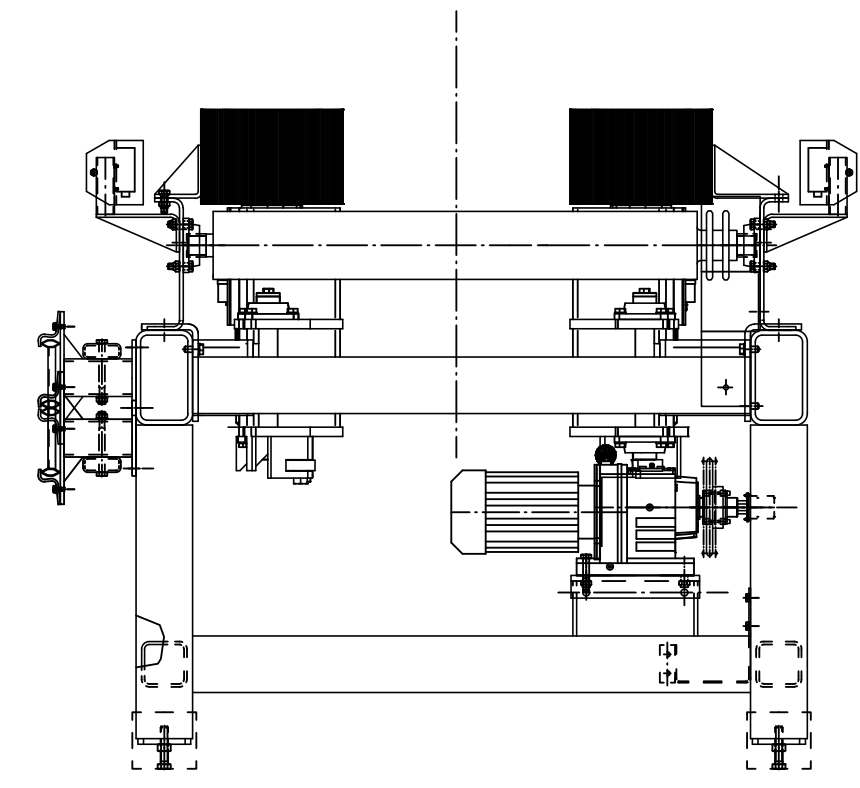
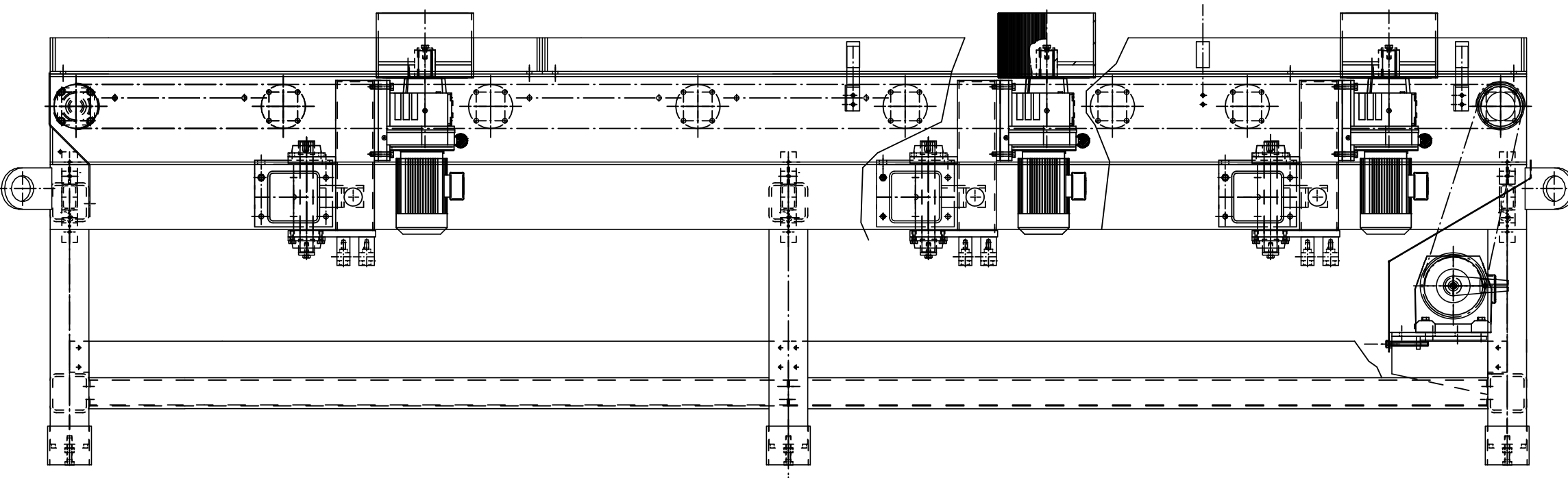
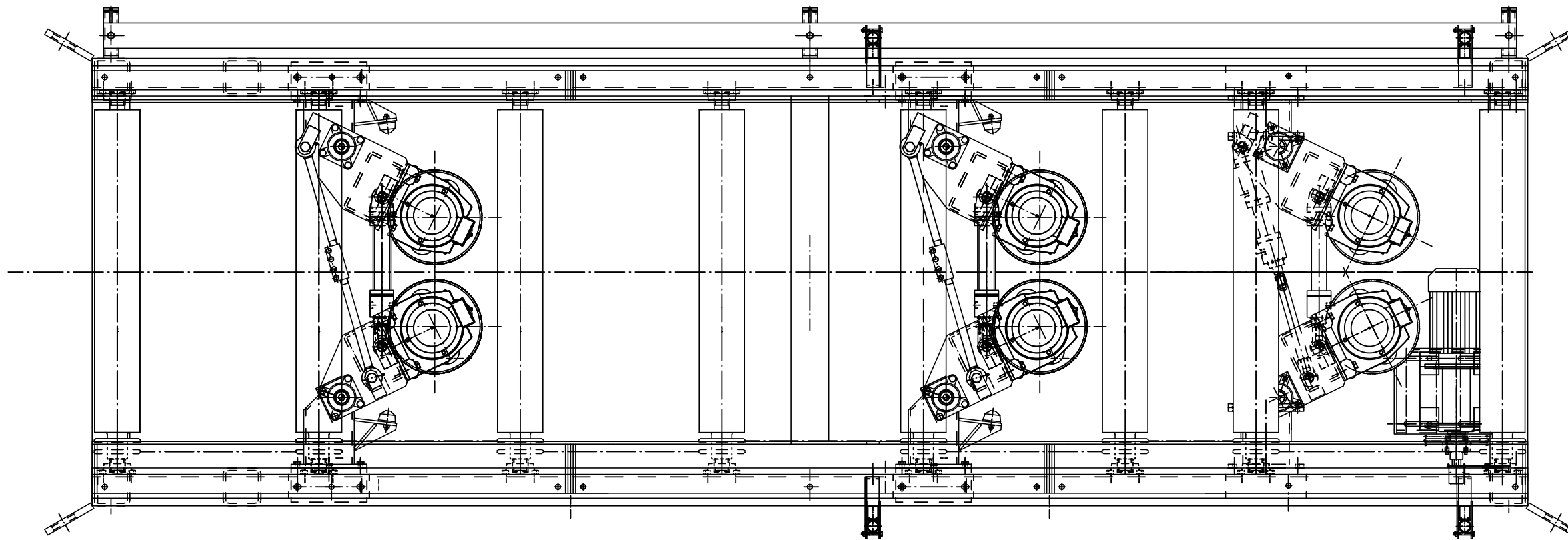
Tämä asiakirja on osa YBISTO GROUPIN tuotteen teknistä dokumentaatiota. Kaikki oikeudet pidätetään. Tämä asiakirja on luokiteltu salaiseksi ja sen sisältöä ei saa julkistaa ilman YBISTO GROUPIN kirjallista lupaa. Tämä asiakirja on tarkoitettu yksinomaan YBISTO GROUPIN käyttöön ja sen sisältöä ei saa kopioida, jäljentää tai muuten julkistaa.

Tämä asiakirja on osa YBISTO GROUPIN tuotteen teknistä dokumentaatiota. Kaikki oikeudet pidätetään. Tämä asiakirja on luokiteltu salaiseksi ja sen sisältöä ei saa julkistaa ilman YBISTO GROUPIN kirjallista lupaa. Tämä asiakirja on tarkoitettu yksinomaan YBISTO GROUPIN käyttöön ja sen sisältöä ei saa kopioida, jäljentää tai muuten julkistaa.



 YBISTO GROUP YBISTO OY	AN	2005-01-07	Repl./Replid: Ref.	 Weight: From: R014078 R056113 PK Job nro TDC Des nro R056113
	CANT TURNER ASSEMBLY			

TUSTAKONTAJISET VEISTOGRANSSI... SIS-EN ISO 13920 / 22268-1
 TARKKAILU...
 KOKO...
 VEISTO GROUP
 VEISTO-RAKENNUS RAKENTAMIS OY



Scale:	Dr. TV	2004-12-29	Rep./Repld:			Weight:
App.			Ref. J551600			From: R014082
		INFED CONVEYOR		R014082 K		Job n:o TDC
VEISTO GROUP VEISTO-RAKENNUS RAKENTAMIS OY				R056114		

3. OPERATION

3.1 Measuring conveyor

The log arrives from the log infeed onto the scanning conveyor. After the log is settled, it is fed through the log scanner. Side rolls in the rear end of the conveyor center the butt of the log while rotated by the log positioner.

A photocell pair before the log scanner monitors the length of logs. The operation of the side rolls is controlled by a photocell curtain installed between the side rolls. The speed of the conveyor chain is measured with a pulse sensor for the PLC and with an absolute sensor for the log scanner. Movements of the side rolls are made by pneumatic cylinders.

3.2 Log scanner

Measurement results received from the log scanner contain following information:

- Log top end position on the conveyor
- X and Y position of the top
- Log information: volume, conicalness, length
- Curve, curve position

3.3 Log positioner

In the log positioner positioning cylinders move the first rotating rotor in x- and y-direction and the second rotor in y-direction. The rotating rolls of the rotors are pressed by hydraulic cylinders. Infeed and centering roll pair between the rotors supports the log while rotating. The rotating rolls are driven by hydraulic motors. So both rotors contain two of these motors and a pump. Gear motors and cardan shafts run the infeed and centering roll pair.

According to log information received from the log scanner the rotating rolls of the first rotor are positioned in x- and y-direction to the center point of log top end and the rotor is rotated to the angle which matches with the crookness of the log. The 1st rotor centers the log top end to the chipper canter centerline and rotates the log as near the final angle as possible. The 2nd rotor rotates the remaining angle and feeds the log in "horns down" position to the chipper canter. The maximum rotation angle of the 1st rotor depends on the length of the log and the feeding speed.

After the 1st rotor has rotated the log is supported by the infeed and centering roll pair.

The 1st rotor is controlled by the photocells of the measuring conveyor. The photocell curtain between the rotors controls the 2nd rotor and infeed and centering roll pair and changes the rotating shifts between the rotors also. The rotation of the rotors is made by electric servomotors. Inductive proximity sensors placed in 0°/180° angle calibrate the positions of the servomotors.

3.4 Chipper canter

In the chipper canter four surfaces of the log are chipped by chipper heads.

During a saw pattern change the vertical position of the chipper canter centerline is adjusted according to the log diameter. The log positioner and the chipper canter are mounted onto the same base frame lifted and dropped with six screw jacks. The screw jacks are mechanically connected to two groups which are controlled with two electric motors. Two linear sensors are installed between the base frame and the footing to control aligned movements.

The log is centered and fed by infeed wheels and round wood guide to the chipper heads. Based on the log measurement results and the value of a curve set in the sawing pattern, a curve sawing automatism controls the vertical position of the log by adjusting the positioning cylinders of the infeed wheels and the round wood guide.

With a pair of side infeed rolls located in the infeed gate, the log top end is centered into the infeed wheels. The pressing of the infeed rolls is produced by a pneumatic cylinder which is pressurized when the log is between the rolls. The gear motor driven rolls are opened if logs are run backwards.

The top end of the log is pressed with the infeed wheels as soon as it gets between the wheels and is released before the log has entirely passed by. The top end is centered to the chipper heads with centering rolls located between the infeed wheels and the round wood guide. After the centering the pressure is released from the rolls. The pressing movements of the infeed wheels, flaps and round wood guide are produced by pneumatic cylinders. The round wood guide presses the log constantly.

The chipper heads are adjusted to the determined positions by positioning cylinders. Side guides are attached to the chipper head units. The rolls of the side guides are hydraulic motor driven, which enables minimized clearances between cant and the side guide.

Upper and lower outfeed rolls are controlled with a positioning cylinder. When changing a sawing pattern the rolls are moved to the position which is 1-3 mm narrower than the cant height. A pressing depth of the rolls depends on the cant width and the seasons (summer/winter). The upper and lower rolls center the cant mechanically to the centerline.

Side outfeed rolls are controlled the same way as the horizontal outfeed rolls.

The running of log is monitored with a pulse sensor mounted in the gear motor of the infeed wheels and with photocells placed in the infeed unit and vertical guides.

For tool maintenance the tail end of the chipper canter is moved 950mm lengthwise along guide rails forming the maintenance space between the vertical and horizontal chipper heads. The movement is produced with a screw jack. Before the machine splits the chipper heads are automatically cleaned with compressed air. A pneumatic cylinder moves the service platform between the frame blocks after the opening.

The open position of the frame and position of the service platform outside the machine are monitored by inductive proximity switches. The close position of the frames (for starting the machine) is monitored with a non-contacting proximity switch. The switch is also used to stop the screw jack when closing the machine. The frame blocks are locked together with a locking device operated by a hydraulic cylinder.

3.5 Cant scanning conveyor

The cant is transported with a chain conveyor linearly through the cant scanner and is fed to the cant saw. Side rolls support the cant. The movement of the side rolls is limited according to the sawing pattern so that the rolls are opened with a pneumatic cylinder as little as possible. Both minimum and maximum opening have a separate limiter lever mechanism operated by positioning cylinders. This mechanism controls all rolls of the conveyor. Every pneumatic cylinder of the side rolls has its own photocell controlled valve. The photocells are located before the first pair of rolls and after the seventh pair of rolls. The speed of the chain/rolls is measured with a pulse sensor from the drive end.

If the width of the cant is changed during a sawing, the limiters of the rolls must be adjusted according to the maximum and minimum width of the cant.

One roll in the side roll pair is motorized. This motor-driven roll is installed onto the different side of the centerline in sequential pairs.

The conveyor is equipped with an automatic chain tensioner, which operates with a hydraulic cylinder. An inductive proximity sensor alarms if the outer limit of tensioning has been gained.

3.6 Cant scanner

The cant curvature and the profile are measured in the cant scanner. Based on these measurement results the PC optimize the edging of side boards in the cant saw and rip saw. The information of cant curvature is used to control the centering of the infeed conveyor rolls, so the crooked cant is directed into the saw blades according to these results.

3.7 Cant saw

In the cant saw side boards (1-2 pcs/side) are sawed from the chipped cant. If sawing two boards per side a pre-assembled assembly tube determinates the distance of the outer blades. The side boards are edged in two edging unit immediately after the sawing. Automatism optimizes the width and height of the side boards according to the measurement results of the profile scanning.

When changing a sawing pattern the infeed rolls, side guides, inner circular blades, rear supports of the saw units, edging tools/separating knives, width of the outfeed rolls and center frame of the machine are adjusted into the right position with positioning cylinders. The separating knives of the second edging unit move between the centerline and the first edging unit. The minimum distance between the separating knives of the first and the second edging unit is 19 mm. The height of the center frame is positioned so that the midway between the circular saw blades is adjusted to the cant centerline or slightly above (cant curvature).

For tool maintenance the air blows are directed inside the saw. A lower guide is opened hydraulically and the right rip saw unit is moved out from the machine along guide rails. The opening of the saw works with a manual valve controlled hydraulic cylinder. A noncontacting safety switch monitors that the rip saw unit is close. Work safety during open/close movements is secured with a separate opening pressure circuit resulting slow movements of the unit. The service doors of the edging unit are equipped with electric safety switches.

The rolls of the side guides are driven by electric motors. With these rolls the clearance between the cant and the guide can be minimized.

Before sawing the first cant the infeed rolls are adjusted 1-4 mm narrower than the cant width. The side guides are also positioned into the desired distance. The separating knives of the edging unit are adjusted to the sawing kerfs according to the saw assembly.

In the log gaps the positioning cylinders are utilized to move edging tools to the right width and height position for the side boards. These adjustments base on optimization results.

In scan'n'set sawing the height of the frame block is settled permanently according to the highest cant. Other adjustments (rolls, guides and edging tools) change positions in the log gaps as those are set in the sawing pattern.

While sawing the running of the cant is monitored by photocells in the infeed unit, side guides and the rear supports of the saw units. The photocells are used to ensure that the log gap is long enough for changing the saw assembly. The rotation speed of the rolls is measured with a pulse sensor at gear motor. The open/close positions of the lower guide are monitored by inductive proximity sensors.

3.8 Separating conveyor EK2

With the separating conveyor side boards are separated and synchronized onto the side shift conveyor. If the saw assembly contains two side boards, those are separated and guided into the same gap of flight attachments.

The EK2 consists of chain conveyor, eleven side roll pairs and board separator arms. The first roll pair is attached onto the guide shafts and is equipped with separate cylinder adjustments.

Every other side roll is a drive roll. These gear motor driven rolls are installed on the different side of the centerline in sequential pairs.

A movement of the side rolls is limited according to the sawing pattern so that the rolls are opened as little as possible. Both minimum and maximum opening have a separate limiter lever mechanism operated by positioning cylinders. This mechanism controls ten pair of rolls. The rolls are pressed by photocell controlled hydraulic cylinders. The photocell is located before the second roll pair. The hydraulic cylinders are opened for a moment while the separator arms press the boards to the side slides. The distance between the board separator arms is adjusted with a positioning cylinder during a saw assembly change.

Two pairs of the board separator arms are controlled by a positioning cylinder which upper position is adjusted according to the cant height. The cant length and the line speed are taken into account to ensure perfectly timed operation of the board separator arms. Before the board separator arms are driven up the side rolls start pressing the centre goods again. The arms are controlled with a photocell located after the sixth pair of rolls.

If the cant width is changed during a sawing, the limiters of the rolls must be adjusted according to the maximum and minimum width of the cant. The distance between board separator arms must be adjusted the same way according to cant width.

Side boards are dropped to the side slides. Upper stoppers and cassette cams control the falling of boards and release boards to the side shift conveyor. The flexible operation of the stoppers absorbs the impacts of falling boards.

The conveyor is equipped with an automatic chain tensioner which operates with a hydraulic cylinder. An inductive proximity sensor alarms if the outer limit of tensioning has been gained. The speed of the chain/rolls is measured with a pulse sensor from the drive end.

3.9 Cant turner

With the cant turner the cant is rotated 90° around the longitudinal axis. The turner contains a hydraulic motor driven roll pair which is mounted into the rotor circle. The rotor/rolls are installed onto the height adjustable frame. While rotating the frame is lifted and dropped depending on the center point of the cant. The rotation and the height adjustment of the rotor operate with positioning cylinders. A photocell pair in front side of the rotor controls actions of the turner and the first roll pair of the infeed conveyor of the rip saw.

3.10 Infeed conveyor

The construct of the infeed conveyor contain a chain-driven horizontal roll unit equipped with three side roll units. The first unit restrains and centers the top end of the rotated cant. With the 2nd and 3rd side rolls the cant is centered and fed into the rip saw. The bottom end of a crooked cant is guided away from the centerline meanwhile the top end is in between the rip saw rolls. In this way the tangent of a curvature is parallel with the centerline of the saw line.

System is adjusted by a positioning cylinder installed in place of the 3rd roll pair centering lever. The roll units are controlled by photocells attached before the 2nd roll pair and between the 2nd and 3rd pair. The speed of the conveyor is monitored with a pulse sensor in the drive motor.

3.11 Rip saw

The circular saw unit of the rip saw is mechanically similar as in the cant saw. The edging unit resemble the 2nd edging unit of the cant saw.

In the rip saw the cant is sawed to side boards (1 pcs/side) and centre goods (1-7 pcs). The distance of blades is specified with a pre-assembled assembly tube. Separate assembly tubes (1-4 blades/tube) are installed on both sides of the centerline. The thickness of center piece can be adjusted with positioning cylinders. The side boards are edged in the edging unit immediately after the sawing. Automatism optimizes the width and height of side boards according to measurement results of the cant scanner.

When changing a sawing pattern the side rolls, infeed rolls, side guides, inner circular blades, rear supports of the saw units, edging tools/separating knives, width of the outfeed rolls, side outfeed rolls and center frame of the machine are adjusted into the right position with positioning cylinders. The center frame height is positioned so that the midway between the circular saw blades is adjusted to the cant centerline.

For tool maintenance, air blows are directed inside the machine and the right rip saw unit is moved out from the saw along guide rails. The opening of saw operates with a manual valve controlled hydraulic cylinder. A noncontacting safety switch monitors that the rip saw unit is close. Work safety during open/close movements is secured with a separate opening pressure circuit resulting slow movements of the unit. The service doors of the edging unit are equipped with electric safety switches.

The rolls of the side guides are driven by electric motors. With these rolls the clearance between the cant and the guide can be minimized.

Before sawing the first cant the infeed rolls are adjusted 1-4 mm narrower than the cant width. The side guides are also positioned into the desired distance. The separating knives of the edging unit are adjusted to the sawing kerfs according to the saw assembly.

While sawing the edging units are moved to the correct width and height position for the side boards by positioning cylinders. The adjustment base on optimization results and it is carried out while there is a gap between cants.

In scan'n'set sawing the height of the frame block is settled permanently according to the highest cant. Other adjustments (rolls, blades and edging tools) change positions in the log gaps as those are set in the sawing pattern.

The running of the cant is monitored during a sawing with photocells in the infeed unit, side guides, rear supports of the saw units, and outfeed opening. The photocells are used to ensure that the log gap is long enough for changing the saw assembly. The rotation speed of the rolls is measured with a pulse sensor at gear motor.

4. SAFETY PRECAUTIONS

4.1 General

HewSaw SL250 Trio sawing line delivered to the TDC Sawmills Ltd. by Veisto is part of sawmill's sawing line. Control and automation system for the HewSaw sawing line is purchased by TDC Sawmills Ltd. and it is not included to the Veisto's delivery. Do not use the machines before the control and automation system for the whole sawing line satisfy the requirements of the general safety standards. Employees must be familiar with the safety instructions given by the supplier of the control and automation system before using any machine.

Only trained personnel are allowed to operate and maintain the machines.

Always physically look around the machine and announce clearly before anyone energizes the machine.

When cleaning or maintaining the machines, control voltage must be locked in OFF-position. Make sure that all the movement has stopped inside the machine until opening any covers.

Check periodically that all the safety switches and equipment are in a good working order.

Always use protective gloves when handling knives, circular blades and edging tools. When servicing the machine, pay special attention to the sharp knives and blades. They can cut you severely. Always use safety glasses or a face shield when grinding knives, circular blades and edging tools. Use safety glasses and ear muffs when working around the machine while it is operational.

Bright lights may cause errors or even damage the cameras of the log and cant scanner. Therefore protect the cameras from welding flames and other bright lights.

A special safety fence must be installed around machines or otherwise prohibit access to the close vicinity of these equipments during sawing process. Never go near the machine when it is operating.

Checklist before starting the machine:

- Make sure there are no people or foreign objects in immediate vicinity of machines.
- Air pressure must be 6 -7.5 bar.
- The machine must be lubricated properly.
- Chipping knives and finishing blades must be sharp and securely fastened.
- Saw assemblies and edging tool assemblies must be secured on the arbors and check that the rotation directions are correct. Inspection of the saw straightness and carbide tip condition.
- Check that the separating knives are securely fastened to their places.
- Take care of the general cleanliness of the machines to achieve reliable operation.
- Check the air lines and connections for leaks.
- Visually check for oil leaks.
- Inspect that there is no any sawdust or chip build up blocking the photocell's view.

4.2 Safety devices

4.2.1 Standstill monitors

The chipper heads, rip saws and edging unit motors are equipped with standstill monitors. The protective doors can not be opened before the motors have stopped.

4.2.2 Safety switches

Safety switches in the doors and covers of the machine are equipped with micro switches that keep the control voltage in OFF-position until they are shut. Note that all the bolt-on covers do not have these switches. Make sure that there are no moving or rotating parts inside the machine and the control voltage is locked to the OFF-position when opening these covers.

Using keys to open safety covers is only allowed during machine installation and repairs. After the installation is completed, micro switches must be locked with keys. Then the keys must be collected to the person in charge of safety operations.

5. OPERATING INSTRUCTIONS

See instructions on the documentation folder given by the deliverer of the automatic system.

6. AUTOMATIC FEATURES

See instructions on the documentation folder given by the deliverer of the automatic system.

7. PNEUMATIC SYSTEM

7.1 Pneumatic valves

Measuring conveyor valve unit:

Pneumatic drawing of measuring conveyor (J606900 on page 7/4)

Main valve (F1)

- 5/2 directional valve
- intakes the compressed air into to the system when the control voltage is ON

Valves for side rolls (F2, F3)

- 5/3 directional valve, 2 pcs
- controls open/close movements of side rolls

Chipper canter valve unit:

Pneumatic drawing of chipper canter (J606600 on page 7/5)

Main valve (F1)

- 5/2 directional valve
- intakes the compressed air into to the system when the control voltage is ON

Valve for centering rolls (F2)

- 5/3 directional valve
- closes the centering rolls during infeed
- opens the centering rolls during reversing

Proportional valves of infeed wheels (F3A, F3B)

- proportional valve, 2 pcs
- controls open/close movements of infeed wheels

Proportional valves of round wood guide (F4A, F4B)

- proportional valve, 2 pcs
- controls open/close movements of round wood guide

Valve for service platform (F5)

- 5/2 directional valve
- controls the movements of service platform in the maintenance opening

Valve for blowing, frame 1 (F6)

- 5/2 directional valve
- controls air jets

Valve for blowing, frame 2 (F7)

- 5/2 directional valve
- controls air jets

Cant scanning conveyor valve unit:

Pneumatic drawing of cant scanning conveyor (J607100 on page 7/6)

Main valve (F1)

- 5/2 directional valve
- intakes the compressed air into to the system when the control voltage is ON

Valves for side rolls (F2-F17)

- 5/2 directional valve, 16 pcs
- controls open/close movements of side rolls

Cant saw valve unit:

Pneumatic drawing of cant saw (J607200 on page 7/7)

Main valve (F3)

- 5/2 directional valve
- intakes the compressed air into to the system when the control voltage is ON

Valves for blowing, center frame (F1, F2)

- 5/2 directional valve, 2 pcs
- controls air jets

Rip saw valve unit:

Pneumatic drawing of rip saw (J607300 on page 7/8)

Main valve (F1)

- 5/2 directional valve
- intakes the compressed air into to the system when the control voltage is ON

Valve for centering cylinder of infeed rolls (F2)

- 5/2 directional valve
- controls centering of infeed rolls

Valves for blowing (F3, F4)

- 5/2 directional valve, 2 pcs
- controls air jets

Valve for centering cylinder of outfeed rolls (F5)

- 5/2 directional valve
- controls centering of outfeed rolls

7.2 Adjusting the pressures

Pressure: 6-7.5 bar
Flow rate: 6000 l/min

Pressures depend on the quality of logs. Higher pressures might be needed when sawing frozen or bigger logs than usually.

Below shown values are for guidance. The final values must be adjusted on the trial run. Adjust the pressures by using the pressure regulators:

Measuring conveyor:

- Side rolls approx. 4 bar

Chipper canter:

- Centering rolls approx. 4 bar

Cant scanning conveyor:

- Side rolls approx. 4 bar

Cant saw:

- Sealing of sawing unit approx. 4 bar
- Relief of feeding rolls approx. 4 bar

Rip saw:

- Centering cylinder of infeed rolls approx. 4 bar
- Sealing of sawing unit approx. 4 bar
- Centering cylinder of outfeed rolls approx. 4 bar

Compressed air must be clean and dry. When the temperature is below 0 °C Veisto Oy recommends using Aerol or similar anti-freeze in the pneumatic system. Use only anti-freeze that is made for pneumatic system or otherwise it may cause wearing of plastic and rubber parts.

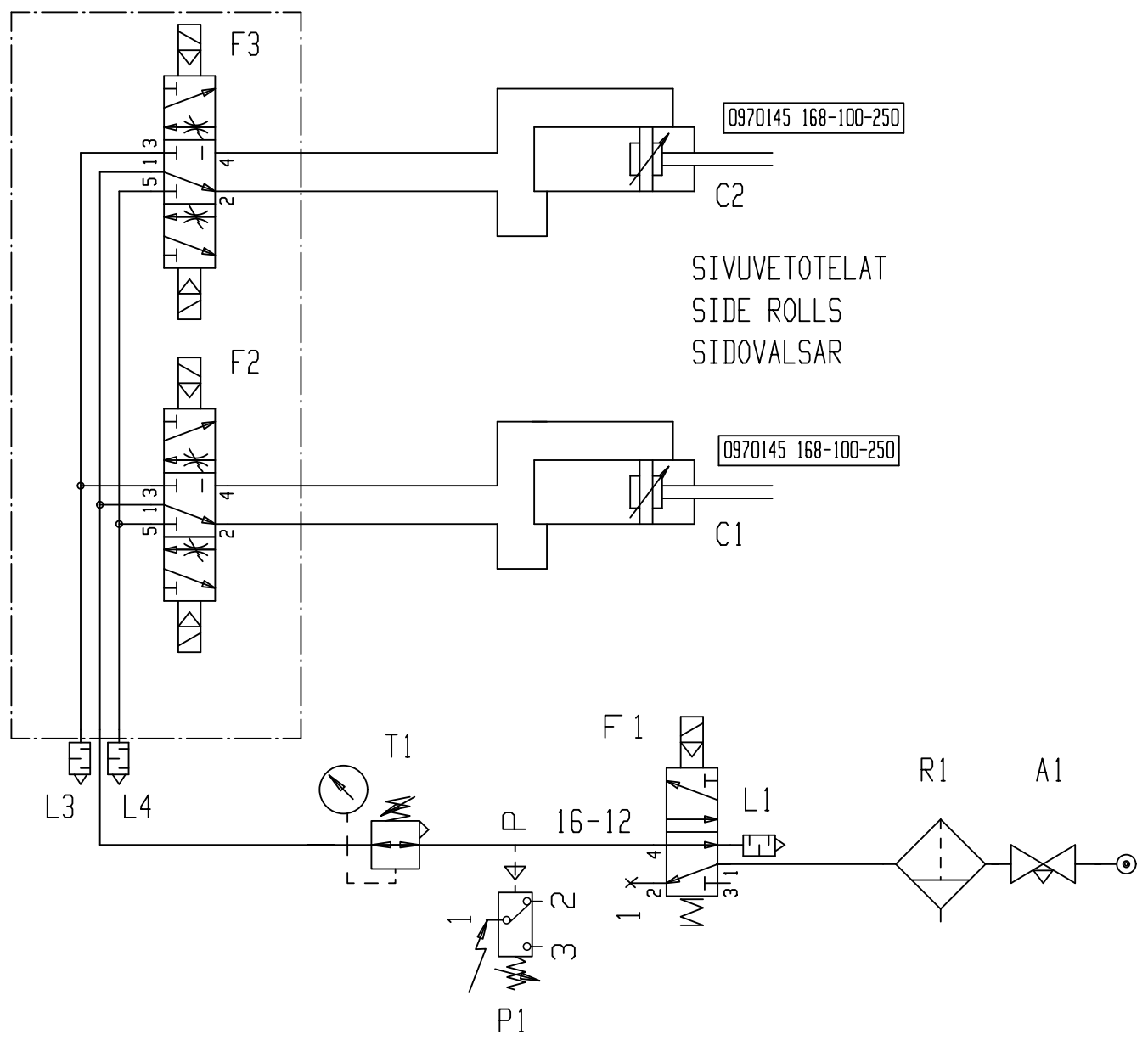
This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

Dessa ritning är vår egendom och är inte tillåtet att kopieras, reproduceras, förmedlas eller utlämnas till tredje part eller användas till andra ändamål än de som ursprungligen är avsedda, utan vårt tillstånd.

Tämä piirustus on omaisuutemme eikä sitä saa kopioida, jäljentää tai käyttää muuten ilman meidän lupamme.

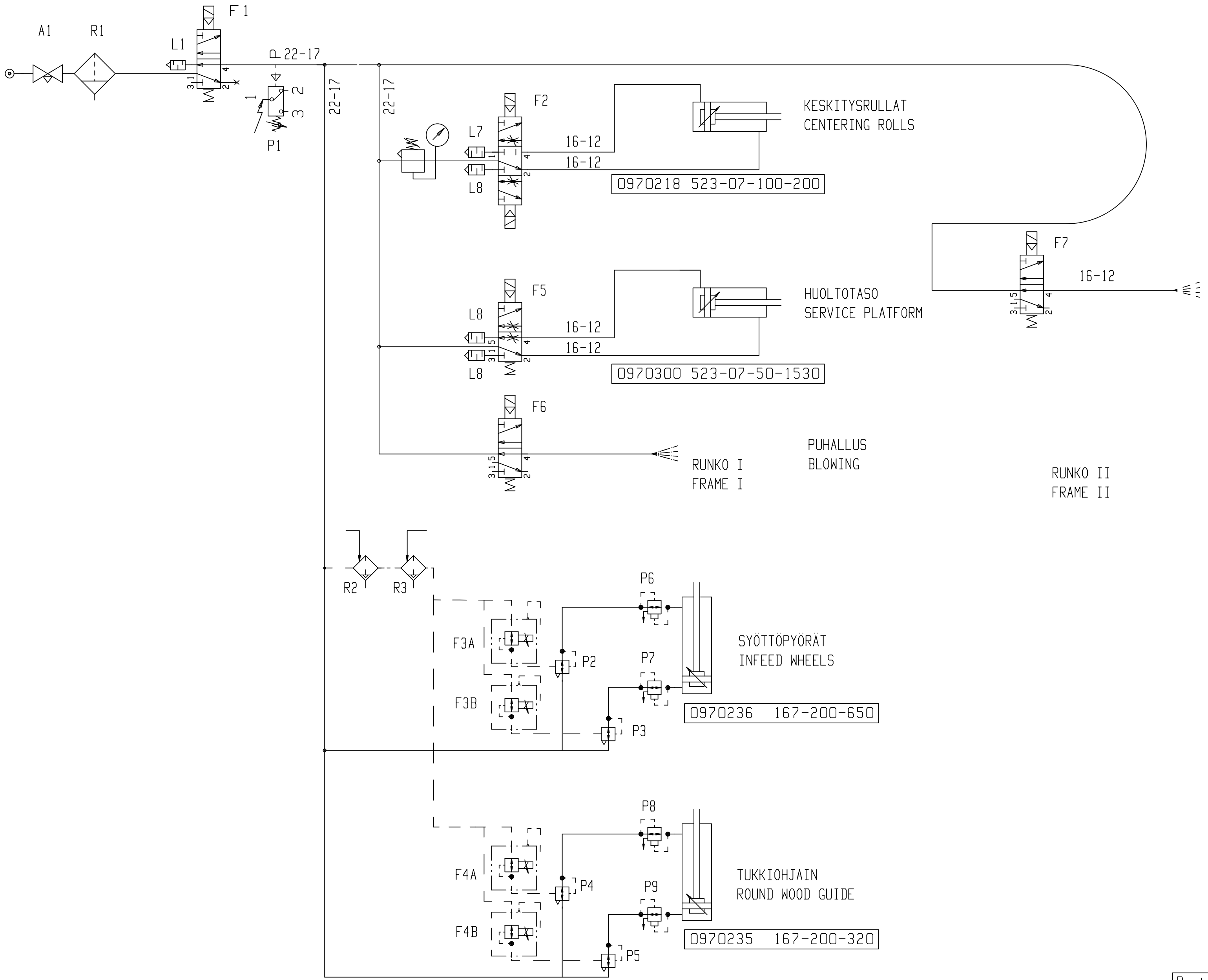
Tämä piirustus on omaisuutemme eikä sitä saa kopioida, jäljentää tai käyttää muuten ilman meidän lupamme.

TYÖTAPAKOHTAISET YLEISTOLERANSSIT: SFS EN ISO 13920 / 22768-I
 *Hitsatut rakenteet: kulma- ja pituusmitat
 *Suoruuksien tasomaisuus ja yhdenmuotoisuus
 *Koneistetut kappaleet: pituus- ja kulmamitat
 TARKKUUUSLUOKKA B
 TARKKUUUSLUOKKA F
 TARKKUUUSLUOKKA m




Partlist: P:/TDC-Sawmills SL250TRI0/Taulukot/J606900.xls

Scale: 1 : 1	Dr. RKA App.	2005-02-17	Repl./Repld: Ref. R056107		Weight: From: J273900
 VEISTO GROUP VEISTO OY				J606900 PNEUMATIikka	
				Job n:o TDC Sawmills LTD	
				Dwg. n:o J606900	



Partlist: P:/TDC-Sawmills SL250TRIO/Taulukot/J606600.xls

Scale: 1:1	Dr. RKA App.	2005-02-24	Repl./Repld: Ref. R056109	Weight: From: J022700
 VEISTO GROUP VEISTO OY		PNEUMATICS CHIPPER CENTER SL250		J606600 PNEUMATIikka Job n:o TDC Sawmills LTD Dwg n:o J606600

This drawing is our property and it is not allowed to be copied, reproduced, transmitted or used in any way without our written consent. If you have any questions, please contact us at the address given, without our consent. We are not liable for any damage caused by the use of this drawing.

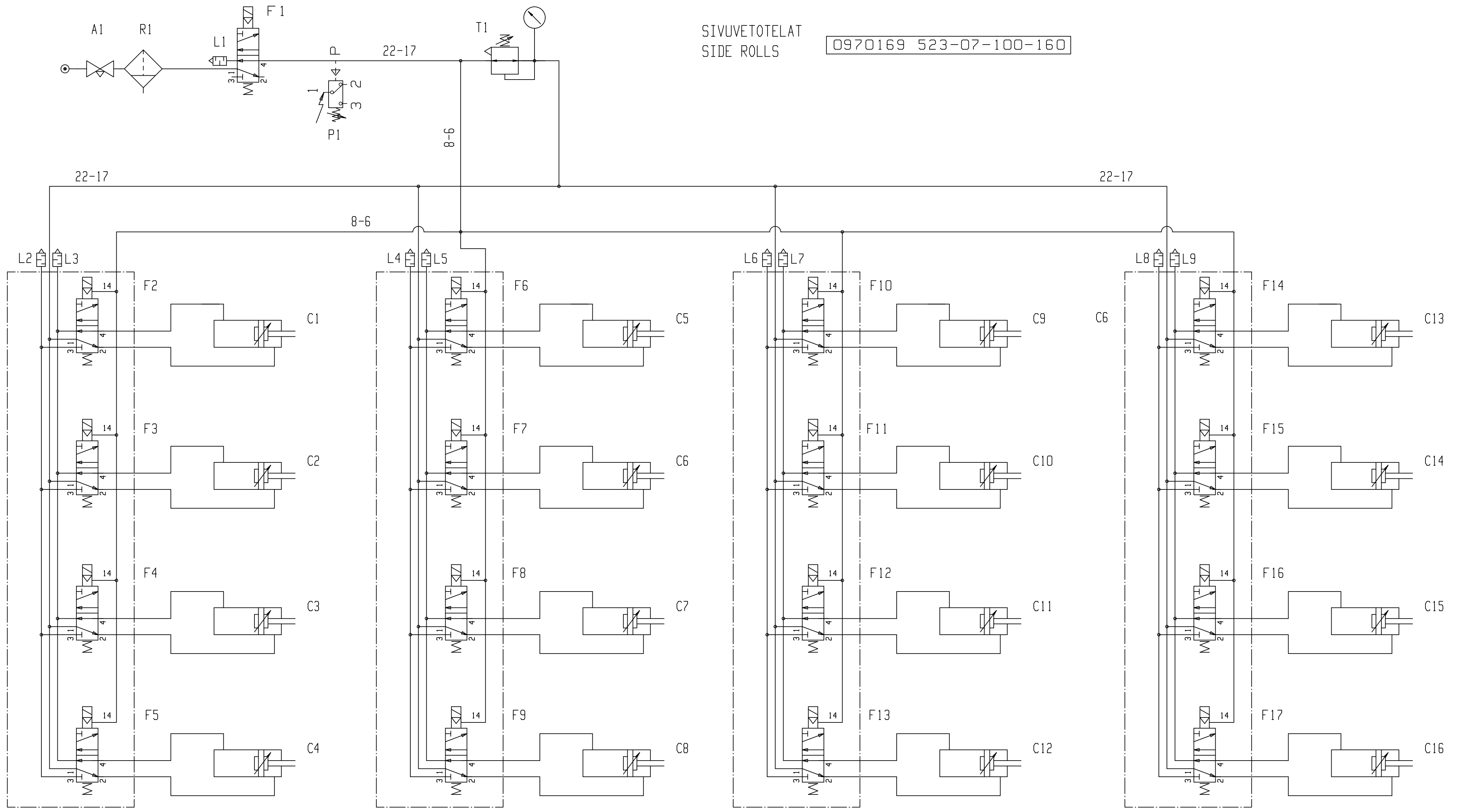
Tämä piirustus on oma-
suunniteltu ja sen käyttö ilman
HewSaw Oy:n kirjallista lupaa
on kielletty. Mikäli sinulla on
kysymyksiä, ota yhteyttä
meihin osoitteella
HewSaw Oy, PL 100, 01501
Vammala, Suomi.

TYÖTAPA KOHTAISET YLEISTOLERANSSIT: SFS-EN ISO 13920 / 22768-1
*Hitsatut rakenteet: kulma- ja pituusmitat
*Koneistetut kappaleet: pituus- ja kulma- ja
suoruuksien mitat
*Koneistettujen kappaleiden
suoruuksien mitat
*Koneistettujen kappaleiden
pituus- ja kulma- ja
suoruuksien mitat
*Koneistettujen kappaleiden
pituus- ja kulma- ja
suoruuksien mitat


VEISTO GROUP
VEISTO-RAKENNE RAUTIO OY

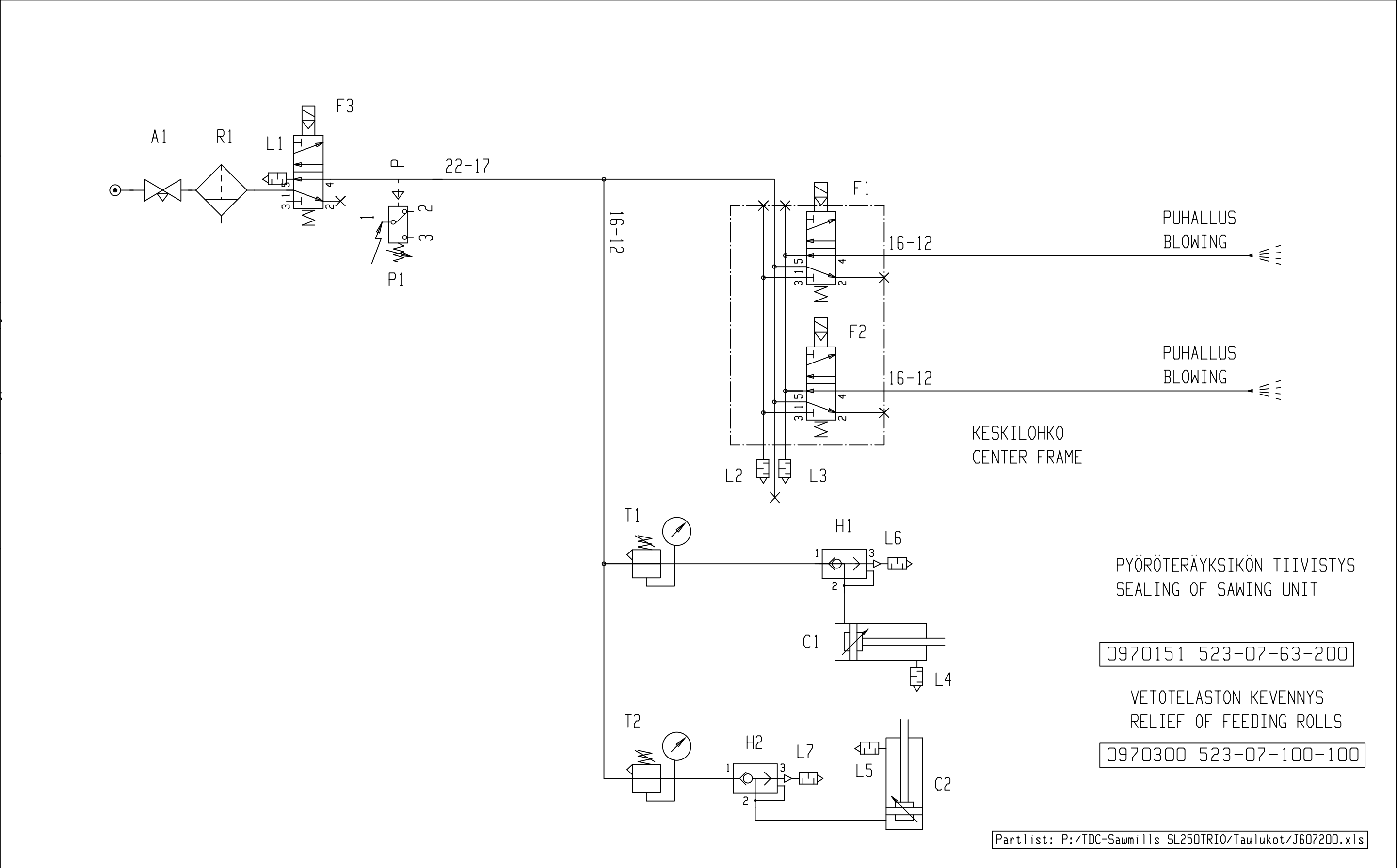
SIVUVETOTELAT
SIDE ROLLS

0970169 523-07-100-160



Partlist: P:/TDC-Sawmills SL250TRI0/Taulukot/J607100.xls

Scale: 1:1	Dr. RKA App.	2001-05-16	Repl./ReplId: Ref. R056111	Weight: From: J023200
 VEISTO GROUP VEISTO-RAKENNE RAUTIO OY			PNEUMATICS CANT CONVEYOR SL250	
			J607100 PNEUMATIikka Job n:o TDC Sawmills Dwg n:o J607100	



0970151 523-07-63-200

PYÖRÖTERÄYKSIKÖN TIIVISTYS
 SEALING OF SAWING UNIT

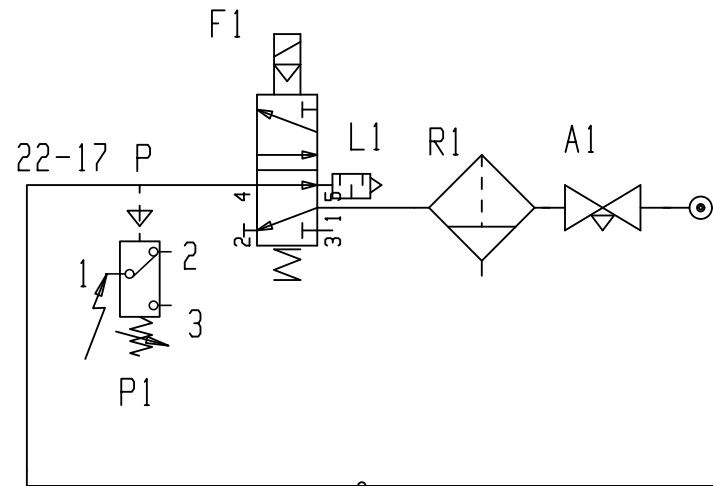
0970300 523-07-100-100

VETOTELASTON KEVENNYS
 RELIEF OF FEEDING ROLLS

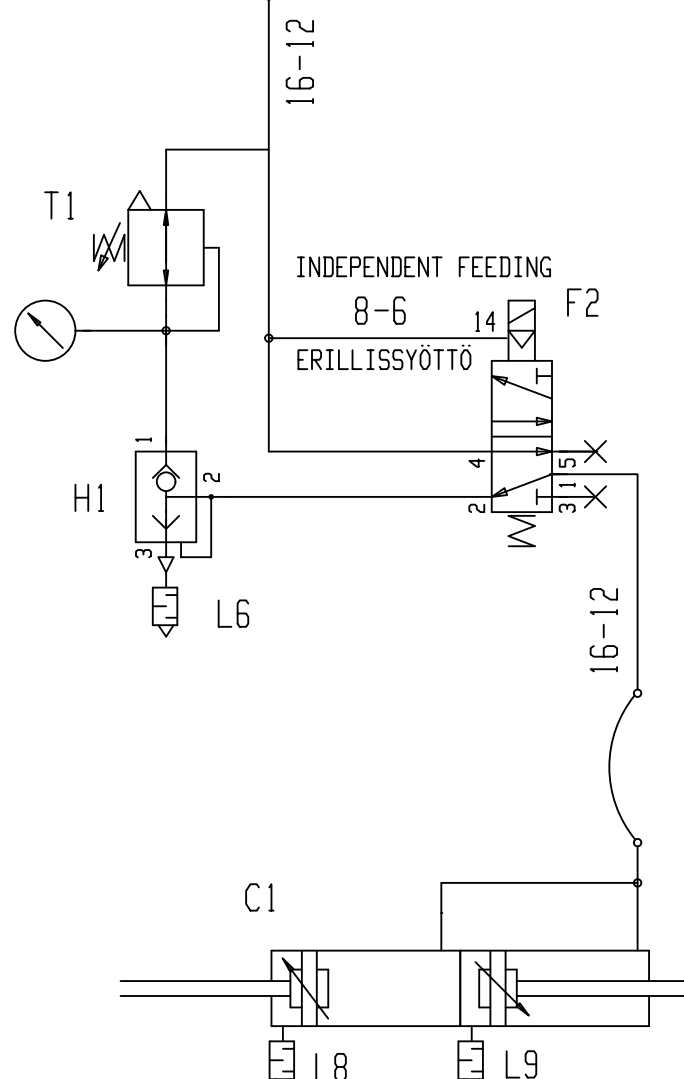
Partlist: P:/TDC-Sawmills SL250TRIO/Taulukot/J607200.xls

Scale: 1:1	Dr. RKA App.	2005-02-24	Repl./Repld: Ref. R056111		Weight: From: J023300
 VEISTO GROUP VEISTO-RAKENNE RAUTIO OY			PNEUMATICS CANT SAW SL250		J607200 PNEUMATIikka Job n:o TDC Sawmills Dwg n:o J607200

This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

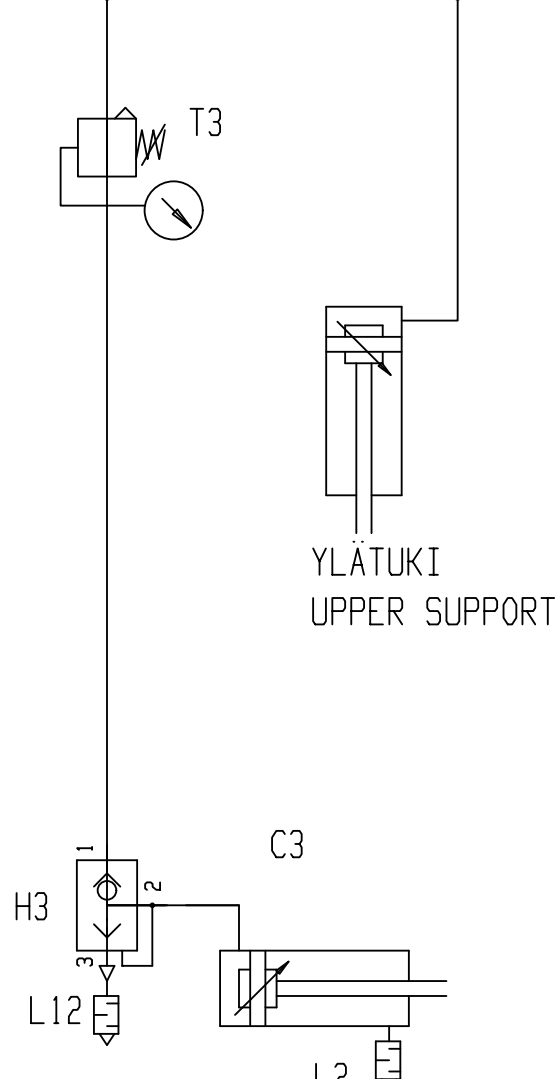


KESKILOHKO
CENTER FRAME



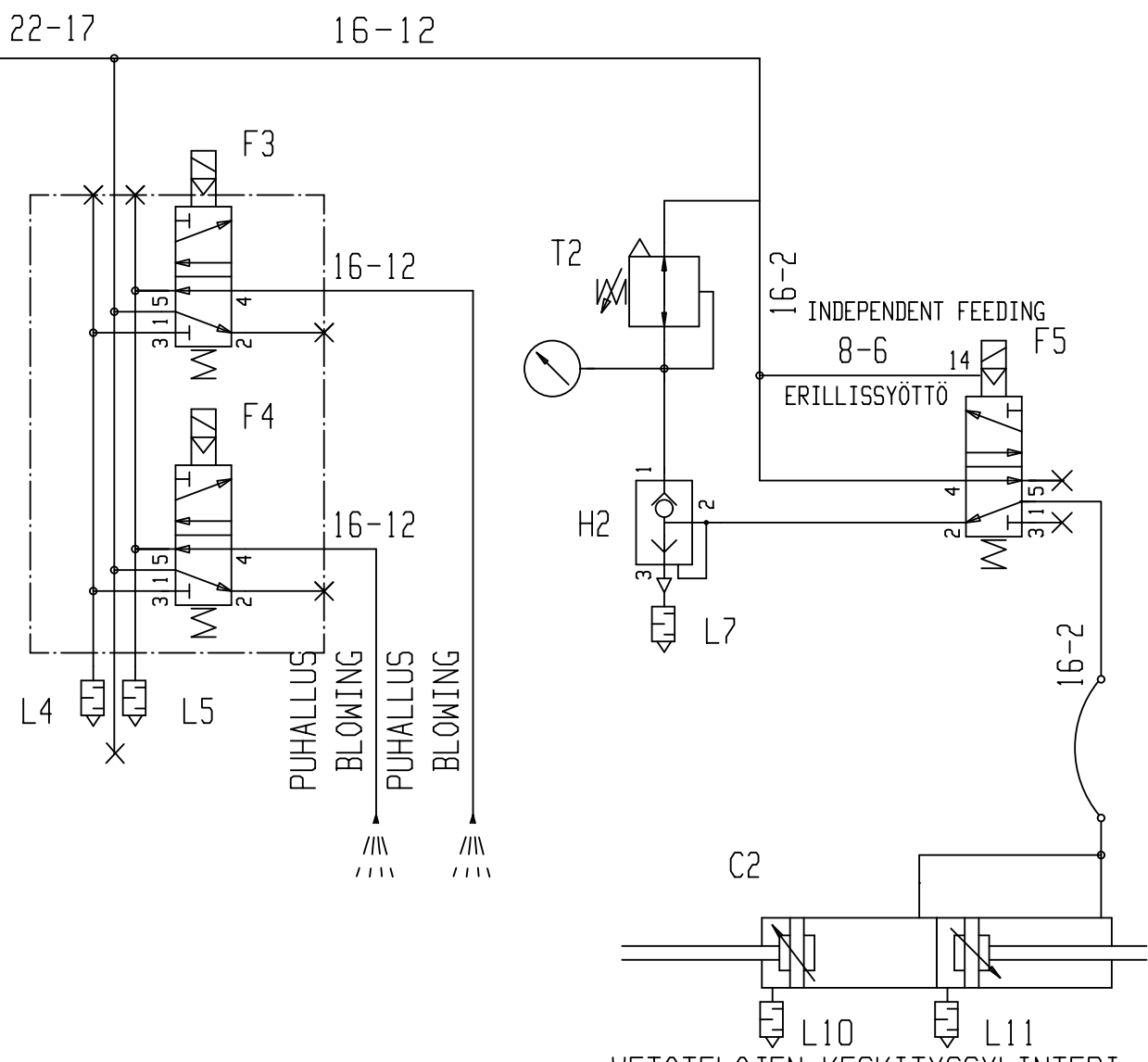
SYÖTTÖTELOJEN KESKITYSSYLINTERI
CENTERING CYLINDER OF INFEED ROLLS

5751200 167-100-65+65



PYÖRÖTERÄYKSIKÖN TIIVISTYS
SEALING OF SAWING UNIT

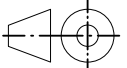

0970151 523-07-63-200



VETOTELOJEN KESKITYSSYLINTERI
CENTERING CYLINDER OF OUTFEED ROLLS

5751200 167-100-65+65

Partlist: P:/TDC-Sawmills SL250TRI0/Taulukot/J607300.xls

Scale: 1:1	Dr. RKA App.	2001-05-17	Repl./Repld: Ref. R056115	 Weight: From: J023400
 VEISTO GROUP VEISTO-RAKENNE RAUTIO OY			PNEUMATICS RIP SAW SL250	

8. SAW PATTERNS

8.1 Chipper canter

The four surfaces of the log are chipped by chipper canter. Automatism uses the measuring conveyor's measuring data to adjust automatically the positions of the chipper heads and the vertical position of the chipper canter centerline.

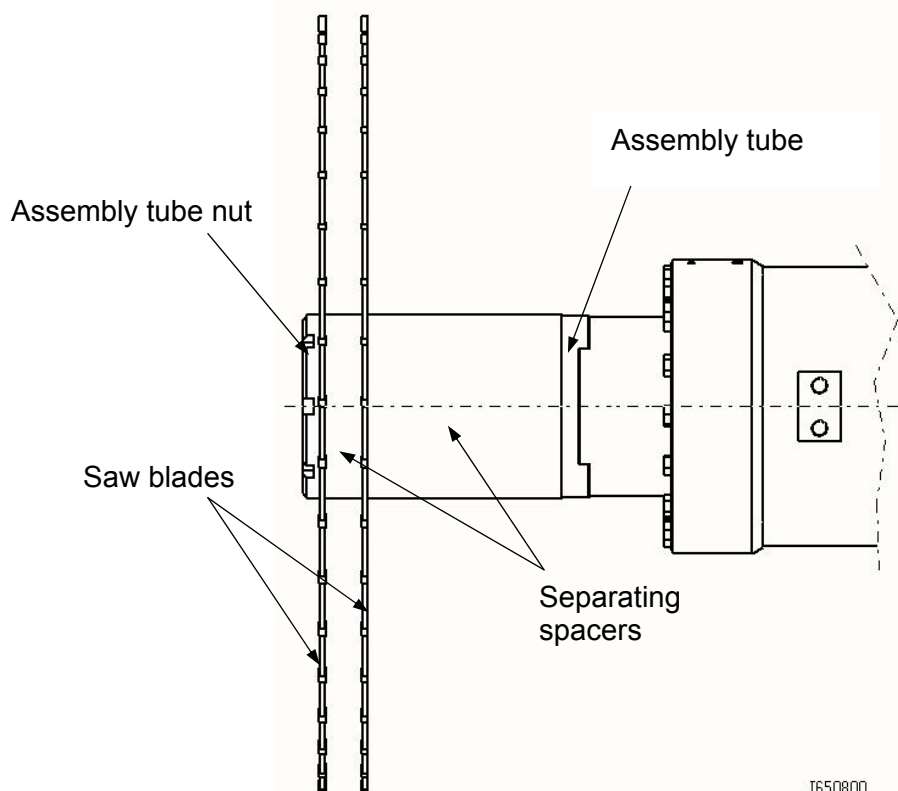
8.2 Cant saw

The cant profile is scanned by the cant scanning conveyor before feeding it to the cant saw. Profile data is used to optimize the side board width and vertical position. In the cant saw these side boards (1-2 / side) are sawed from the chipped cant. After this rip sawing the side boards are edged by two edging units of the cant saw.

8.2.1 Circular saw assembly of the cant saw

The cant saw is equipped with two circular saw units, left and right. Both of these contain two assembly tubes (upper and lower) installed onto the bearing unit. Thereby four saw assemblies are needed in the cant saw. The saw assembly consists of an assembly tube, circular saw blades and separating spacers between them. This assembly is built in a separate assembly jig by assembling the one or two saw blades ($\text{Ø } 550 \text{ mm}$) and separating spacers on the assembly tube. The separating spacer between the saw blades defines the thickness of the side board closer the cant centerline when sawing two side boards from one side. The minimum thickness of this side board is 19 mm. Note that the separating spacers are manufactured to very tight tolerances to achieve the best performance of the saws.

Pay attention to the rotation directions when building a saw assembly. The correct torque for the nut of the saw assembly tube is 200 Nm.



8.2.2 Edging assembly of the cant saw

After the sawing side boards are edged by two edging units of the cant saw. The edging unit 1 (Ø 252 mm) is closer the sawing unit than edging unit 2 (Ø 316 mm). The first unit is used to edge the outer boards while the second unit edges the inner side boards.

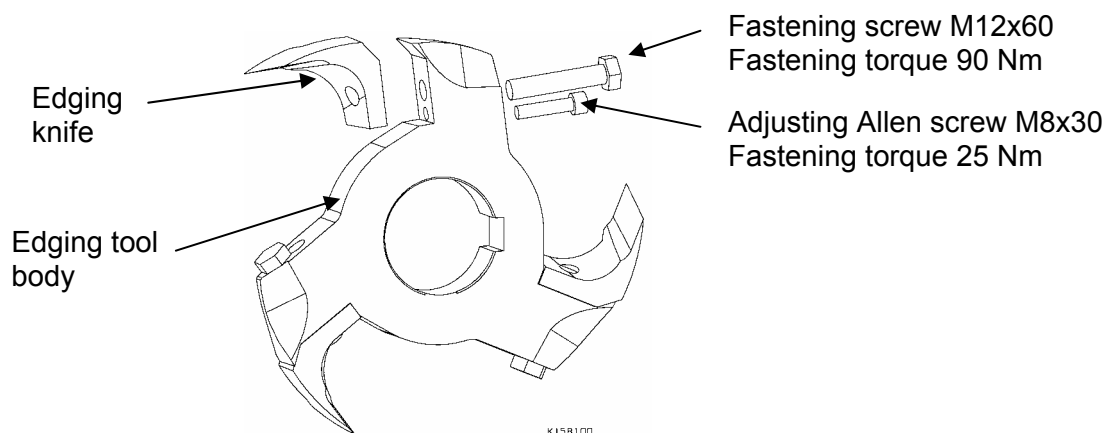
Both edging units contain four edging tool unit, which move vertically and horizontally. Automatism positions all edging assemblies according to the measuring results of the cant scanner.

When assembling the edging assemblies, note that the edging tools are 2-clips in the edging unit 1 and 3-clips in the edging unit 2. Pay also attention to the rotation directions of the edging tool units.

Assemble the edging tools onto the assembly tube by using assembly jig K249900 (See the assembly drawing K249800 for the edging unit 2 on the page 8/4). Use the adjusting device (see drawing J538600 on page 8/5) to adjust edging knives into the correct position.

Procedure:

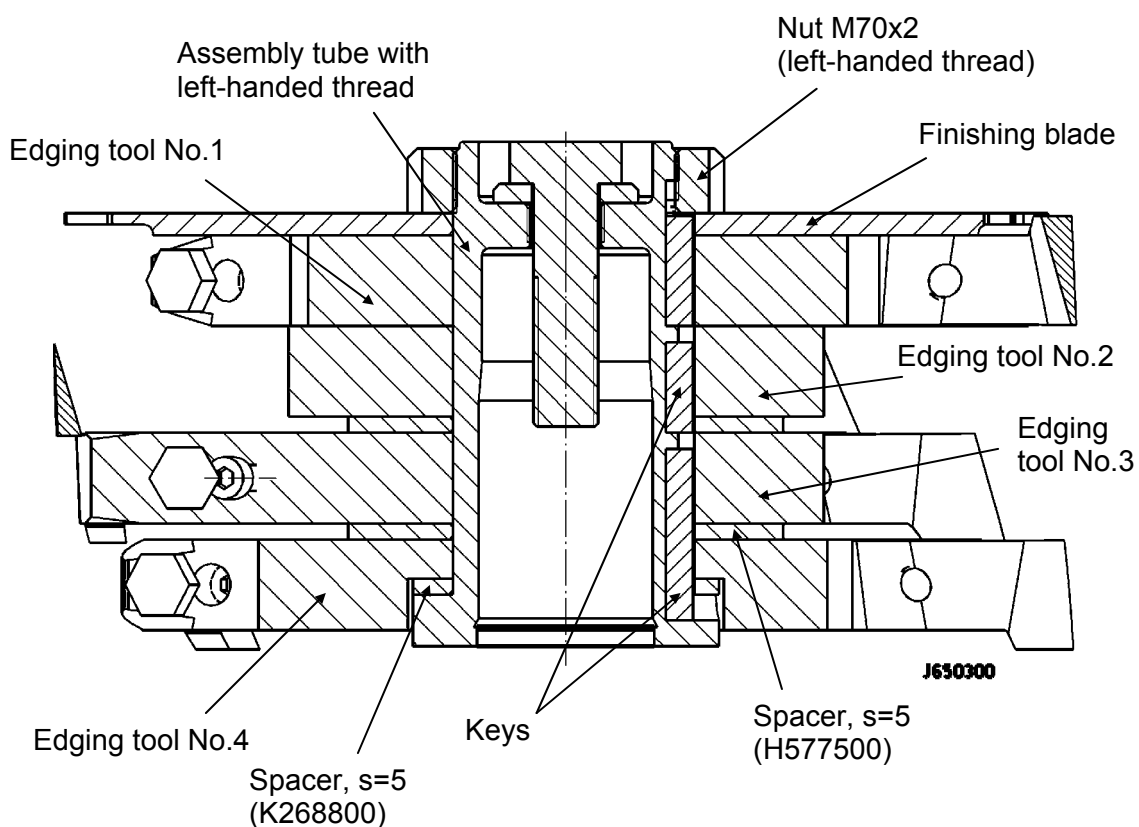
1. Measure and adjust (if needed) the adjusting device.
2. Set the adjusting screws (Allen screws) to their place in the edging tool body. The top of the screw must not extend over the attaching surface of the edging knife.
3. Fasten the edging knives to the edging tool body by using hex screws.
4. Set the assembled edging tool to the adjusting device. Rotate the edging tool counterclockwise carefully. The edge of the edging knife has to be at the same distance as the gauge. Unfasten the hex screws and adjust the edging knife to the correct place by using the adjusting screws if needed.
5. The correct torque for hex screws is 90 Nm.
6. In case there's no need to use adjusting screws, fasten the adjusting screws. The correct torque for adjusting screws is 25 Nm.



There is no need to dismantle the edging tool bodies from the assembly tube when changing or sharpening the edging knives. Unfasten the knives from the bodies and change them during daily maintenance.

Building the right lower edging assembly (edging unit 2, cant saw)
 (See drawing K249800 on page 8/4)

1. Fasten sharpened edging knives to the edging tool bodies. Check from the assembly drawing that the rotation directions and parts are correct.
2. Install spacer K268800 and lift the first edging tool (No.4) onto the assembly tube (left-handed).
3. Set 5 mm thick spacer H577500 on top of the edging tool.
4. Lift the second edging tool (No.3) on its place.
5. Install another spacer onto the assembly tube.
6. Lift the third edging tool (No.2) and the fourth edging tool (No.1) onto the assembly tube.
7. Finally install a finishing blade and lock the edging assembly with a nut (M70x2, left-handed thread). Fastening torque of the nut is 400 Nm.

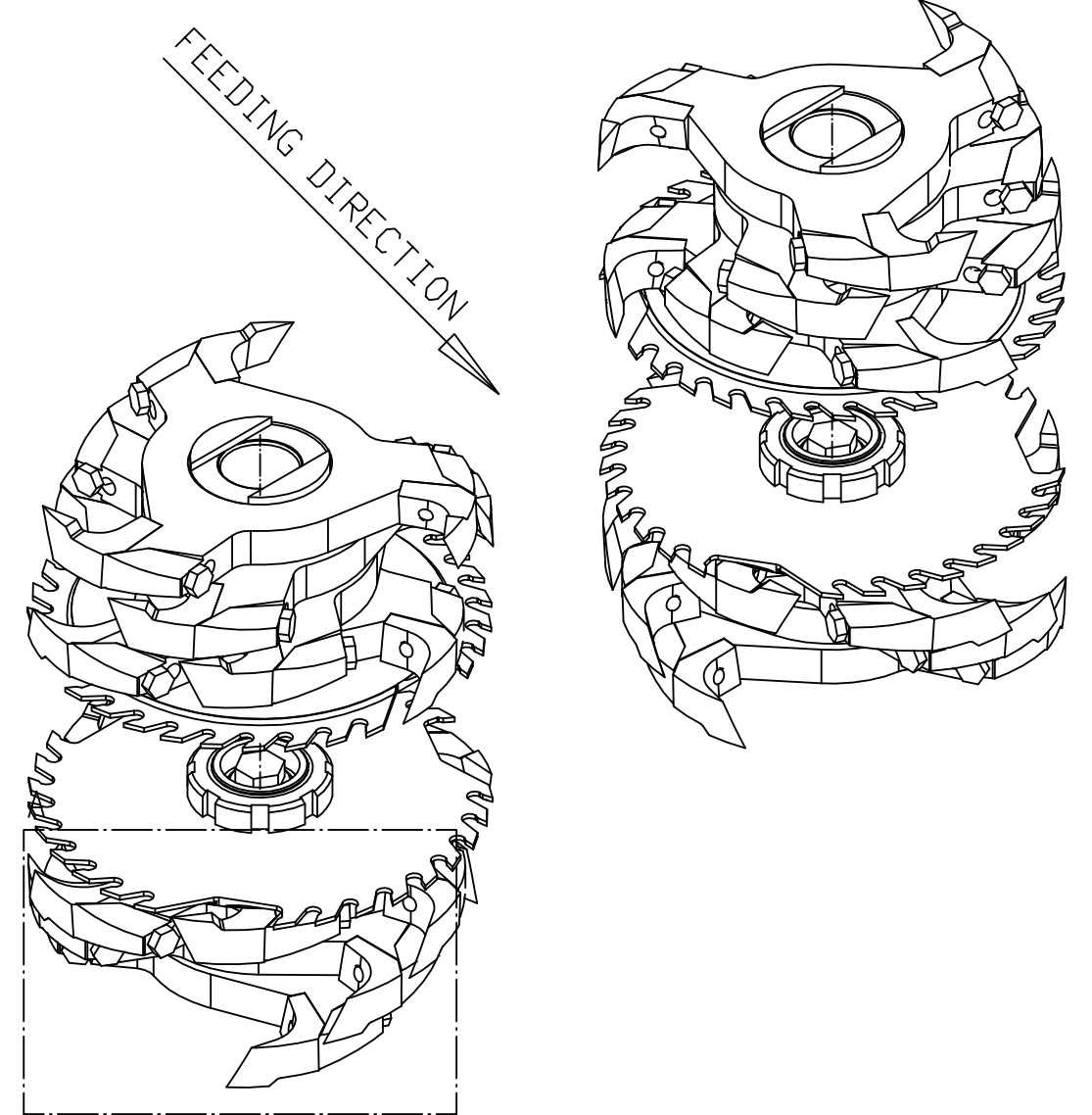
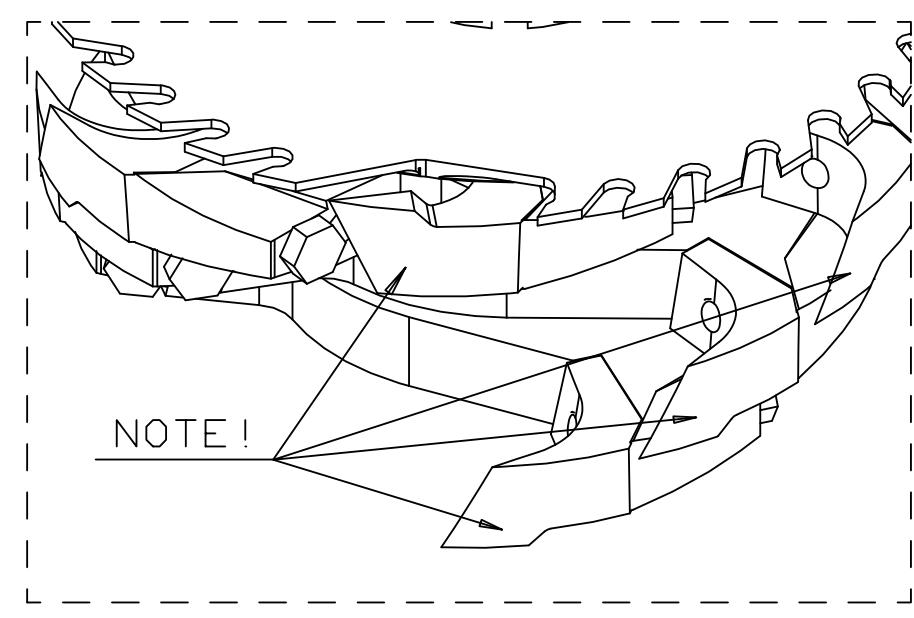
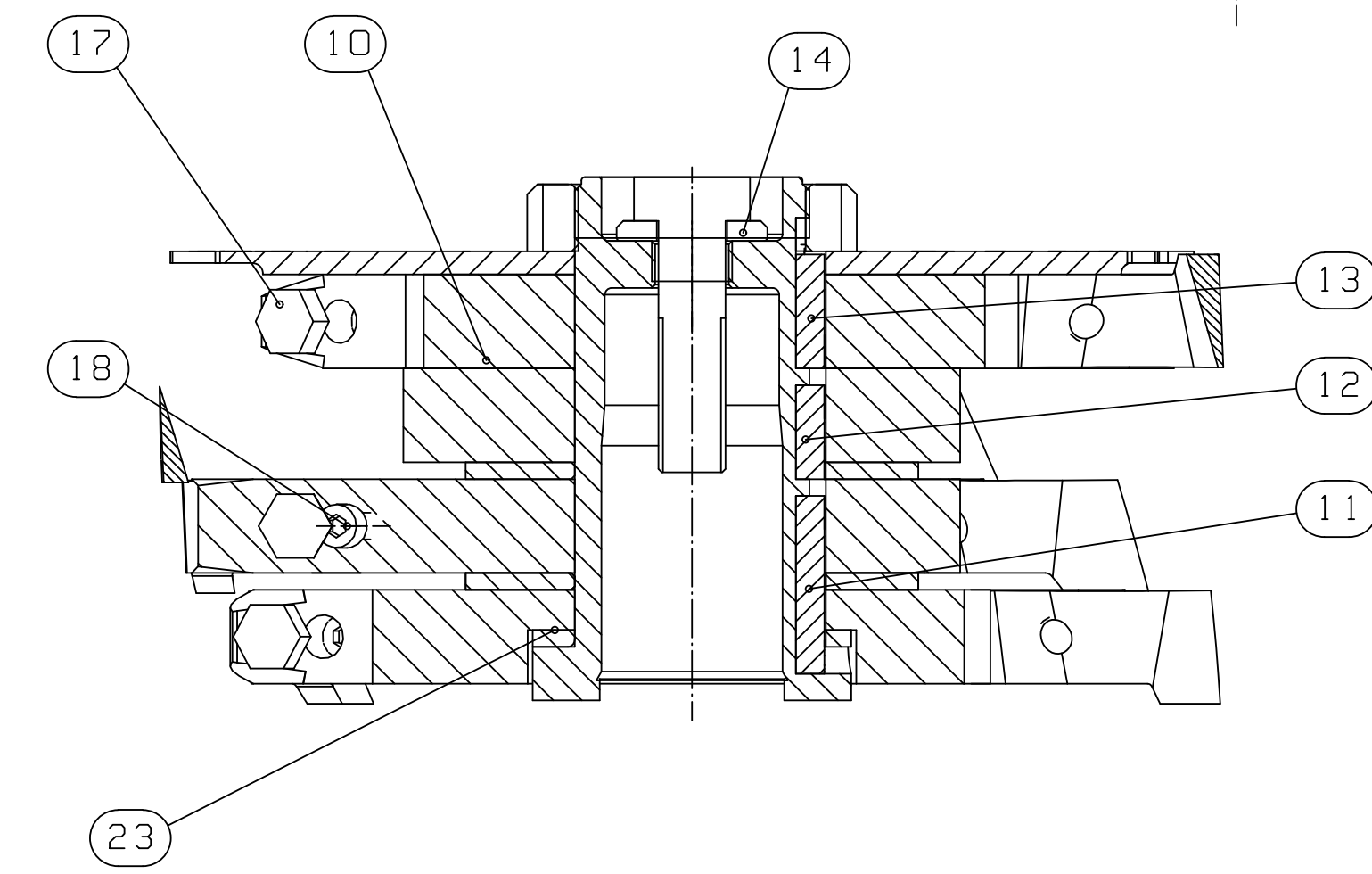
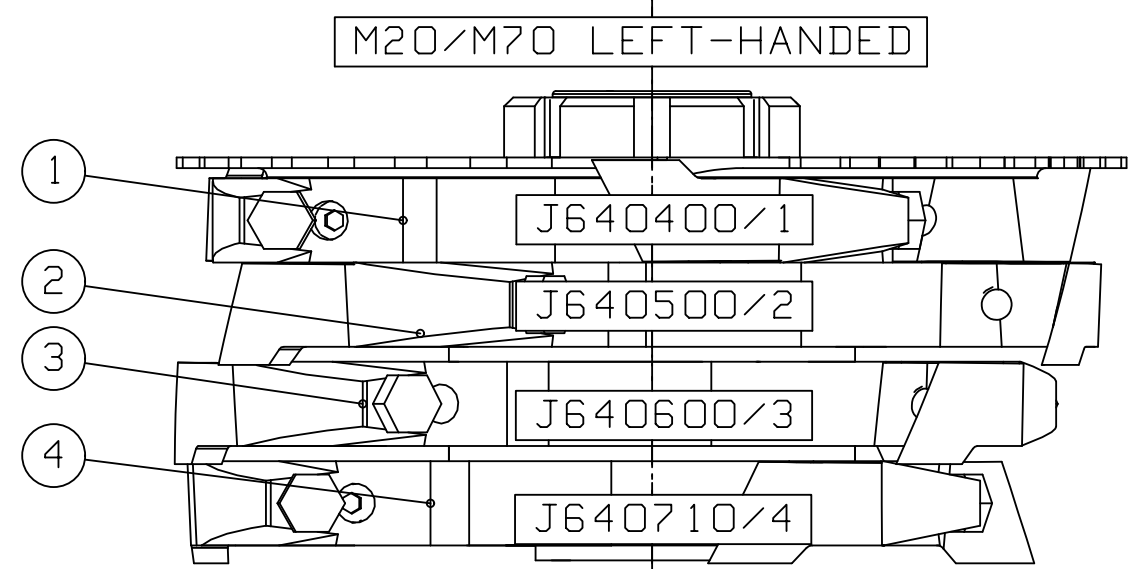
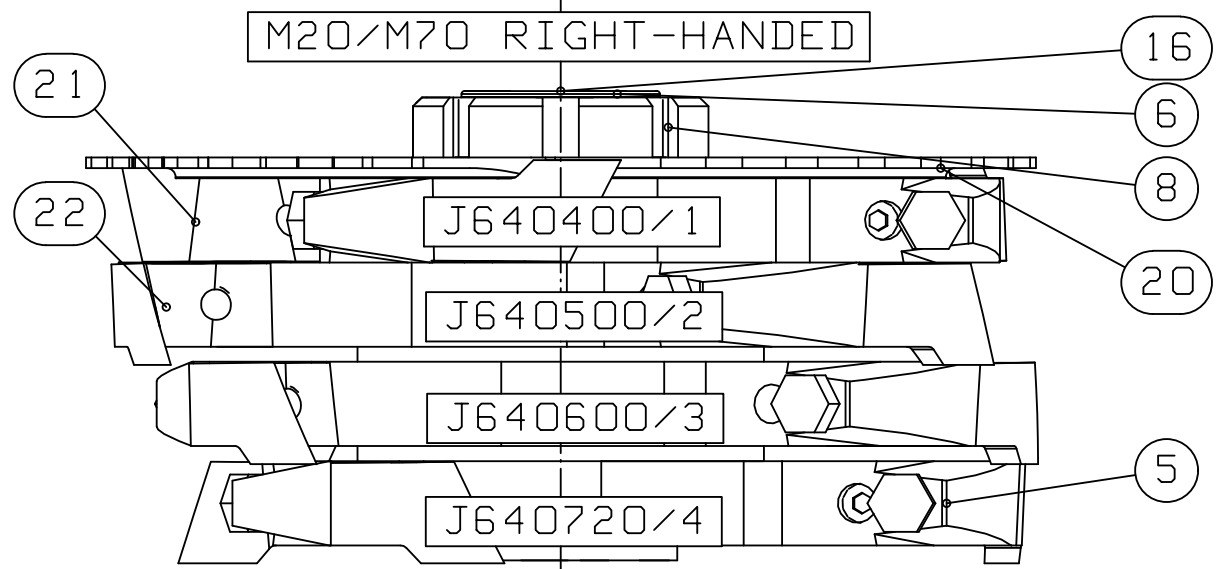
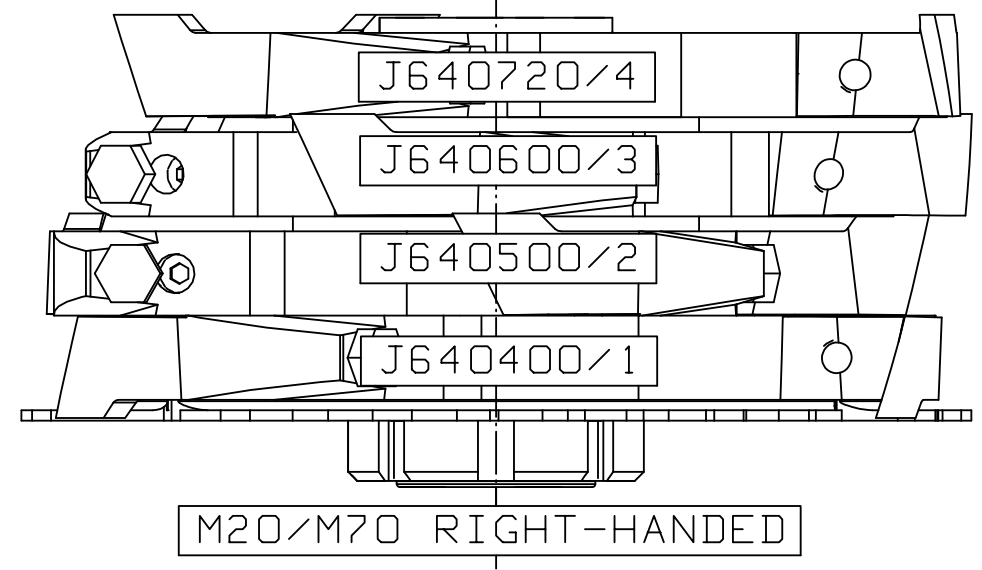
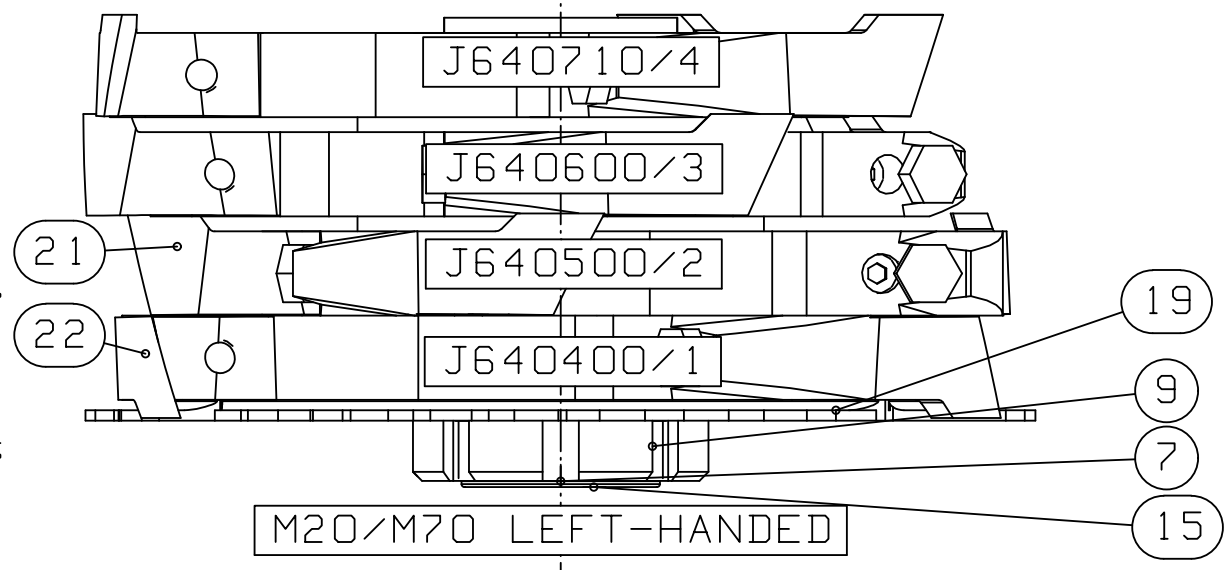


HEWLETT-PACKARD CORPORATION
 Hewlett-Packard Company
 This drawing is our property and it is not
 allowed to be copied, reproduced, transmitted or
 communicated to the third party or utilized
 in any way without our consent.
 Tämä piirustus on oma-
 suutamme eikä sitä saa
 kopioida, jäljentää, levittää
 tai muuten julkistaa
 ilman meidän lupamme
 ilman kuluja.

YÖTAPAKOHITAISET YLEISTOLERANSSIT: SES, EN, ISO 13920 / 22768-1
 *Hittisetu rakenteet: kulma- ja pituusmitat
 *Koneistetut kappaleet: pituus- ja kulmamitat

LEFT

RIGHT



HOLKKIMUTTERIN AVAIN J372300

23	K268800	ALUSPALA Ø70/Ø95...5 mm SÄRMÄYSASETTE R200/R250	4
22	F430420	KURSOPALA SÄRMÄYSKURSOON SÄÄDETTÄVÄ	24
21	F430410	KURSOPALA (Piiir.muk) SÄRMÄYSKURSOON SÄÄDETTÄVÄ	24
20	J641020	OTSATERÄ Ø316 / 3-SPIRAALI d=70	2
19	J641010	OTSATERÄ Ø316 / 3-SPIRAALI d=70	2
18	0902064	KUUSIORUUVI M8X30 DIN 912 8.8 PINTAK.	48
17	0900115	KUUSIORUUVI M12X60 DIN 931 8.8 PINTAK.	48
16	0900198	KUUSIORUUVI M20X75 DIN 931 8.8 PINTAK.	2
15	J566000	KUUSIORUUVI M20X75 DIN 931 VAS.KÄT SÄRMÄYSYKSIKKÖ	2
14	J243000	LAIPPA 45/21 S=6 SÄRMÄYSYKSIKKÖ	4
13	J246100	KIILA L=34 SÄRMÄYSYKSIKKÖ	4
12	J246020	KIILA SÄRMÄYSYKSIKKÖ	4
11	J246010	KIILA SÄRMÄYSYKSIKKÖ	4
10	H577500	LAIPPA 135/70 s=5 SÄRMÄYSYKSIKKÖ	9
9	J242310	MUTTERI M70x2 VASENKÄTINEN SÄRMÄYSYKSIKKÖ	2
8	J242300	MUTTERI M70x2 OIKEAKÄTINEN SÄRMÄYSYKSIKKÖ	2
7	J241110	KURSOHOLKKI VASENKÄTINEN M70x2 SÄRMÄYSYKSIKKÖ	2
6	J241100	KURSOHOLKKI OIKEAKÄTINEN M70x2 SÄRMÄYSYKSIKKÖ	2
5	J640720	SÄRMÄYSKURSONR. Nro.4 Z3 D316 d70	2
4	J640710	SÄRMÄYSKURSONR. Nro.4 Z3 D316 d70 SÄRMÄYS	2
3	J640600	SÄRMÄYSKURSONR. Nro.3 Z3 D316 d70	4
2	J640500	SÄRMÄYSKURSONR. Nro.2 Z3 D316 d70	4
1	J640400	SÄRMÄYSKURSONR. Nro.1 Z3 D316 d70	4
Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kpl

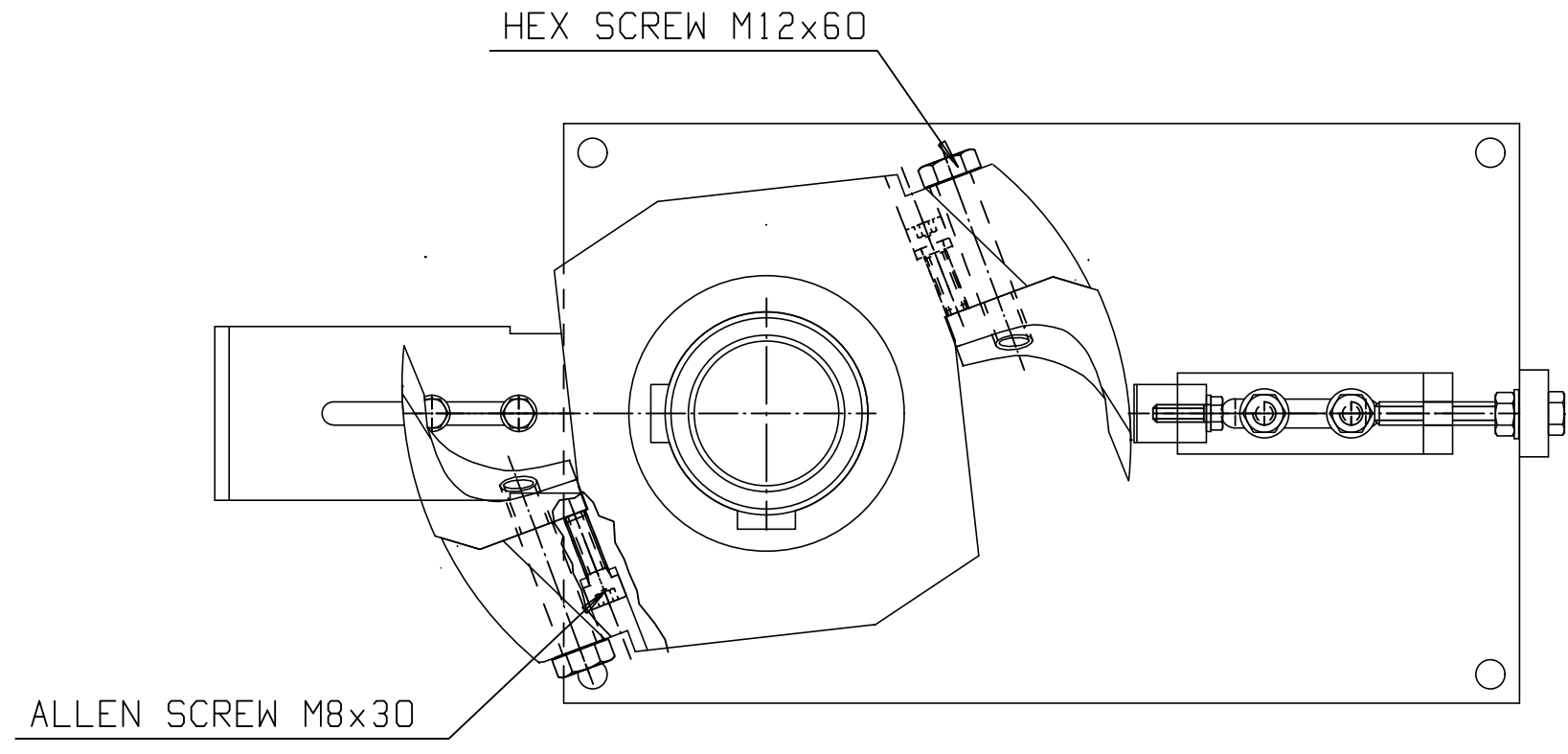
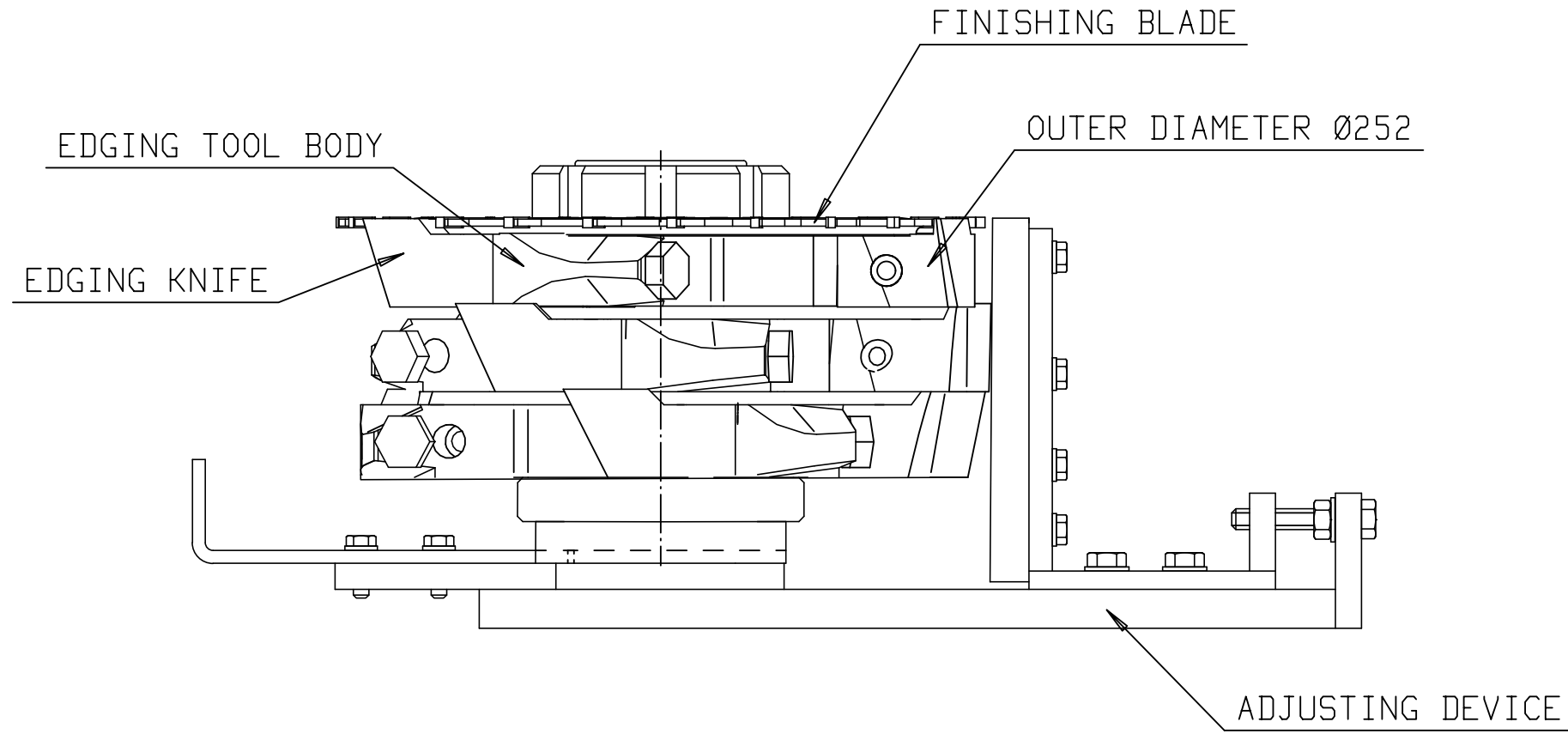
KOHTA A

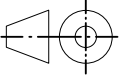

LEIKKAUS A-A
1:2



KURSOJEN RUNGOT 4x 3-LEIKKUINEN
 SÄRMÄYSYKSIKKÖ
SL250 TRIO

Suhde: 1:2.5	Piirt.AK	2005-05-31	Korvaa/Korvattu: Liittyy: K179200	Massa: Esikuva: J430800
K249800 R250TRIO-II				Työ n:o TDC
Piir n:o				K249800

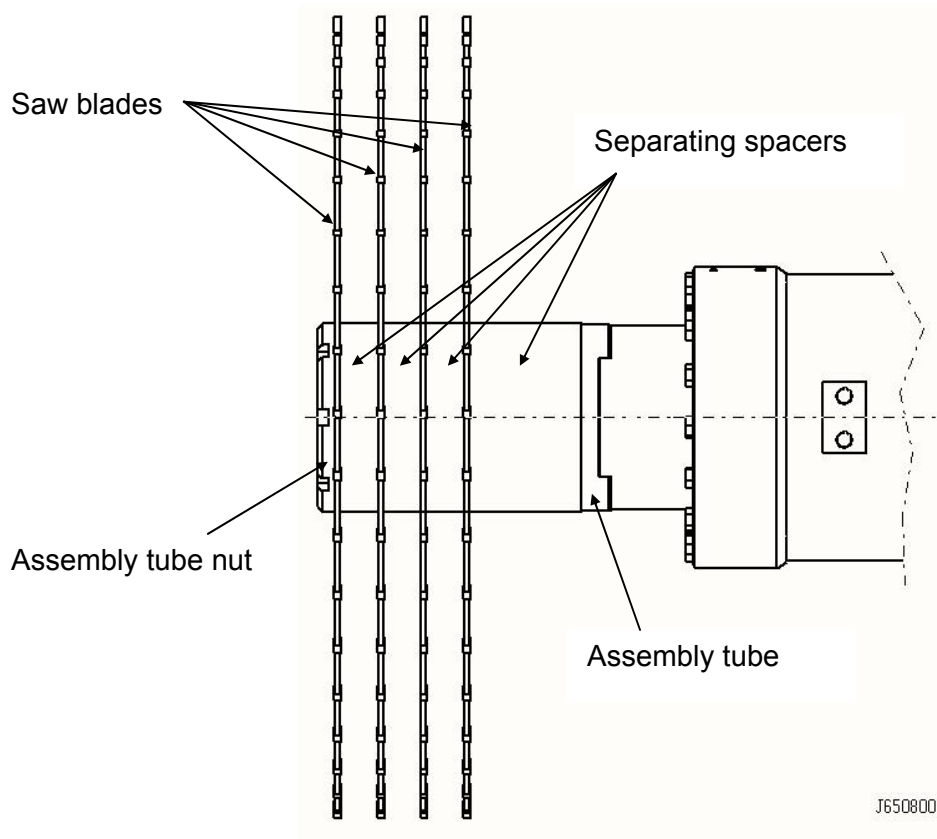


Scale: 1:2.5	Dr. PL App.	2004-07-09	Repl./Repld: Ref.	 Weight: From: J460900
 VEISTO GROUP VEISTO OY			ADJUSTING THE EDGING TOOL EDGING UNIT	

8.3 Rip saw

8.3.1 Circular saw assembly of the rip saw

The rip saw contains four sawing spindles as the cant saw. Circular saw assemblies (\varnothing 450 mm) are installed onto the all four shafts paying attention to the rotation directions. Several saw blades can be mounted onto the assembly tube and distances between saw blades (thickness of sawn goods) are defined with the separating spacers. When changing the position of the assembly tubes, the whole circular saw unit (left or right) is being moved. The fastening torque of the assembly tube nut is 200 Nm.



8.3.2 Edging assembly of the rip saw

After rip sawing side boards are edged in the edging unit. The edging unit contain four edging tool unit, which move vertically and horizontally. Automatism positions all edging assemblies according to the measuring results of the cant scanner.

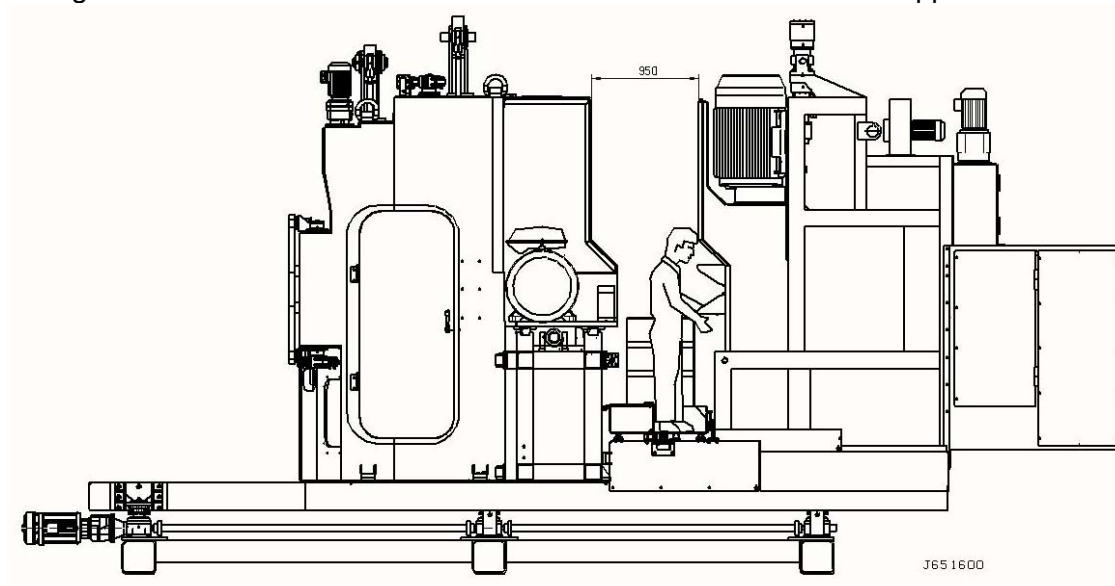
Assemble the edging tools (\varnothing 316 mm) onto the assembly tube according to an assembly drawing. The edging assemblies for the rip saw are built the same way as the edging assemblies of the cant saw. Note that the edging tools are 3-clips in the rip saw.

9. CHANGING THE CUTTING TOOLS AND ASSEMBLIES

Pay extra attention to the cleanliness of the parts when changing or maintaining saw assemblies. Before making any actions ensure that these operations can be carried out safely.

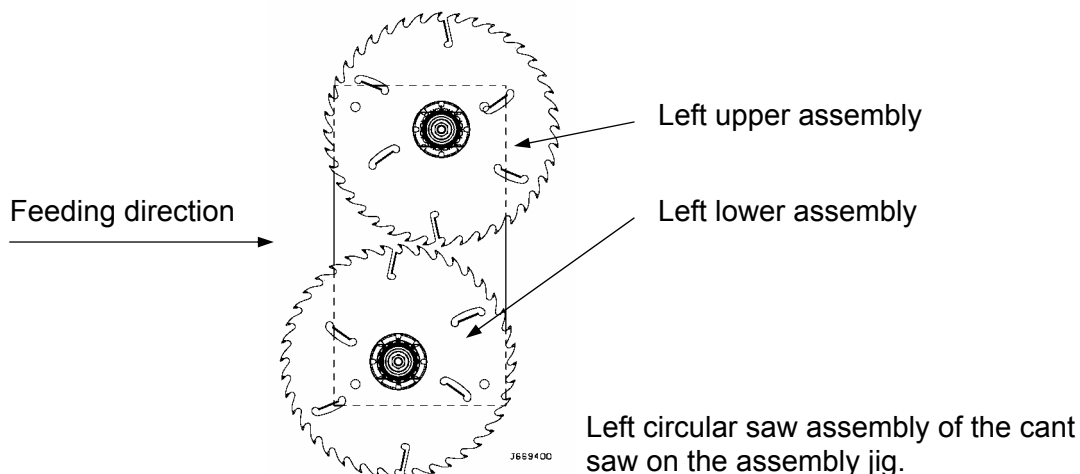
9.1 Changing chipping knives of the chipper canter

The chipper canter is opened to service position when changing chipping knives or maintaining it in other ways. During opening the rear part of the machine is moved 950 mm backward, chipper head are transferred to the service position and service platform is driven to cover the opening in between the frame blocks. This enables easy access from the right side of the machine to between the horizontal and vertical chipper heads.



9.2 Lifting the circular saw assemblies

Circular saw assemblies are changed in the same way in the cant saw and rip saw. The right circular saw unit is moved out of the sawing machine along roller guide rails and the circular saw assembly is lifted carefully in its place. Check that the slots in the assembly tube shoulder match with the shaft. When the saw assembly is correctly installed, fasten the assembly tube onto the shaft by using hex screw M20x100. Fastening torque is 200 Nm. Repeat these procedures until all assemblies are changed. Ensure that the rotation directions and alignments are correct before moving the right circular saw unit in its place.



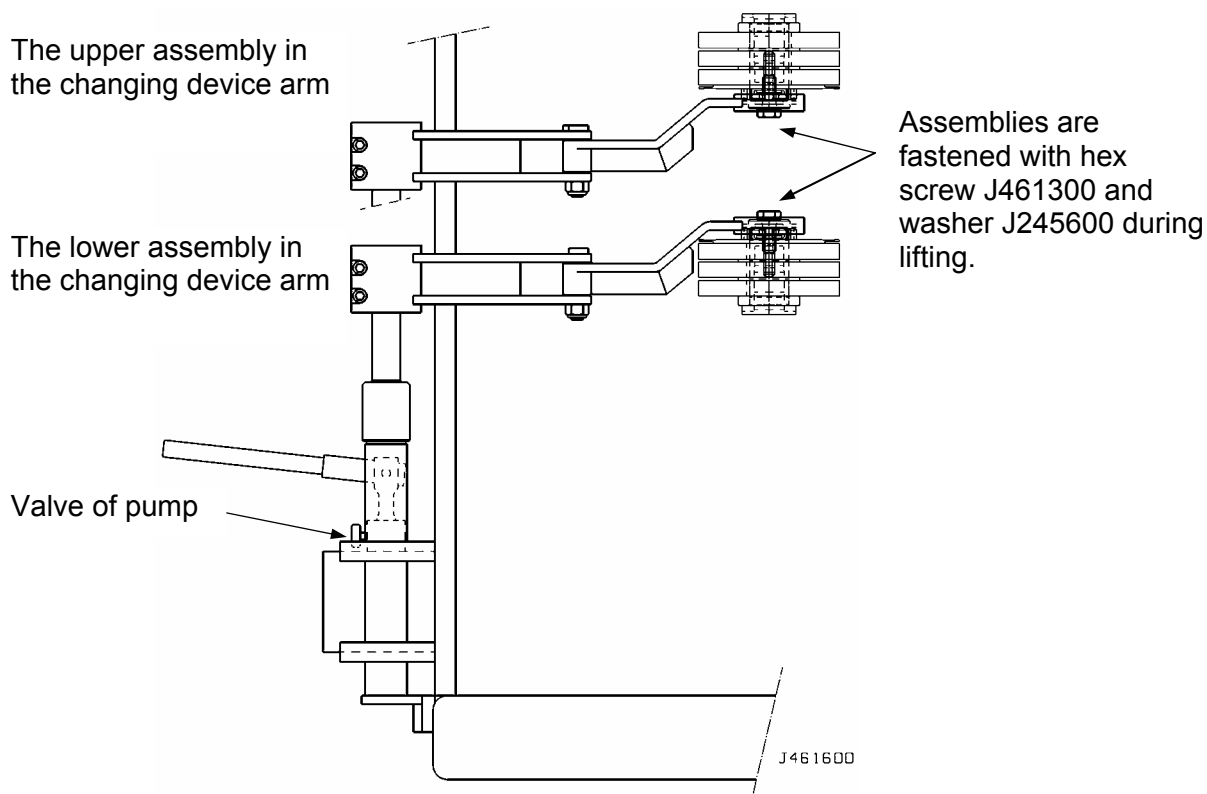
9.3 Lifting the edging assemblies

After the edging assemblies are assembled those are lifted into the edging unit shafts by using the edging assembly changing devices located on the both sides of the edging units.

Changing the left upper edging assembly

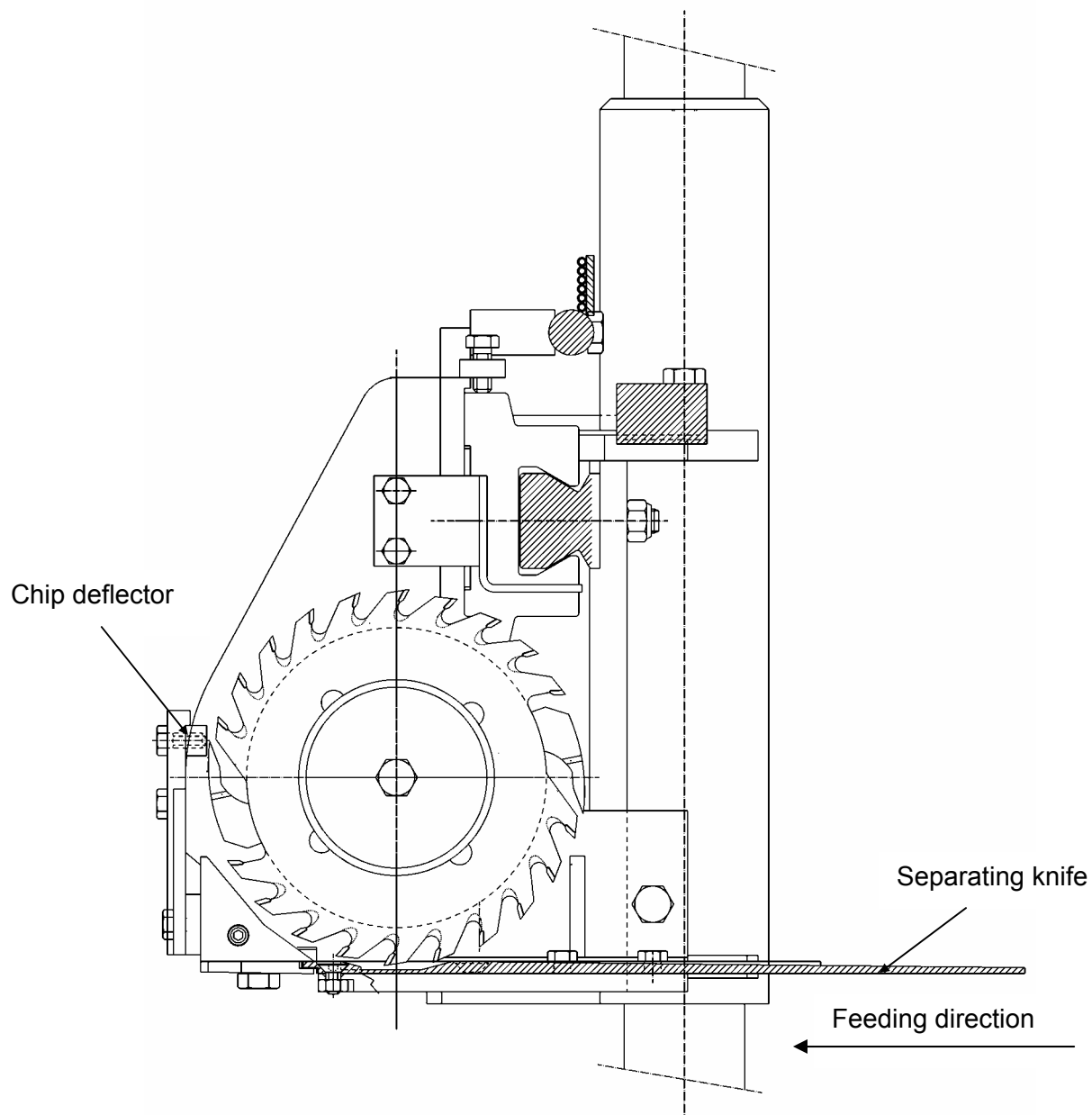
1. Attach the edging assembly to the arm of the changing device by using a hex screw J461300 (M24x50, key opening 30 mm) and washer J245600.
2. Move the assembly inside the edging unit and guide it to the same line with the bearing unit shaft. Rotate the assembly tube until its slots matches with the shaft. Check that the edging assembly goes correctly in its place while lifting it up by using manual pump.
3. Replace the hex screw J461300 and washer J245600 with a flange J243000 and hex screw M20x75. Fastening torque of the screw is 200 Nm.
4. Move the changing device arm outside and close the door.

When changing a lower edging assembly move it above the bearing unit shaft and then use the valve of lifting pump to lower assembly in its place. Fasten the assembly same way to the shaft as the upper assemblies.



After the edging assemblies are installed, rotate assembly and check if it collides with the separating knife or chip deflector (clearance between the chip deflector and edging tool must be 0.5...1.0 mm). Check also the condition of separating knives.

Similar procedures are carried out with the lower edging assemblies. A right lower edging assembly is shown in the drawing below.



10. SERVICE INSTRUCTIONS FOR THE CARBIDE TIP BLADES (Pages 10/3 and 10/4)

10.1 General

In order to keep the circular blades in good condition and to reach the best possible sawing result, the blades need careful service right from the beginning.

Clean the blades every time when assembling or disassembling them, preferably with some solvent. This way the blade body stays clean and prevents resin etc. sticking to it, which may cause heating. If the blade body becomes overheated, the tension disappears and it causes difficulties in sawing.

10.2 How to identify the need for sharpening the carbide tip blade

The sharpening intervals of the carbide-tip blades are relatively long, from a day to a week depending on the material that is being sawn.

The blades used in the HewSaw are recommended to be sharpened after every 2500-5000 sawn logs whether the blades are worn or not.

Frequent sharpening saves the blades and prevents damages and interruptions!

10.3 Sharpening the carbide tip blade

If there are noticeable cracks in the blade tip replace it.

As the carbide tip blade diameter can not be reduced, only the face of the tip can be sharpened.

It is recommended to remove 0.1 mm material from the face. Not more than 2/3 of the blade thickness can be sharpened.

Sharpen the carbide tip blades in a special grinding machine used for this purpose, using a diamond grinding wheel.

Choose the grinding wheel according to:

- Diamond content 75-100 %
- Grain size medium
- Mean coarseness 220

Use slow feeding rate to achieve the best grinding result.

Use either wet or dry sharpening method, although the wet method is often recommended. Both methods have their own type of diamond grinding discs.

10.4 Servicing and sharpening the carbide tip blade step by step

1. Brush the blade clean using some solvent.
2. Examine tips for damages and if possible, replace the damaged tips with new ones.
3. Examine the blade body and have it straightened and strained if necessary.
4. Sharpen the tip face with a diamond grinding wheel, by removing material about 0.1 mm, unless the blade has been driven so blunt that it is necessary to grind more.
5. If carbide tips have been replaced with new ones, sharpen their sides to match the remaining ones.
6. Check once more that the blade body is straight and straighten it if necessary. Check that there are no damaged or blunt tips left. Dry the blades and grease them lightly with protective grease.

10.5 Strob-tooth (Page 10/3)

The STROB-tooth doesn't get blunt as fast as the cutting teeth. However, it should be sharpened every sixth service. Sharpen the STROB-tooth from the face only.

10.6 Finishing blades of the cutter heads (Page 10/5)

Sharpen the finishing blades of the cutter heads according to the instruction of the carbide tip blades.

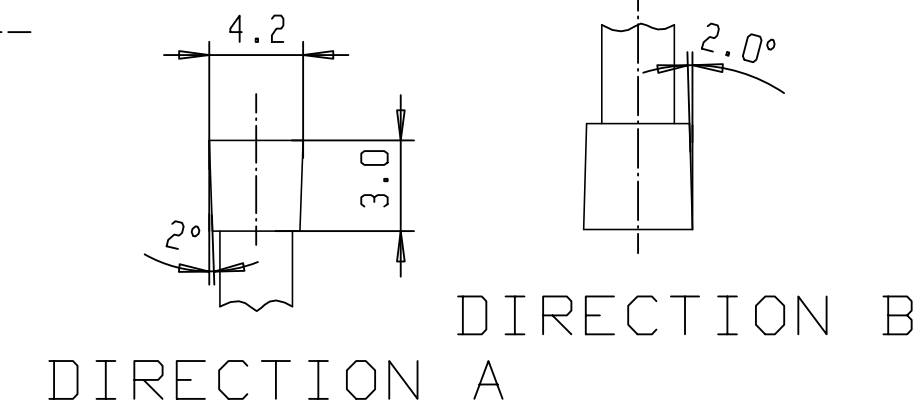
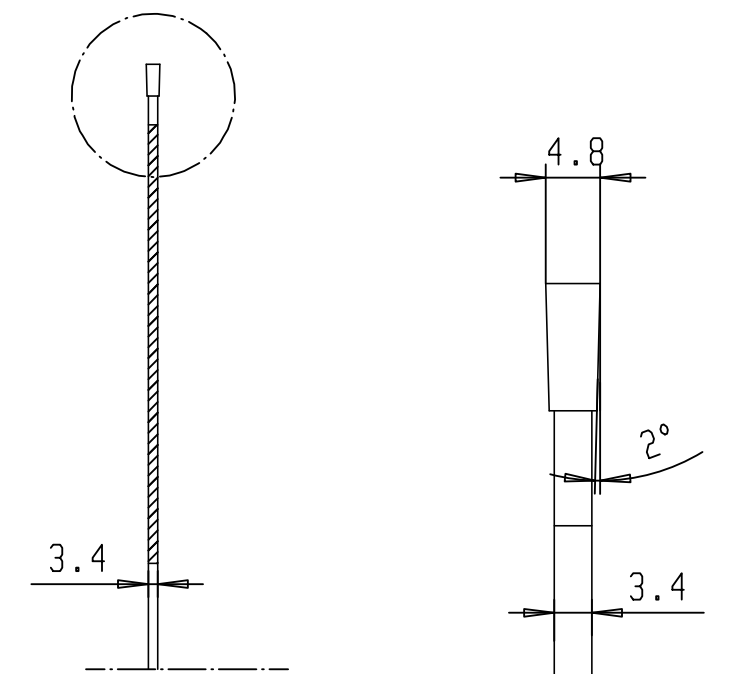
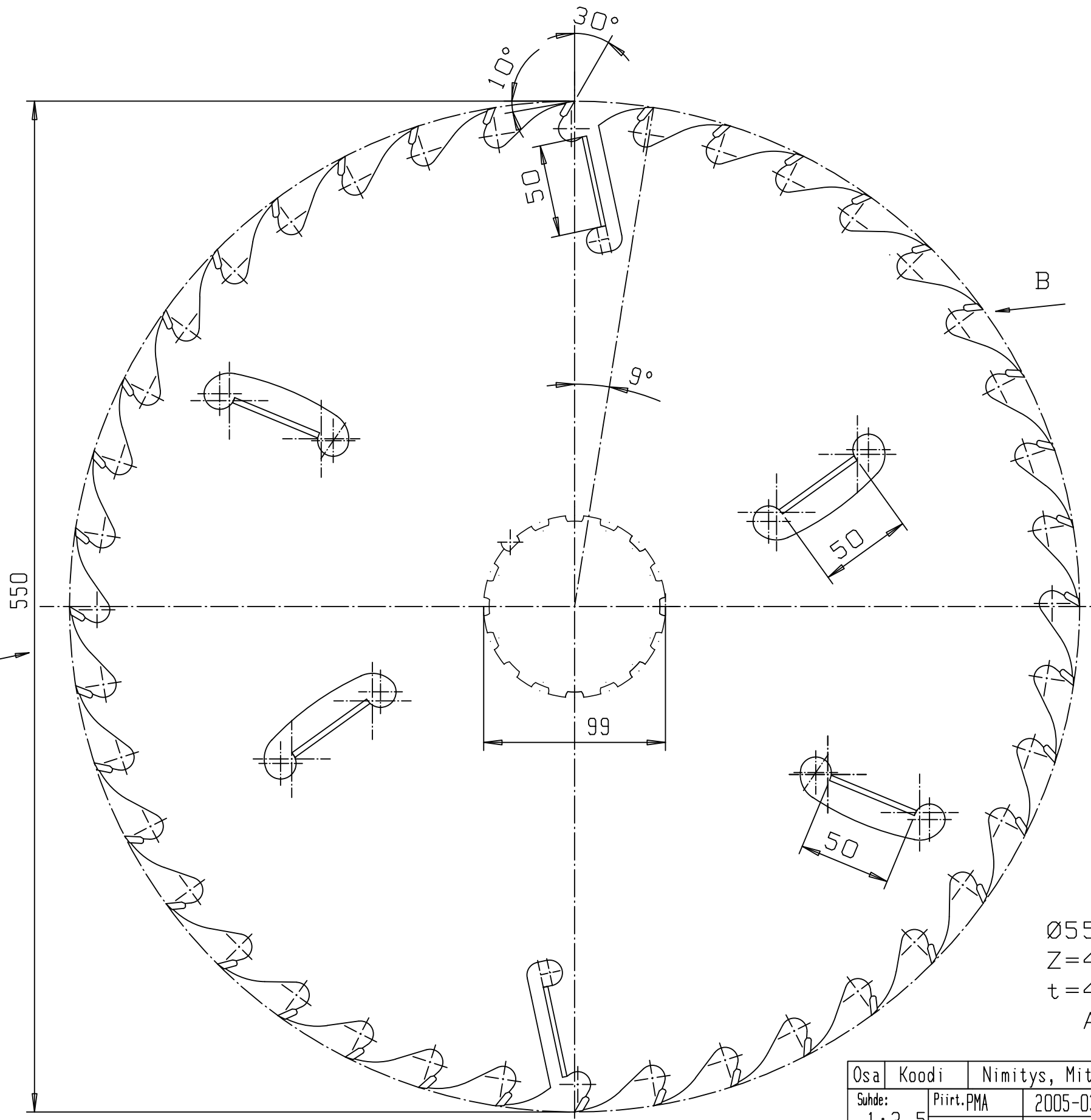
Note! If any of the chipping heads stops because of the overload when using finishing blades, do not move the chipper heads wider before checking that the blades are not inside the log.

Note the dimension 9.2 mm between the finishing blade frame and the edge of the carbide tip (see page 10/5). This dimension must be same after repairing or changing the finishing blades. Remember especially when using other finishing blades than Veisto's.

The side clearance must be 0.5 mm (see drawing on page 10/5). The maximum side clearance is 0.6 mm if carbide tips are changed.

10.7 Finishing blades of the edging tools (See drawings on page 10/6 and 10/7)

Sharpen the finishing blades of the edging tools according to the instruction of the carbide tip blades.



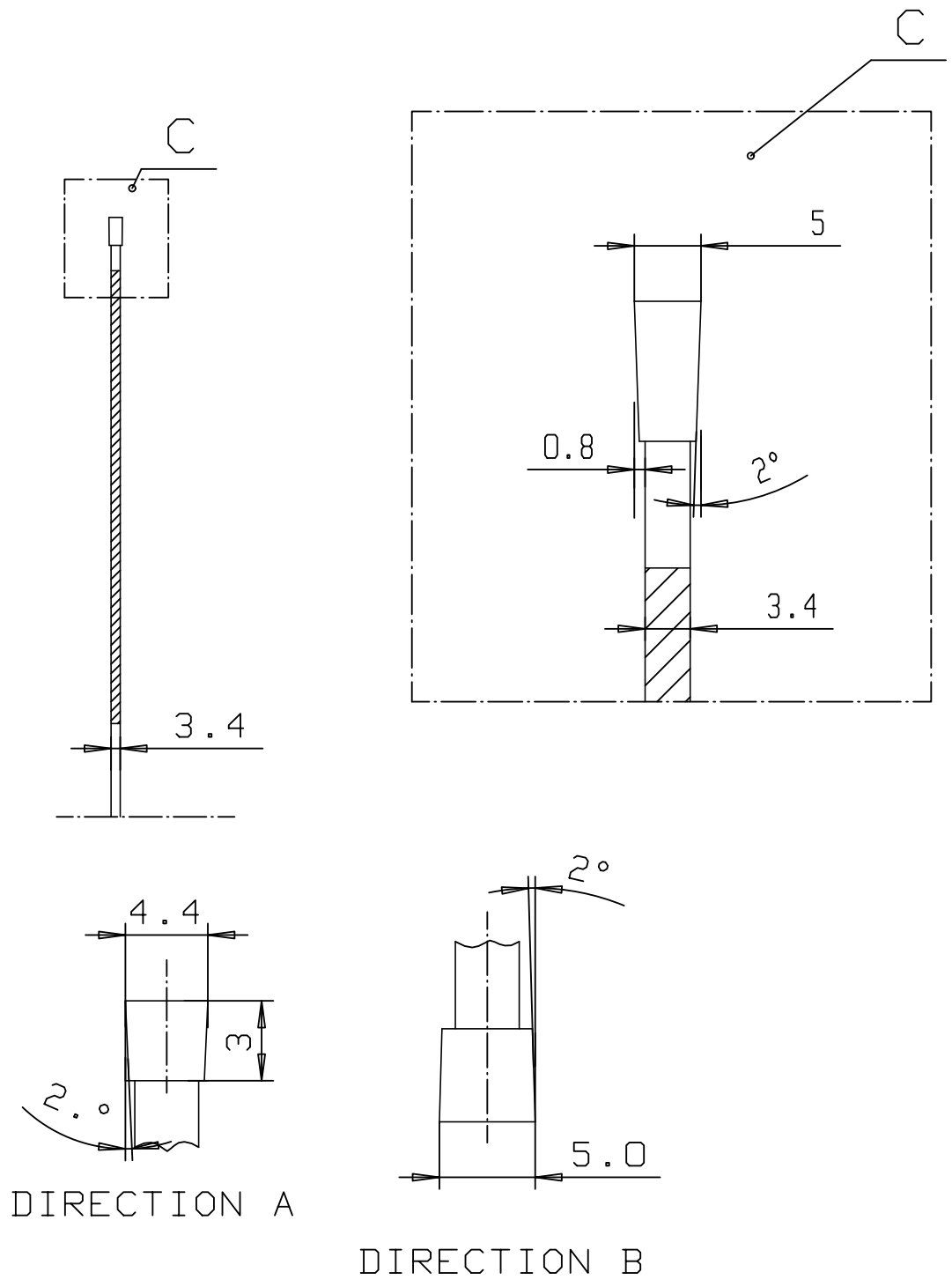
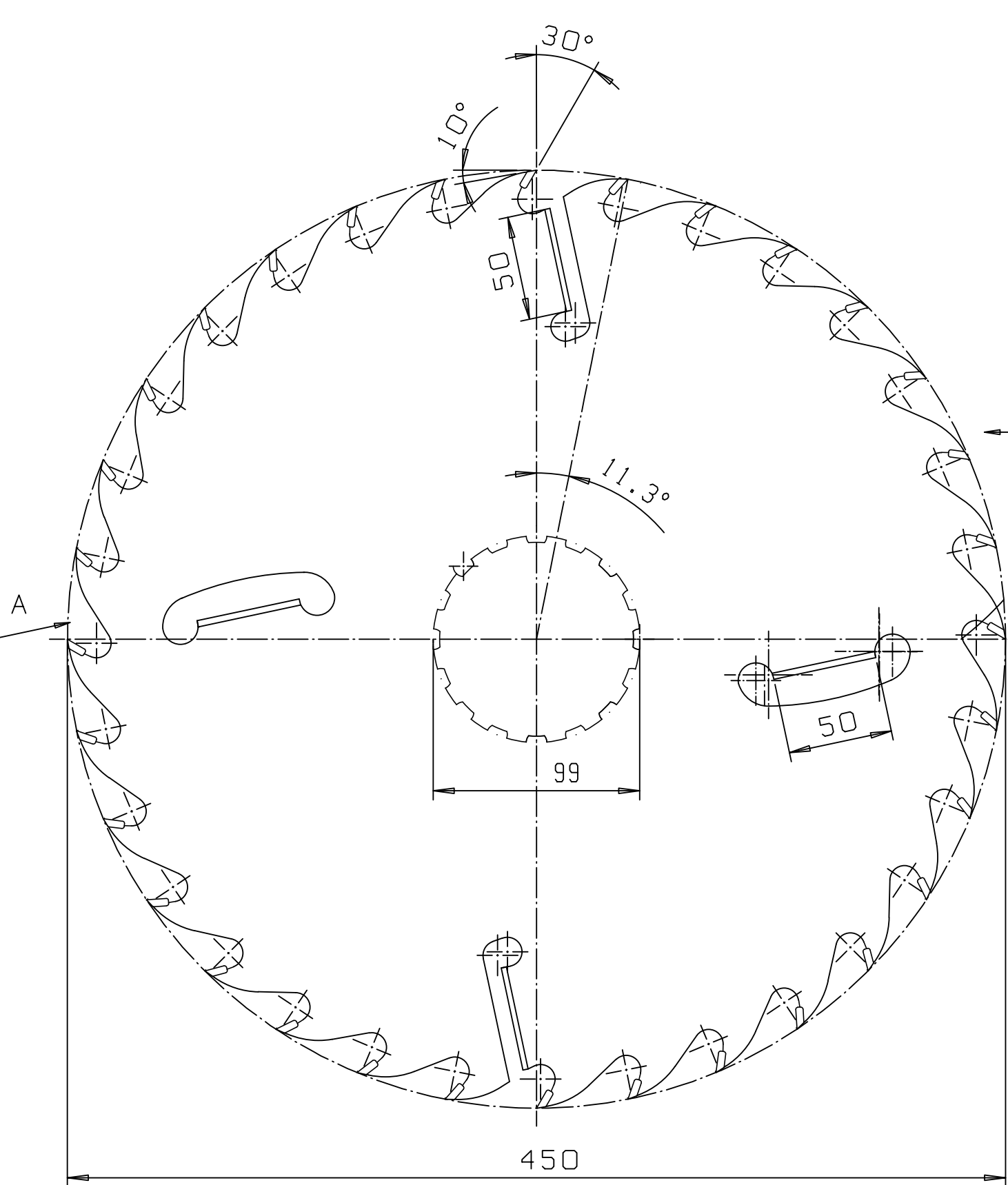
Ø550/Ø93×4.8/3.4
Z=40
t=43.17
A-30°

Osa	Koodi	Nimitys, Mitat, Laatu, ym.		kpl
Suhde:	Piirt.PMA	2005-03-21	Korvaa/Korvattu:	Massa:
1:2.5	Hyv.		Liittyy:	Esikuva:
 VEISTO GROUP VEISTO OY		CENTER BLADE D550 Z=30 -6 STROB- 0.8		J621700 HEWSAWTERAT
				Työ n:o
				Piir n:o
				J621700

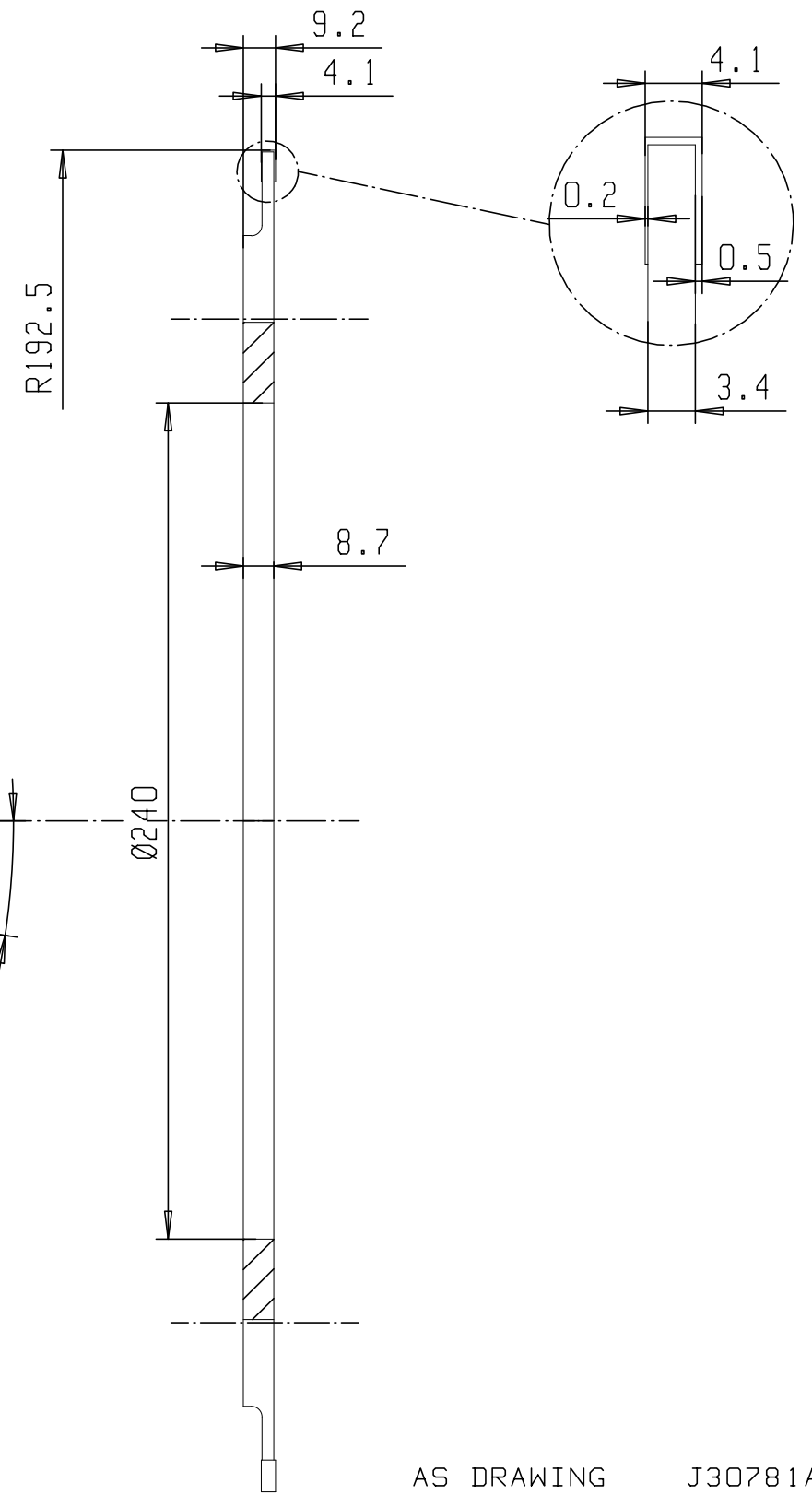
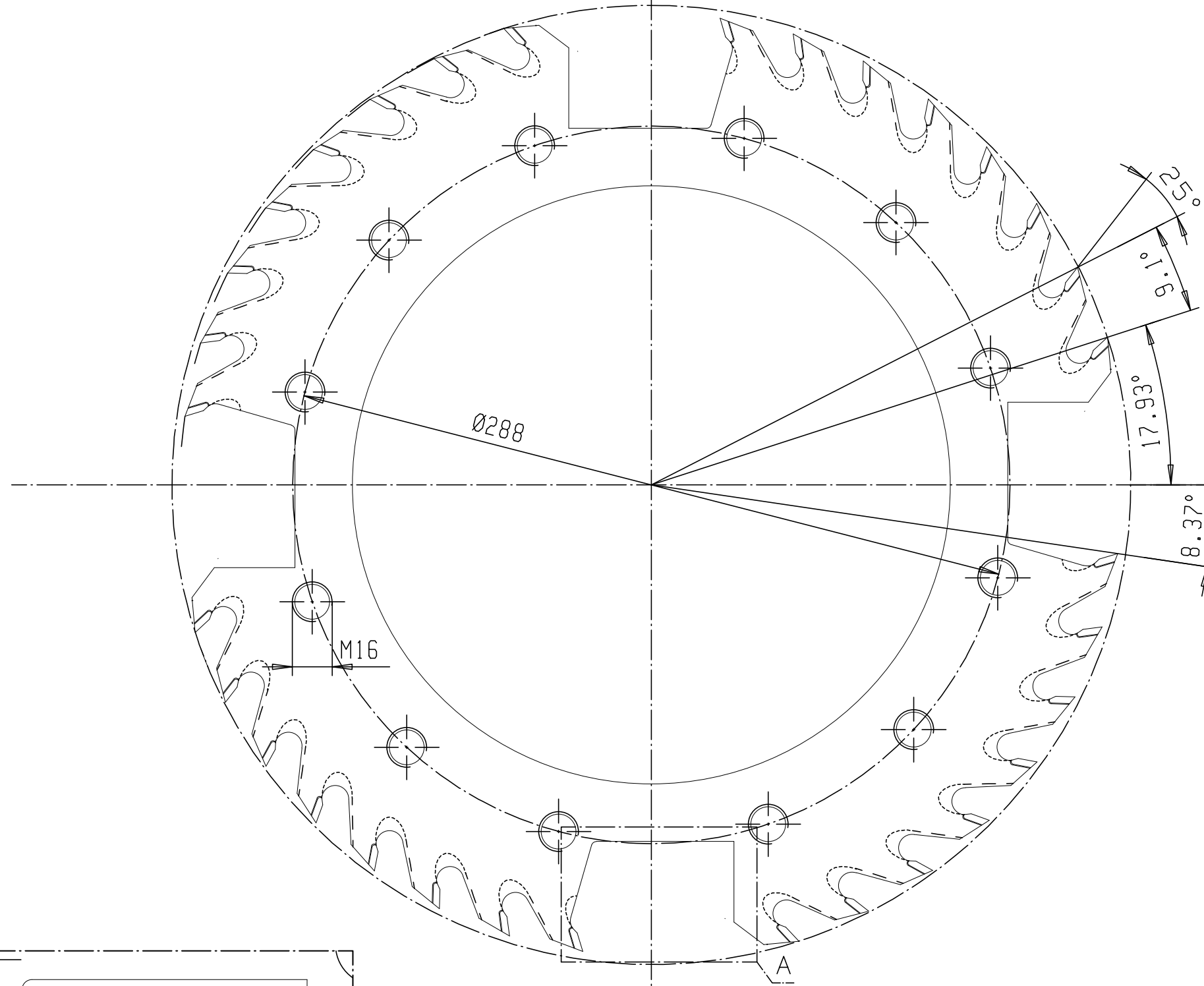
This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

Tämä piirustus on omaisuus ja sen kopiointi ilman meidän lupaa on kielletty. Tämä piirustus ei saa olla käytössä muissa kuin meidän tuotteissa.

TYÖTAPAKOHTAISET YLEISTOLERANSSIT: SFS EN ISO 13920 / 22768-1
 *Hittaus: kulma- ja pituusmitat
 *Koneistetut kappaleet: pituus- ja kulmamitat



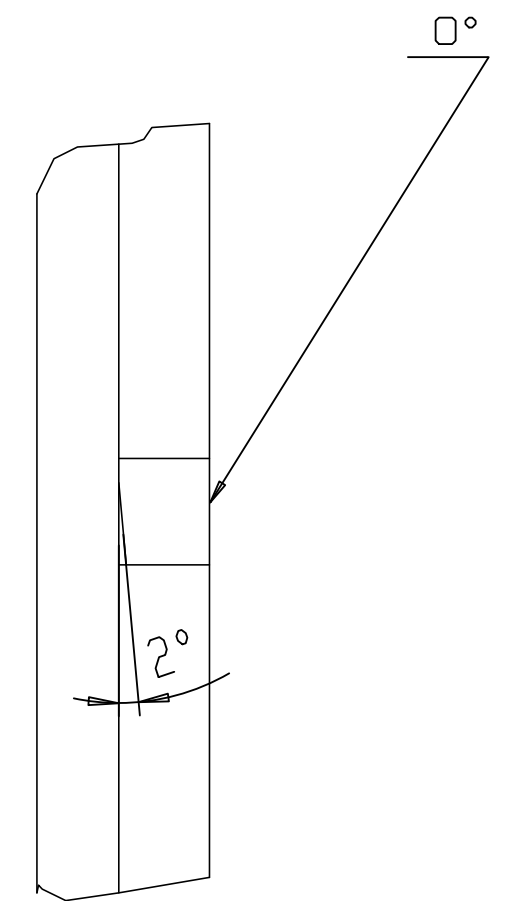
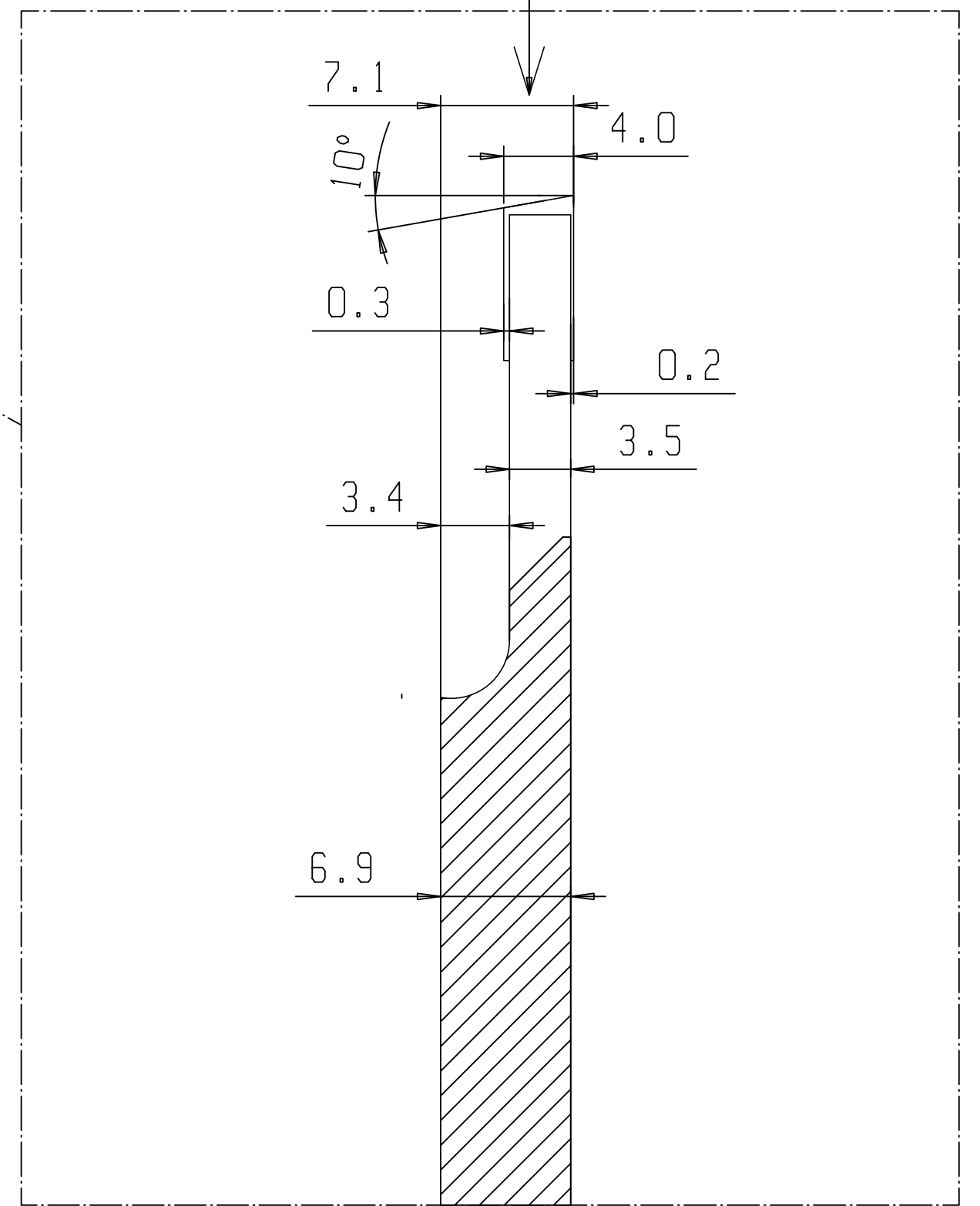
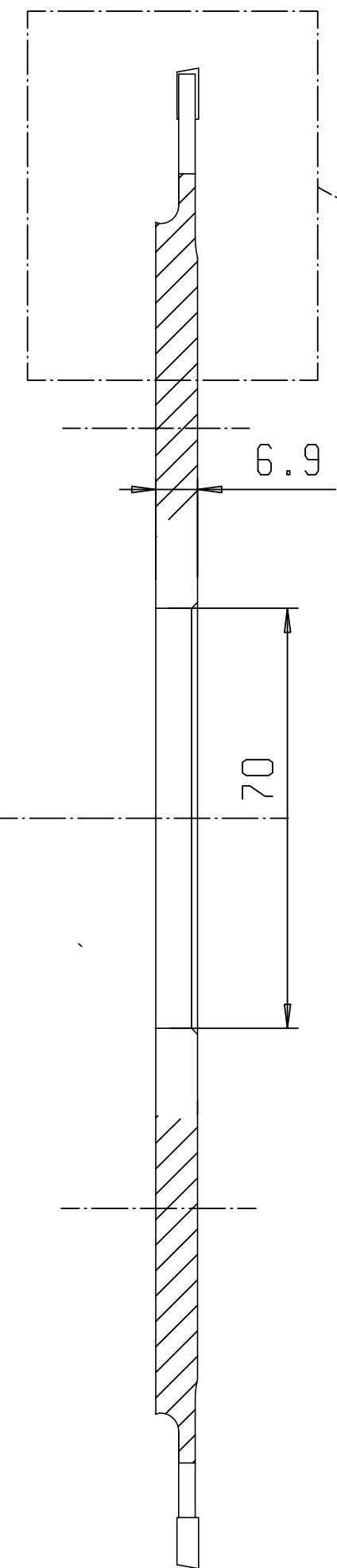
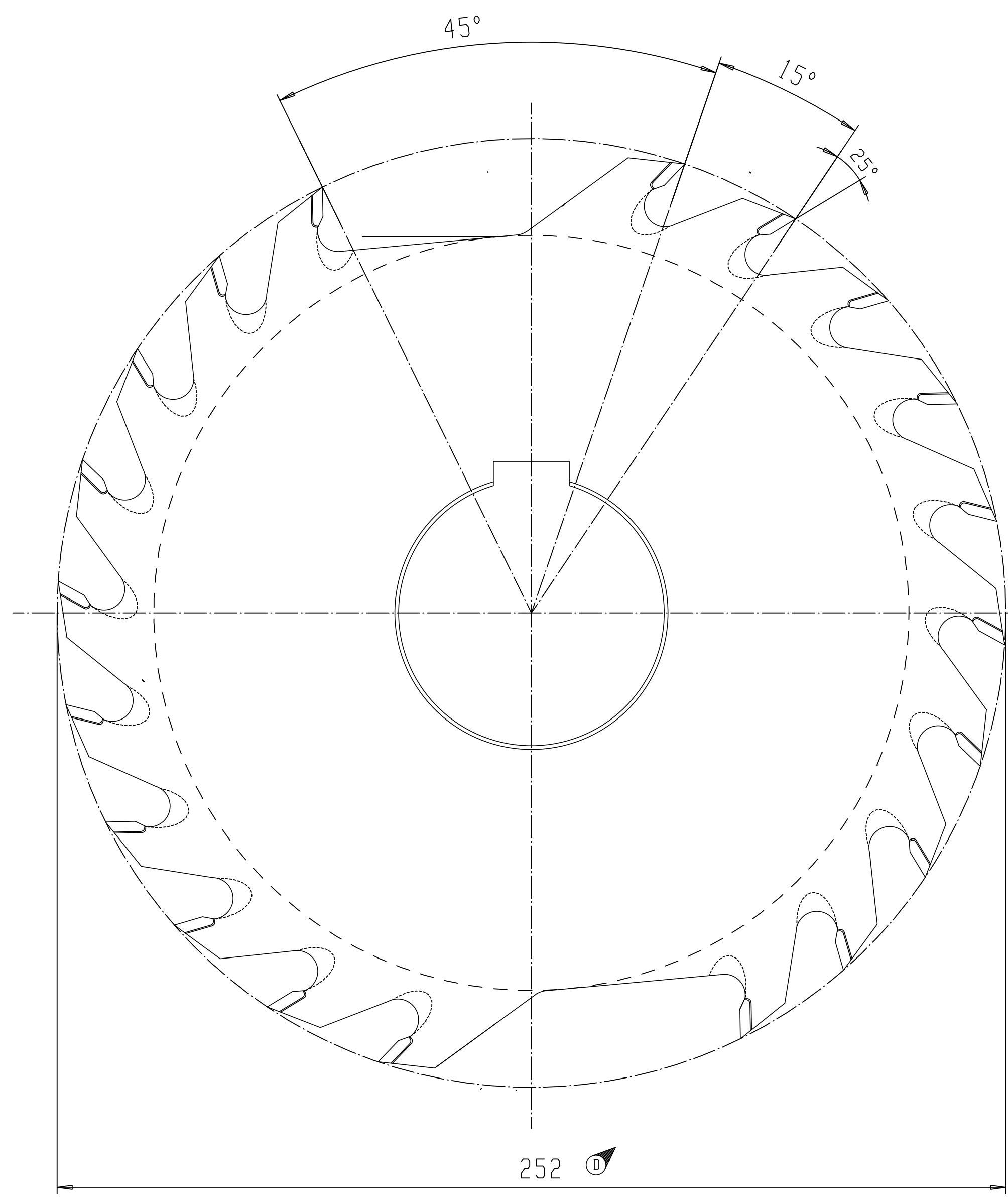
Osa	Koodi	Nimitys, Mitat, Laatu, ym.		kpl
Suhde: 1:2.5	Piirt.PMA Hyv.	2005-04-15	Korvaa/Korvattu: Liittyy:	Massa: Esikuva:
 VEISTO GROUP VEISTO OY		CENTER BLADE D450/z32/3.4/5.0-4 STROB d 99/16 R250		J622400 HEWSAWTERAT Työ n:o
				Piir n:o J622400



AS DRAWING J30781A
MIRROR IMAGE J30782A

Osa	Koodi	Nimitys, Mitat, Laatu, ym.		kp l
Suhde: 1:2	Piirt.TM Hyv.	2005-04-14	Korvaa/Korvattu: Liittyy: J609310&20	Massa: Esikuva:
<p>VEISTO GROUP VEISTO OY</p>		<p>FINISHING BLADE 4-SPIR CHIPPER HEAD 4-SPIR R250 UNIVERSAL</p>		J30780A HEWSAWTERAT
				Työ n:o
				Piir n:o J30780A

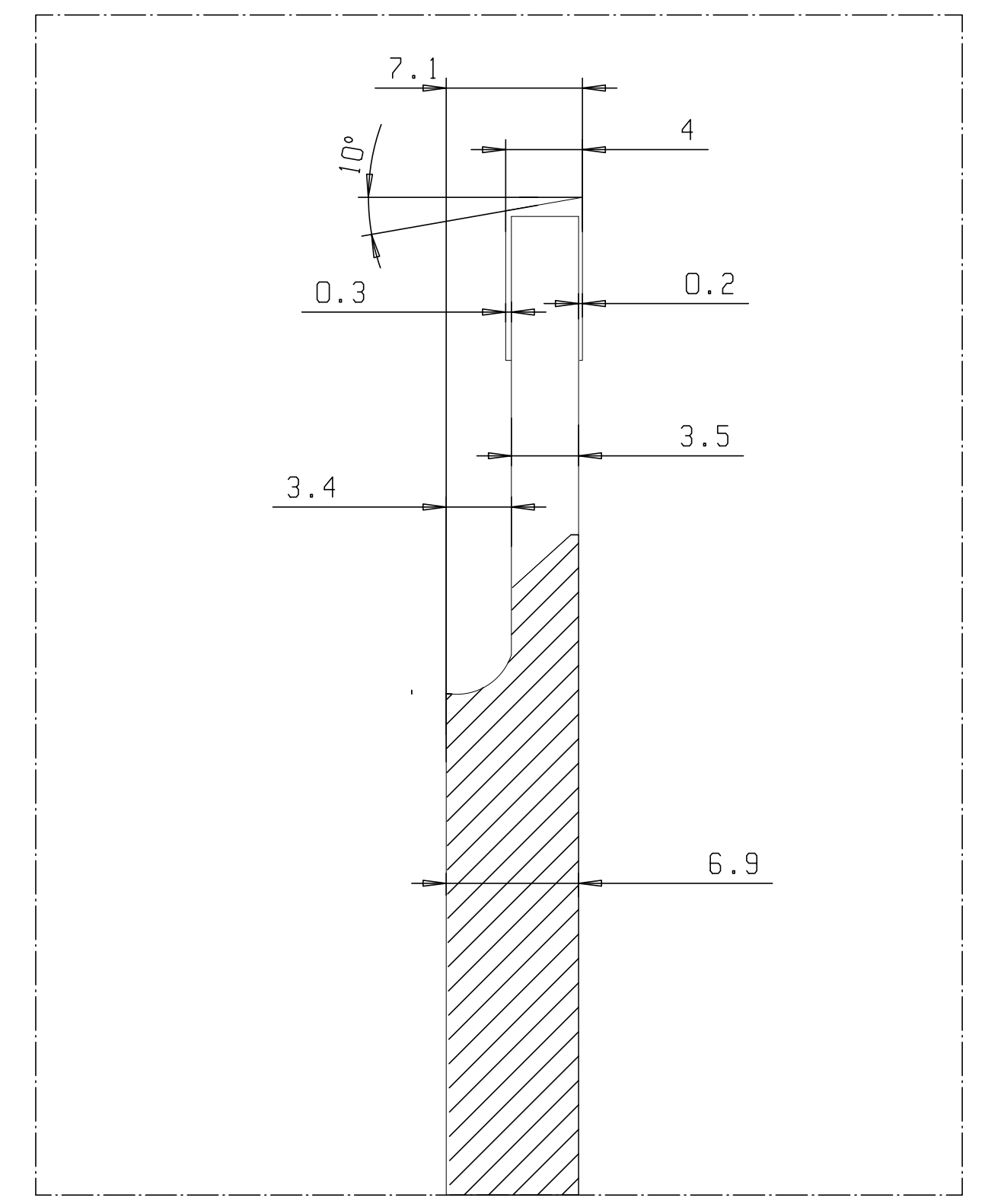
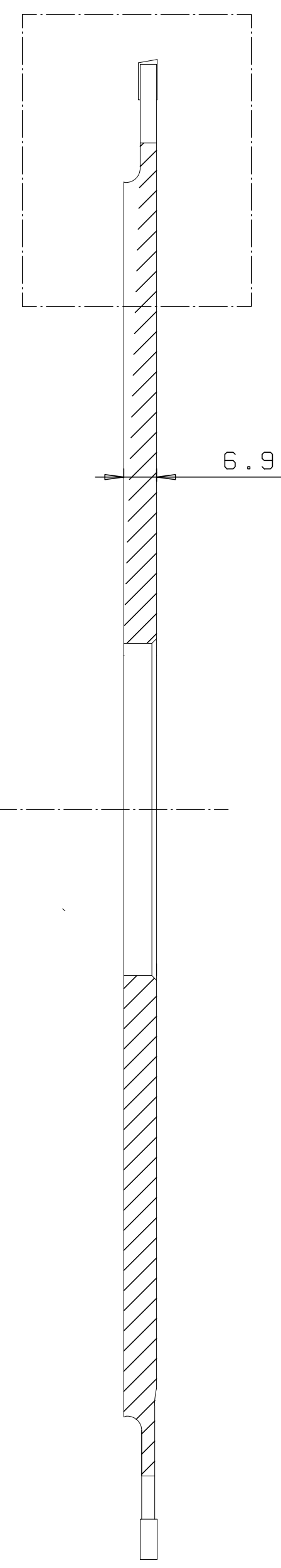
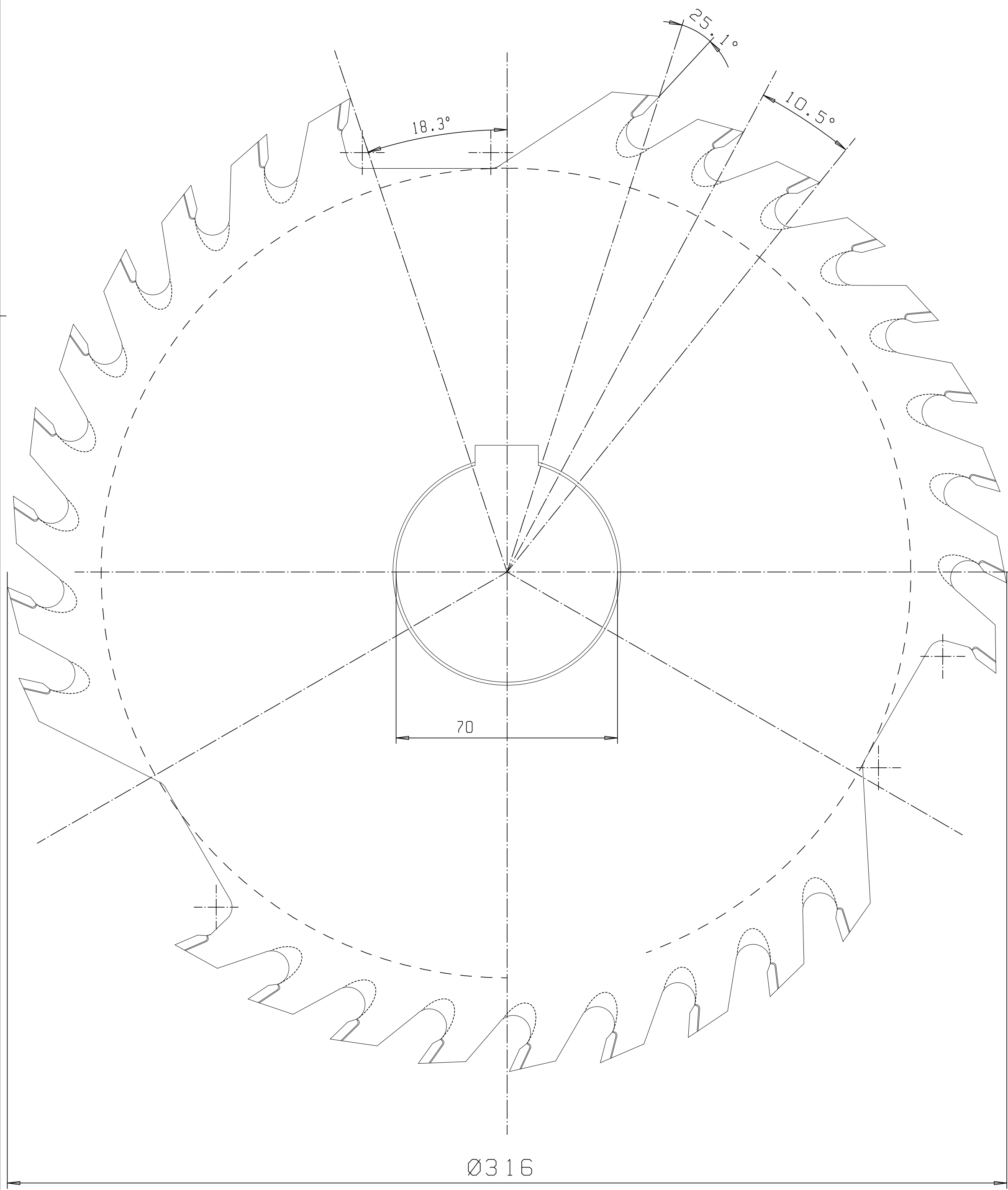
HEWLETT-PACKARD
 Hewlett-Packard is a trademark of HEWLETT-PACKARD COMPANY
 Tämä piirustus on omalla nimellä tekijän oma tuote. Sen kopiointi, jäljentäminen tai muu käyttö ilman tekijän lupaa on kielletty.
 *Koneistetut kappaleet: pituus- ja kulmamittat tarkkuusluokkaa m
 *Hitsatut rakenteet: kulma- ja pituusmittat tarkkuusluokkaa F
 *Koneistetut kappaleet: pituus- ja kulmamittat tarkkuusluokkaa m
 *Koneistetut kappaleet: pituus- ja kulmamittat tarkkuusluokkaa m



AS IMAGE F46521C
 MIRROR IMAGE F46522C

D	TOLERANSSIN MUUTOS	-0.2/+0.2	2002-01-08	PM			
M	Muutos	0n / 0li	Pvm	Tek	Tark	Hyv	

Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kp l
Suhde:	Piirt.	HP	2000-01-25
1:1	Hyv.	Korvaa/Korvattu:	Liittyy:
VEISTO GROUP VEISTO-RAKENNE RAUTIO OY			Massa: Esikuva:
			HEWSAWTERAT Työ n:o Piir. n:o F46520C



J641010 AS DRAWING
 J641020 MIRROR IMAGE

Ø316

AIUKONKOKO MUUTTUNUT (SYVYYYS)

Suhde 1:1	Piirt. PMA Tark. Hyv.	2005.05.06	Korvaa: Korvattu: Liitty: J640800		Massa: Esikuva: J328600 HEWSAWTERAT
	FINISHING BLADE Ø316 3-SPIR EDGING UNIT HewSaw R200		Työ n:o Piir n:o	J641000	

11. MAINTENANCE OF EDGING TOOLS

11.1 General

Examine and clean the edging tools every time the circular blade assembly is changed. Pay extra attention to the edging tool body and the knives. Check that the body surface is clean and even, to make sure that the side cutting circular blade will be correctly positioned.

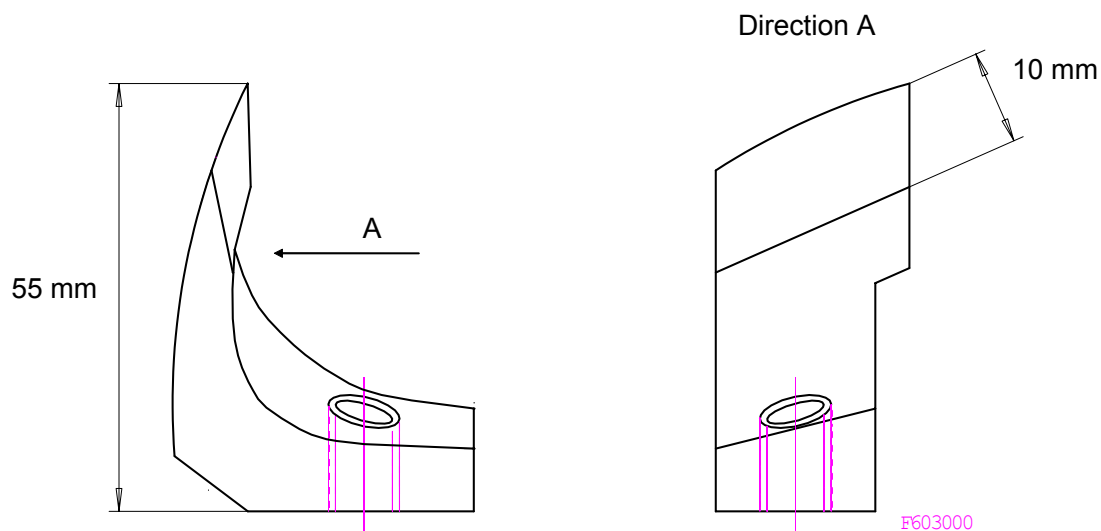
Note! Sharpen the edging knives from the face only. The radius of an assembled edging tool must maintain unchangeable.


Use Tyrolit FA 704796 or a corresponding grinding stone. Sharpen the rapid steel bits after every 10.000 sawn logs. The sharpening frequency depends naturally on the cleanliness and quality of the logs.

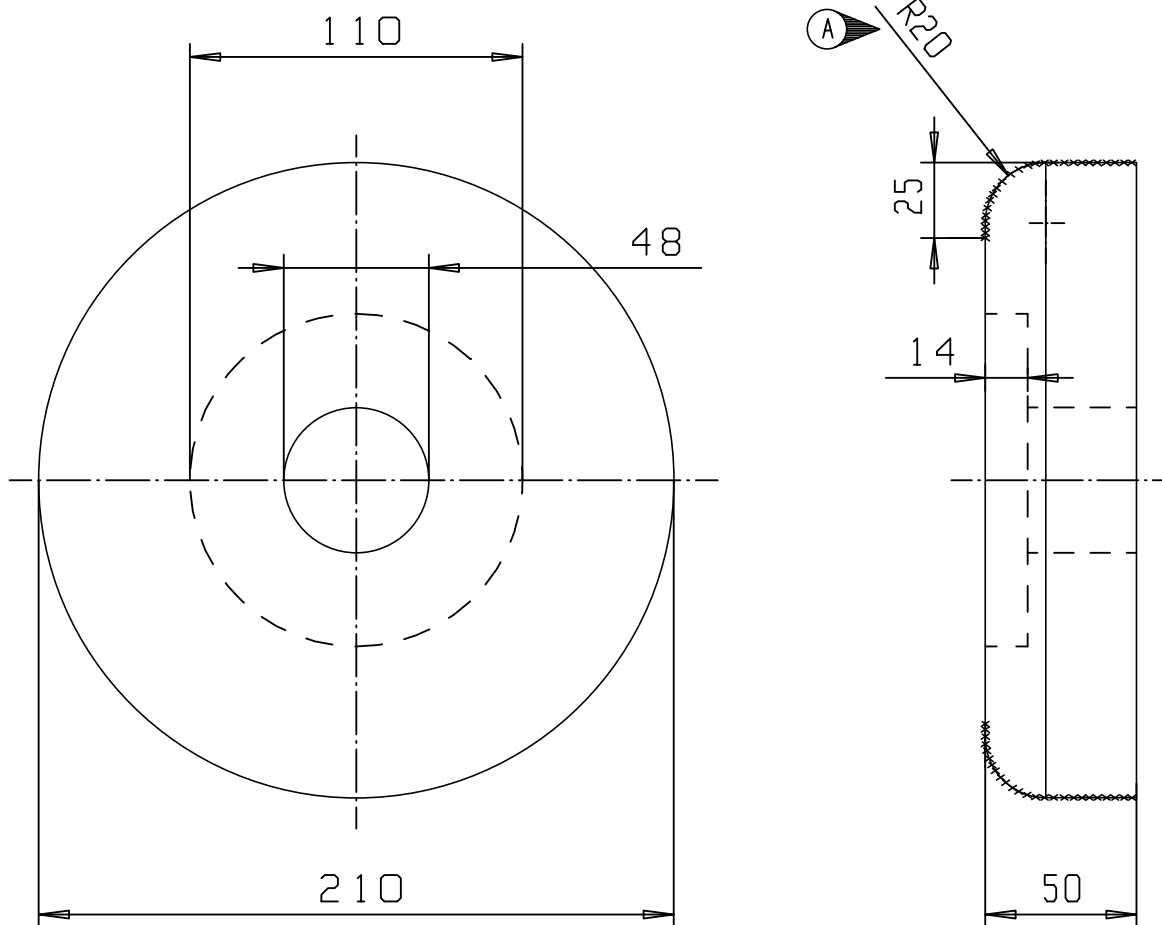
11.2 Sharpening the edging knives of the edging units


Veisto Oy recommends using HewSaw RM-8D Grinder for sharpening the edging knives. HewSaw Grinder is designed specifically for sharpening the patent design edging knives of the HewSaw machines.

The minimum length of the edging knife is 55 mm (see drawing below). The shape of the grinding wheel must be like in drawing F470500 (on page 11/2). It is important to keep the radius of the grinding wheel in 20 mm to prevent to form the point of discontinuity in the edging knife. Keep the position of the grinding wheel in proportion to edging knives so that the ground surface is 10 mm wide.



		This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.		TYÖTAPAKOHTAISET YLEISTOLERANSSIT: SFS EN ISO 13920 / 22768-1		VEISTO GROUP	
*Hitsatut rakenteet: kulma- ja pituusmitat *Koneistetut kappaleet: pituus- ja kulmamitat		TARKKUUSLUOKKA B TARKKUUSLUOKKA F TARKKUUSLUOKKA m		M Muutos		On / Oli	
A SÄDE		20/10		Pvm		Tek Tark Hyv	



Ref	Part no	Description	Qty
Scale:	Dr. PM	1997-01-23	Repl./Repld:
1:2.5	App.		Ref.
		GRINDING DISC FOR EDGING UNIT KNIVES BORATSON	
VEISTO GROUP VEISTO OY		F470500 HEWSAWTERAT Job n:o Dwg n:o F470500	

12. CHIPPING HEAD KNIVES

12.1 General

The chipping knives are easy and quick to change, thanks to the one-screw fastening (see page 12/2). Examine the condition of the knives at least once a day and change the first four knives in every spiral even as often as twice per shift if needed (especially when sawing dry material). This is essential, as knives in good condition guarantee smooth cutting surface, faultless feeding and prime chip quality!

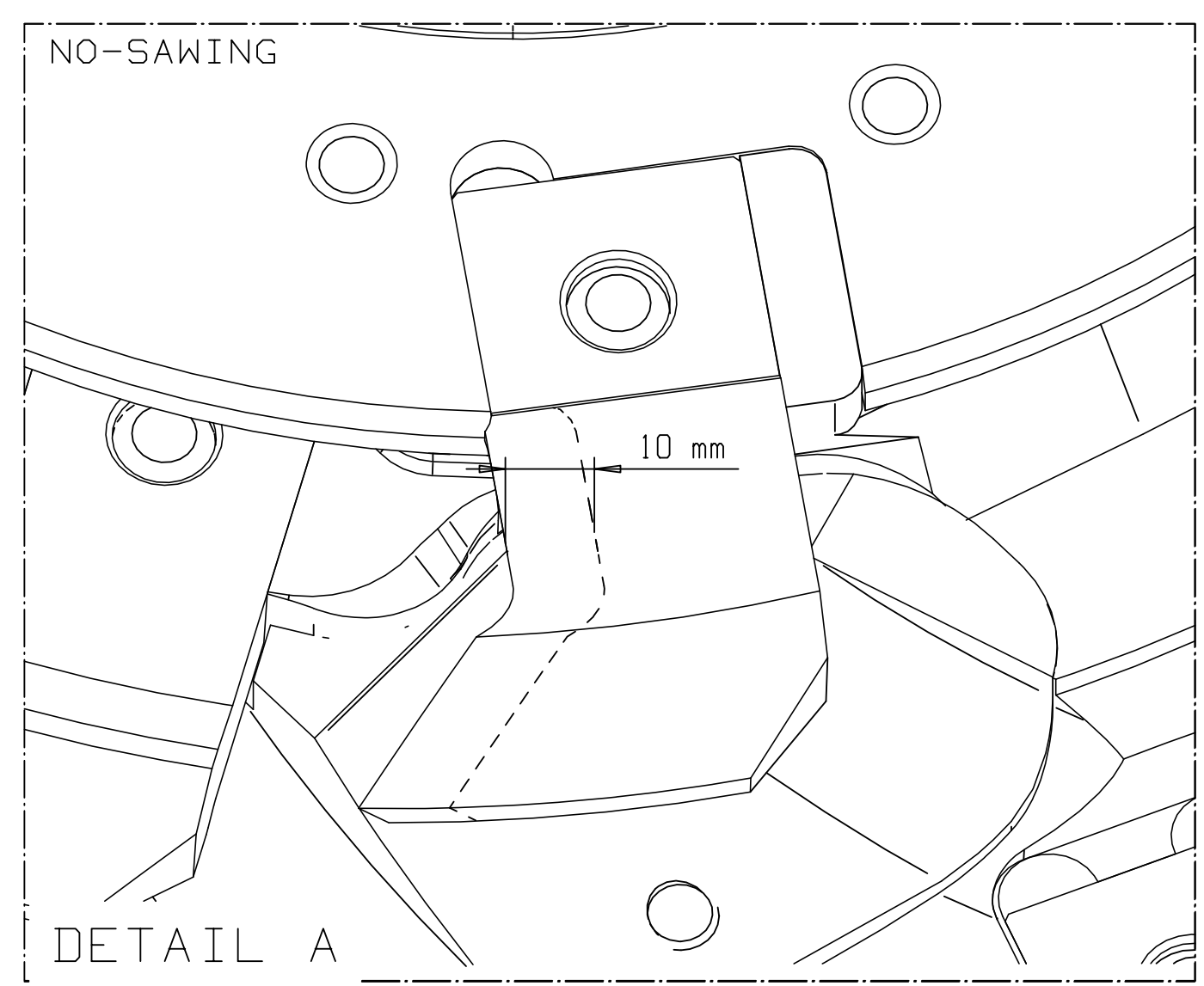
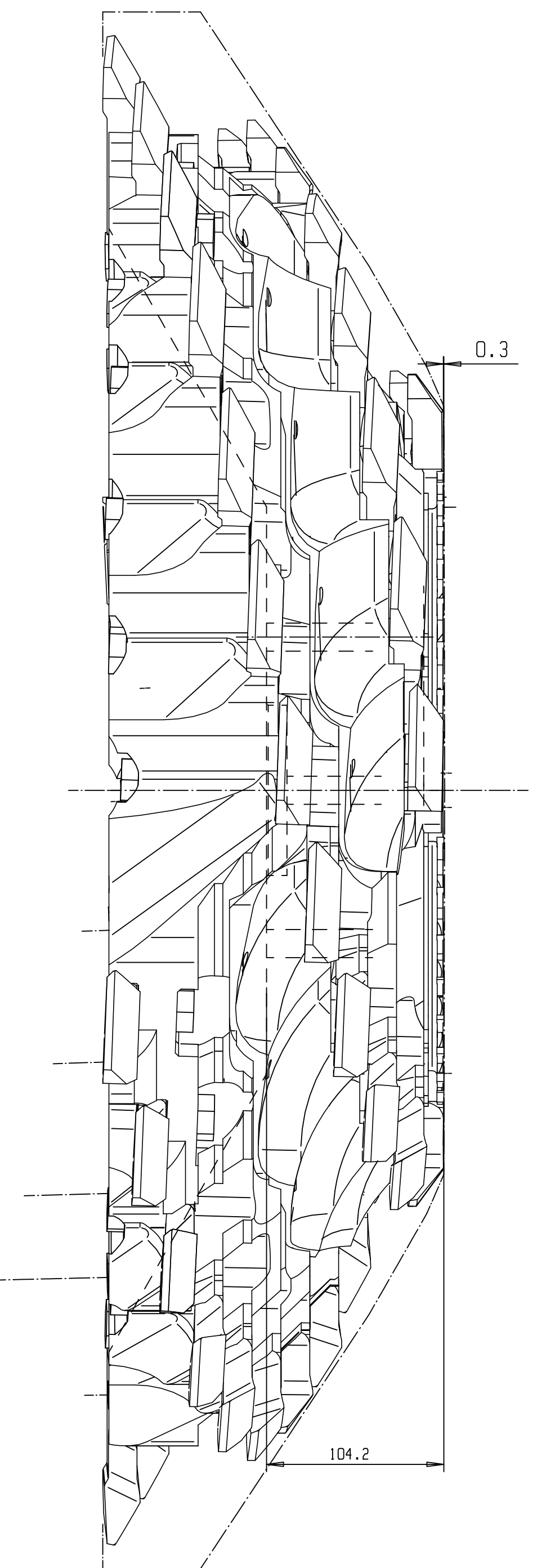
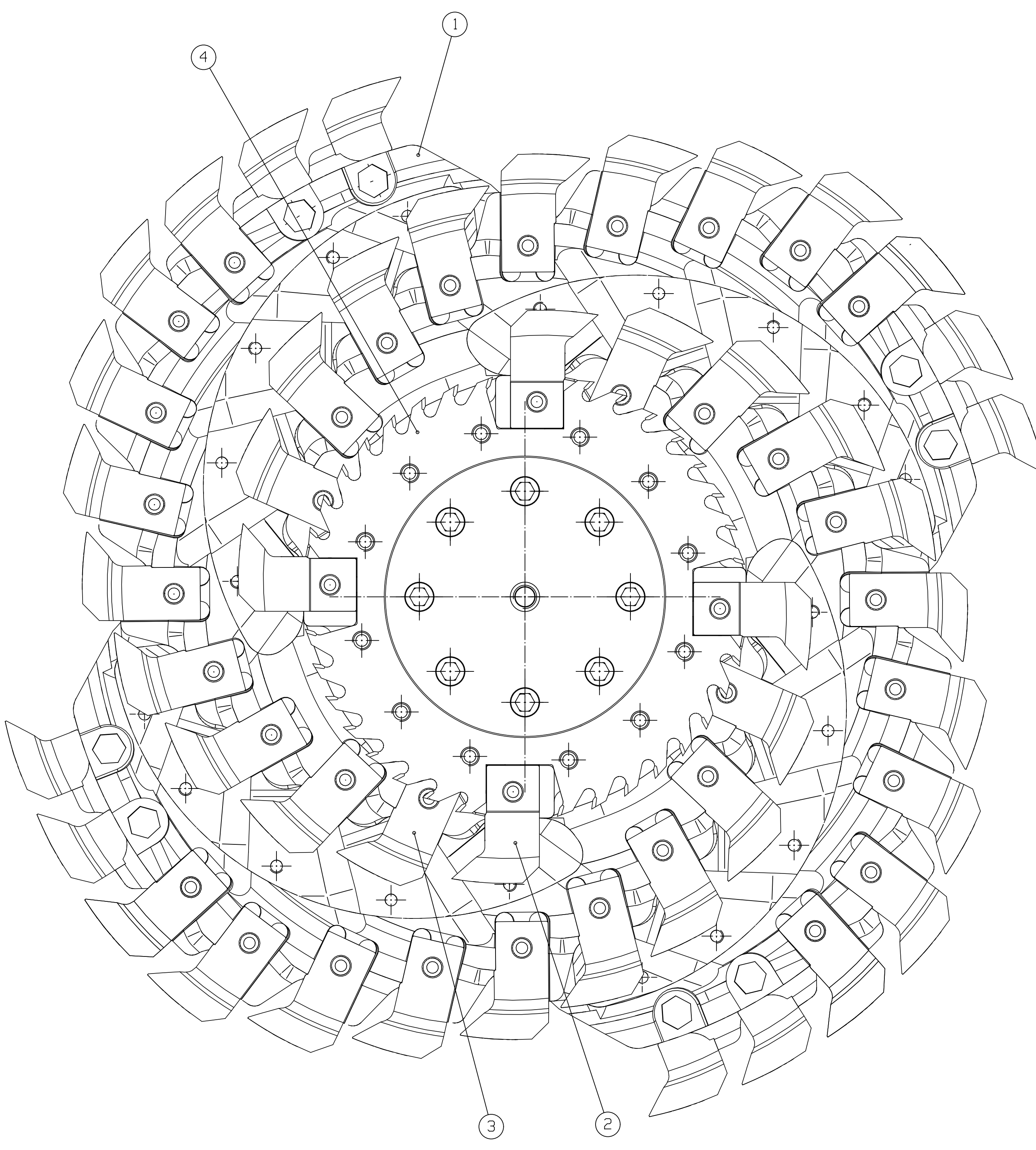
Sharpening the knives frequently will prolong their operating life!

As the chipper head motors rotate in opposite directions, **the opposite chipper heads are each others mirror images**. In the four spiral -shaped chipper heads the knives of same size should be placed on opposite sides to keep the balance. All 1st chipping knives must be equally grinded with each other if chipping without finishing blades. In this case the maximum grinding depth is 10 mm (see detail A in drawing J609320 on page 12/2). Place most worn knives into the outer circles of spirals.

12.2 Changing the knives

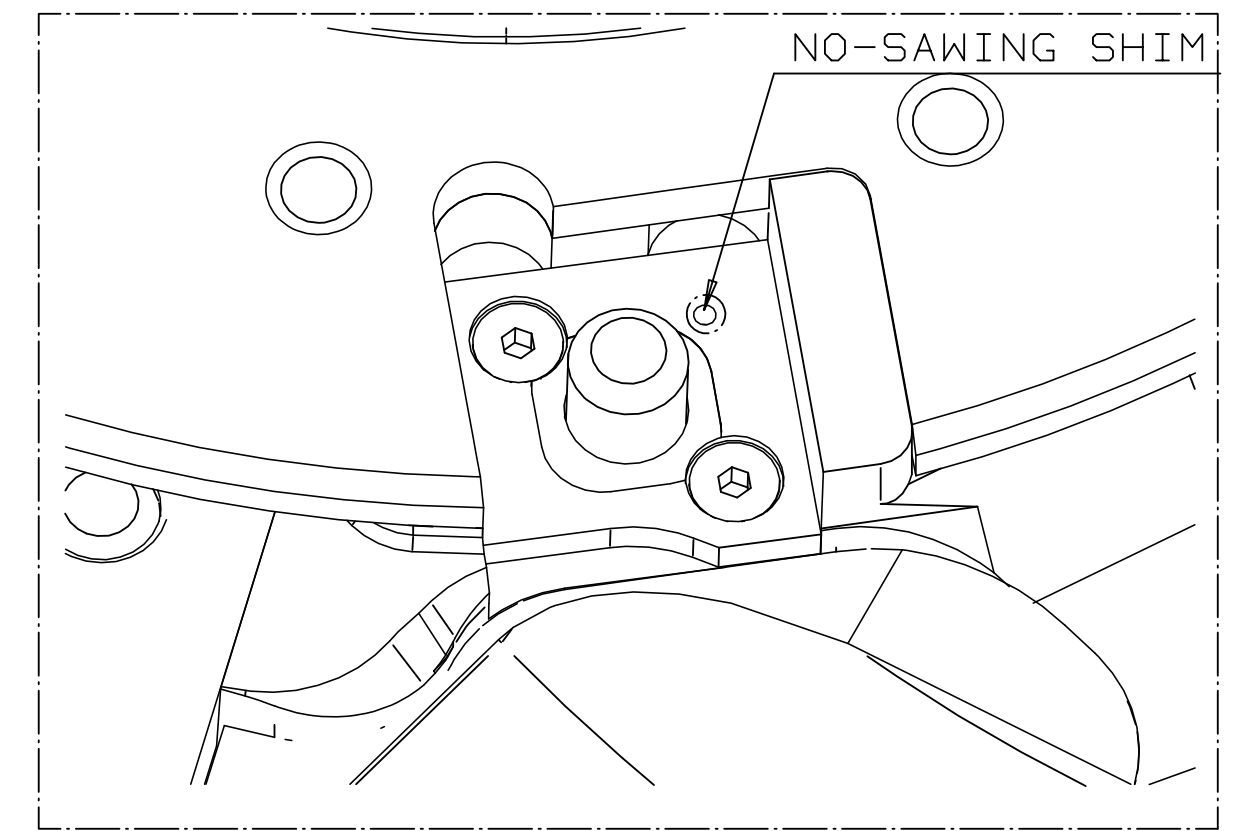
1. Make sure that there is no sawdust or chips under the chipping heads or on the slide bar supports.
2. Move the horizontal and vertical chipper heads to the service position.
3. Open the fixing screw of the knife and clean the **fixing groove of the knife carefully**.
4. Place a new knife and tighten the fixing screws carefully (fastening torque 120 Nm). The knives will set in the correct position automatically without any adjustments or measurements. Fixing screw hardness is 8.8. Make sure knives of equal size (degree of grinding) are used in opposite sides of the spiral in the same position. If not, the chipper heads will be out of balance and cause poor chipping and pre-mature bearing failure. Either measure from the back of the knife to the gullet edge or measure the weight to separate equally worn knives to be used together. We recommend having individual boxes to categorize knife sizes. This system can also be used when grinding knives of equal size.
5. Adjust the chipper head units on desired cutting width and height.

Tämä piirros on tehty CAD-ohjelmalla. Piirroksen sisältämien osien mitat on otettu suoraan osien valmistuspiirroksista. Piirroksen sisältämien osien mitat eivät välttämättä vastaa osien todellista muotoa ja mittoja. Osien valmistuspiirroksista on otettu käyttöön vain ne osat, jotka ovat merkittyinä. Osien valmistuspiirroksista on otettu käyttöön vain ne osat, jotka ovat merkittyinä. Osien valmistuspiirroksista on otettu käyttöön vain ne osat, jotka ovat merkittyinä.

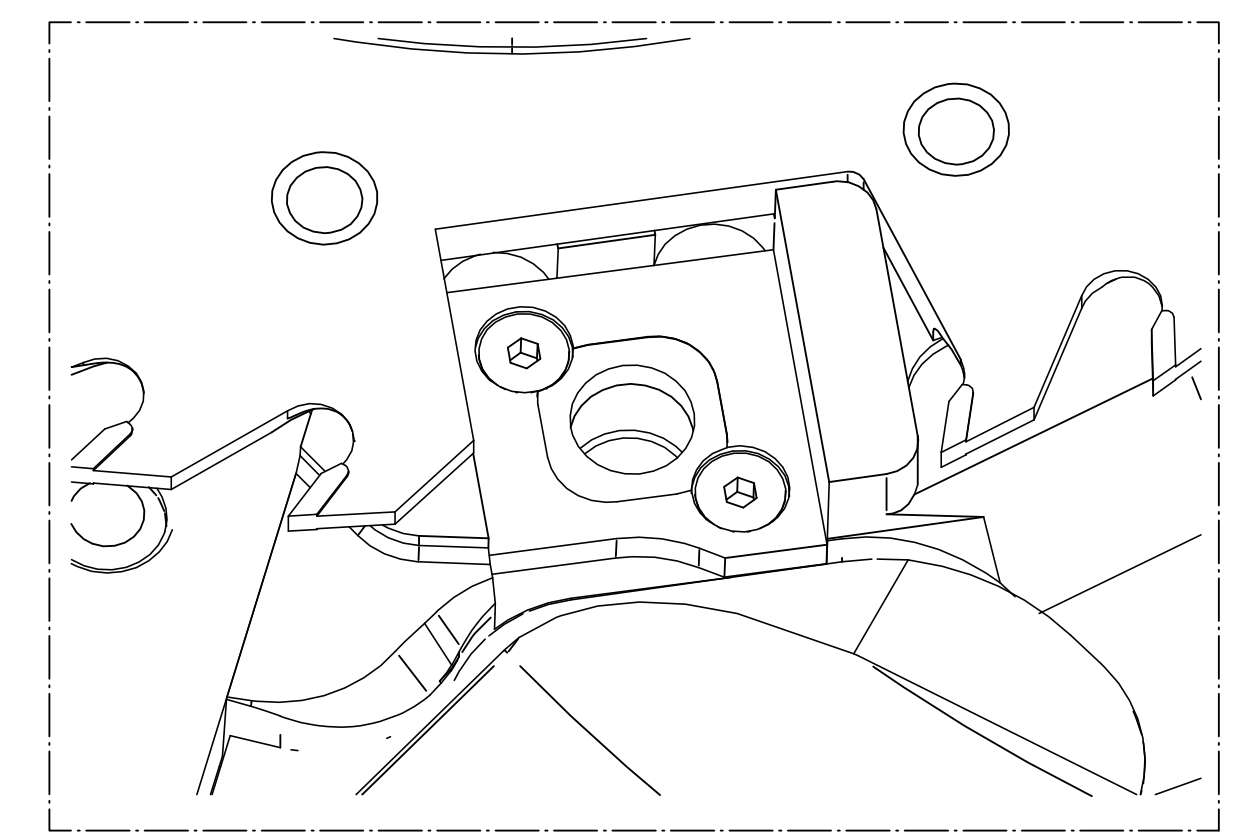


DETAIL A

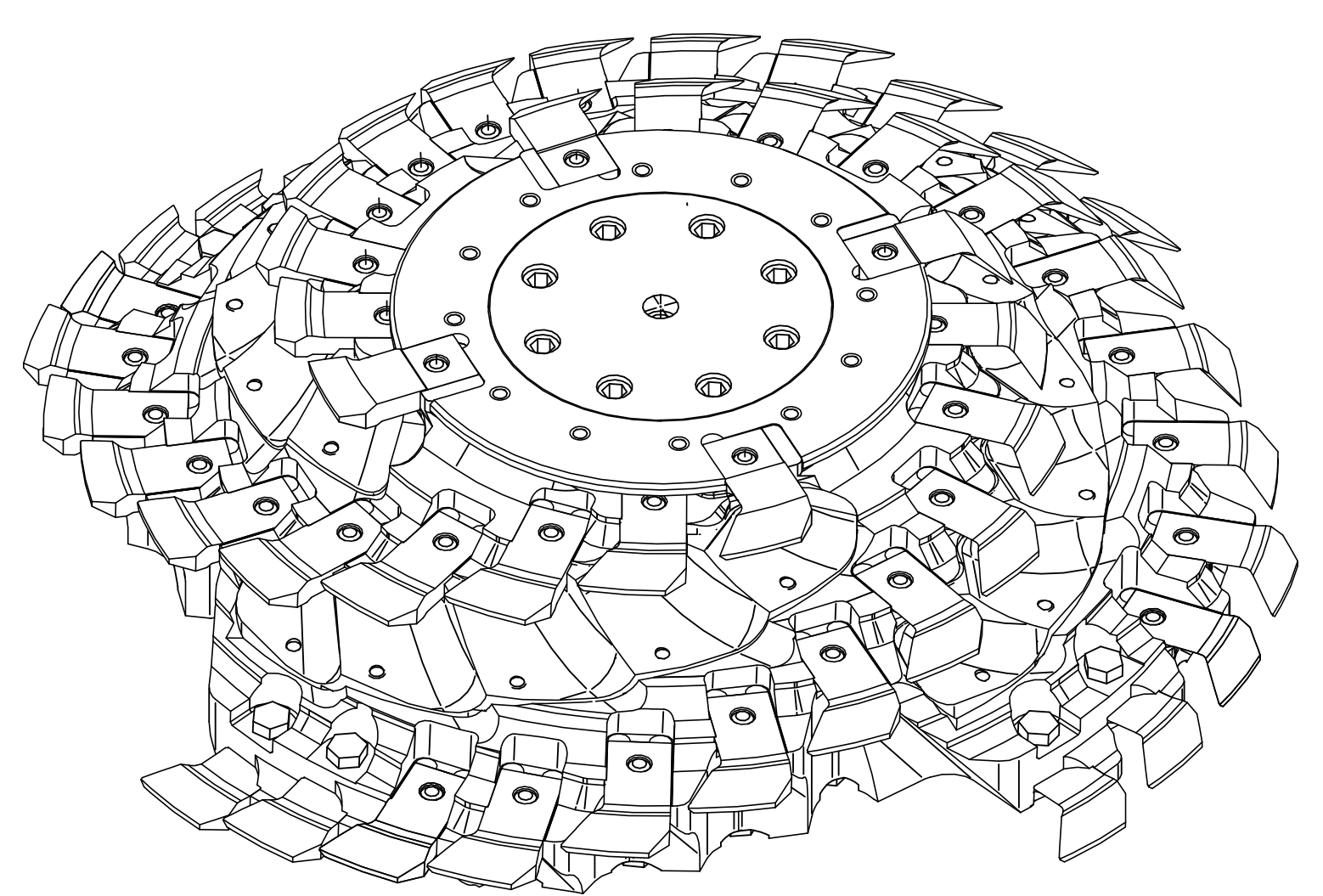
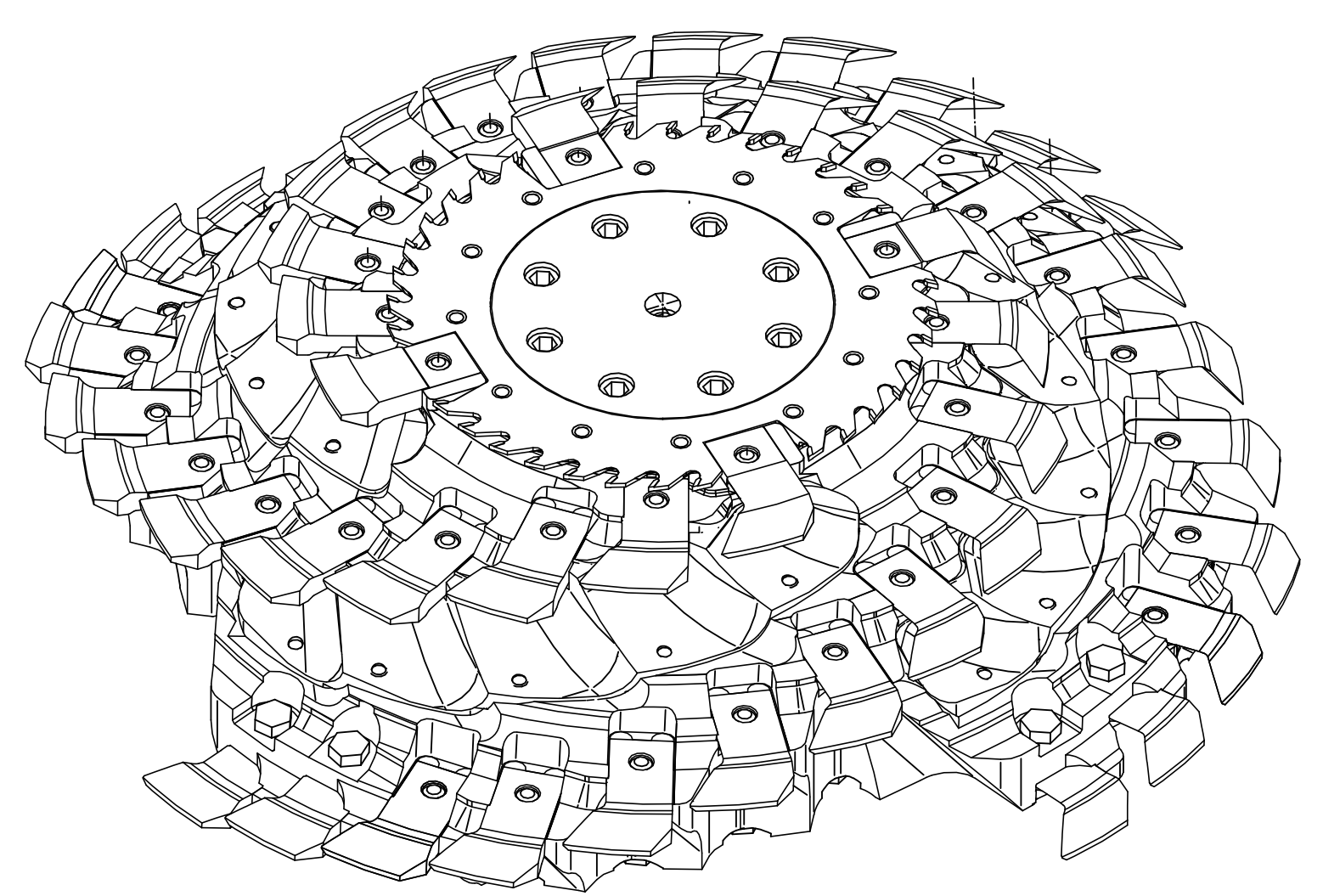
CHANGE 1st KNIVES IN THE SECOND AND THIRD POCKETS WHEN GROUND MORE THAN 10mm (MINIMUM CROSS-SECTION LENGTH = 35mm WHEN USED IN THE FIRST POCKETS).



When no sawing use in the first pockets shim H70282A s=5.3 mm. The shim H70282A is marked with extra 3 mm hole (det A).



WHEN SKIMMING USE SHIM H70272A s=5.0 mm.



NOTE! ALWAYS CHECK THE BOLT THREADS WHEN CHANGING WEAR PLATES AND CHIPPING KNIVES. WORN BOLTS MUST BE REPLACED IMMEDIATELY.

CHIPPER HEADS KNIVES SCREWS TORQUE	120 Nm
CHIPPER HEADS SCREWS TORQUE	250 Nm
	Tol. +5 Nm

4	J30782A	OTSATERA JALJ.SAH 4-SPIR R250, OIKEA	1
3	H157920	HAKETUSTERAPALA, OIKEA, PITKA 16mm VARS	44
2	J287520	HAKETUSTERAPALA, OIKEA, PITKA KEVENNETTY VARS	4
1	J631820	TERAPAAAN RUNKO, OIKEA OSAKOKOONPANO	1
Osa			kp
Koodi			
Nimitys, Mitat, Laatu, ym.			
1:2.5	Prirt.TM	2005-04-12	Massa:
hyv.		Korvaa/Korvattu:	Esik kuva: J307710
		Liitty: J307710	
VEISTO GROUP VEISTO OY			
CHIPPER HEAD 4-SPIR R250 UNIVERSAL, R ASSEMBLY			J609320 HENSANTERAT Työ n:o Pile n:o J609320

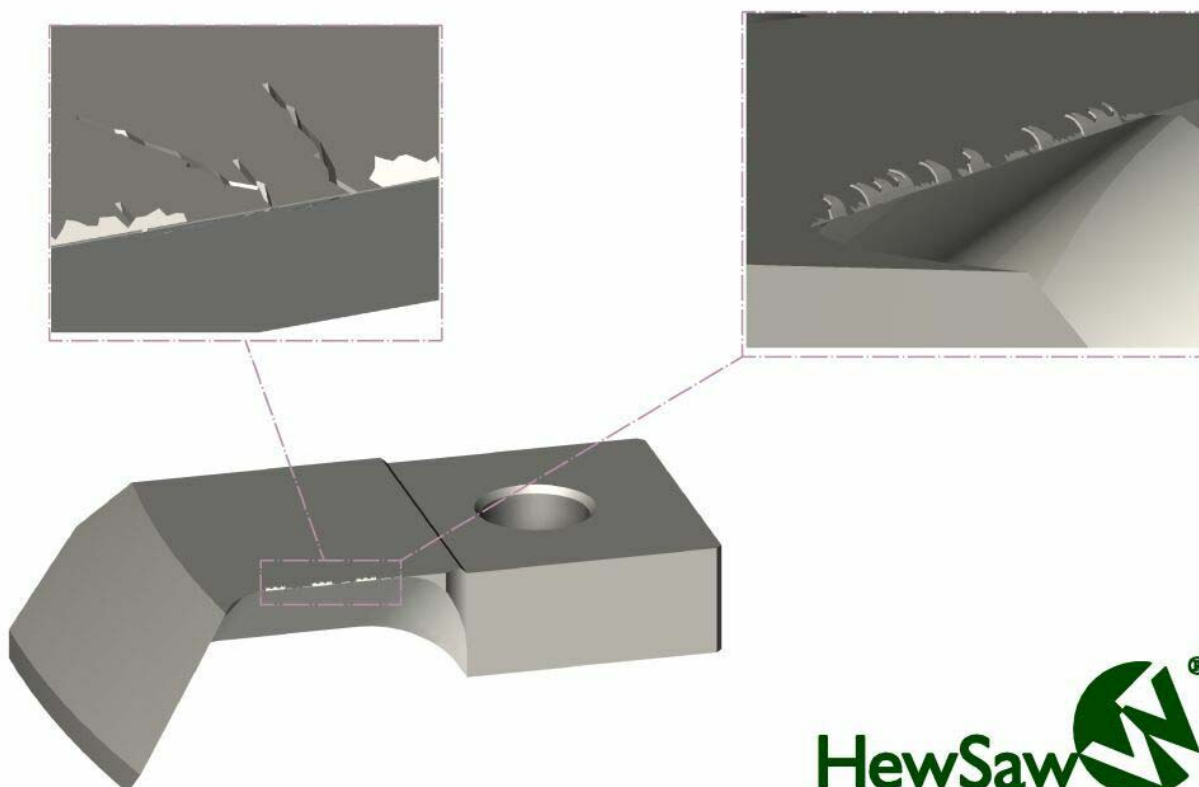
12.3 Sharpening the knives

Veisto Oy recommends using the HewSaw Grinder RM-12C for sharpening the chipper head knives. Grinder RM-12C is designed specifically for sharpening the patent design chipping knives of the HewSaw-machines.

When using some other device and wet sharpening method, ordinary liquids used in metal working are suitable as cooling liquids.

Do not sharpen the knives from the front rake. When the edge of the knife becomes blunt and worn the knife must be sharpened until the roundness has vanished (see drawing on page 12/4). **Remove the burr manually from the sharpening edge with a smoothing stone.**

Cracks may appear into the knife edge if a feeding speed in grinding is too high (see drawing below). In this case remove damaged knife from use and lower the feeding speed.

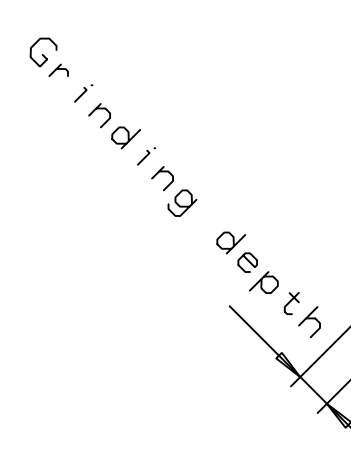
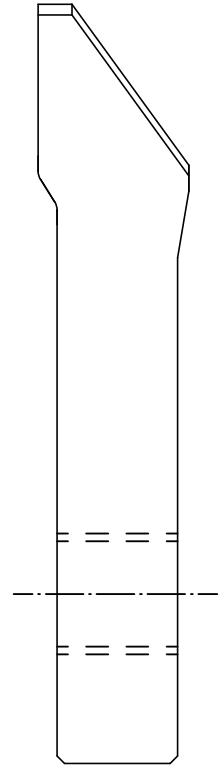


HewSaw is a trademark of VEISTO-RAKENNE RAUTIO OY
 This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

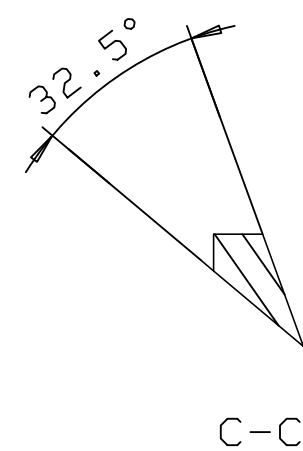
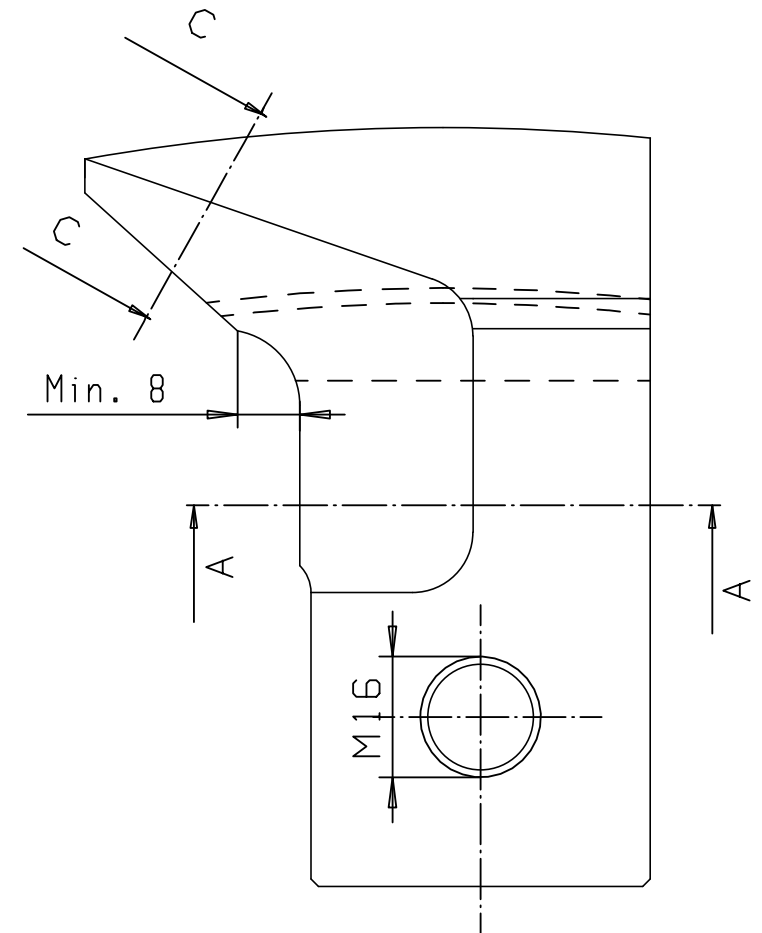
Denna ritning är vår egendom och får inte utan vårt medgivande kopieras, föredisas för eller utlämnas till konkurrent eller annan obehörig person.

Tämä piirustus on omal-
 suuttamme eikä sitä saa ilman meidän lupamme jäljentää tai käyttää sivullisille.

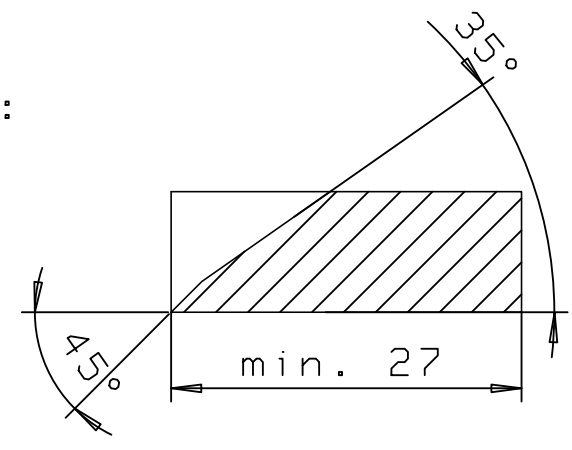
TYÖTAPAKOHTAISET YLEISTOLERANSSIT: SFS-EN ISO 13920 / 22768-1
 *Hitsatut rakenteet: kulma- ja pituusmitat
 *Koneistetut kappaleet: pituus- ja kulmamitat



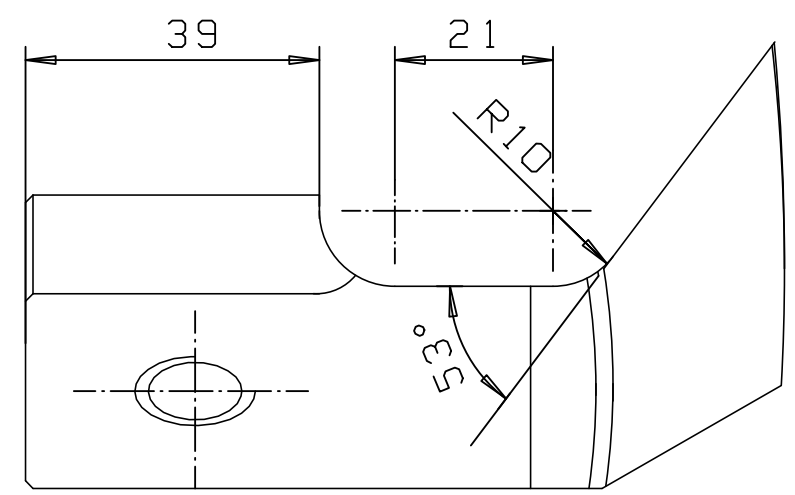
Normal grinding depth is 0.004"-0.010" (0.10-0.25 mm)



Resharpening:
 Angle 45°



A-A



Direction B

Scale: 1:1	Dr. SK	2000-03-22	Repl./Repld:		Weight:
	App.		Ref. 3101721		From: -----
 VEISTO GROUP VEISTO-RAKENNE RAUTIO OY				H15792H HEWSAWTERAT	
				Job n:o	
				Dwg n:o H15792H	

CHIPPING KNIFE
 SHARPENING

12.4 Removing the chipper head

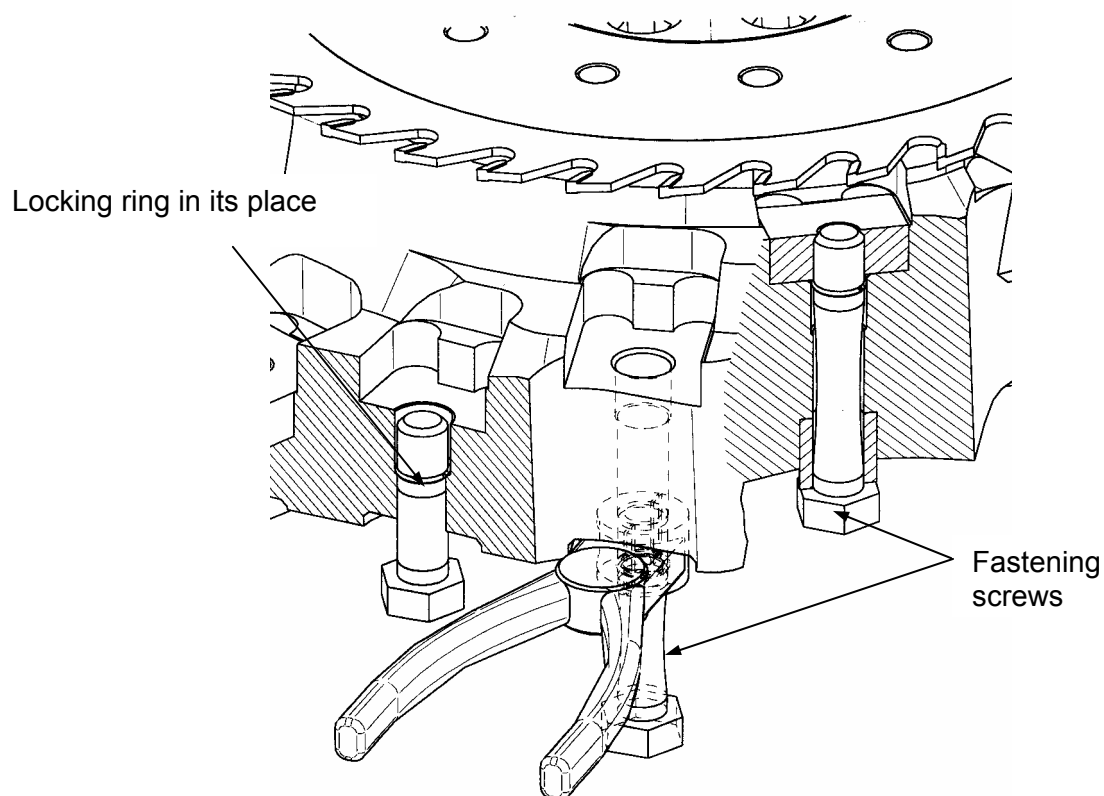
The chipper head is fastened to the shaft by eight hexagonal screws.

Note! When releasing the upper chipper head don't let it fall freely while loosening the screws.

12.5 Installing the chipping knife fastening screws

Chipper heads J609310 and J609320 contain chipping knife fastening screws, which are attached into a chipper head body with a locking ring. This locking ring prevents screws from falling while chipping knives are dismantled.

1. Attach the locking ring into the groove of the fastening screw
2. Check the cleanliness of screw holes and clean if needed.
3. Press the locking ring with a gripper while pushing the fastening screw into the chipper head body. When the locking ring is in the hole correctly, press the screw until it is locked.



13. ADJUSTING THE MACHINES INTO THE RIGHT WORKING LINE

13.1 General

The machines are adjusted using a HewSaw centerline, which simulates the longitudinal center axis of the log. Centerline diameter is 1 mm, which must be noticed in measuring results. Use a micrometer. Clear indicators of misalignment are poor surface quality and off-centered sawing result.

Note! If the log tends to get stuck in the machine, check the condition of the surfacing blades and the knives **first** and then check the centerline of the machine. Most often sawing problems are caused by the poor condition of cutting tools. Check also the pressure of the compressed air, minimum is 6.0 bar. Inspect the hydraulic system too.



When adjusting the machines, control voltage has to be locked in OFF-position. Also pressures from pneumatic system must be removed and hydraulic system has to be turned off. **Note!** Be extra cautious when adjusting the hydraulic servo cylinders. Use sufficiently firm limiters between mechanical structures if there is need to take measurements when the pressure is on to avoid any accidents.

13.2 Adjusting the measuring conveyor

1. Adjust the side rolls symmetrically to the centerline by changing the length of the centering levers.

13.3 Adjusting the log positioner

Note! If there is a reason to believe that the vertical position of the screw jack operated base frame (under the log positioner and chipper canter) does not correspond to the height value in the control system, the position has to be calibrated. Drive the base frame to the same height level as the measuring conveyor by using an optical levelling device and save this position to the control system.

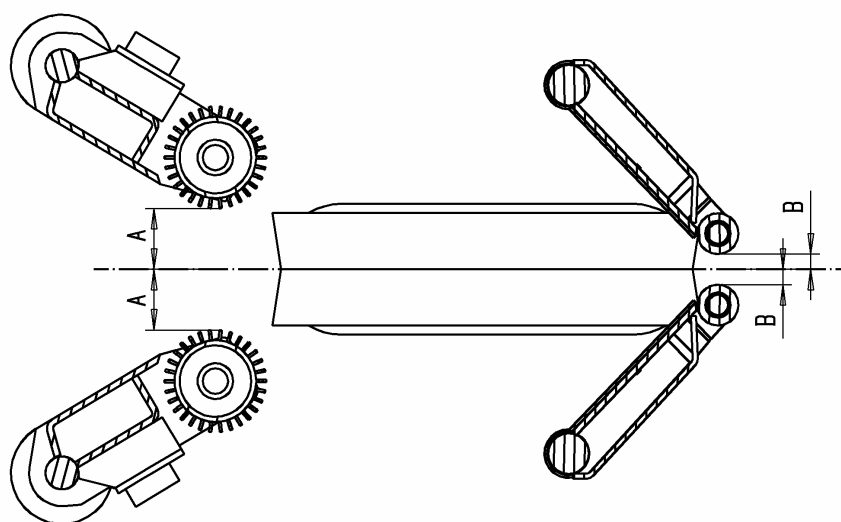
1. Turn the first rotator rolls to the horizontal position so that the rotator is against the rubber cushions. Save this horizontal position to the control system as the value of the 1st rotator rolls.
2. Open the rolls and fill the hydraulic system (when adjusting first time).
3. Close the rolls at 300 mm from one another (this enables measurements).

4. Measure the vertical distance between rolls and the centerline. Set the rolls similarly to the centerline if needed. The tolerance is ± 1 mm. Save this position to the control system.
5. Install the plumb-line in the middle of the upper roller. Measure and set the horizontal position of the rollers to the centerline. The tolerance is ± 1 mm. Save this position to the control system.
6. Measure and adjust the middle roll pair similarly to the centerline by changing the length of the centering lever.
7. Turn the second rotator rolls to the vertical position so that the rotator is against the rubber cushions. Save this vertical position to the control system as the value of the 2nd rotator rolls.
8. Measure the vertical distance between rolls and the centerline. Set the rolls similarly to the centerline if needed. The tolerance is ± 1 mm. Save this position to the control system.

13.4 Adjusting the chipper canter

Note! If there is a reason to believe that the vertical position of the screw jack operated base frame (under the log positioner and chipper canter) does not correspond to the height value in the control system, the position has to be calibrated. Drive the base frame to the same height level as the measuring conveyor by using an optical levelling device and save this position to the control system.

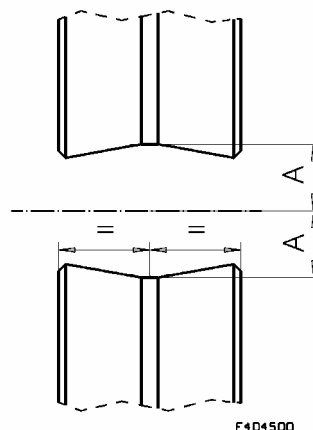
1. Measure and adjust the centering rolls to be equal to the centerline by changing the length of the centering levers.



J64 P500

2. Measure and adjust the infeed wheels (see drawing F404500 below). Center the vertical position of wheels by using the servo cylinder and save the centerline value of the infeed wheels to the control system.

Check also the horizontal alignment of the wheels. If needed, move the bearing unit of the wheel until the wheels are positioned horizontally and lock the position.



3. Adjust the vertical position of the round wood guide in same way the infeed wheels. Center the both feeding chains to the same distance from the centerline by using servo cylinder and save the centerline value of the round wood guide to the control system.
4. Measure the distance between each chipper head and the centerline (see drawing J647800 on page 13/4 and drawing J648000 on page 13/5). Because there is a lead in the chipper head the measurement should be taken of the same place in the feeding direction. Each chipper head unit has its own servo cylinder and these measured values are saved to the control system.
5. Adjust the side guides according to drawing J647800 on page 13/4. Adjust the side guides in two phases. First loosen the screws on the arm of the side guide and adjust the side guide to the same direction than the centerline by the side adjusting screws and shims. The distance to the centerline in the front end of the side guide must not be smaller than in the rear. Having that set, adjust the distance of the side guide to the centerline by using the adjusting screws behind the side guide arm and tighten the screws properly.
6. Adjust the vertical guides according to the drawing J648000 on page 13/5.
7. Center the opposite outfeed rolls at similar distance from the centerline. The vertical position of the upper and lower outfeed rolls is adjusted by changing the position of the centering lever sliding bars. Use bubble tube to check the horizontal alignment of the upper and lower rolls. The side outfeed rolls are centered by adjusting the length of the centering lever.

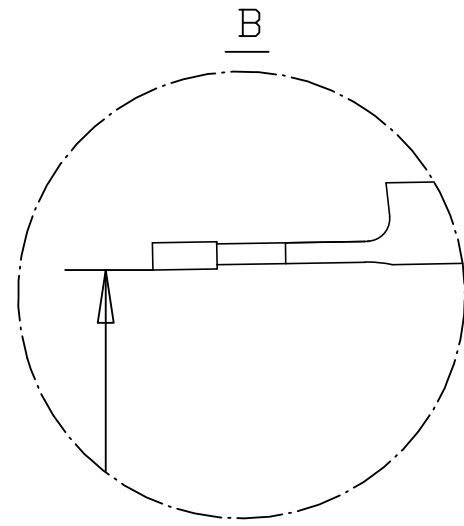
Note! The adjustment values for the guides may change according to the raw material. The guides can be tightened in case the surface quality requires. Too large clearance may cause blade damages.

This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

Tämä piirustus on omaisuuttamme eikä sitä saa ilman meidän lupamme kopioida, jäljentää tai käyttää muuhun tarkoitukseen ilman oikeutettua henkilöä.

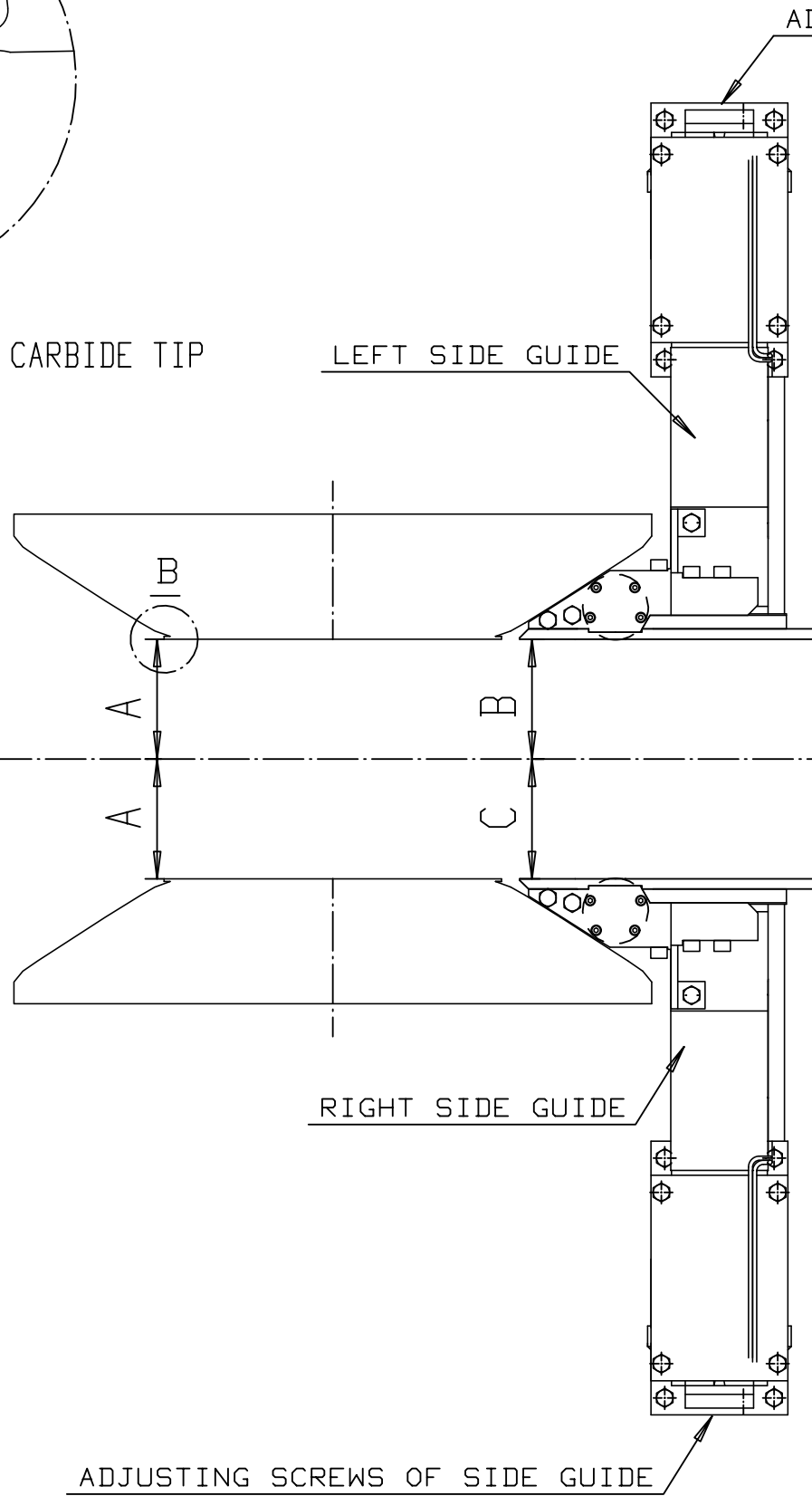
TYÖTAPAKOHTAISET YLEISTOLERANSSIT: SFS-EN ISO 13920 / 22768-1
 *Hitsatut rakenteet: kulma- ja pituusmitat
 *Koneistetut kappaleet: pituus- ja kulmamitat

TARKKUUSLUOKKA B
 TARKKUUSLUOKKA F



MEASURE DISTANCE A FROM CARBIDE TIP

FEEDING DIRECTION



ADJUSTING SCREWS OF SIDE GUIDE

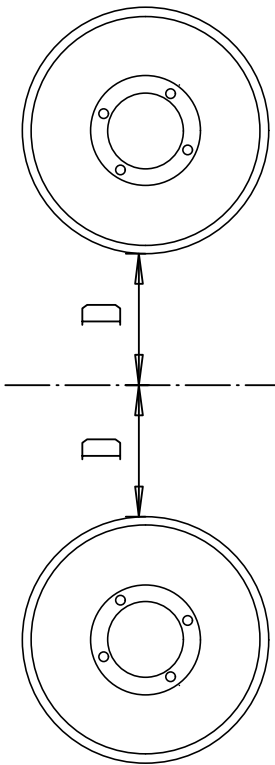
LEFT SIDE GUIDE

MEASURE DISTANCE B AND C FROM SIDE GUIDE WEARING PLATE

RIGHT SIDE GUIDE

ADJUSTING SCREWS OF SIDE GUIDE

SIDE OUTFEED ROLLS



$$B = A + (0.15 \dots 0.25 \text{mm})$$

$$C = A + (0.35 \dots 0.50 \text{mm})$$

$$D = A - (0.50 \dots 1.50 \text{mm})$$

Scale: 1:10	Dr. PL App.	2005-06-08	Repl./Repld: Ref.		Weight: From: H211000
<p>VEISTO GROUP VEISTO OY</p>				J647800 DOKUMENTTI	
				Job n:o	
				Dwg n:o J647800	

ADJUSTMENT OF SIDE GUIDES AND
 SIDE OUTFEED ROLLS
 CHIPPER CANTER

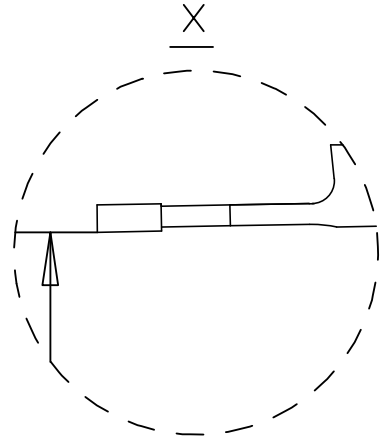
This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

Diese Zeichnung ist unser Eigentum, Sie darf nicht ohne unser Einverständnis kopiert oder dritten Personen zur Verfügung gegeben oder auf ähnliche Weise verwendet werden.

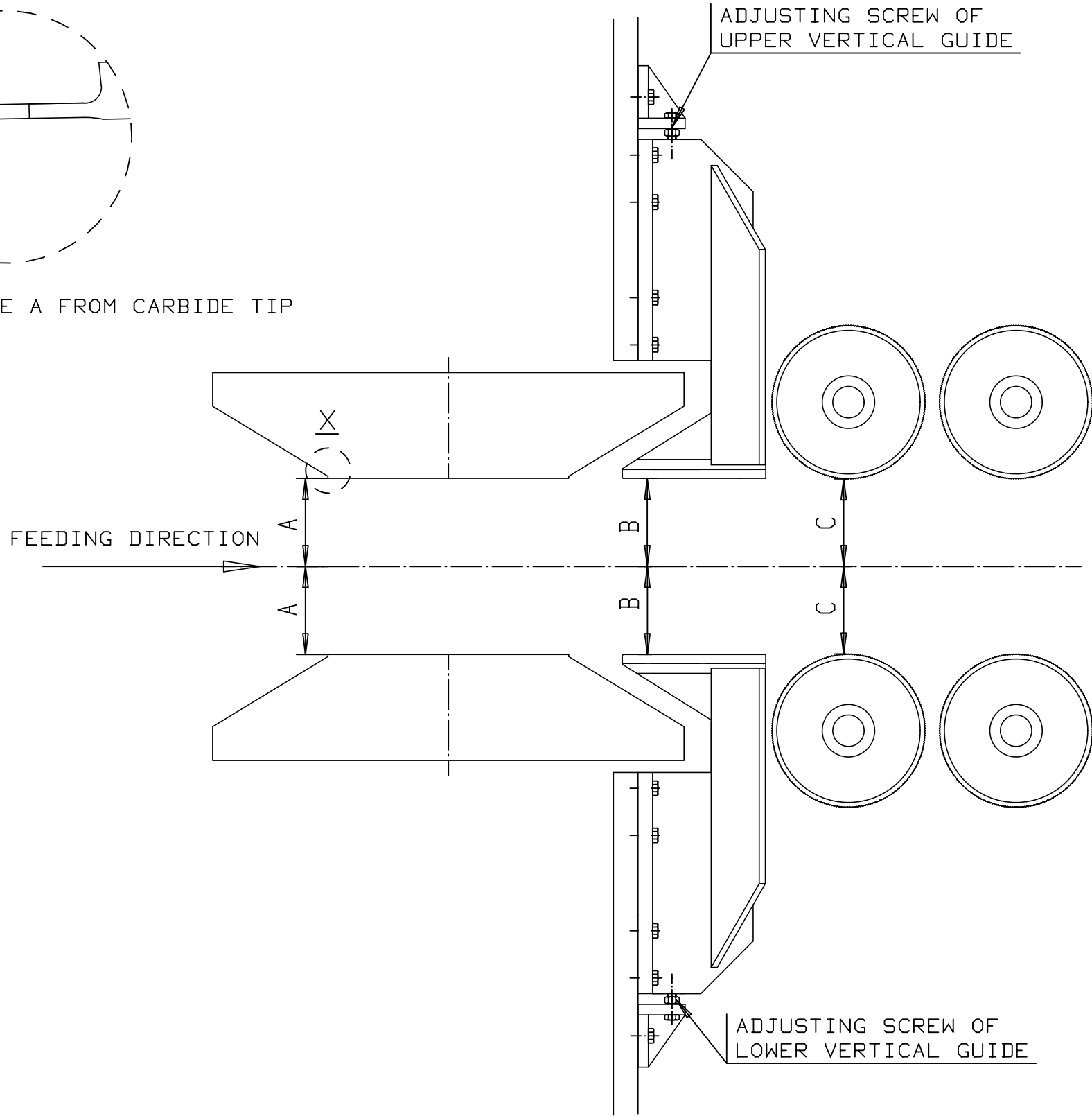
Tämä piirustus on omaisuuttamme eikä sitä saa ilman meidän lupaa kopioida, jäljentää tai näyttää muulle henkilölle.

Tämä piirustus on omaisuuttamme eikä sitä saa ilman meidän lupaa kopioida, jäljentää tai näyttää muulle henkilölle.

TYÖTAPAKOHTAISEI YLEISIOLERANSIT: SFS EN ISO 13920 / 22768-1
 *Hitsatut rakenteet: kulma- ja pituusmitat
 *Koneistetut kappaleet: pituus- ja kulmamitat
 TARKKUUUSLUOKKA B
 TARKKUUUSLUOKKA F
 TARKKUUUSLUOKKA m



MEASURE DISTANCE A FROM CARBIDE TIP



$$B = A + (0.30 \dots 0.45 \text{mm})$$

$$C = A - (0.50 \dots 1.50 \text{mm})$$

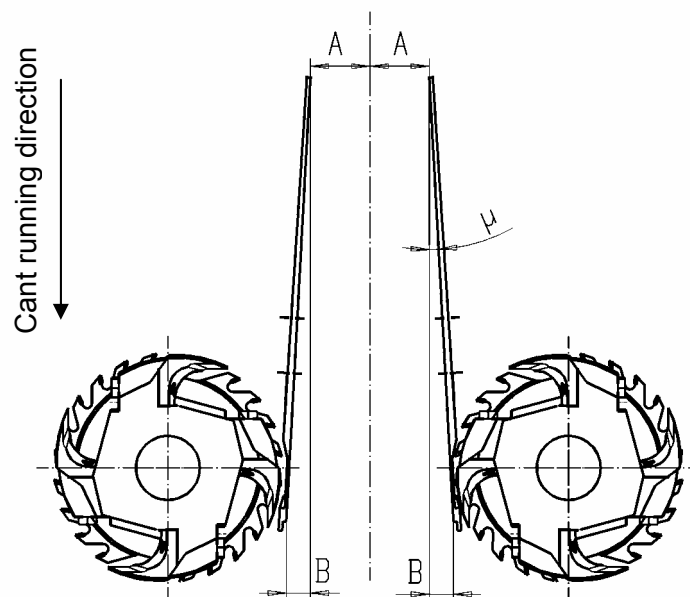
Scale: 1:10	Dr. PL App.	2005-06-08	Repl./Repld: Ref.		Weight: From: H211100
 VEISTO GROUP VEISTO OY					J648000 DOKUMENTTI
				ADJUSTMENT OF VERTICAL GUIDES AND OUTFEED ROLLS CHIPPER CANTER	

13.5 Adjusting the cant scanning conveyor

1. Adjust the side rolls symmetrically to the centerline by changing the length of the centering levers.

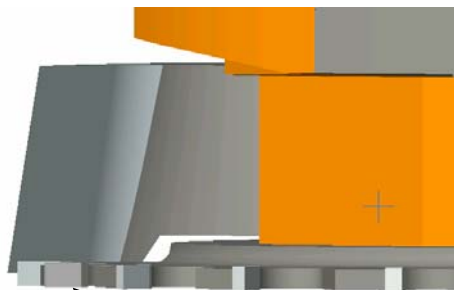
13.6 Adjusting the cant saw

1. Measure the distances from the infeed rolls to the centerline. Save these servo cylinder values to the control system. While sawing the rolls are set 1 - 4 mm narrower than the width of cant.
2. Adjust the positions of side guides by using servo cylinders. Measure distances from both side guides to the centerline and set these values to the PLC. During sawing the clearance between cant and the side guides must be 0.50 mm (see drawing J649600 on page 13/8).
3. Horizontal positions of the circular saw units are controlled by servo cylinders (drawing J651700 on page 13/9). Save values to the control system.
4. Rear supports of the circular saw units are adjusted by servo cylinders. Measure distances to the centerline and set them to the PLC. Use the automatism to adjust the both rear supports 0.50 - 1.00 mm wider than the cutting edges of the chipper head (drawing J649600 on page 13/8).
5. Adjust the edging units. The servo cylinders move the edging units horizontally. Measure the distance from the centerline to the nearest surface of the separating knives as shown drawing below (distance A). Set the values to the control system.



Note! The separating knives are closer the centerline in the front end than the rear end. The front end of the separating knife must go into the saw kerf. Do not bend the knives during the alignment.

Every edging assembly has its own hydraulic servo cylinders to adjust a vertical position. Attach the edging assemblies in their places and measure the distance from the cutting edge of the finishing blades to the centerline and save the values to the control system. After a trial run check the side board width and make adjustments if needed.



Measure from the cutting edge of the finishing blade

6. Measure the distances of the cant outfeed rolls. Set measurement results to the PLC.
7. Measure the distances from the outfeed rolls to the centerline (drawing J649600 on page 13/8). Save these servo cylinder values to the control system. While sawing the rolls are set 1 - 4 mm narrower than the width of sawed cant. In other words the distance between rolls is:
Cant width - amount of saw kerfs x saw kerf - (1...4 mm)

13.7 Adjusting the separating conveyor

1. Adjust the side rolls symmetrically to the centerline by changing the length of the centering levers.
2. Change the length of the centering lever to adjust the board separator arms symmetrically to centerline. Measure horizontal distance from the board separator arms to the centerline and save value to the control system. Also the vertical position of the separator arms from the centerline is checked and feeded to the PLC.

13.8 Adjusting the cant turner

1. Turn the rotating rolls to the horizontal position so that the rotator is against the rubber cushions. Save this horizontal position to the control.
2. Open the rolls and fill the hydraulic system (when adjusting the first time).
3. Close the rolls at 300 mm from one another (this enables measurements).
4. Measure the vertical distance between rolls and the centerline. Set the rolls similarly to the centerline if needed. The tolerance is ± 1 mm. Save this position to the control system.

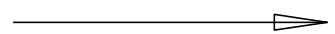
This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

These drawings are our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

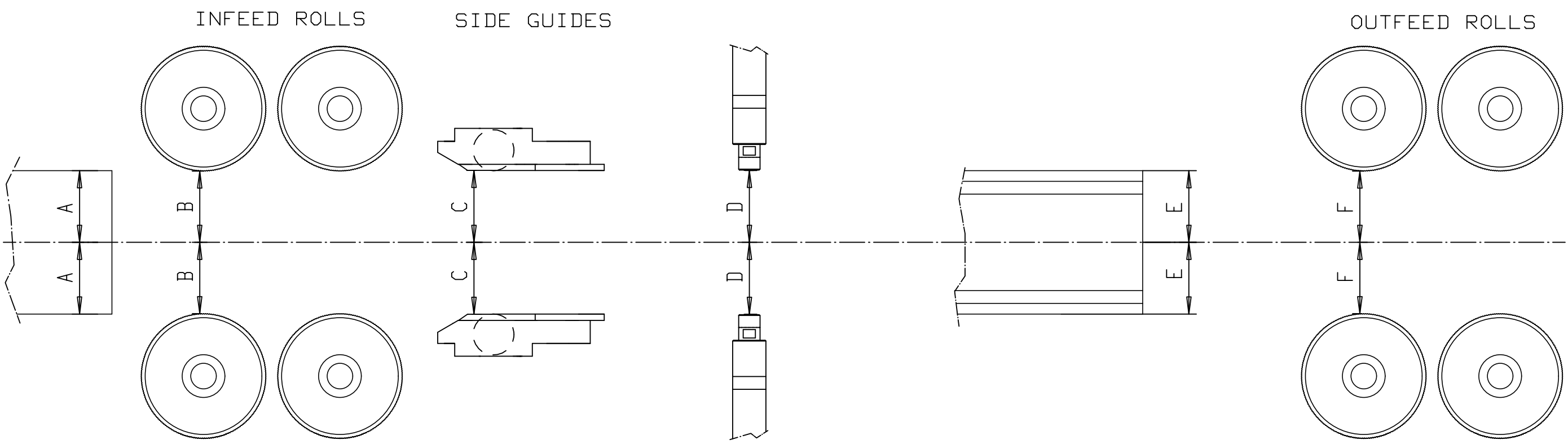
Tämä piirustus on omaisuus ja pituusmitat
suuttamie eikä sitä saa
ilman meidän lupaa
jäljentää tai käyttää
sivullisille.

TYÖTAPAKOHTAISET YLEISTOLERANSSIT: SFS EN ISO 13920 / 22768-1
*Hitsatut rakenteet: kulma- ja pituusmitat
*Koneistetut kappaleet: pituus- ja kulmamitat

CANT RUNNING DIRECTION



REAR SUPPORTS OF SAWING UNITS



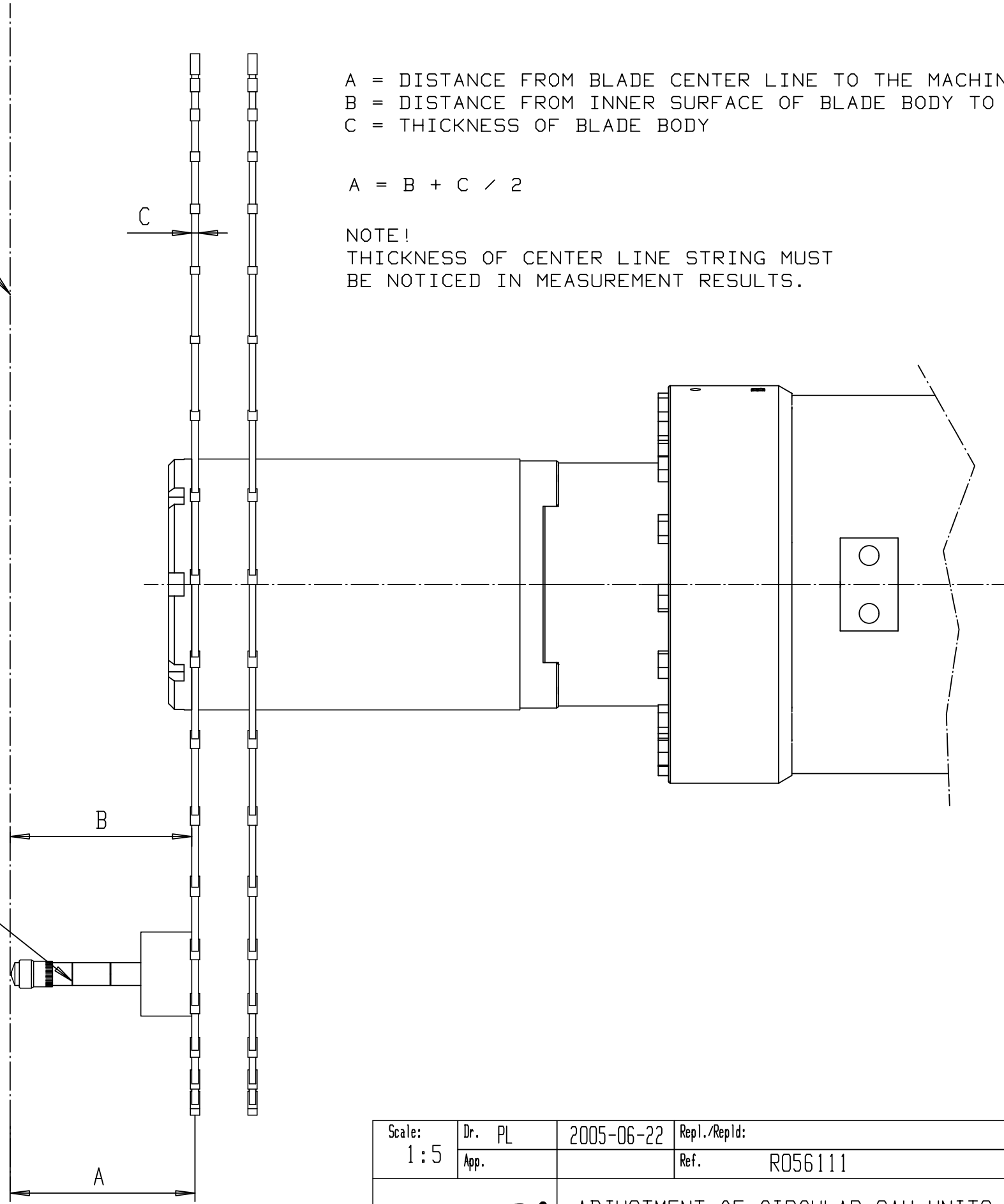
NOTE! MEASURE DISTANCE C FROM FRONT SIDE OF SIDE GUIDE WEARING PLATE

- A = CANT WIDTH / 2
- B = A - (0.50...2.00mm)
- C = A + (0.30...0.50mm)
- D = A + (0.50...1.00mm)
- E = OVERALL WIDTH OF SAWN GOODS AFTER CANT SAWING / 2
- F = E - (0.50...2.00mm)

Scale: 1:10	Dr. PL App.	2005-06-08	Repl./Repld: Ref.		Weight: From: J483900
<p>VEISTO GROUP VEISTO OY</p>					J649600 DOKUMENTTI Job n:o Dwg n:o J649600
				ADJUSTMENT OF INFEED AND OUTFEED ROLLS CANT SAW	

CENTER LINE OF MACHINE

MEASURE DISTANCE B WITH MICROMETER



- A = DISTANCE FROM BLADE CENTER LINE TO THE MACHINE CENTER LINE
- B = DISTANCE FROM INNER SURFACE OF BLADE BODY TO THE MACHINE CL
- C = THICKNESS OF BLADE BODY

$$A = B + C / 2$$

NOTE!
 THICKNESS OF CENTER LINE STRING MUST BE NOTICED IN MEASUREMENT RESULTS.

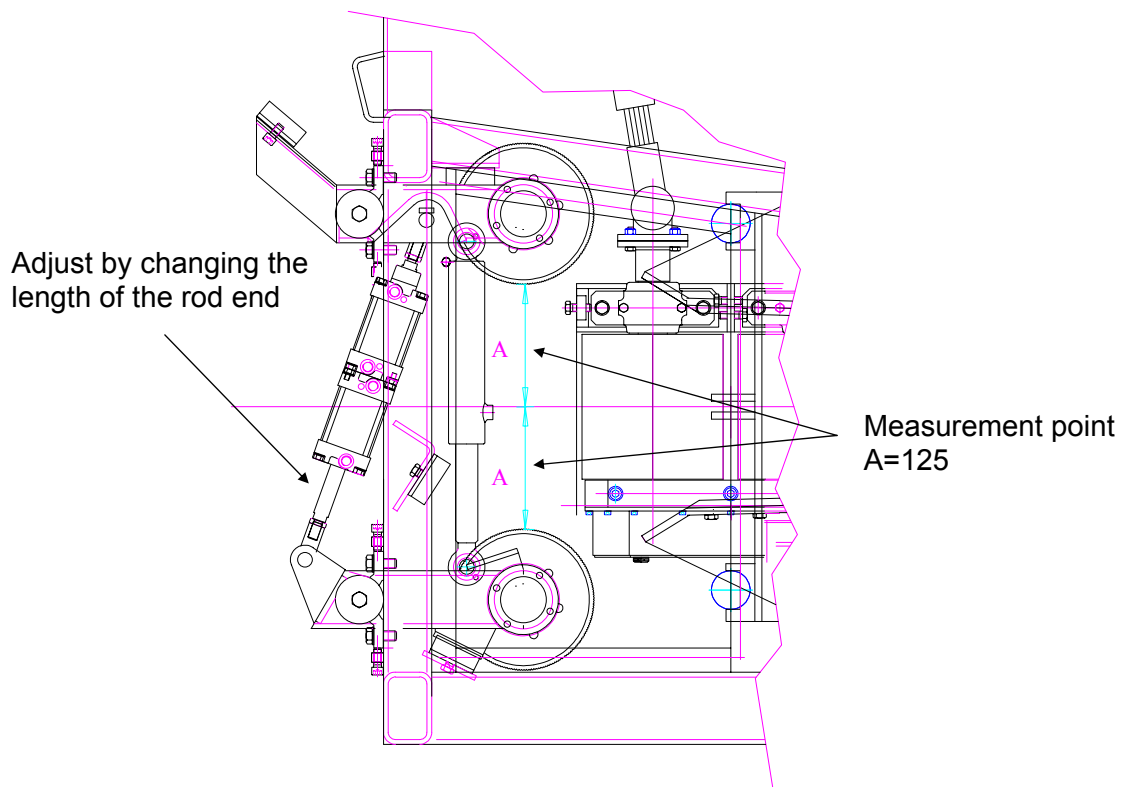
Scale: 1:5	Dr. PL App.	2005-06-22	Rep1./Rep1d: Ref. R056111		Weight: From: J459900
 VEISTO GROUP VEISTO OY				J651700 DOKUMENTTI	
				Job n:o	
				Doc n:o J651700	

13.9 Adjusting the infeed conveyor

1. Adjust the side rolls symmetrically to the centerline by changing the length of the centering levers. The last side roll pair is centered with the servo cylinder and the position is feeded to the control system.

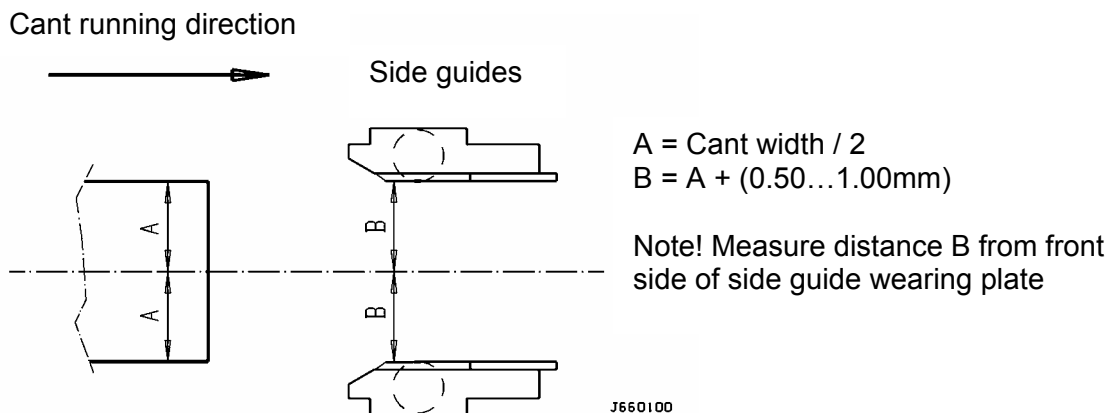
13.10 Adjusting the rip saw

1. Adjust the side feeding rolls at similar distance from the centerline. Centering is carried out by changing the rod end length of the pneumatic cylinder (see drawing below). Make the adjustments when the distance between the rolls is 250 mm. Use the servo cylinder to press the rolls towards the centerline and measure distances (A). Release the pressures from the pneumatic and hydraulic system after that and adjust the length of the rod end. Switch pressures on and press rolls towards the centerline and measure the distances (A) again. Repeat these procedures until the rolls are centered. Measure distance A and save it to the PLC.



2. The lower infeed rolls are mounted to the frame. The upper infeed rolls are moved by the hydraulic servo cylinder. Measure the vertical position of the upper rolls and save this value to the control system. While sawing the upper roll is adjusted so that the rolls are 1 - 4 mm narrower than the height of sawed cant.

- Adjust the positions of side guides by using servo cylinders. Measure distances from both side guides to the centerline and set these values to the PLC. During sawing the clearance between cant and the side guides must be 0.50...1.00 mm (see drawing below).



- The circular saw units of the rip saw are adjusted same way as the sawing units in the cant saw.
- Use same methods as in the cant saw when adjusting the rear supports of the circular saw units.
- The vertical and horizontal alignments of the edging units are performed also same way as in the cant saw.
- The outfeed rolls are adjusted same way as the infeed rolls. While sawing the side outfeed rolls are set 1 - 4 mm narrower than the width of sawed cant. In other words the distance between rolls is:
Cant width - amount of saw kerfs x saw kerf - (1...4 mm)

13.11 Trial run

- Select a straight log and feed it through the machines and check the sawing result.
- Make the corrections in the adjustments if there are problems in feeding or sawing result (see Troubleshooting, on page 16/1).

14. SERVICE

14.1 General

Only trained personnel are allowed to operate and maintain the machines. In order to achieve the best production level, the machine has to be inspected and serviced daily. **Preventive maintenance programs are a key to a successful operation.** Inspecting the machine for worn parts and detecting them in good time will save the mill from much of downtime. Keeping the machine clean is essential for machine's good operation and gives a change to inspect it for defects.

Check daily the sawing result. Do the needed adjustments immediately when the defect is observed. Lubricate the machine according the lubrication instructions. Tighten the rip saw belts and taper lock bushings.

Note! Check the tension of the bolts and nuts of the machine after one week operation and thereafter periodically.

The machine must be cleaned daily using pressured air. Remove any accumulated sawdust and chips from the guide shaft bracket and electric motor cooling ribs. Pay special attention to the cleanliness of the roller guide rails. Do not direct the air jet toward any of the lip seals from a close distance. The rip saw belt and sprockets should also be cleaned regularly. It is a good idea to clean all the photocells during each maintenance break. Note that the control voltage must be switched off before cleaning the photocells.

The lubrication points of the sawing line are mainly connected into the centralized lubrication systems. Lubrication instructions are shown in the chapter 14.8.

14.2 Inspection

In addition to the daily operations mentioned above we recommend to inspect certain parts of the machines periodically. The inspection objects and periods are listed in the next chapters.

14.2.1 Measuring conveyor

Inspection object	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Cylinders			X	
Conveyor chain and wearing plates			X	
Lubrication system for wearing plates			X	
Pneumatic system			X	
Safety and control devices			X	
Bearings of the side rolls				X
Bearings of the conveyor chain				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.2 Log positioner

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Cylinders			X	
Chains and sprockets			X	
Safety and control devices			X	
Bronze bushings of the guide shafts				X
Bearings of the feeding rolls				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.3 Chipper canter

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Infeed wheels		X		
Centering levers		X		
Infeed chains of the round wood guide		X		
Centering rolls			X	
Chipper heads			X	
Bearing housings of the chipper head units			X	
Cylinders			X	
Screw jacks			X	
Lubrication system for the round wood guide chains			X	
Safety and control devices			X	
Pneumatic system			X	
Levers of the infeed wheels				X
Levers of the round wood guide				X
Bronze bushings of the chipper head units				X
Levers of the outfeed rolls				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.4 Cant scanning conveyor

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Cylinders			X	
Conveyor chain and wearing plates			X	
Lubrication system for wearing plates			X	
Safety and control devices			X	
Pneumatic system			X	
Bearings of the side rolls				X
Bearings of the conveyor chain				X
Lubrication system (grease)				X
Limiter for the side rolls				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.5 Cant saw

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Cylinders			X	
Side guides			X	
Sprockets of the circular saw units			X	
Bearing units of the circular saw units			X	
Rear supports of the circular saw units			X	
Separating knives			X	
Bearing housings of the edging units			X	
Safety and control devices			X	
Water jet system			X	
Pneumatic system			X	
Bronze bushings of the infeed and outfeed rolls				X
Bearings of the infeed and outfeed rolls				X
Lower guide				X
Bronze bushings of the side guides				X
Bearing of the side guides				X
Roller runner blocks of the circular saw units				X
Bronze bushings of the edging units				X
Roller runner blocks of the edging units				X
Roller runner blocks of the cant outfeed rolls				X
Bronze bushings of the middle frame block				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.6 Separating conveyor EK2

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Levers of the board separator arms		X		
Cylinders			X	
Conveyor chain and wearing plates			X	
Lubrication system for wearing plates			X	
Safety and control devices			X	
Bronze bushings of the board separator arms				X
Bronze bushings of the 1st roll pair				X
Bearings of the cassette cams and upper stoppers				X
Bearings of the side rolls				X
Bearings of the conveyor chain				X
Limiter of the side rolls				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.7 Cant turner

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Cylinders			X	
Chain and sprockets			X	
Safety and control devices			X	
Bronze bushings of the guide shafts				X
Bearings of the feeding rolls				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.8 Infeed conveyor

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Cylinders			X	
Lubrication system for chains			X	
Chains and sprockets			X	
Safety and control devices			X	
Bearings of the side rolls				X
Bearings of the conveyor rolls				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.2.9 Rip saw

Inspection objects	Minimum inspection period in months			
	1	3	6	12
Centering levers		X		
Cylinders			X	
Side guides			X	
Sprockets of the circular saw units			X	
Bearing units of the circular saw units			X	
Rear supports of the circular saw units			X	
Separating knives			X	
Bearing housings of the edging units			X	
Safety and control devices			X	
Water jet system			X	
Pneumatic system			X	
Bronze bushings of the infeed and outfeed rolls				X
Bearings of the infeed and outfeed rolls				X
Lower guide				X
Bronze bushings of the side guides				X
Bearing of the side guides				X
Roller runner blocks of the circular saw units				X
Bronze bushings of the edging units				X
Roller runner blocks of the edging units				X
Oil change for the chain transmissions				X
Bronze bushings of the middle frame block				X
Lubrication system (grease)				X
Hydraulic system	See instructions for the hydraulic system			
Electric motors	At manufacturer's recommendation			

14.3 Servicing the gear motors

Inspection and maintenance intervals of the gear units:

- Check oil every 3000 machine hours at least every six months.
- change oil:
 - o mineral oil: minimum every three years
 - o synthetic oil: minimum every five years

More information for the gear units, see folder's section "Machine enclosures".

Electric motors are lubricated by instructions of the motor manufacturer.

14.4 Servicing the infeed wheels

The infeed wheels of the chipper canter are filled with bulk. Check the condition of infeed wheel surfaces, studs and bearings regularly.

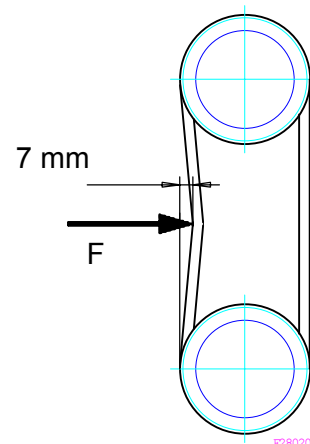
Change the infeed wheels through the service opening on the right side of the machine. Infeed wheels weigh approximately 125 kg and therefore fasten infeed wheel properly to a lifting machine. Remember to lock the door after changing.

14.5 Cogged belts of the cant saw and rip saw

Goodyear Eagle PD R1568 cogged belts are used on the transmission of the circular saw units. Tighten the belt tension according instructions below. Recheck the belt tension and alignment after 8 hours of operation after the first installation to ensure the drive has no shifted. Later recheck the belt tension after one month of operation.

Check the belt tension by pressing the belt downright to the belt between the span length. Use the belt tension gauge for measuring the proper deflection force F . The proper deflections and deflection forces are:

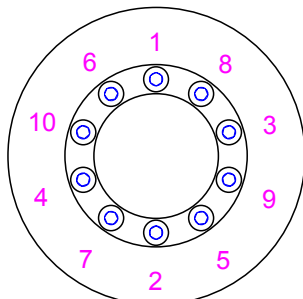
- new belt: 7 mm deflection $F=370$ N
- used belt: 7 mm deflection $F=270$ N



Install the belt arrowhead against the rotating direction. Remember this when removing and installing the sprockets.

14.6 Installing the tensioning sleeves of the circular saw units

Lubricate the tensioning sleeve lightly with motor oil. Mount the sprocket in line with the other sprocket and tighten the tensioning sleeve. Tighten the tensioning sleeve in phases, in order as shown in the picture below. The torque in the first phase is 10 Nm. The second phase is 20 Nm, the third 30 Nm etc.

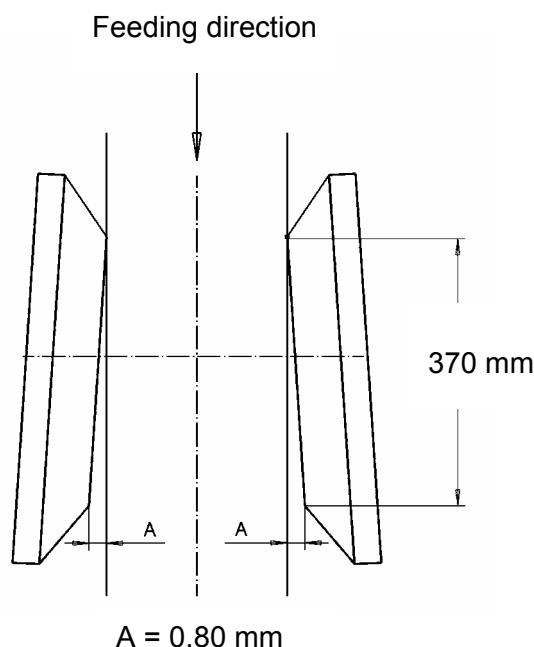


Tensioning sleeve	Pcs / Size	Torque
RCK11 65x95	9 / M8	30 Nm
RCK11 75x115	11 / M10	60 Nm

Install the belts. Check the tightness of the belts after a one day of operation and monthly after that.

14.7 Chipper head lead

Check the chipper head lead in case the chipper head bearing housing have been removed. Measure the lead from a smooth surface of the finishing blade to the centerline. The correct lead is 0.80 mm when the distance between measuring points is 370 mm (see picture below).



14.8 Lubrication instructions

HewSaw SL250 Trio sawing line is equipped with centralized lubrication systems (Lincoln and Safematic). The centralised lubrication system for grease has been designed to delivery commercial greases up to NGLI grade 2. In the oil lubrication systems (Safematic) use Shell Tellus 32 or comparable oil.

Note! Some lubrication points are not connected into the centralized lubrication systems. Lubrication instructions for these points are also listed in the next sections.

Absolute cleanliness is essential when handling lubricants. Impurities will remain suspended in the lubricant and cannot settle. This will result in damage to the lubrication system and thus to the bearings.

The centralized lubrication system includes a lubrication pump, line valves, metering devices and plumbing between these parts and lubrication points. At least one line valve need to be open at the same time when the lubrication pump starts lubrication.

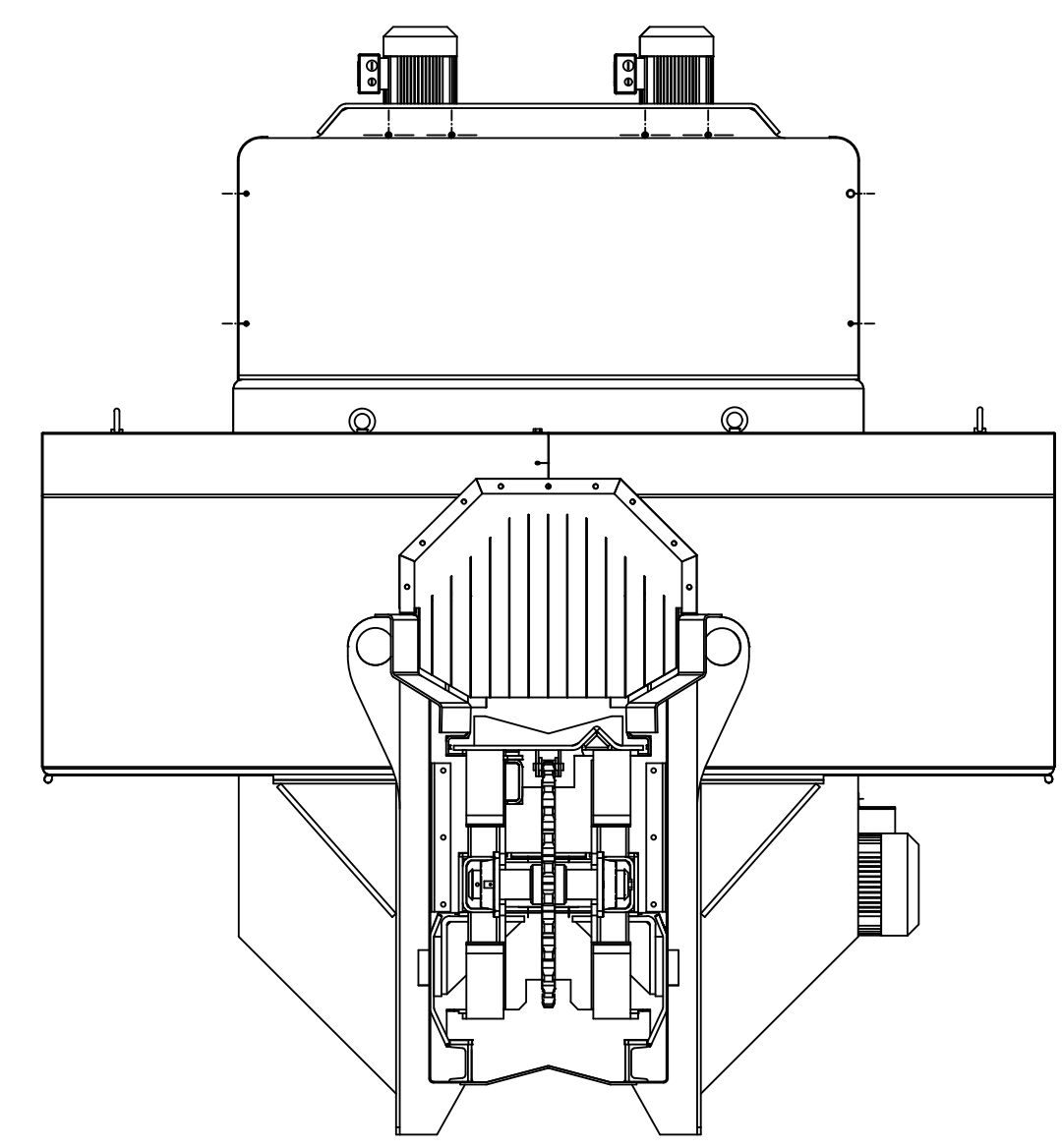
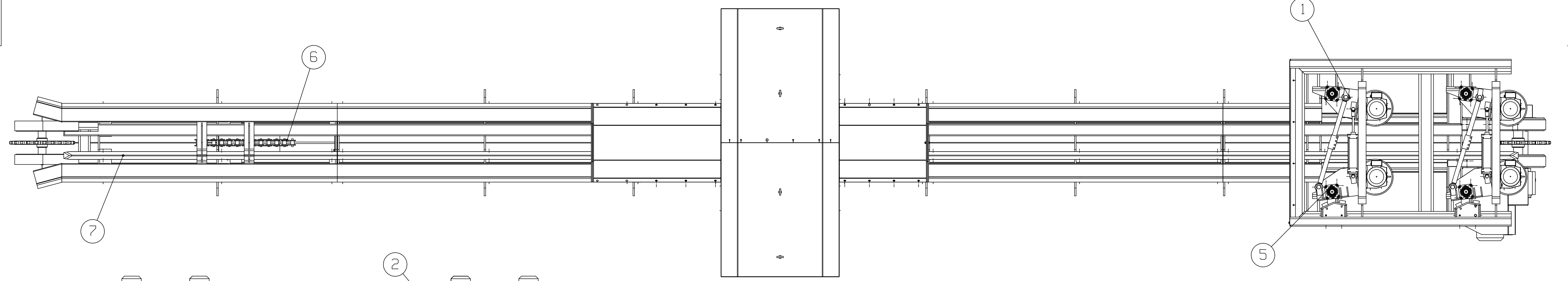
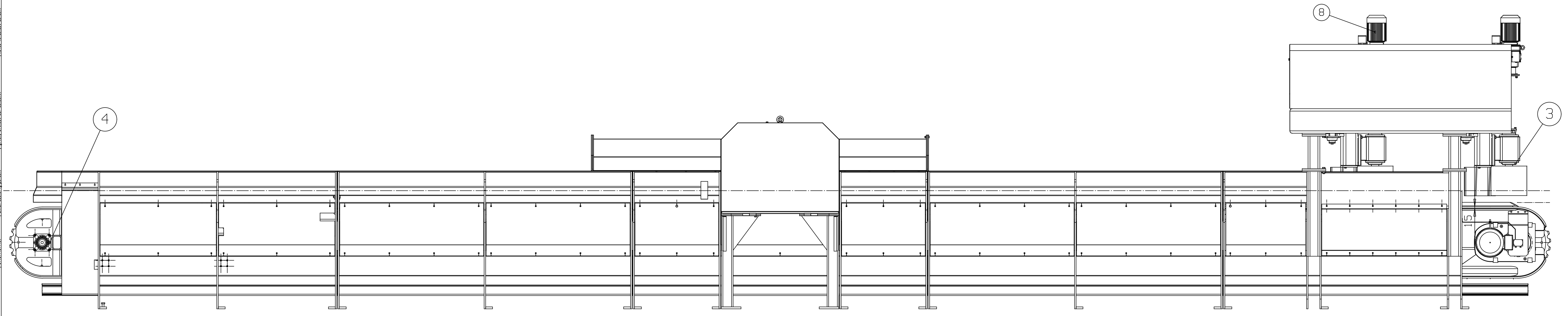
Note! Do not plug the grease lubrication hose or tube if it is broken or it will stop the whole system (Lincoln). In SSV dividers outlets 1 and 2 must be in use to allow the system to operate properly.

Hereinafter mentioned amounts of grease and lubrication cycles are recommendations. The general grease pump gives 2 g per press. Use EP 2 Lithium Based grease if lubricated manually. Do not overgrease bearings or it will cause pre-nature bearing failure.

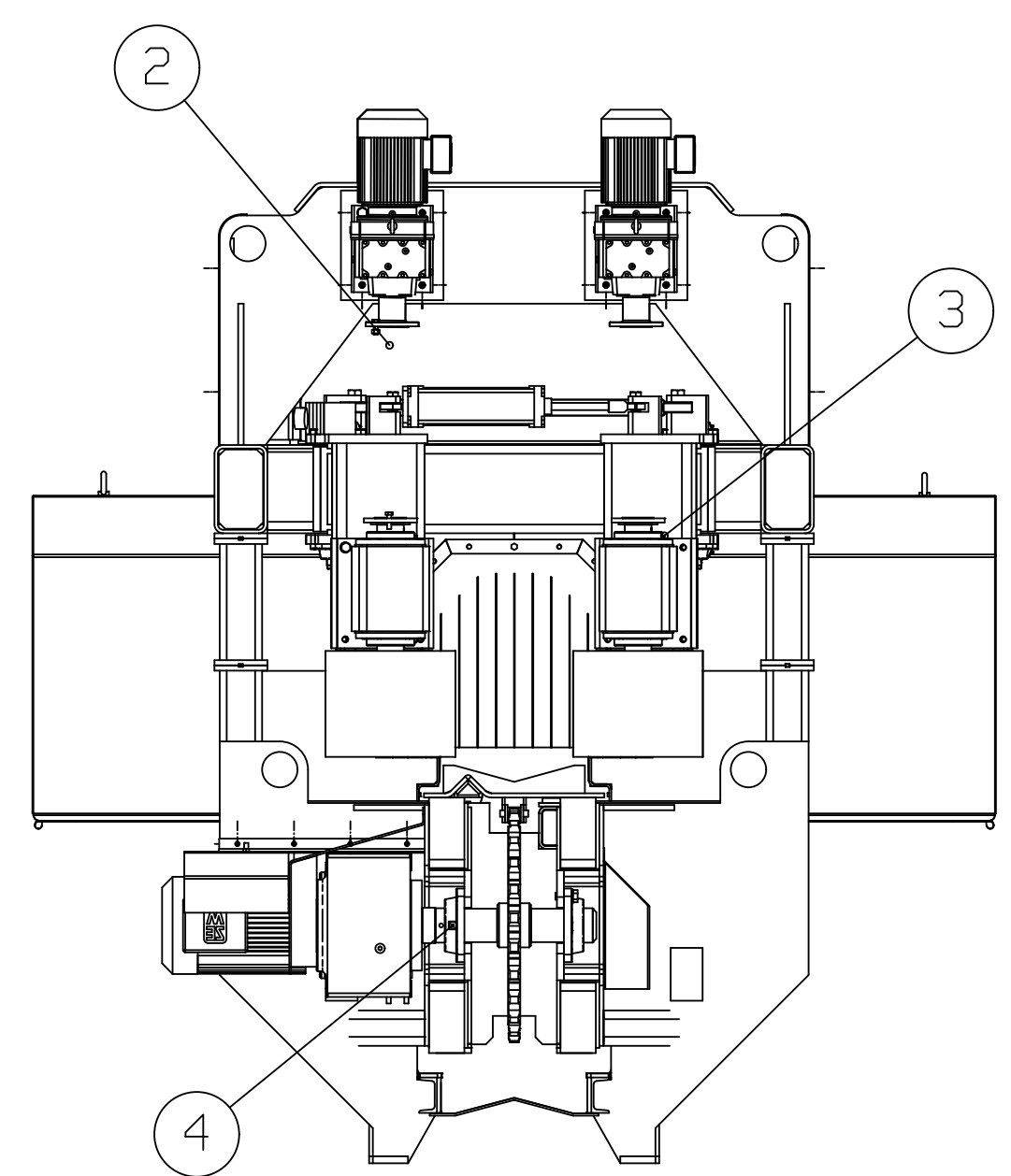
14.8.1 Lubrication instructions, measuring conveyor (Drawing K178900)

No	Item	Pcs	Interval/hrs	Amount/g.
1	Mountings of the centering lever	4	80	4
2	Cardan shafts	8	80	4
3	Bearings of the side rolls	8	160	4
4	Bearings of the chain sprockets	4	160	4
5	Bearing housings of the side roll arms	8	160	4
6	Mountings of the chain tensioner cylinder	2	160	4
7	Lubrication of the wearing plates (Drawing K197200)	1	Oil lubrication *(1)	Oil lubrication *(1)
8	Gear motors		See chapter 14.3	See manufacturer's instructions

- (1) Use the measuring conveyor one week without oil lubrication. After the wearing plates are shiny and smooth, those are cleaned well with compressed air. Lubricate the cleaned wearing plates with oil. After that, lubricate the plates manually once in a day. If the measuring conveyor is equipped with the automatic lubrication system, the lubrication period is 1 cm³ in 2 hrs intervals for example.



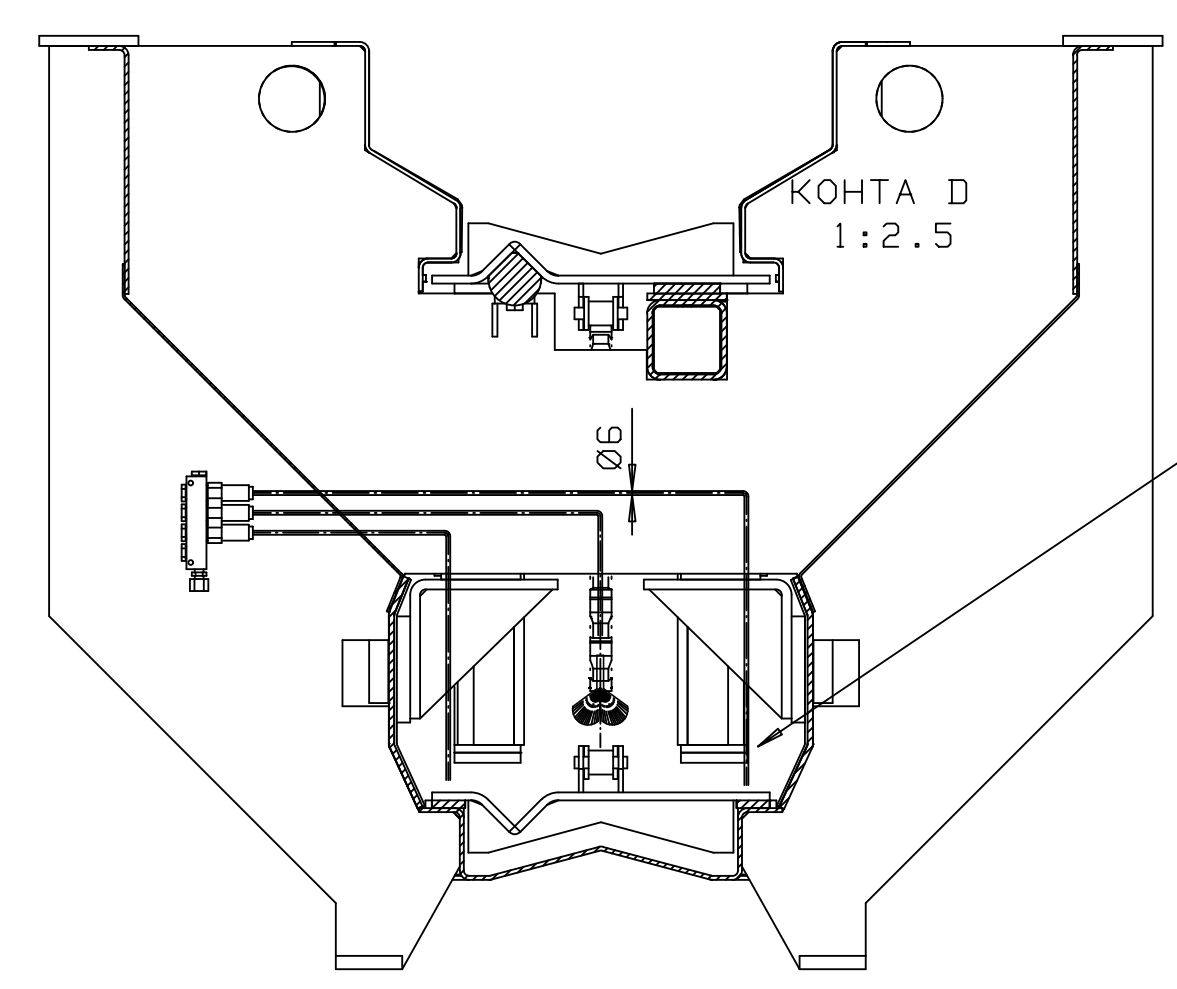
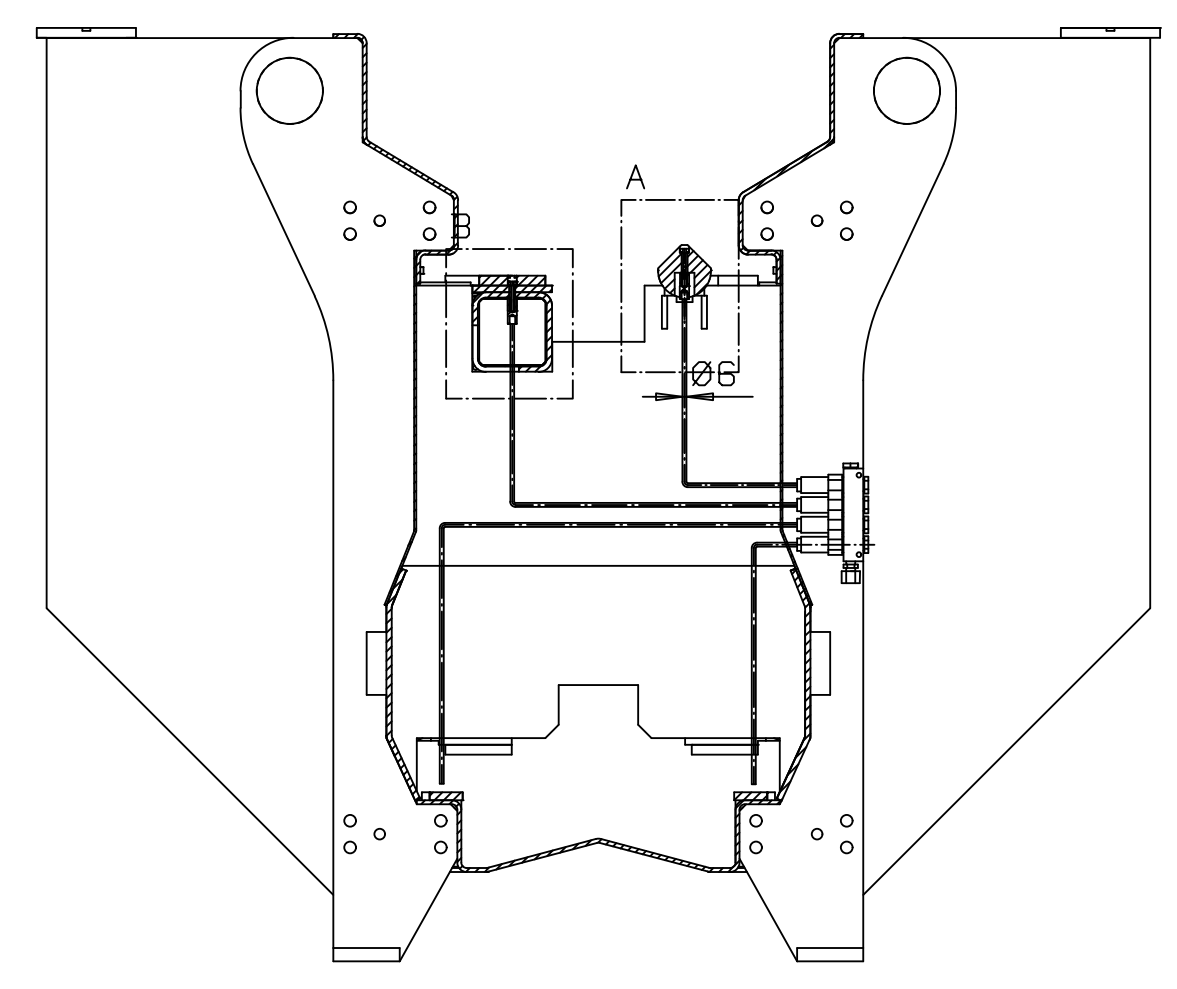
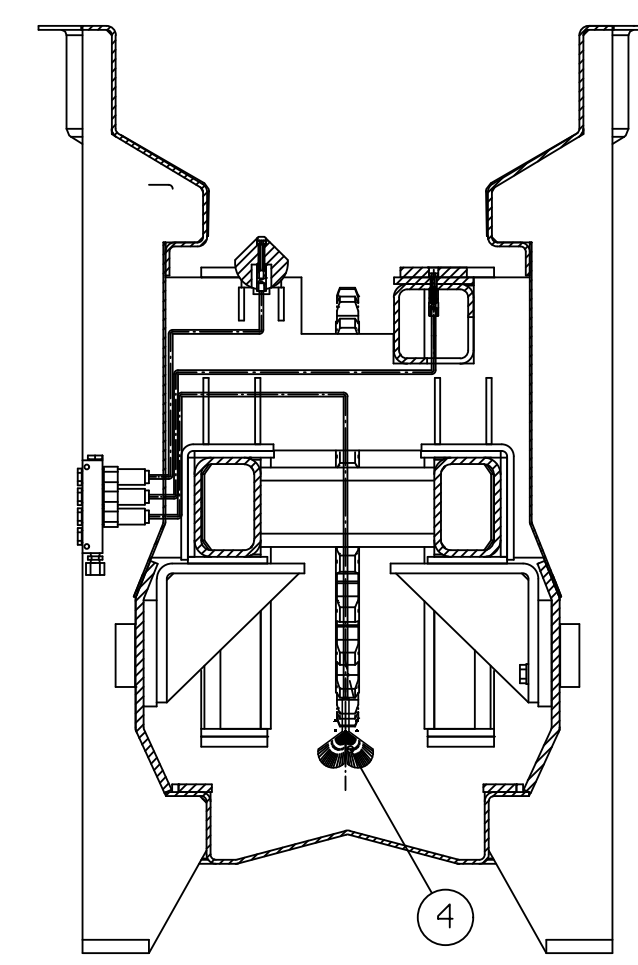
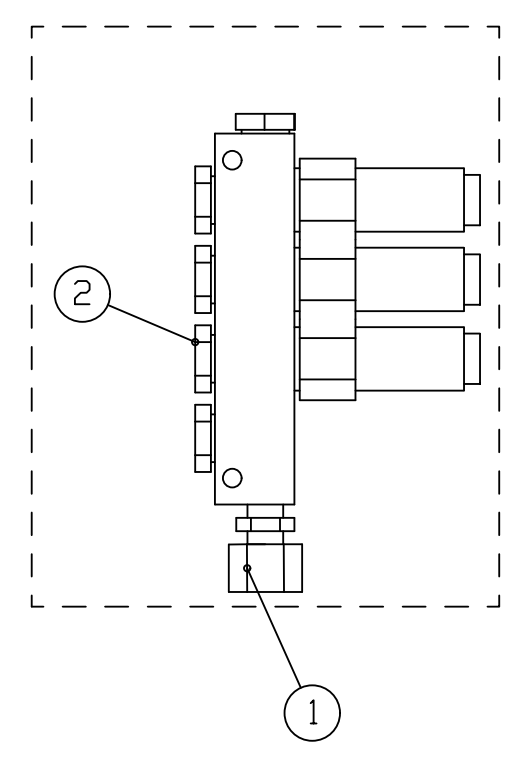
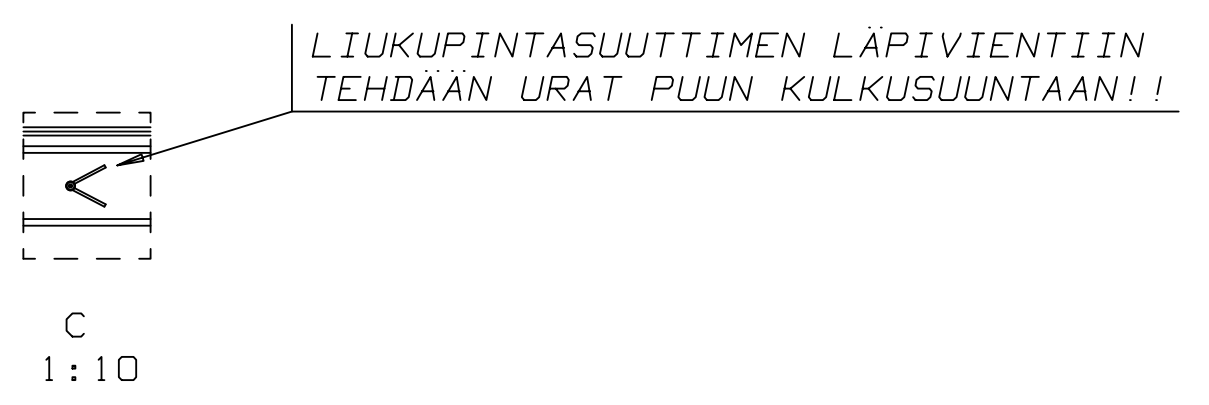
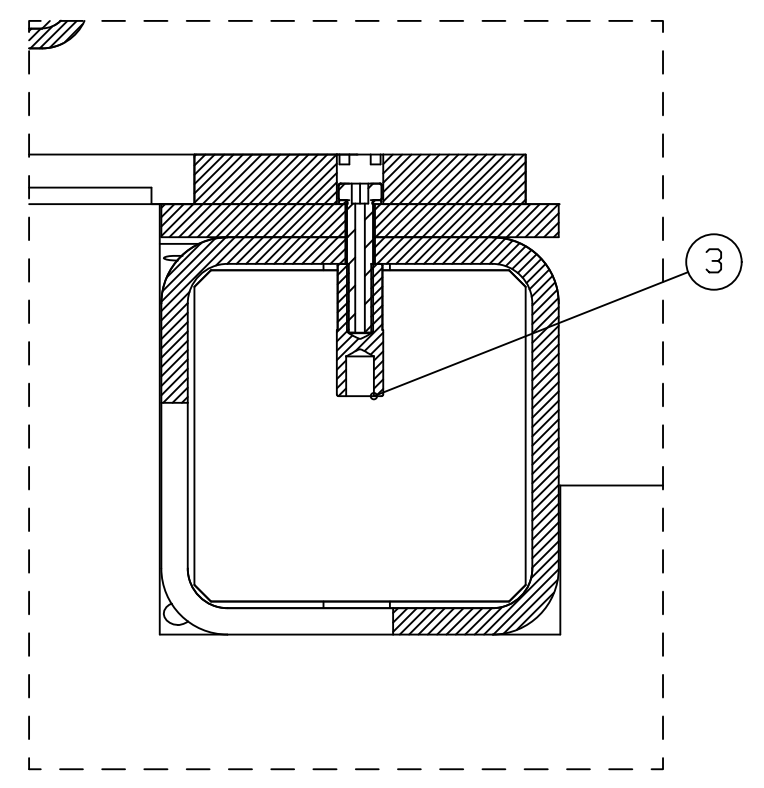
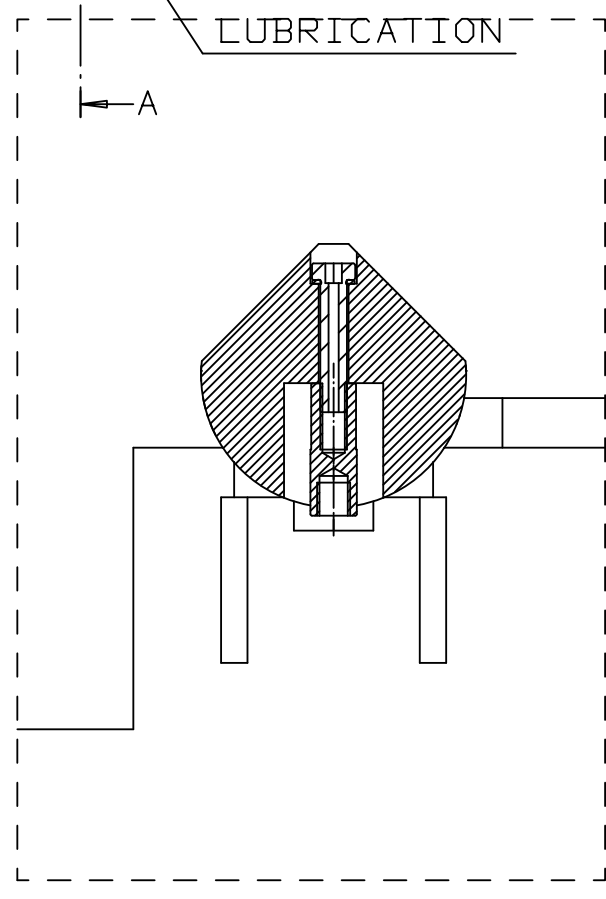
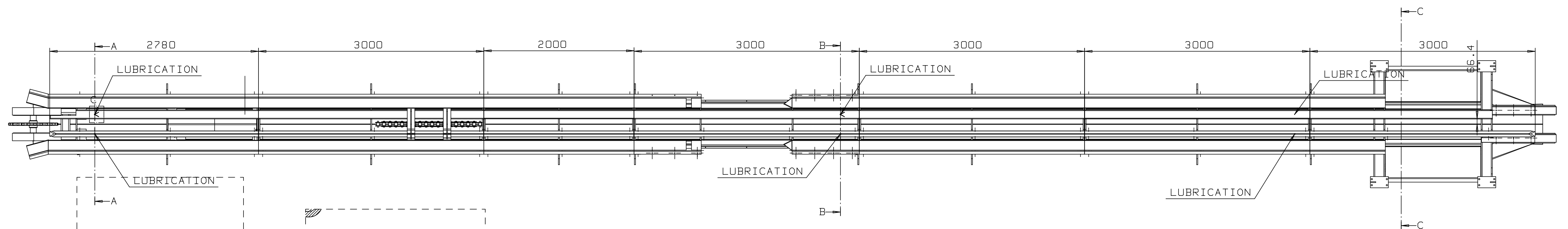
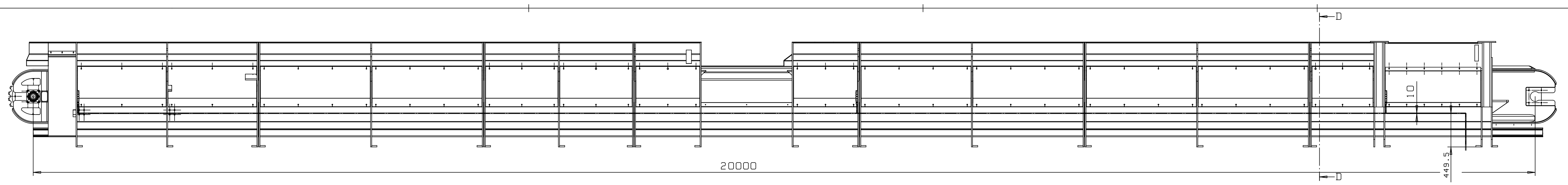
TAIL END



DRIVE END

Scale: 1:20	Dr. PL App.	2004-11-12	Ref. R056107	Weight: From: J195100
HewSaw VEIŠTO GROUP VEIŠTO OY		LUBRICATION MEASURING CONVEYOR LogIn		K178900 DOKUMENTTI Job no K178900

Yhteystiedot: **VEISTO GROUP**
 Puhelin: +358 (0)9 2544 2000
 Faksi: +358 (0)9 2544 2001
 Sähköposti: myynti@veisto.fi
 Internet: www.veisto.fi
 Osasto: **VEISTO GROUP**
 Kone- ja laitekoneiden osasto
 Yhteystiedot: **VEISTO GROUP**
 Puhelin: +358 (0)9 2544 2000
 Faksi: +358 (0)9 2544 2001
 Sähköposti: myynti@veisto.fi
 Internet: www.veisto.fi



4	HAARAHARJA	3
3	SUUTIN LIUKUPINTA 05N-40-ZN	6
2	ANNOSTELIJARYHMÄ BPOS 04 AL/3	4
1	0970089 PERUSLIITIN SUORA 1151004L R1/4" 1151004L DL10	6
Osa Koodi Nimitys, Mitat, Laatu, ym.		kpI
Säde:	1:25	
Fiirt.TM	2005-01-10	Korvaa/Korvattu:
Hyv.		RO56107
Lisä:		K197200 MK
Esik kuva:		K122400

LUBRICATION OF WEARING PLATES
MEASURING CONVEYOR

K197200 MK
Tyyppi: K197200

14.8.2 Lubrication instructions, log positioner

No	Item	Pcs	Interval/hrs	Amount/g.
1	Chains	2	40	Oil lubrication
2	Cardan shafts	6	80	4
3	Bearings, bronze bushings etc. (Drawing J642700)	70	Central lubrication	Central lubrication
4	Gear motors		See chapter 14.3	See manufacturer's instructions

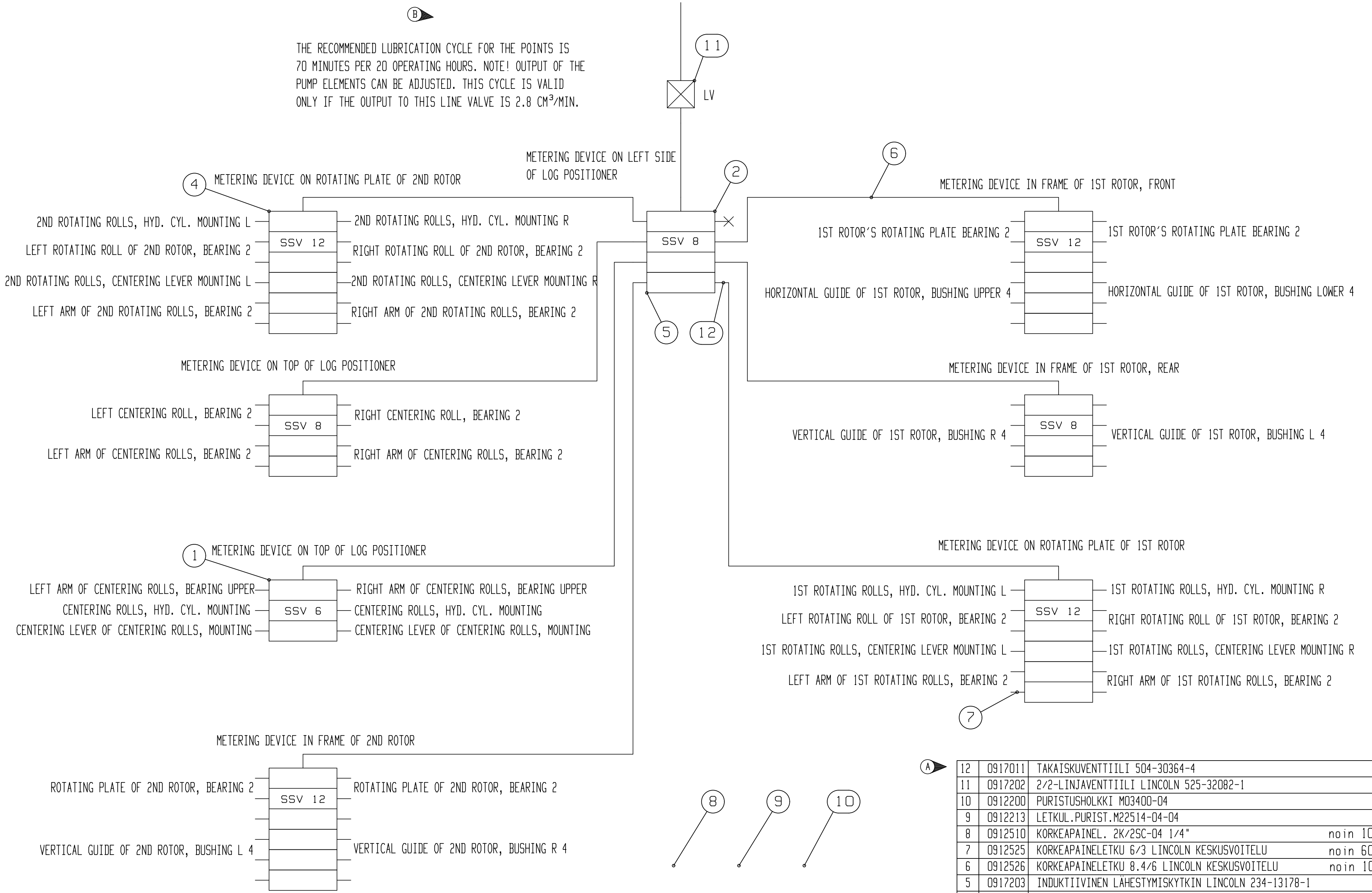
**14.8.3 Lubrication instructions, chipper canter
(Drawing J658500)**

No	Item	Pcs	Interval/hrs	Amount/g.
1	Cardan shafts (infeed and centering rolls)	6	80	4
2	Cardan shafts (infeed wheels)	4	80	4
3	Cardan shafts (round wood guide)	6	80	4
4	Cardan shafts (outfeed)	12	80	4
5	Cardan shafts (side outfeed)	6	80	4
6	Screw jacks of the base frame (grease)	6	80	4
7	Screw jacks of the base frame (oil)	2	See manufacturer's instructions	See manufacturer's instructions
8	Screw jack (service position)	1	1000	4
9	Lower mounting of the pneumatic cylinder (round wood guide)	1	80	4
10	Upper mounting of the pneumatic cylinder (infeed wheels)	1	80	4
11	Mountings of the hydraulic cylinder (outfeed)	2	160	4
12	Linear bearings of the service platform	4	160	4
13	Bearings, bronze bushings etc. (Drawing J646100)	147	Central lubrication	Central lubrication
14	Lubrication of the infeed chains (Drawing K254500)	1	Oil lubrication *(1)	Oil lubrication *(1)
15	Gear motors		See chapter 14.3	See manufacturer's instructions
16	Other motors		See manufacturer's instructions	See manufacturer's instructions

- (1) The infeed chains of the round wood guide must be moist of oil, but oil must not flow from the chains.

TO LUBRICATION SYSTEM

THE RECOMMENDED LUBRICATION CYCLE FOR THE POINTS IS 70 MINUTES PER 20 OPERATING HOURS. NOTE! OUTPUT OF THE PUMP ELEMENTS CAN BE ADJUSTED. THIS CYCLE IS VALID ONLY IF THE OUTPUT TO THIS LINE VALVE IS 2.8 CM³/MIN.



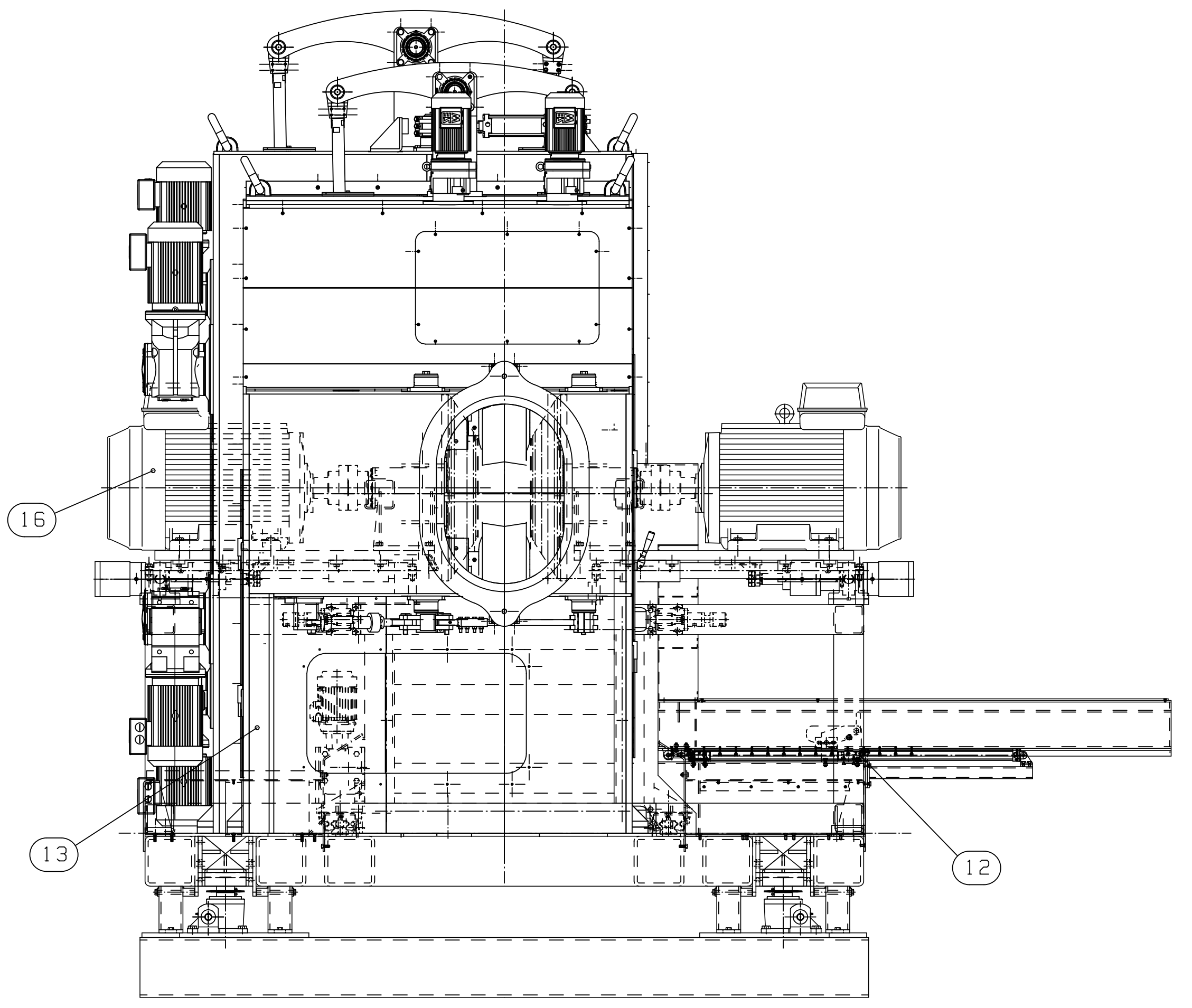
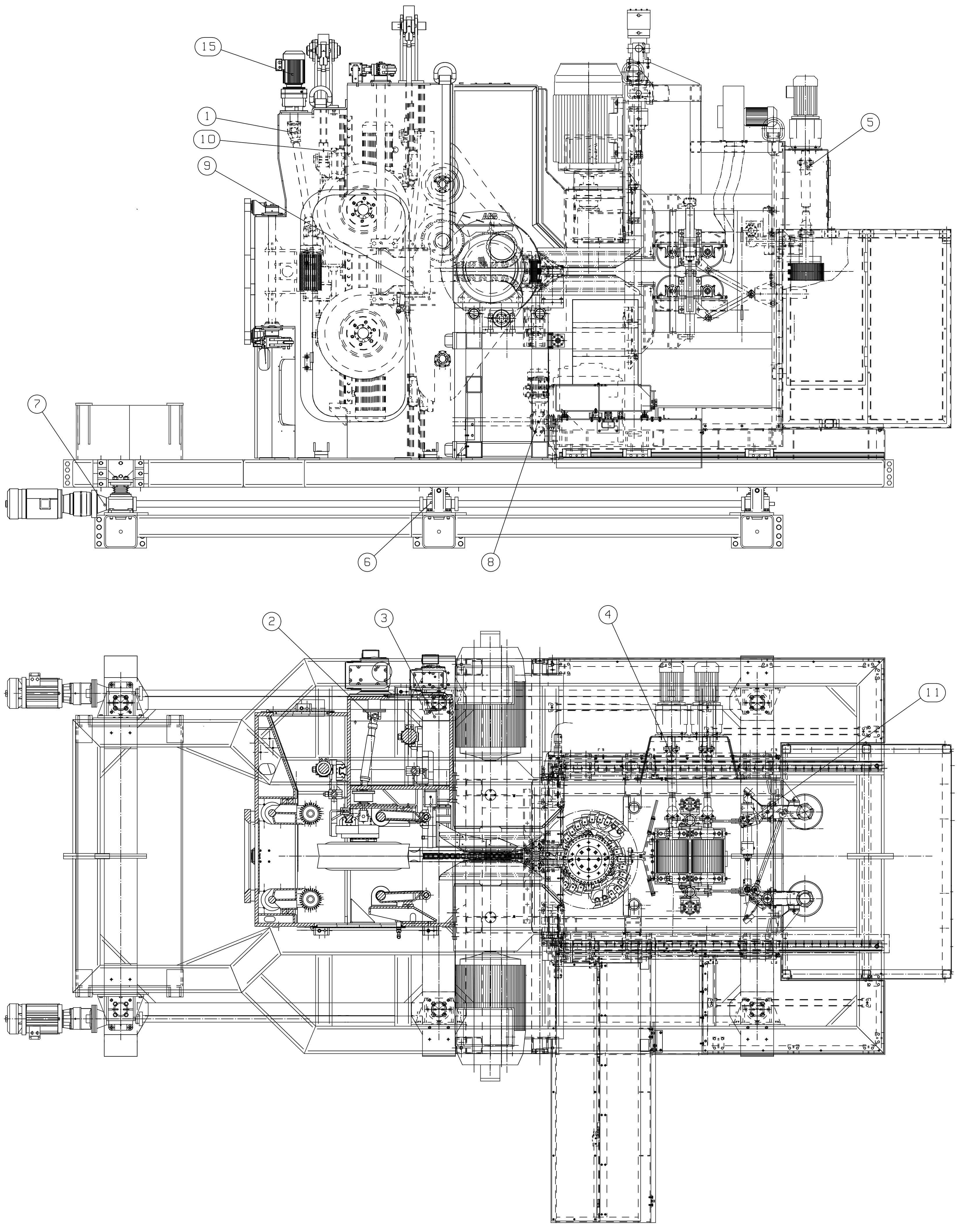
A

12	0917011	TAKAISKUVENTTIILI 504-30364-4	7
11	0917202	2/2-LINJAVENTTIILI LINCOLN 525-32082-1	1
10	0912200	PURISTUSHOLKKI M03400-04	4
9	0912213	LETKUL.PURIST.M22514-04-04	4
8	0912510	KORKEAPAINEL. 2K/2SC-04 1/4"	noin 10m
7	0912525	KORKEAPAINELETKU 6/3 LINCOLN KESKUSVOITELU	noin 60m
6	0912526	KORKEAPAINELETKU 8.4/6 LINCOLN KESKUSVOITELU	noin 100m
5	0917203	INDUKTIIVINEN LÄHESTYMISKYTKIN LINCOLN 234-13178-1	1
4	0917002	JAKAJA SSV 12 LINCOLN	4
2	0917003	JAKAJA SSV 8 LINCOLN	3
1	0917000	JAKAJA SSV 6 LINCOLN	1

Scale: 1:2
 Dr. PL 2005-05-18
 App.
 Rep./Repld: R056108
 Ref.
 Weight: From: J555700
HewSaw
VEISTO GROUP
VEISTO OY
 LUBRICATION SYSTEM / GREASE
 R056108 / LOGIN 2R
 Job n:o
 Dwg n:o
J642700

B	KORJATTU VOITELUJAKSO -TEKSTI	2005-09-14	PL			
A	LISÄTTY POS.12 TAKAISKUVENTTIILIT	0917011 / -	2005-07-26	PL		
M	Muutos	0n / 0li	Pvm	Tek	Tark	Hyv

Handbook
It is prohibited to reproduce or distribute this document in any form without the written permission of Veisto Group. All rights reserved.
Käyttöohje
Tämän dokumentin sisältöä ei saa kopioida eikä levittää ilman Veisto Groupin kirjallista lupaa. Kaikki oikeudet pidätetään.
Manual
It is prohibited to reproduce or distribute this document in any form without the written permission of Veisto Group. All rights reserved.
Käyttöohje
Tämän dokumentin sisältöä ei saa kopioida eikä levittää ilman Veisto Groupin kirjallista lupaa. Kaikki oikeudet pidätetään.
Handbook
It is prohibited to reproduce or distribute this document in any form without the written permission of Veisto Group. All rights reserved.
Käyttöohje
Tämän dokumentin sisältöä ei saa kopioida eikä levittää ilman Veisto Groupin kirjallista lupaa. Kaikki oikeudet pidätetään.



Scale: 1:20	Dr. PL	2005-08-18	Repl./Replid:		Weight:
	App.	Ref.	Ref.		From:
 VEISTO GROUP VEISTO OY				LUBRICATION CHIPPER CENTER SL250	J658500 DOKUMENTTI Job no: TDC Dwg. no: J658500

is a trademark of VEISTO or Hewlett-Packard.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.

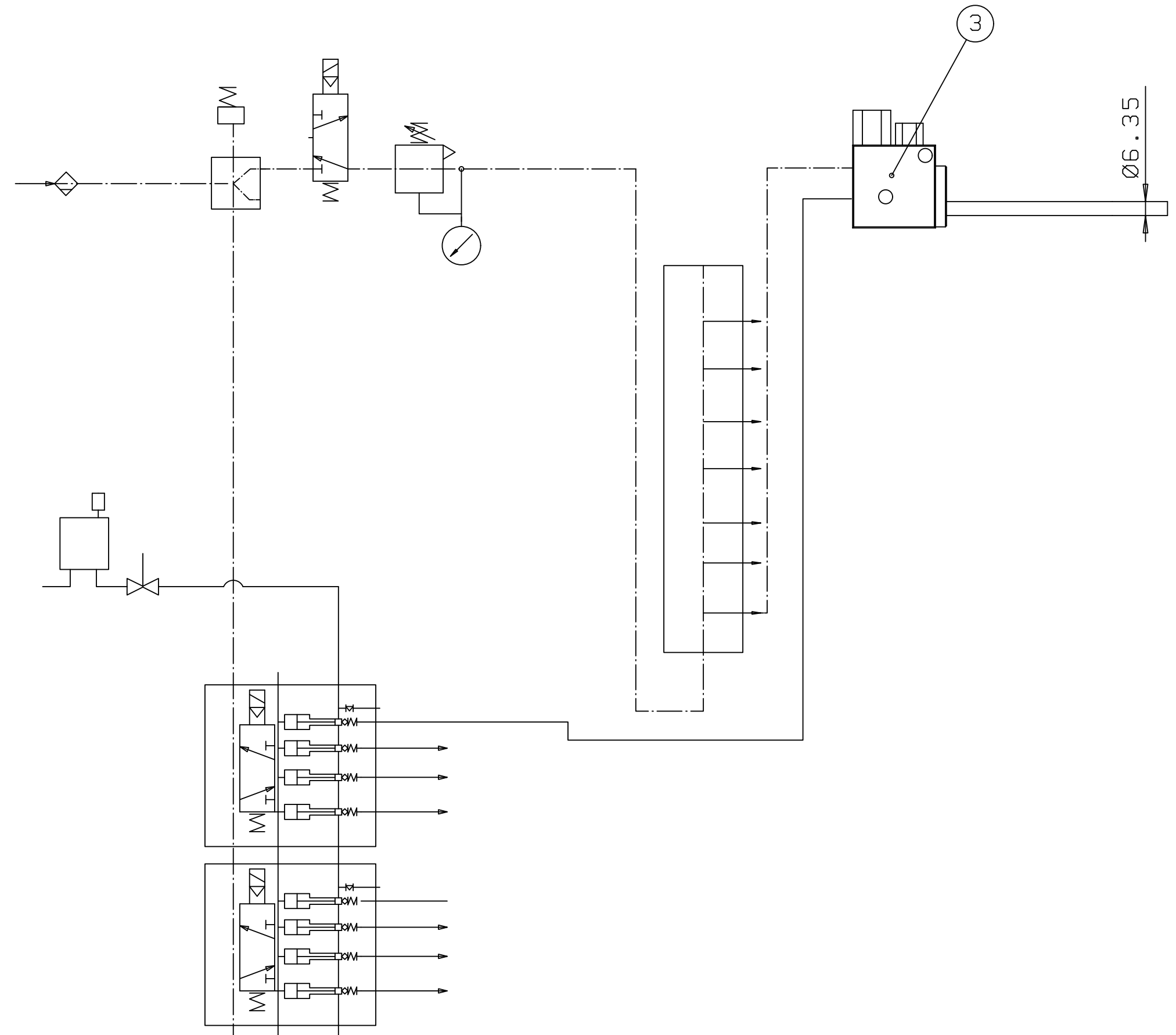
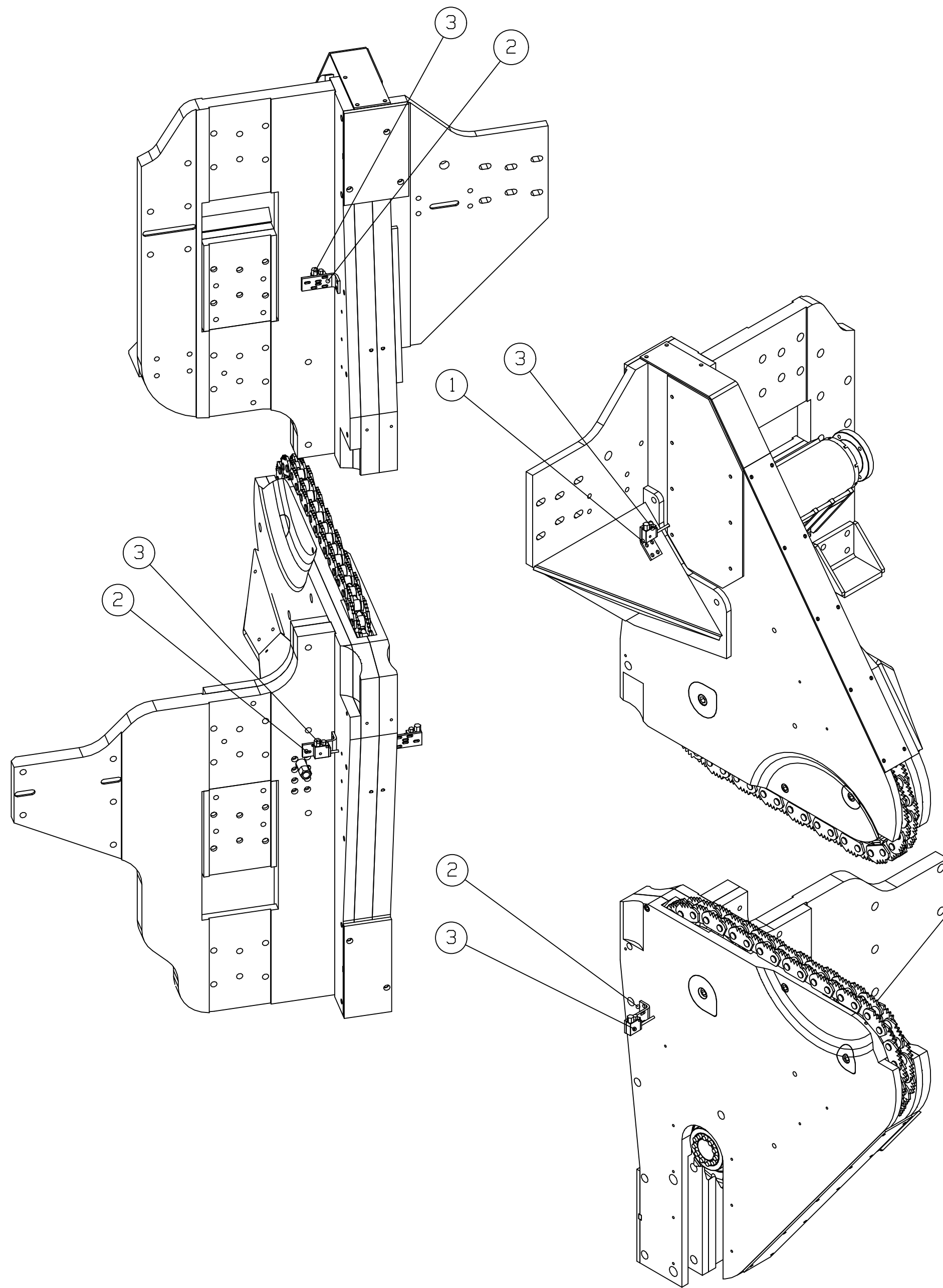
Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der Hewlett-Packard Development Company, L.P.



A

3	K253000	KETJUN VOITELUKAAVIO	1
2	K252600	VOITELUSUUTTIMEN TUKI SYÖTTÄVÄ TUKKIOHJAIN	3
1	K252500	VOITELUSUUTTIMEN TUKI SYÖTTÄVÄ TUKKIOHJAIN	1
Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kpl
Suhde:	Piirt.VTy	2005-06-20	Korvaa/Korvattu:
1:10	Hyv.		Liittyy: R056109
Hewlett-Packard		MASSA	Esikuva:
VEISTO GROUP		K254500	R250TRIO-I
VEISTO OY		Työ n:o	
		Piir n:o	K254500

A	POS.3 KAPPALEMAARA	1/4	2005-06-20	VTy		
M	Muutos	On / OIi	Pvm	Tek	Tark	Hyv

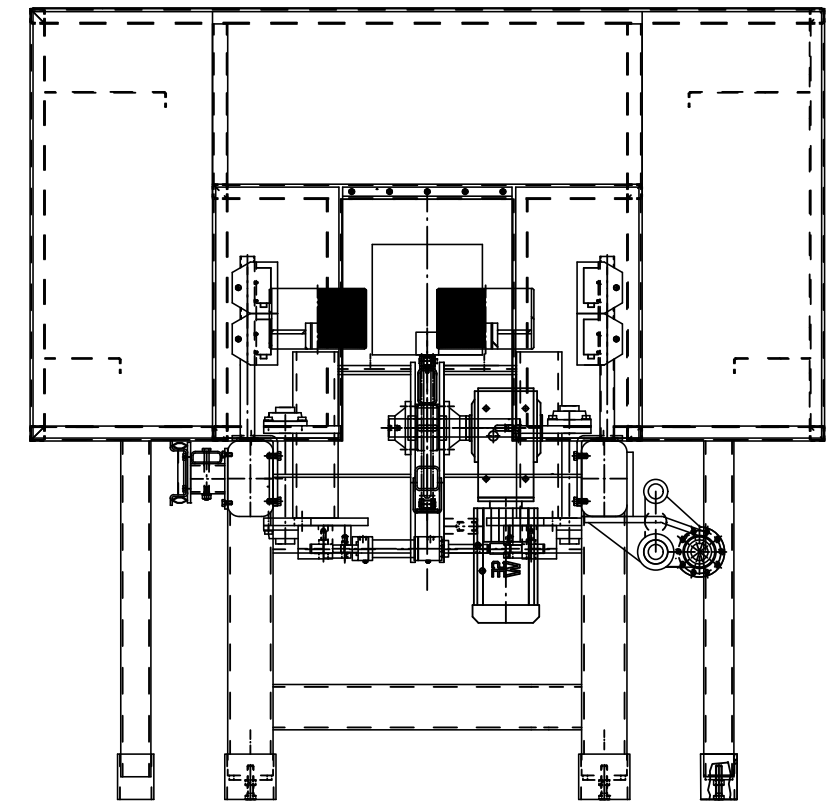
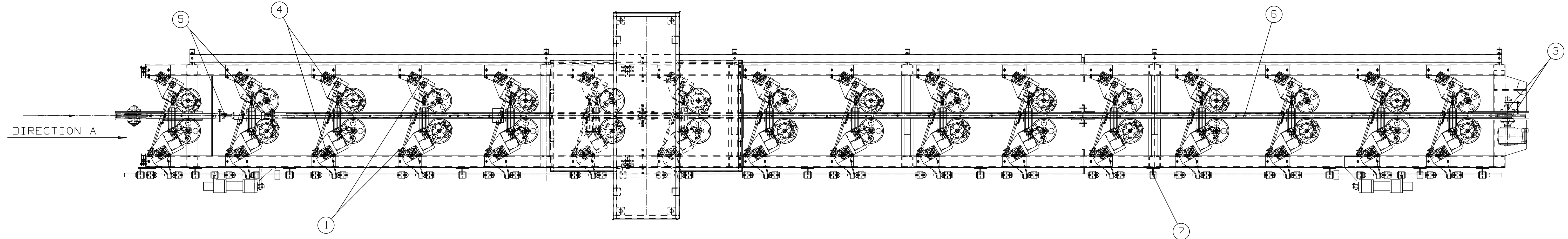
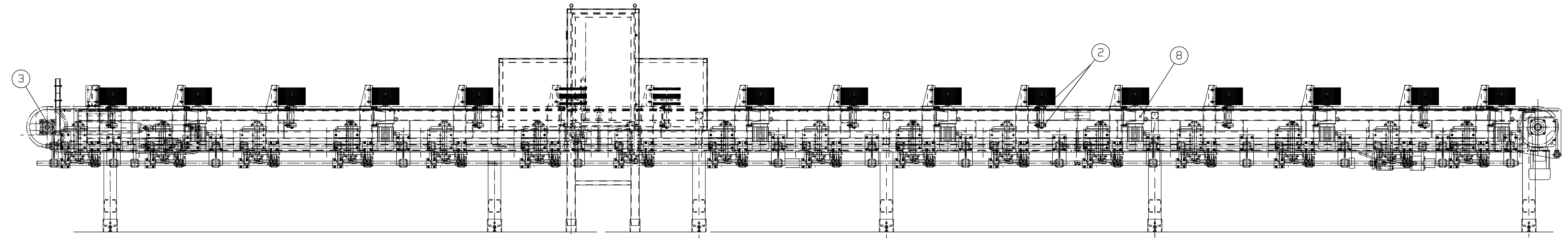
14.8.4 Lubrication instructions, cant scanning conveyor
(Drawing J644900)


No	Item	Pcs	Interval/hrs	Amount/g.
1	Mountings of the centering lever	32	80	4
2	Bearings of the side rolls	32	320	4
3	Bearings of the chain sprockets (Drawing J645300)	4	Central lubrication	Central lubrication
4	Bearing housings of the side roll arms	64	320	4
5	Mountings of the chain tensioner cylinder	2	320	4
6	Lubrication of the wearing plates (Drawing J656500)	1	Oil lubrication *(1)	Oil lubrication *(1)
7	Limiter for the side rolls	56	If needed	
8	Gear motors		See chapter 14.3	See manufacturer's instructions

- (1) Use the scanning conveyor one week without oil lubrication. After the wearing plates are shiny and smooth, those are cleaned well with compressed air. Lubricate the cleaned wearing plates with oil. After that, lubricate the plates manually once in a day. If the scanning conveyor is equipped with the automatic lubrication system, the lubrication period is 1 cm³ in 2 hrs intervals for example.

YÖTÄPÄIKKÄISEN YLEISTÖLÖYKÖN...
 SFS-EN-ISO 13920 / 22288-1
 TÄRKKÖLÖYKÖN
 Koneistus ja huolto
 Koneistus: kappaleet: p/luus- ja huolto

HEWLETT-PACKARD
 Hewlett-Packard is a leader in providing solutions for the printing industry.
 This drawing is our property and all its contents are confidential.
 It is not to be distributed, copied, or otherwise used without the express written permission of Hewlett-Packard.
 This drawing is for reference only. It is not to be used for manufacturing or other purposes.
 All dimensions are in millimeters unless otherwise specified.
 All tolerances are as indicated.

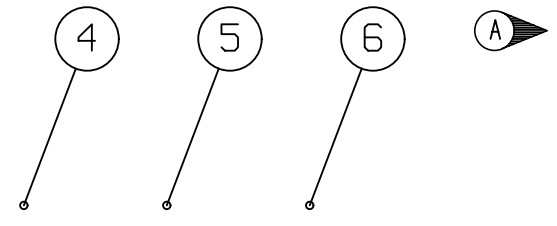
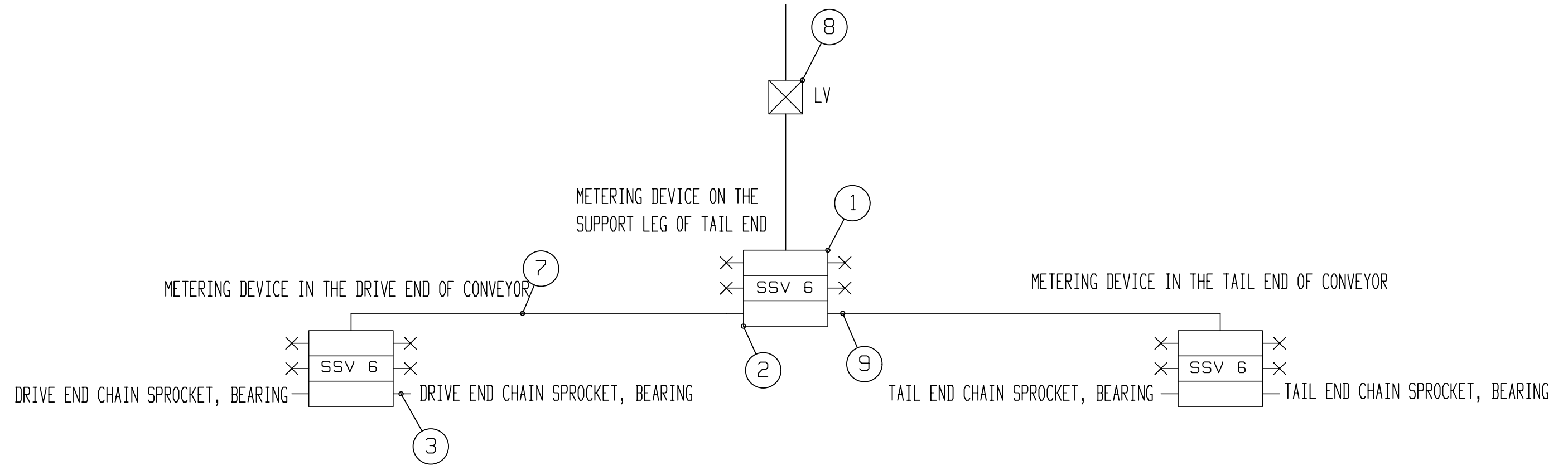


Scale: 1:25	Dr. PL App.	2005-05-25	Repl./Repld: Ref. R056110	Weight: From:
 HEWLETT-PACKARD VEISTO GROUP VEISTO 01			LUBRICATION CANT SCANNING CONVEYOR SL250	
			J644900 R250TR10-K Job nro	
			J644900 Dep. nro	

B

THE RECOMMENDED LUBRICATION CYCLE FOR THE POINTS IS 50 SECONDS PER 20 OPERATING HOURS. NOTE! OUTPUT OF THE PUMP ELEMENTS CAN BE ADJUSTED. THIS CYCLE IS VALID ONLY IF THE OUTPUT TO THIS LINE VALVE IS 2.8 CM³/MIN.

TO LUBRICATION SYSTEM



9	0917011	TAKAISKUVENTTIILI 504-30364-4	2
8	0917202	2/2-LINJAVENTTIILI LINCOLN 525-32082-1	1
7	0812276	HYDRAULIIKAN PUTKI St37.4 12x1.5	noin 16m
6	0912200	PURISTUSHOLKKI M03400-04	4
5	0912213	LETKUL.PURIST.M22514-04-04	4
4	0912510	KORKEAPAINEL. 2K/2SC-04 1/4"	noin 1m
3	0812290	HYDRAULIIKAN PUTKI 6x1 ZN	noin 3m
2	0917203	INDUKTIIVINEN LÄHESTYMISKYTKIN LINCOLN 234-13178-1	1
1	0917000	JAKAJA SSV 6 LINCOLN	3

Scale: 1:2.5	Dr. PL	2005-05-27	Rep1./Repld:		Weight:		
App.			Ref. R056110		From:		
 VEISTO GROUP VEISTO OY				LUBRICATION CANT SCANNING CONVEYOR		J645300 PK	
						Job n:o	
						Dwg n:o J645300	

B	MUUTETTU VOITELUJAKSO -TEKSTI		2005-09-14	PL		
A	LISÄTTY POS.9 TAKAISKUVENTTILIT	0917011 / -	2005-07-26	PL		
M	Muutos	On / Oli	Pvm	Tek	Tark	Hyv

14.8.5 Lubrication instructions, cant saw
(Drawing J659700)

No	Item	Pcs	Interval/hrs	Amount/g.
1	Cardan shafts (infeed rolls)	12	80	4
2	Cardan shafts (side guides)	4	80	4
3	Cardan shafts (edging unit 1)	12	80	4
4	Cardan shafts (edging unit 2)	12	80	4
5	Cardan shafts (cant outfeed rolls)	6	80	4
6	Cardan shafts (side outfeed rolls)	12	80	4
7	Mounting of the side movement cylinder (right circular saw unit)	4	320	2
8	Mountings of the hydraulic cylinder (lower guide)	3	320	4
9	Lower mounting of the hydraulic cylinder (cant outfeed)	2	160	4
10	Upper mounting of the hydraulic cylinder (cant outfeed)	8	160	2
11	Bearings, bronze bushings etc. (Drawing J646200)	138	Central lubrication	Central lubrication
12	Gear motors		See chapter 14.3	See manufacturer's instructions
13	Other motors		See manufacturer's instructions	See manufacturer's instructions

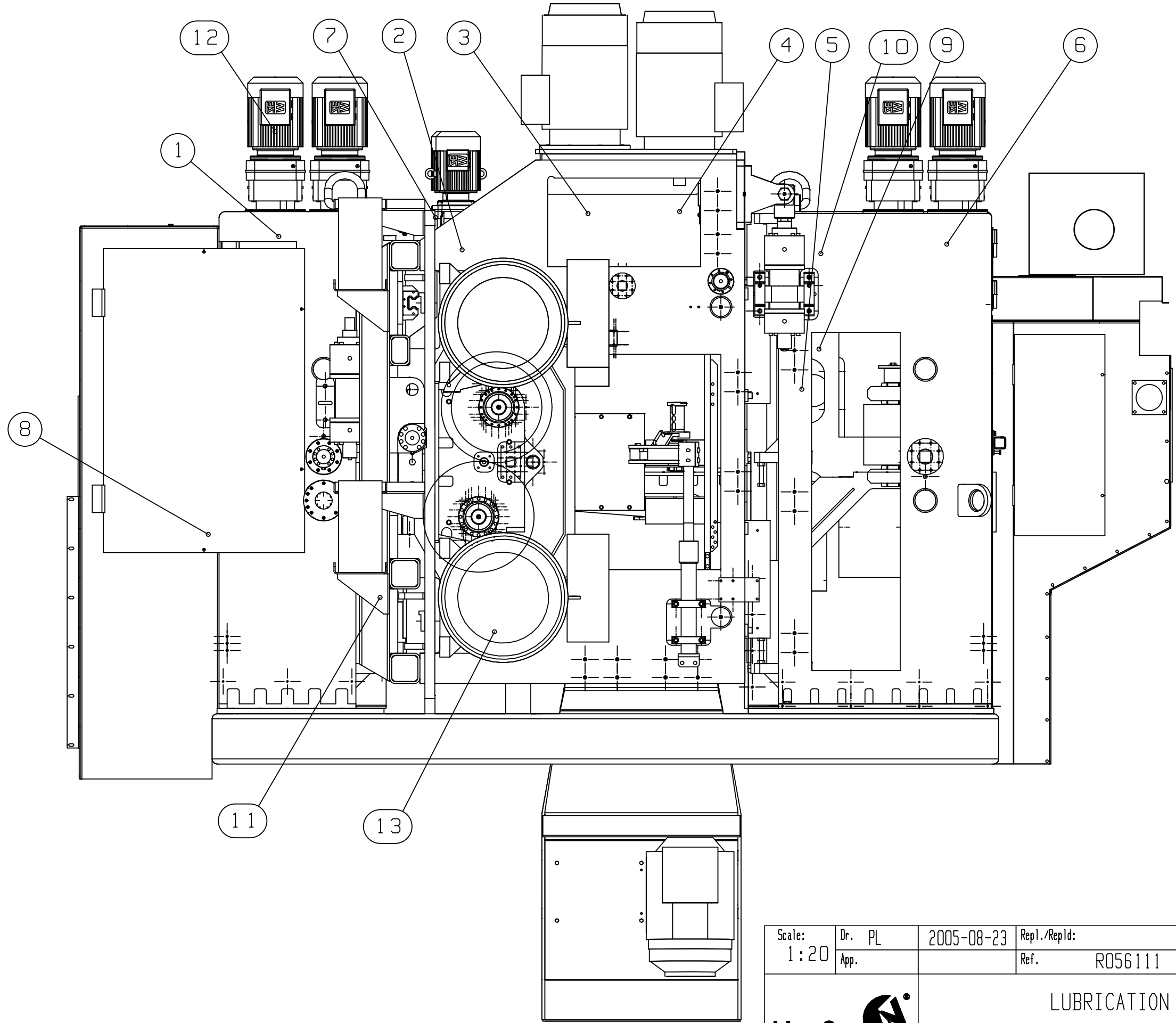
This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

Denna ritning är vår egendom och får inte utan vårt medgivande kopieras, förvisas för eller utlämnas till konkurrent eller annan obehörig person.

Tämä piirustus on omaisuuttamme eikä sitä saa ilman meidän lupaa jäljentää tai näyttää sivullisille.

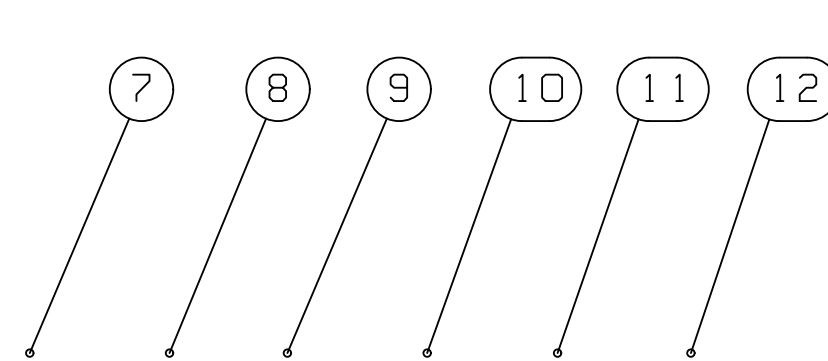
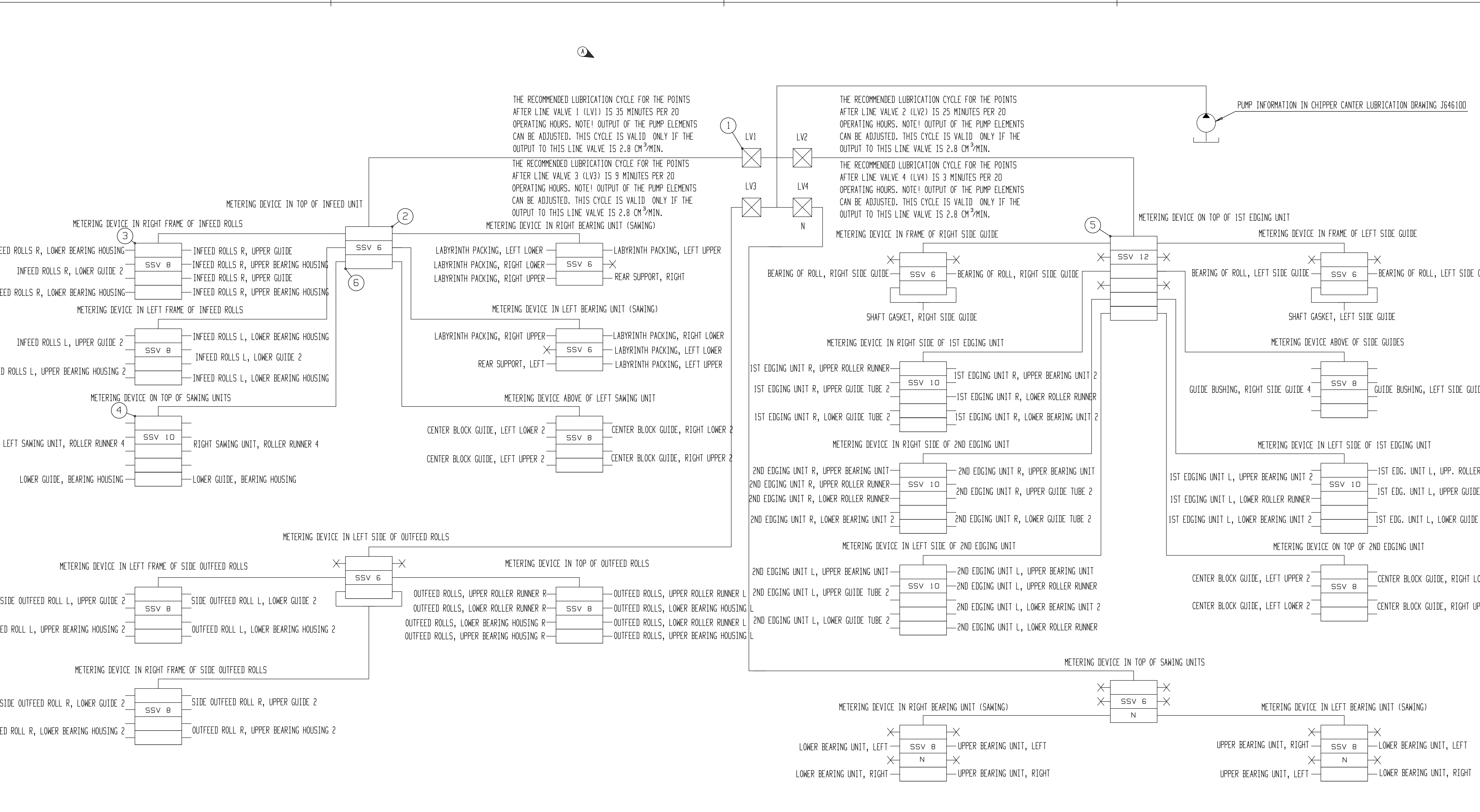
TARKKUUUSLUOKKA B
TARKKUUUSLUOKKA F
TARKKUUUSLUOKKA m

TYÖTAPAKOHTAINEN YLEISTOLERANSSIT: SFS EN ISO 13920 / 22768-1
*Hitsatut rakenteet: kulma- ja pituusmitat
*suoruuus, tasomaisuus ja yhdensuuntaisuus
*Koneistetut kappaleet: pituus- ja kulmamitat



Scale: 1:20	Dr. PL App.	2005-08-23	Repl./Repld: Ref. R056111		Weight: From: J658600
 VEISTO GROUP VEISTO OY			LUBRICATION CANT SAW		J659700 SL250QUARTET
					Job n:o

Yhtiön nimi: Veisto Group Oy
 Yhtiön osoite: Veistokatu 1, 01500 Vammala
 Puhelin: +358 (0)9 2525 1000
 Faksi: +358 (0)9 2525 1001
 E-posti: myynti@veisto.fi
 www.veisto.fi



12	0917011	TAKAISUVENTTIILI 504-30364-4	18
11	0912200	PURISTUSHOLKKI M03400-04	8
10	0912213	LETKUL.PURIST.M22514-04-04	8
9	0912510	KORKEAPAINEL. 2K/2SC-04 1/4" n. 25m	
8	0812290	HYDRAULIIKAN PUTKI 6x1 ZN n. 200m	
7	0912526	KORKEAPAINELETKU 8.4/6 LINCOLN KESKUSVOITELU n. 150m	
6	0917203	INDUKTIIVINEN LAHESTYMISKYTKIN LINCOLN 234-13178-1	4
5	0917002	JAKAJA SSV 12 LINCOLN	1
4	0917001	JAKAJA SSV 10 LINCOLN	5
3	0917003	JAKAJA SSV 8 LINCOLN	10
2	0917000	JAKAJA SSV 6 LINCOLN	7
1	0917202	2/2-LINJAVENTTIILI LINCOLN 525-32082-1	4

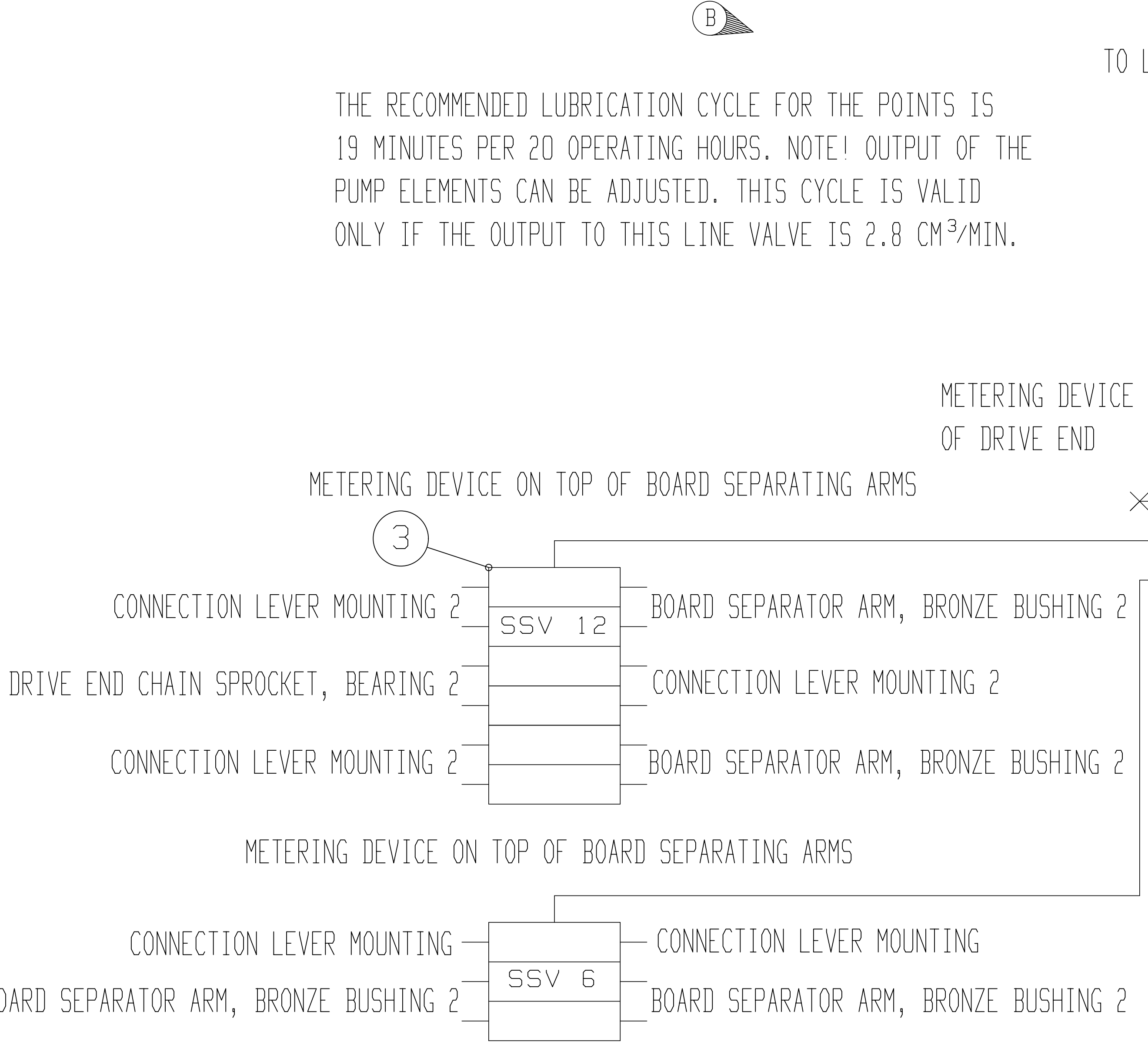
Scale: 1:2
 Dr. PL
 App.
 Ref. R056111
 Rep./Replid:
 Ref. R056111
 Weight: From: J646100
HewSaw
 LUBRICATION SYSTEM / GREASE
 CANT SAW
 Job no
 Drawn by
VEISTO GROUP
VEISTO OY
J646200

A	MUUTETTU VOITELUJAKSO - TEKSTI	2005-09-14	PL			
M	Muutos	0n / 01i	Pvm	Tek	Tark	Hvy

14.8.6 Lubrication instructions, separating conveyor EK2 (Drawing J645000)

No	Item	Pcs	Interval/hrs	Amount/g.
1	Bronze bushings of the board separator arms (Drawing J645200)	8	Central lubrication	Central lubrication
2	Bronze bushings of the 1st side roll pair (Drawing J645200)	8	Central lubrication	Central lubrication
3	Mountings of the centering levers	22	80	4
4	Mountings of the hydraulic cylinders (side rolls)	20	80	4
5	Bearing housings of the side roll arms	40	320	4
6	Bearings of the chain sprockets (Drawing J645200)	8	Central lubrication	Central lubrication
7	Mountings of the hydraulic cylinders (cassette cams)	4	160	4
8	Bearings of the cassette cams	16	160	4
9	Bearings of the longitudinal rotating shafts	4	160	4
10	Mountings of the levers (Drawing J645200)	8	Central lubrication	Central lubrication
11	Bearings of the rotating shaft	2	160	4
12	Bearings of the side rolls	20	320	4
13	Mountings of the hydraulic cylinders (board separator arms)	4	160	4
14	Mountings of the chain tensioner cylinder	2	320	4
15	Stoppers for the side rolls	34	If needed	
16	Mountings of the hydraulic cylinders (upper stopper)	4	160	4
17	Bearings of the upper stoppers	4	160	4
18	Lubrication of the wearing plates (Drawing J589900)	1	Oil lubrication *(1)	Oil lubrication *(1)
19	Gear motors		See chapter 14.3	See manufacturer's instructions

- (1) Use the separating conveyor one week without oil lubrication. After the wearing plates are shiny and smooth, those are cleaned well with compressed air. Lubricate the cleaned wearing plates with oil. After that, lubricate the plates manually once in a day. If the scanning conveyor is equipped with the automatic lubrication system, feed a small amount of oil in 2 hrs intervals for example. Excess oil leaves marks into the sawn goods.



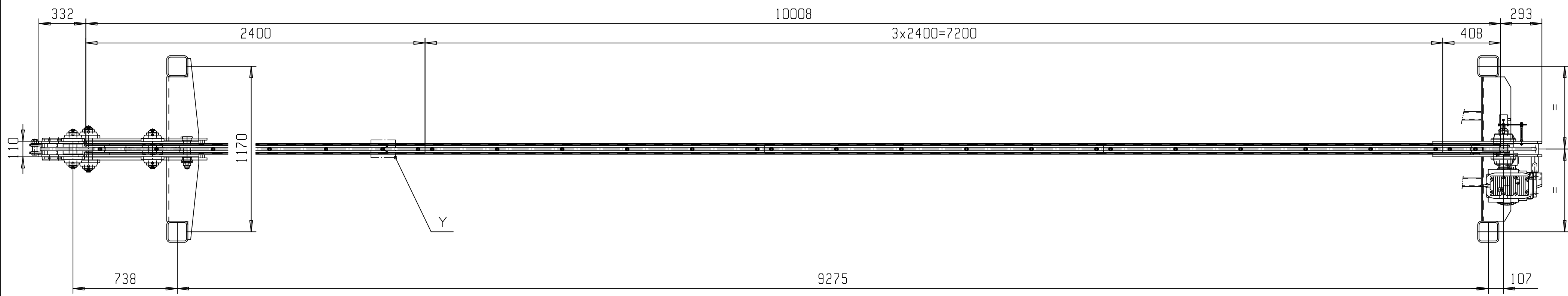
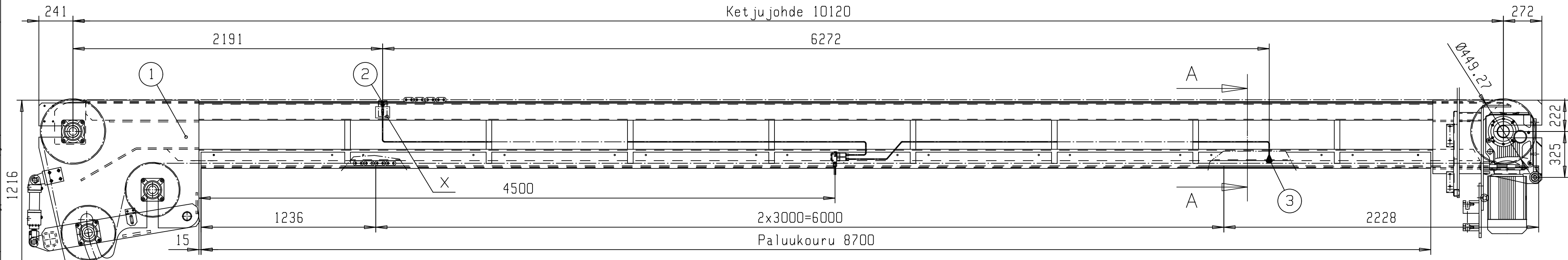
8	0917011	TAKAISKUVENTTIILI LINCOLN 504-30364-4	4
7	0917202	2/2-LINJAVENTTIILI LINCOLN 525-32082-1	1
6	0812290	HYDRAULIIKAN PUTKI 6x1 ZN	noin 20m
5	0912526	KORKEAPAINELSKU 8.4/6 LINCOLN KESKUSVOITELU	noin 20m
4	0917203	INDUKTIIVINEN LÄHESTYMISKYTKIN LINCOLN 234-13178-1	1
3	0917002	JAKAJA SSV 12 LINCOLN	1
2	0917003	JAKAJA SSV 8 LINCOLN	1
1	0917000	JAKAJA SSV 6 LINCOLN	3

B	MUUTETTU VOITELUJAKSO -TEKSTI		2005-09-14	PL		
A	LISÄTTY POS.8 TAKAISKUVENTTIILIT	0917011 / -	2005-07-26	PL		
M	Muutos	On / Oli	Pvm	Tek	Tark	Hyv

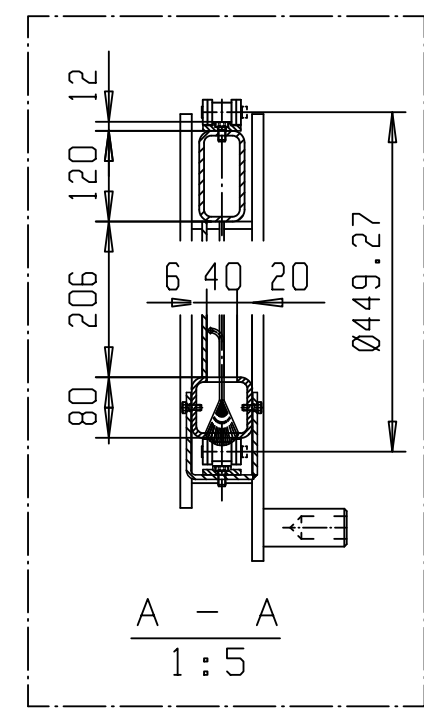
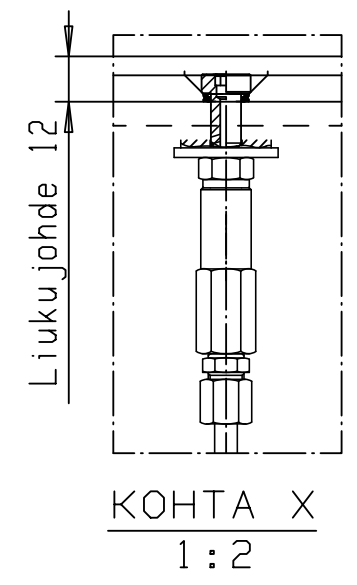
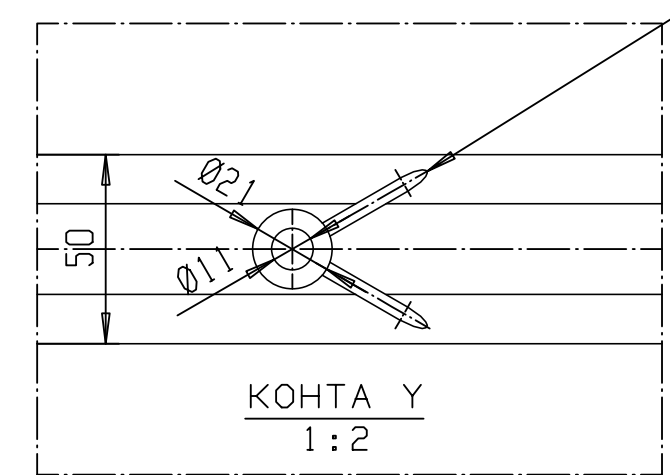
Scale: 1:2.5	Dr. PL App.	2005-05-26	Repl./Repld: Ref. R056112	Weight: From:
<p>VEISTO GROUP VEISTO OY</p>			LUBRICATION SYSTEM SEPARATING CONVEYOR EK2	
			Job n:o J645200 PK Dwg n:o J645200	

VEISTO GROUP is a trademark of VEISTO OY. This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized for other purposes than it is originally intended for without the written consent of VEISTO OY.

VEISTO GROUP on tavaramerkki. Tämä piirustus on omaisuutta ja sen kopiointi, jäljentäminen tai muu käyttö ilman meidän lupamme on kiellettyä. Tämä piirustus ei ole tarkoitettu muihin kuin alkuperäiseen tarkoitukseen ilman VEISTO OY:n kirjallista lupaa.



Liukupintasuuttimen pintaan tehdään urat puun kulkusuuntaan.



A

3	0912416	HAARAHARJA	1
2	0912415	SUUTIN LIUKUPINTA OSN-40-ZN	1
1		ANNOSTELIJARYHMÄ 2/2 LINCOLN SL-43, 83661-2	1
Osa	Koodi	Nimitys, Mitat, Laatu, ym.	kp1
Suhde:	Piirt.VAT	2005-01-13	Korvaa/Korvattu:
1:20	Hyv.		Liittyy: R056112
			Massa: Esikuva: J166700



LUBRICATION OF WEARING PLATES
SEPARATING CONVEYOR

EK2

J589900 EK
Työ n:o
Piir n:o
J589900

A	Lisätty koodit.	2005-09-07	Vät			
M	Muutos	On / Oli	Pvm	Tek	Tark	Hyv

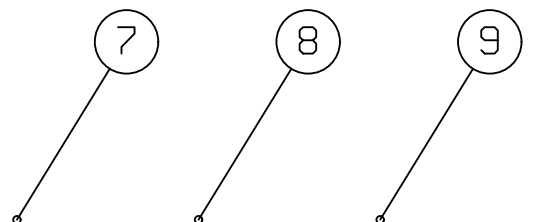
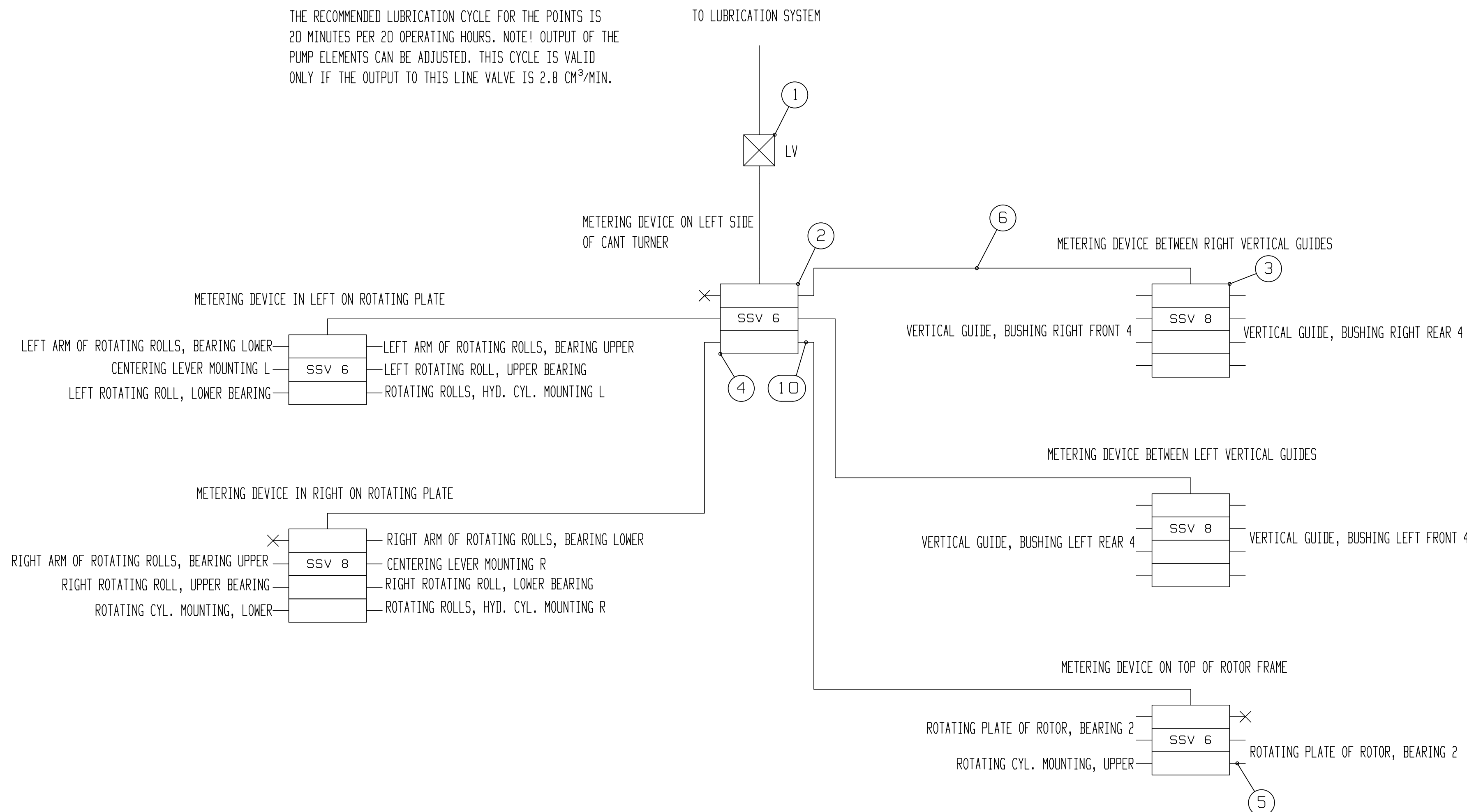
14.8.7 Lubrication instructions, cant turner
(Drawing J647700)

No	Item	Pcs	Interval/hrs	Amount/g.
1	Bronze bushings of the guide shafts	16	Central lubrication	Central lubrication
2	Bearings of the rotor	4	Central lubrication	Central lubrication
3	Mountings of the hydraulic cylinders	4	Central lubrication	Central lubrication
4	Mountings of the centering lever	2	Central lubrication	Central lubrication
5	Bearings of the rotating rolls	4	Central lubrication	Central lubrication
6	Bearing housings of the rotating roll arms	4	Central lubrication	Central lubrication

14.8.8 Lubrication instructions, infeed conveyor
(Drawing J645800)

No	Item	Pcs	Interval/hrs	Amount/g.
1	Mountings of the centering levers	4	80	4
2	Mountings of the hydraulic cylinders (side rolls)	8	160	4
3	Bearing housings of the side roll arms	12	320	4
4	Bearings of the feeding rolls	16	320	4
5	Lubrication of the chains	1	Oil lubrication	Oil lubrication
6	Gear motors		See chapter 14.3	See manufacturer's instructions

THE RECOMMENDED LUBRICATION CYCLE FOR THE POINTS IS 20 MINUTES PER 20 OPERATING HOURS. NOTE! OUTPUT OF THE PUMP ELEMENTS CAN BE ADJUSTED. THIS CYCLE IS VALID ONLY IF THE OUTPUT TO THIS LINE VALVE IS 2.8 CM³/MIN.



10	0917011	TAKAISKUVENTTIILI 504-30364-4 LINCOLN	5
9	0912200	PURISTUSHOLKKI M03400-04	4
8	0912213	LETKUL.PURIST.M22514-04-04	4
7	0912510	KORKEAPAINEL. 2K/2SC-04 1/4"	noin 5m
6	0912526	KORKEAPAINEL. 2K/2SC-04 1/4"	noin 20m
5	0812290	HYDRAULIIKAN PUTKI 6x1 ZN	noin 15m
4	0917203	INDUKTIIVINEN LÄHESTYMISKYTKIN LINCOLN 234-13178-1	1
3	0917003	JAKAJA SSV 8 LINCOLN	3
2	0917000	JAKAJA SSV 6 LINCOLN	3
1	0917202	2/2-LINJAVENTTIILI LINCOLN 525-32082-1	1

Scale: 1:2	Dr. PL	2005-06-07	Repl./Replid:		Weight:
App.			Ref. R056113		From: J642700
				LUBRICATION SYSTEM / GREASE	
				CANT TURNER	
VEISTO GROUP VEISTO OY				Job n:o Dag n:o J647700	

B	MUUTETTU VOITELUJAKSO -TEKSTI		2005-09-14	PL		
A	LISÄTTY POS.ID TAKAISKUVENTTIILIT	0917011 / -	2005-07-27	PL		
M	Muutos	On / Oli	Pvm	Tek	Tark	Hyv

14.8.9 Lubrication instructions, rip saw
(Drawing J658600)

No	Item	Pcs	Interval/hrs	Amount/g.
1	Cardan shafts (side infeed rolls)	6	80	4
2	Cardan shafts (infeed rolls)	6	80	4
3	Cardan shafts (side guides)	6	80	4
4	Cardan shafts (edging unit)	12	80	4
5	Cardan shafts (outfeed rolls)	6	80	4
6	Cardan shafts (side outfeed rolls)	6	80	4
7	Mounting of the side movement cylinder (right circular saw unit)	4	320	2
8	Chain transmissions of the infeed and outfeed rolls	4	Add oil if needed	
9	Bearings, bronze bushings etc. (Drawing J646400)	108	Central lubrication	Central lubrication
10	Gear motors		See chapter 14.3	See manufacturer's instructions
11	Other motors		See manufacturer's instructions	See manufacturer's instructions

This drawing is our property and it is not allowed to be copied, reproduced, transmitted or communicated to the third party or utilized to other purposes than it is originally given, without our consent.

Alle Rechte vorbehalten. Nachdruck, Vervielfältigung und Verbreitung, auch auszugsweise, ist ohne schriftliche Genehmigung der VEISTO OY.

Denne ritning är vår egendom och får inte utan vårt medgivande kopieras, förvisas för eller utlämnas till konkurrent eller annan obehörig person.

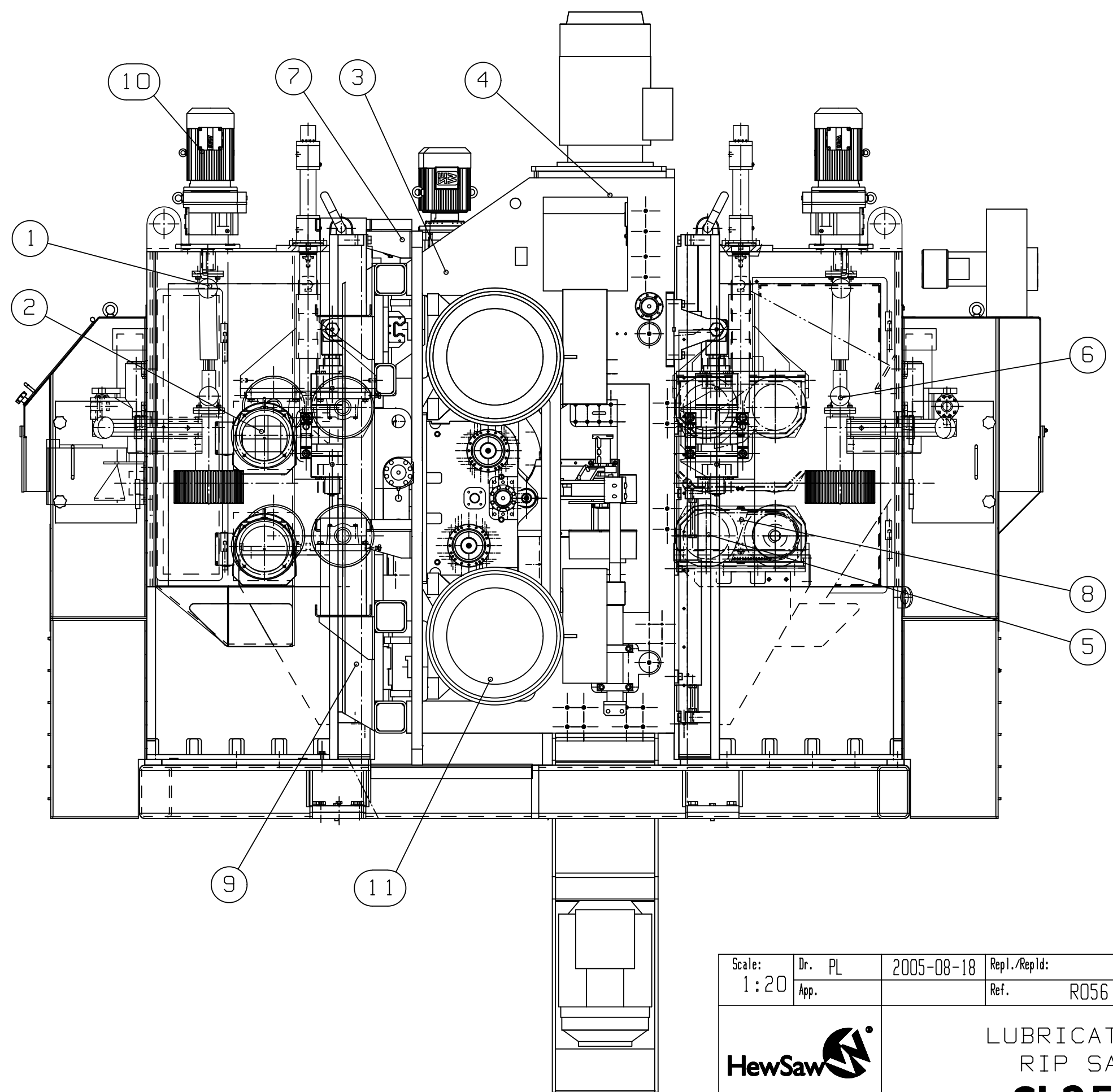
Tämä piirustus on omaisuutemme eikä sitä saa ilman meidän lupamme jäljentää tai näyttää sivullisille.

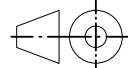

TARKKUUSSUUNNITTELU
TARKKUUSSUUNNITTELU
TARKKUUSSUUNNITTELU
TARKKUUSSUUNNITTELU

SFS EN ISO 13920 / 22768-1
SFS EN ISO 13920 / 22768-1
SFS EN ISO 13920 / 22768-1
SFS EN ISO 13920 / 22768-1

TYÖTAPA-KOHTAISET YLEISTOLERANSSIT:
*Hitsatut rakenteet: kulma- ja pituusmitat
*Suoruuksien tasomaisuus ja yhdensuuntaisuus
*Koneistetut kappaleet: pito- ja kulmamitat

TYÖTAPA-KOHTAISET YLEISTOLERANSSIT:
*Hitsatut rakenteet: kulma- ja pituusmitat
*Suoruuksien tasomaisuus ja yhdensuuntaisuus
*Koneistetut kappaleet: pito- ja kulmamitat



Scale: 1:20	Dr. PL App.	2005-08-18	Repl./ReplId: Ref. R056115	 Weight: From:
 VEISTO GROUP VEISTO OY			LUBRICATION RIP SAW SL250	

15. BEARING CLEARANCES

15.1 Chipper head bearings

Clearances are measured by applying pressure to them with a 1 m long bar. Attach a dial indicator to the frame and put the point of the indicator to the center of the chipper head face.

With pressure applied the axial play should not exceed 0.20 mm. If the clearance is more than 0.20 mm or bearing is overheated or noisy, the bearings should be replaced.

Make sure that the new bearings are matching type and quality with the originals.

15.2 Circular saw unit bearings of the cant saw and rip saw

Remove the belt before measuring. Apply some pressure to the shaft with a 1 m long bar and measure the axial play with a dial indicator. If the clearance is more than 0.15 mm, bearing is overheated or noisy, or if the side surface of the cant is uneven in the centerline (where the working faces of the lower and upper saw blade meet), find the reason for the fault and replace the bearings if needed. Before changing the bearings check the settings of the servo adjustments and the condition of the saw blades accurately.

15.3 Edging unit bearings of the cant saw and rip saw

Apply some pressure to the shaft with a 1 m long bar and measure the axial play with a dial indicator.

With pressure applied the axial play should not exceed 0.15 mm. If the clearance is more than 0.15 mm or bearing is overheated or noisy, the bearings should be replaced.

Note! Do not overgrease the rip saw shaft bearings. Overgreasing causes overheating. If the operating temperature exceeds 85 °C repeatedly, the bearing housing and bearings must be cleaned of excess grease or changed.

16. TROUBLESHOOTING

1. Log doesn't go through

- Log is too short, too crooked or knotty for the machine to feed it through
- The butt end is too large
- Chipper head knives, blades or edging tools are in poor condition
- Air pressure is too low
- Pressures in the hydraulic system are not correct
- Infeed wheels have worn out
- One of the motors is not running
- The axial play of the chipper head bearings is too high
- Separating knives are installed incorrectly
- Infeed and outfeed rolls are positioned incorrectly

2. Log winds horizontally on either side in the chipper canter

- Check the knives of the horizontal chipper heads

3. Uneven wany surface on upper or lower side of the cant

- Check the air pressure
- Check the condition of the infeed wheels, round wood guide and outfeed rolls

4. Wany surface on the opposite sides in the front and rear end of the cant

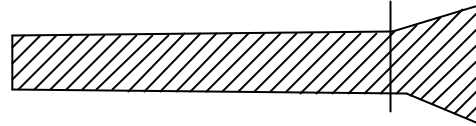
- Check the horizontal chipping heads
- Check the operation of the log positioner
- Check if the guides are in line to each other
- Check the alignment of the infeed wheels and feeding rolls

5. Surface is uneven or poor

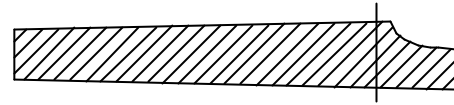
- Check the condition of the finishing blades
- Check the clearances of the guides with the centerline string
- Logs are too small for the pattern
- Chipper head knives, blades or edging tools are not in good condition
- Check the axial play of the bearings
- Pressures in the infeed wheels and feeding rolls are too low

CUT OFF SAW BUCKING REQUIREMENTS

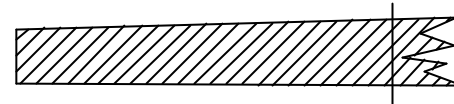
1. FLAIRED ENDS



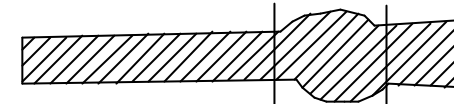
2. KEY ENDS



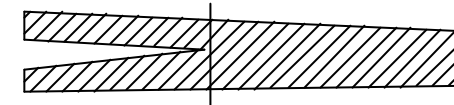
3. ROTTEN ENDS



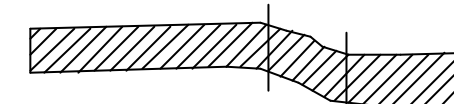
4. KNOTS



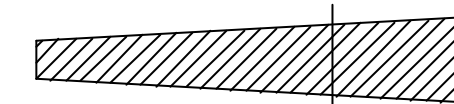
5. FORKED



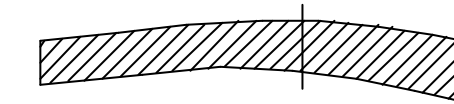
6. SNAKED



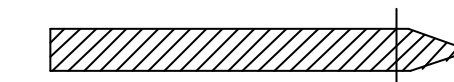
7. TAPERED



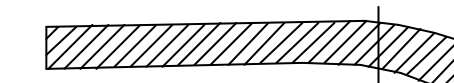
8. SWEEP



9. SNIPE



10. CURLLED END



11. CRACKED

