waratah om
FORESTRY ATTACHMENTS

H480
Harvester Head
Training Material

H480 Harvester Head

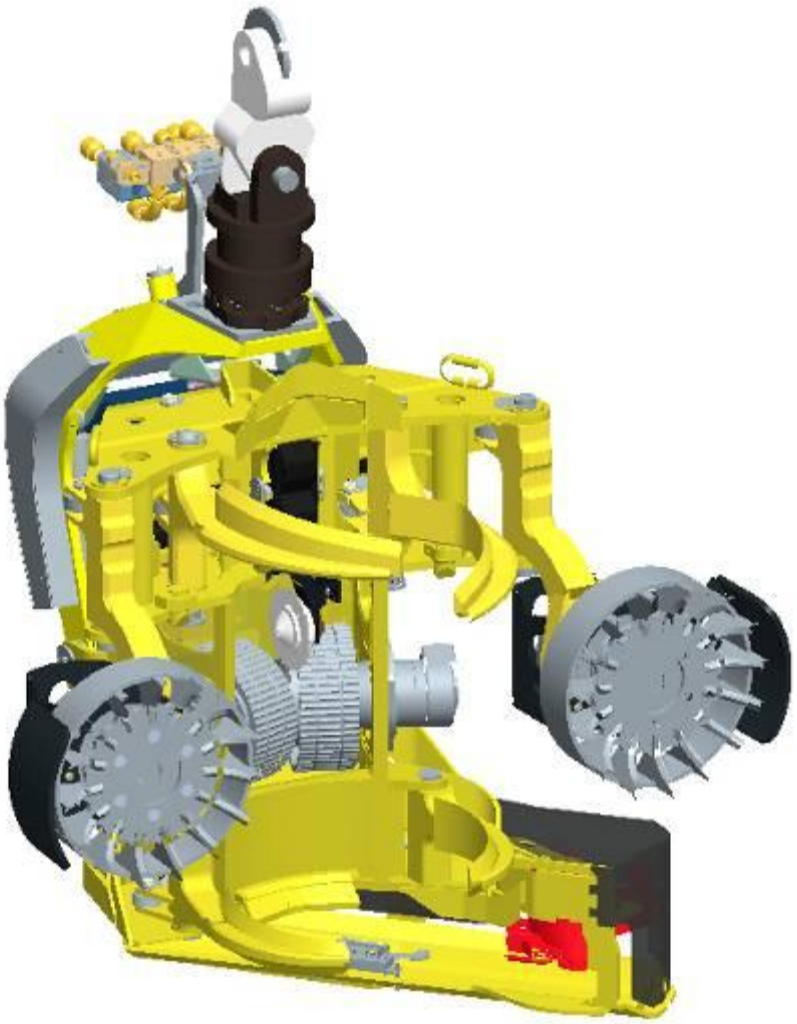
- Specifications
- General, 4 WD heads
- Differences to 758HD
- Modularity and Options
- Delimbing performance
- Sensors
- Hydraulics
- Automatics

H480 Harvester Head

Performance :
Better handling of big trees
Easier to pick falled trees

Uptime:
Pressure settings from the cabin
Durable steel construction
Stronger hydraulic motors
Cavitation free saw motor valve

Low daily operation costs:
Better efficiency of main valve
Feeding motors are designed for higher pressures
---lower fuel consumption
Good grip of falling the tree
---saving of sawbars and chains



H480 Harvester Head

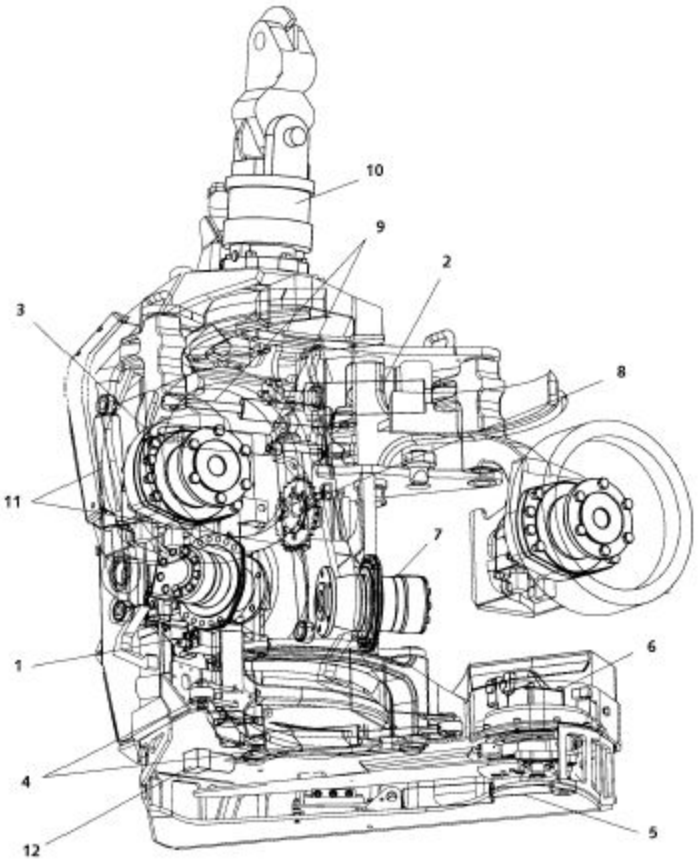
- 4 WD Head
- For 1270D / 1470D size Harvesters and Excavators
- Recommended pump capasity, 240 – 360 l/min
- Max. Working pressure 28 MPa

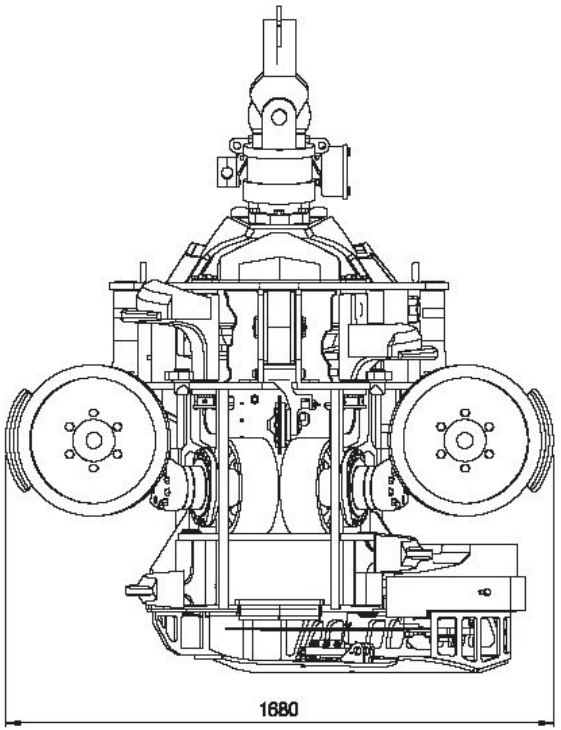
H480 Harvester Head

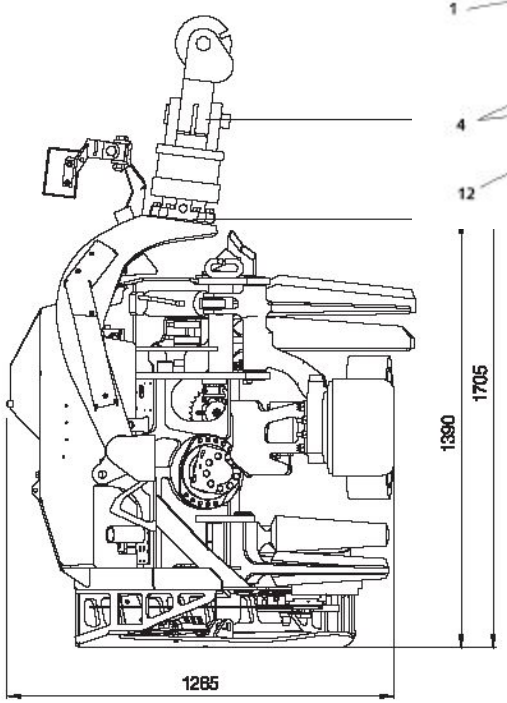
- Technical Specifications
  - Weight - excl. Rotator+link. 1170-1410 kg
  - Weight MTH 1465 kg
  - Max. Felling cut diam. (SC100) 710 mm
  - Max. Feed roller opening 680 mm
  - Max. Opening / Upper knives 680 mm
  - Max. Opening / Lower knives 710 mm
  - Tip to tip delimbing diam. 480 mm
  - Feed force 25.1 – 30.1 kN
  - Feed speed 0 – 5 m/s

H480 Harvester Head

- Technical Specifications
  - Dimensions







H480 Harvester Head

- Saw unit
  - SuperCut 100
    - F060047, std saw bar 82,5 / 15 / 2
    - 12 teeth sprocket
    - Chain 93 links
  - OM saw unit
    - F033631, std saw bas OM 75 / 10 / 2
    - 12 teeth sprocket
    - Chain 85 links

Delimbing Knives

- 4 Moving delimbing knives
  - All have own cylinder
- Fixed upper knife as standard
  - Hydr. opened knife as an option
  - Wider fixed knife also available
- Welded fixed back knive

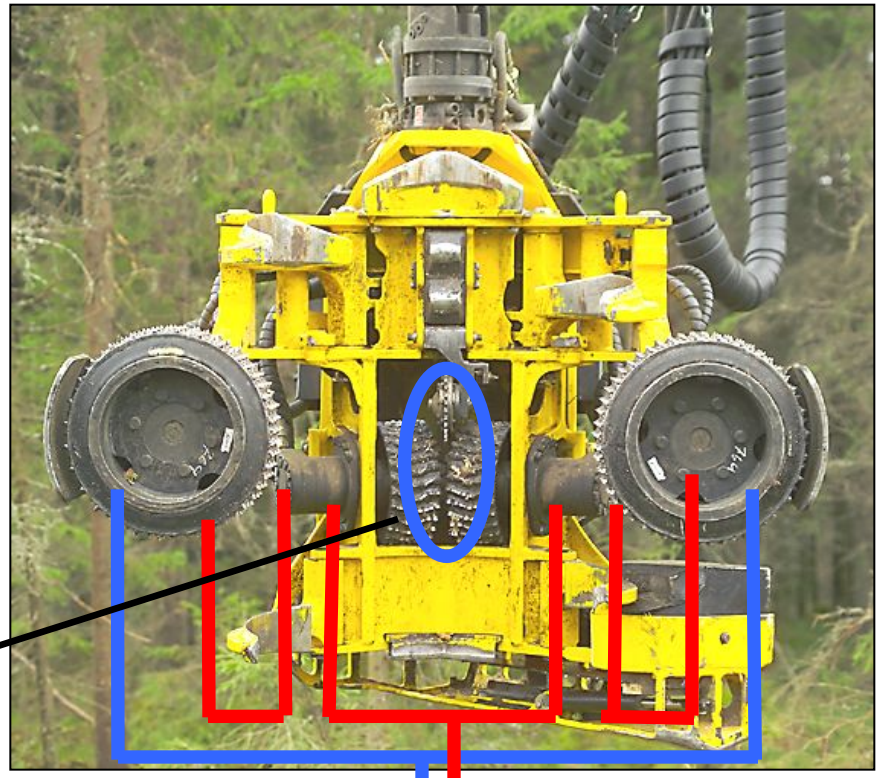
H480 Harvester Head

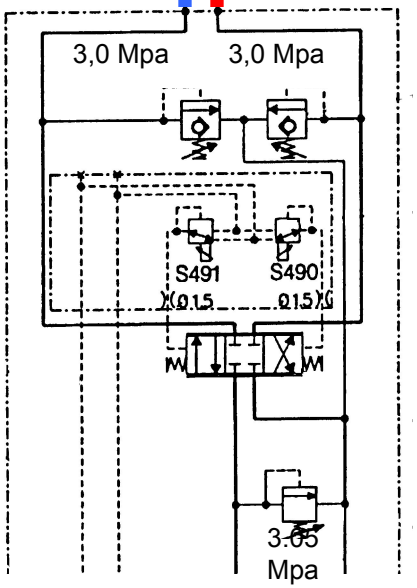
- Welded steel frame
- Four feed rollers
- Five delimbing knives, six optional
- Danfoss / Poclain hydraulic motors
- Standard / Hultdins SuperCut saw unit
- Lokomec EVO 2 valve
- Multi tree handling as option

H480 Harvester Head

- 4 WD feed
  - Mechanical clutch
  - Paraller / serial connection

Mechanical clutch



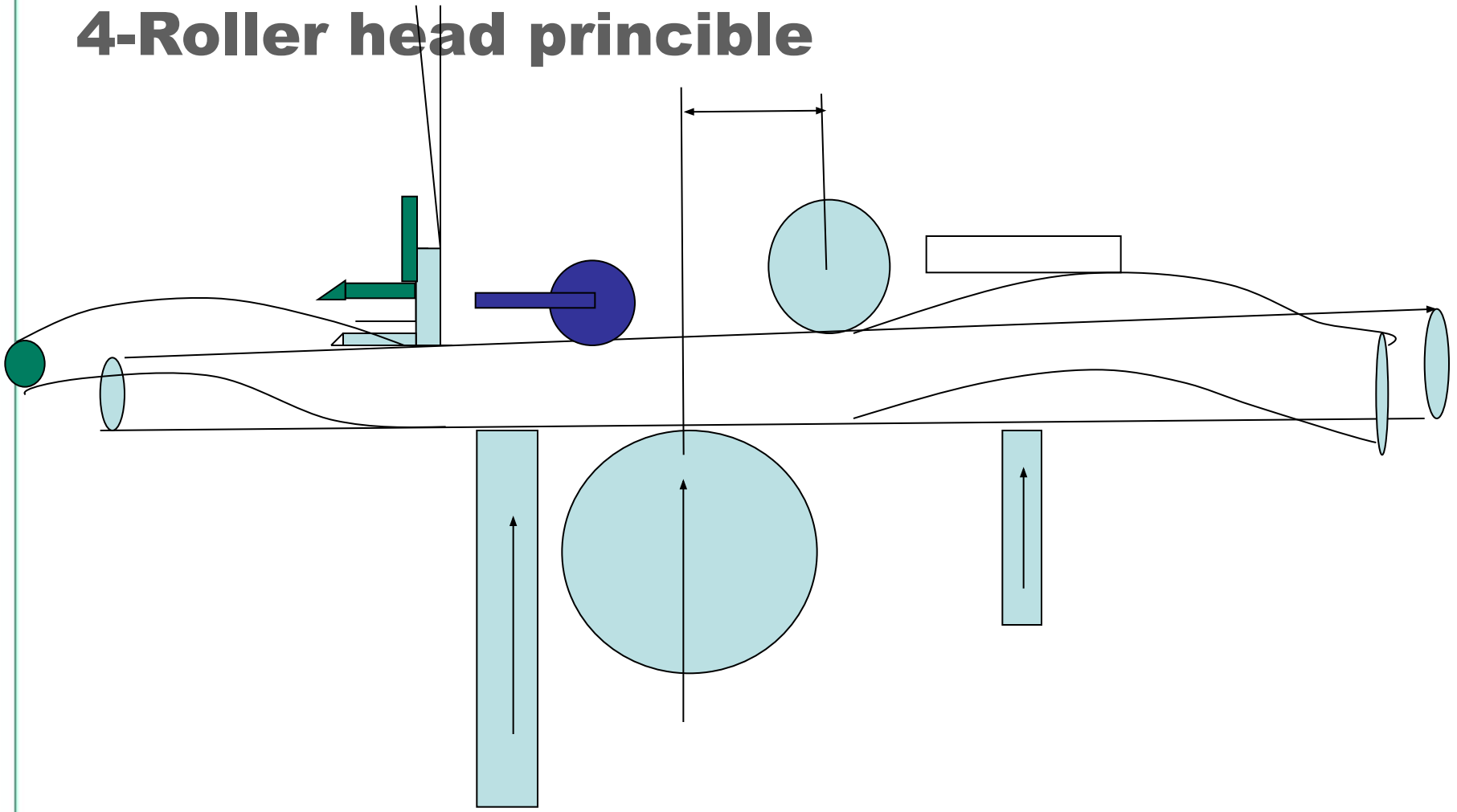


Shortcut to H480_feeding_27092005_Kari_Hanne.pdf.lnk

H480 Harvester Head

- Tree is held by
  - Feeding rollers
  - Front knives

4-Roller head princible



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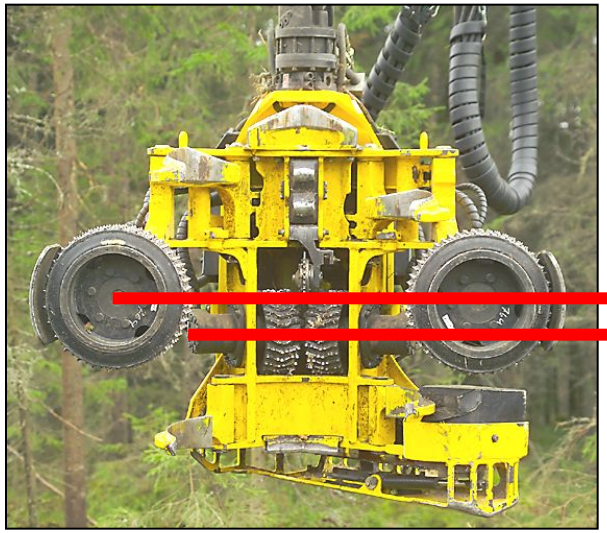
H480 Harvester Head

- Tree should touch upper front knife and all feeding rollers to establish efficient delimbing and feeding.



130 mm

Similarity compared to 758HD

- Upper knives cylinders, pins and bearings
- Roller arms cylinders, pins and bearings
- Tilt frame cylinders, pins and bearings
- OM saw device
- SC saw device
- SM color marking device
- Lenght measuring device
- Diameter measuring device
- Fixed upper knive
- Sensors
- HHM
- Poclain feed arms and motors

Differences compared to 758HD

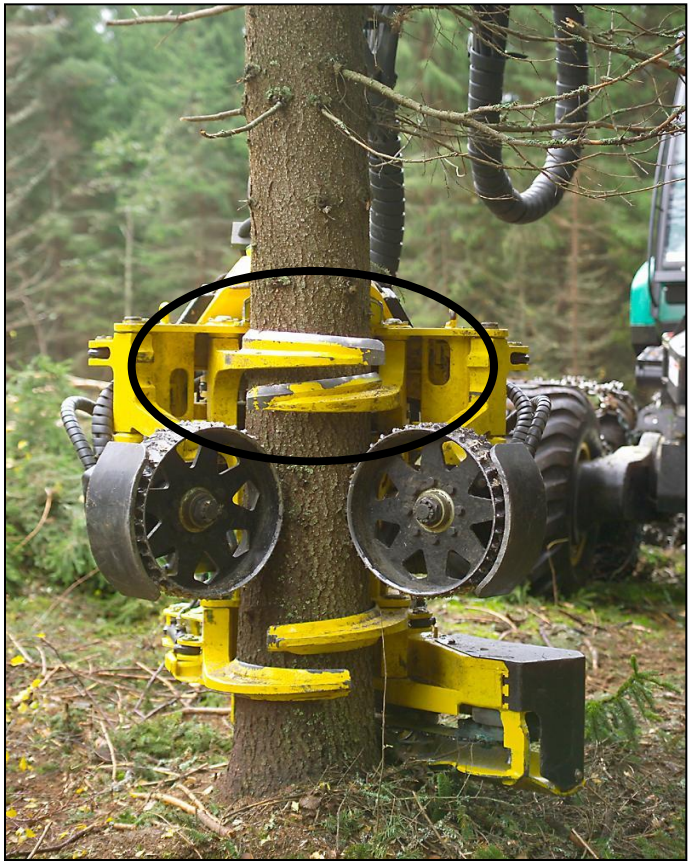
- Delimbing knives, upper and lower
- Roller arms, Danfoss
- Feeding rollers
- Feeding motors, Danfoss
- Valve block
- Tilt frame (H480 tilt will be in use in the future)
- Covers
- Main Frame
- Back knive cylinders
- Hoses and connectors

Differences compared to 758HD

- Delimbing knives close movement stoppers are re-modified

Differences compared to 758HD

- Longer top delimbing knives > easier to pick up logs



Differences compared to 758HD

- TMVW Danfoss high pressure feed motors, feed wheel mounting with 6 bolts. No separate flange.

Differences compared to 758HD

- Back knives pin in ”lower” position than in 758. Better hold on big stems.

Differences compared to 758HD

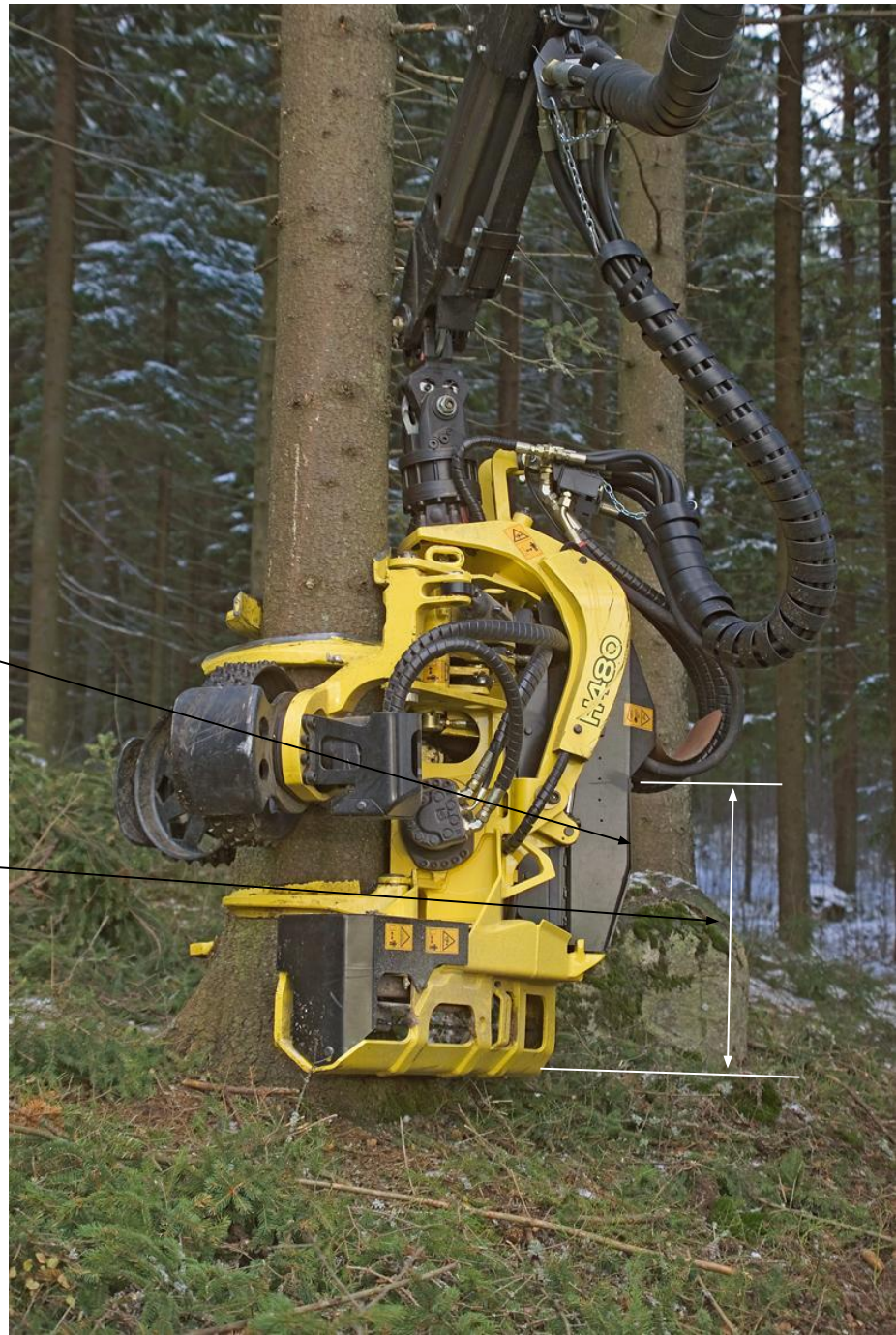
- New back knife cylinder angle, gives more power to knives > better control of big stems.

Differences compared to 758HD

- New tilt frame has two stainless steel colour marking tanks. Improved hose covers. Three colour tank as an option for Supermark.

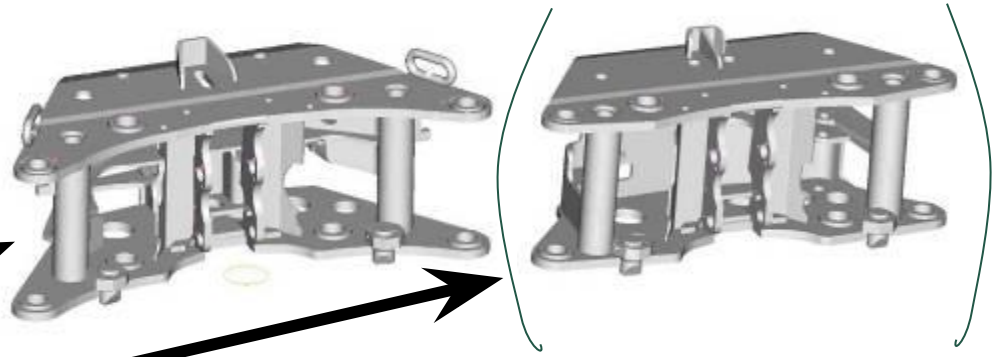
H480 cowers

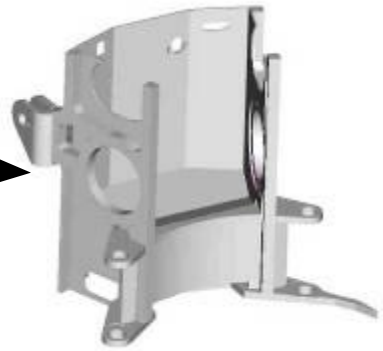
- New cowers, easy to open, pull on rails.
- Slim design
- Hoses routed up, bigger bending radius
- Long distance to ground and snow

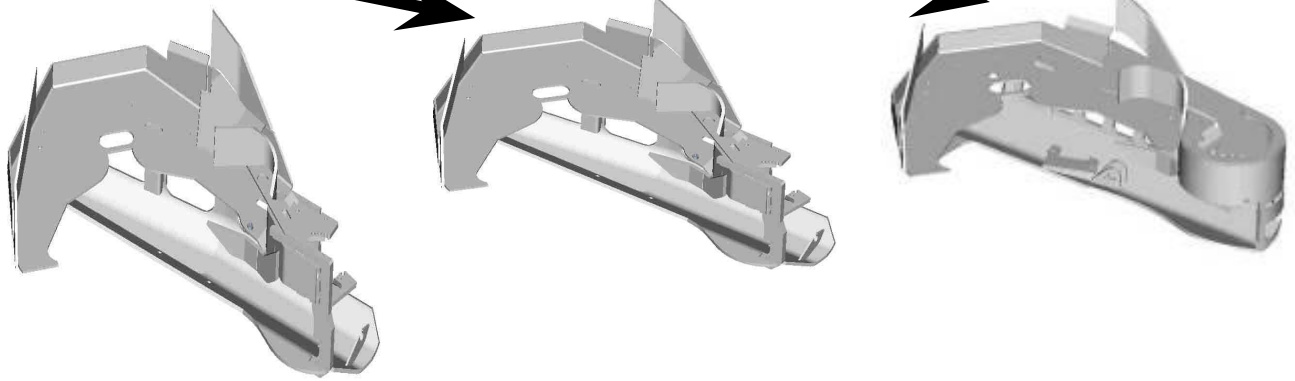


Module Thinking

- Front Frame
  - Standard
- Middle Frame
- Saw Frame
  - Standard (OM)
  - SuperCut
  - Vertical
  - ”



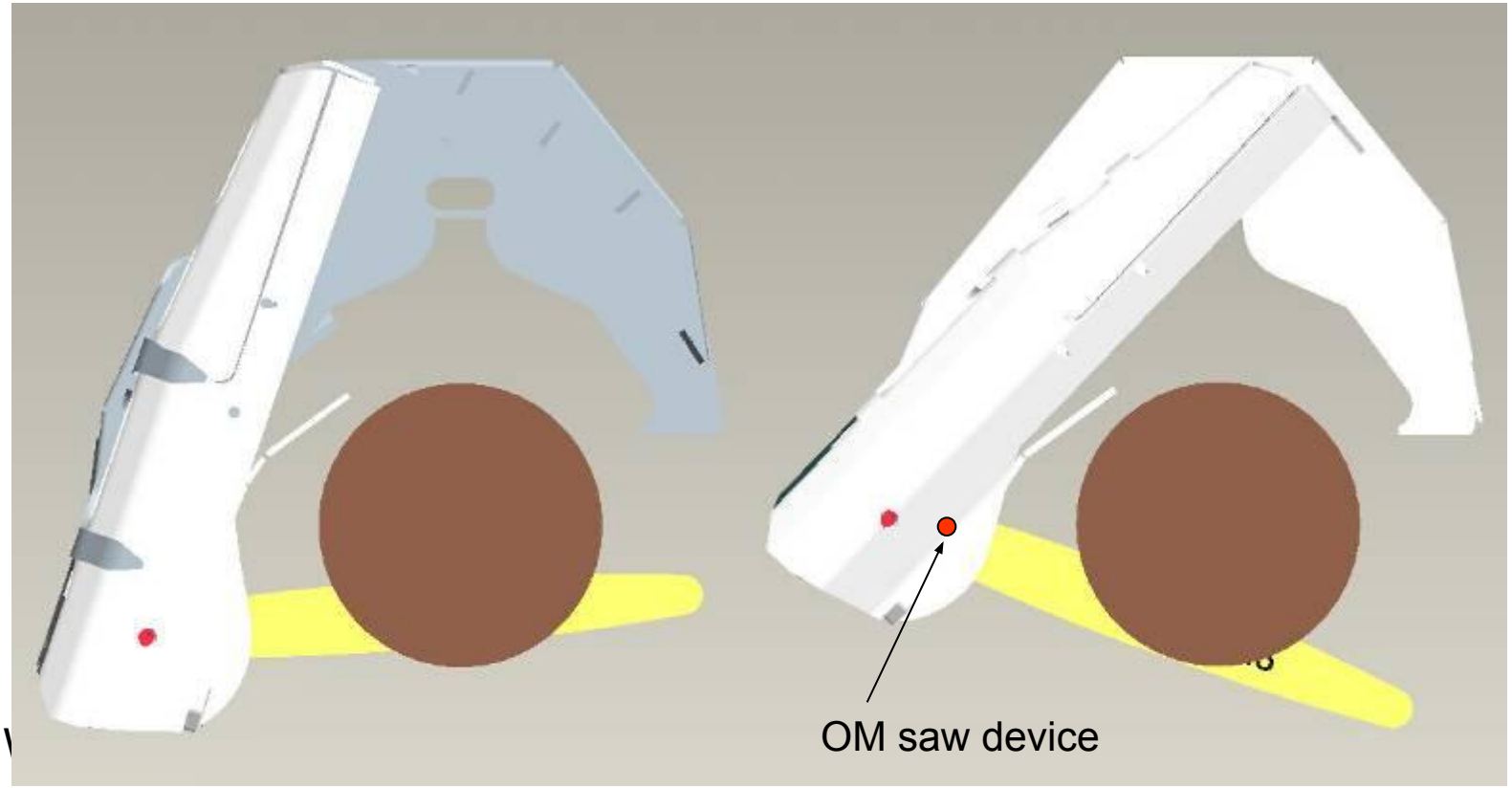




Vertical benefits:
Windblows
Rootbends
Falling to right direction

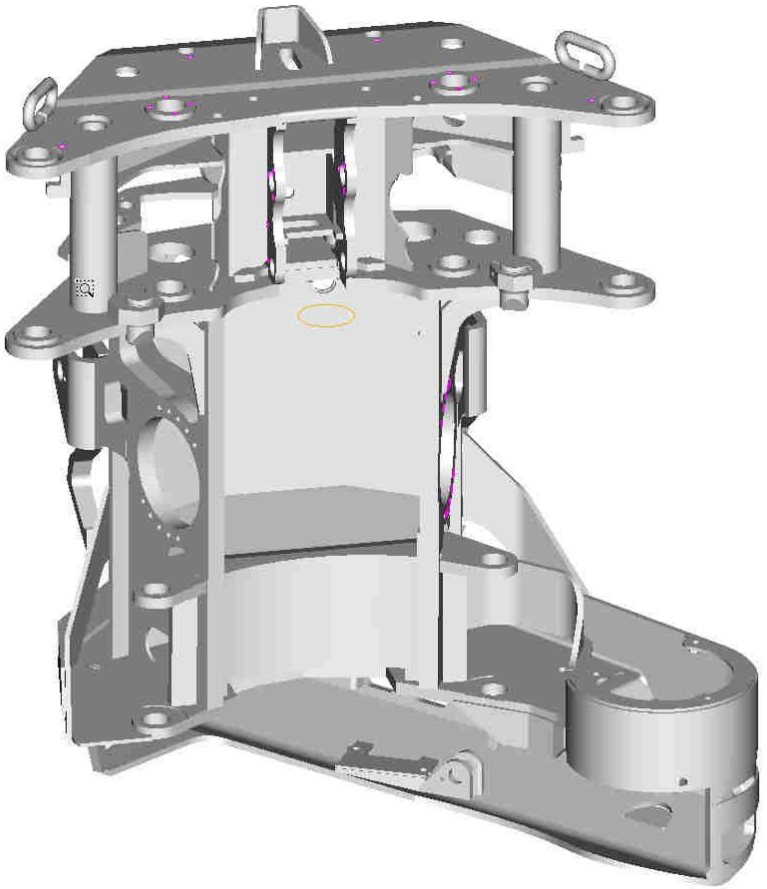
Module Thinking

- Saw Frame
  - Vertical and standard SC saw frames



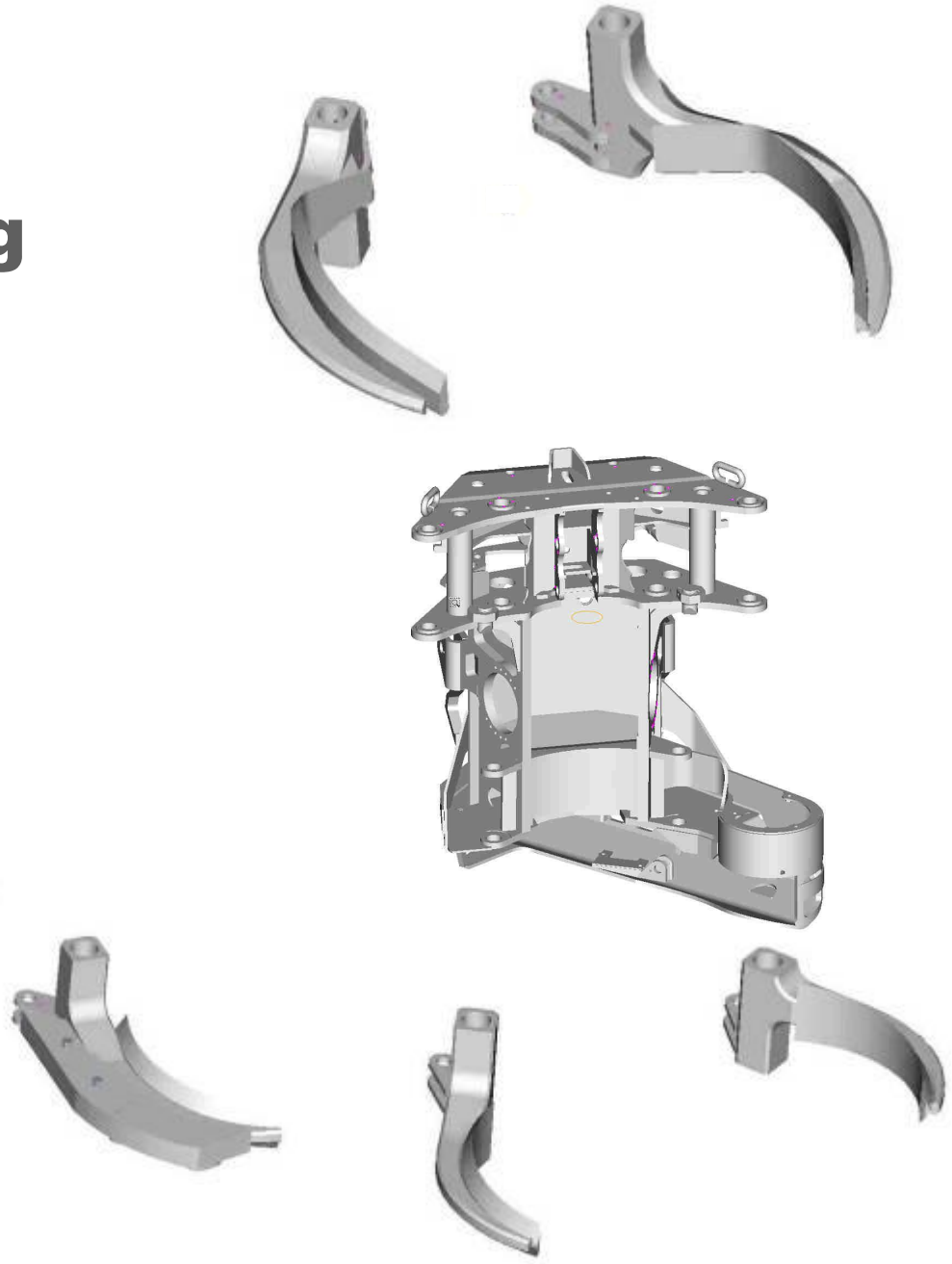
Module Thinking

- Main Frame
  - Front frame, middle frame and saw frame welded together

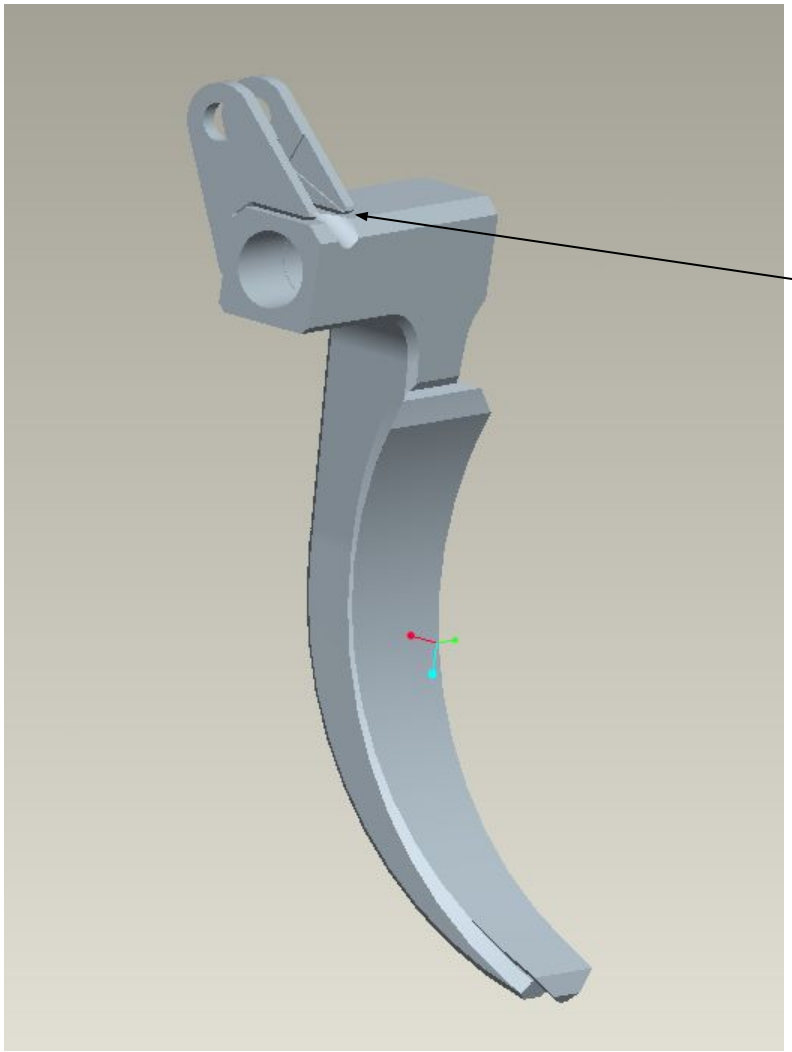


Module Thinking

- Delimbing Knives
- old
  - Standard
  - French modell
  - Color marking knife

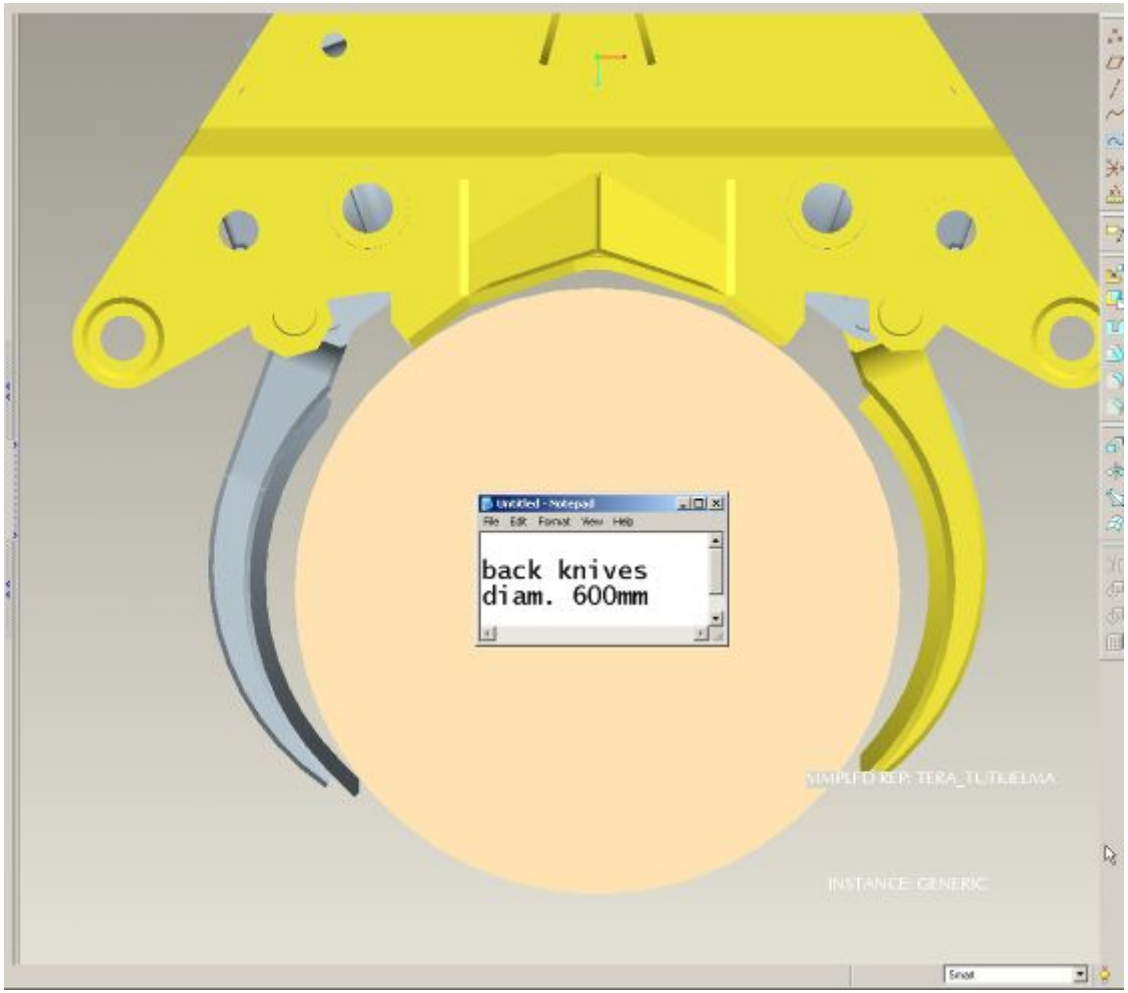


New rear knives. Standard for all heads. F634636 and F640637

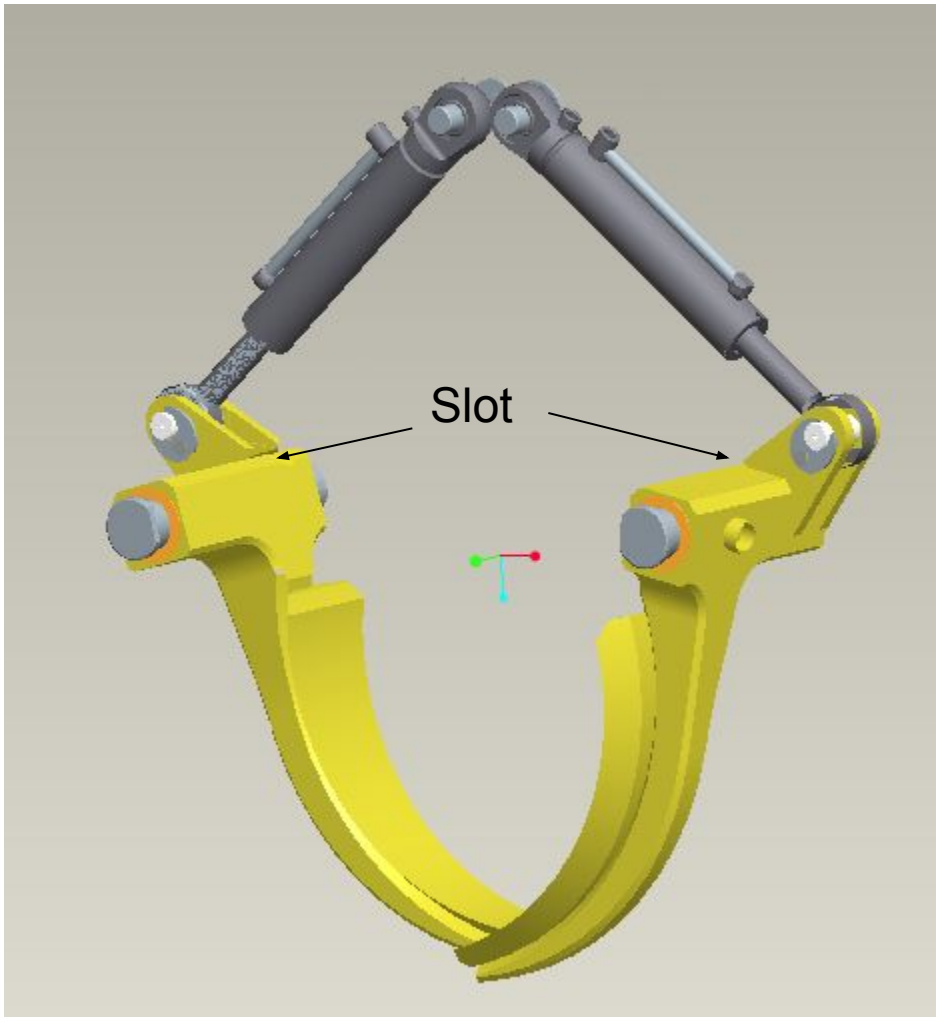


- Rear knives are lengtened 30 mm.
- Slot added for new rear knife cylinder

New rear knives. Standard F646612, F646613



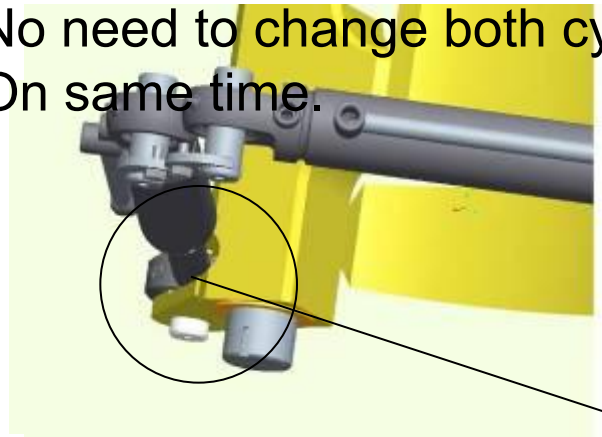
New rear knife cylinder.

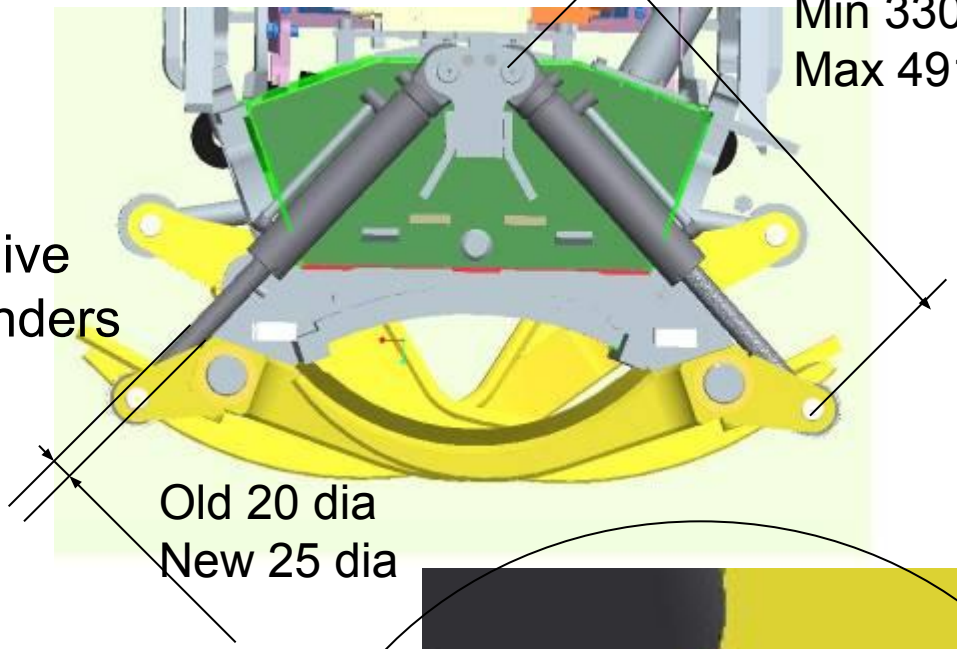


- Rod diameter increased from 20 mm to 25 mm
- Lenght of end cushion increased from 5 to 10 mm in both ends.
- Available as spare parts to old heads. Slot must be grinded to knives to avoid rod hitting to knife
- …WJH48000333

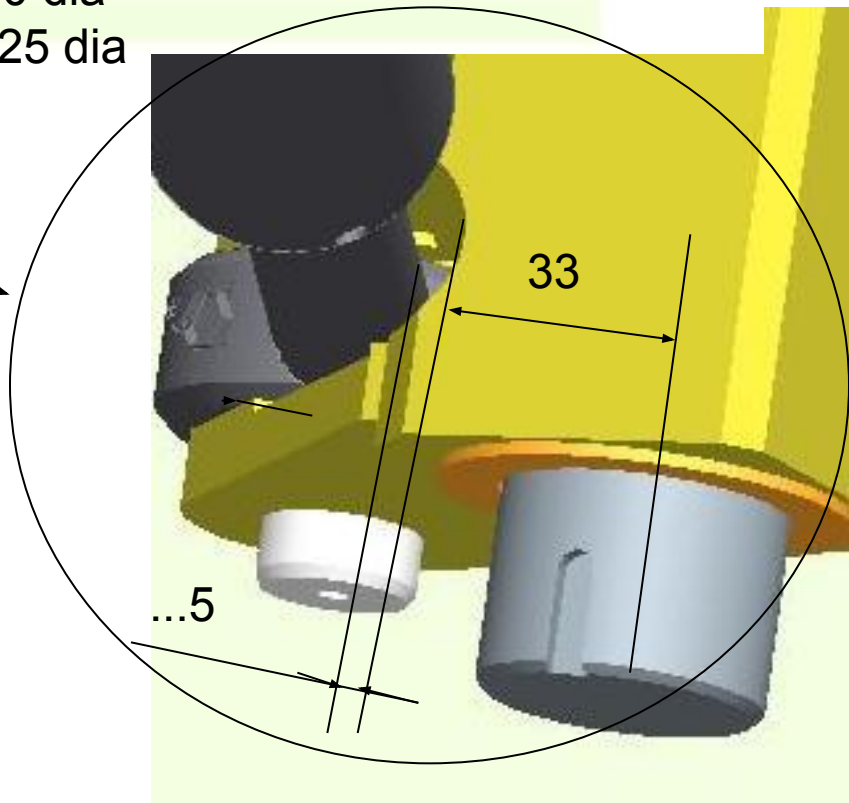
H480 Back knive Modification

…WJH48000333
Hydraulic cylinder
F642383 replaces F065407
Demands Modification for knive
No need to change both cylinders
On same time.

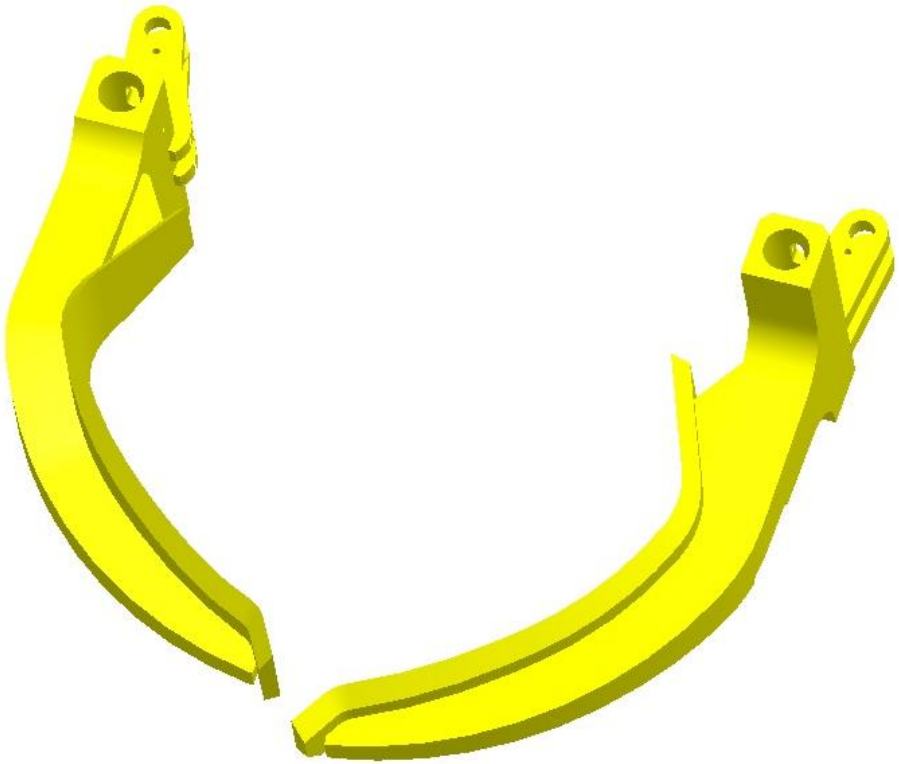




1. Remove old cylinder
2. Remove rear delimbing knives F642576, F642577
3. Grind more room for bigger rod
4. Check the stoppers, (5 mm extra stroke left in min/max positions)
5. Assemble knifes and new cylinder(s)



New strong front knives. F646612 and F646613



More steel, weight
Cutting material hardox 450

Calculated , verified and validated construction

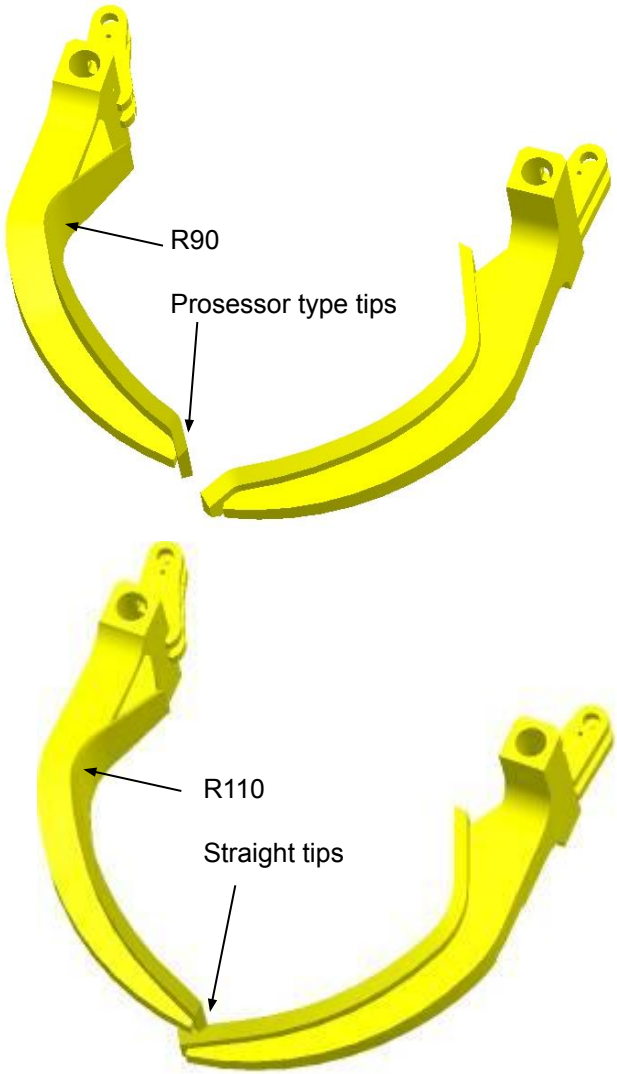
Longer knives helps to pick fallen trees

Prosessor type knive tips

New front knives.

Standard, R90 radius
F646612
F646613

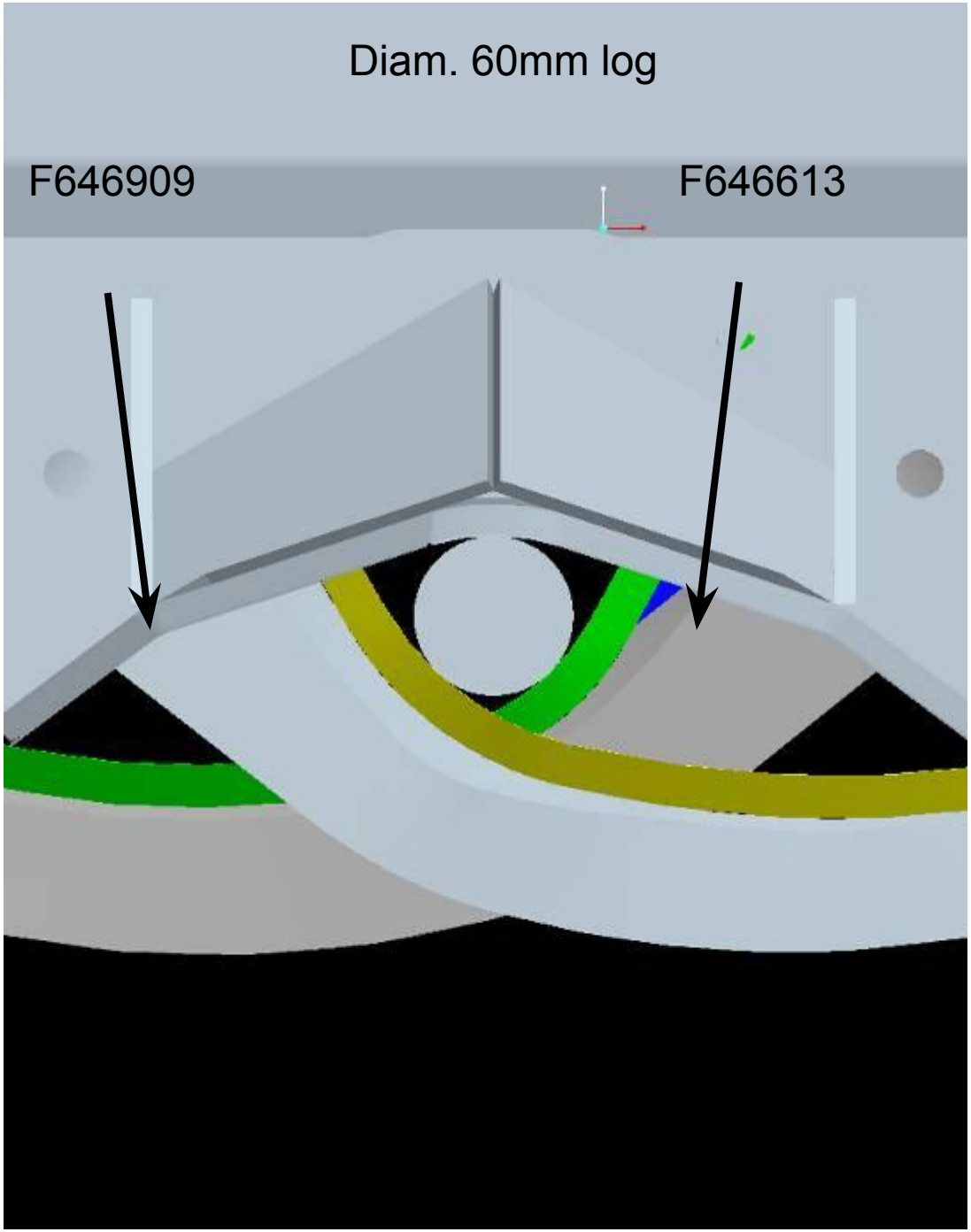
French version, R110 radius,
F646949
F646910

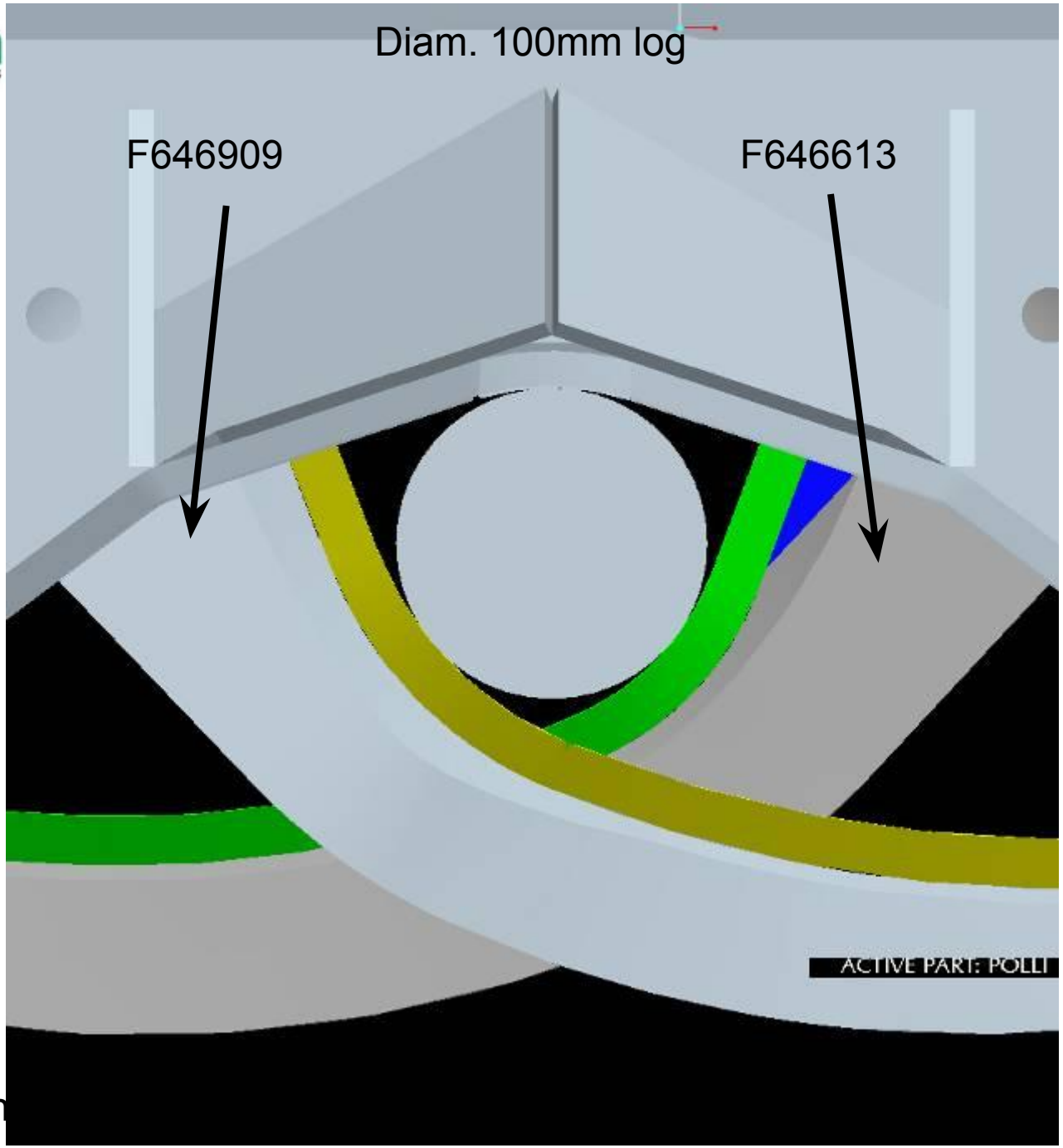


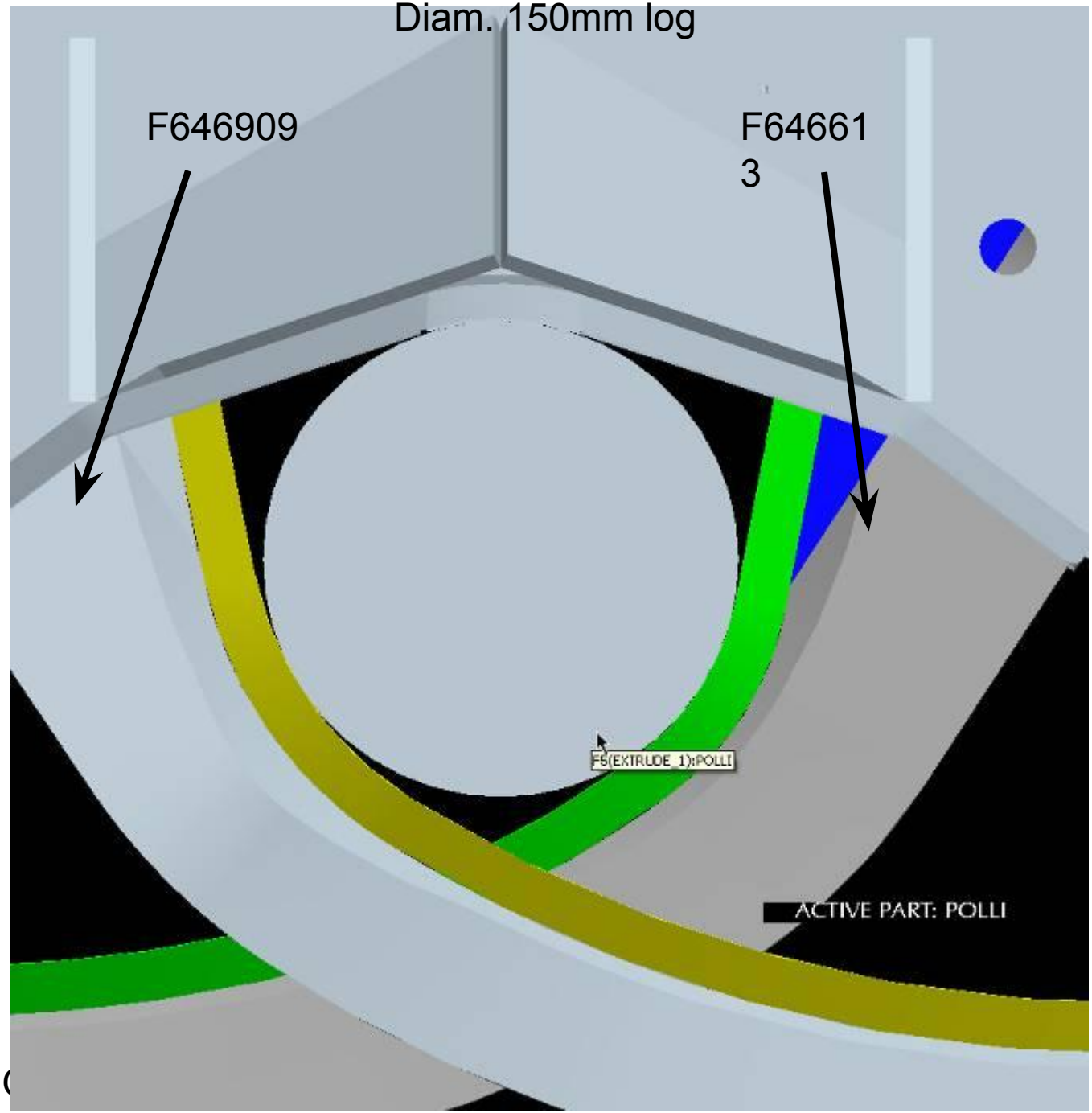
Diam. 60mm log

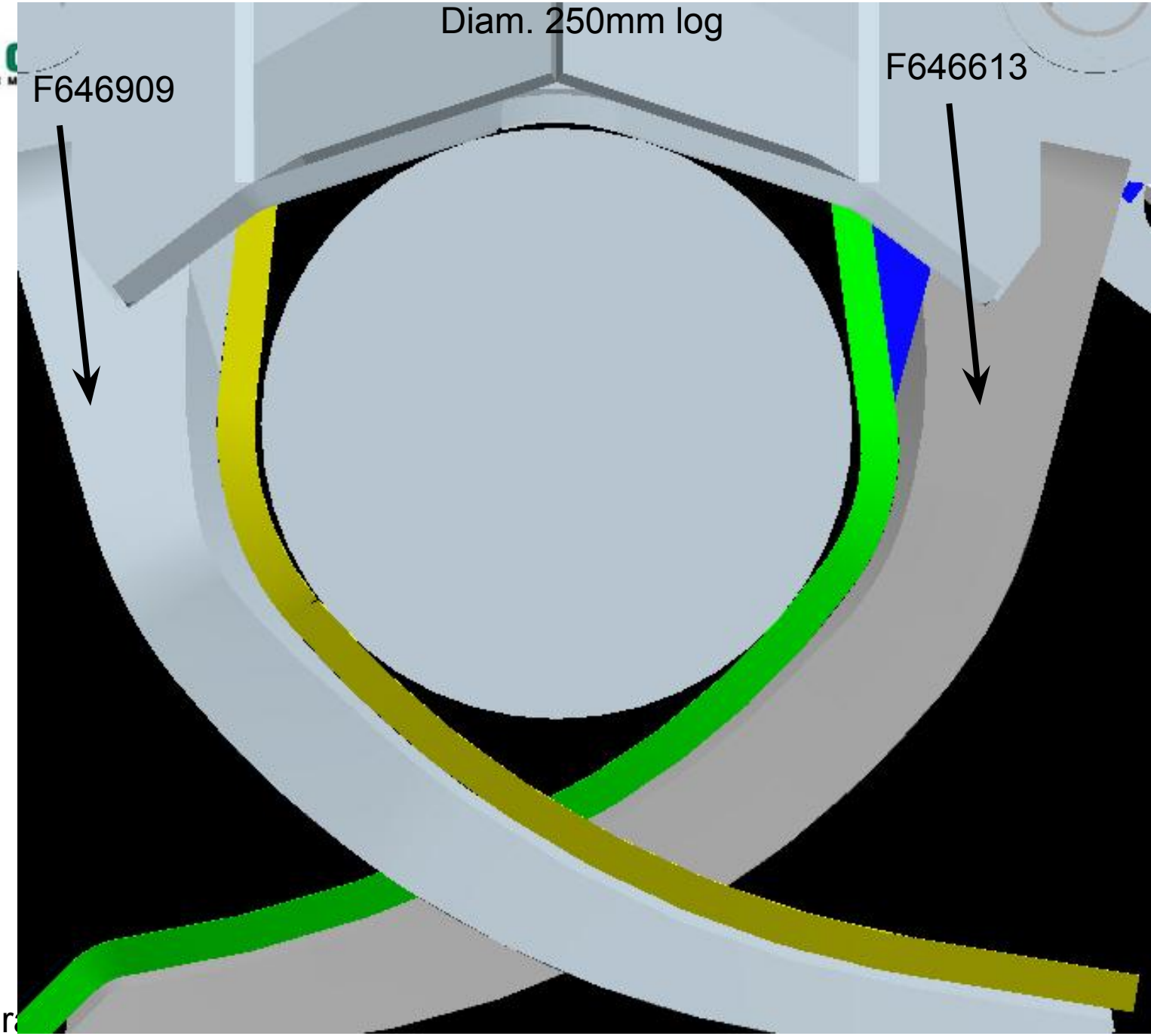
F646909

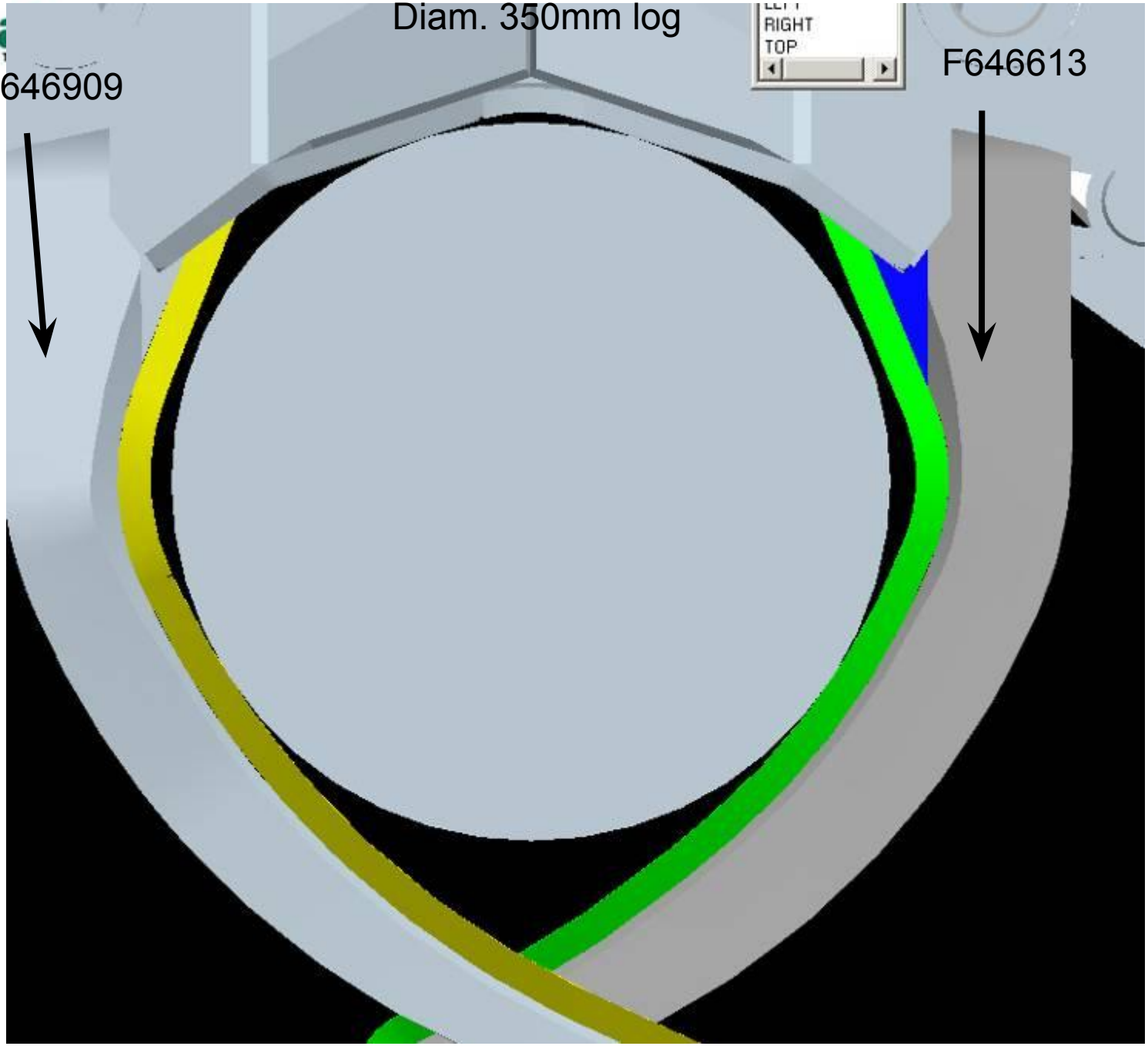
F646613




Diam. 100mm log
F646909
F646613
ACTIVE PART: POLLI


Diam. 150mm log
F646909
F646613
F5(EXTRUDE_1):POLLI
ACTIVE PART: POLLI


Diam. 250mm log
F646909
F646613



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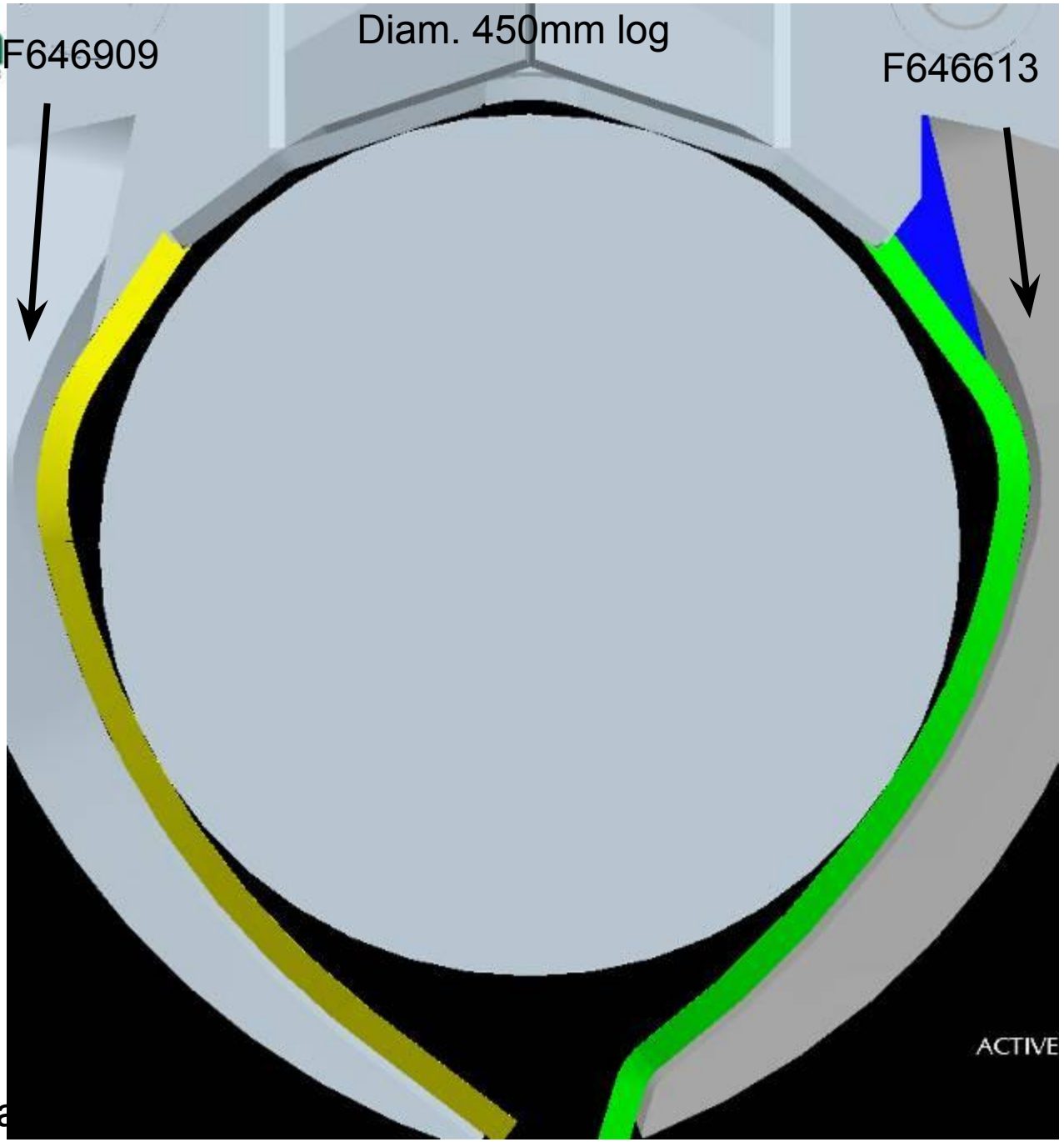
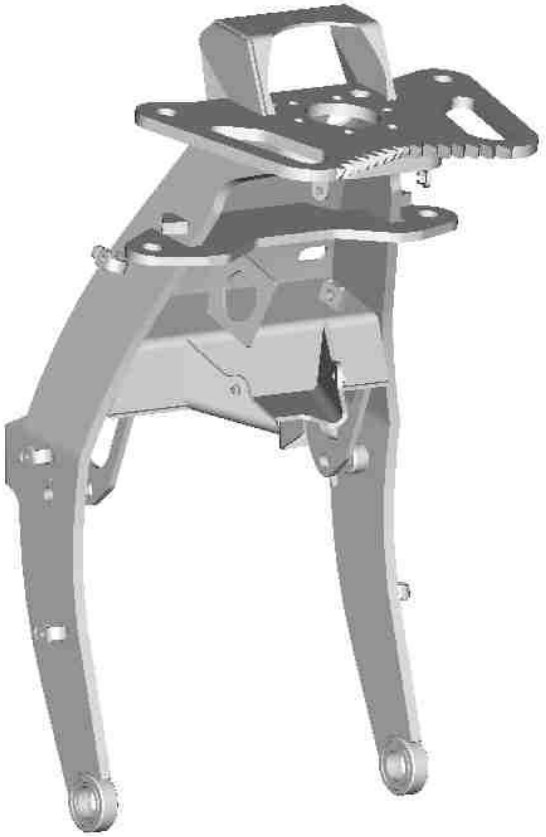
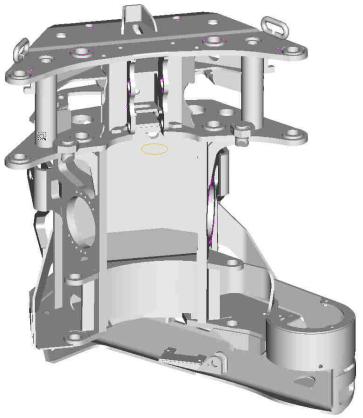

F646909
Diam. 450mm log
F646613
ACTIVE

Module Thinking

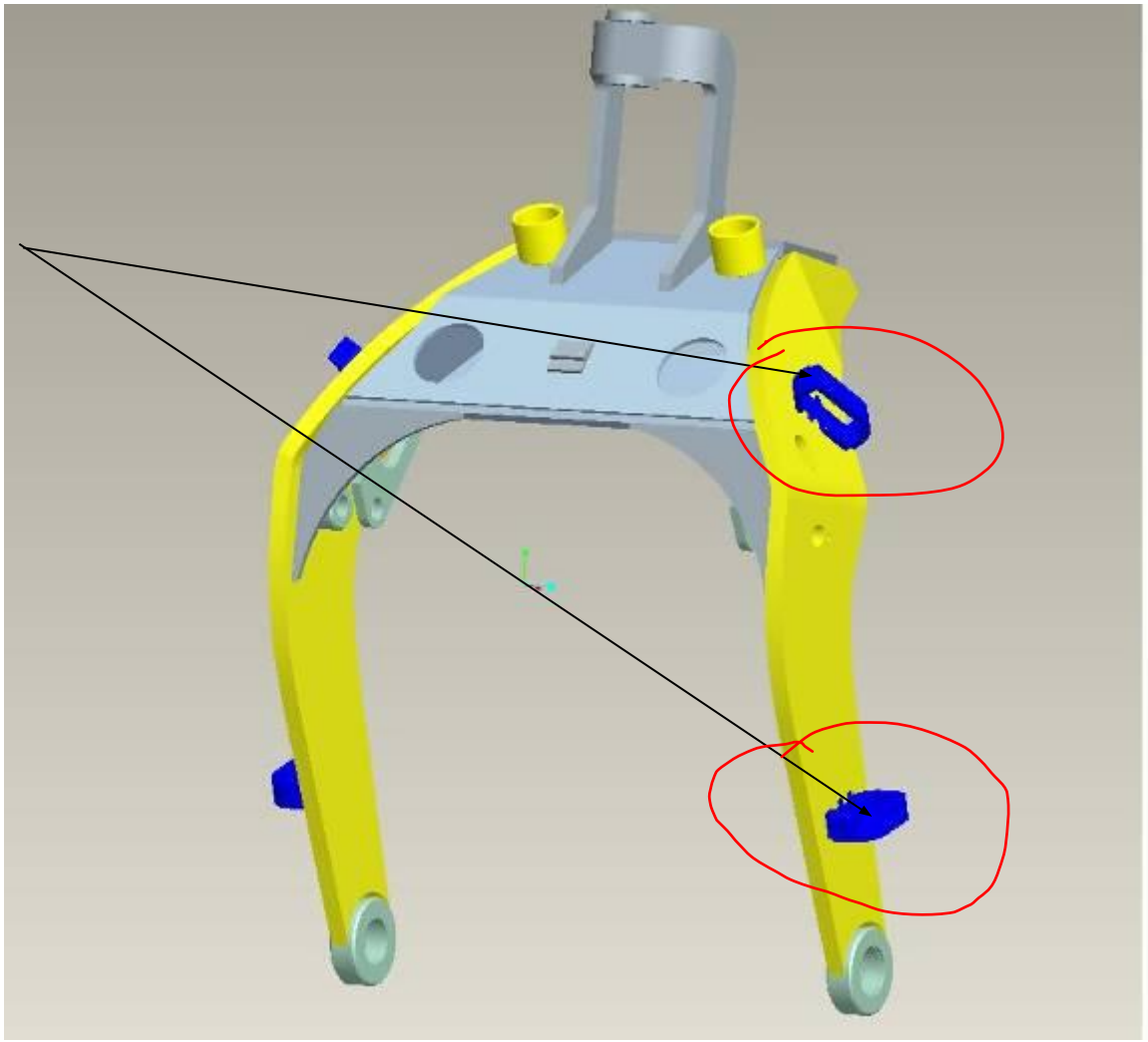
- Tilt Frame
  - Standard
  - Multi Tree handling





Tilt frame

New tilt cower brackets

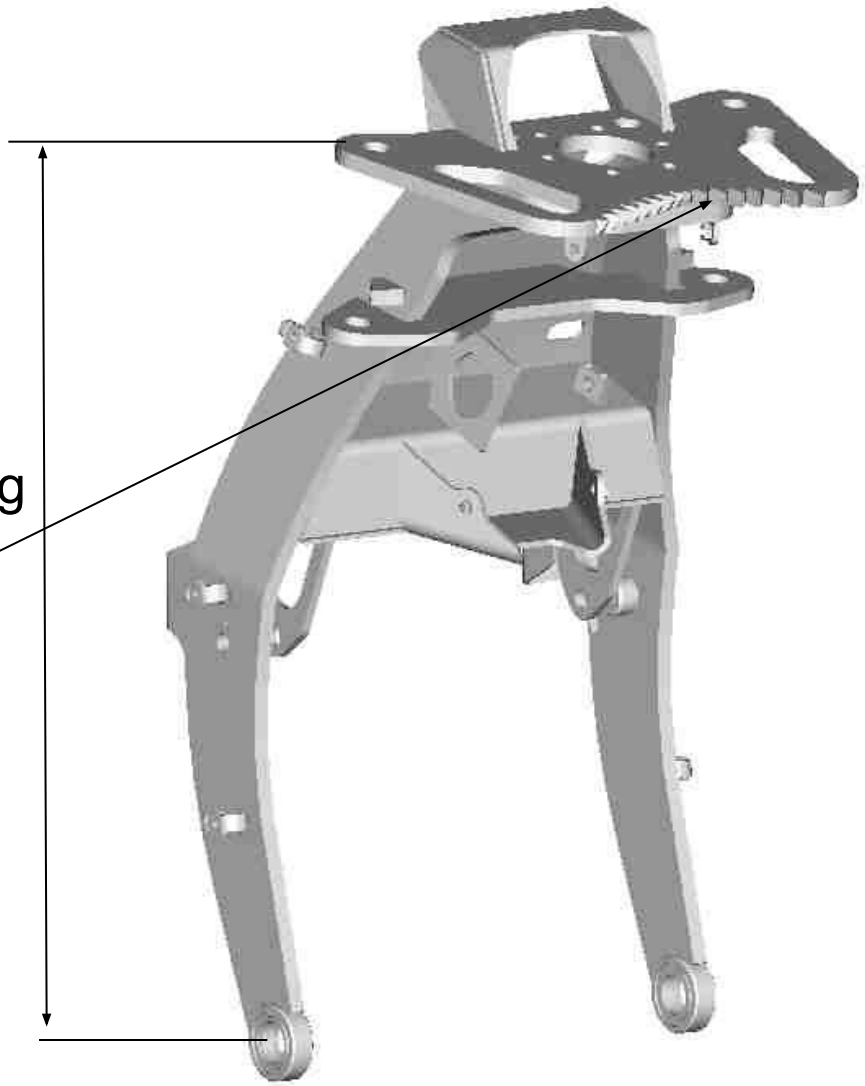


Tilt frame

Possibility to use MTH tilt frame
Without collecting clamps

Extra lenght gives stability in felling

Teething in tilt upper plate
gives extra support



MTH tilt frame

- Multi Tree handling
- -hose routings from valve to tilt as one bundle

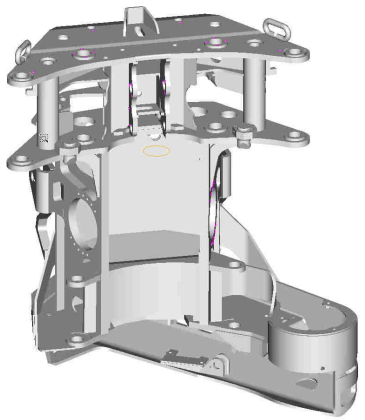
(to MTH cylinder and rotator)

100 mm longer than HTH470 MTH

Function in EVO 2 main valve

No side protection

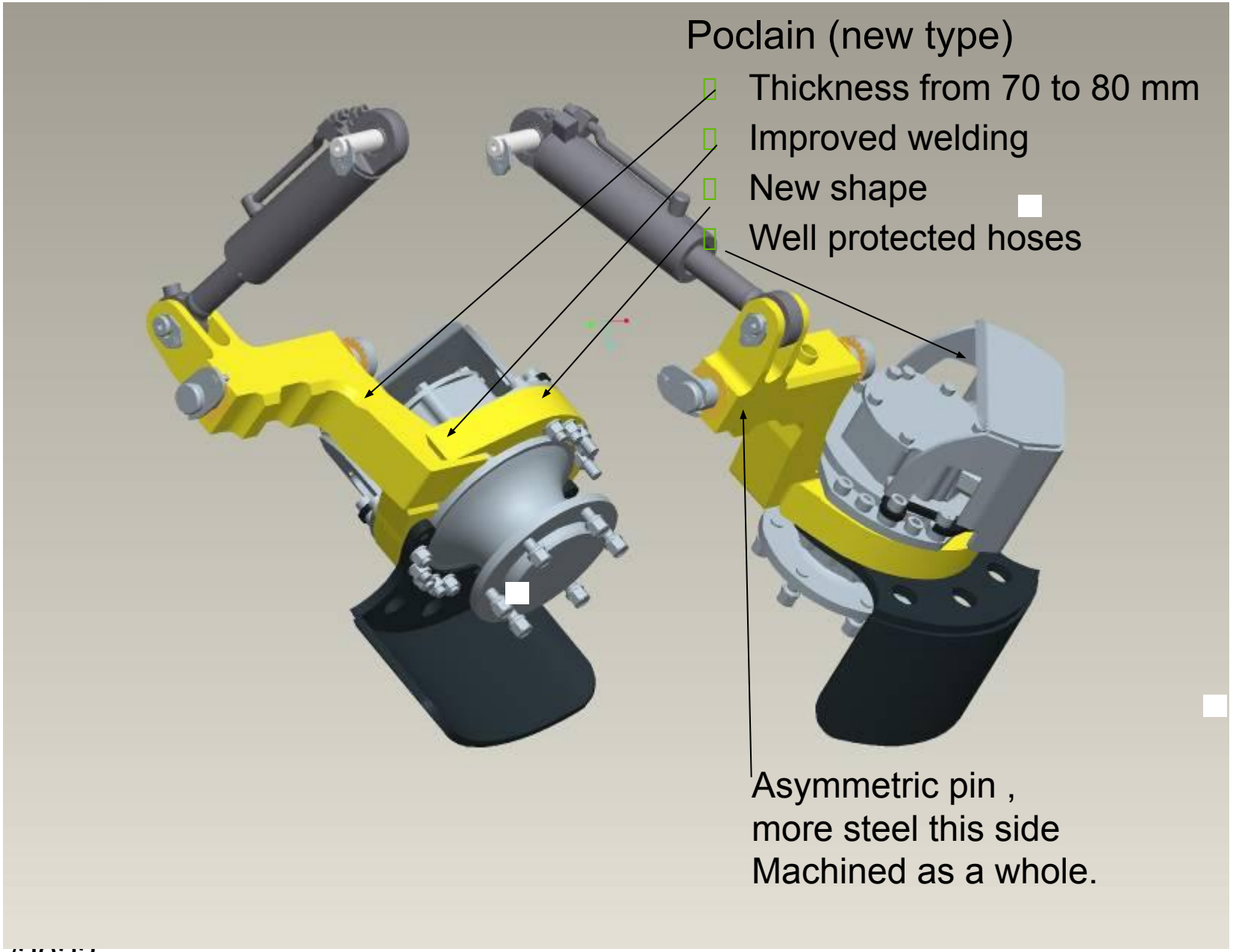
Side plate thickness increased from 20 to 25



Module Thinking

- Feed Roller Arms
  - Danfoss
    - Standard
  - Poclain (new type)
  - Covers for feed rollers

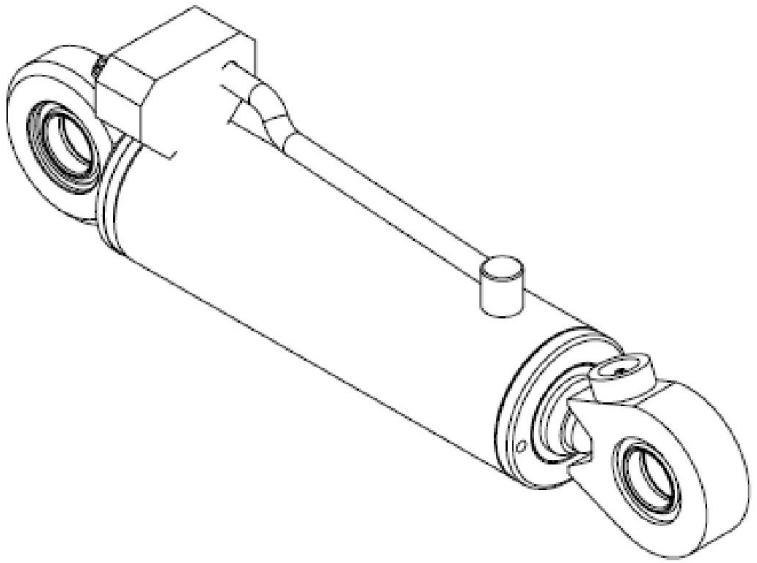
Roller Arms


Poclain (new type)
Thickness from 70 to 80 mm
Improved welding
New shape
Well protected hoses
Asymmetric pin ,
more steel this side
Machined as a whole.

Improvement

- Feed Roller Arm Cylinders

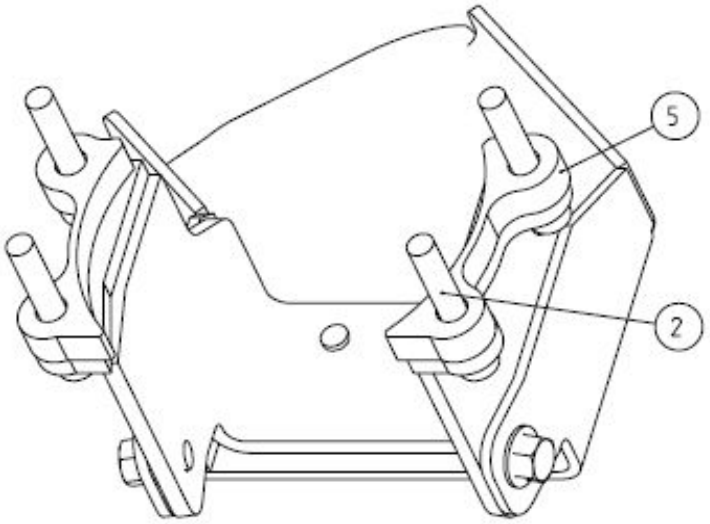
- F071355 stronger rod
- Better fasting for rod and piston
- Better seals
- Replaces F634631

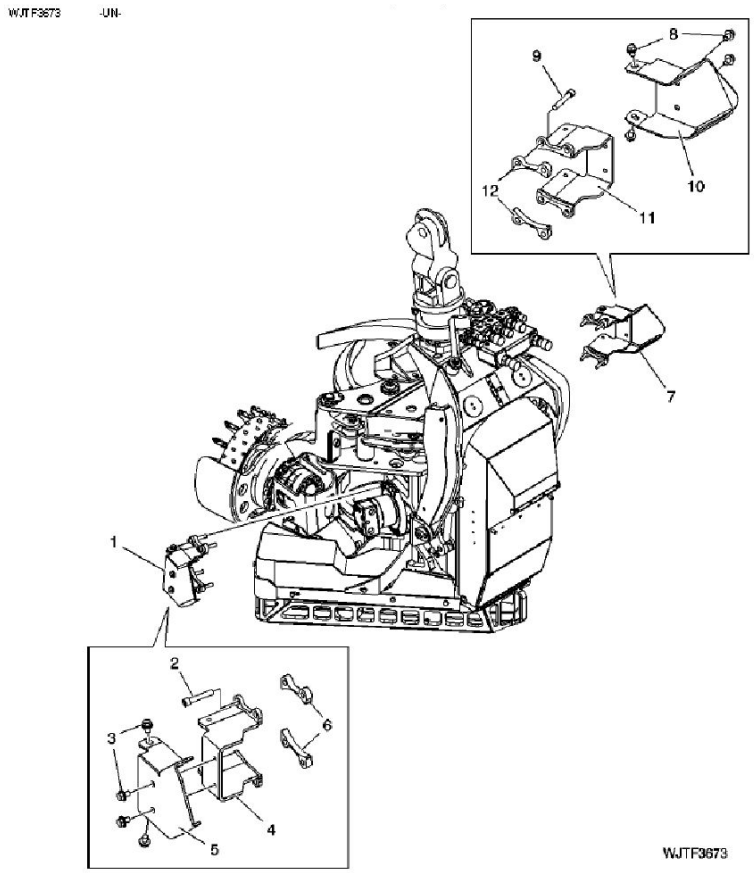


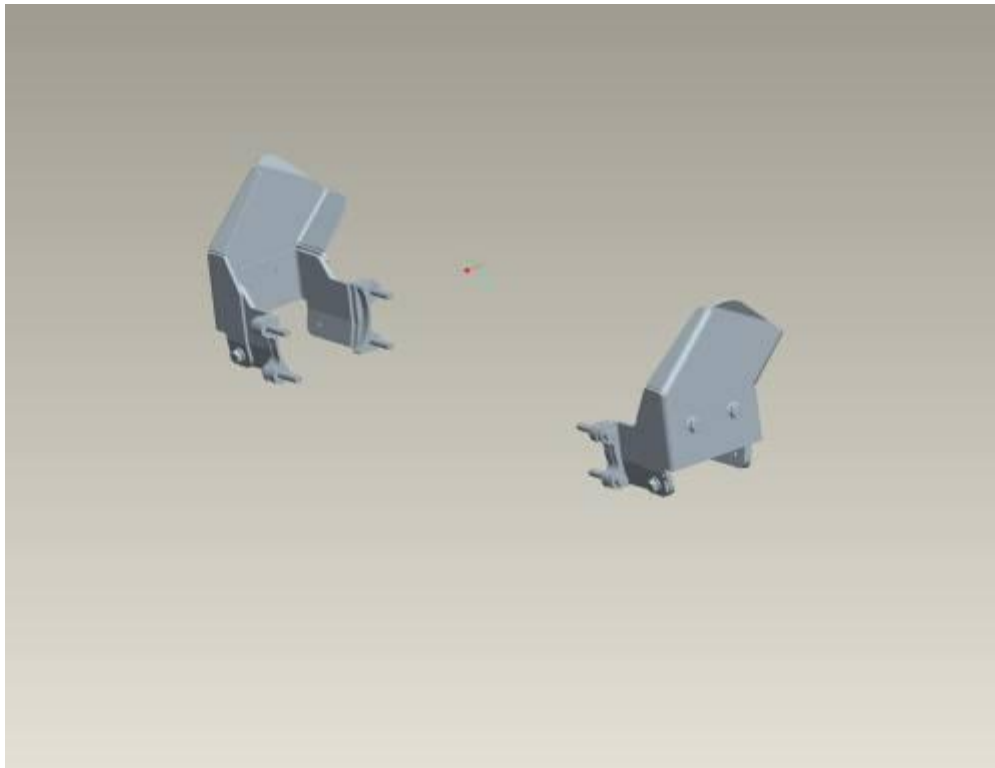
Upper knive shields Option

Right F640571
Left F641116

V00758







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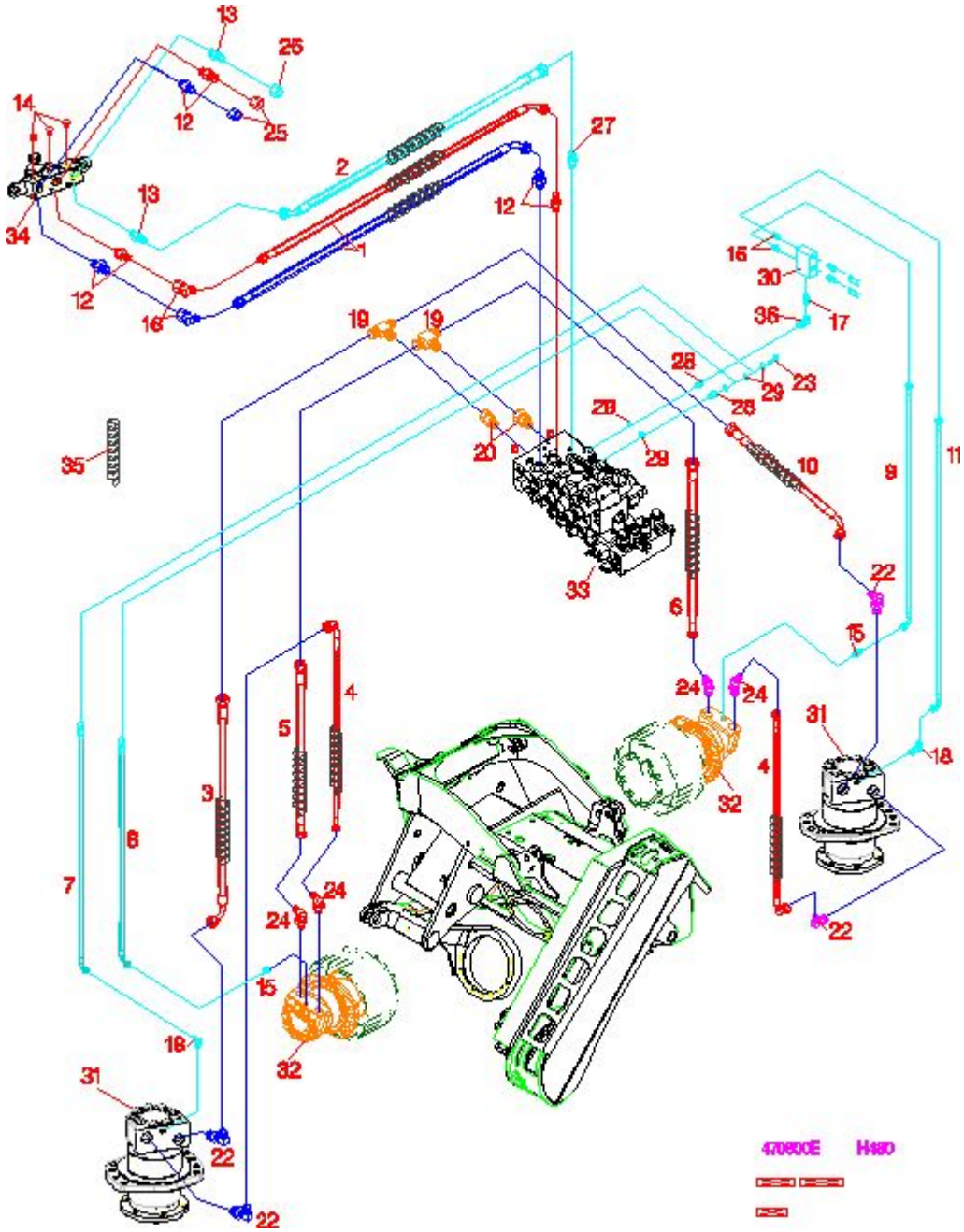
Feed Motors

- 630/400 cc Danfoss TMVW / TMTW
- 800/500 cc Danfoss TMVW / TMTW
- 780/500 cc Poclain MS08/ Danfoss TMTW



Feed Rollers

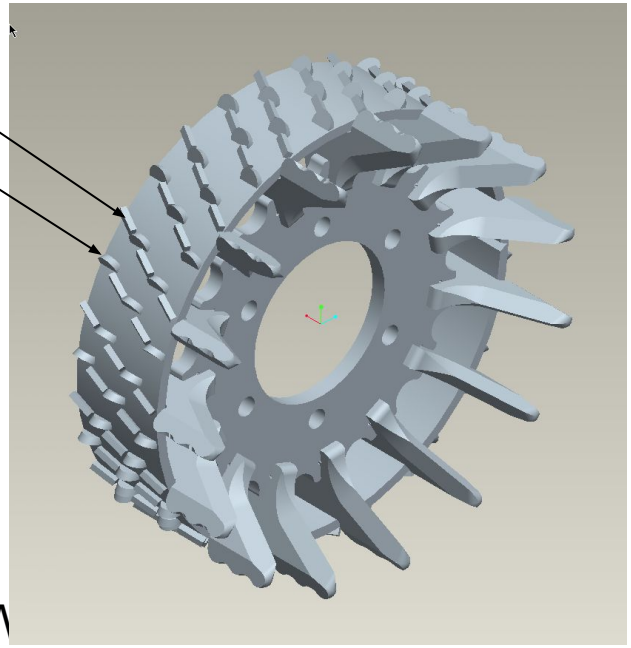
- Upper Rollers
  - Spiked rollers
  - V-type rollers
  - Ribbed rollers
  - Euca rollers

- Down Rollers, Danfoss/Poclain
  - Spiked rollers
  - V-type rollers
  - Mense (Conical)
  - Moipu rollers
  - MTH rollers
  - MTH V-type rollers
  - Euca rollers

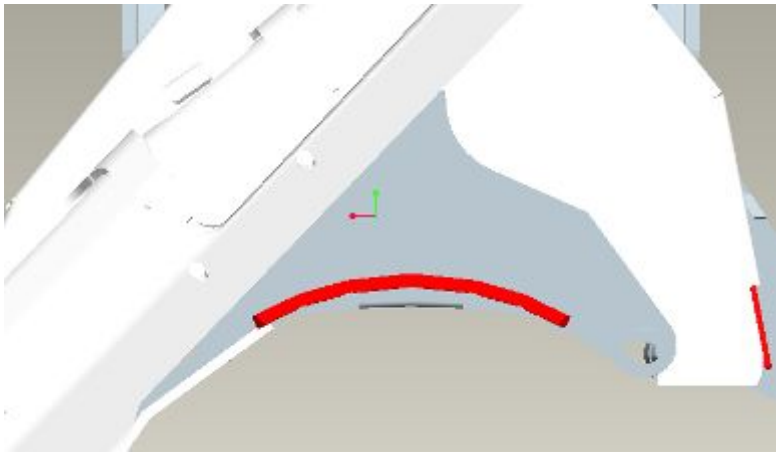
Feed Rollers

- Upper Rollers
  - V-type rollers
  - Thumbnail spikes gives traction
  - Rectangular bars prevents feeding damages

- Down Rollers, Poclain
  - MTH V-type rollers

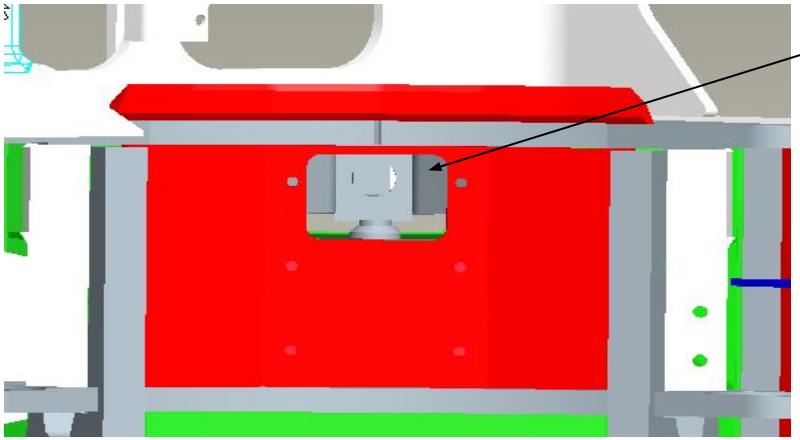


Fixed rear knife. Standard for all heads



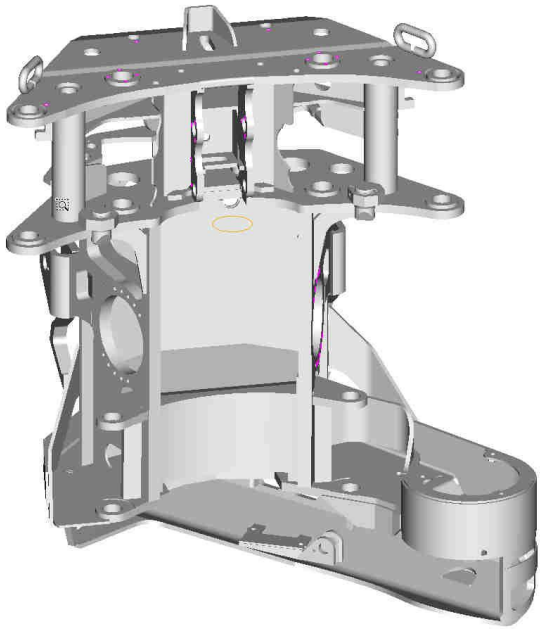
New frame numbers for SC, Om and Q frames

- Bottom plate changed
- Service hatch added for easier cleaning
- Spring loaded rear knife is not available
- …EJH480X000375

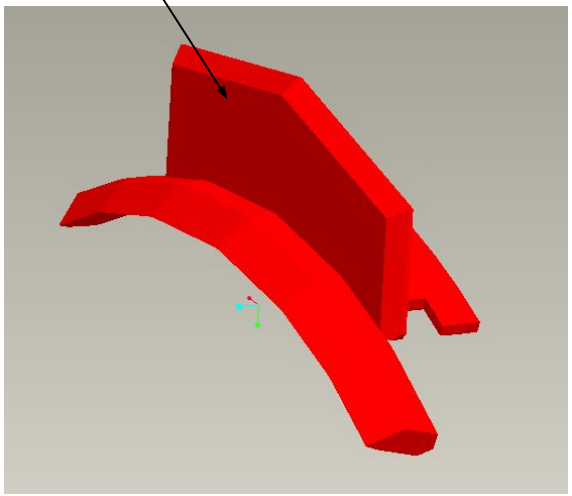


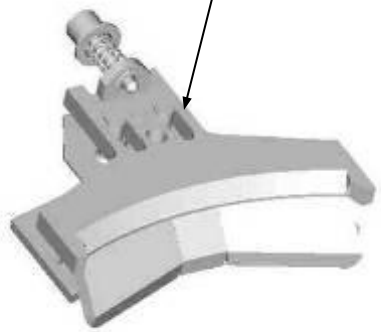
Back knive

Spring loaded knive is not any more available
…EJH480X000375



Field kit for fíxed rear knive, welded
F642291



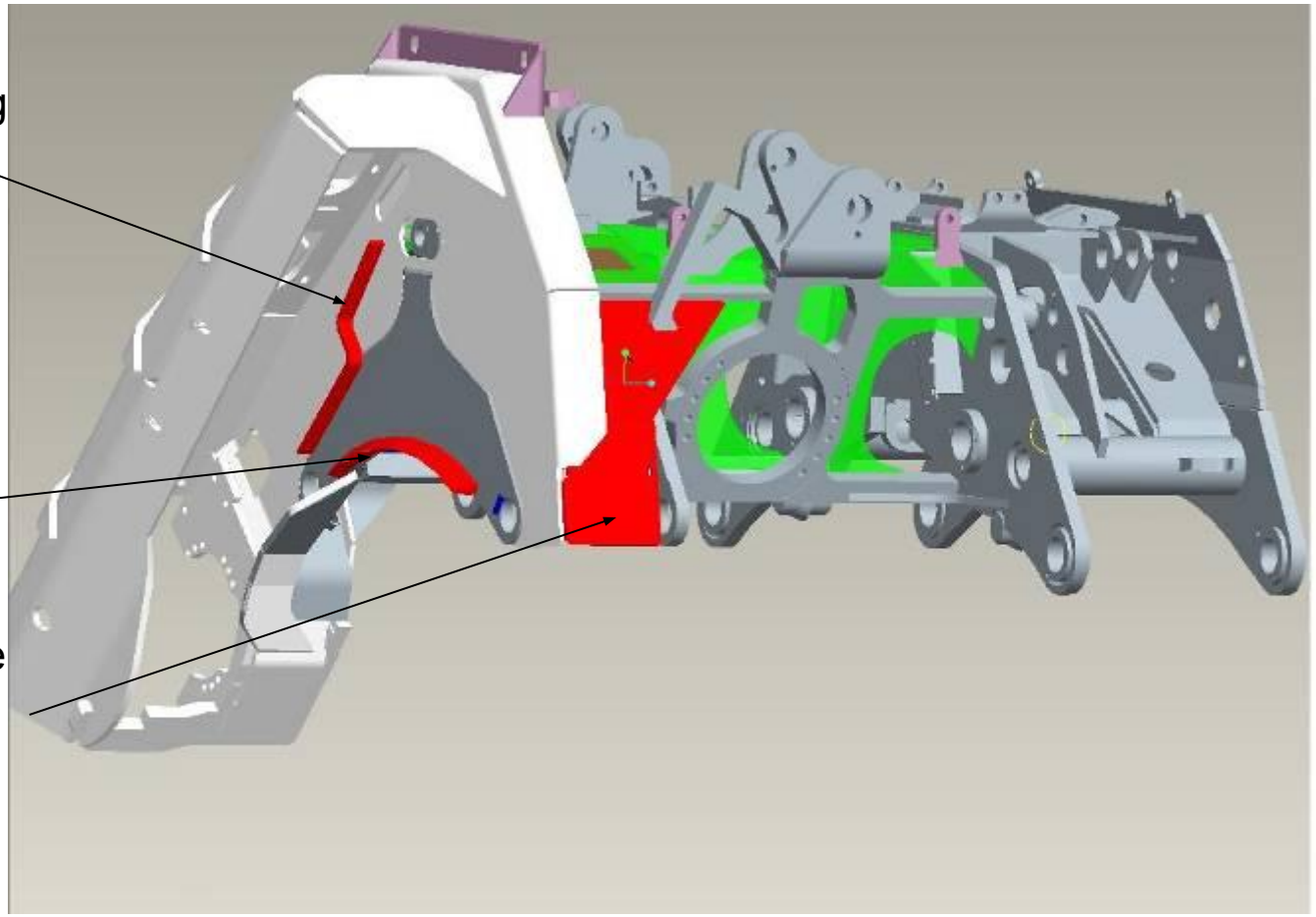


Stronger sawframe

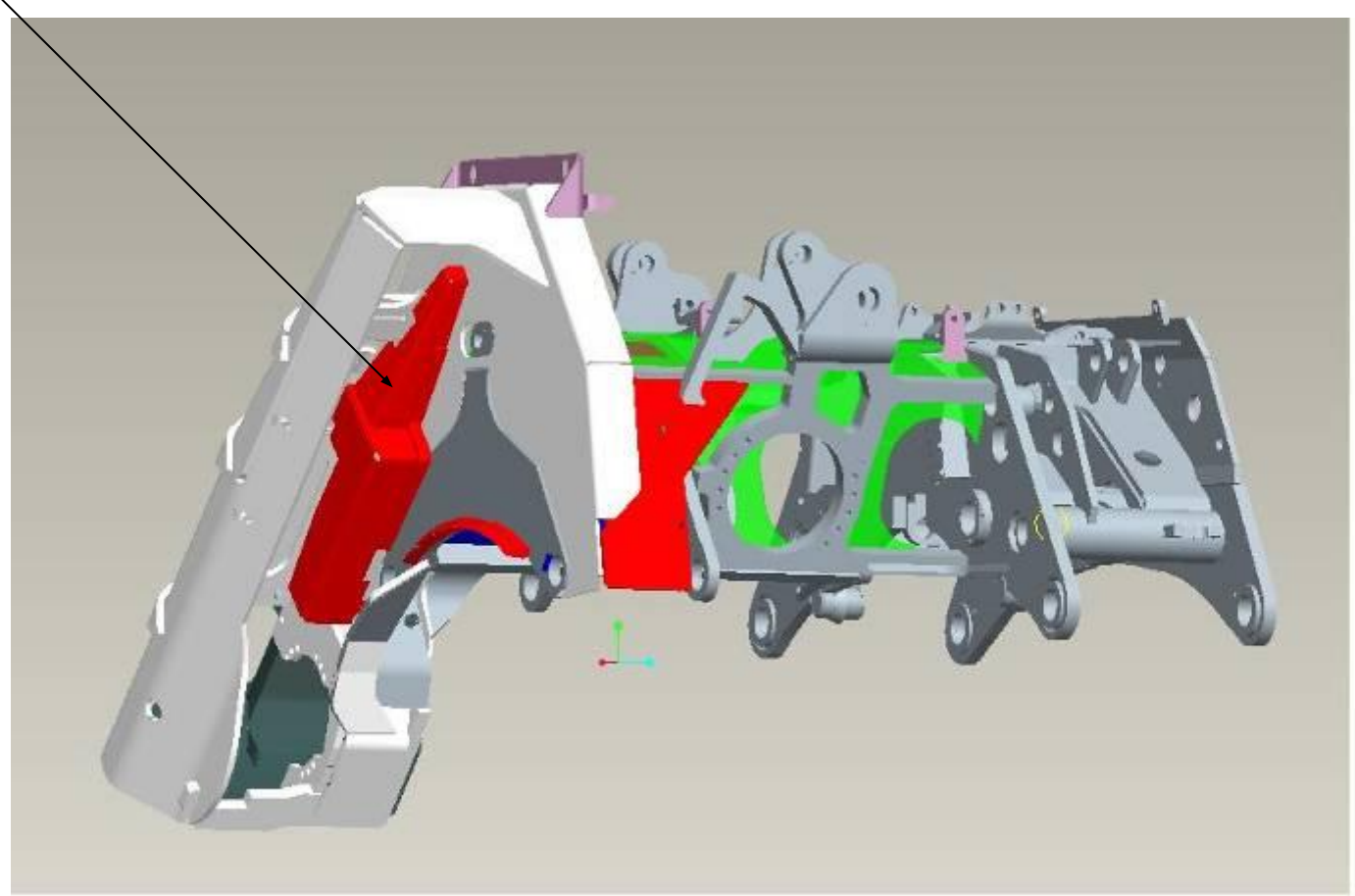
Welded plate preventing sticks penetrating inside sawcower

Fixed back knive

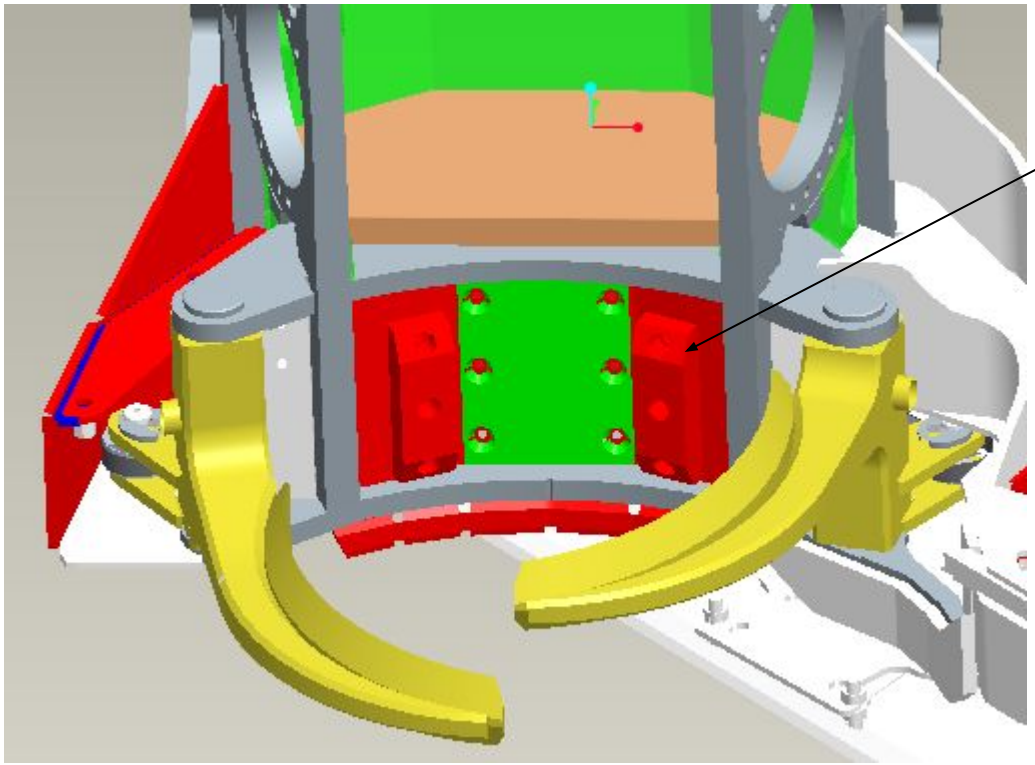
Stronger triangular plate prevents Sawfrane corner bending, when the head hits to ground



Better protection for SC saw unit



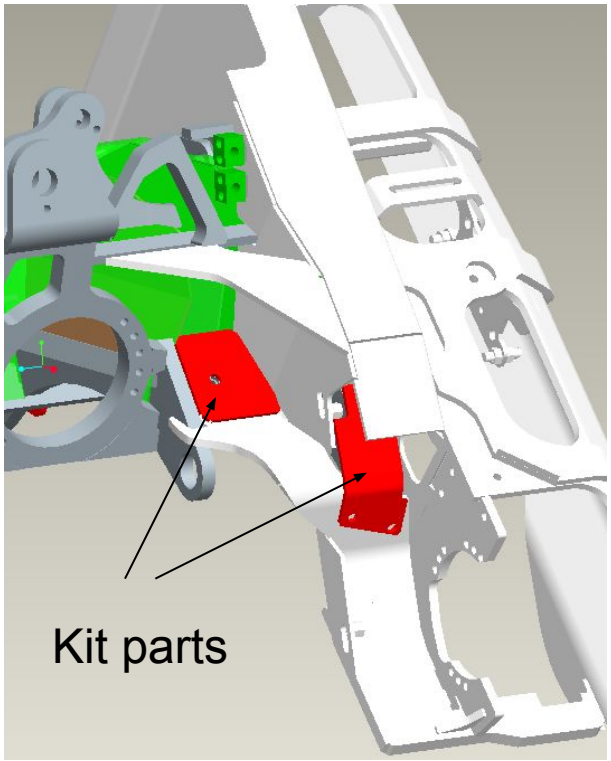
Gliding bars. New option

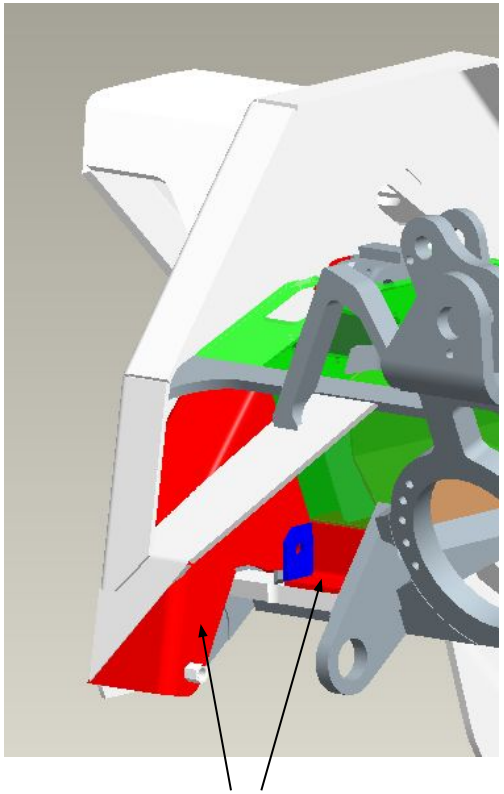


- Added to avoid ”wheelieng” of head
- Improves handling of logs with large stumps

Shield for bottom plate F645570
Gliding plates F645567

Snow protection kit for field



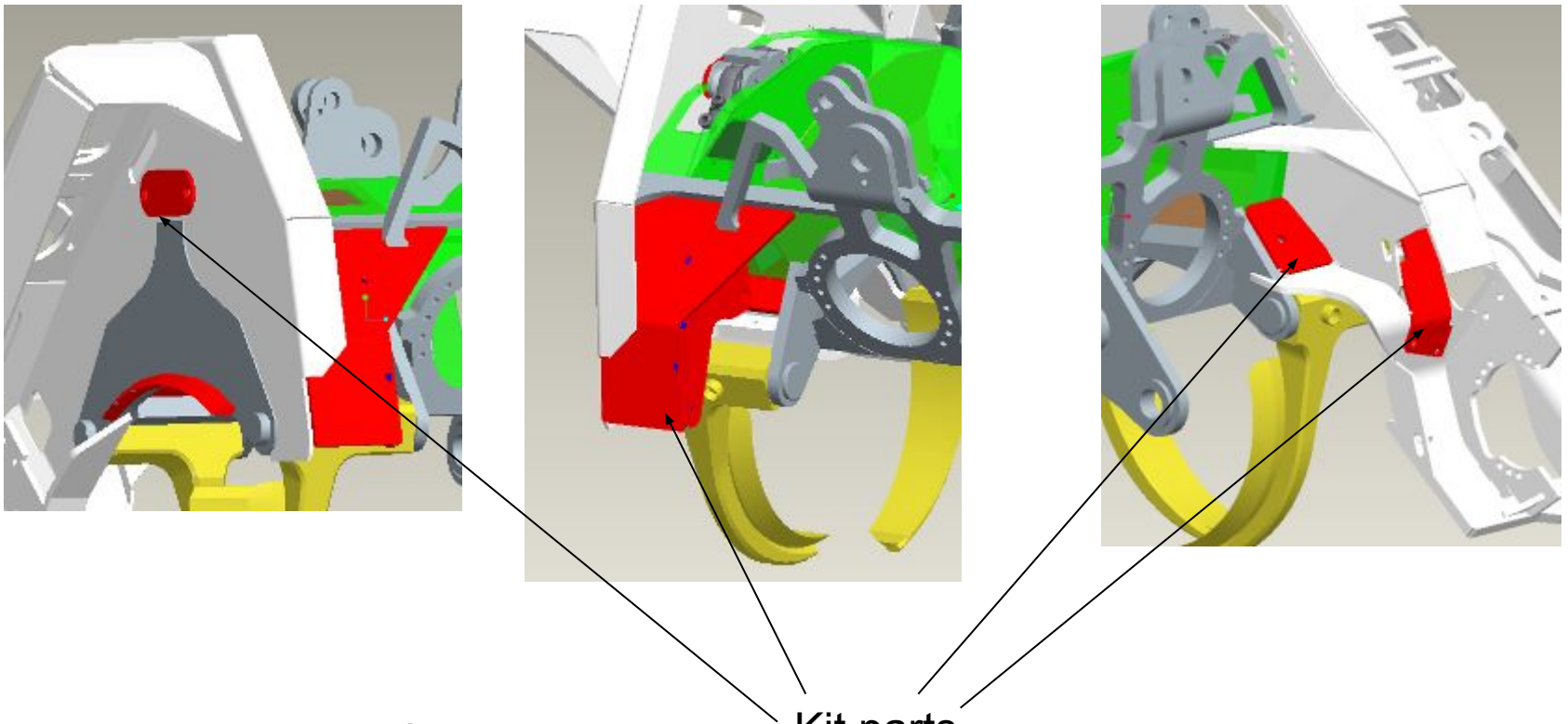


- Rear knife cylinder area is protected of snow and branches.
- Kits for SC and Q frames and OM frame

Kit for snow protection OM F644518
Kit for snow protection SC F642377

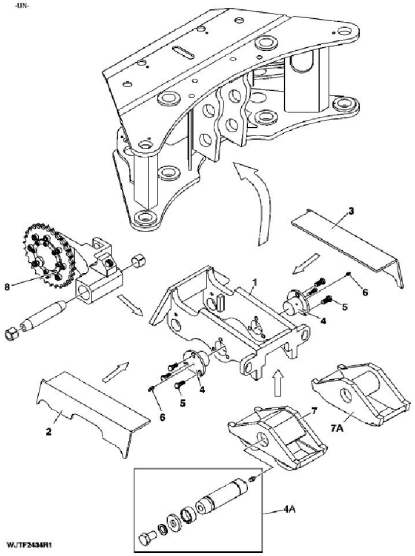
Snow protection kit serie

Kit for snow protection OM F644649 V00746
Kit for snow protection SC F644509 V00749



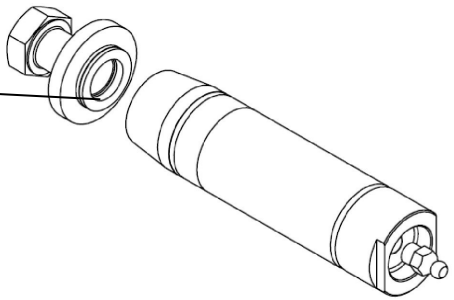
Rocker plates, two alternatives

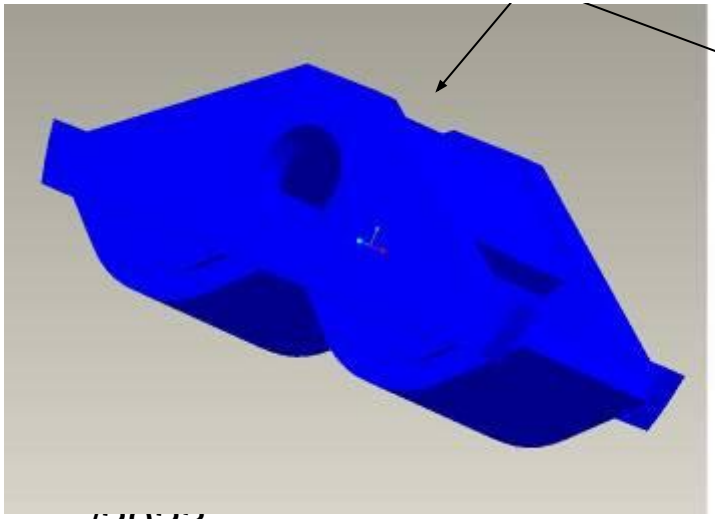
F062604 bogie type rocker plate V00739

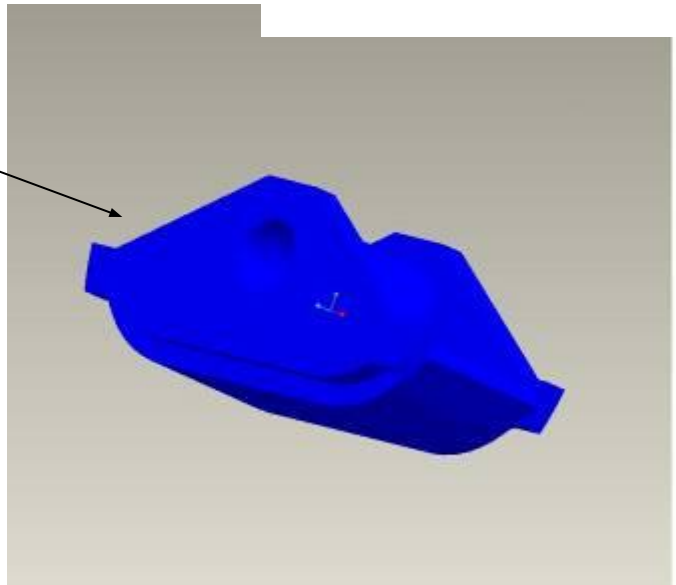


F640277 straights shape rocker plate V00740

F635772 expander pin



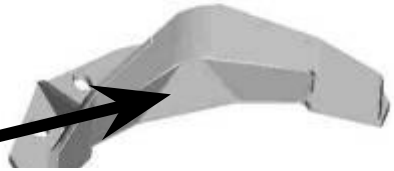


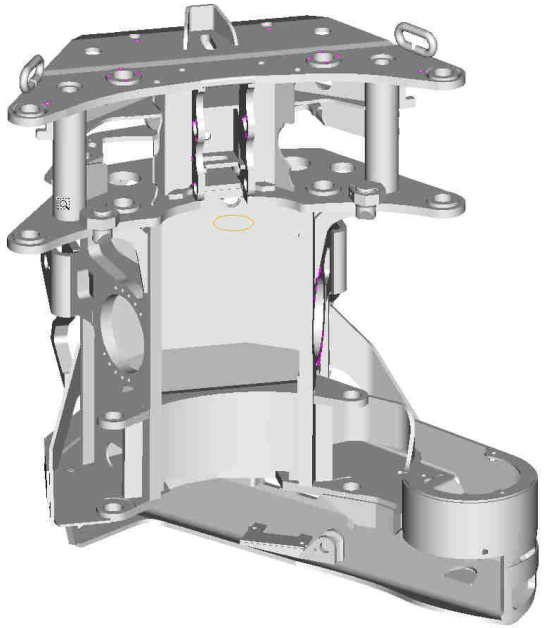


/2023

Delimbing Knives

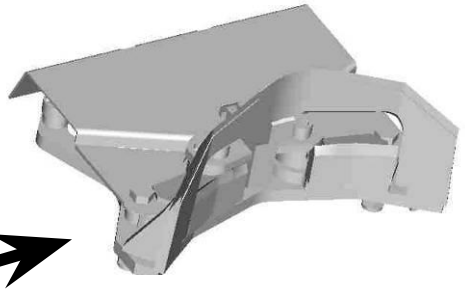
- Fixed top knives
  - Standard **V00390**
  - Wider ”moustache” modell) V00391

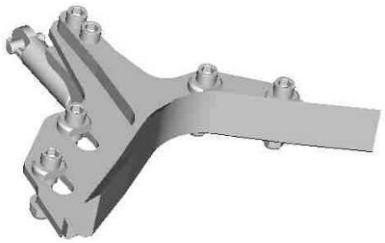


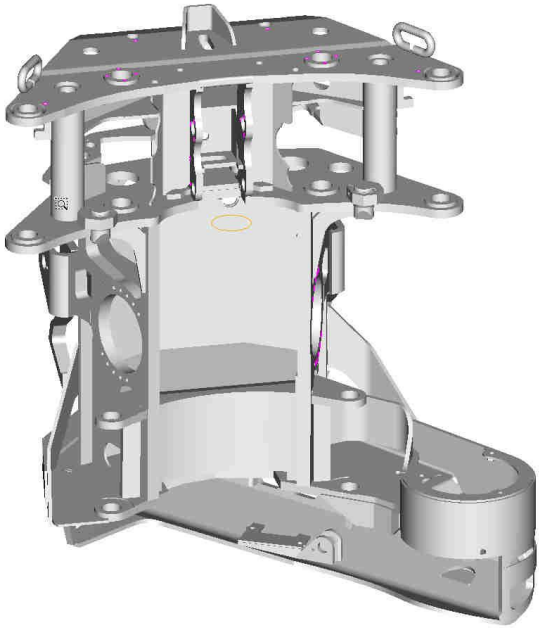


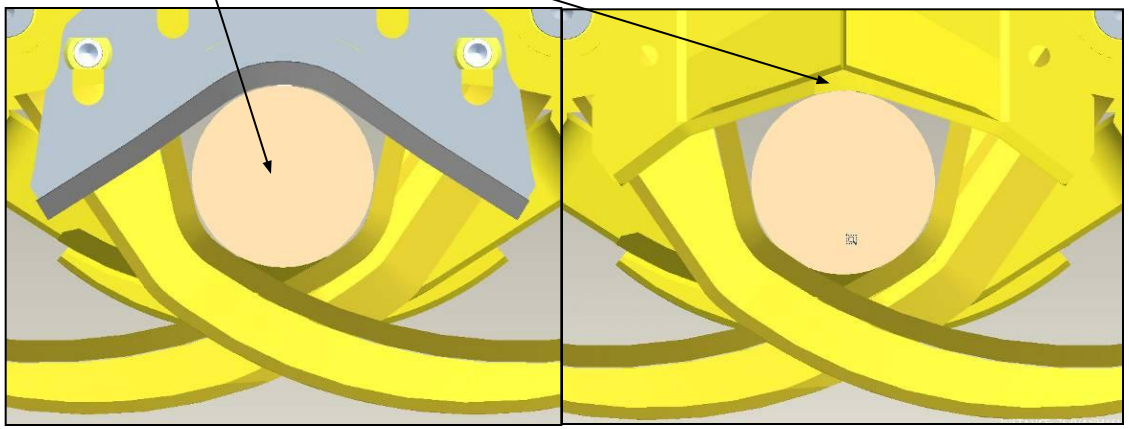
Delimbing Knives

- Options
  - Butterfly knives V00750
  - Hydraulically activated top knife
  - Steep curve V00392
  - Standard curve V00754

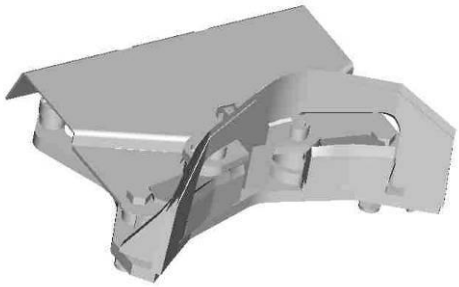




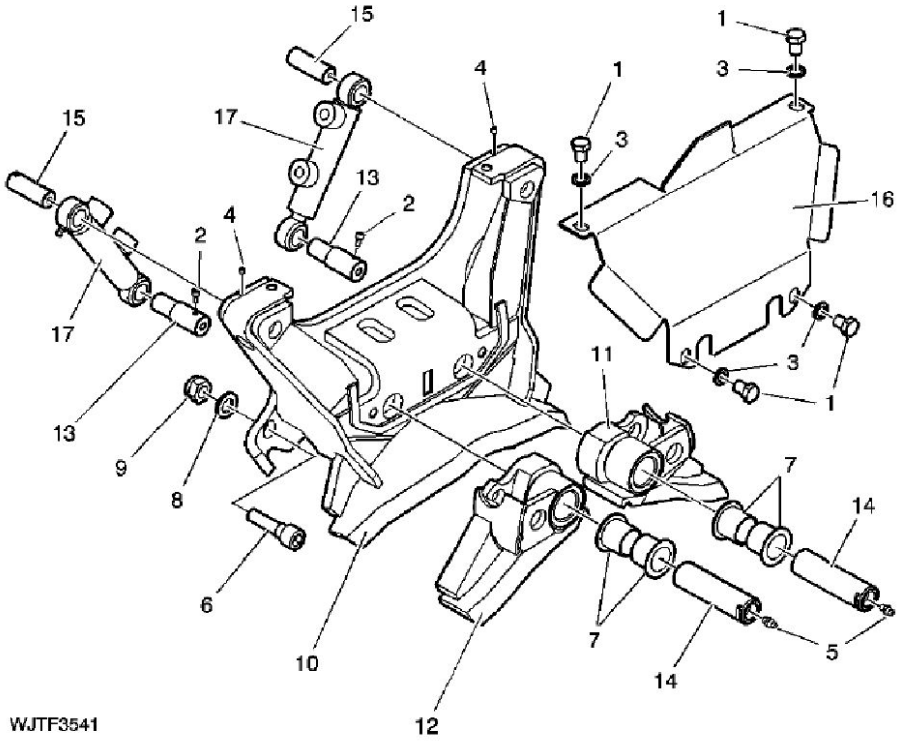




Delimbing Knives

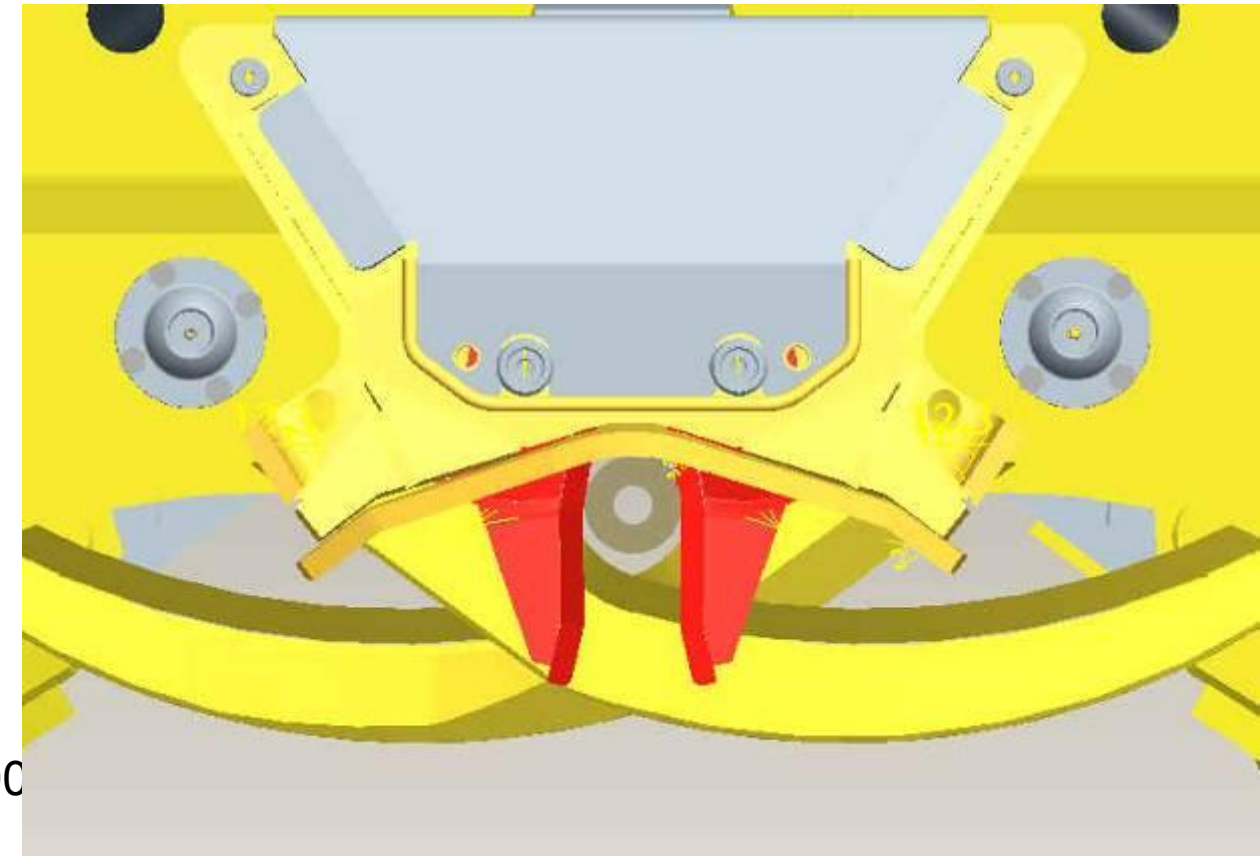


- Options
  - Butterfly knives V00750



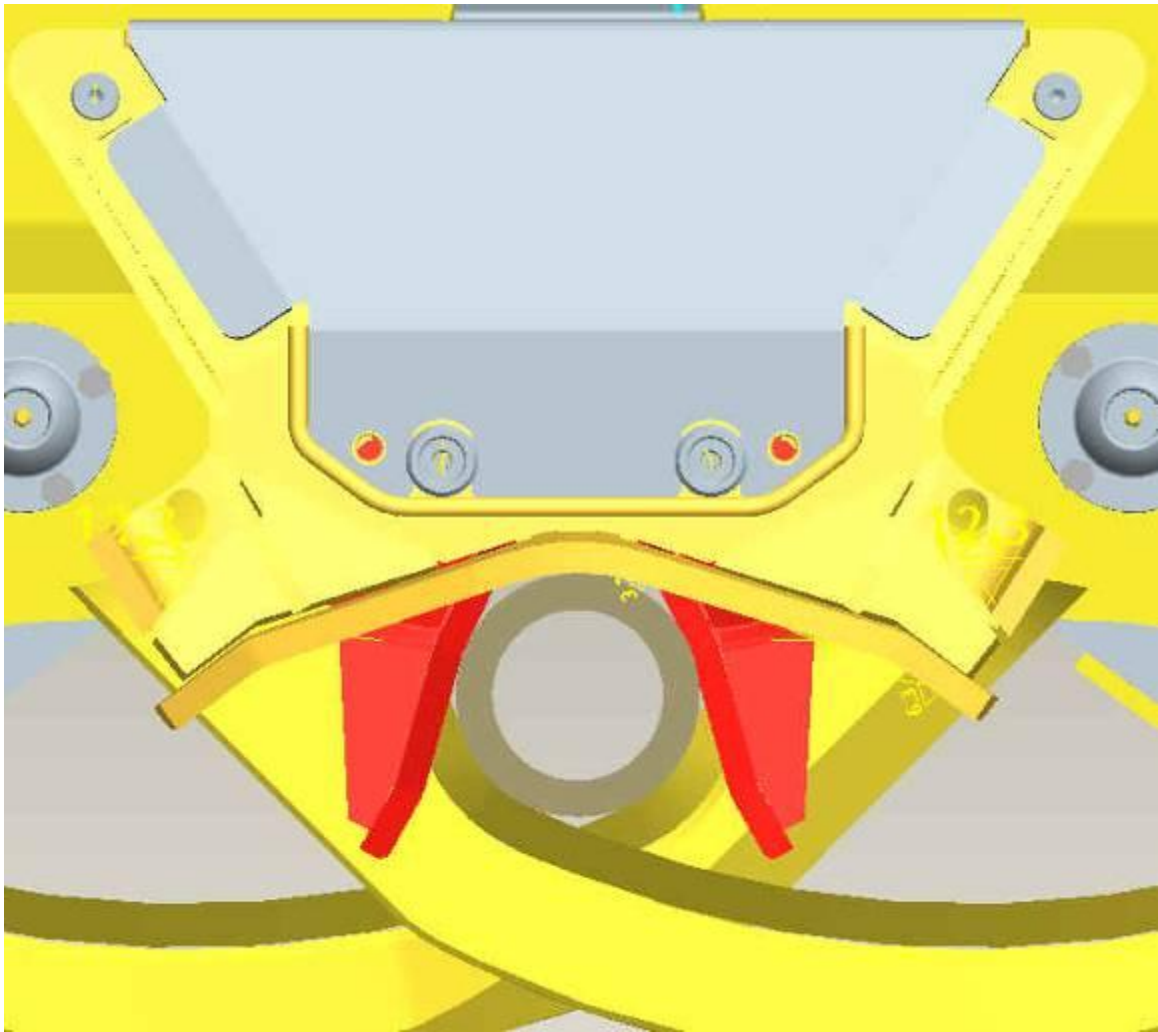
Delimbing

- Precision knives
- ”Butterfly knives”
- Dia 50



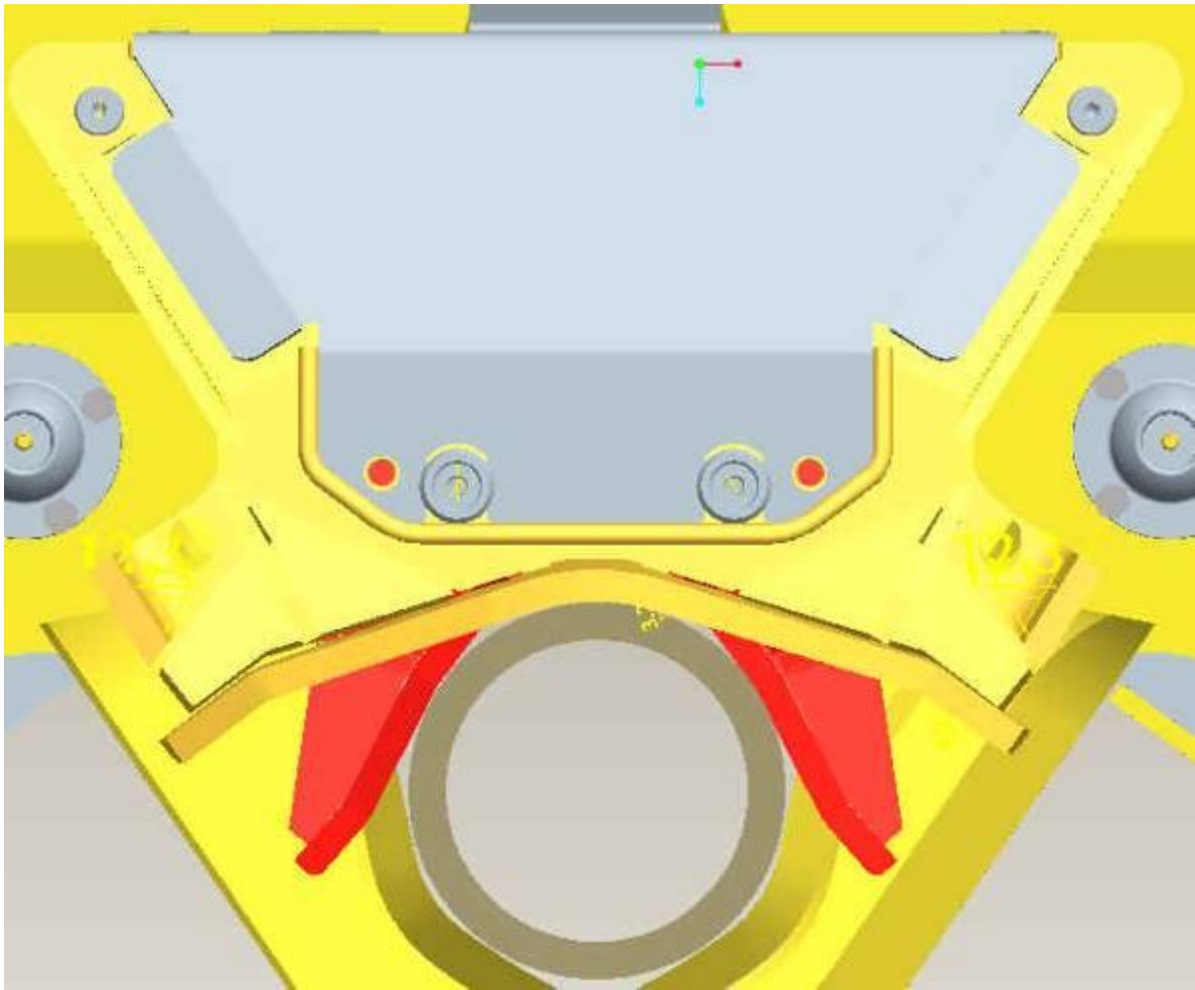
Delimbing

- Precision knives
- ”Butterfly knives”
- Dia 100



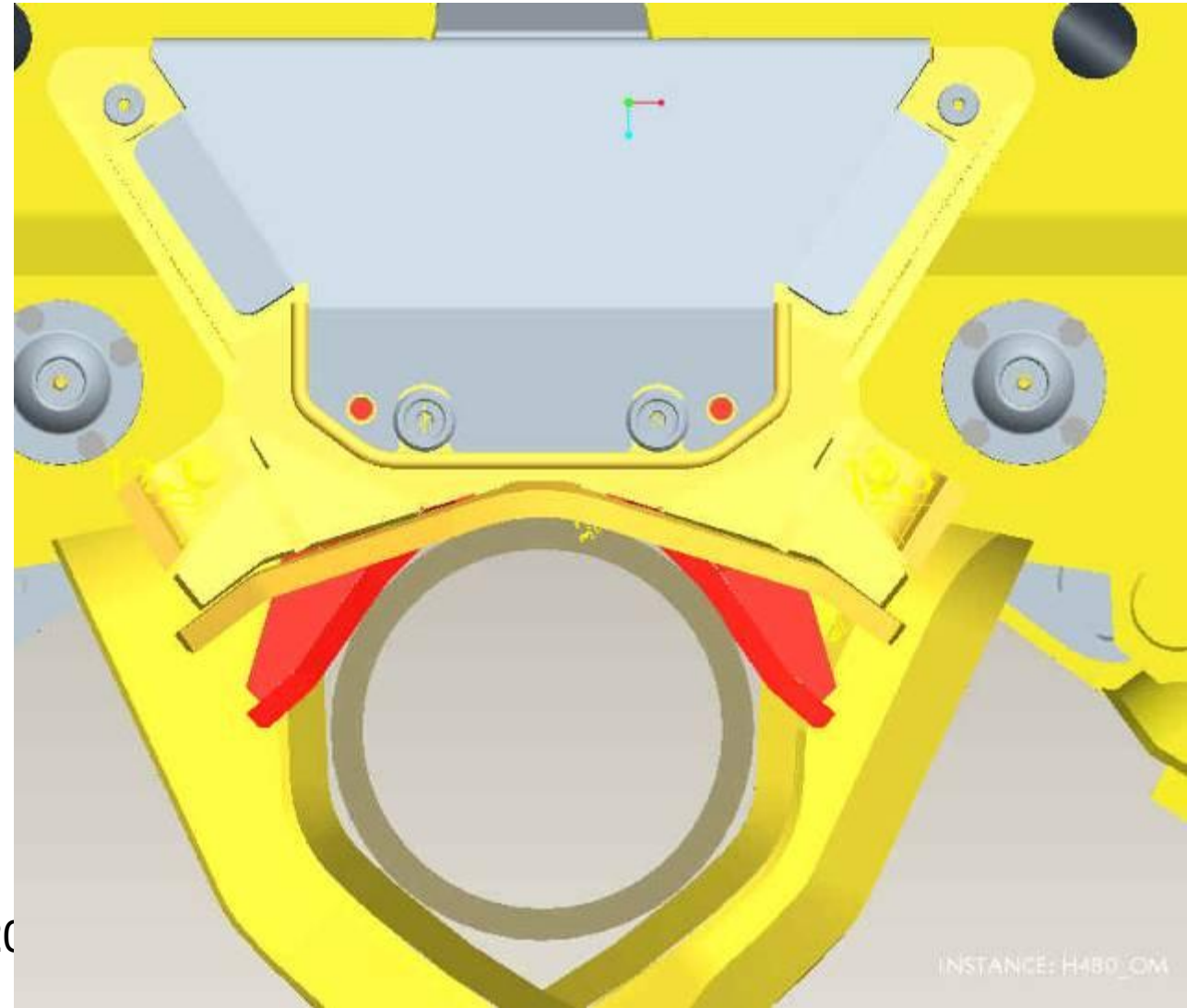
Delimbing

- Precision knives
- ”Butterfly knives”
- Dia 150



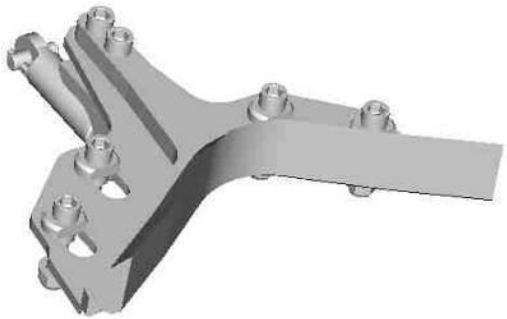
Delimbing

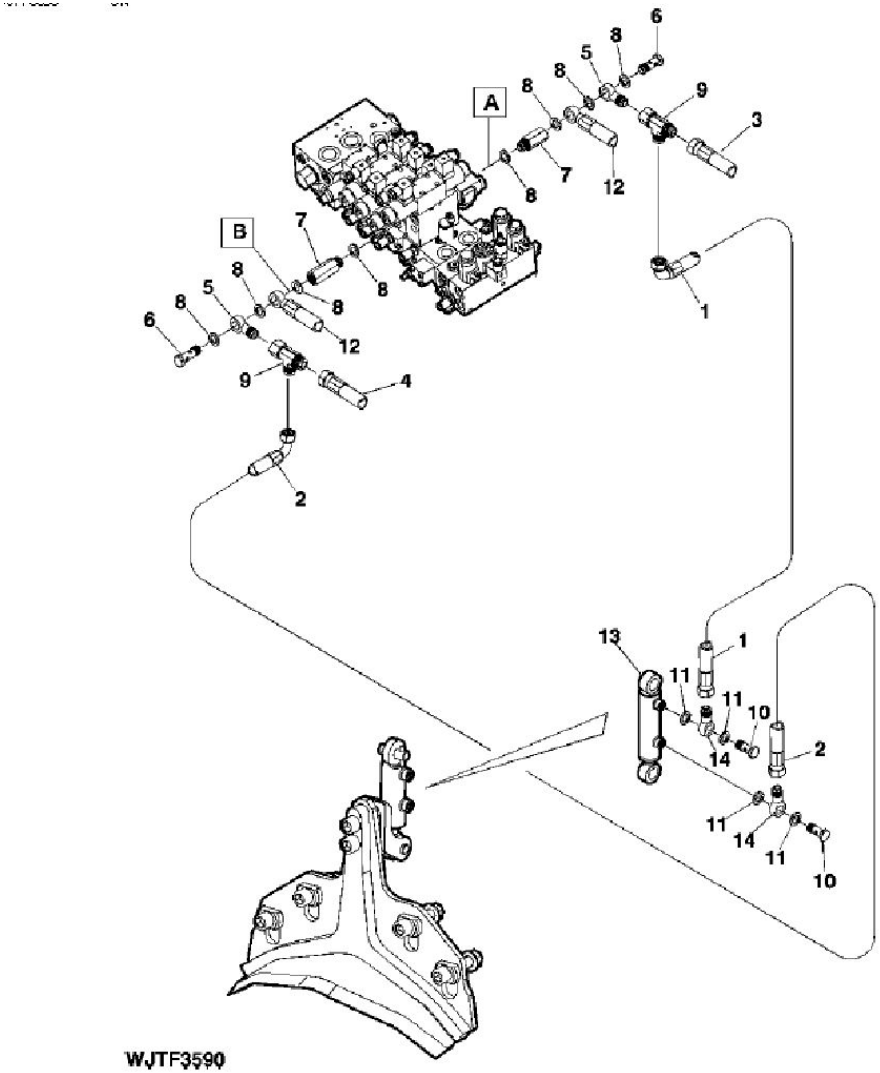
- Precision knives
- ”Butterfly knives”
- Dia 200



Delimbing Knives

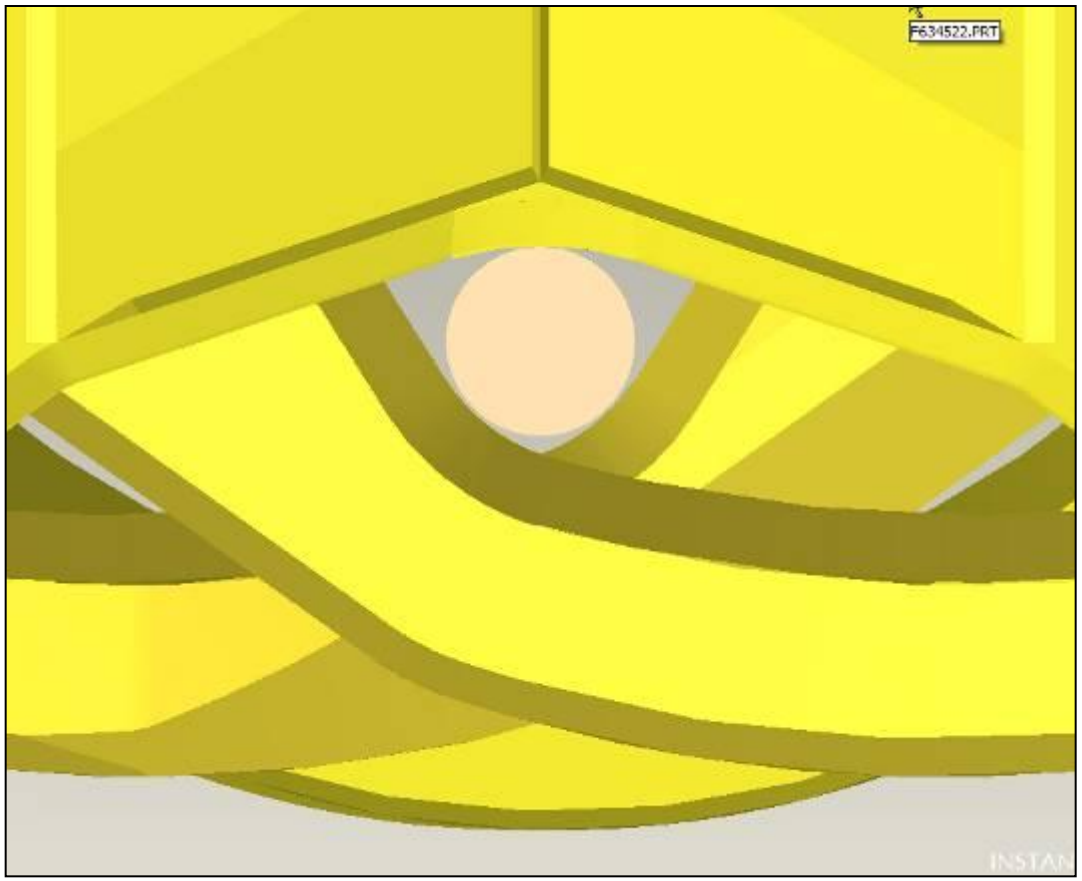
- Options
  - Hydraulically activated top knife
  - Two versions:
  - -standard shape for bended trees
  - -steep curve version for more precise delimbing (2/10 a`clock)





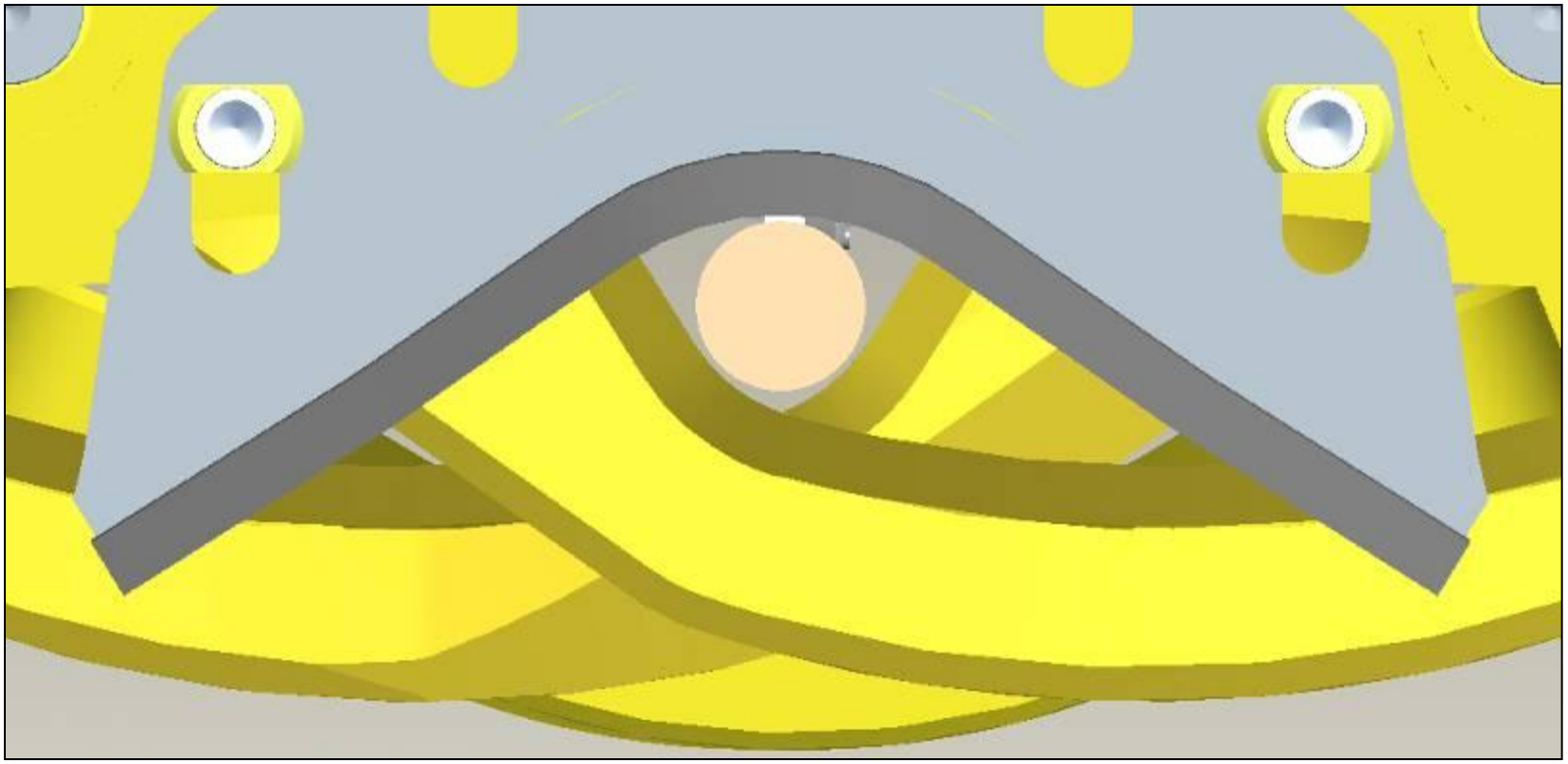
Delimbing

- Standard Top Knife
  - Diam. 50 mm



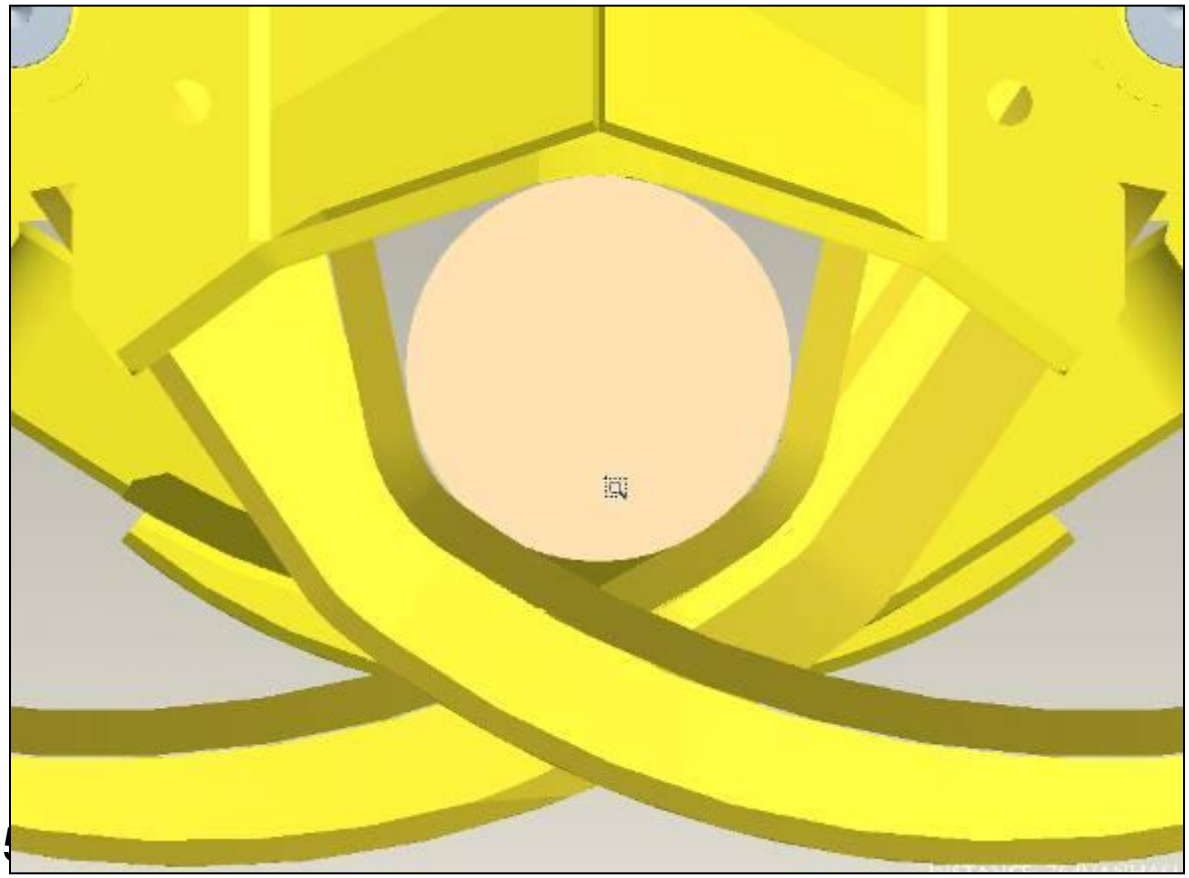
Delimbing

- Hydraulically Activated Top Knife, steep curve



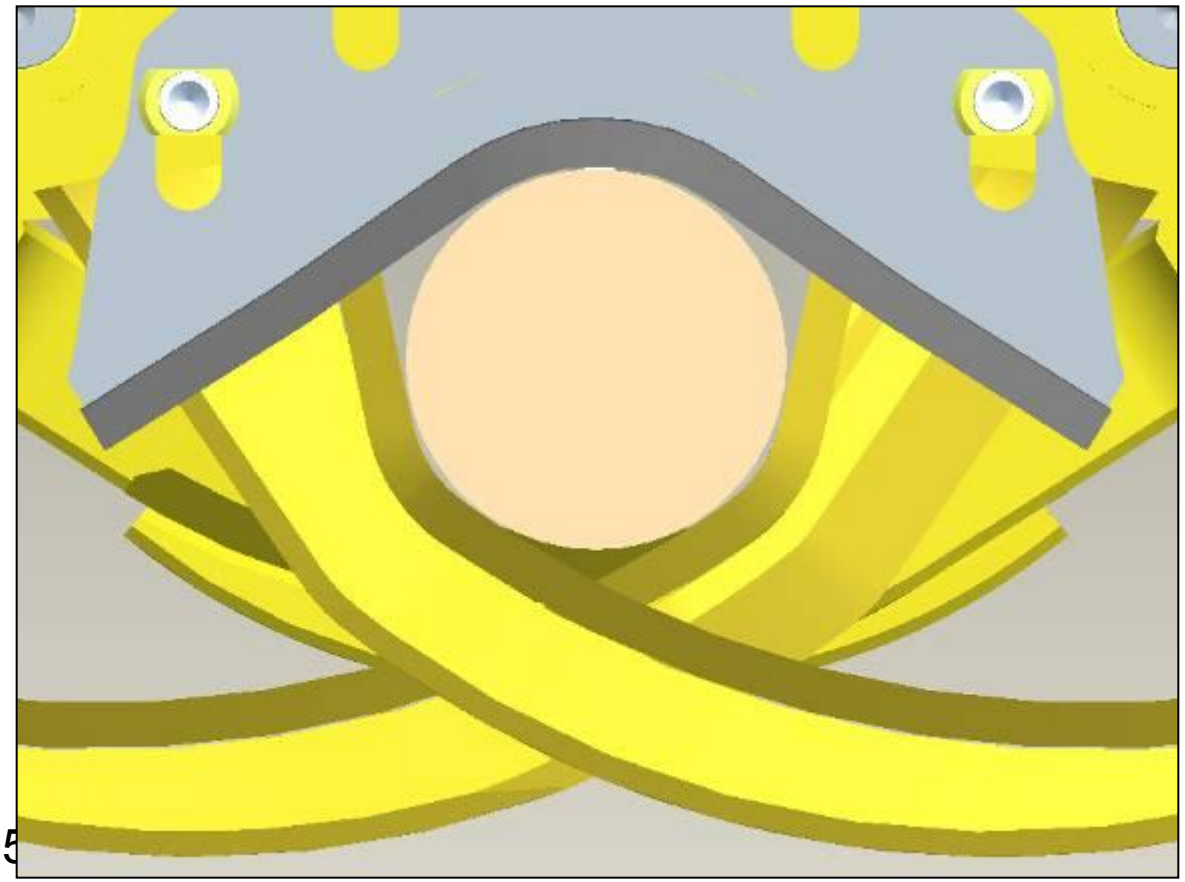
Delimbing

- Standard Top Knife
  - Diam. 150 mm



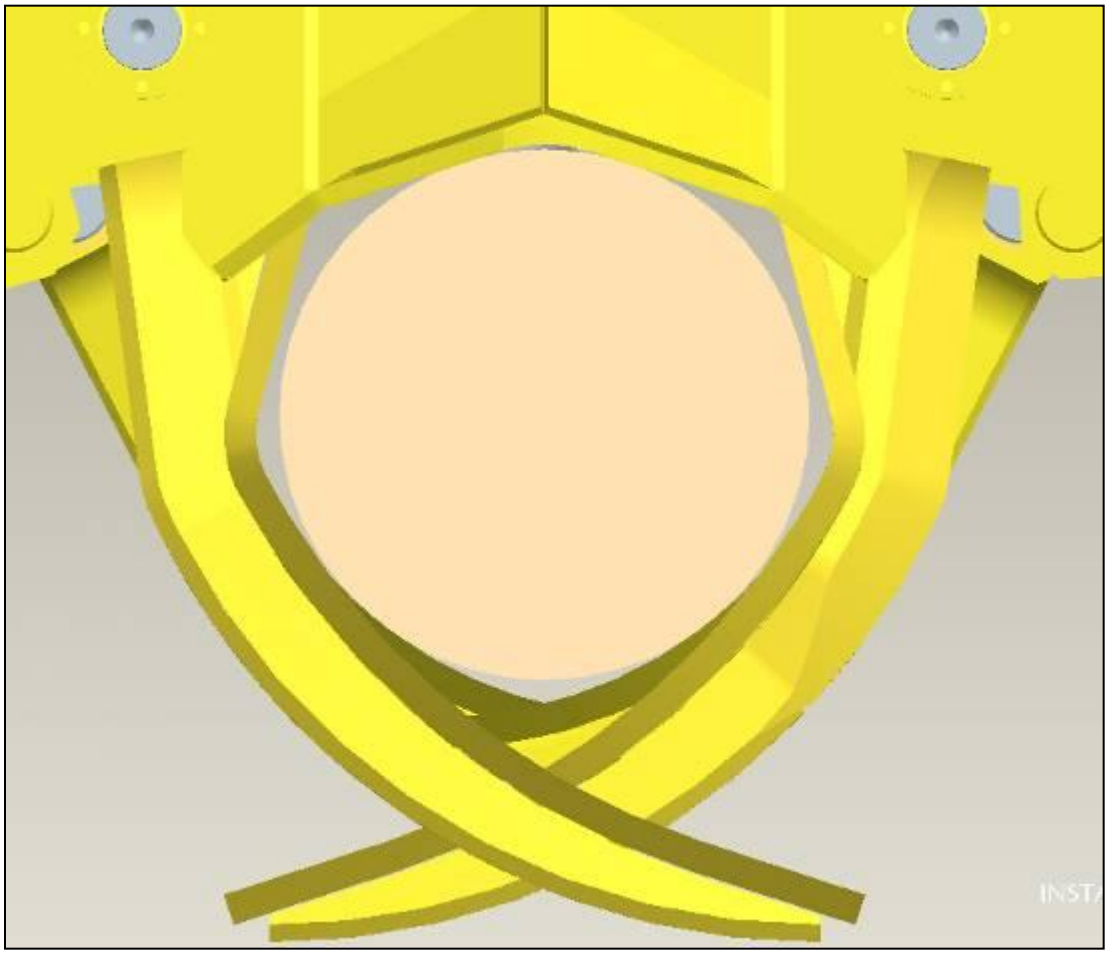
Delimbing

- Hydraulically Activated Top Knife
  - Diam. 150 mm



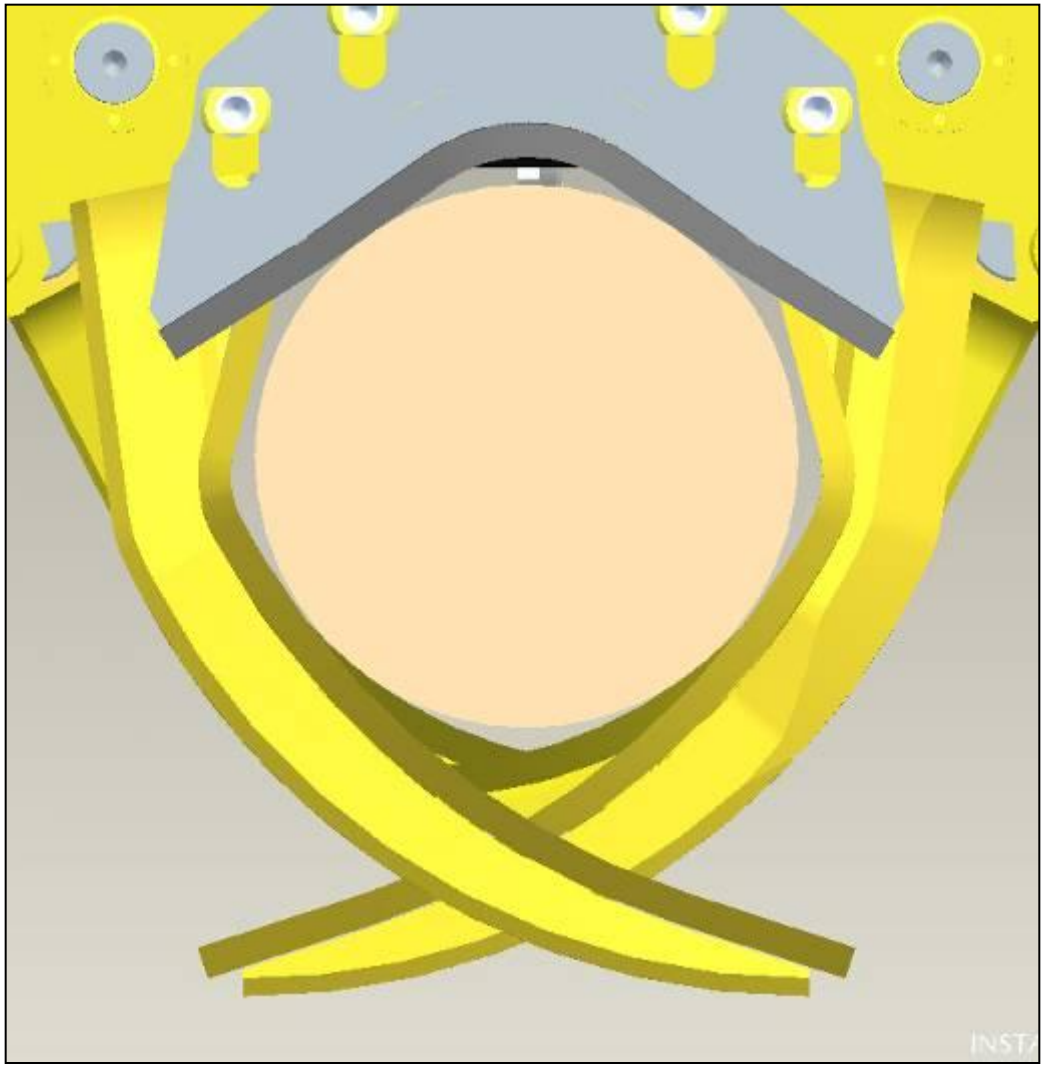
Delimbing

- Standard Top Knife
  - Diam. 300 mm



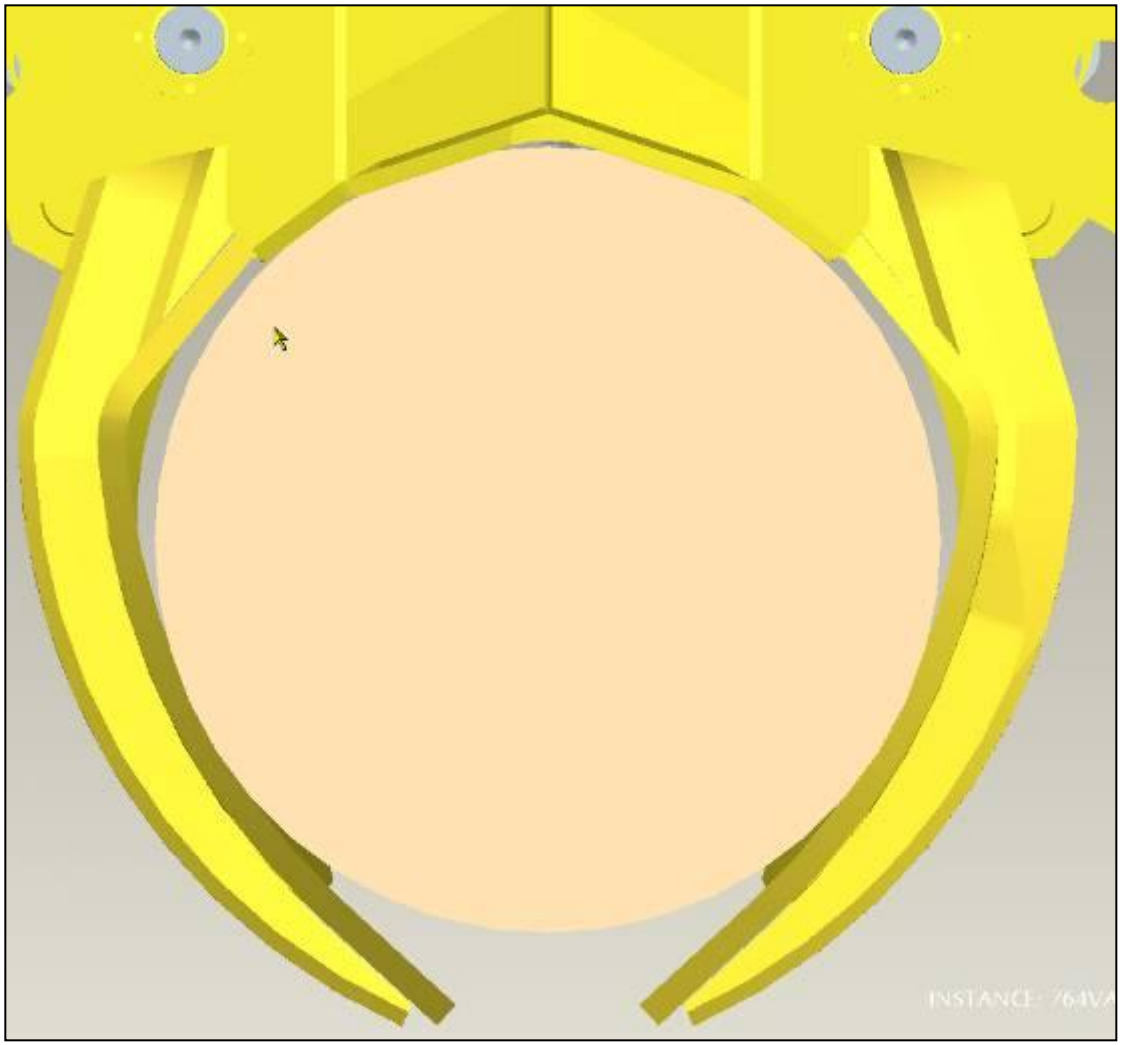
Delimbing

- Hydraulically Activated Top Knife
  - Diam. 300 mm



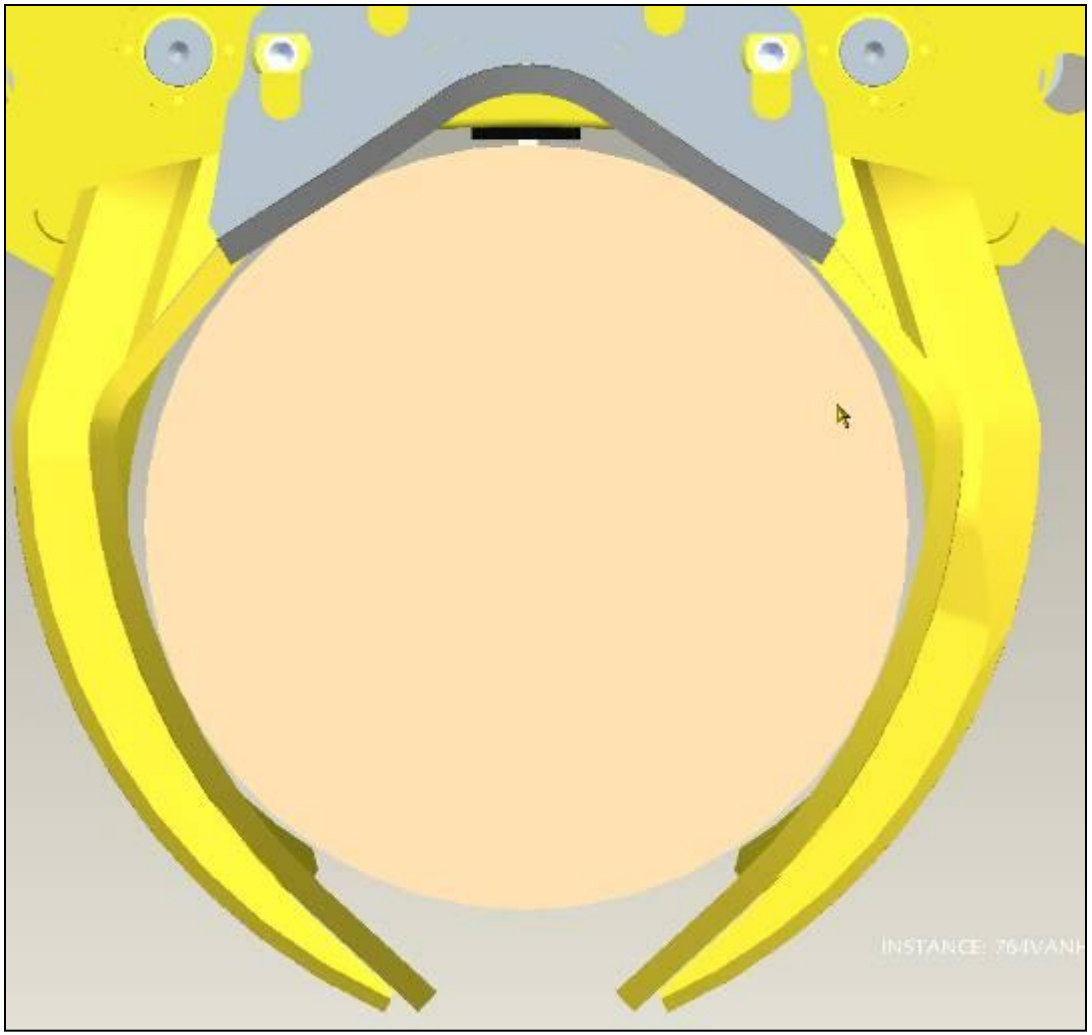
Delimbing

- Standard Top Knife
  - Diam. 500 mm



Delimbing

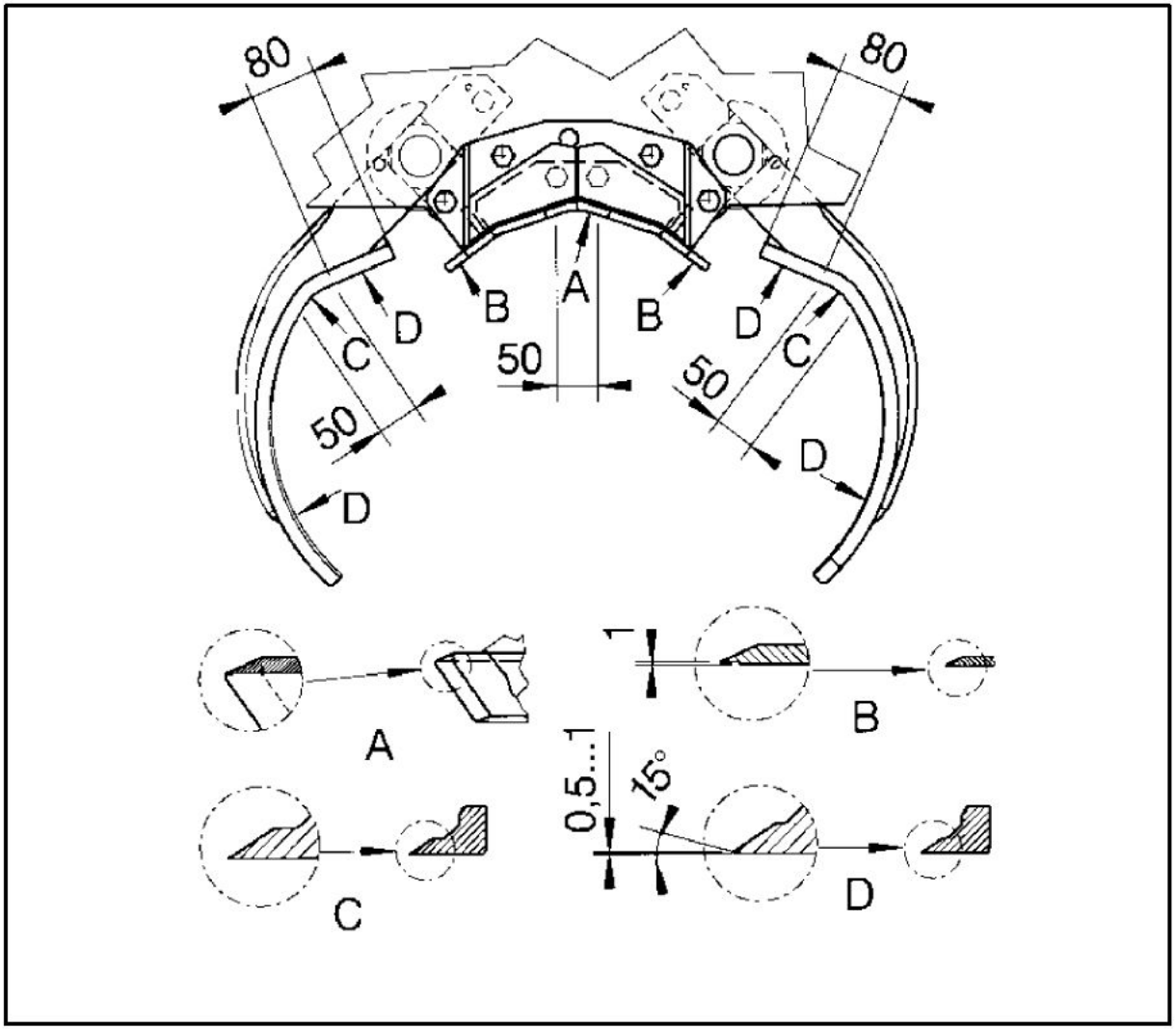
- Hydraulically Activated Top Knife
  - Diam. 500 mm



Delimbing knives

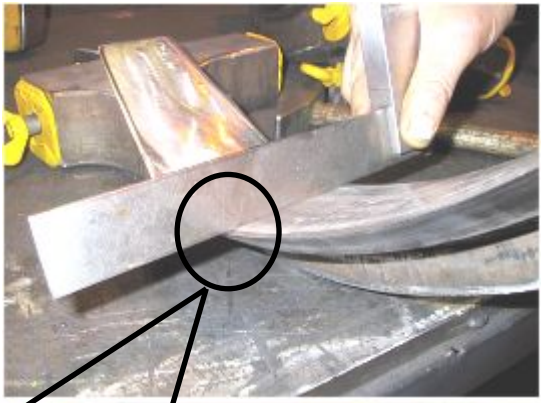
- Sharpening of welded knives
- Use grinder, NO hammering

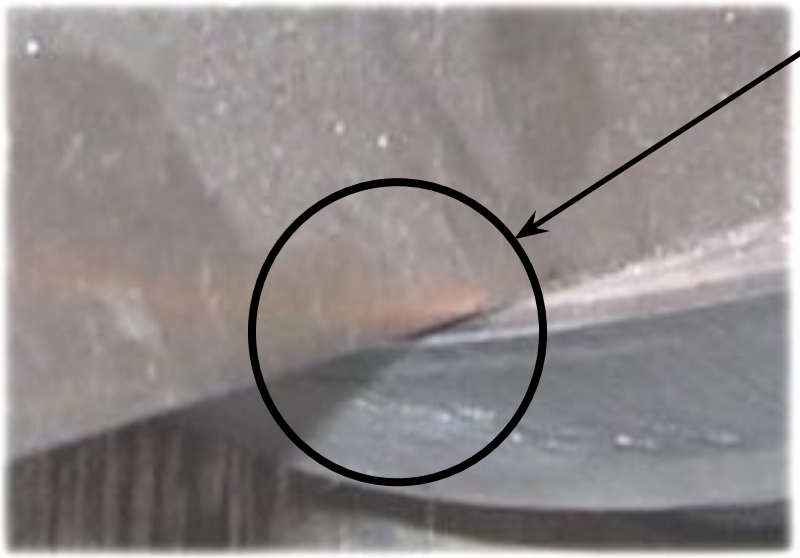
- For Hardox knives
- Hammering is
- possible

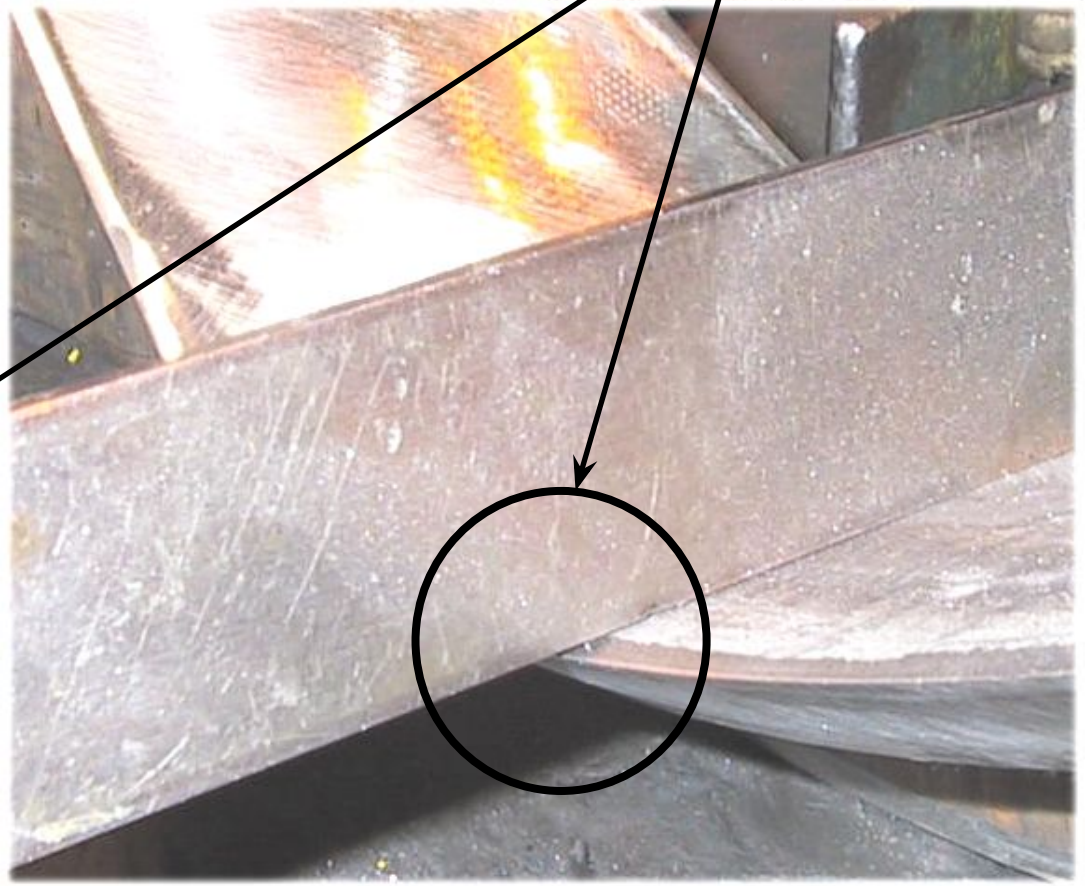


Delimbing knives

- Sharpening of welded knives

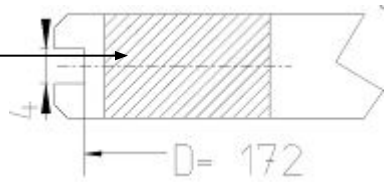






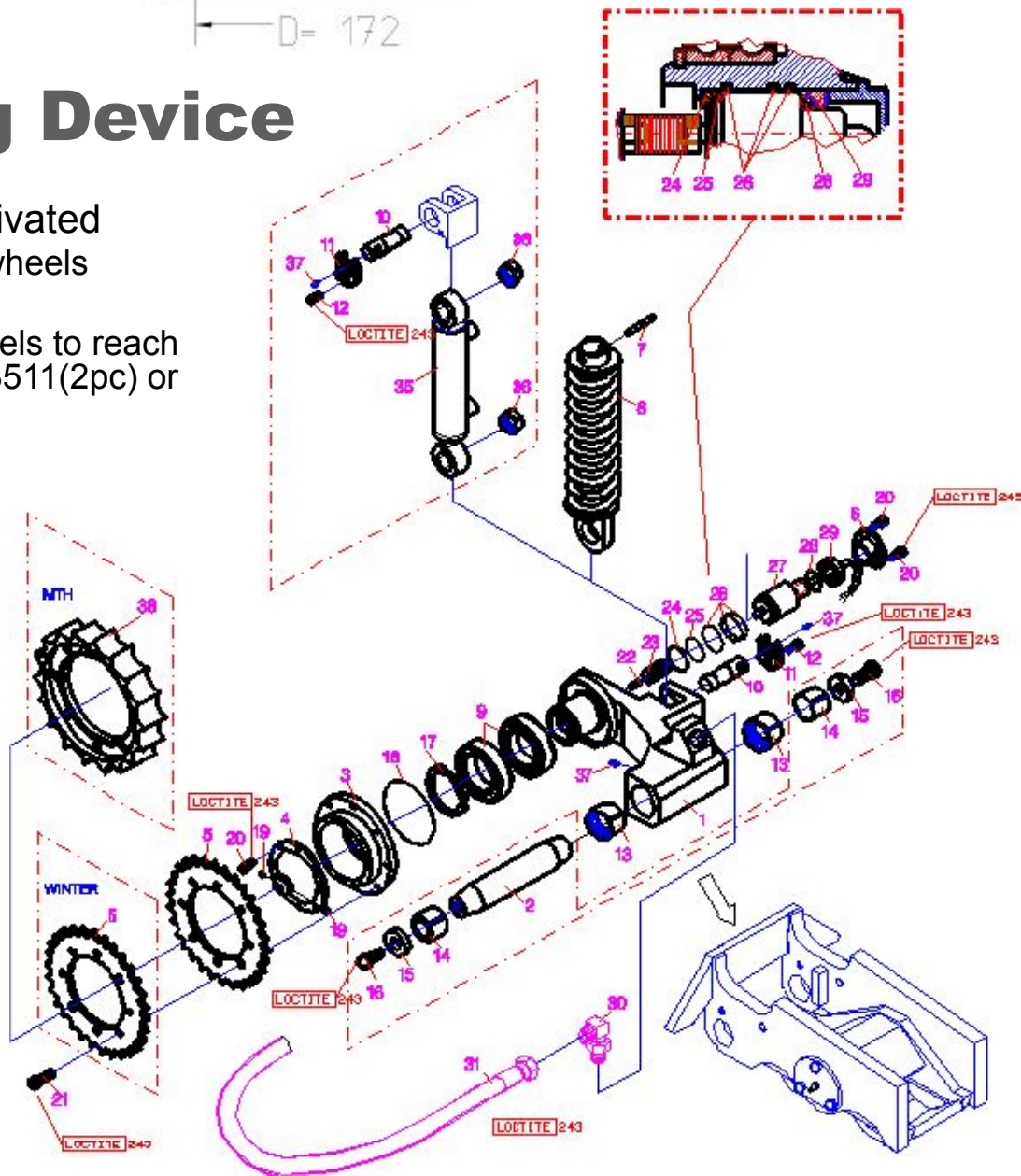
waratah om FORESTRY ATTACHMENTS

special



Lenght Measuring Device

- Spring or Hydraulic cylinder activated
  - 1, 2 or 3 PL 6 mm measuring wheels
  - New F065141 pl 12 version
  - Also possible to use H754 wheels to reach smaller diameter feeding, F063511(2pc) or special F639513
  - MTH measuring wheel
  - Euca measuring wheel
  - L&L sensor
    - 125 pulses / r
    - 30 mm dia
    - Separate cable = F634250
    - Sensor = F065063
    - TM300
      HHM Connector A
      + - A B
      40 30 10 20
- Lenght Measuring from Poclain Feed Motor as an option

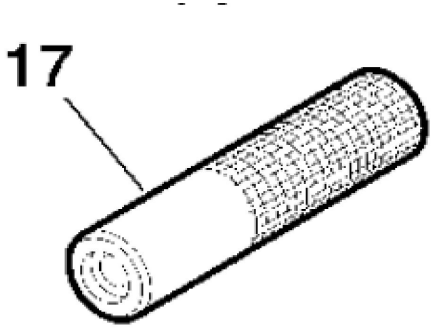


Length measuring

Leine &Linde encoder

New cable with threads

Use special tool to assembly and dismounting
F065064



Length measuring

Measuring wheels:

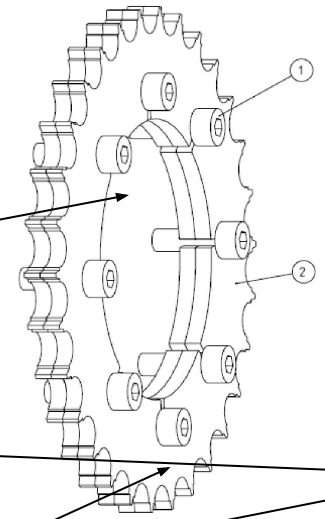
Big diameter: F645981 1, 2 or 3 pc

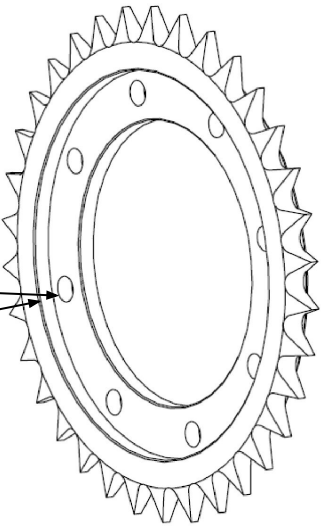
Special F645983
H270 F633609

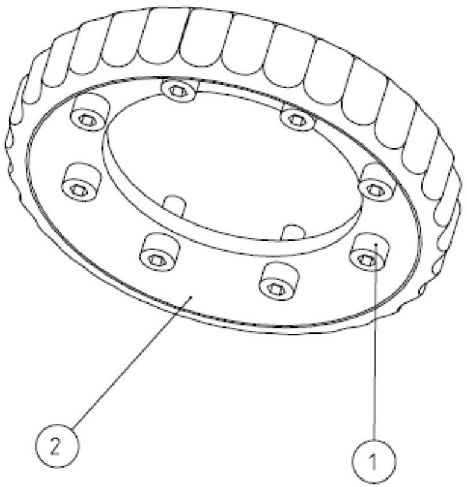
Smaller diameter (H754)

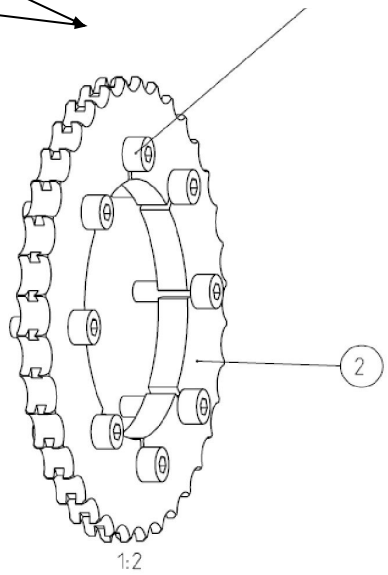
Special F645980
F640501
F645979 1, 2 or 3 pc

Euca F645982





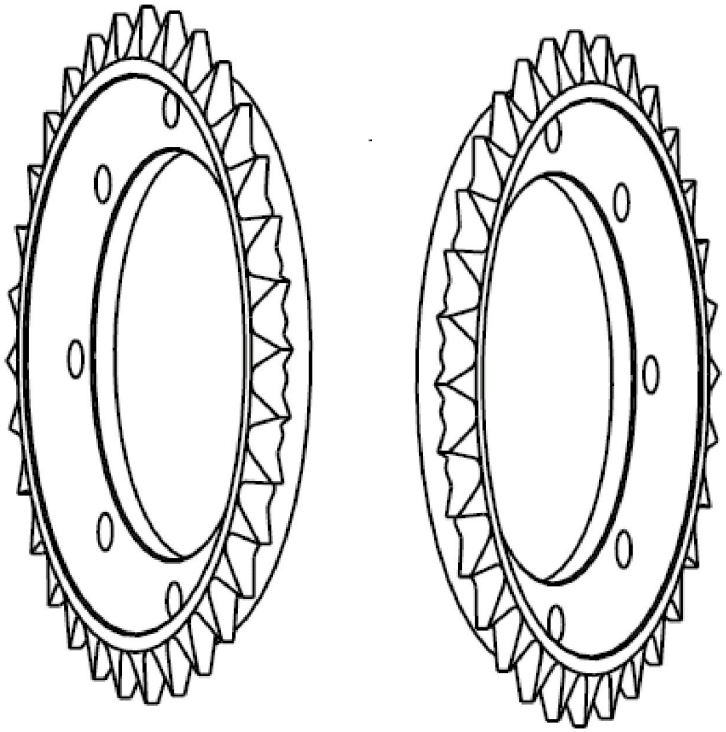




Lenght Measuring rollers

Canada model

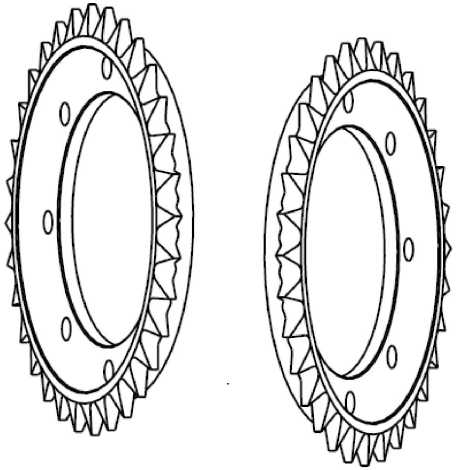
Two measuring weels.
Between wheels cleaning pin in measuring wheel arm

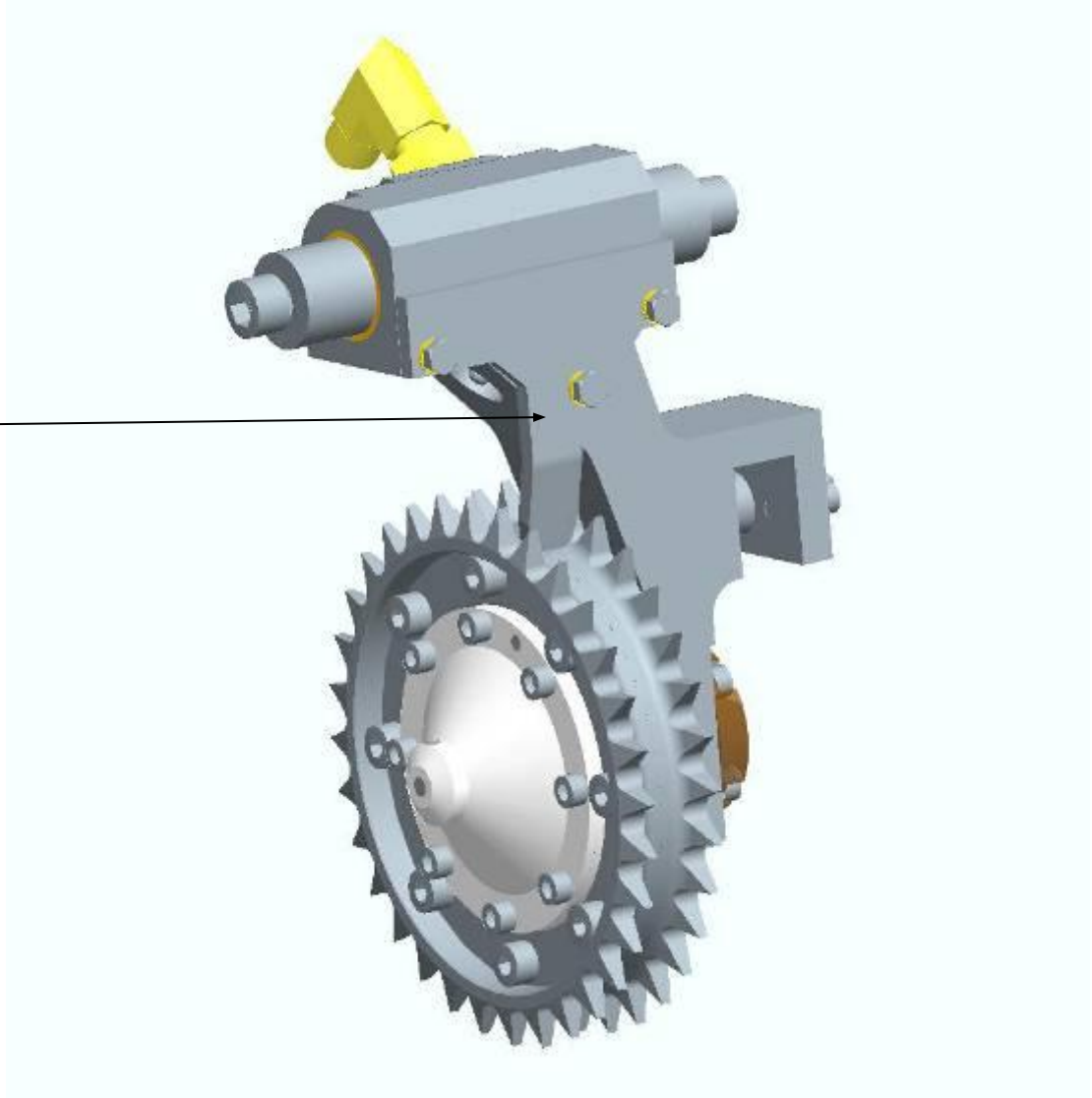


Lenght Measuring rollers

Canada model F648841 2 pc

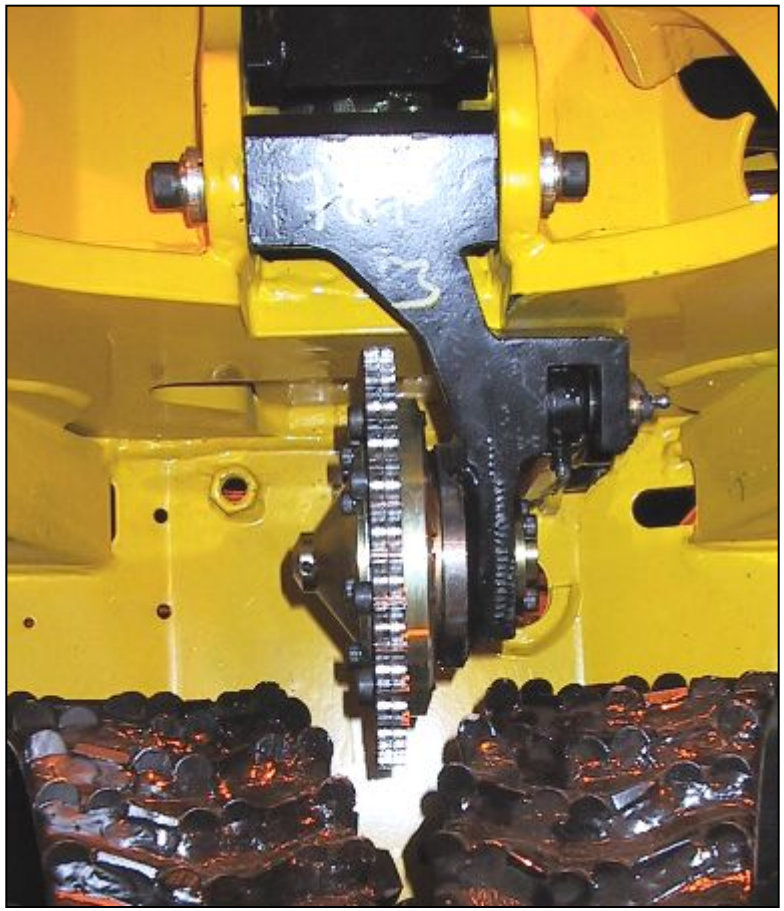
Two measuring weels.
Between wheels cleaning pin in measuring wheel arm
Scraper F648839





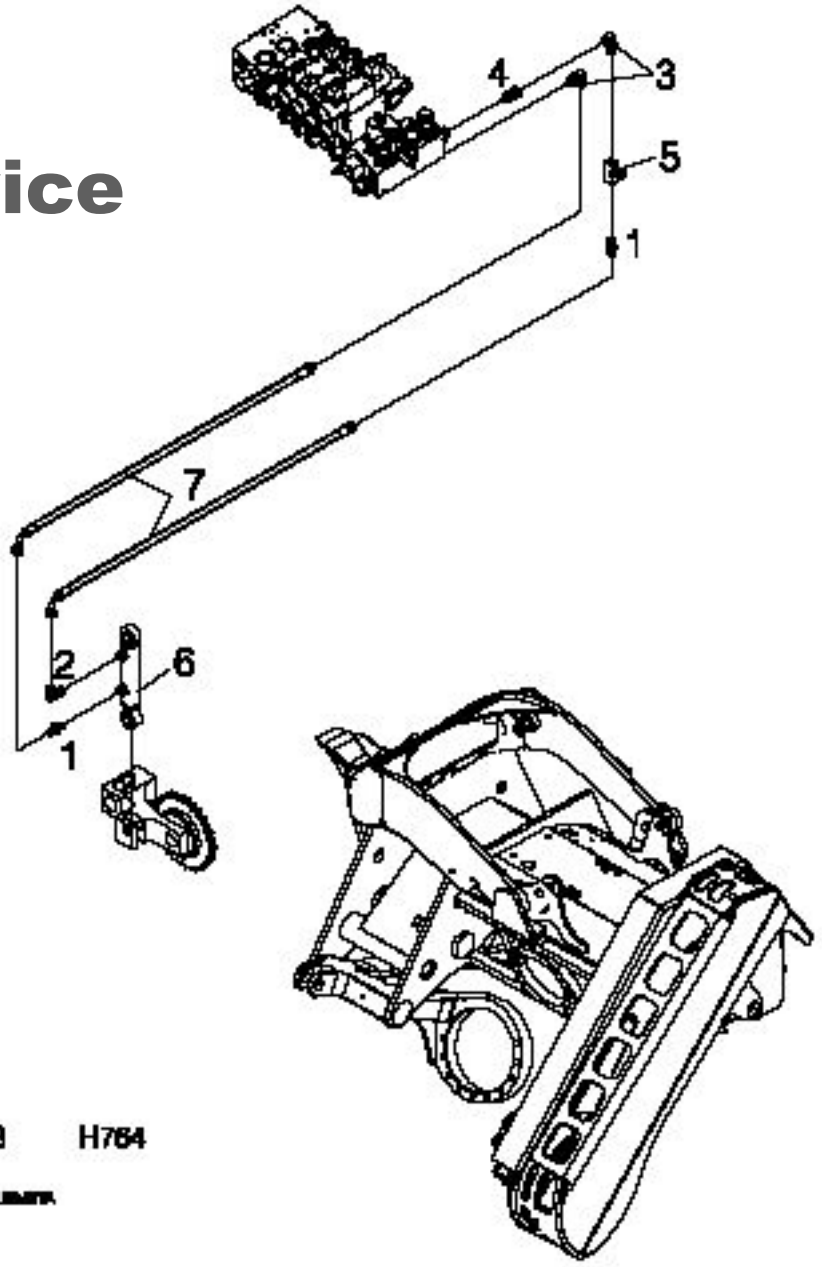
Lenght Measuring Device

- Standard
- Poclain Feed Motor



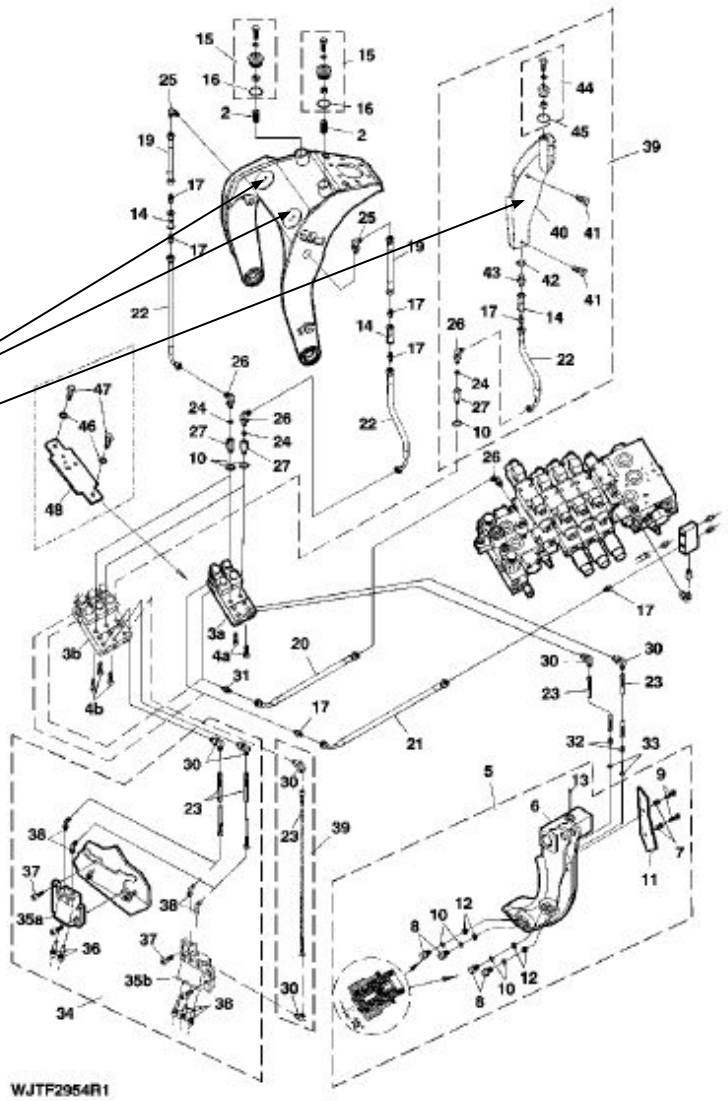
Lenght Measuring Device

- Separate valve
- Manually adjustable pressure
  - ~ 80 bar
  - Check valve in return line 2 rounds open (pos. 5).
    - Possibility to adjust for different temperature conditions

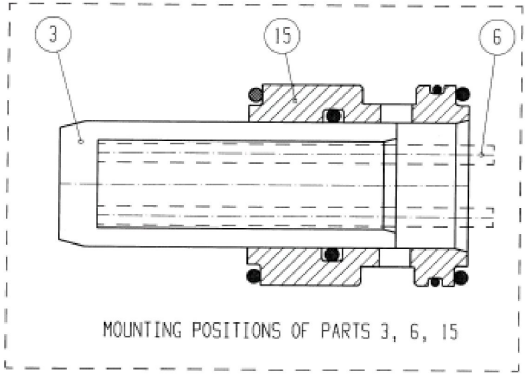


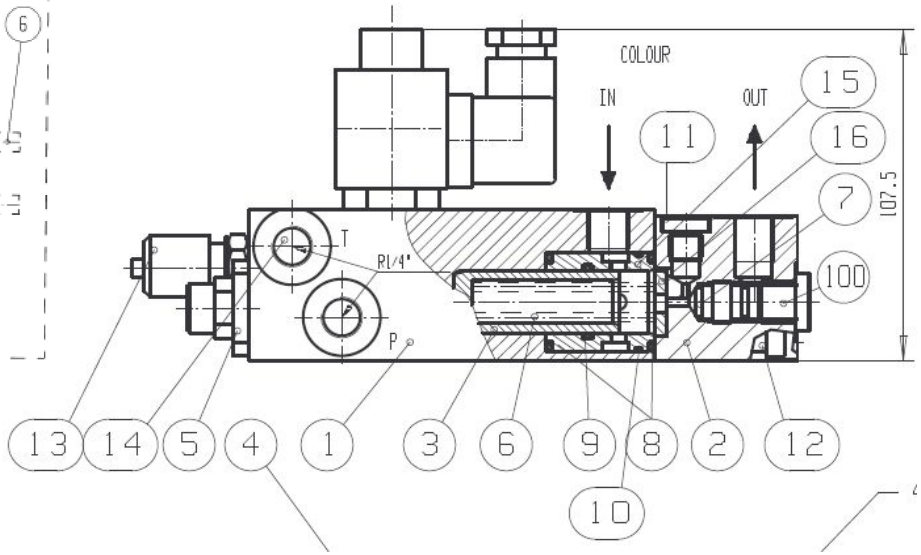
Colour marking

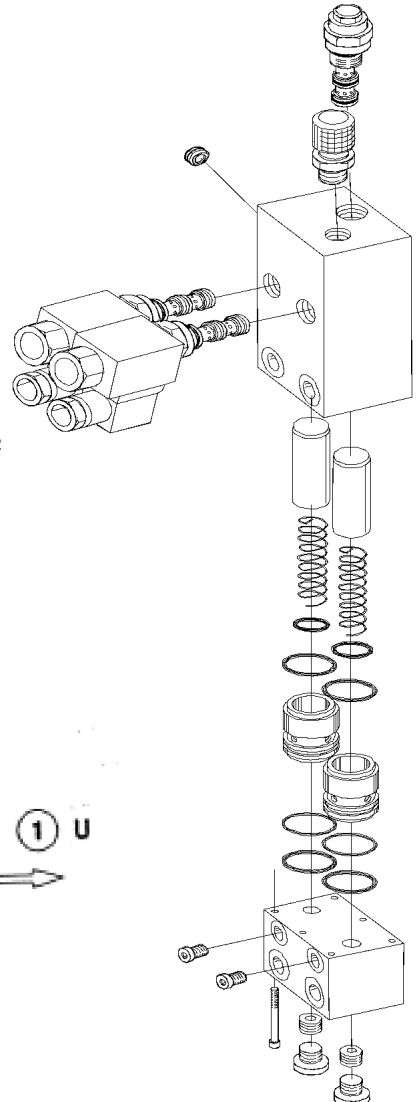
- Tanks for two colours in tilt
- Third colour tank
- Filters for colour F067379



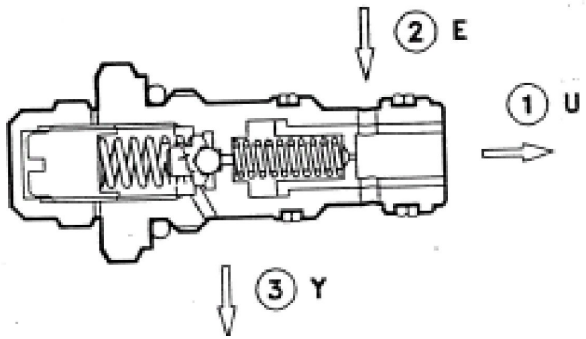
Colour marking pump





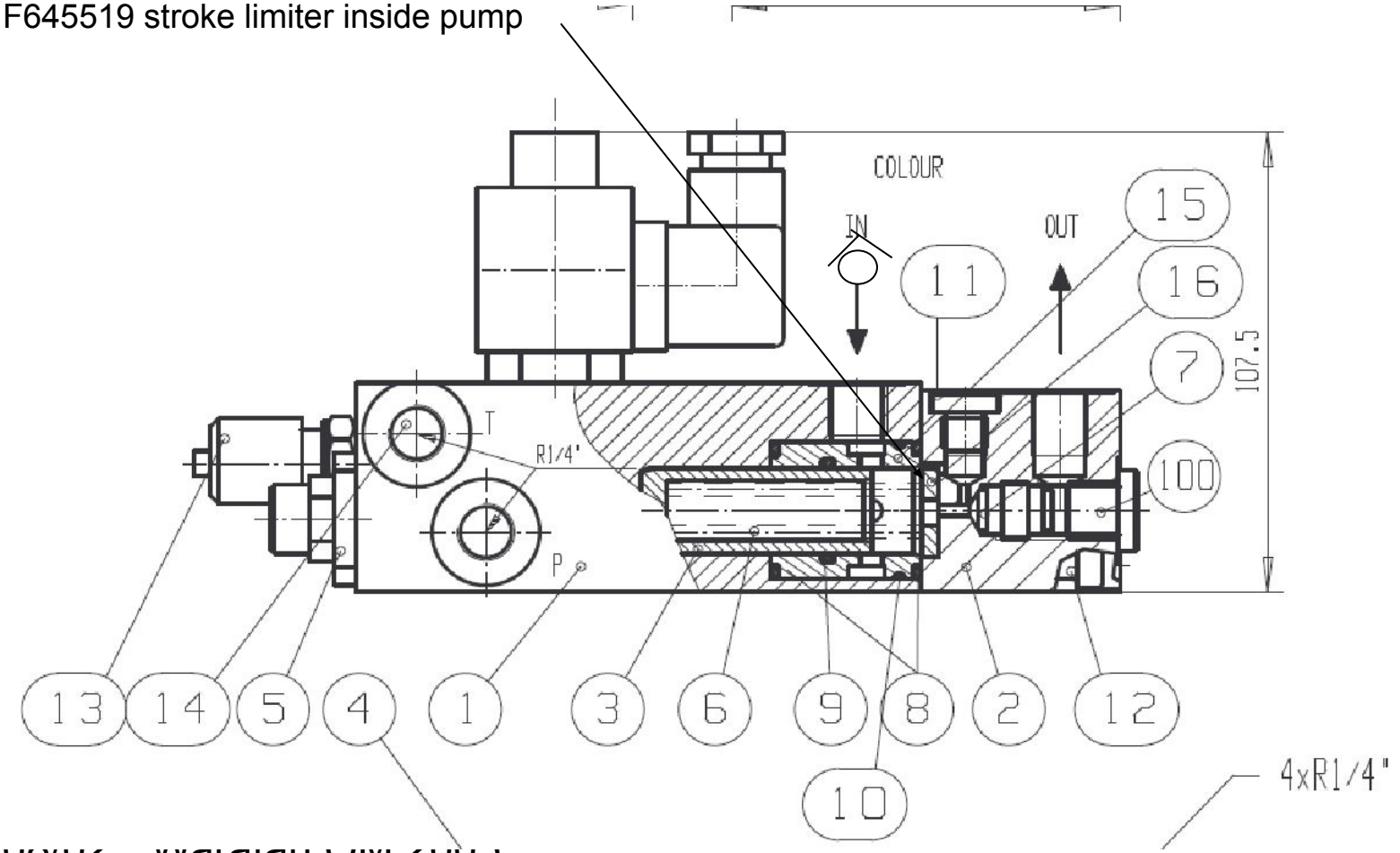


- F063506 = 449300 = 39705600 stroke 4mm bigger
  F061482 = 449200 = 39688600 same, but F645519 stoke limiter assembled
- Separate cylinder liners
- Cartridge valves (F059996)
- 38 ml displacement
- F645519 stoke limiter



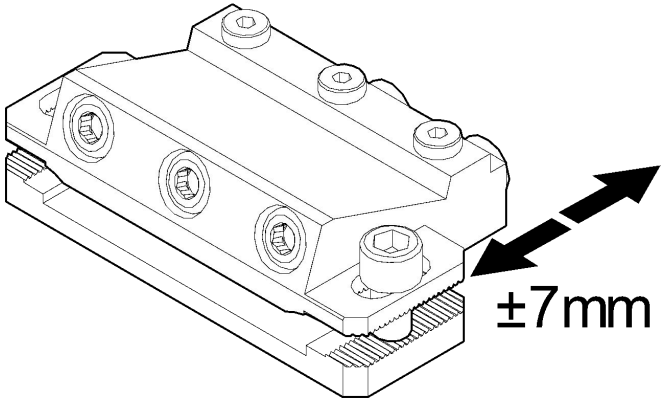
Colour marking pump

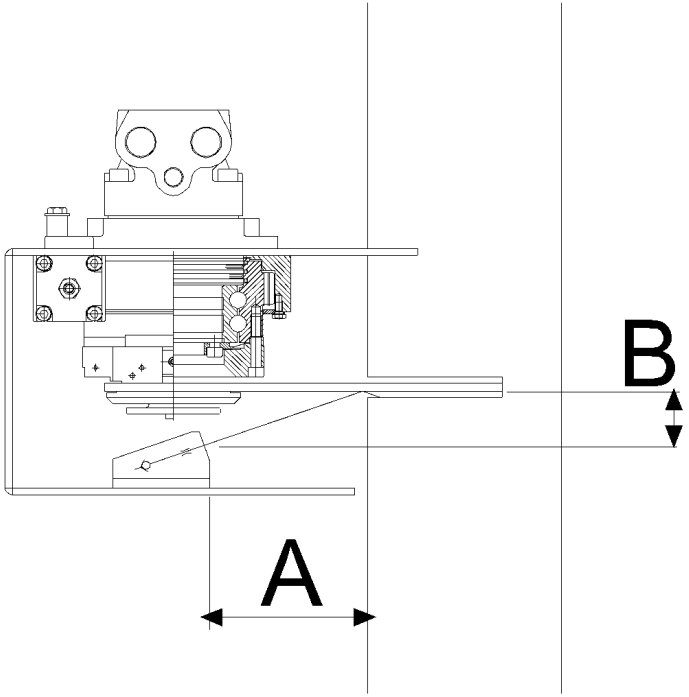
- F645519 stroke limiter inside pump

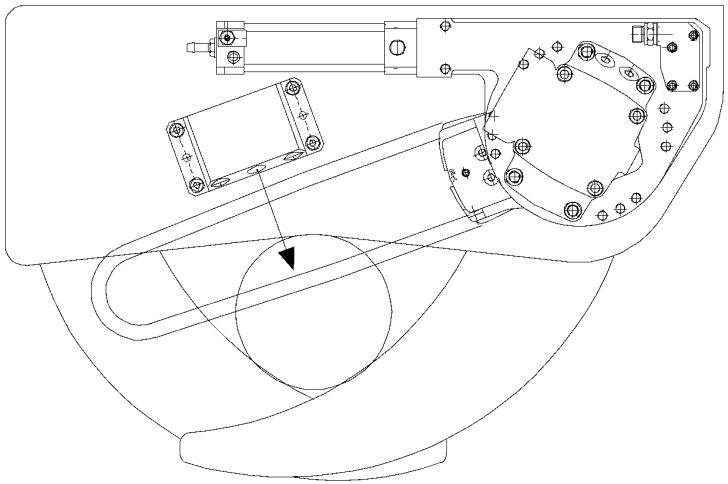


SuperMark

- Spray reflects from saw bar to stem
- Also available to OM saw device

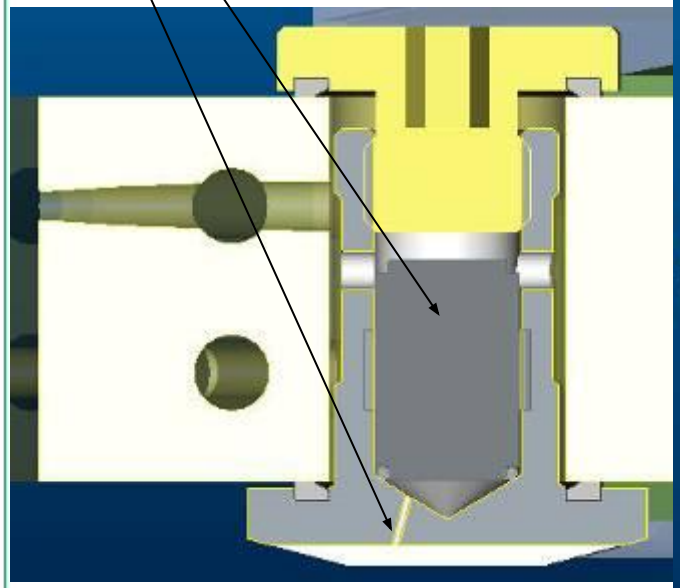


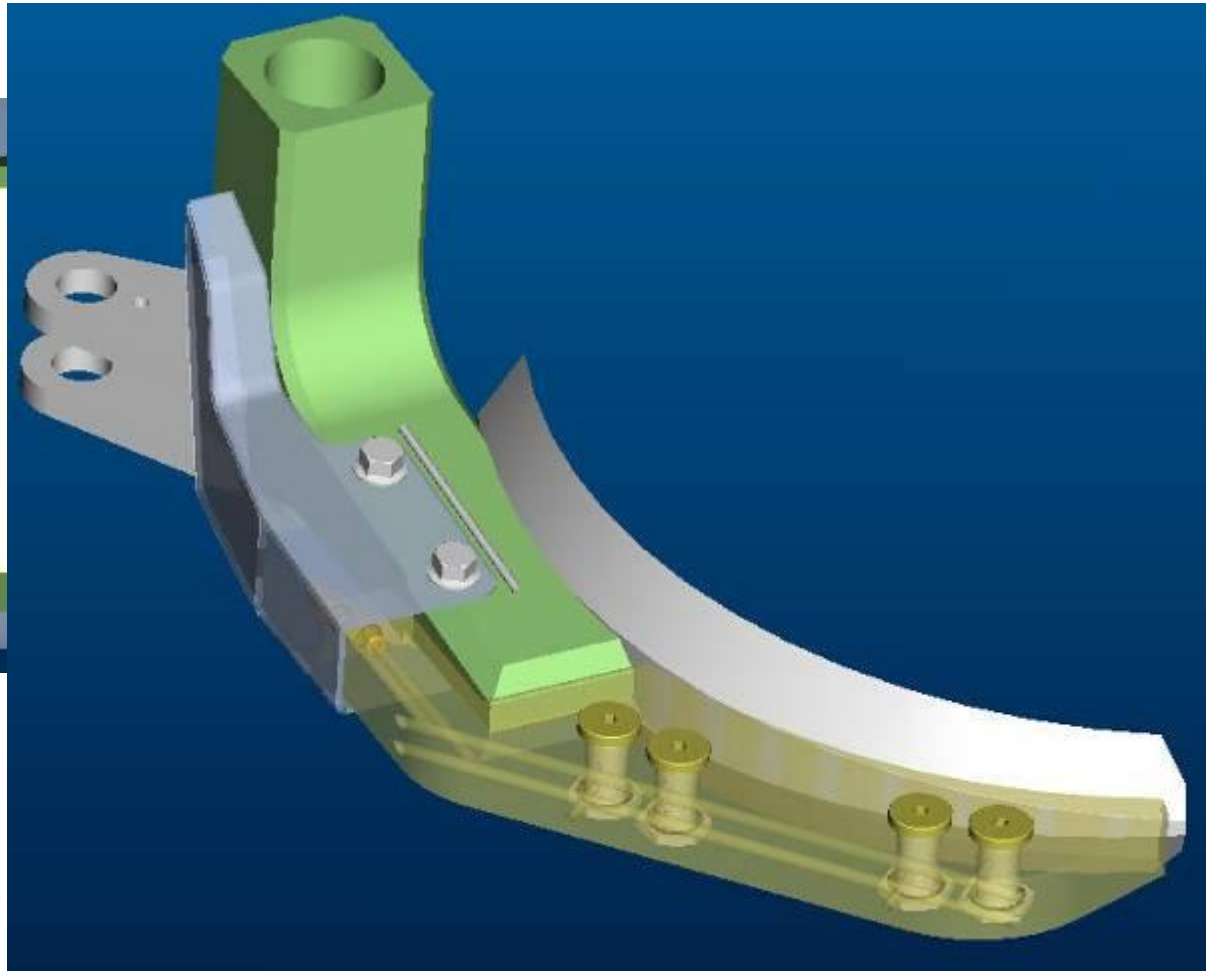




Color marking knife

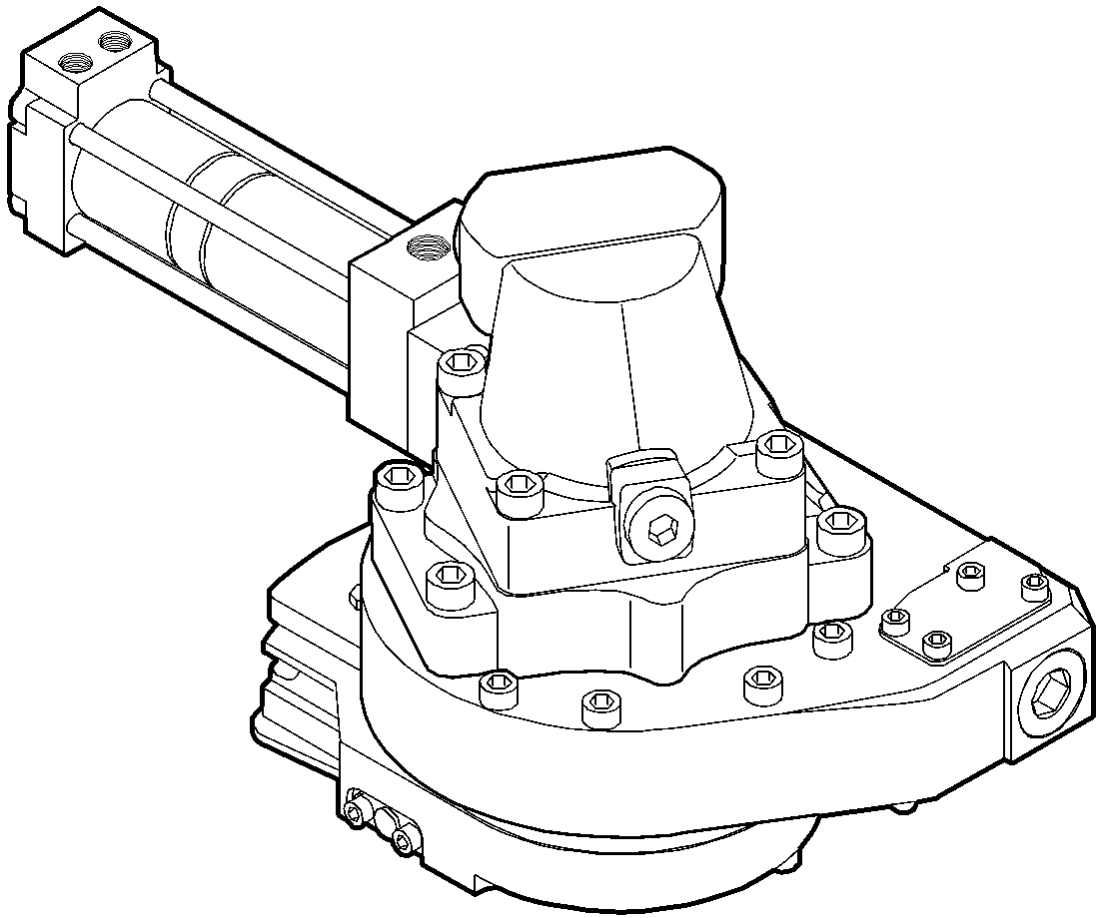
- 2 colours, open and easily adjustable contruction
- 2 nozzles/colour drilled routings
- 6 bar check valve
- Nozzle 15 º angle



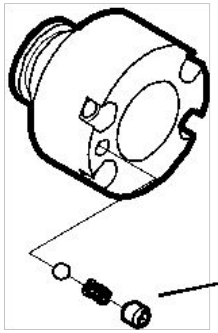


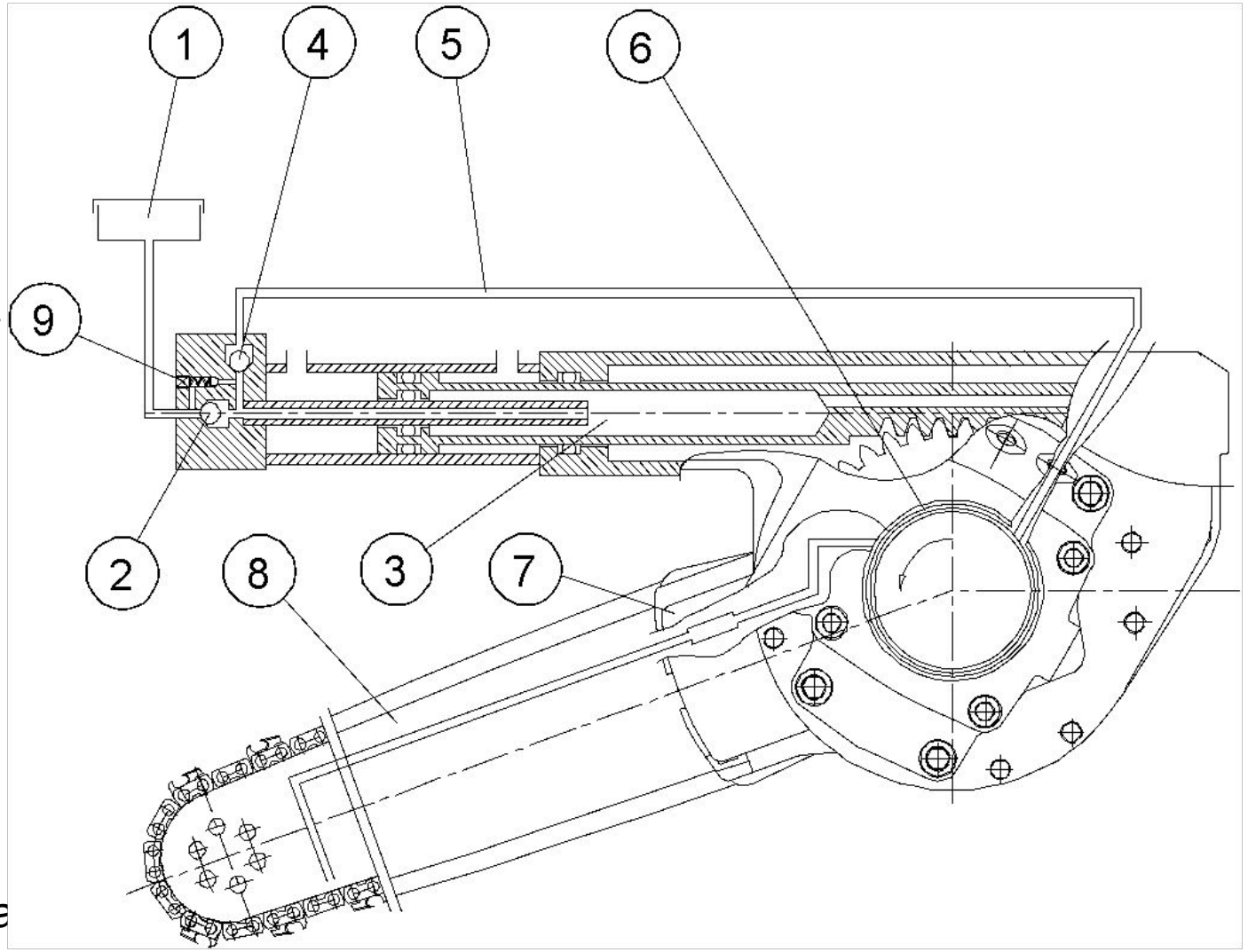
SuperCut 100

- SuperCut 100, left 90°
- Parker motor
  - F11-19
  - 19 cc



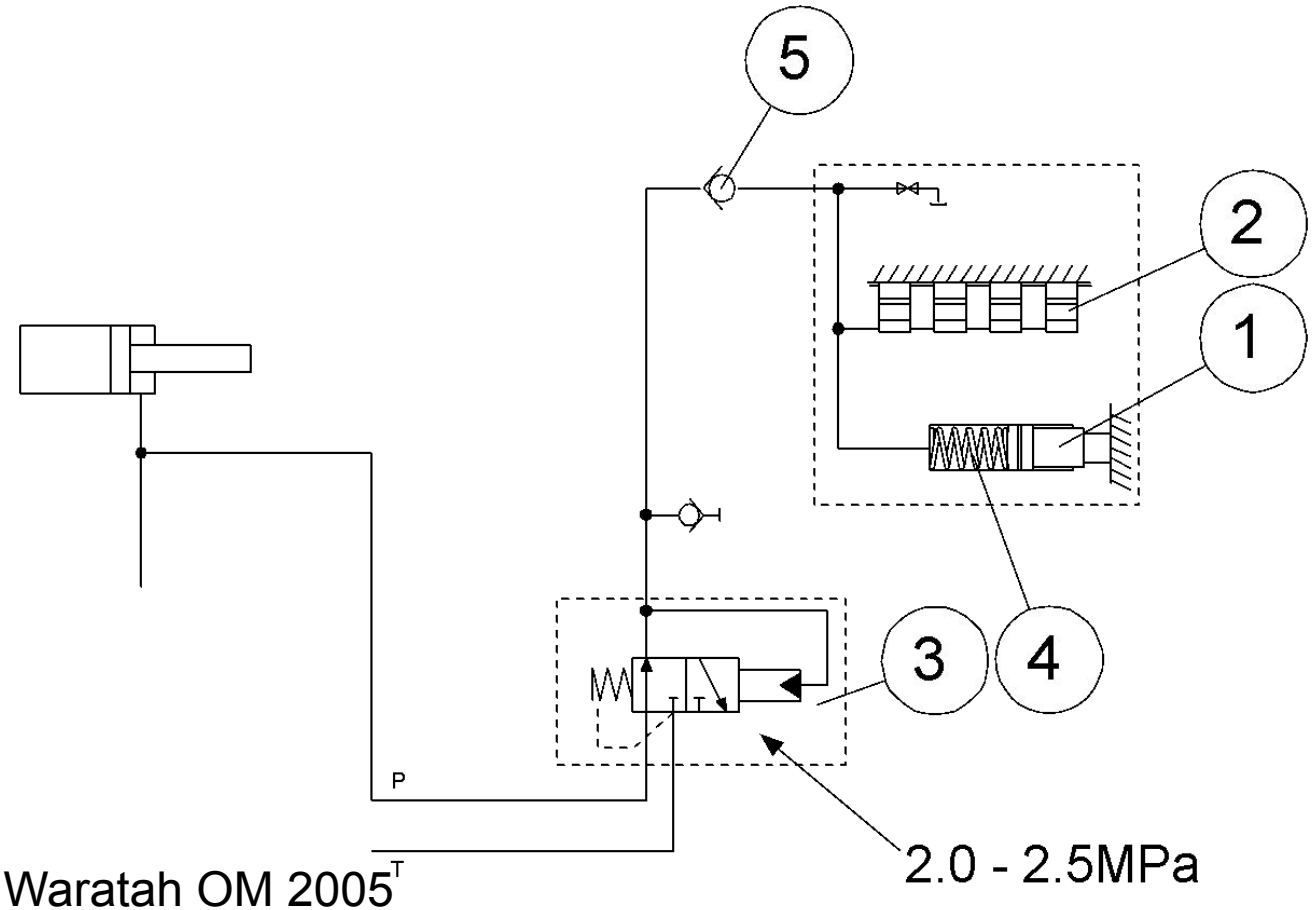
SuperCut 100





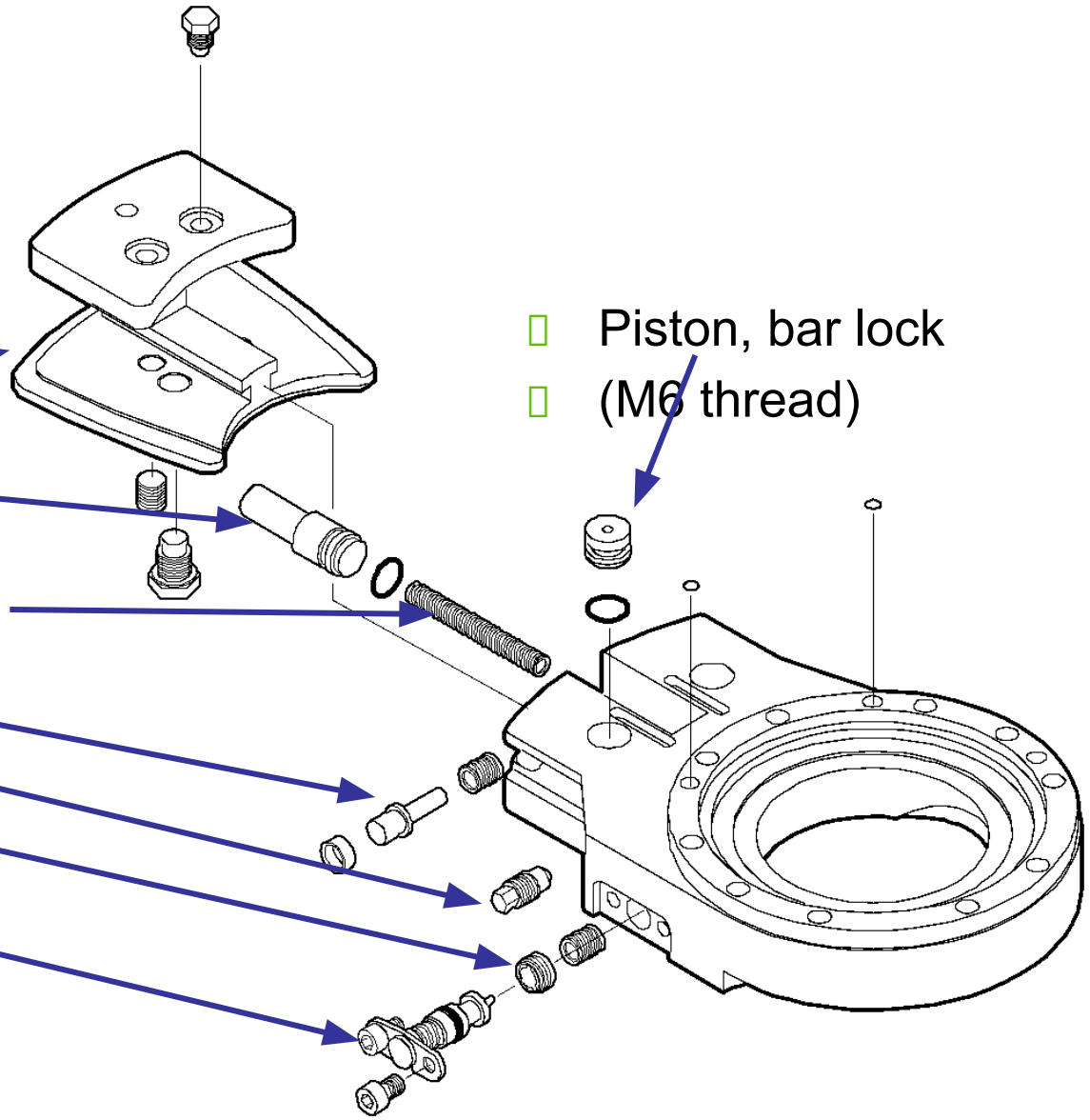
SuperCut 100

1. Piston, chain tension
2. Piston, bar lock
3. Pressure regulating valve
4. Spring, auxiliary tension
5. Check-restrict valve



SuperCut 100

- Saw bar holder
- Piston, chain tension
- Spring, auxiliary tension
- Locking pin (bar in)
- Bleeding screw
- Check-restrict valve
- Chain release
- Piston, bar lock
- (M6 thread)



SuperCut 100

- Chain tensioning pressure

Note! Depending on how the check valve is assembled, it can also function as a restrictor check valve. Please consult the nearest Hultdins dealer on how to properly equip your SuperCut saw unit. *See Fig. 49.*

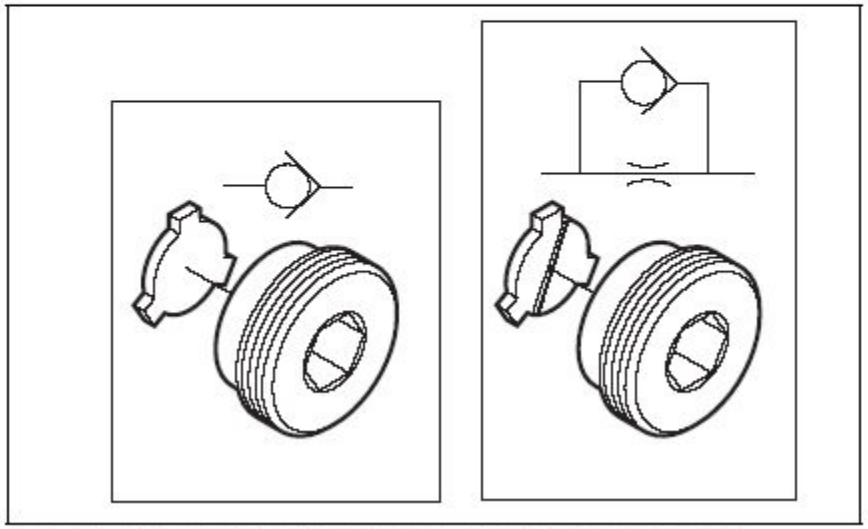
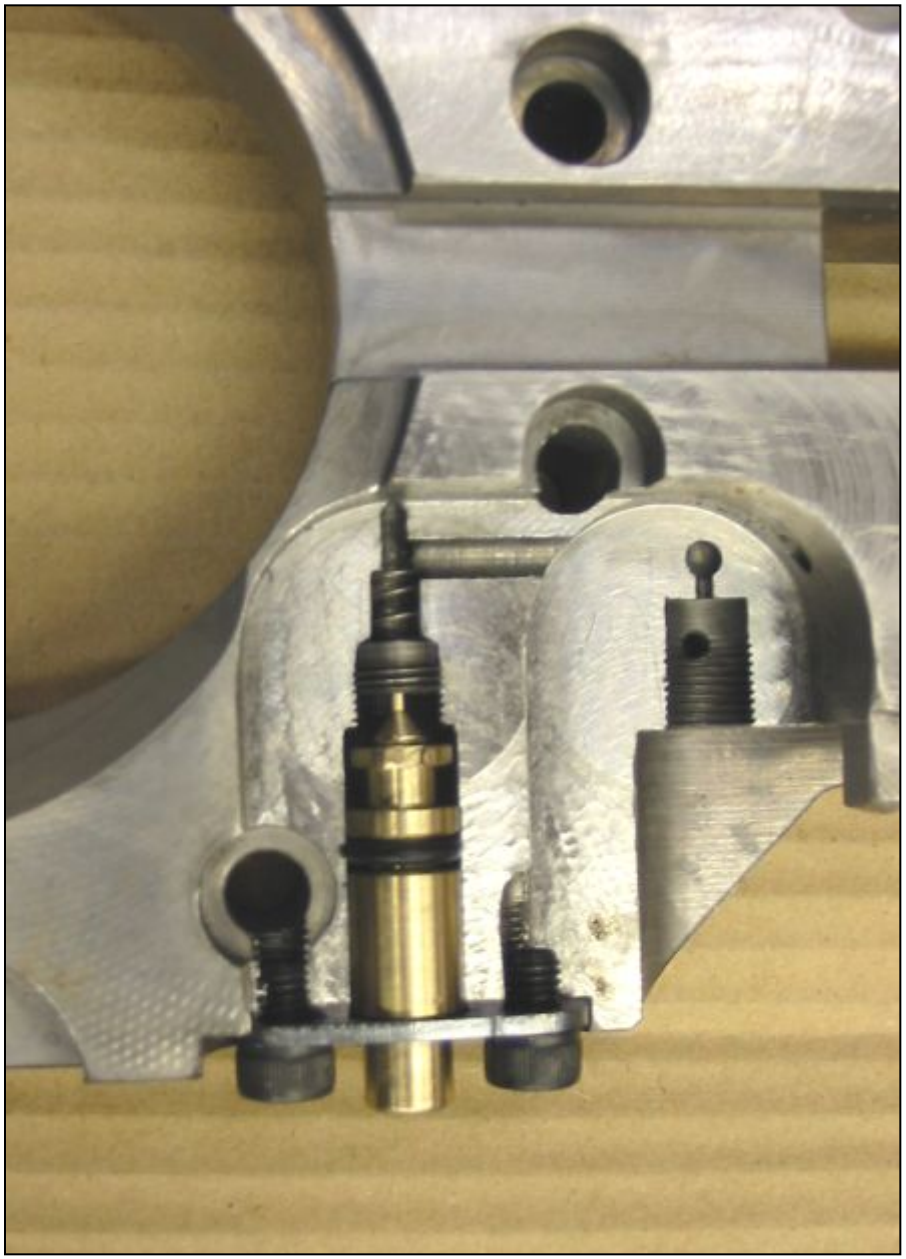
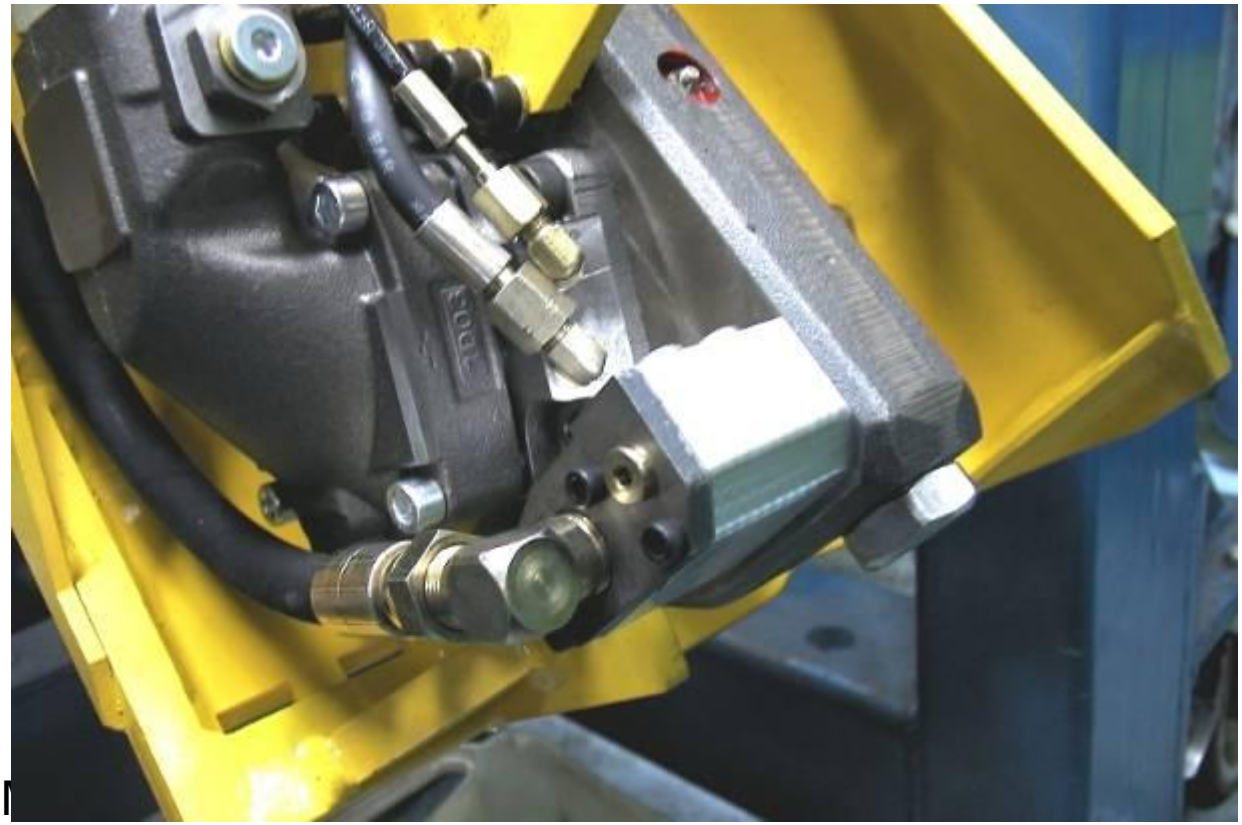


Fig. 49 Check valve / Restrictor check valve assembly



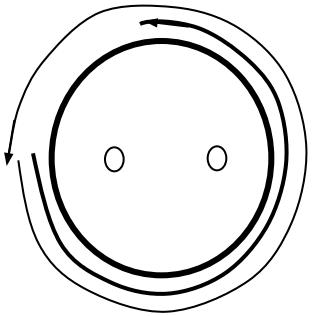
SuperCut 100

- Sensor housing

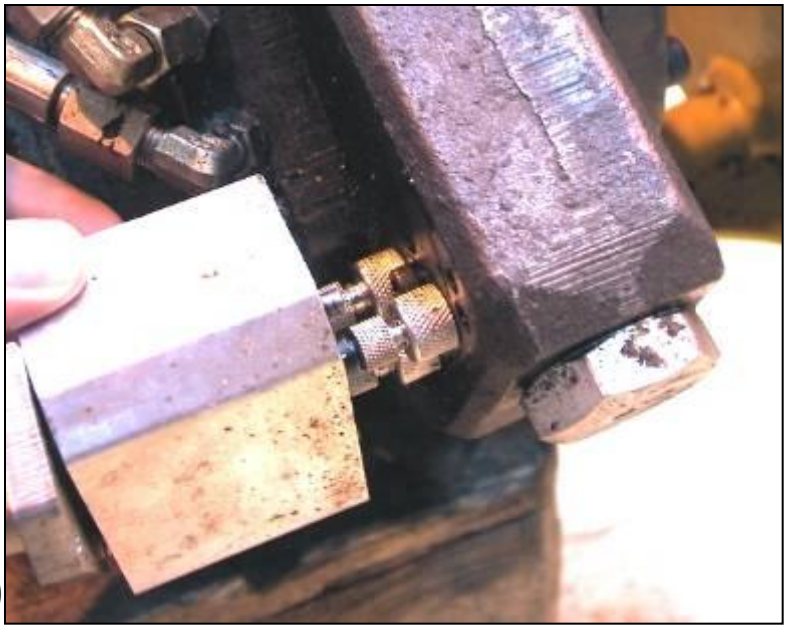


SuperCut 100

- Sensor housing
- 15 longer , more room for the sensor cables
- New Omron F071047 sensors available
- Better Cable F071143 cable
- (change all 3) F071166



¾ turn for Contrinex
1 turn for Omron



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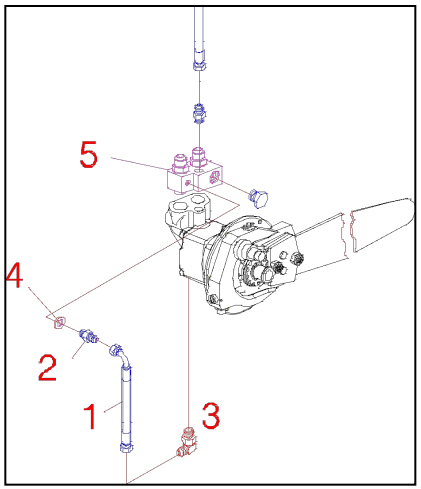
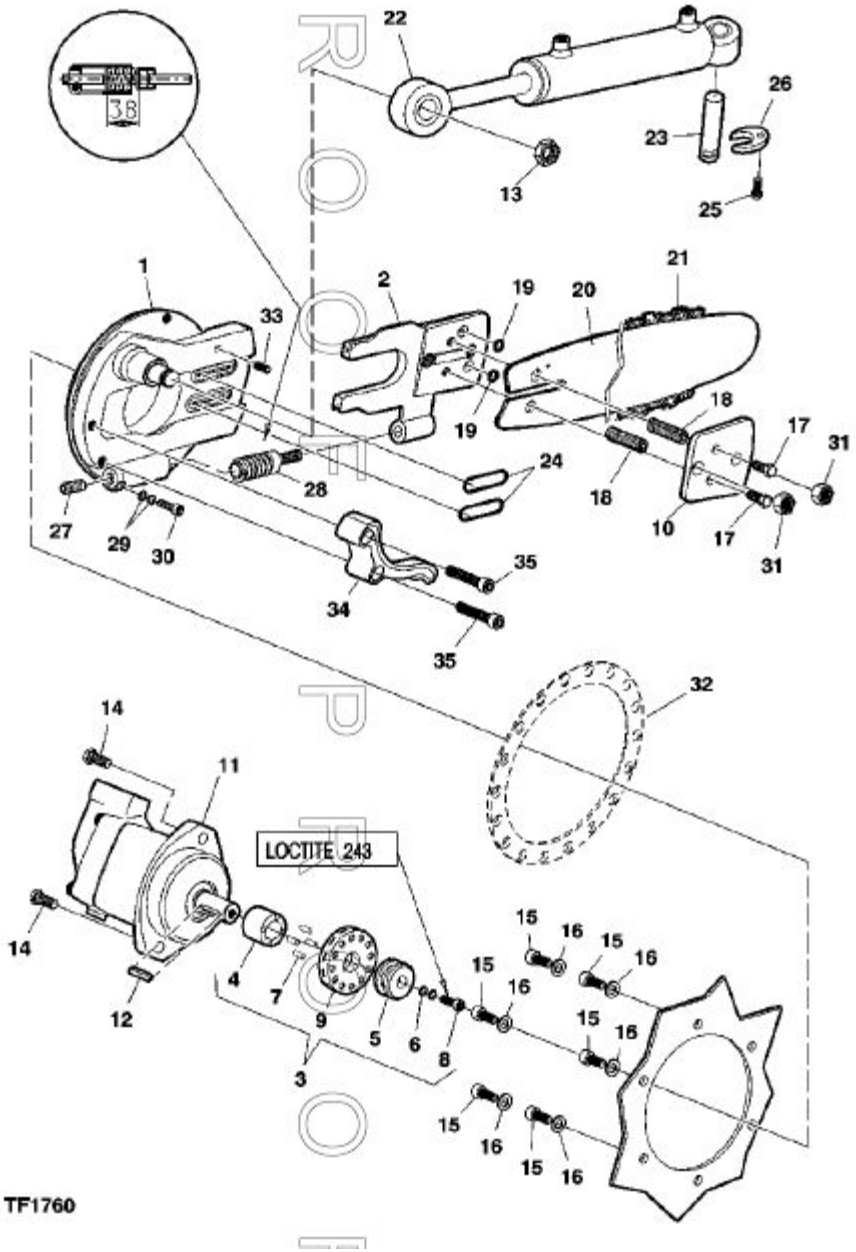
Mechanical Structure

OM saw Unit

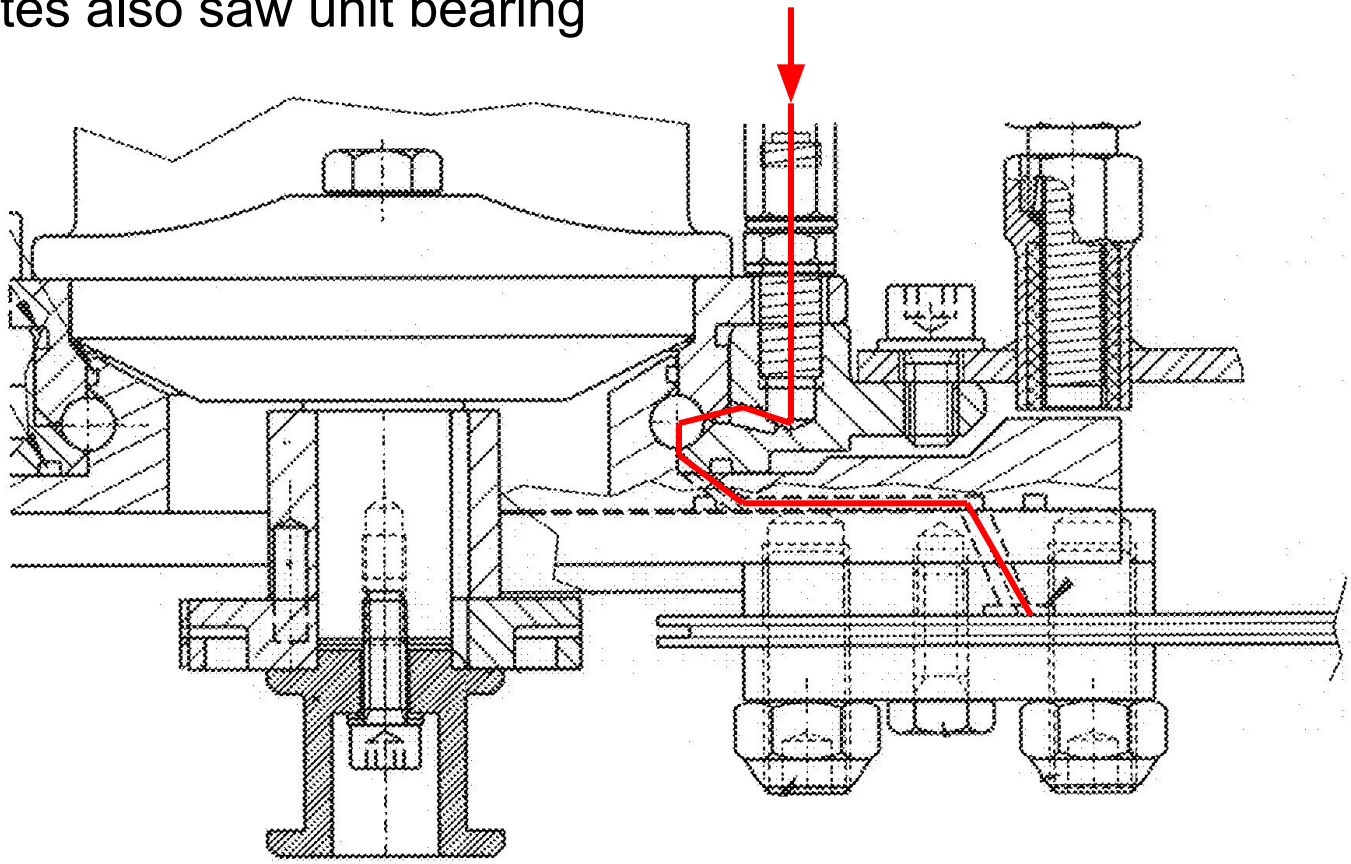
-semi automatical chain tensioning
-tightening with screw
-spring keeps the chain tight
-chain catcher for broken ”chain bullet”
-75 cm sawbar





Om chain lubrication

- Lubricates also saw unit bearing



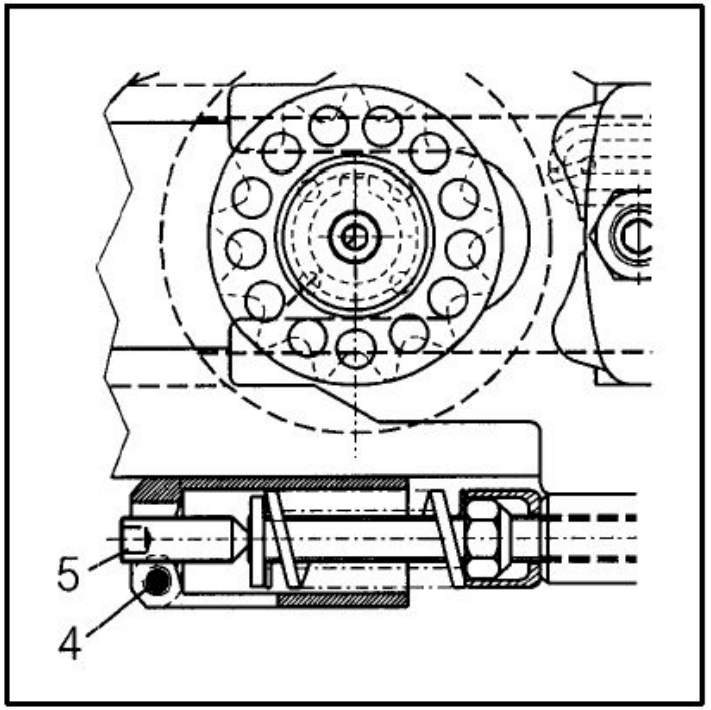
Saw device

Chain tensioning OM saw device

The saw chain is tightened by means of screw (5). First turn the screw all the way in (the springing of the tension spring stops, and the saw guide bar becomes movable). Then loosen the screw a bit by turning it in the opposite direction for a 1/4 (new chain) or 3/4 revolution (used chain). The tension spring keeps the chain tension constant in changing circumstances.

Prevent the screw (5) from unscrewing by using a transverse lock screw (4). The same hex socket key fits both screws. Clean the hex socket if needed.

Control and adjust the tightening of a new chain after a half hour's operation.



Saw device

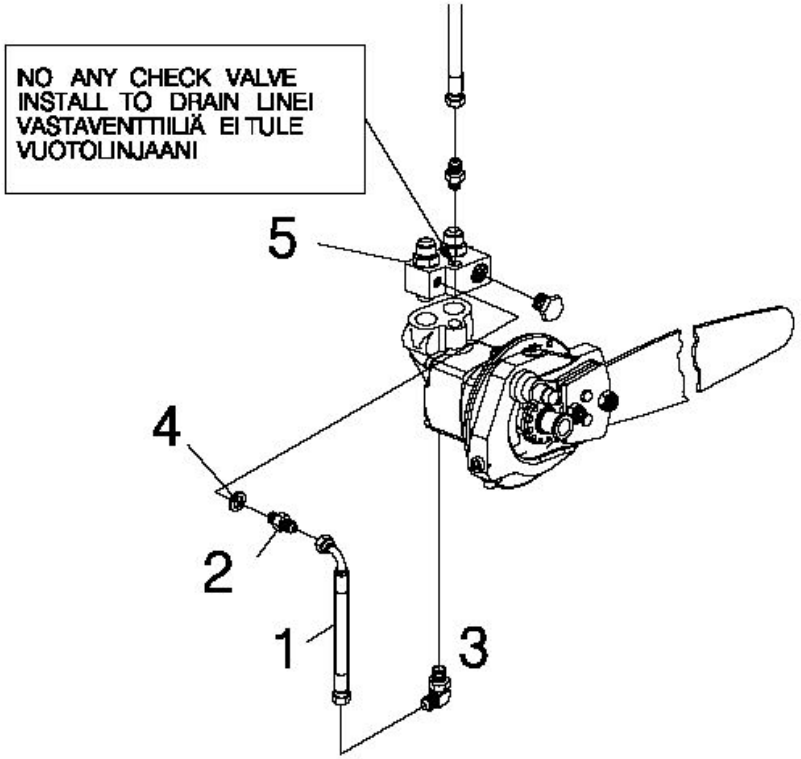
OM saw Unit

Flushing

THE FLUSHING HOSE FOR THE OUTOKUMMUN SAW MOTOR

THE SAW MOTOR HOUSING FILLS WITH OIL NORMALLY AFTER FLUSHING HOSE ASSEMBLY

CAUTION! BEFORE YOU START SAW MOTOR YOU NEED RUN THE FEED MOTORS
2 MINUTE AT LEAST TO AVOID BREAKING THE MOTOR



POS 1 F054371 HYDRAULIC HOSE FABRICATED, SPECMA 722-04/330/P49-04-09/P84-04-09

POS 2 F058999 ORIFICE 0,8MM

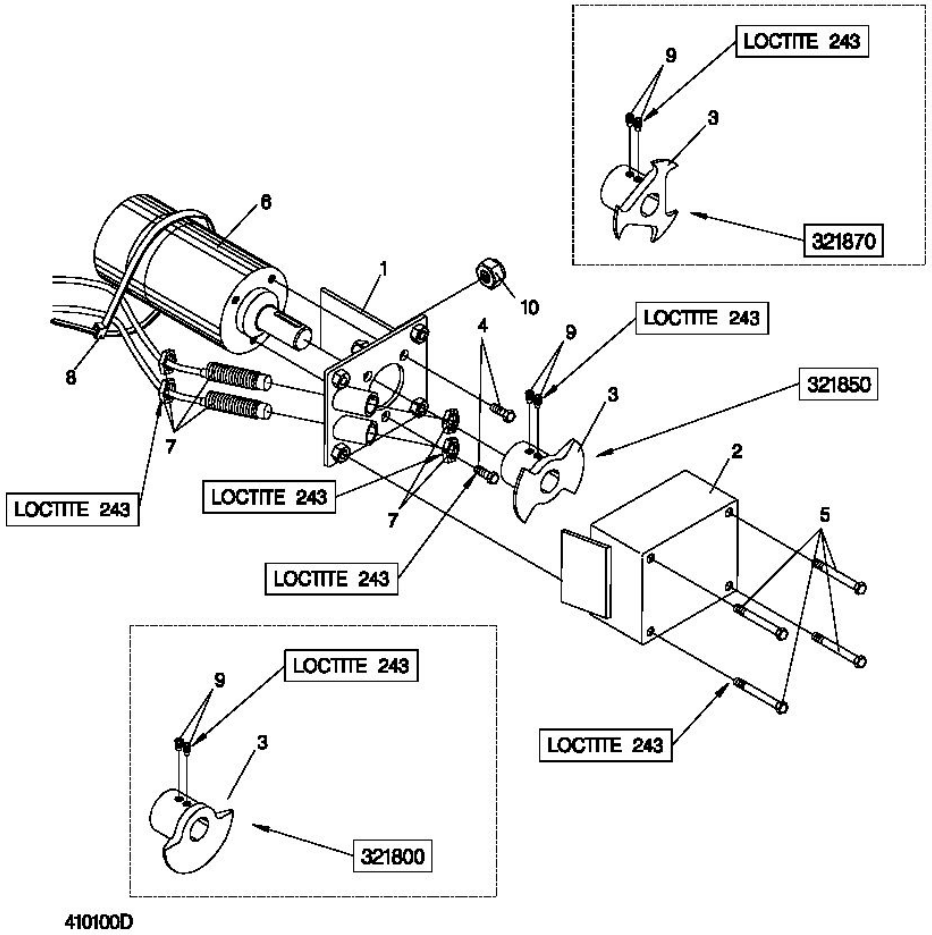
POS 3 F024402 ELBOW FITTING, PARKER 6-6C40MXS

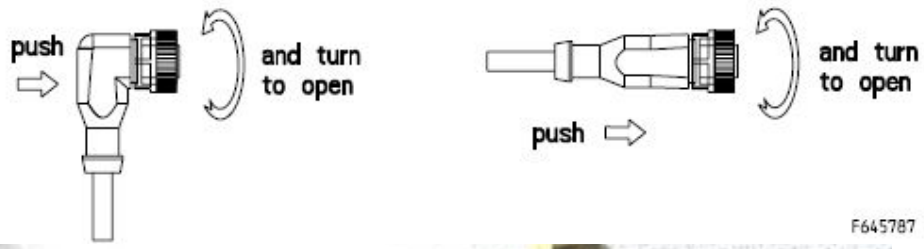
POS 4 F005164 SEALING WASHER

POS 5 F066990 VALVE STACK (ANTICAVITATION BLOCK)

Saw position sensors / OM saw

- 8cc motor
- Propel with 1 to 3 wings available (standard 2)
- IFM sensors 2 pc





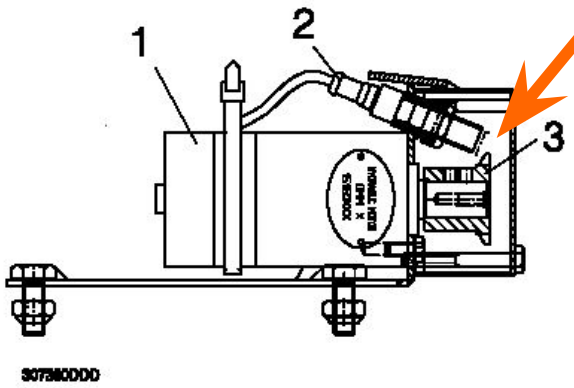
This in standard

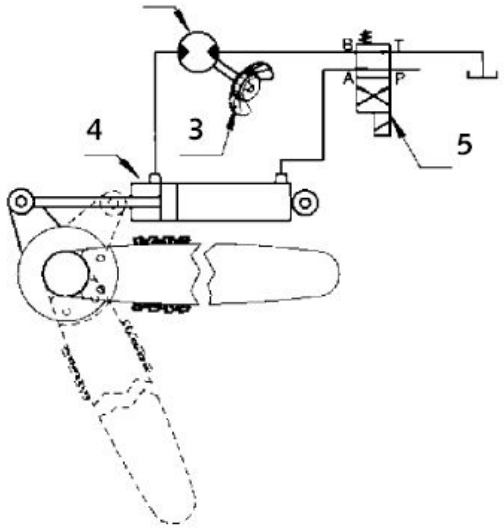
Saw position sensors / OM saw

1. Motor of positional sensor
2. Inductive switch (2pc)
3. Nib plate
4. Saw cylinder
5. Saw feed valve

max. distance 2,5 mm

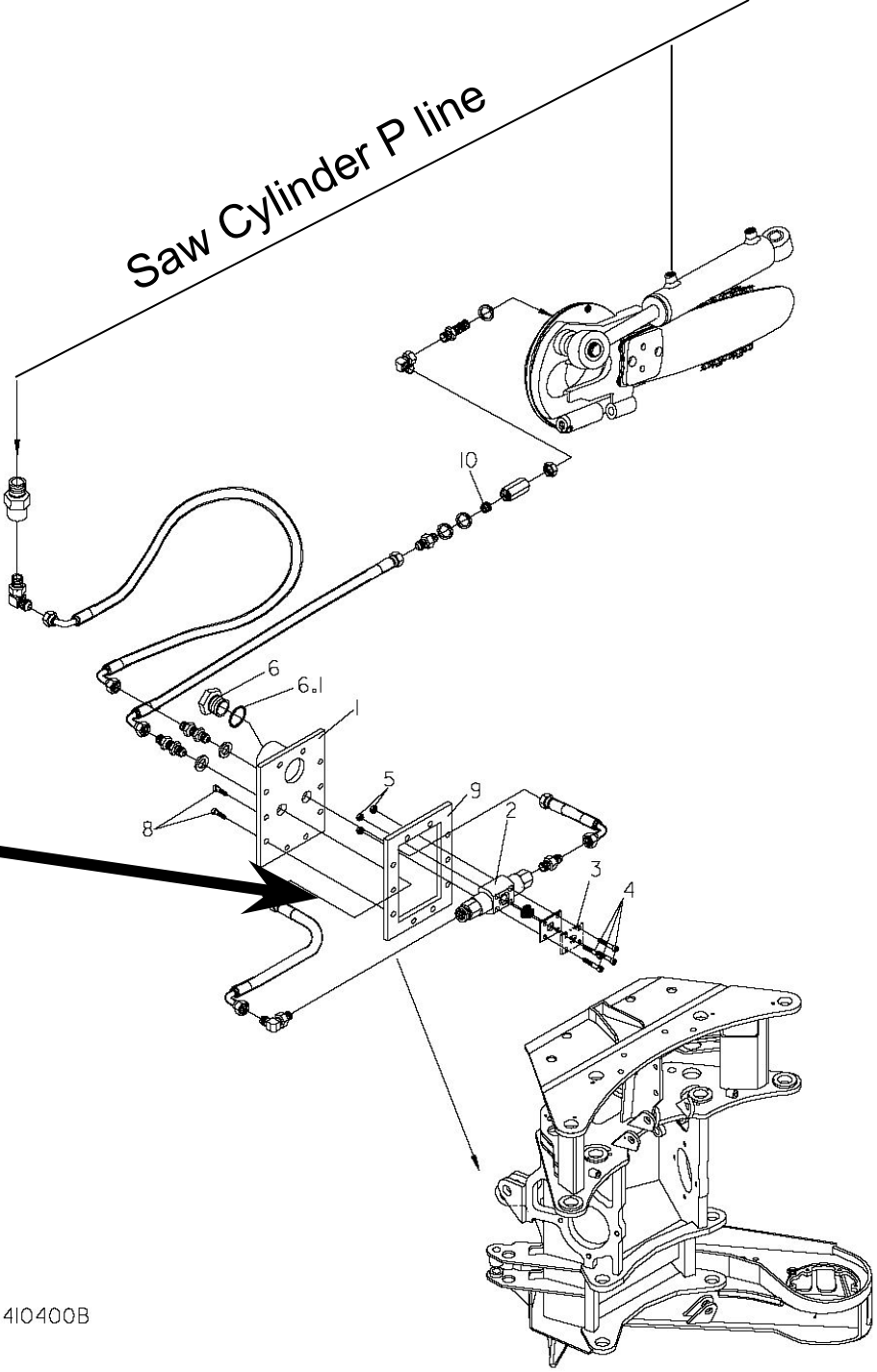
F2 + Saw



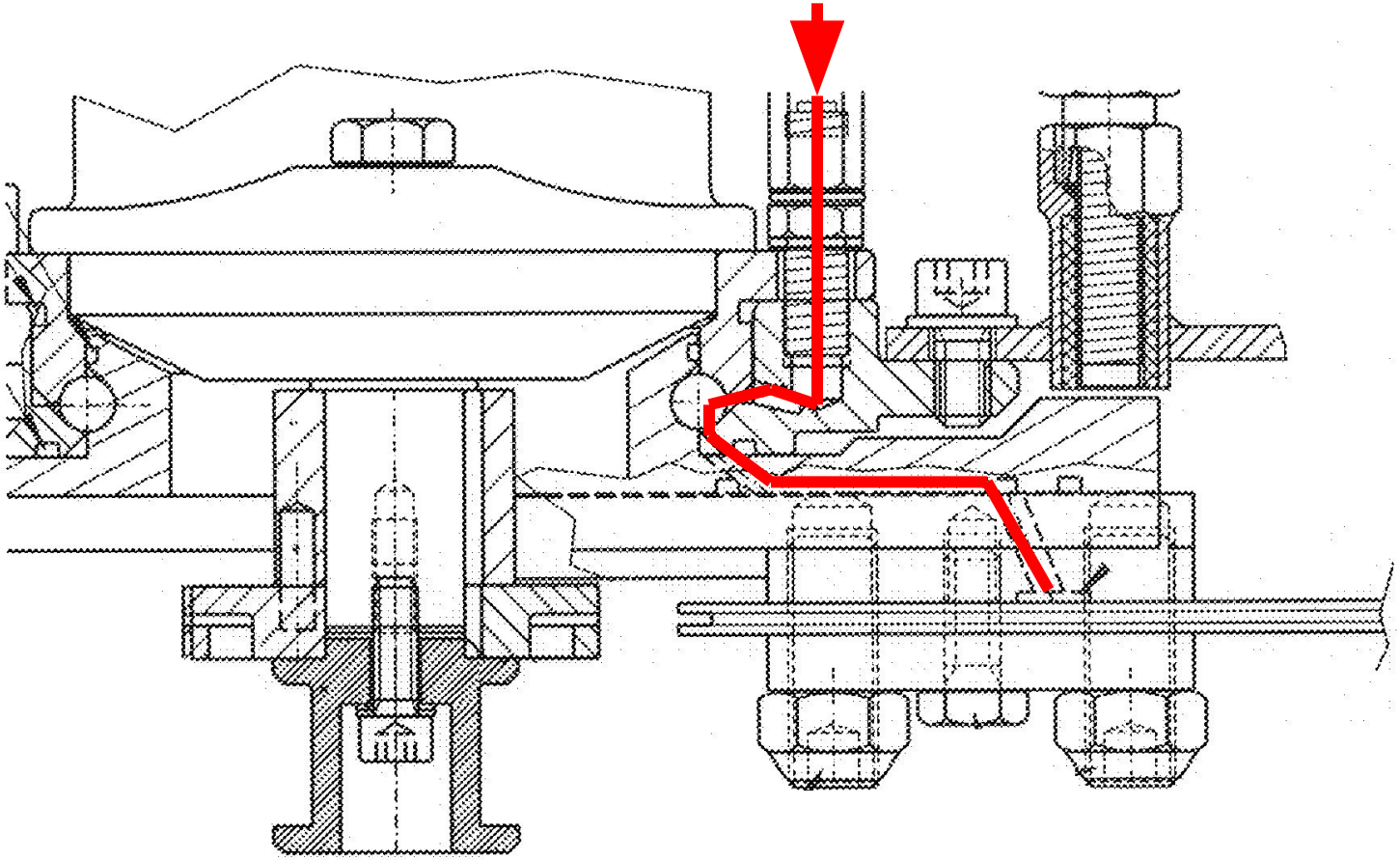


Chain Lubrication

- Standard saw unit (OM)
- Pressure sequence valve (45 bar), prevents extra hits during feeding
- Stroke pump inside tank
  - 1cc or 2cc
- Also possible to use in SC saw devices (SC pump connected off)

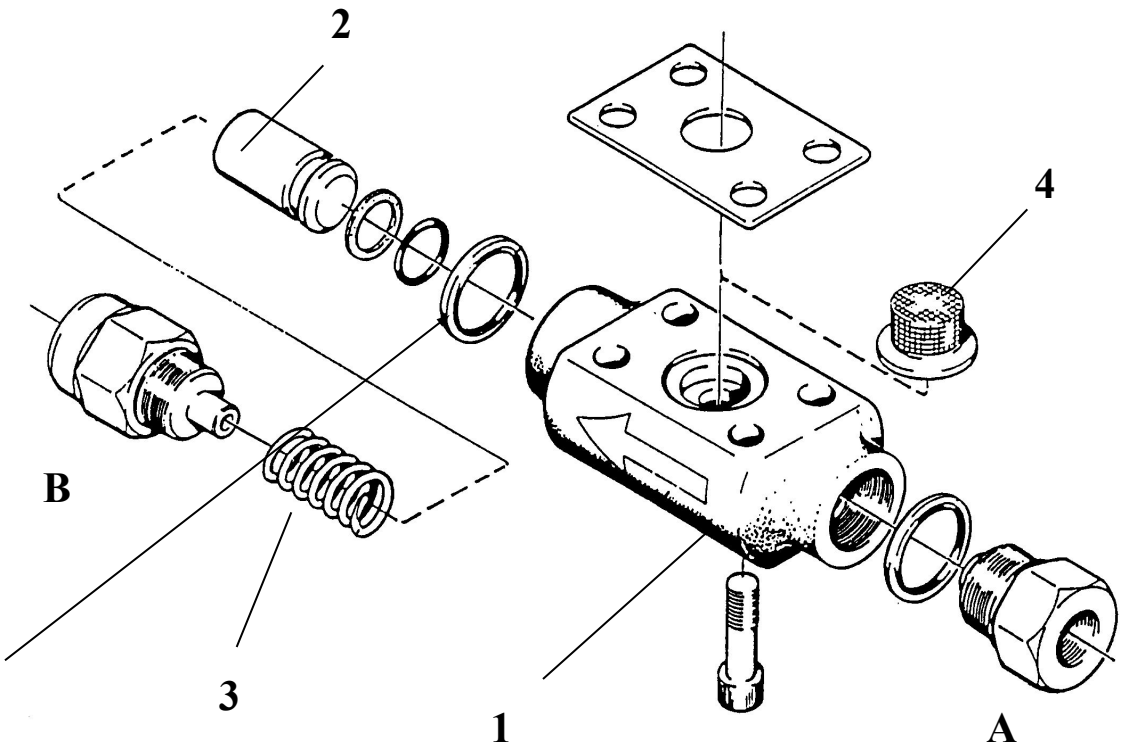


Chain Lubrication



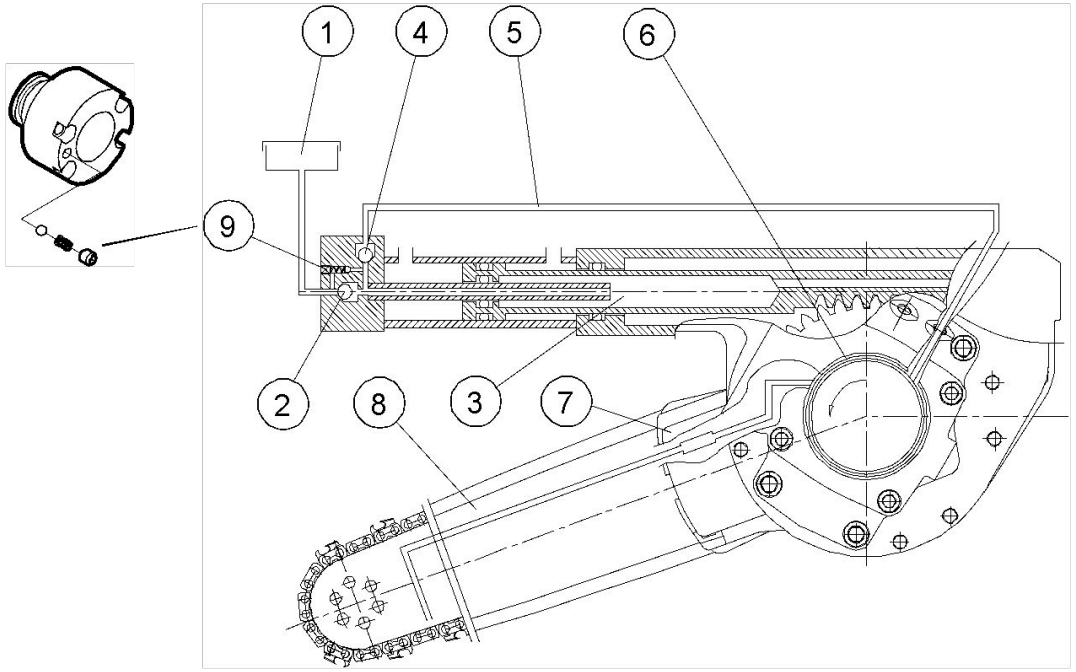
OM chain lubrication pump

- 1/2g
- Pump housing
- Piston
- Return spring
- Filter for incoming lubrication oil
- **A** Pressure from
- the saw cylinder line
- **B** Lubrication oil to
- saw unit
- Two washers gives more oil/stroke



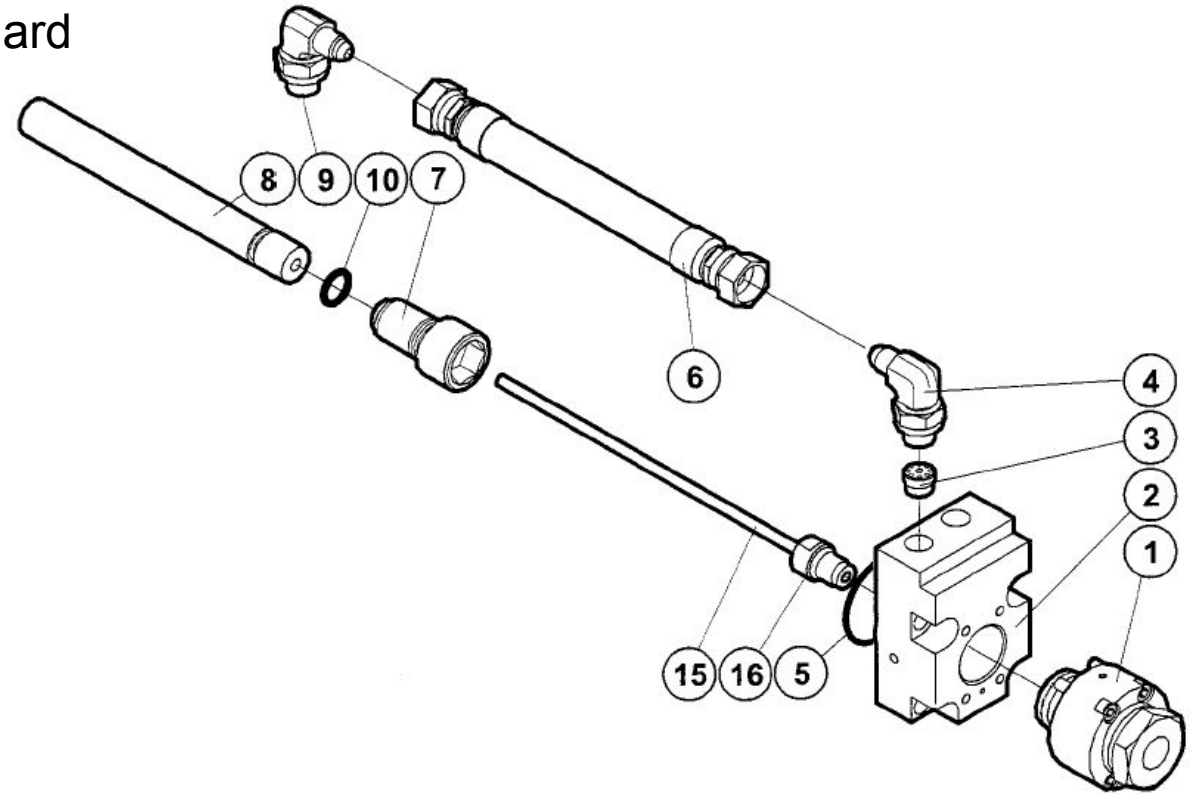
SuperCut 100

- Chain lubrication
  - 2,4 ml as standard
  - Options
    - 1,6 ml
    - 3.5 ml
    - 6,4 ml
  - Possible problems
    > dirt in check valves



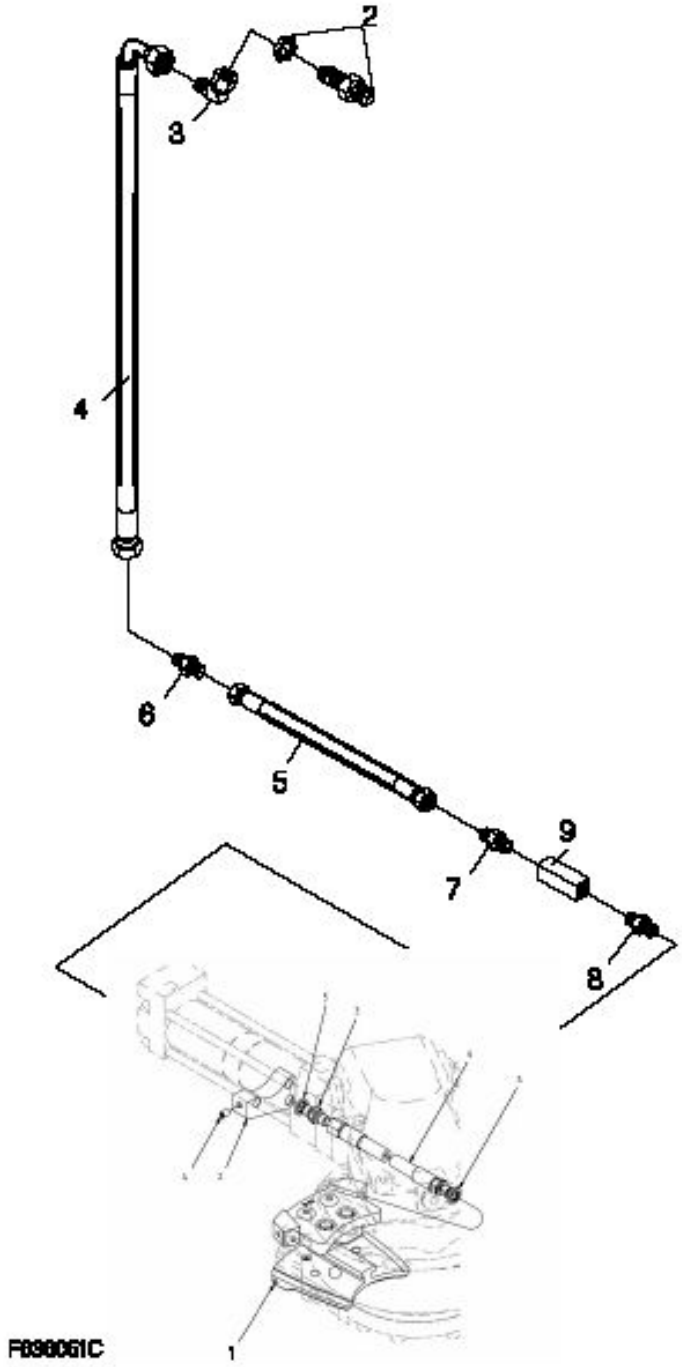
Chain Lubrication

- SuperCut 100
  - 2,4 ml as standard
  - Options
    - 1,6 ml
    - 3.5 ml
    - 6,4 ml



Stump treatment SC

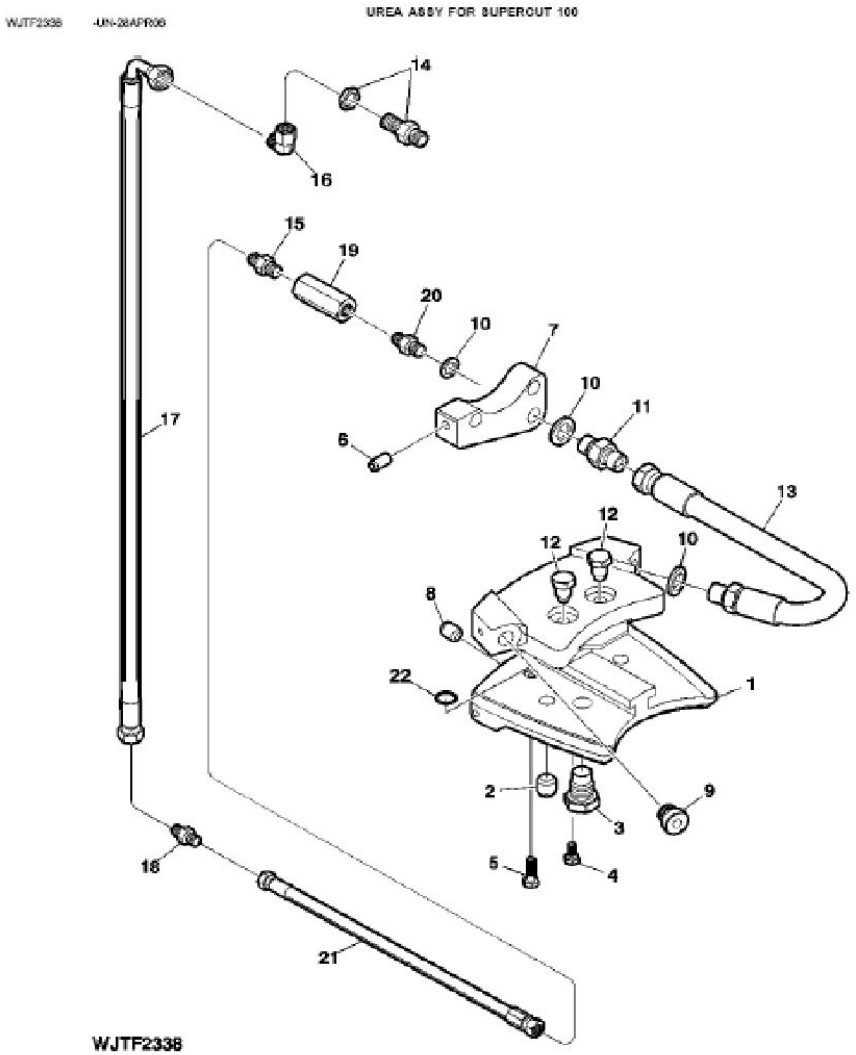
- SuperCut 100
  - Stainless steel check valve
  - Special saw bar holder
  - Urea sawbars needs plugs to prevent leakage against bracket



SuperCut 100
Stump treatment system

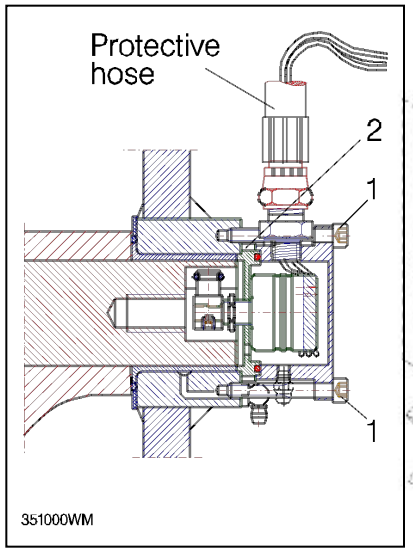
- Stump treatment / Urea equipment
  - Through bar
  - Problem seeking
    > Check valve
- Also Nozzle operated available

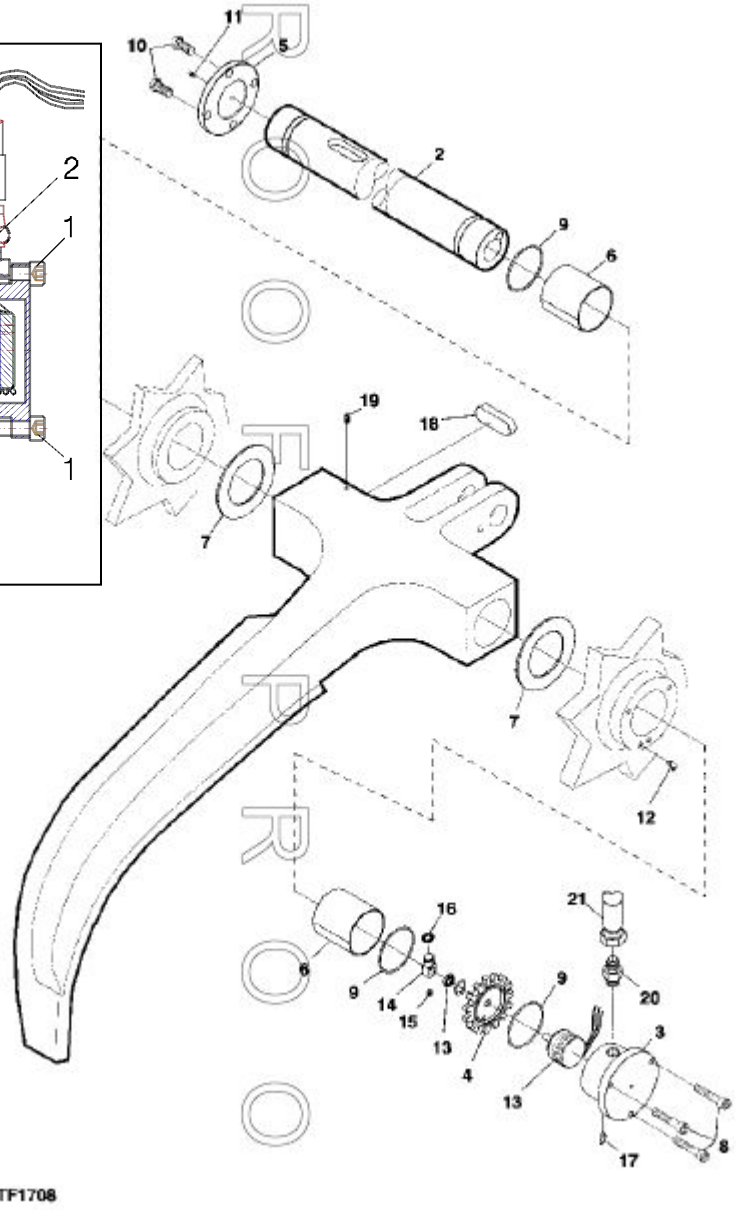
- With OM saw don`t use urea.



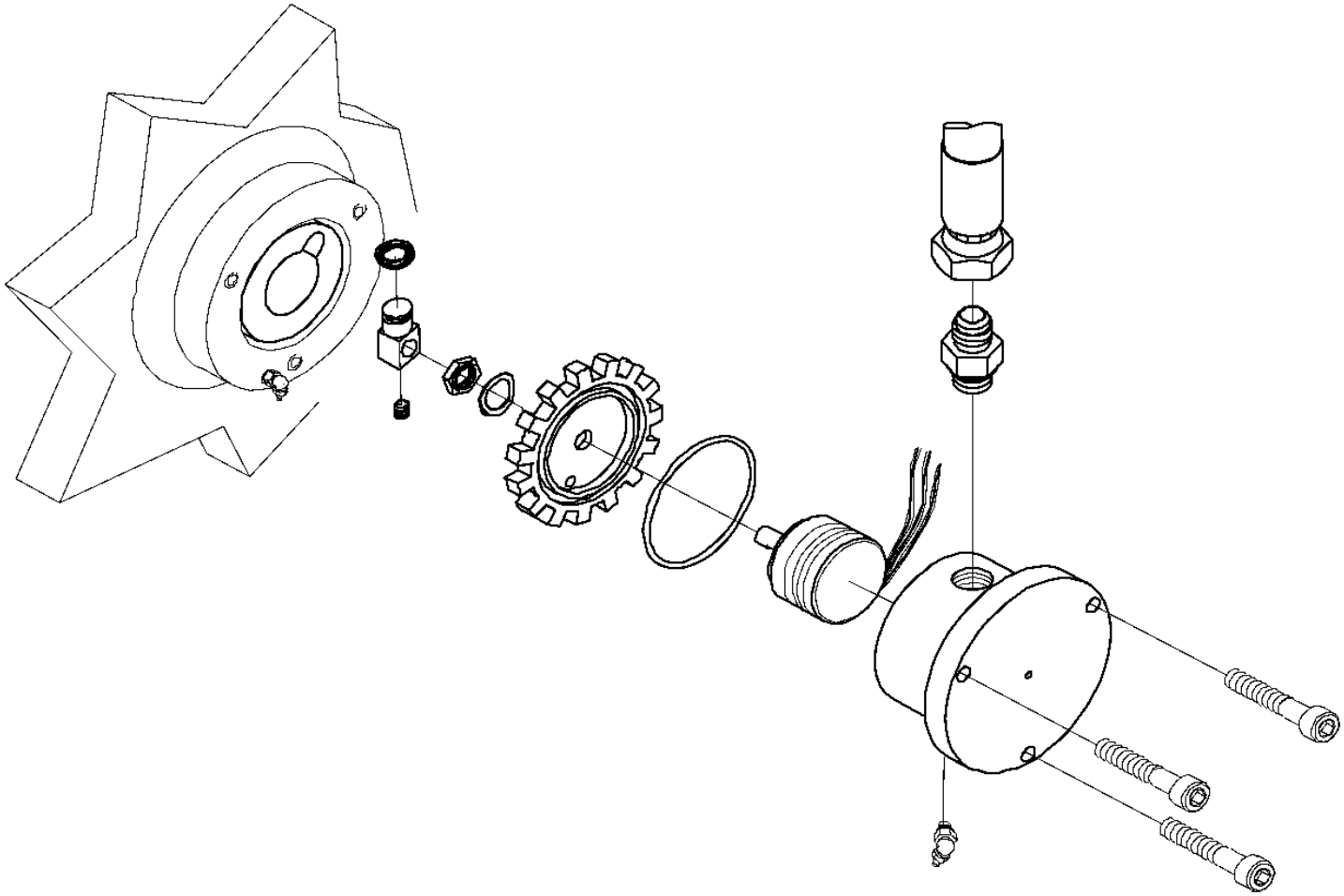
Diameter measuring

If problems and every 1000 h, rotate sensors
By hand several Revolutions.
Dirt inside doas not collect to min/max points

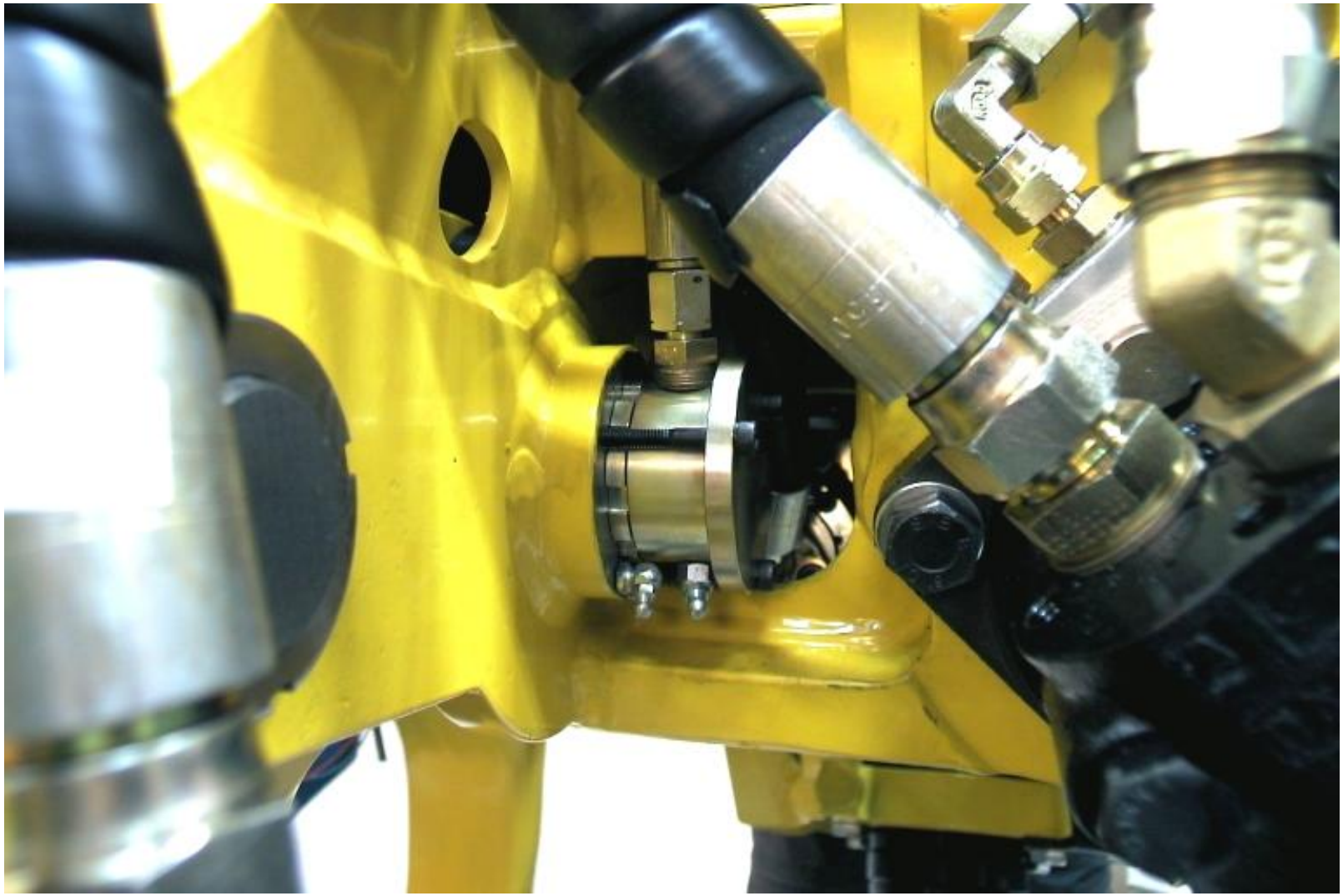




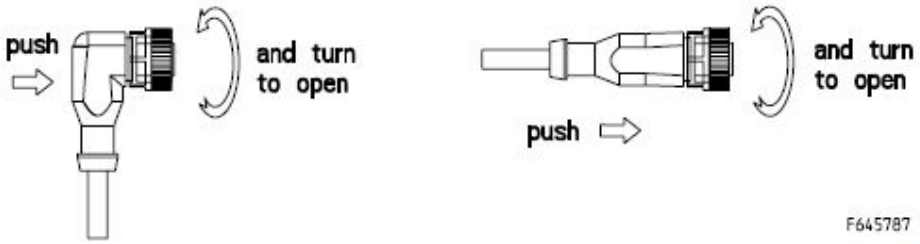
Diameter measuring

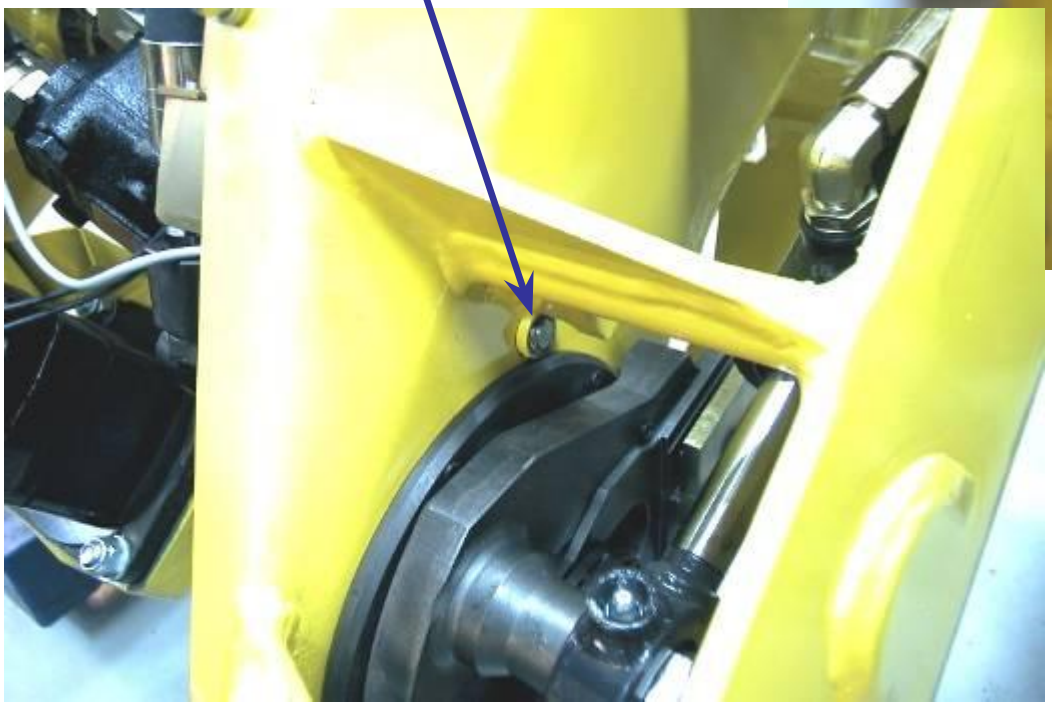


Diameter measuring



OM saw home sensor





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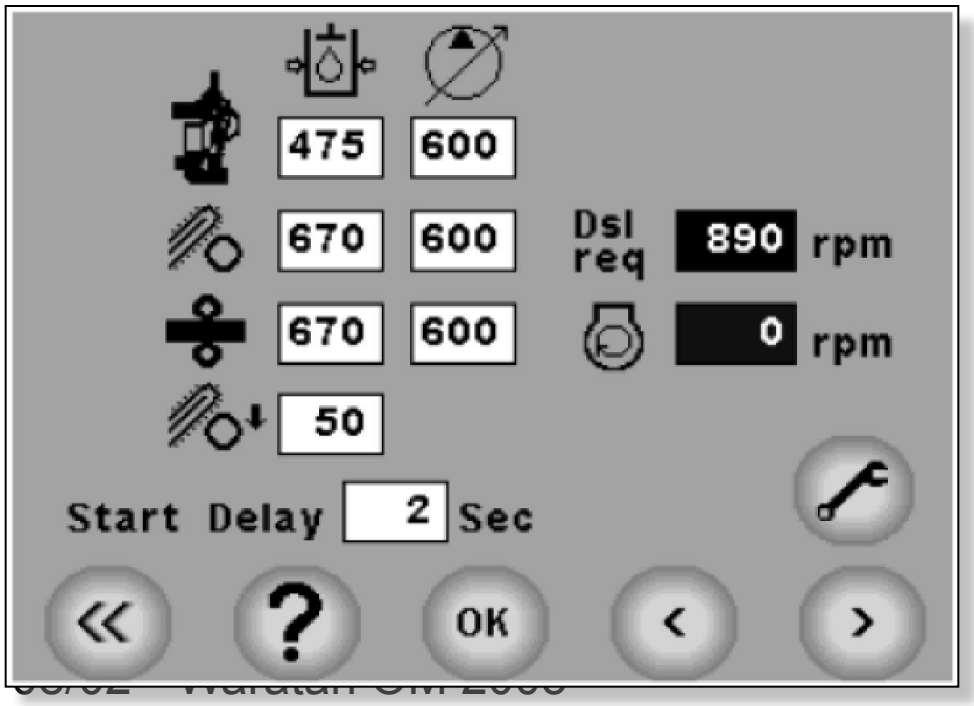
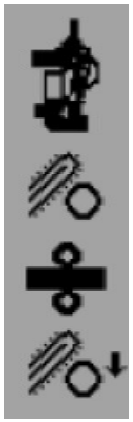
Constant Pressure System

- Maximum Pressure ~ 280 bar
- Maximum Flow ~ 360 lpm

Carrier Pressure Levels





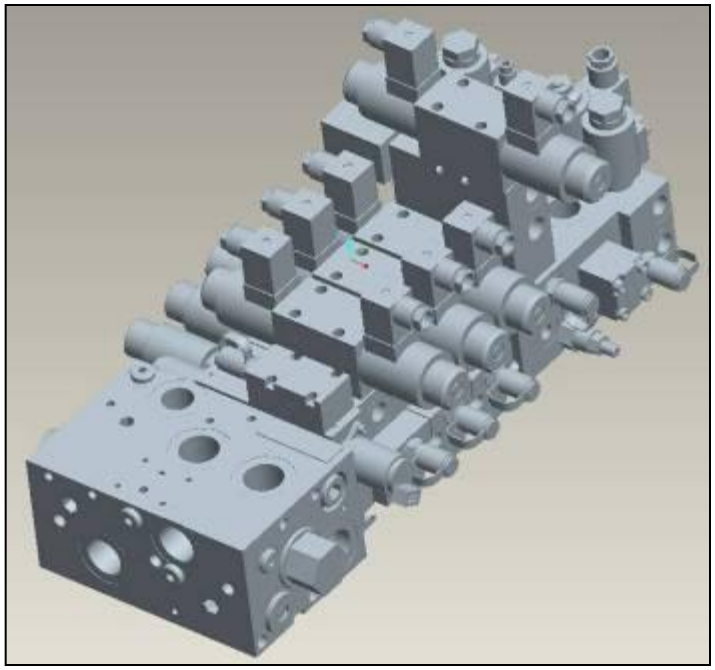
~ 180bar

~ 250bar

~ 280bar

~ 210bar

EVO 2 Lokomec valve

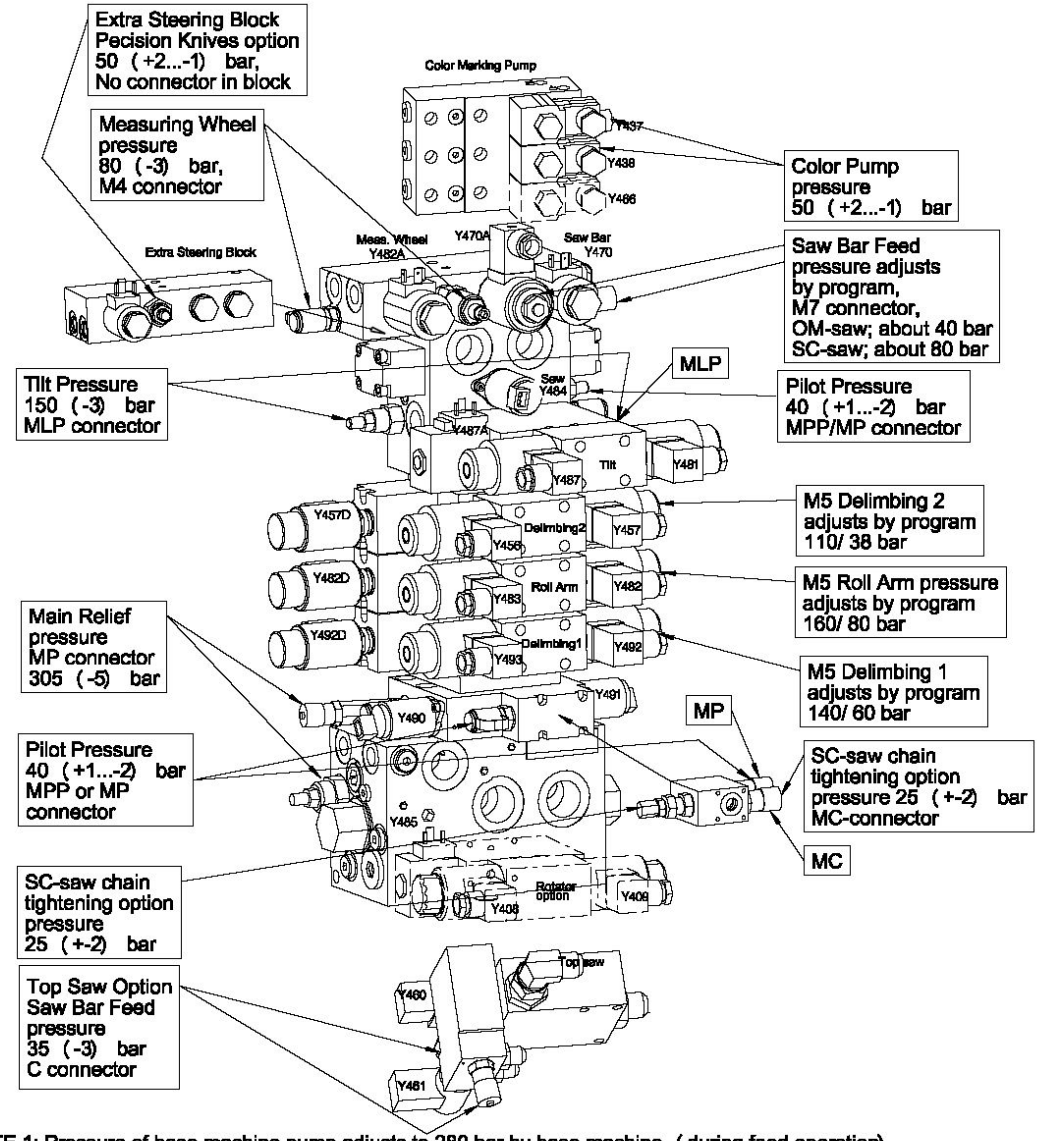


- Manual main (high) pressure setting 300 bars
  - Saw and feed motors use high pressure
- Proportional valves in
  - Feed motors
  - Saw motor
  - Saw bar feed
  - Knives and Arms
    - no manual lower and upper pressure setting as in Gen 1
- Own directional valve and pressure setting for
  - Measuring arm
  - Chain tension (SuperCut demand)
  - Main pressure
  - Tilt pressure
  - Pilot pressure

- Has different tilt floating valve position than Gen 1 valve
  - “tilt floating pos. 2” setting in T3000 and Timbermatic 300

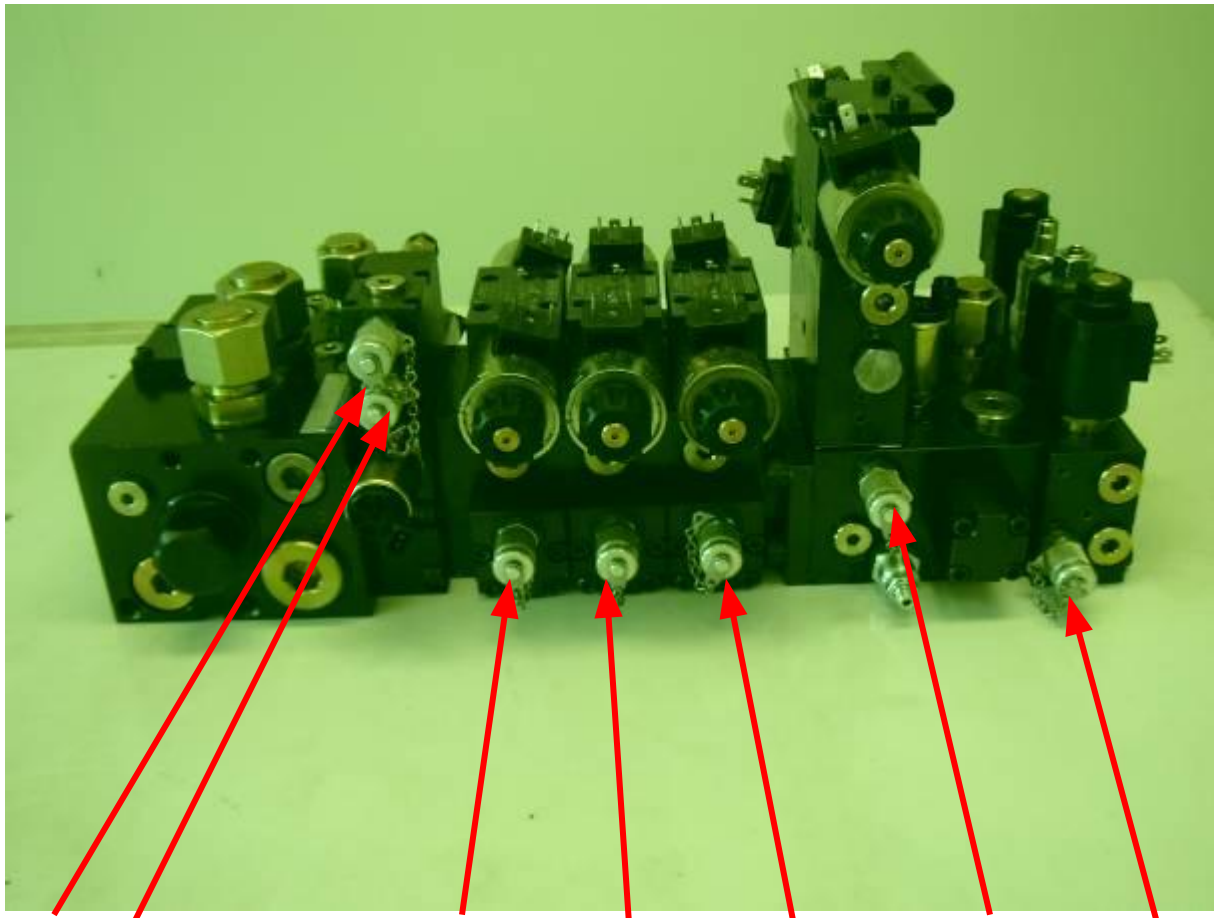
Valve Block

- Pressure values
- TM300
  - Upper and lower knives
  - Feed roller arms
- Manual
  - SC chain tightening 25 bar
  - Pilot pressure 40 bar
  - Tilt pressure 130-160 bar
  - Measuring wheel 80 bar



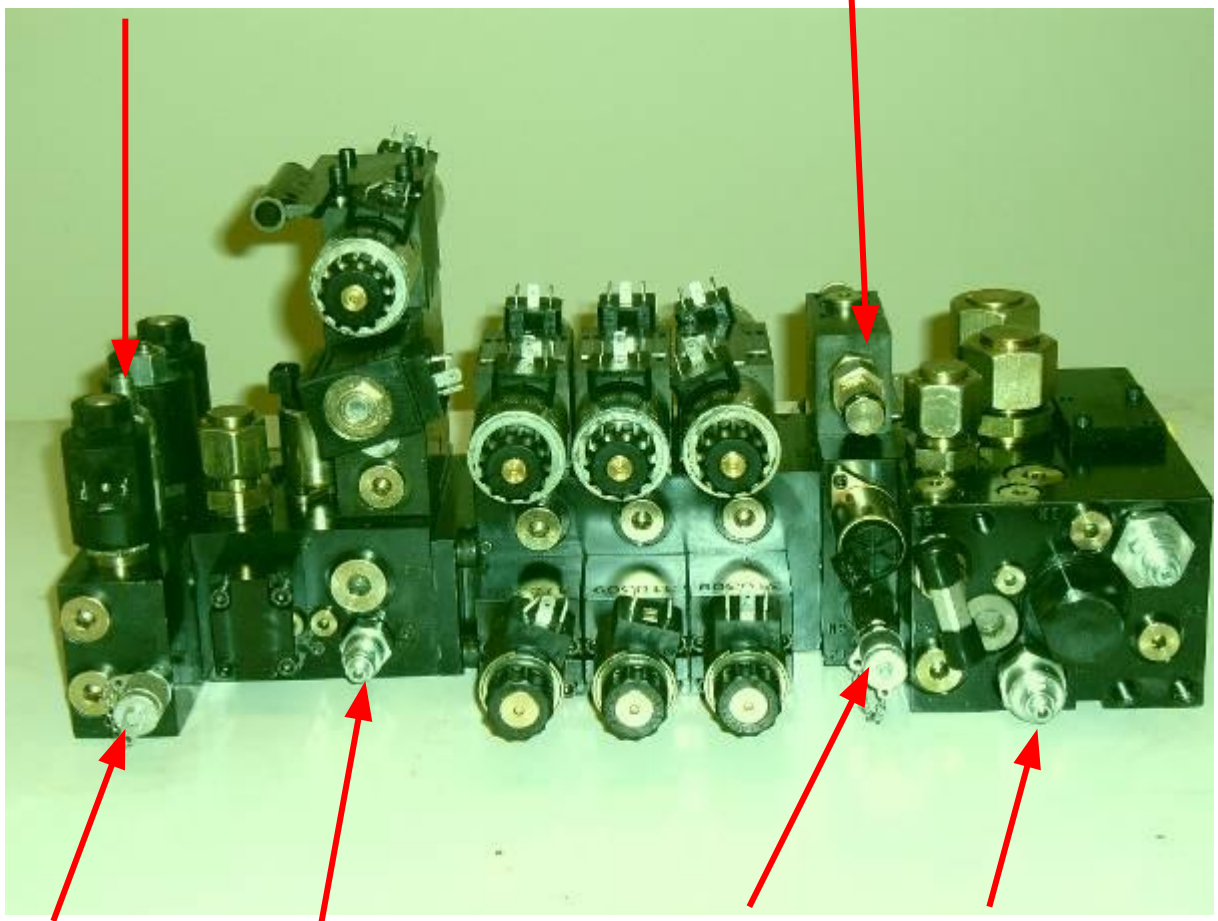
NOTE 1: Pressure of base machine pump adjusts to 280 bar by base machine (during feed operation)
NOTE 2: Read detailed information apply to checking and adjusting from Operator´s and Maintenance Manual

Measuring points Evo II Valve



lenght measuring

chain tensioning 25 Bar



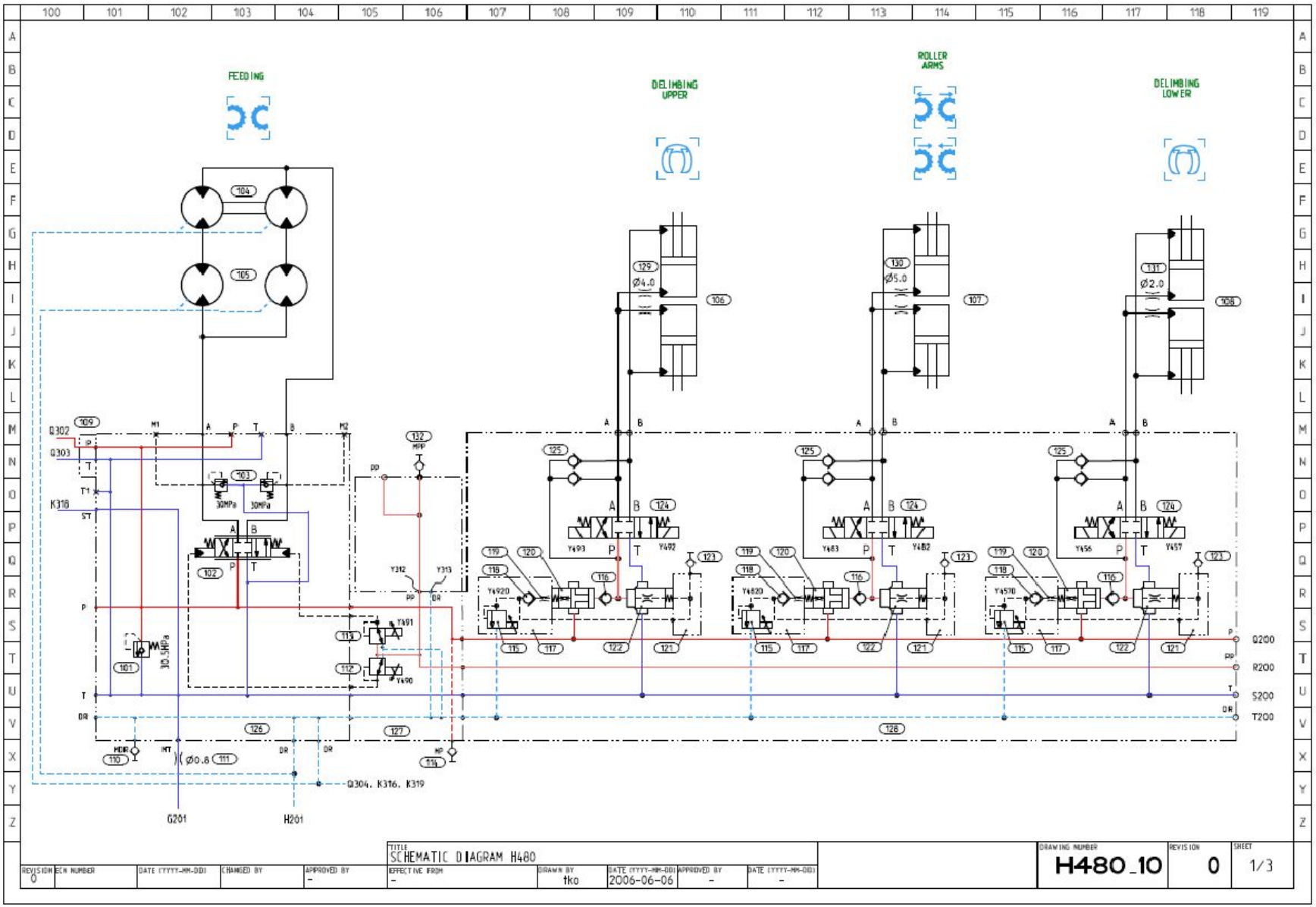
Lenght measuring

Tilt pressure 150bar

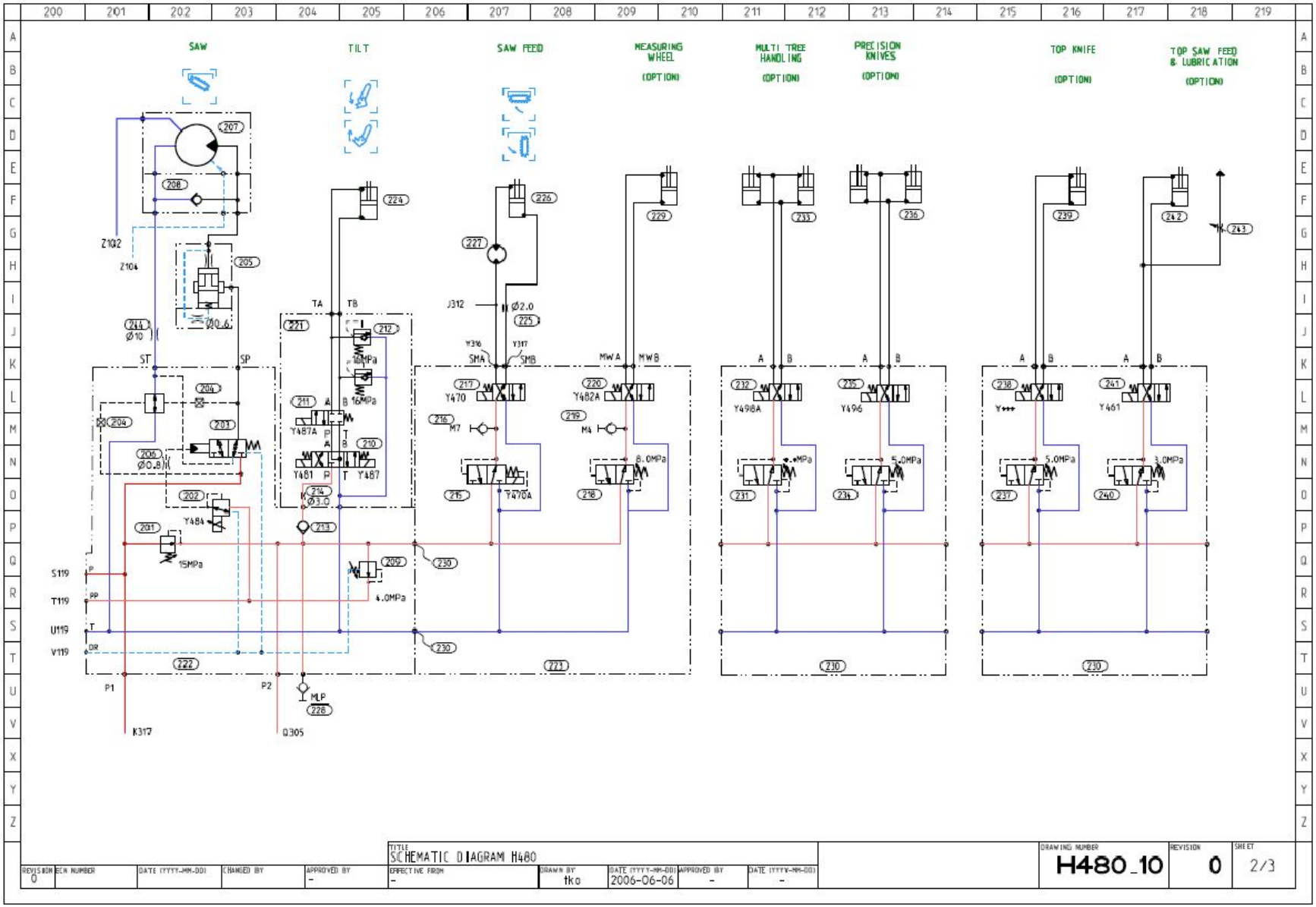
Main pressure 305 Bar

waratah om
FORESTRY ATTACHMENTS

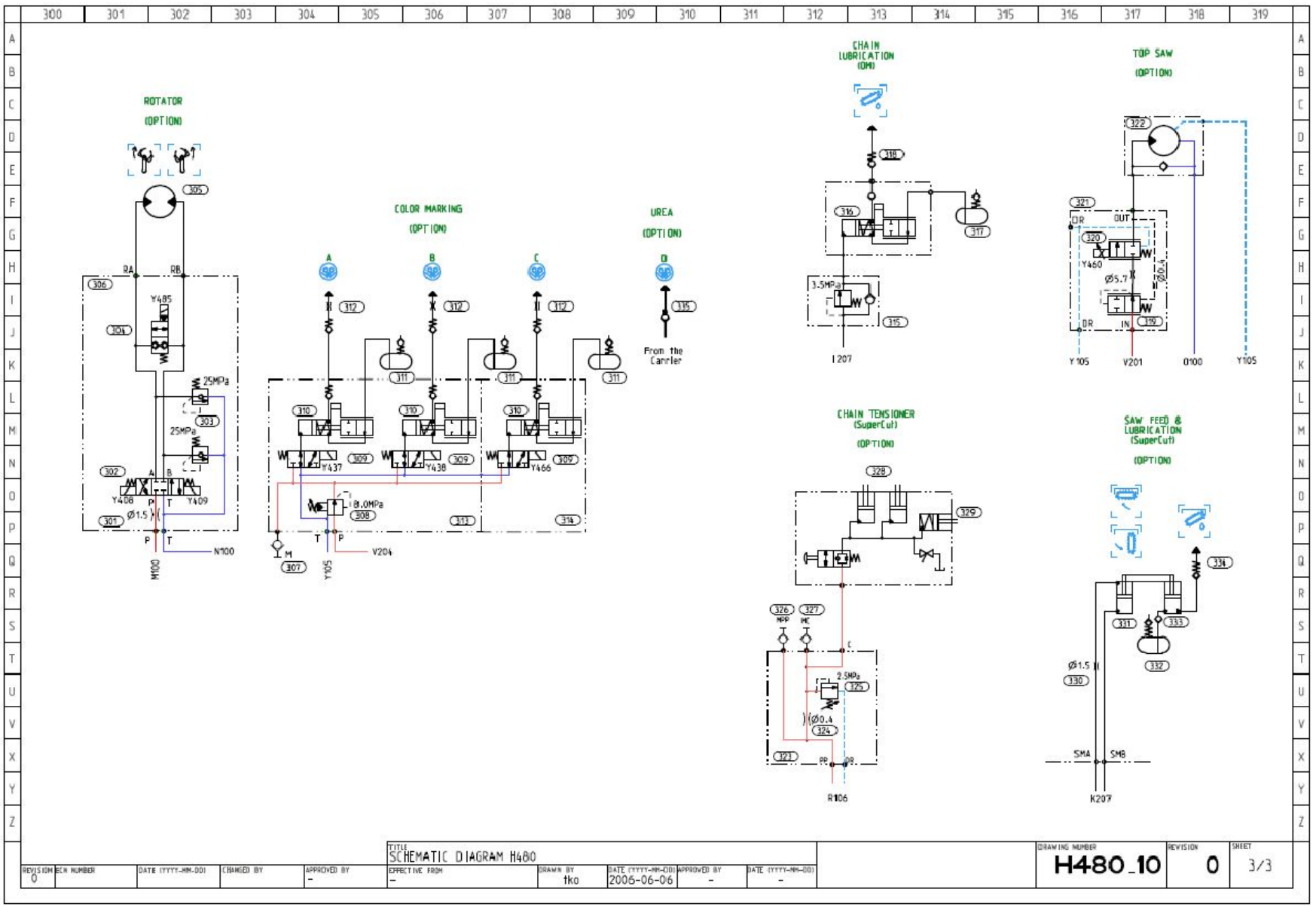
Hydraulic schematic EJH480 … #567



Hydraulic schematic EJH480 … #567

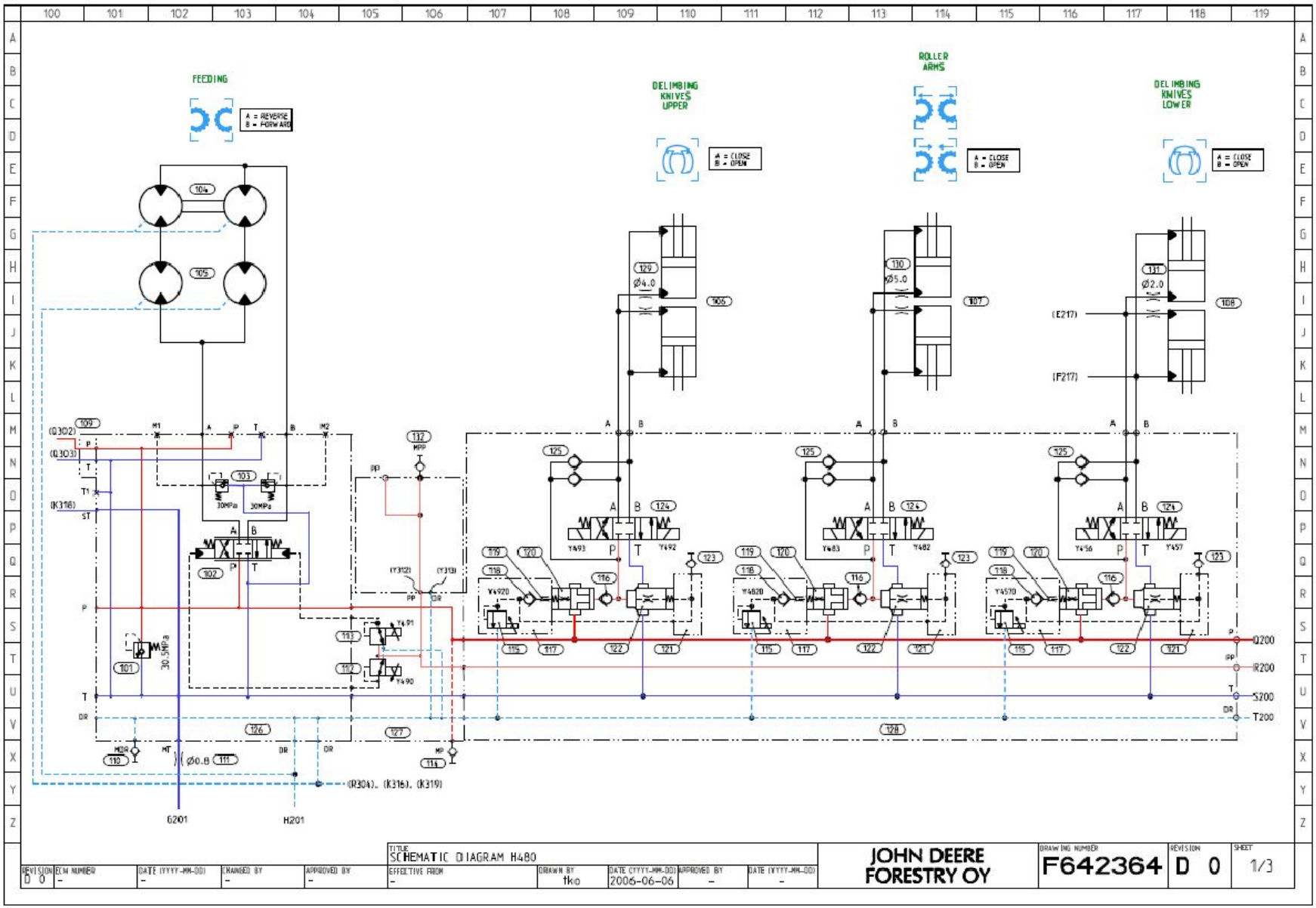


Hydraulic schematic EJH480 … #567

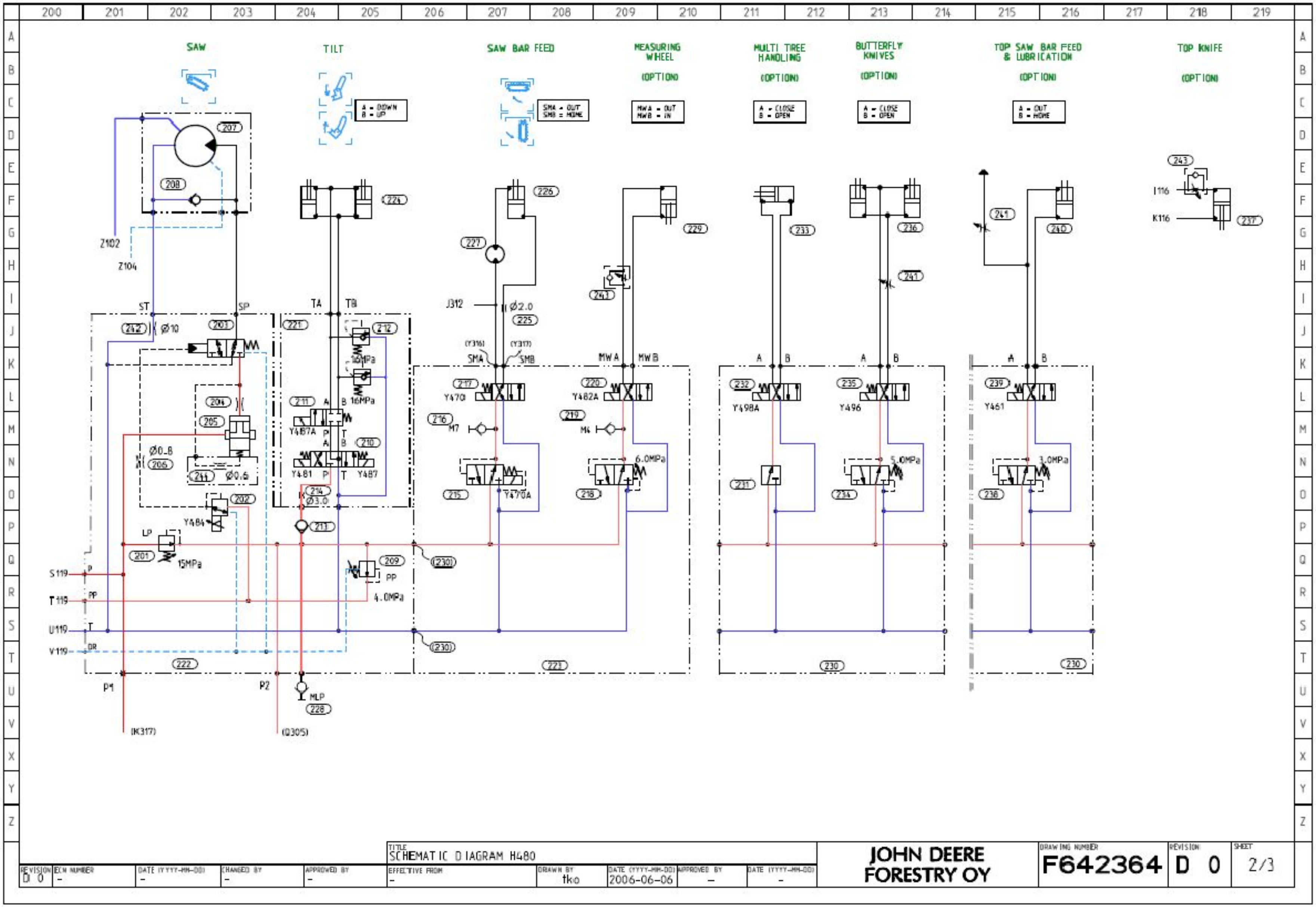


waratah om
FORESTRY ATTACHMENTS

Hydraulic schematic EJH480 #568…

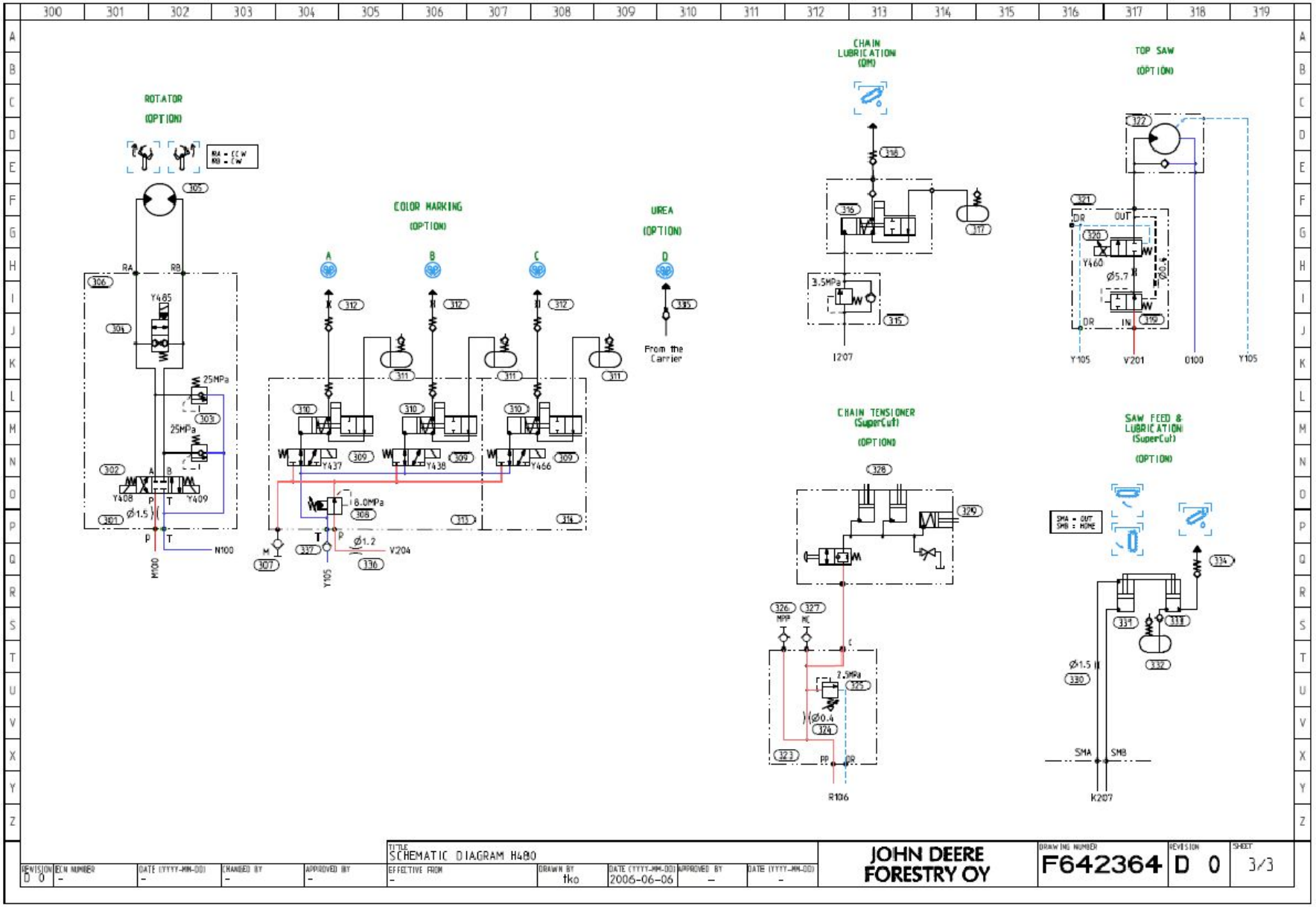


Hydraulic schematic EJH480 #568…

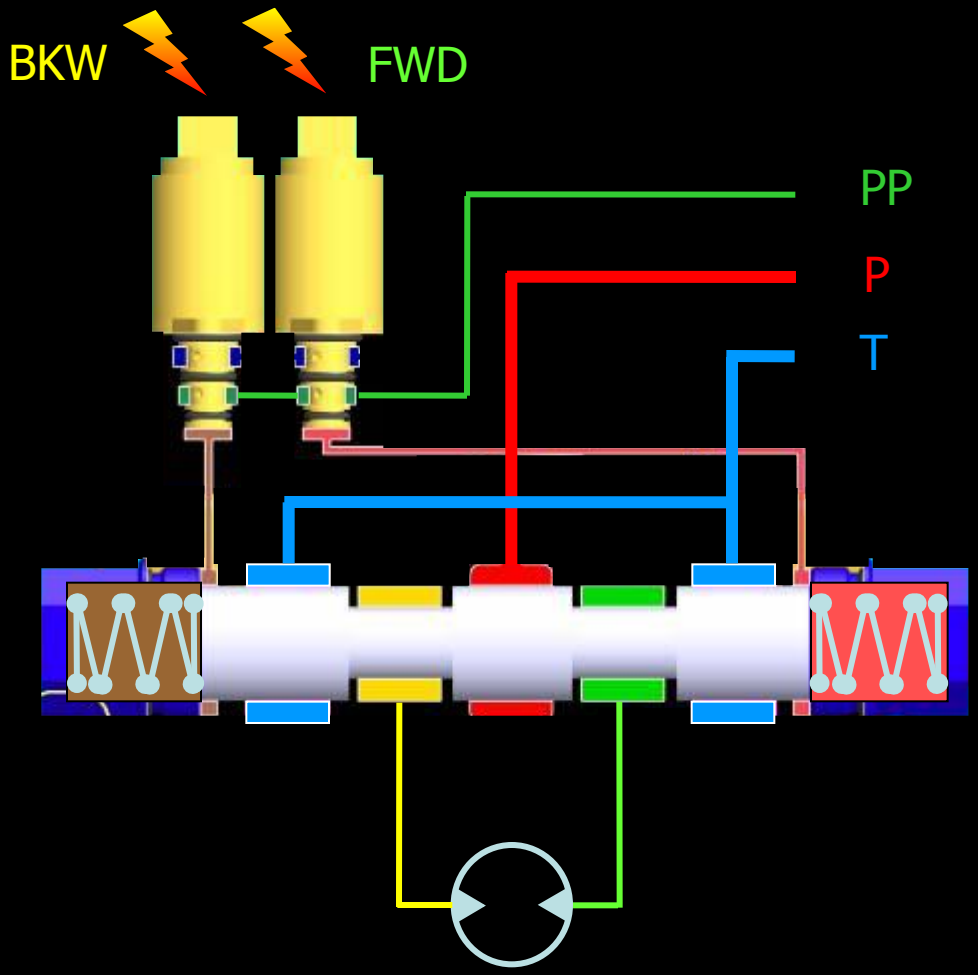


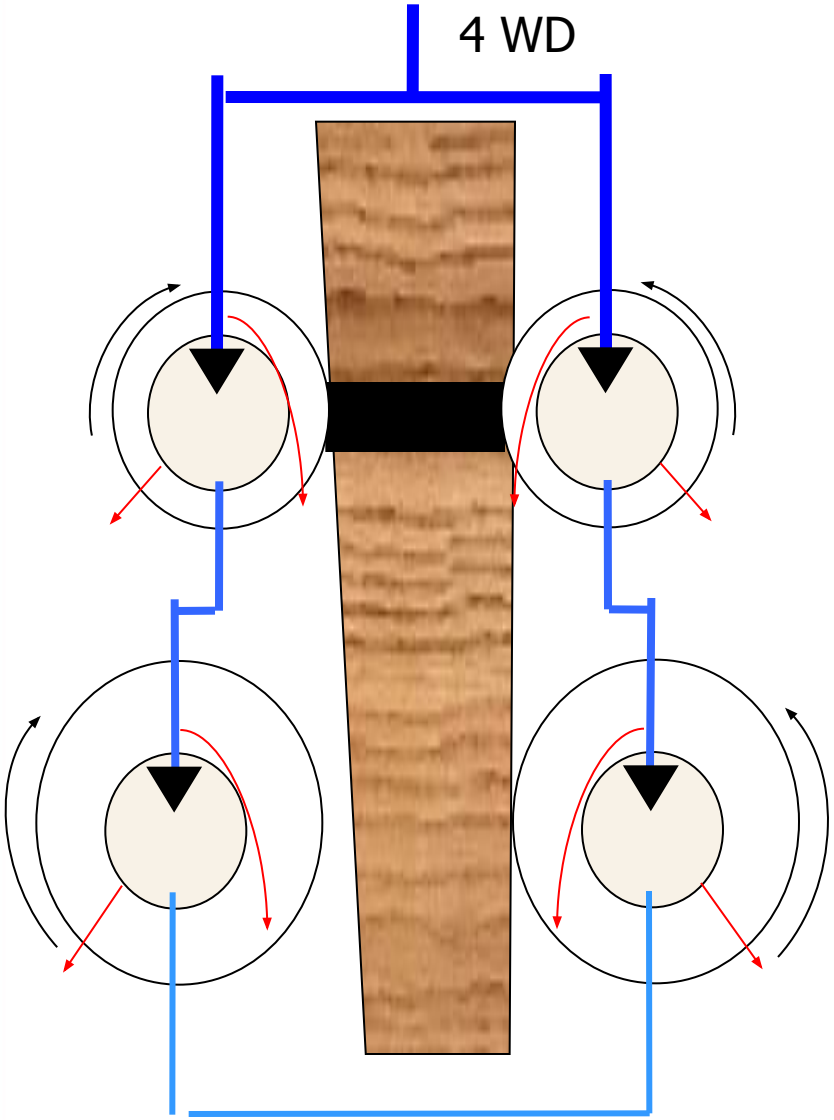
waratah om
FORESTRY ATTACHMENTS

Hydraulic schematic EJH480 #568…



Feeding Schematics




4 WD

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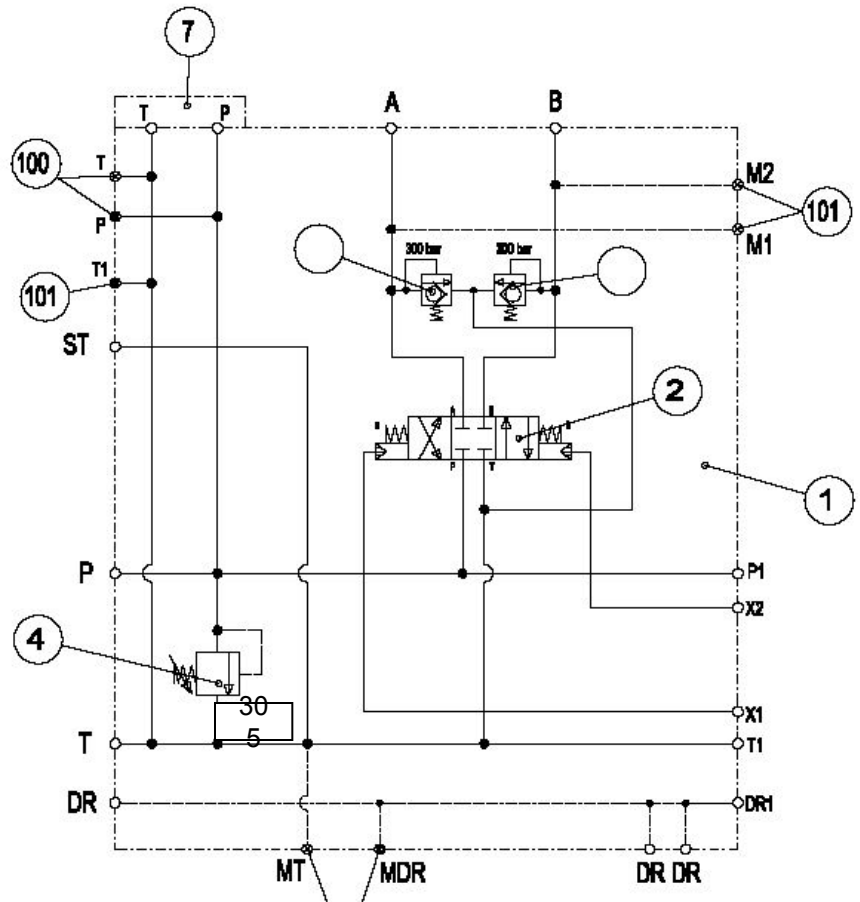
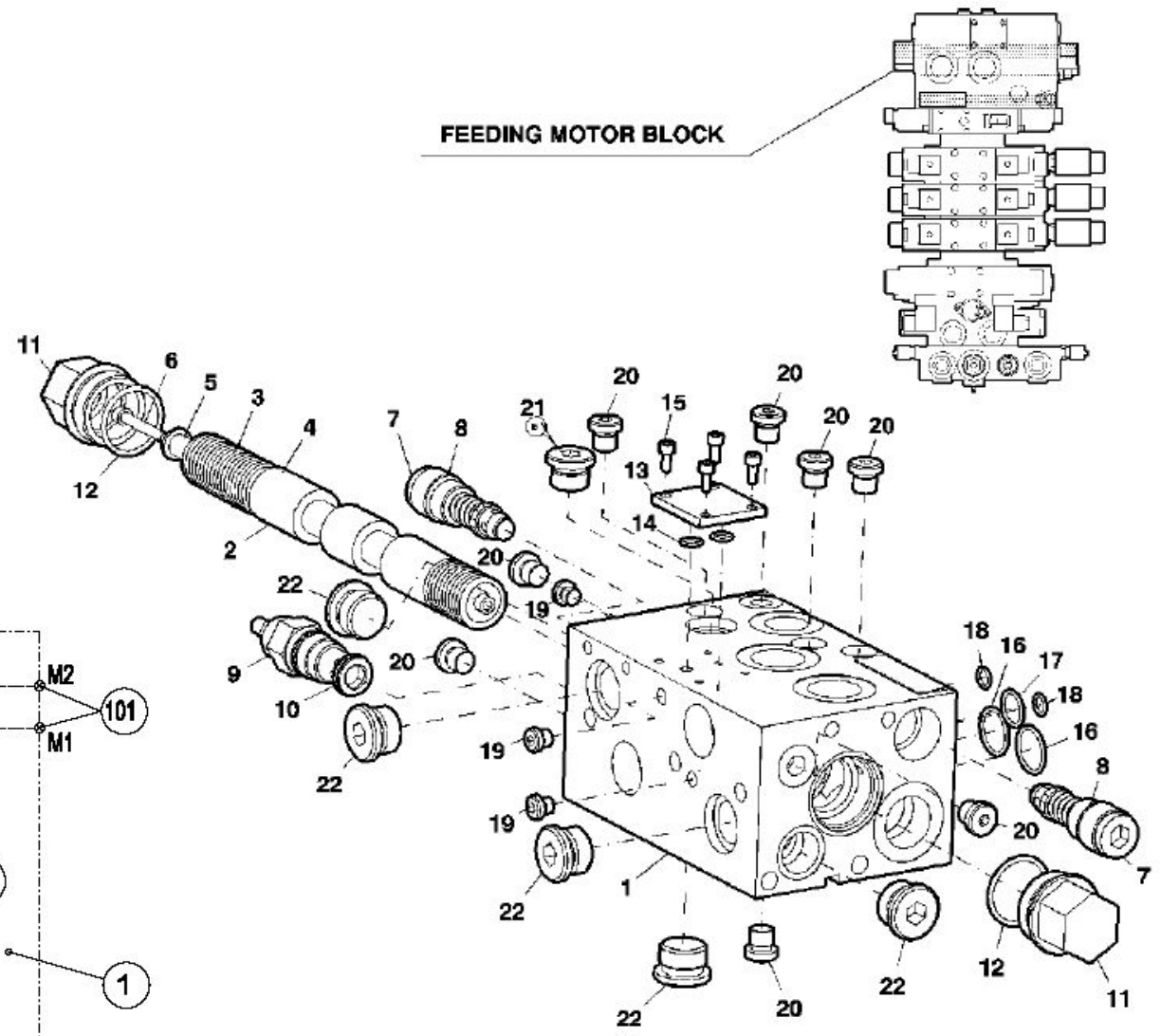
FORESTRY ATTACHMENTS

Main valve

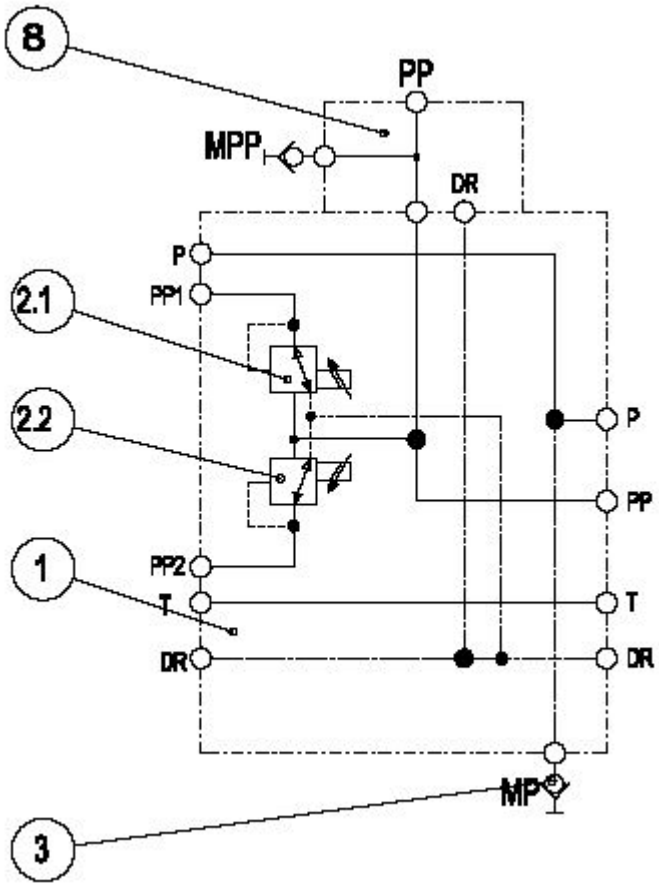
Feeding motor block

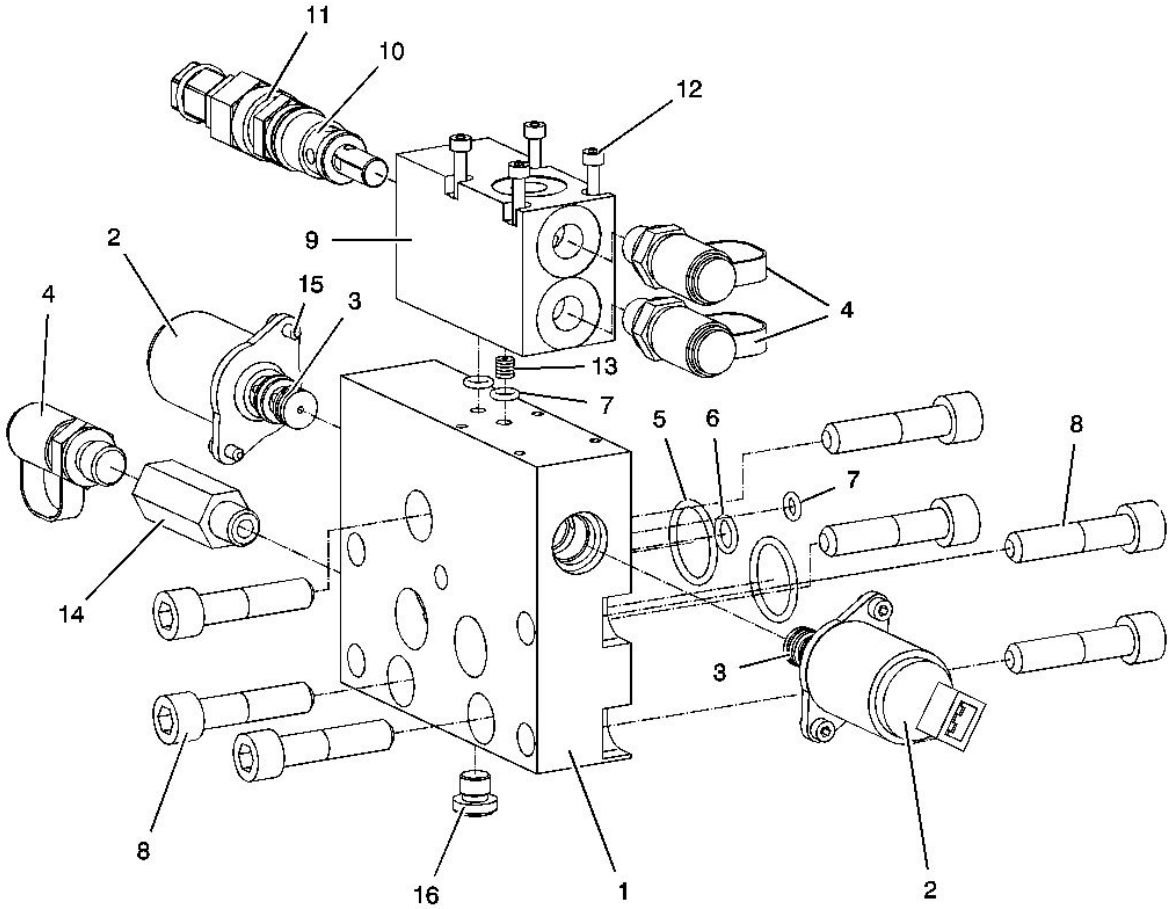




Main valve

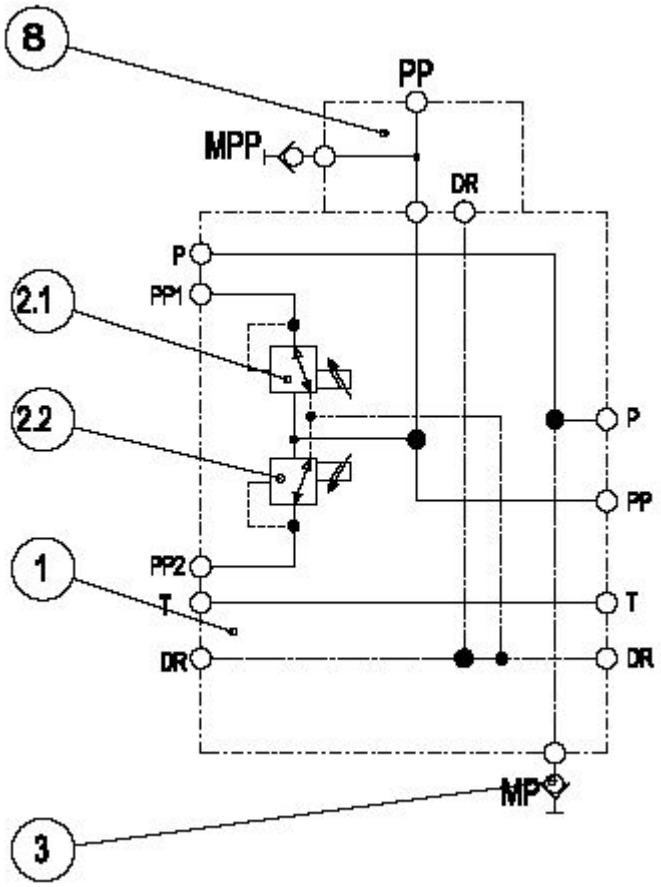
Feeding pilot valves
Sc chain tensioning

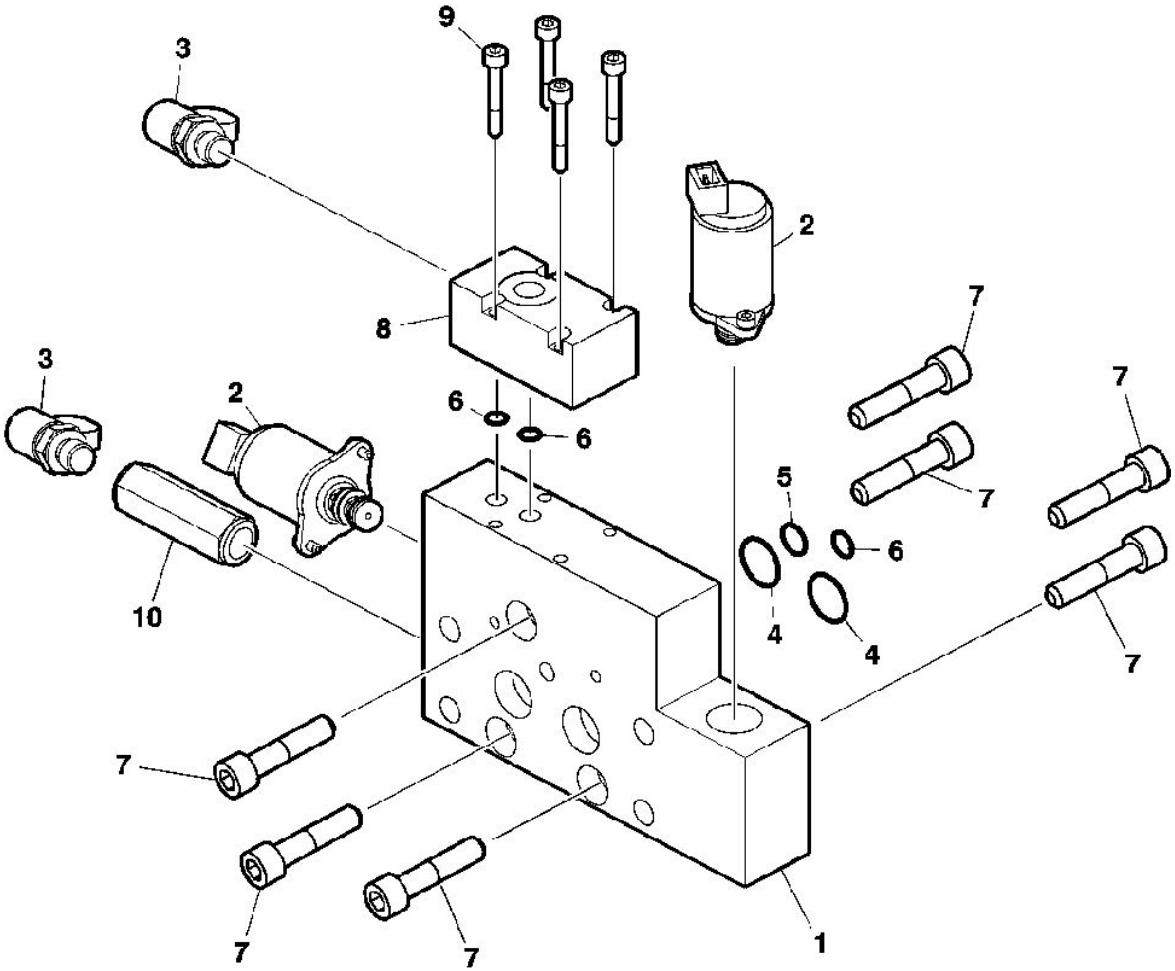




Main valve

Feeding pilot valves
Sc chain tensioning
New block, vertical assembly

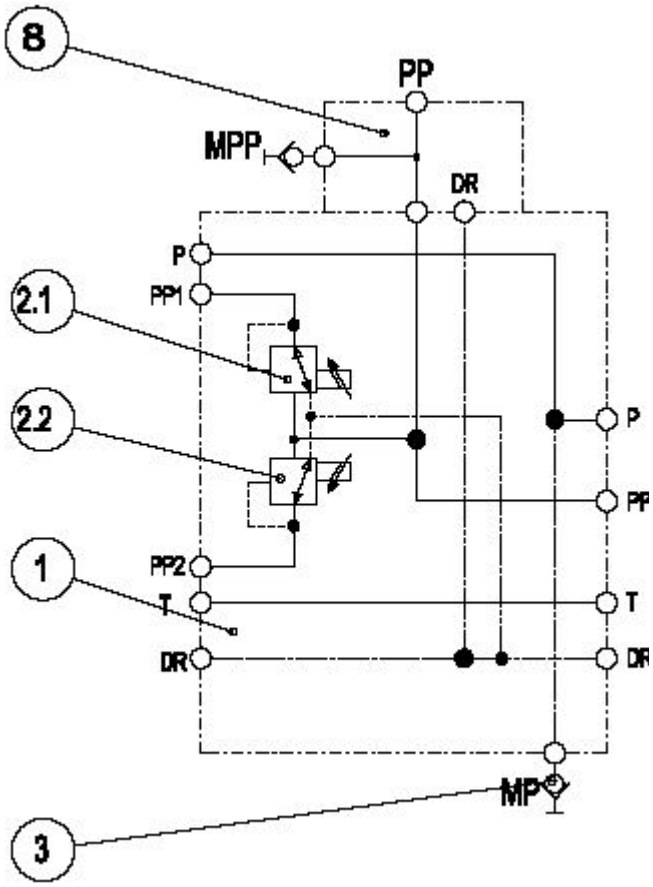


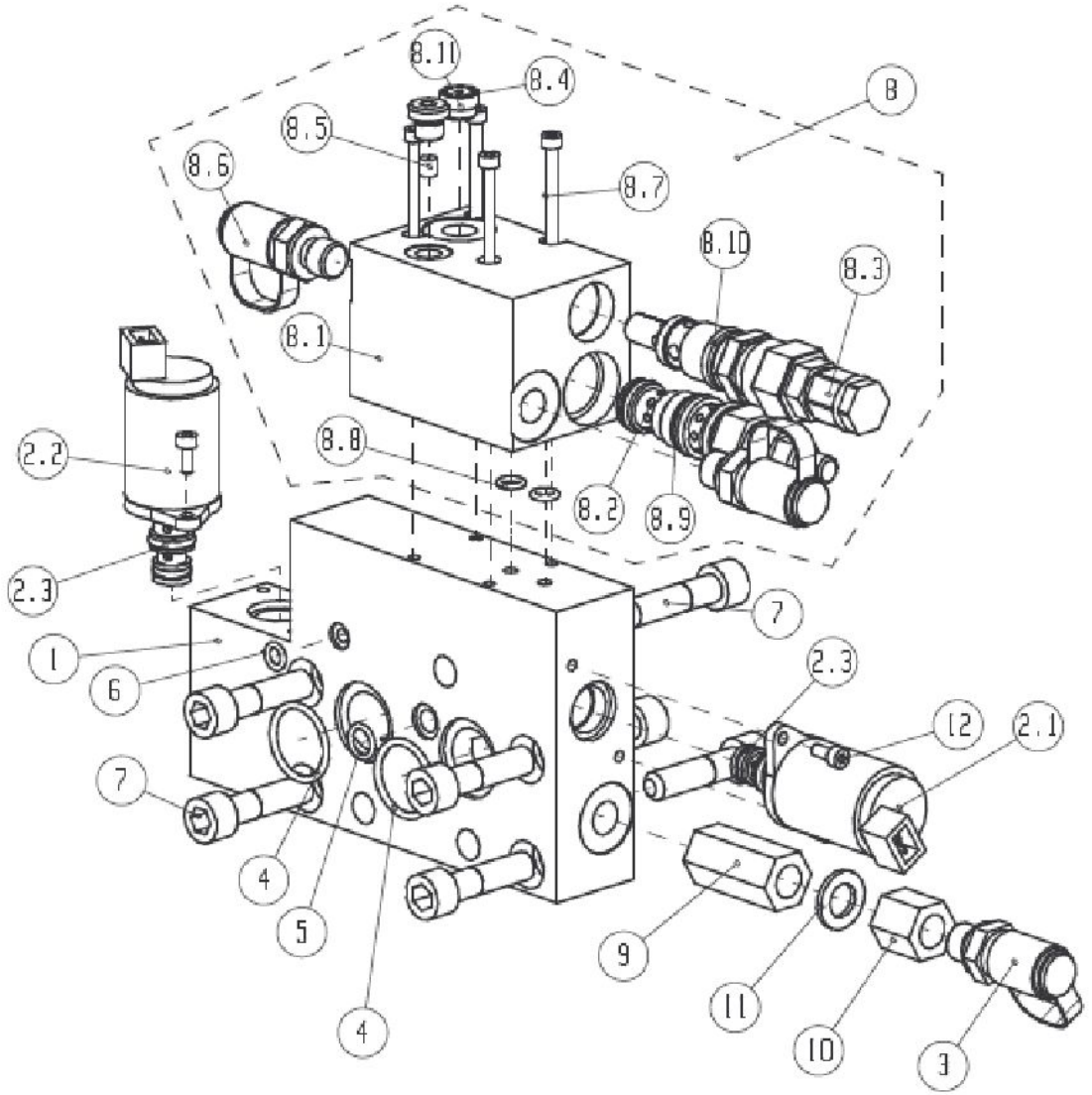


WJTF3746

Main valve

Feeding pilot valves
Sc chain tensioning
New block, vertical assembly





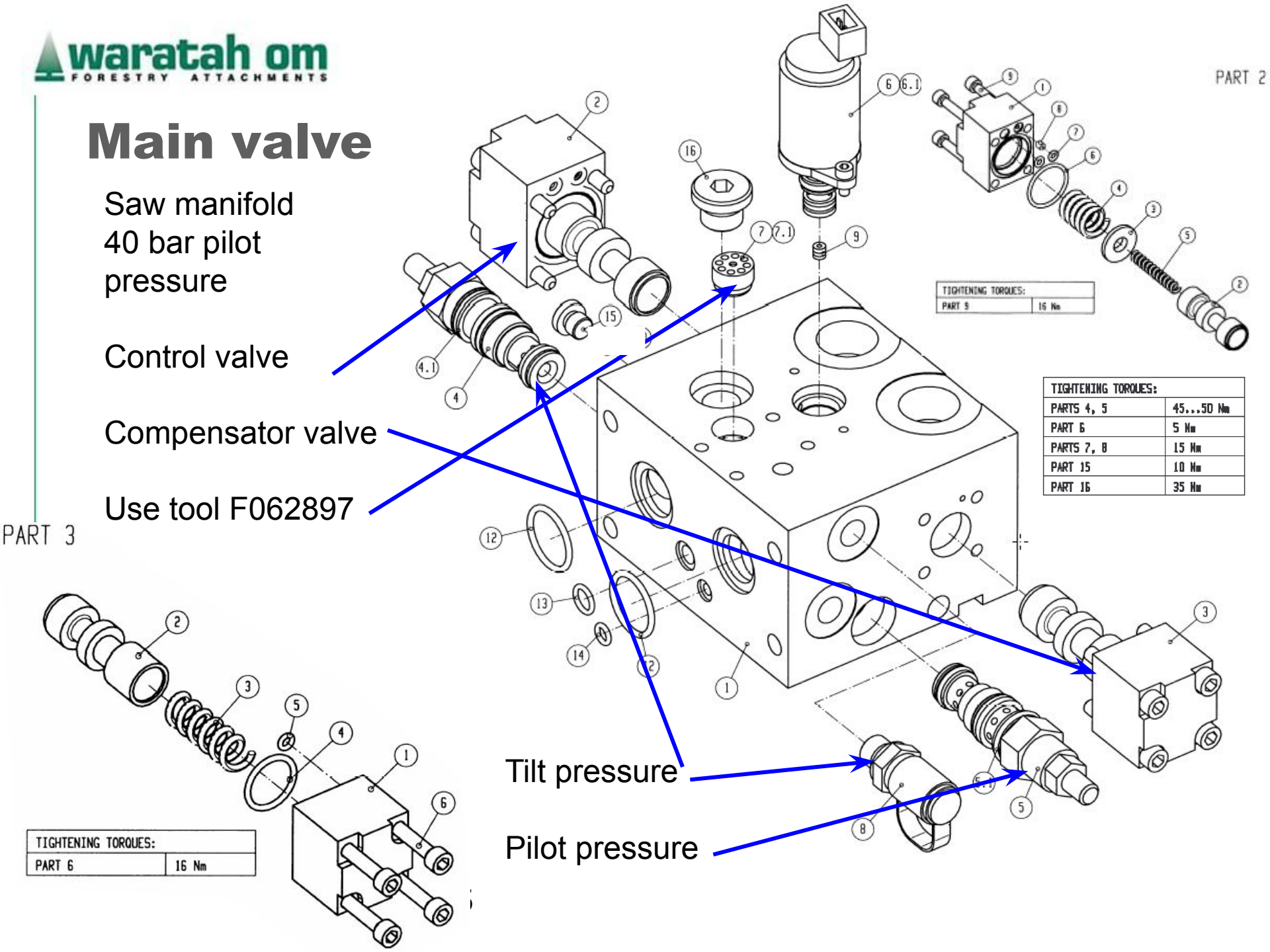
Main valve

Saw manifold
40 bar pilot
pressure

Control valve

Compensator valve

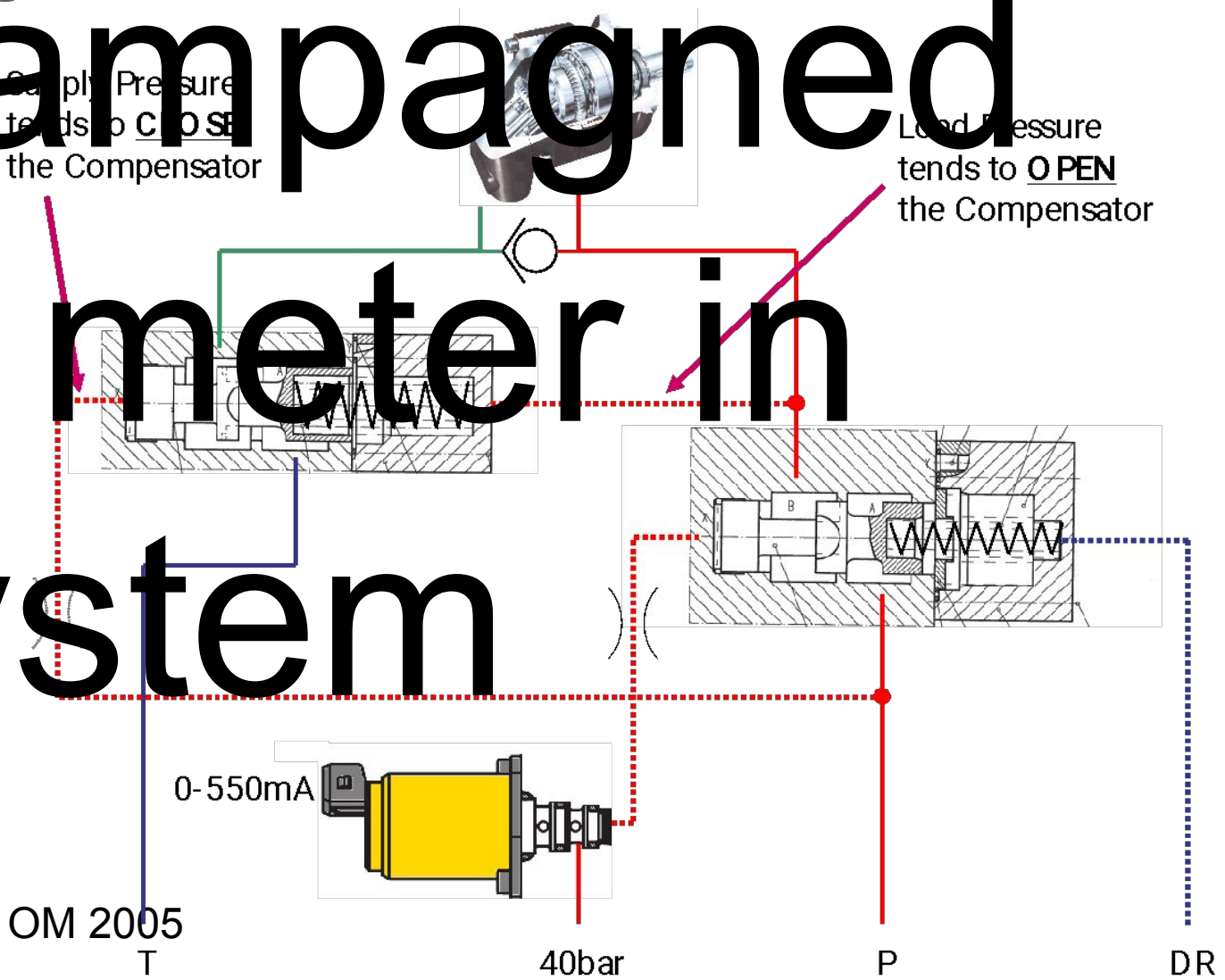
Use tool F062897



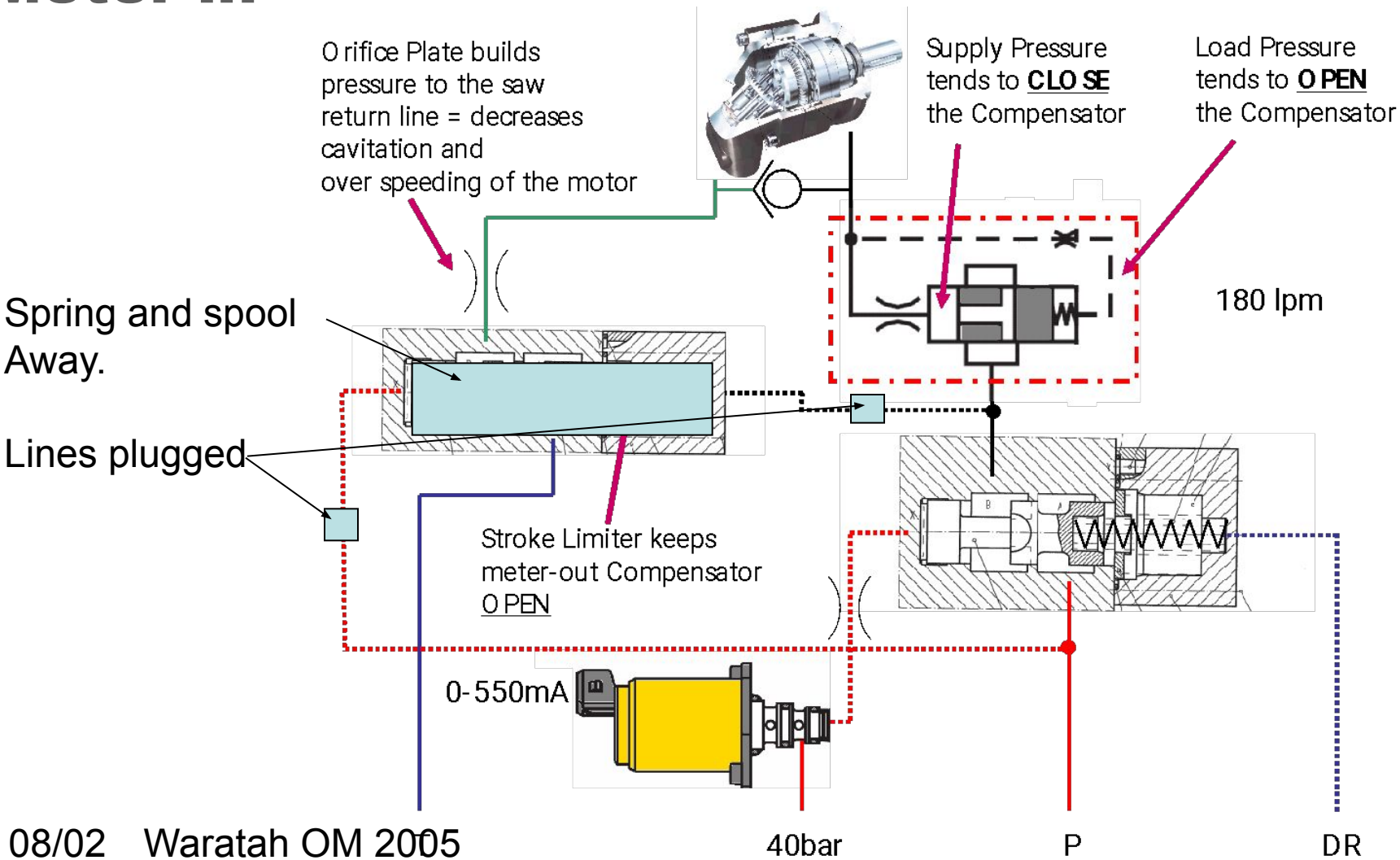
Main valve, Saw, meter out

Meter out
…EJH480x00000203 old spool
…EJH480x00000245 new spool
Meter in
…EJH480x00000348 external compensator, old spool
EJH480x00000349… external compensator, new spool

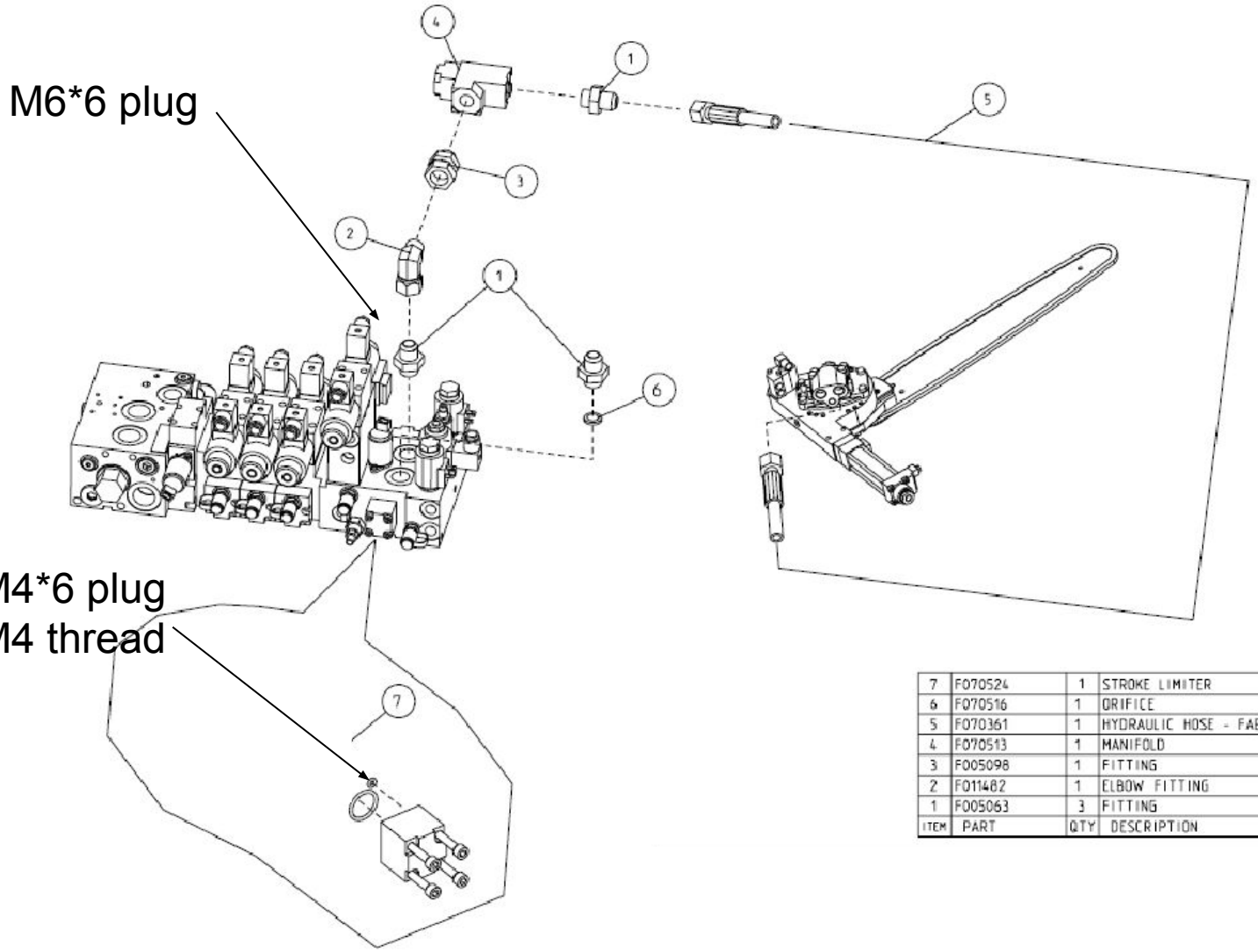
Campaigned to meter in system



Main valve, Saw, Meter in

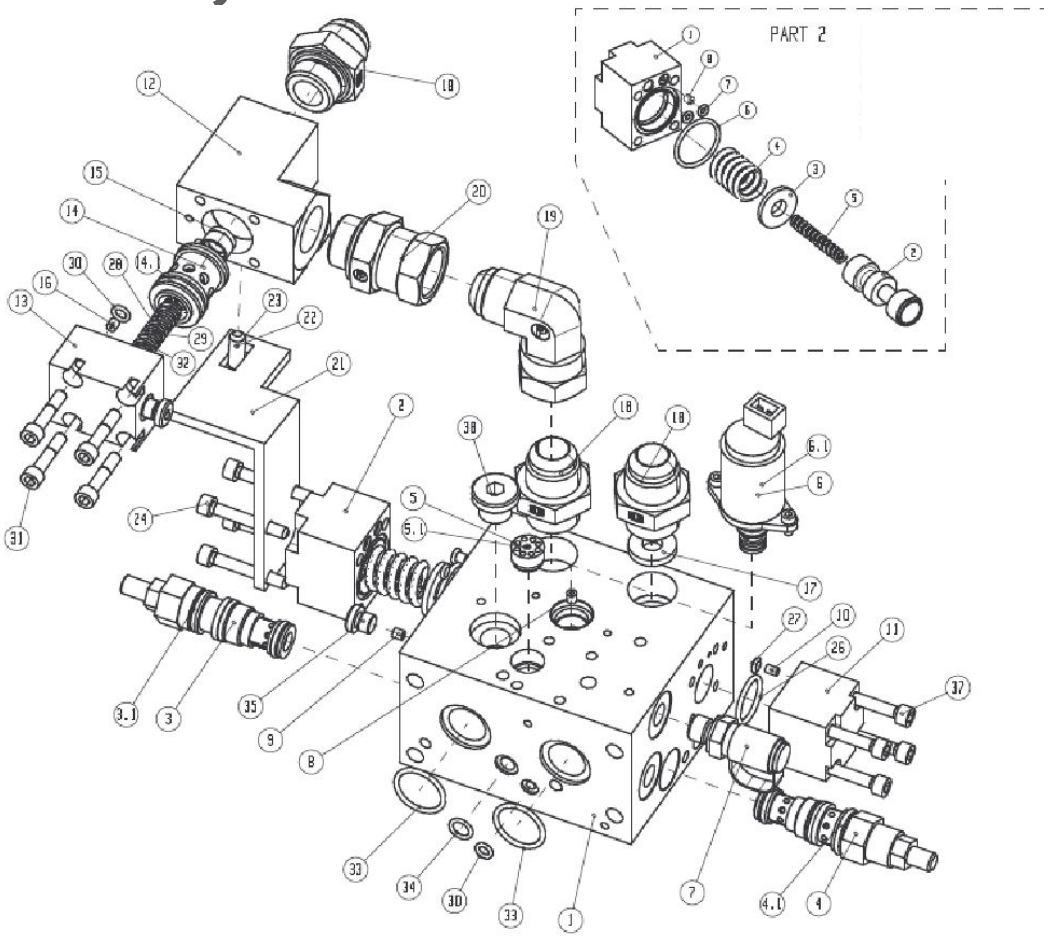


Saw valve, Meter in



ITEM	PART	QTY	DESCRIPTION
7	F070524	1	STROKE LIMITER
6	F070516	1	ORIFICE
5	F070361	1	HYDRAULIC HOSE - FABRICATE
4	F070513	1	MANIFOLD
3	F005098	1	FITTING
2	F011482	1	ELBOW FITTING
1	F005063	3	FITTING

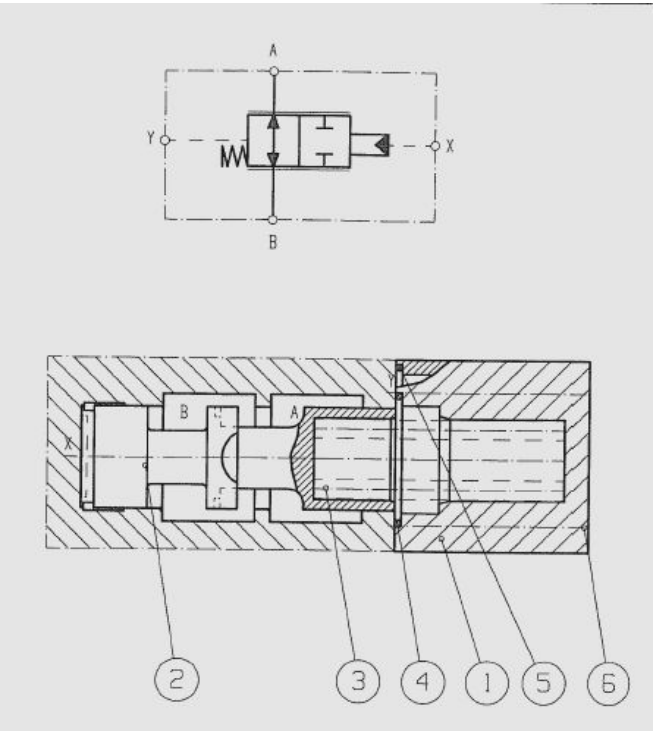
Saw valve, Meter in

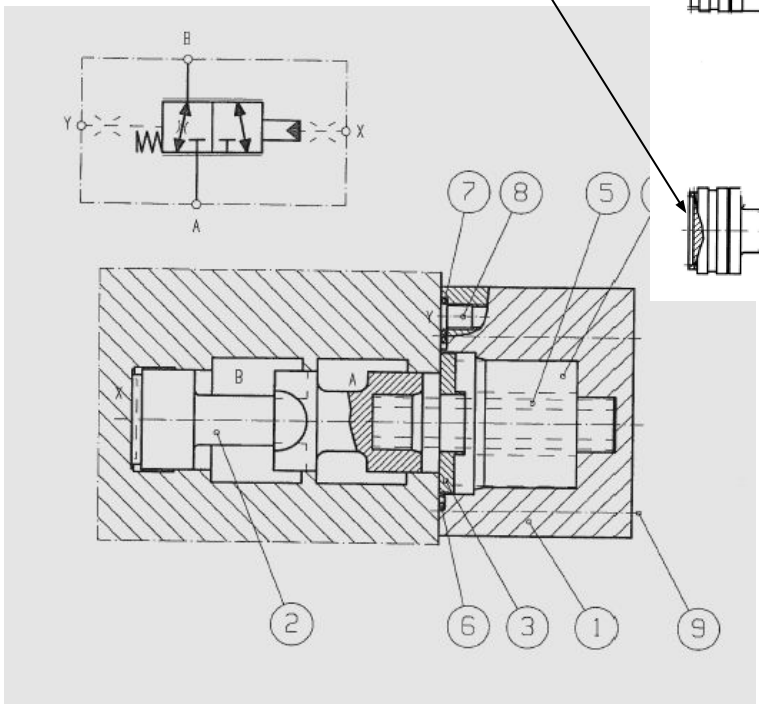


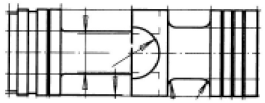
Saw valve

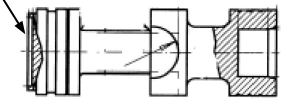
Saw manifold

Saw compensator , EJH480X000204… Saw control valve (Campaigned away) if saw rotation doas not stop, change spool (410685 Lokomec)









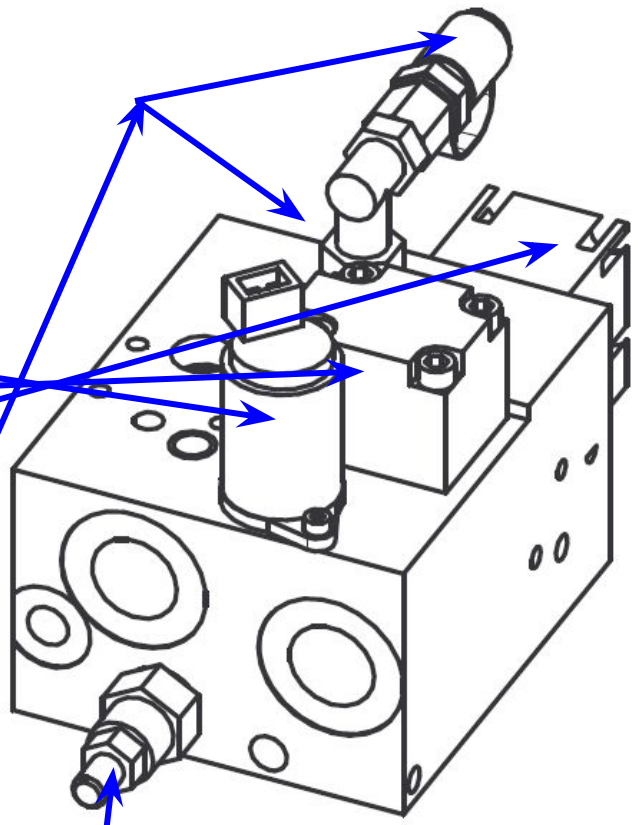
Saw valve

Saw manifold
40 bar pilot
pressure

Control valve

Compensator valve

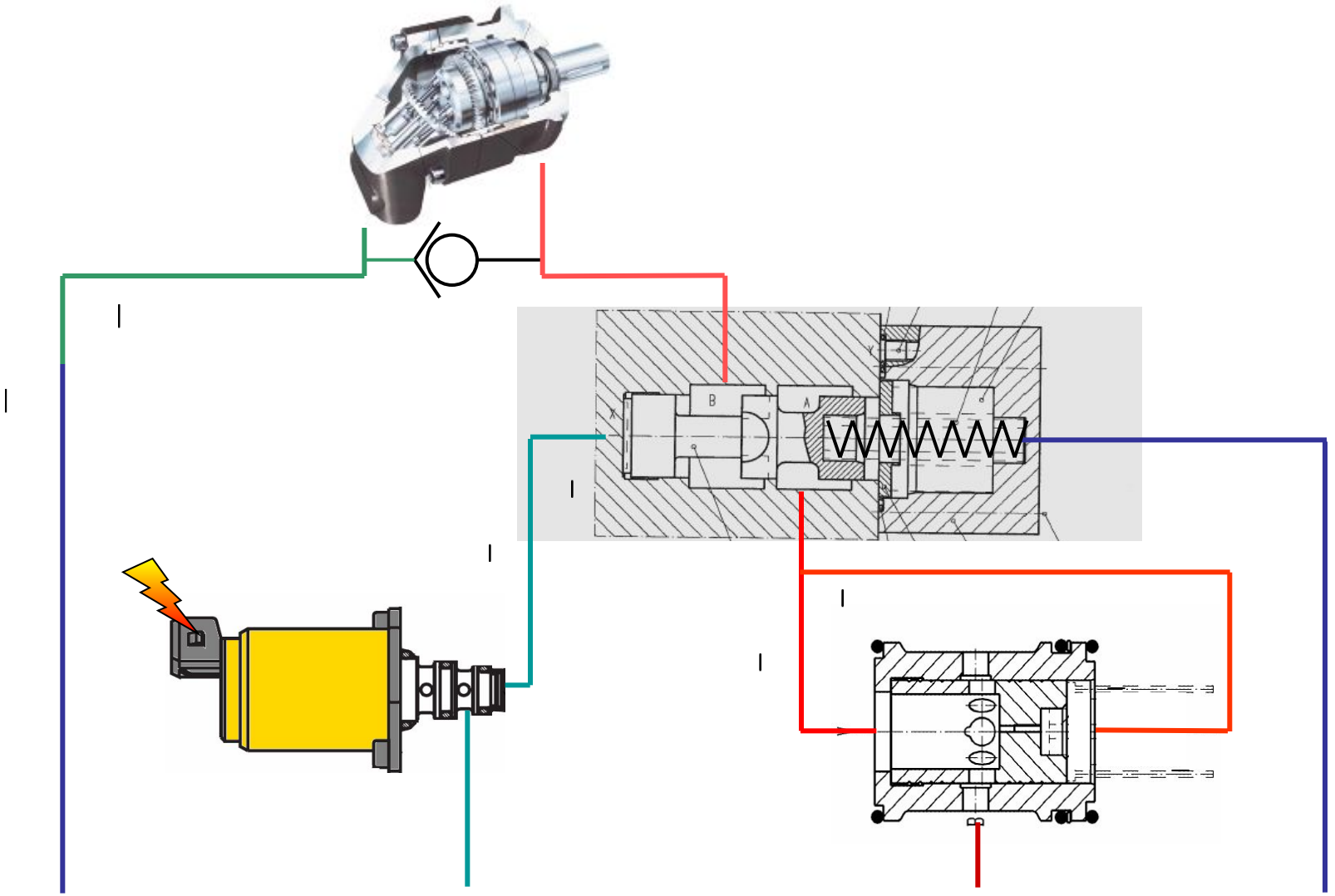
EJH480 #568…
EJH270E000616…
EJH290X000034



Tilt pressure

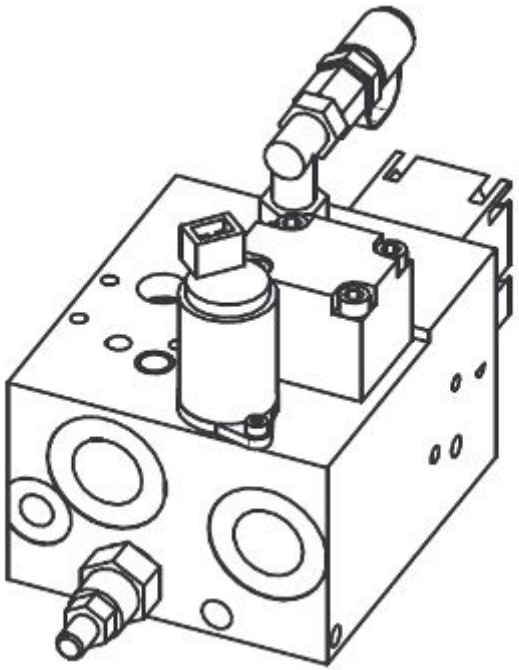
Pilot pressure

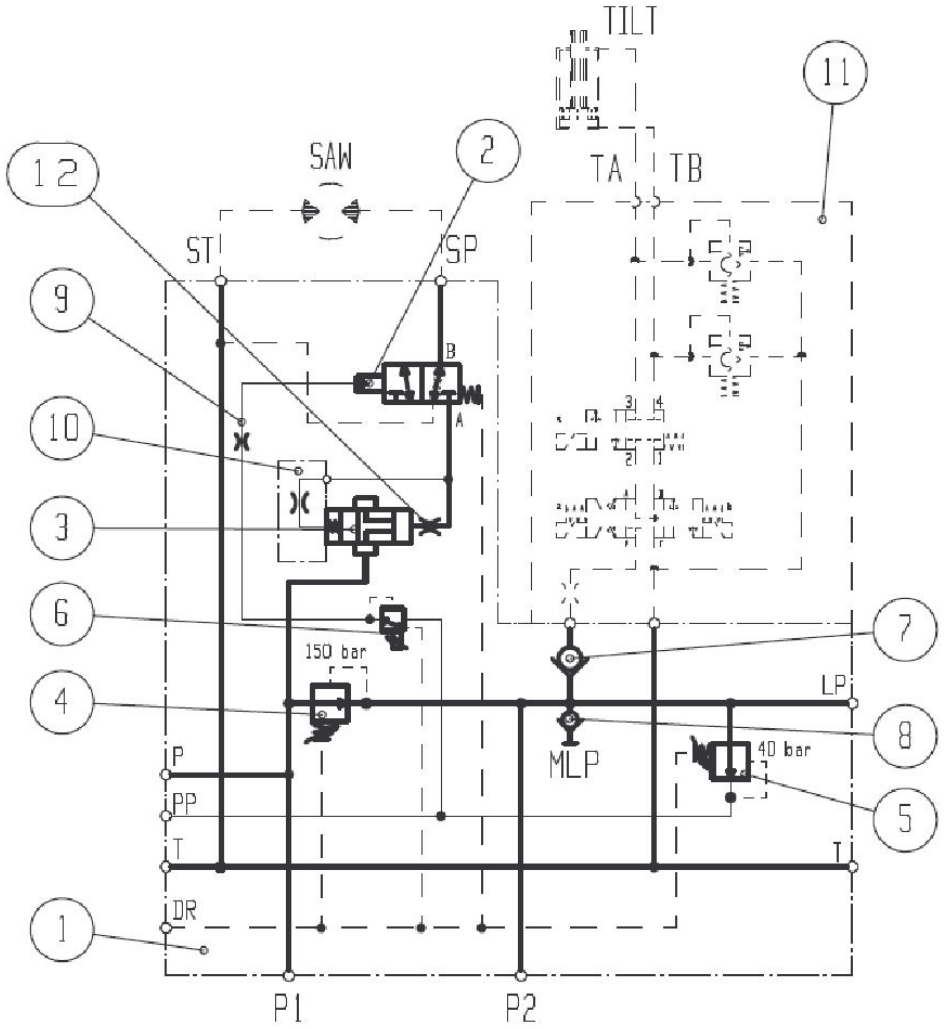
Saw Rotation Schematics



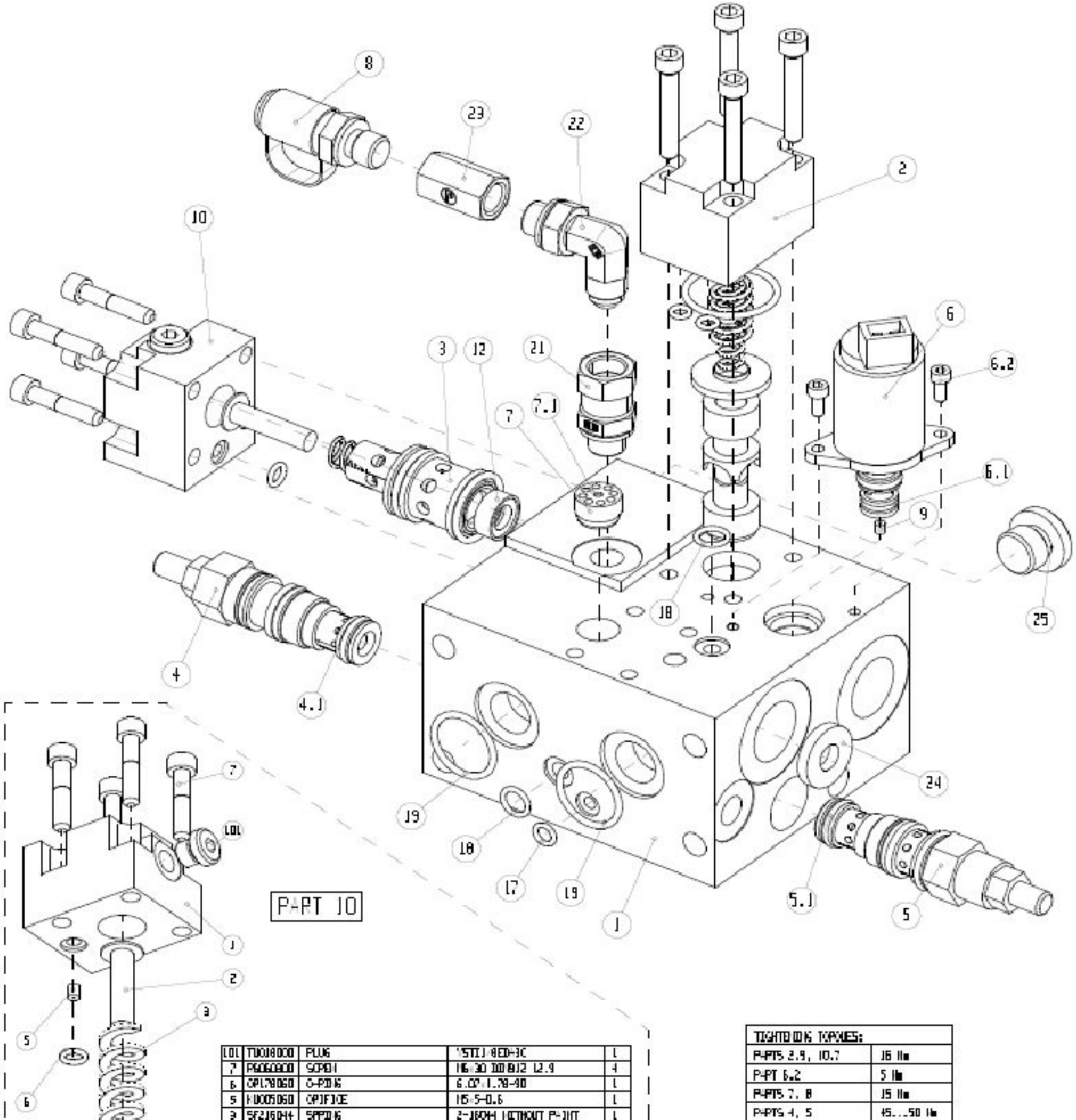
Saw valve,

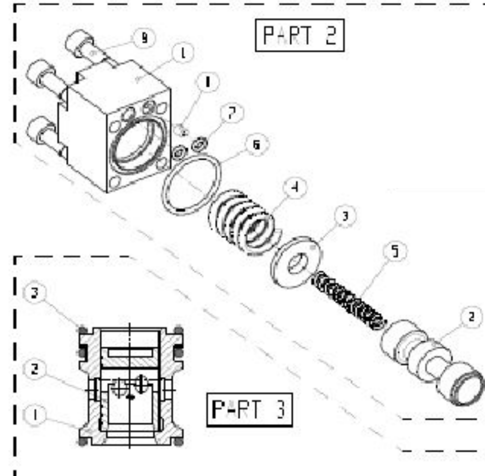
EJH480 #568…
EJH270E000616…
EJH290X000034





Saw valve,



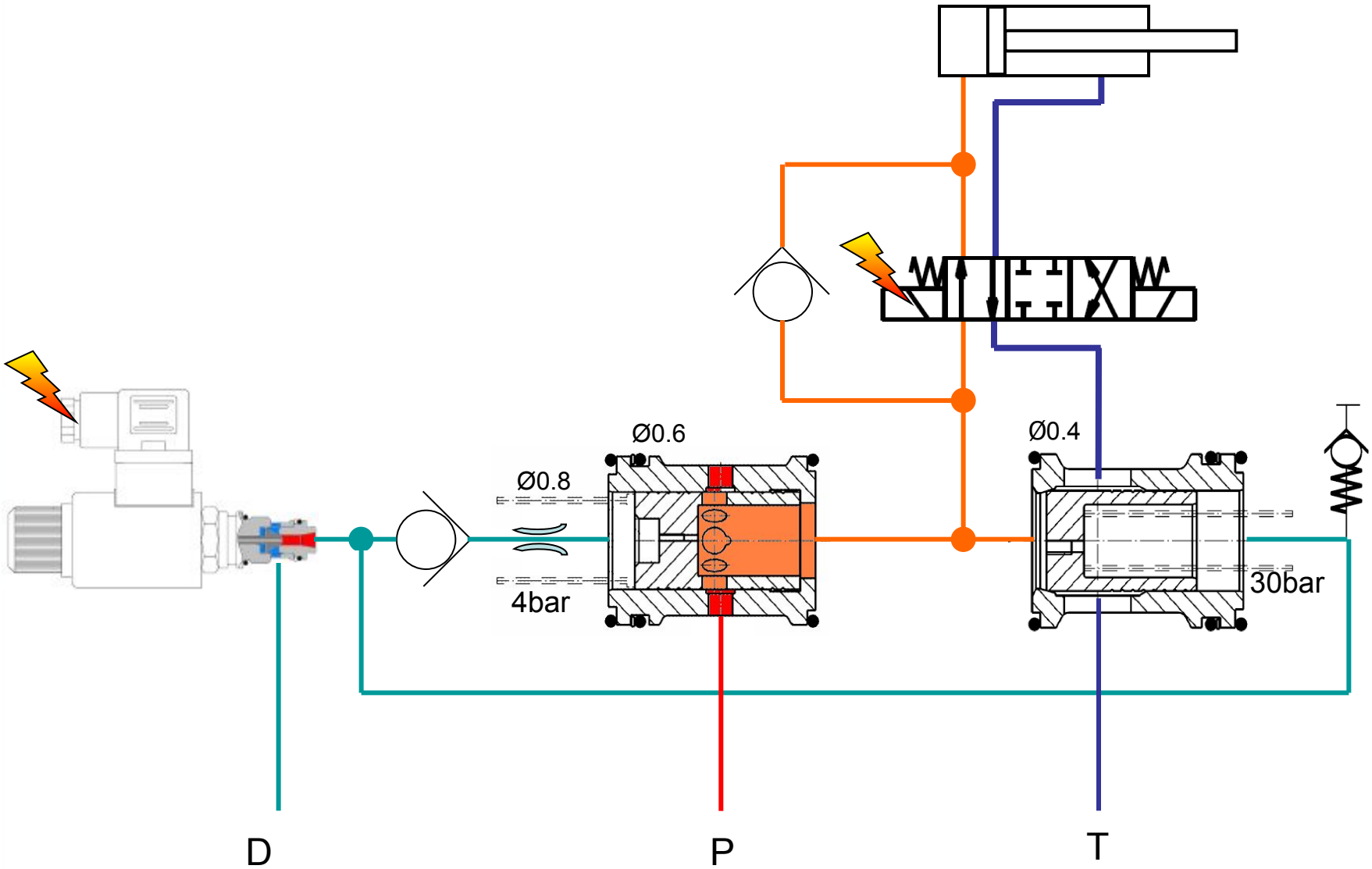


3	T9CEL150	SEAL KIT	SEAL KIT FOR CELLS	1
2	41055200	SPOOL CELLS	PARKER LOKONEC 410 552	1
1	41057400	SLEEVE CHEIS	PARKER LOKONEC 410 574	1

101	TU018000	PLUG	VSTI 1/8 ED-3C	1
7	P6060800	SCREW	M6x30 DIN 912 12.9	4
6	OP178060	O-RING	6.07x1.78-90	1
5	KU005060	ORIFICE	M5x5-0.6	1
3	SF216044	SPRING	2-16044 WITHOUT PAINT	1
2	41053800	STROKE LIMITER	PARKER LOKONEC 410 538	1
1	41053700	COVER	PARKER LOKONEC 410 537	1

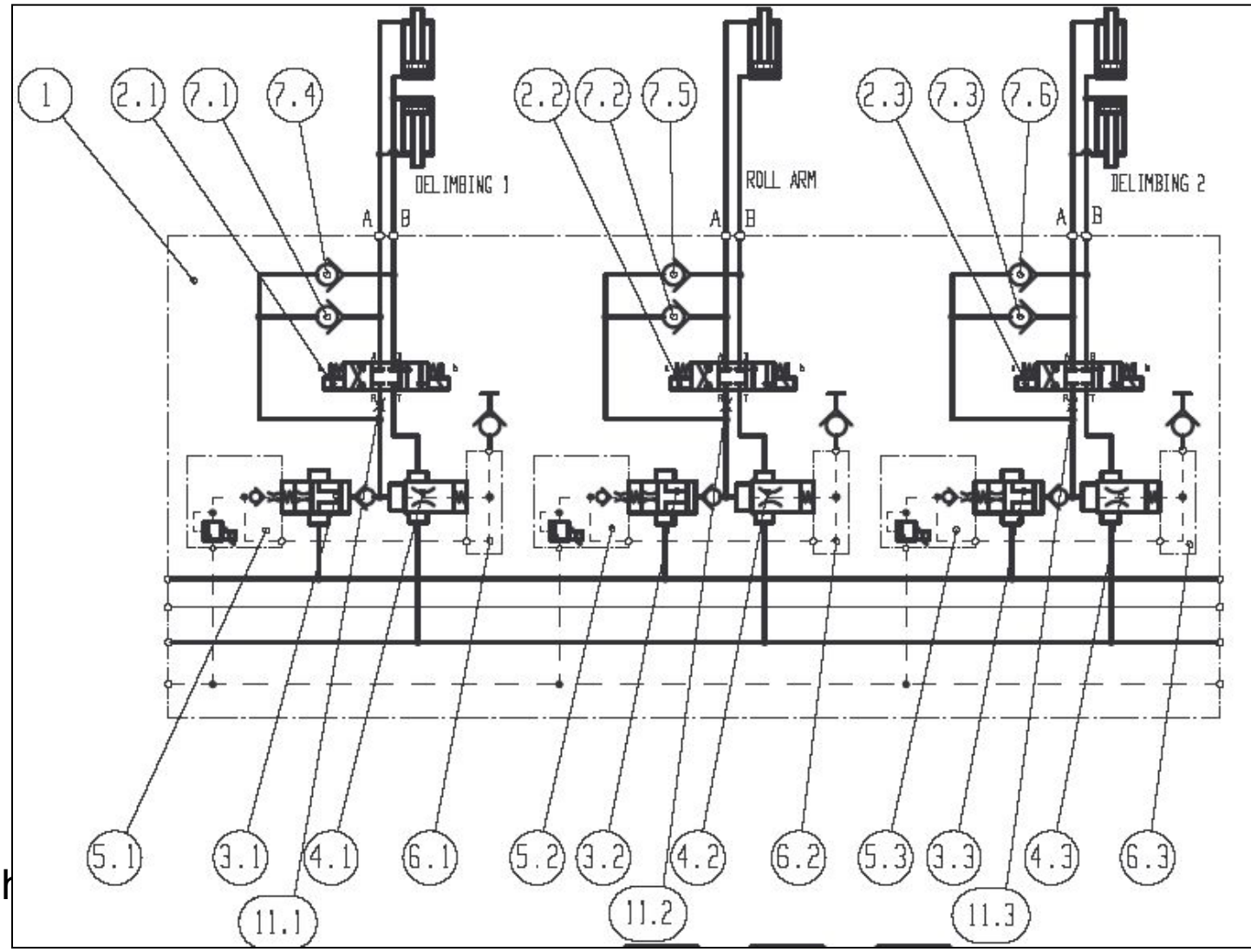
TIGHTENING TORQUES:	
PARTS 2.9, 10.7	16 Nm
PART 6.2	5 Nm
PARTS 7, 8	15 Nm
PARTS 4, 5	45...50 Nm

Grabbing Schematics



Main valve

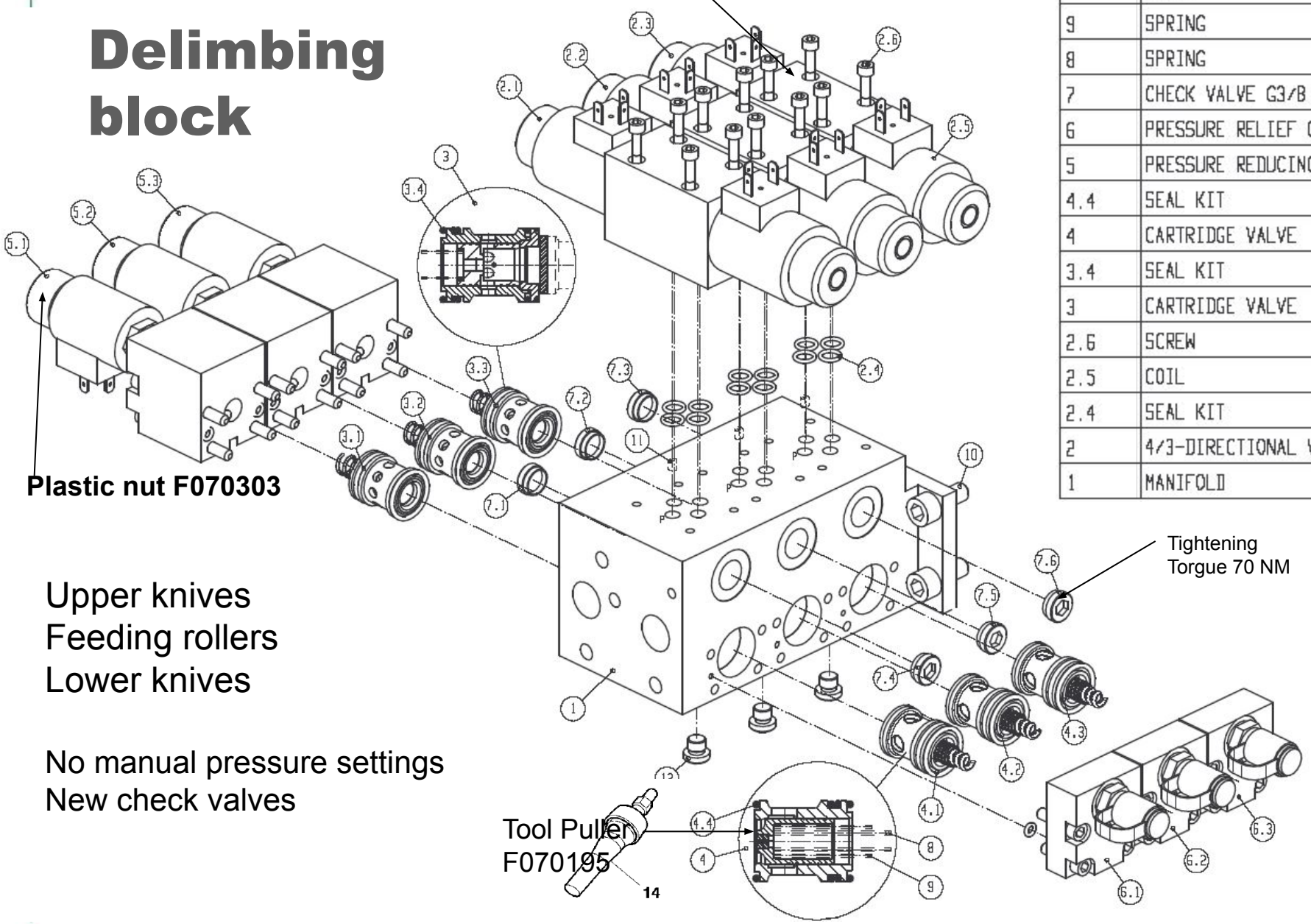
Upper knives
Feeding rollers
Lower knives



Delimbing block

New type of valve changed from…

12	PLUG
11	PLACE FOR ORIFICE
10	SCREW
9	SPRING
8	SPRING
7	CHECK VALVE G3/8
6	PRESSURE RELIEF COVER
5	PRESSURE REDUCING COVER
4.4	SEAL KIT
4	CARTRIDGE VALVE
3.4	SEAL KIT
3	CARTRIDGE VALVE
2.6	SCREW
2.5	COIL
2.4	SEAL KIT
2	4/3-DIRECTIONAL VALVE
1	MANIFOLD



Upper knives
Feeding rollers
Lower knives

No manual pressure settings
New check valves

/2023

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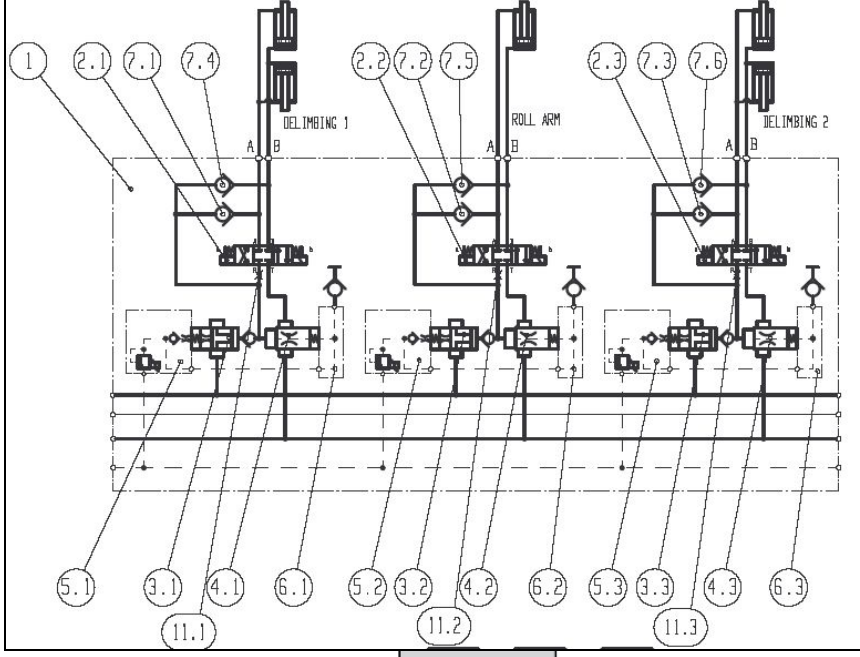
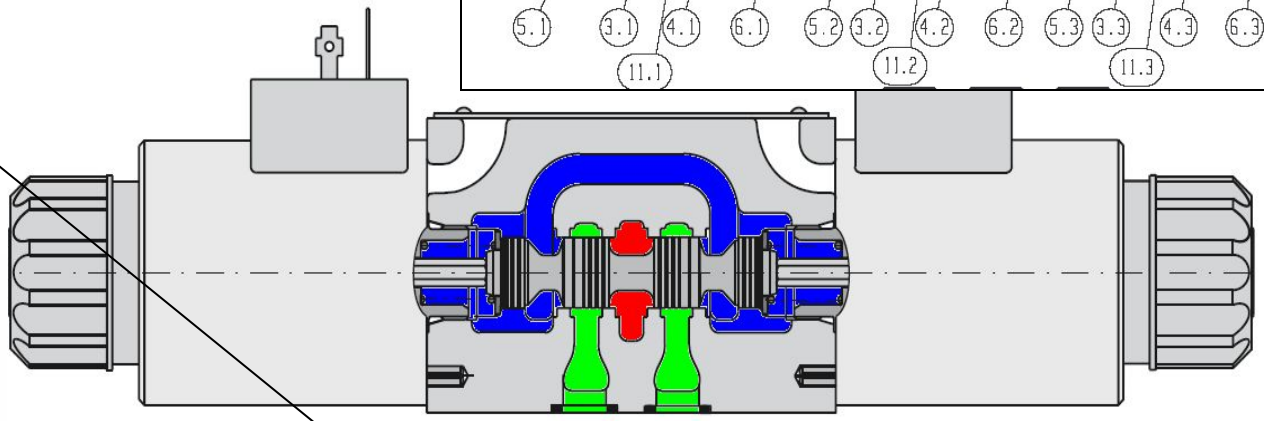
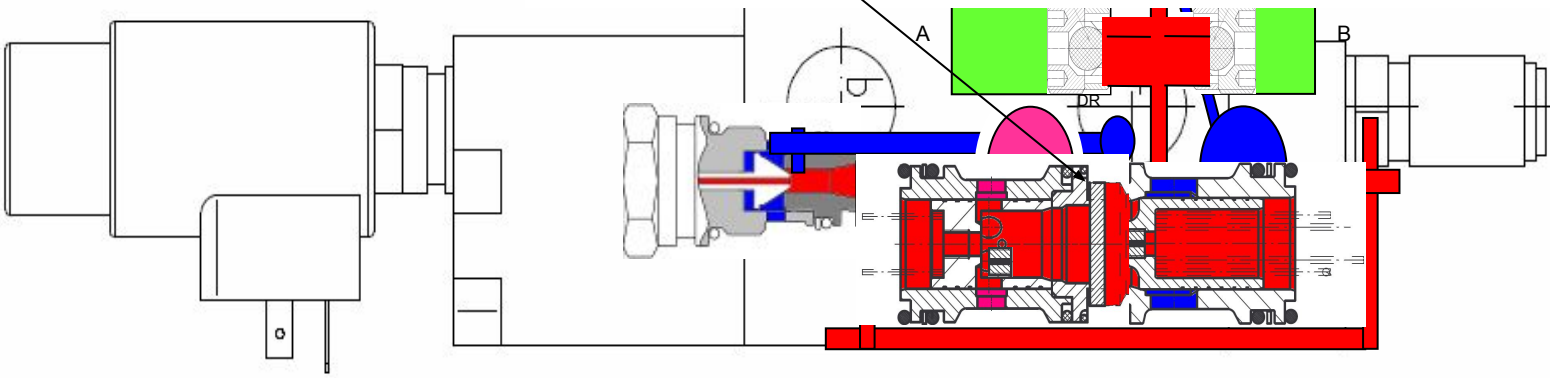
FORESTRY ATTACHMENTS



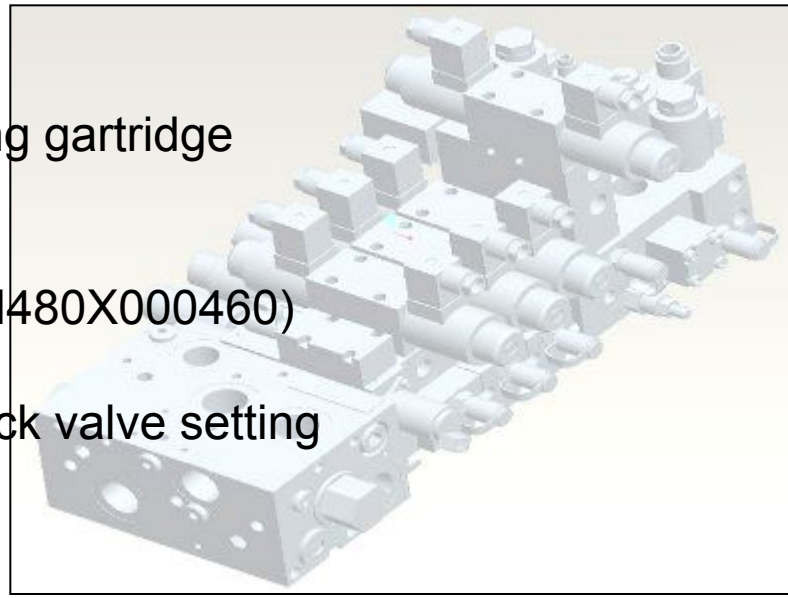
O-ring

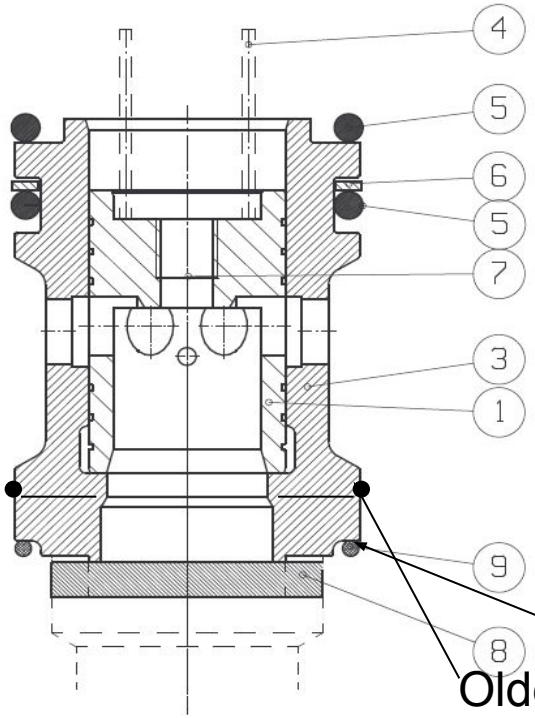


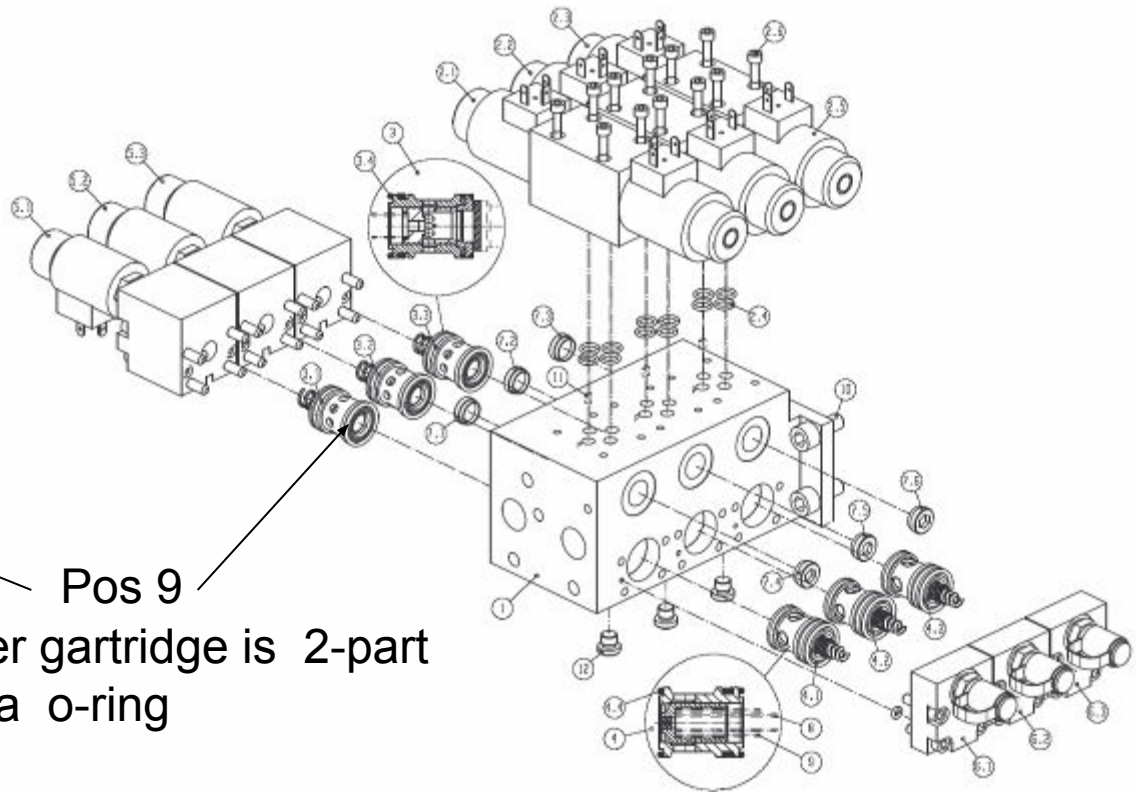


/2023

Seal has been changed for pressure reducing gartridge
Old O-ring was 70 shore
New Seal is F072722 square ring
ECN091829, (90 shore o-ring from head EJH480X000460)
CN092399 From head EJH480X000568…
If o-ring is broken, pressure increases to chock valve setting
, 30 bars up.







Pos 9
Older gartridge is 2-part
Extra o-ring

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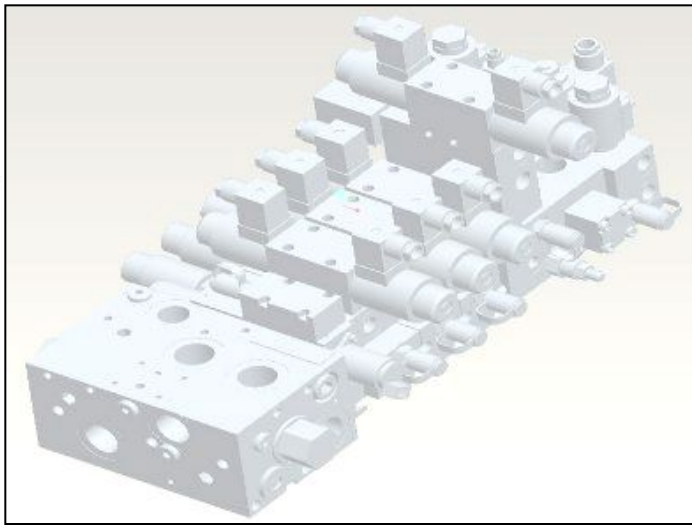
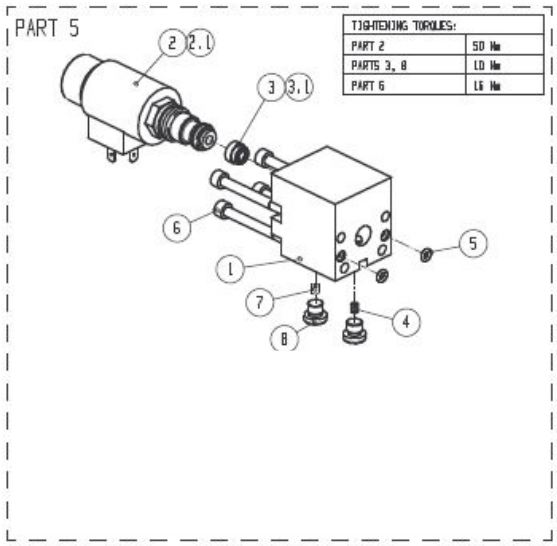
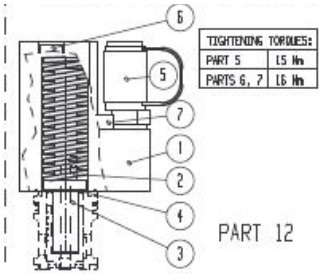
FORESTRY ATTACHMENTS

From xxx …
No check valves



Tightening
Torgue 70 NM

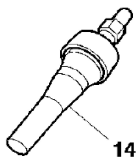




7	R6060950	SCREW	M6x35 DIN912 12.9	2
6	R6060650	SCREW	M6x65 DIN 912 12.9	2
5	N1210330	MEASURING CONNECTOR	EN43/L/4-EOBPCF	1
4	OPL78044	O-RING	4.47x1.78 -90	1
3	41064300	SPRING GUIDE	PARKER LOKOMEC 410 843	1
2	SF4210064	SPRING	4-21064 150 10243	1
1	31CP7900	PRESSURE RELIEF COVER	PARKER LOKOMEC 310 779	1

OSALUETTELO

Tool Puller
F070195

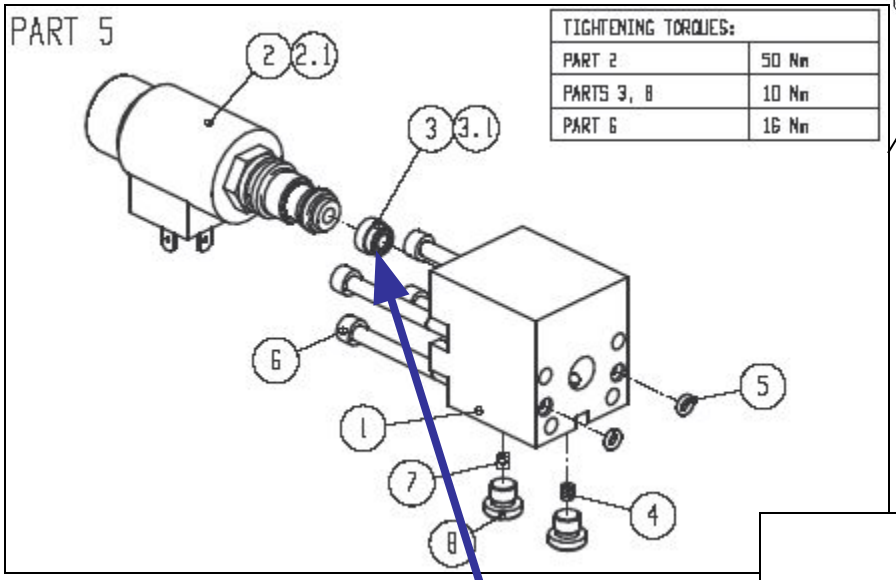


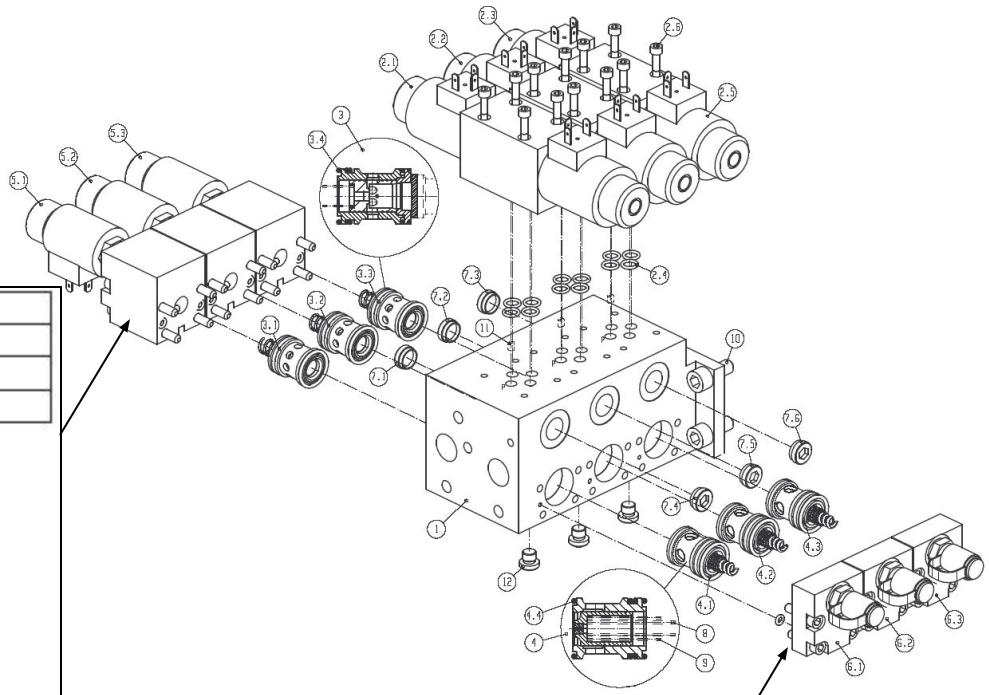
14

Mitkup. suhde / Orig. scale	1:1	Massa / Mass kg	Piirt§n. / Drawn 2008-04-28 KS
Mitat / Dimensions mm			Tarkast. / Checked
Toleranssit / Tolerances	General tolerances ISO 2768-mK		Hyväks. / Approved
Kork. / Angular	±0.5-6 / >6-30 / >30-120 / >120-400 / >400-1000		Koodi / Code 210827VO
Aukeava / Allowed	±0.1 / ±0.2 / ±0.3 / ±0.5 / ±0.8		

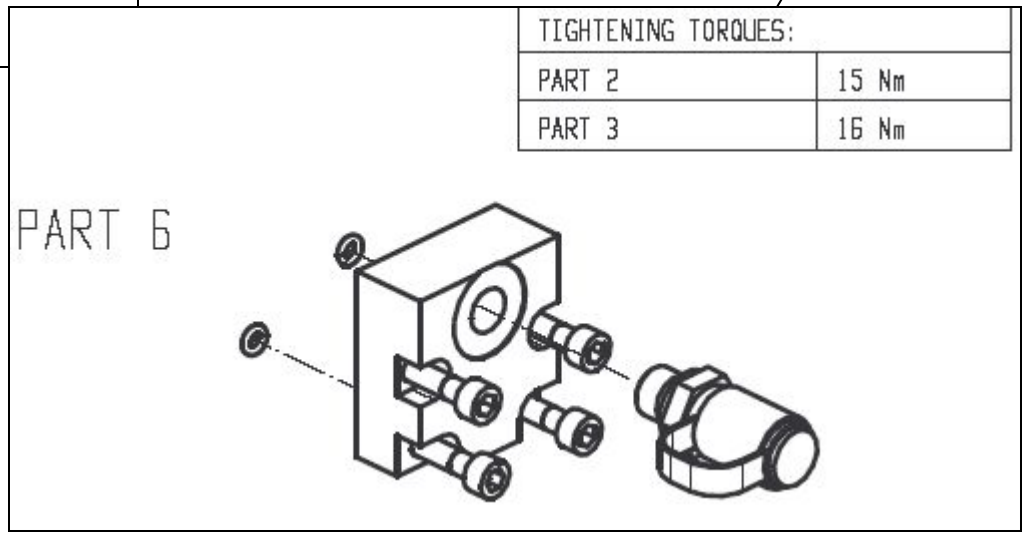
Nimitys / Title
SPARE PARTS
DELIMBING BLOCK

Delimbing block





Use tool F046592



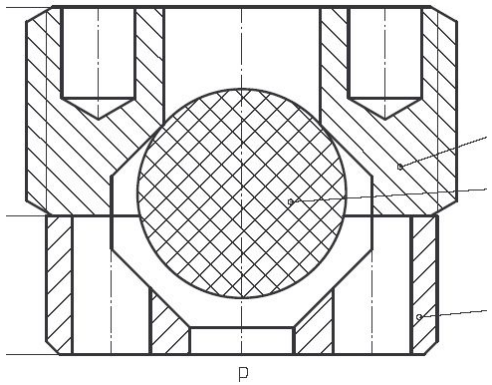
Main valve

Check valve

R3/8” thread

Tool:
F062897 (hawe RK2)

Tightening torgue
70 Nm

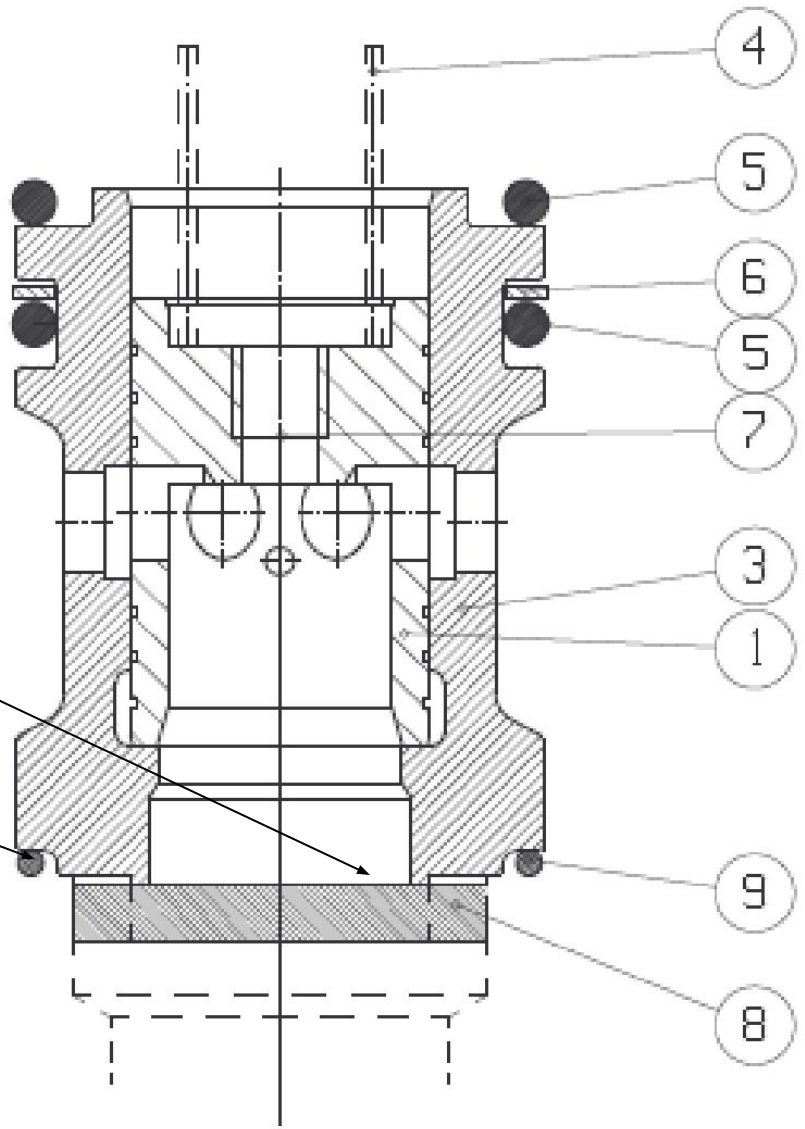


Main valve

Cartridge pos 6

Check valve
(polished side
this side)

O ring changed
F060759
25.12*1,78-90
Serials square seal
F 72722

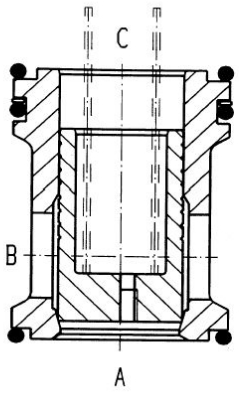


Cones and sleeves

CONES AND SLEEVES

Cone A

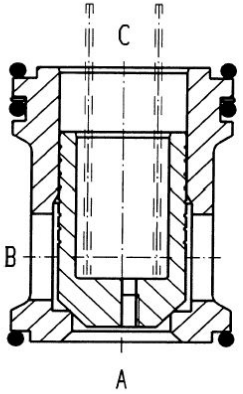
Pressure relief valves
Check valves
2/2-way valves (A ⇒ B)



Seat type
Area ratio 1:1

Cone B

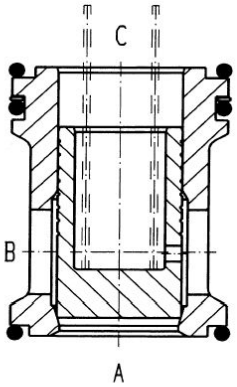
2/2-way valves
(A ⇔ B)



Seat type
Area ratio 1:1.6

Cone R

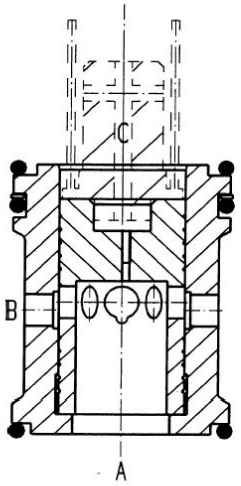
Check valves
(A ⇒ B)



Seat type
Area ratio 1:1

Cone K

Pressure reducing valves
2-way pressure compensators (B ⇒ A)

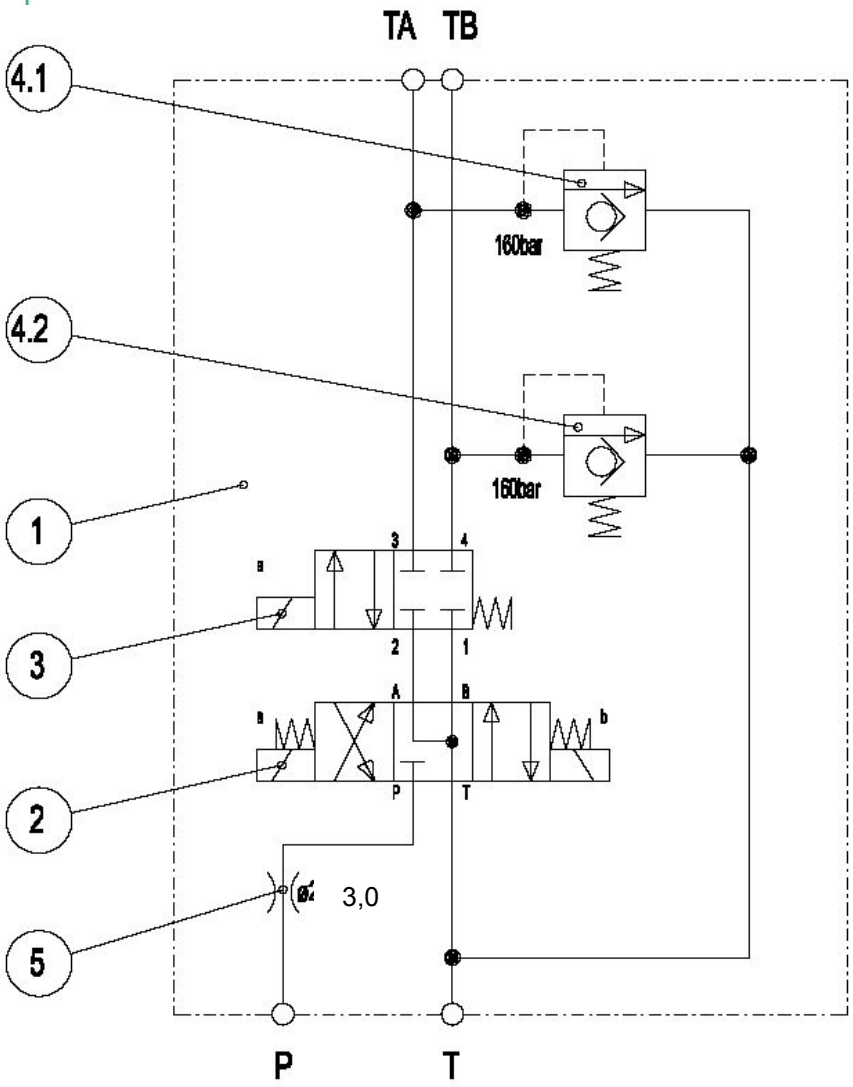


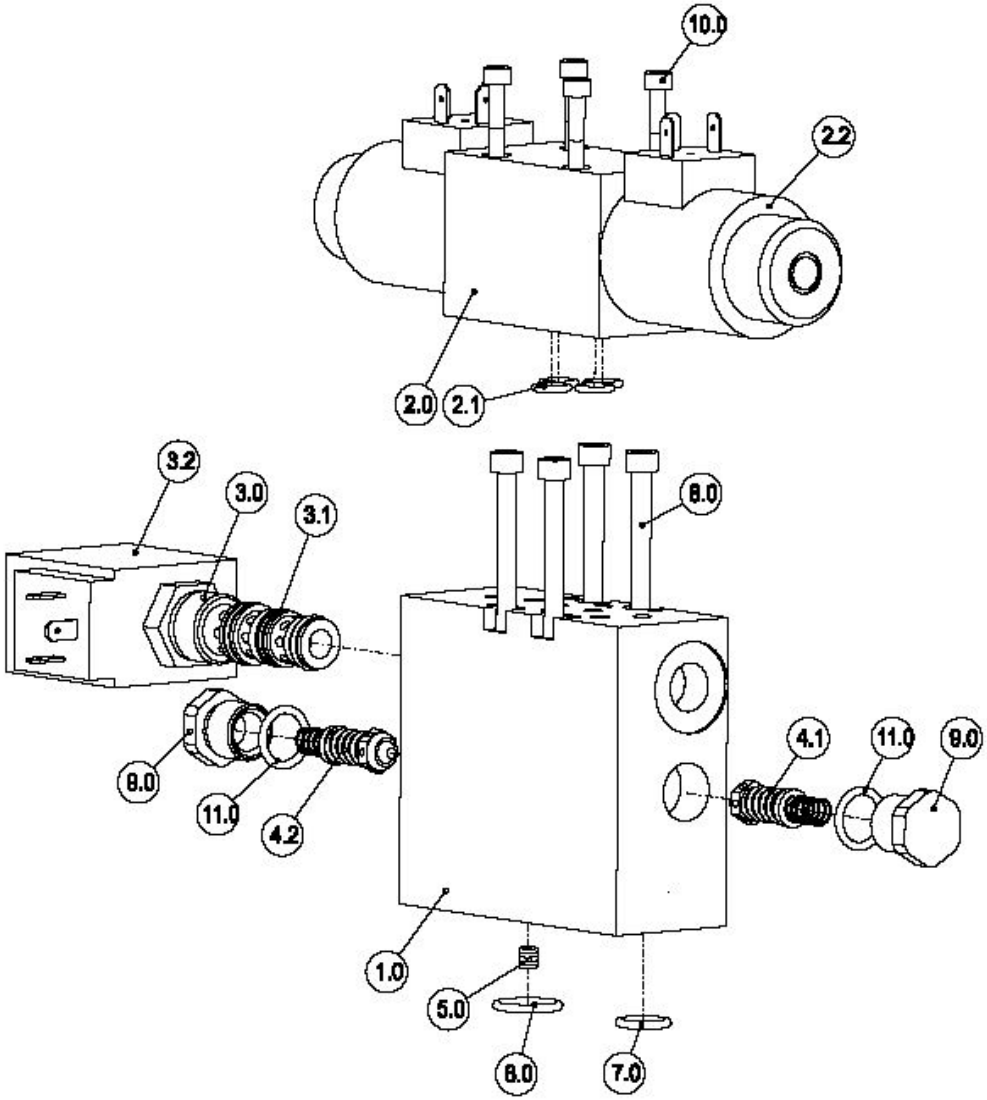
Spool type
Area ratio 1:1

Main valve

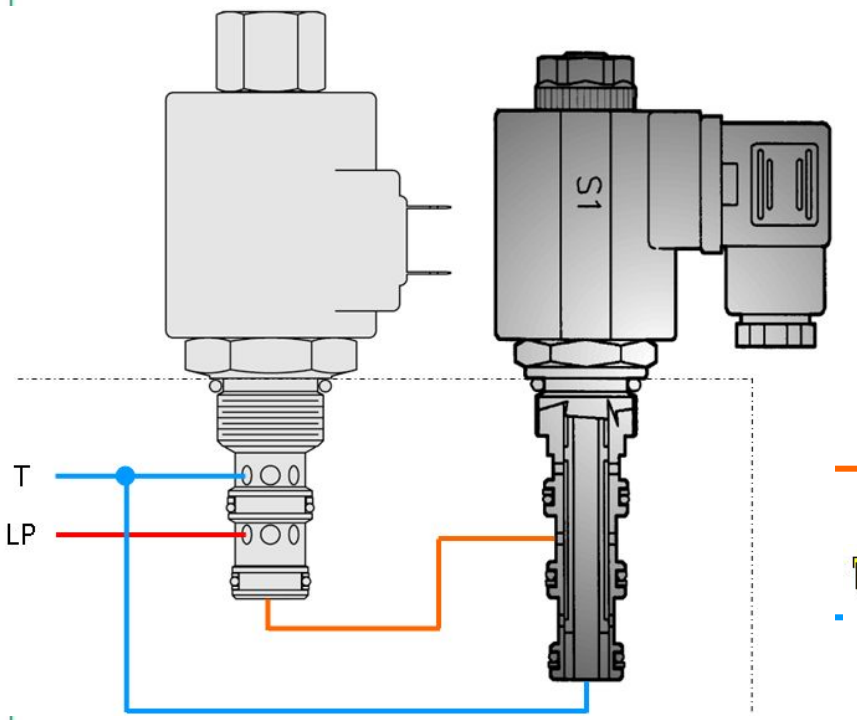
Tilt manifold

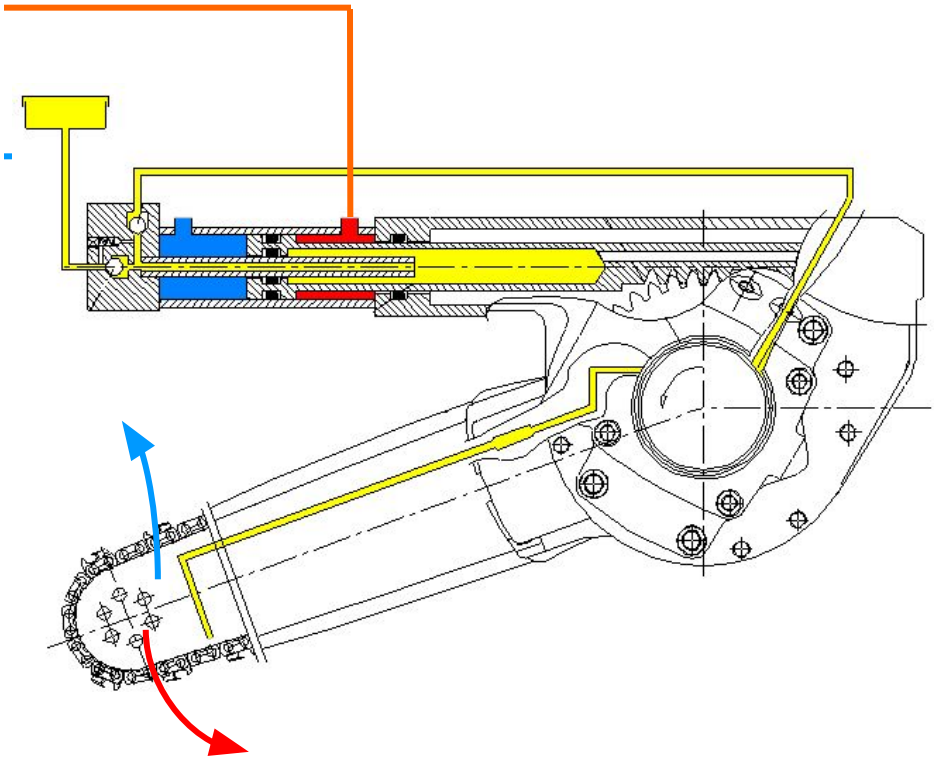
(tilt pressure adjustment
in saw manifold)





Saw bar feeding

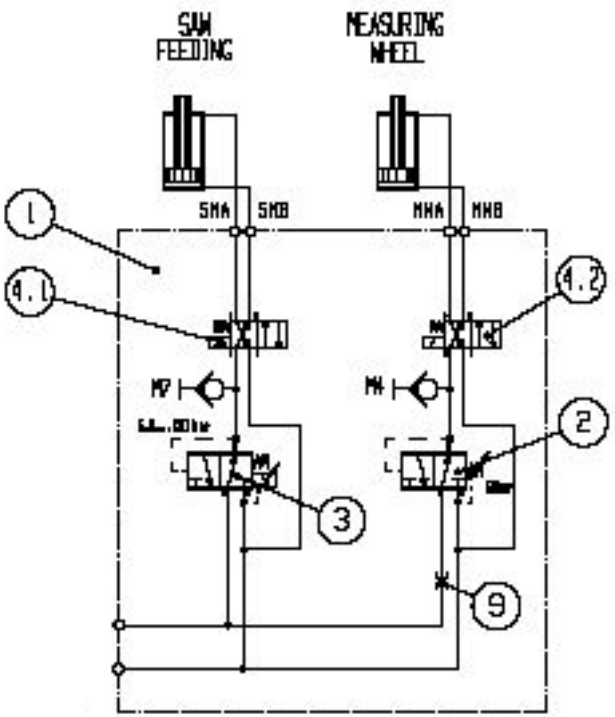


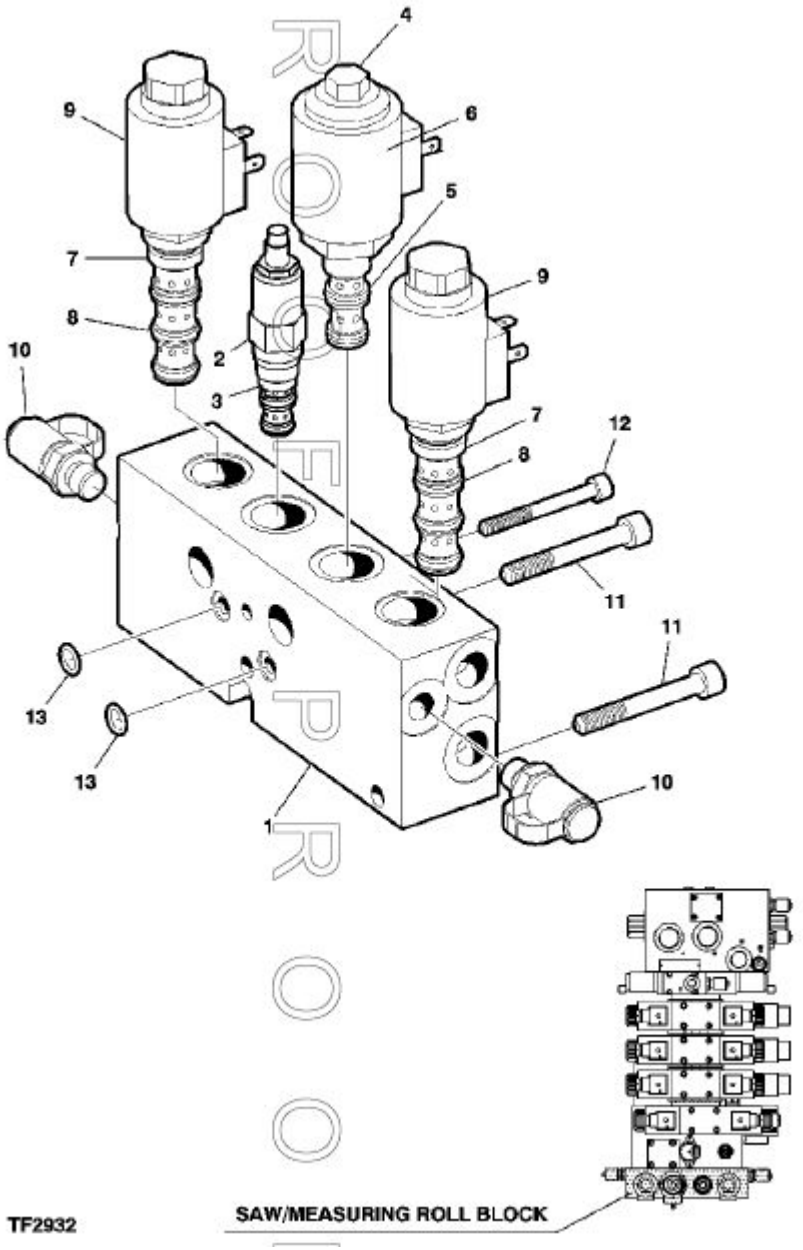


3,0

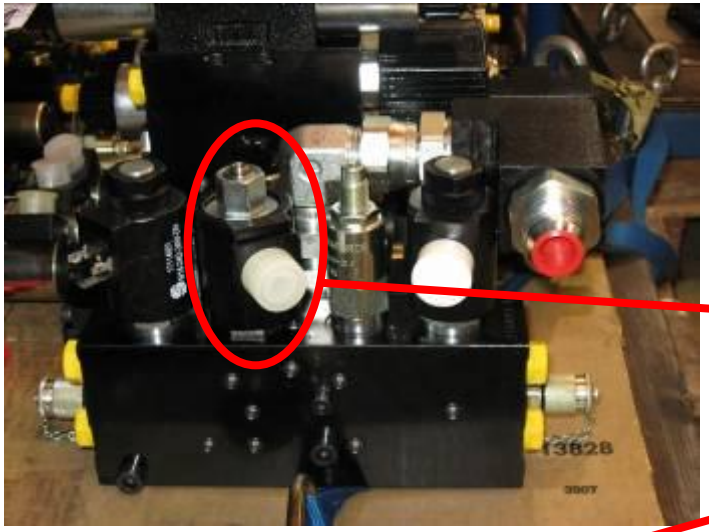
Main valve

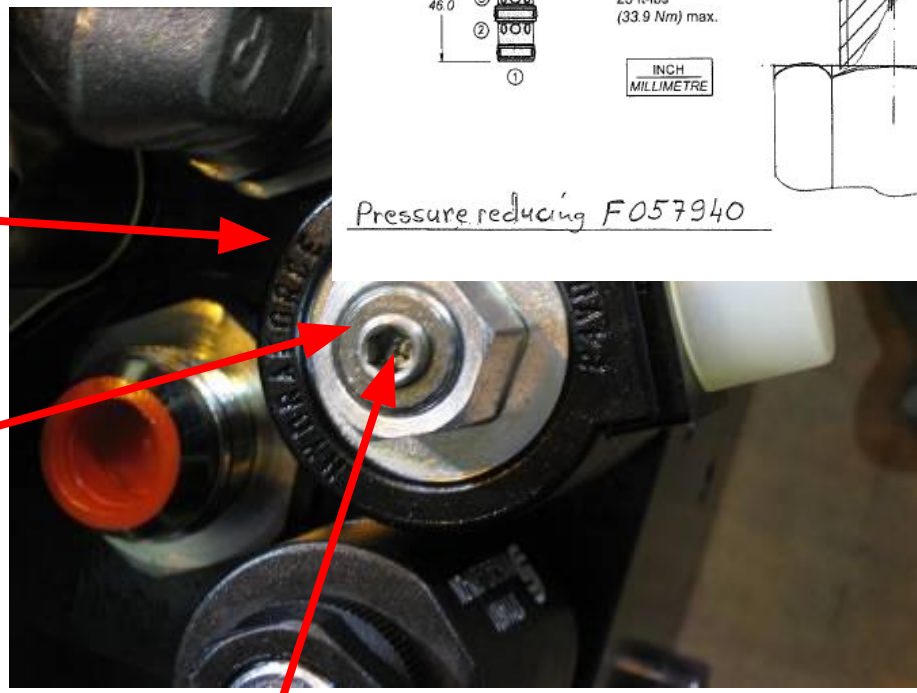
Saw cylinder manifold
Lenght measuring
Cylinder pressure

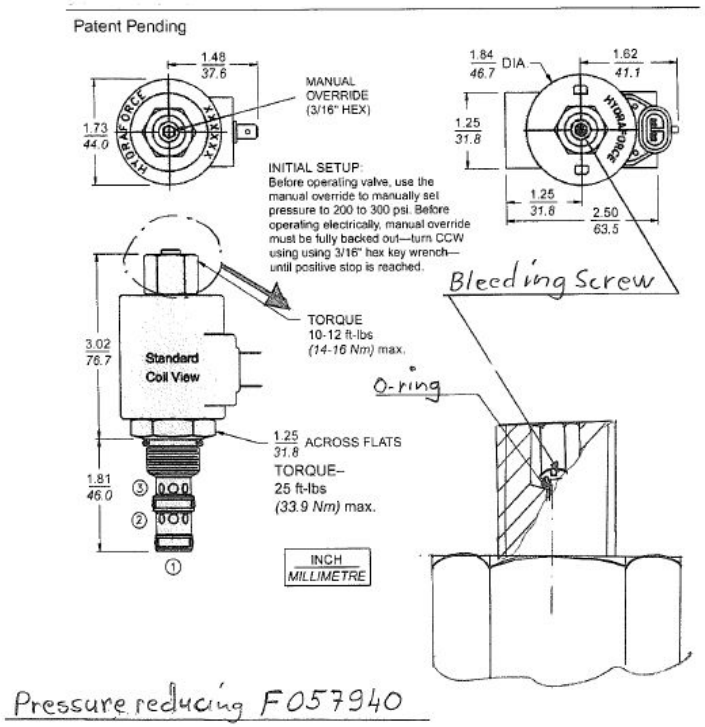




Saw bar feeding proportic valve`s mechanical pressure adjustment scre





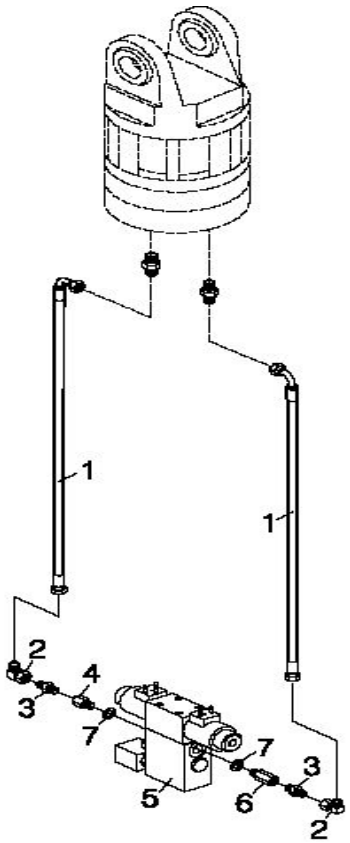


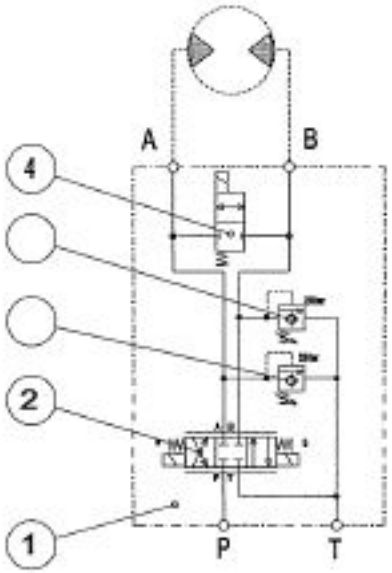
The allen screw must be fully open. There is a back stop which stops the screw.

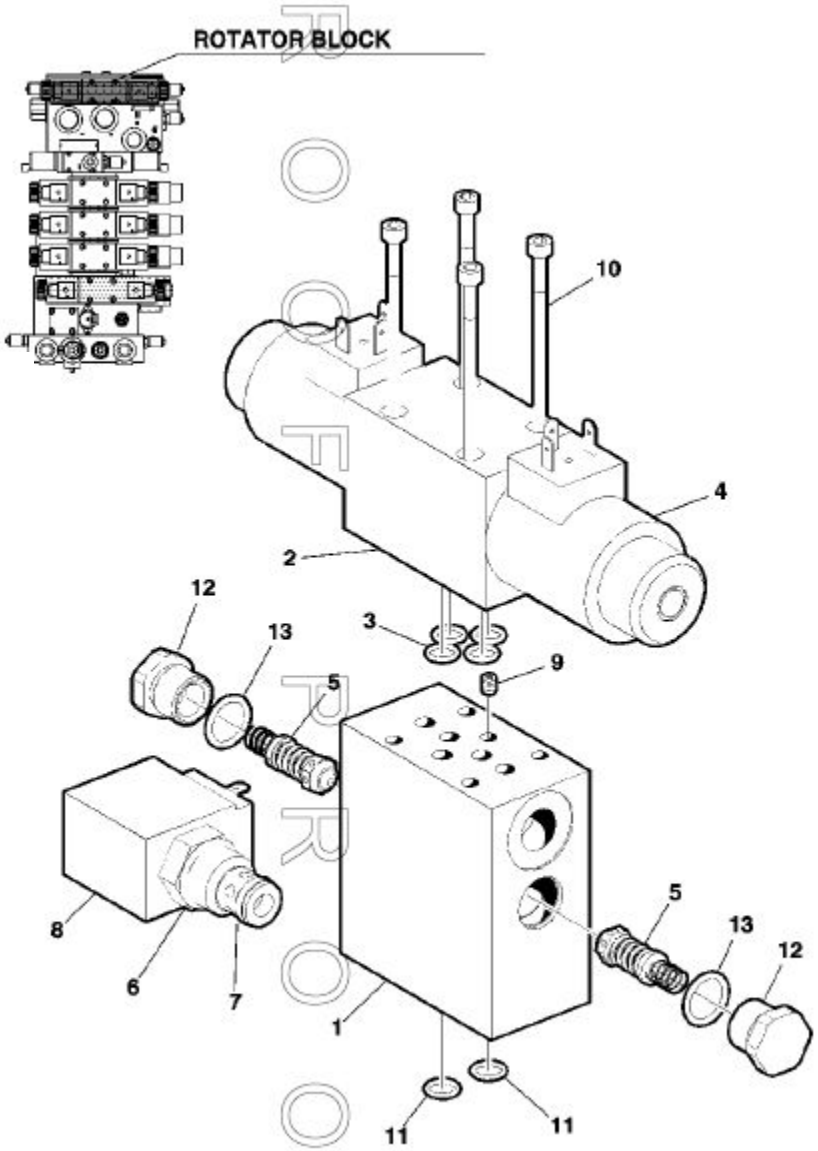
The smaller cross head screw (bleeder-screw) inside the allen screw must be closed.

Main valve

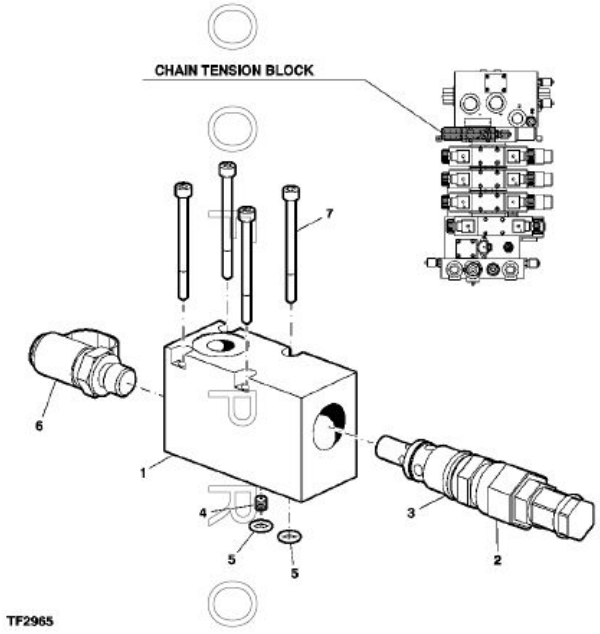
Rotator manifold
-standard on /off
-option
proportional

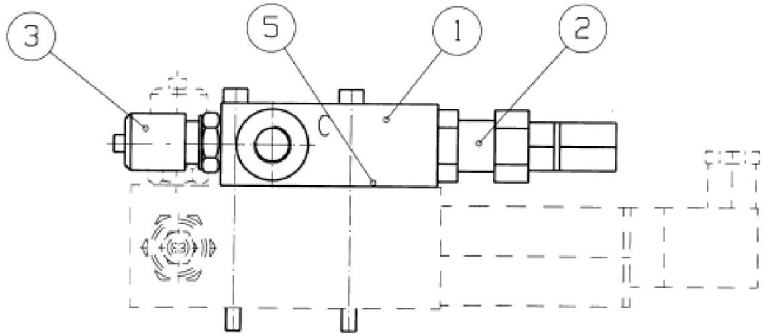


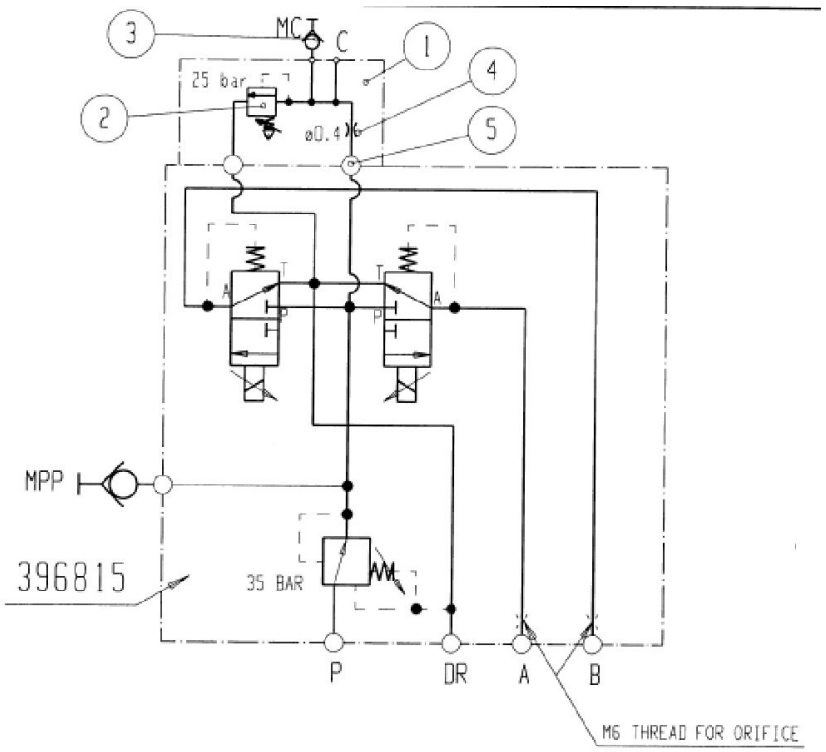




Chain tensioning for Supercut



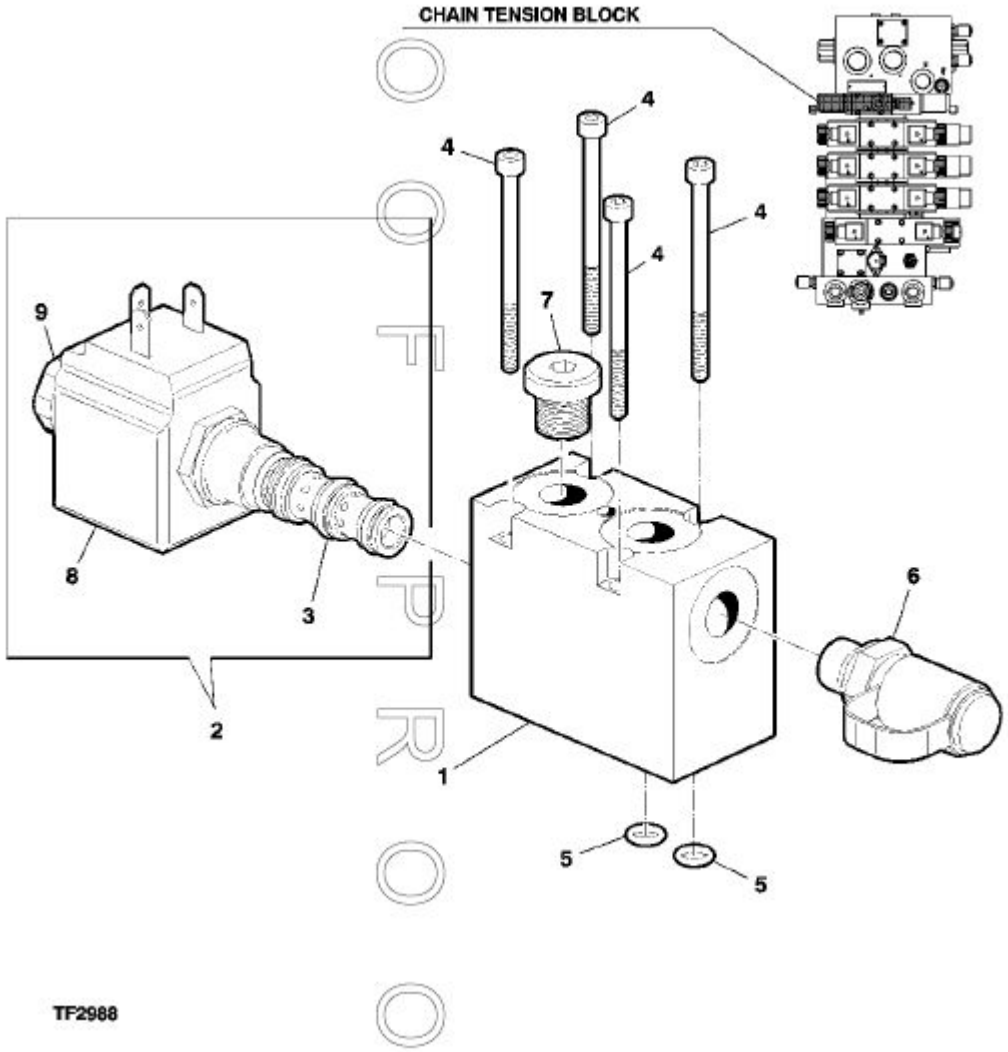




Main valve

35 bar out option

(if not SC saw)

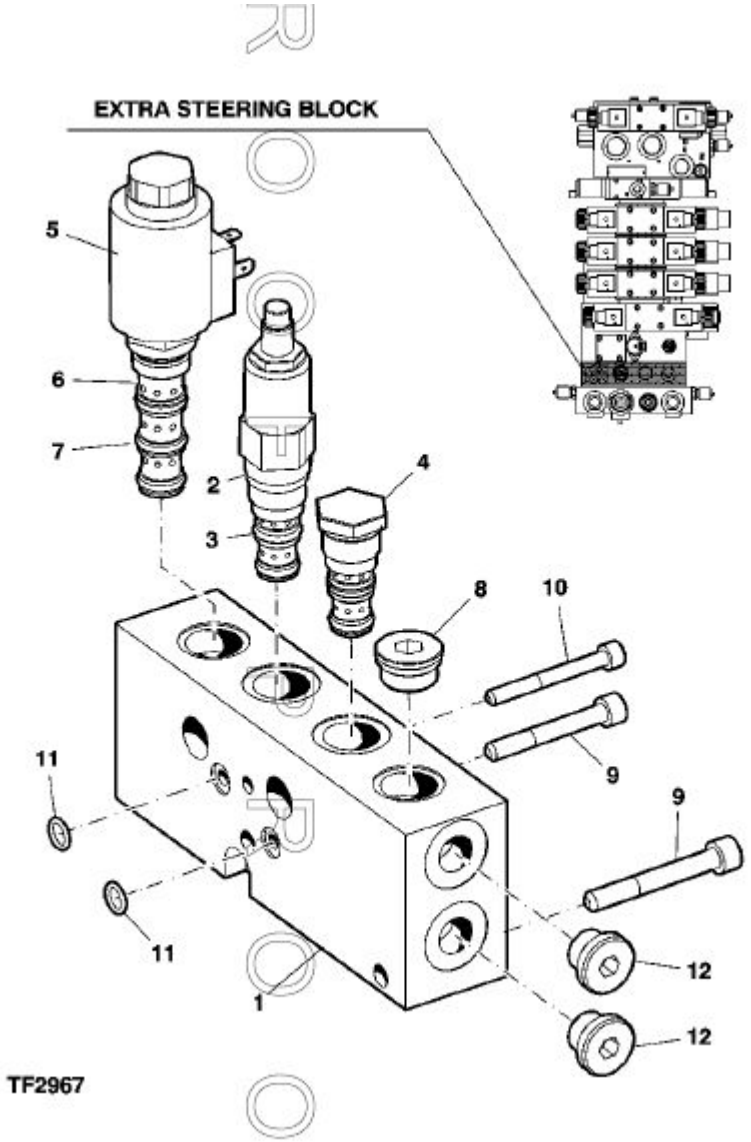


Main valve

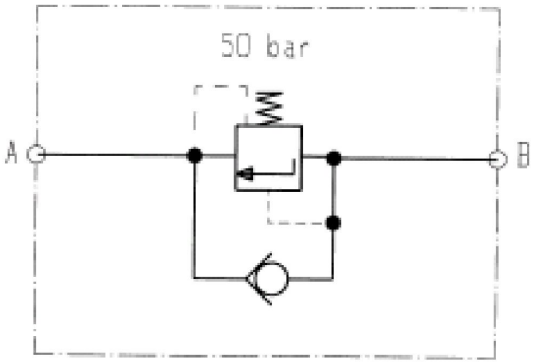
Extra block
Option

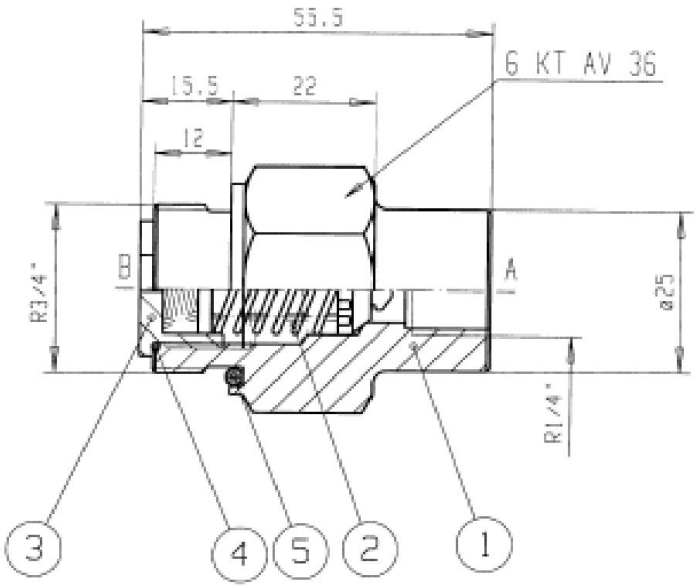
-Precision knives
-MTH valve

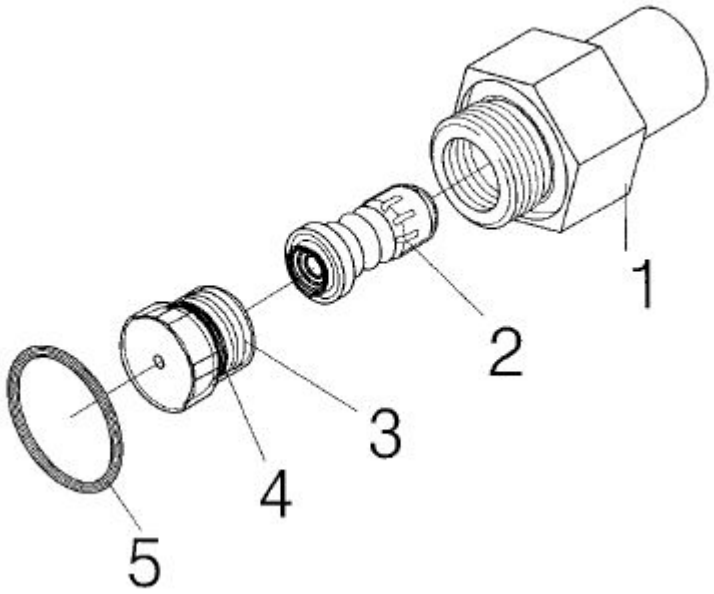
Elecric connection, HHM
B-connector
38 + ,28 -



Pressure relief valve for Saw lubrication pressure

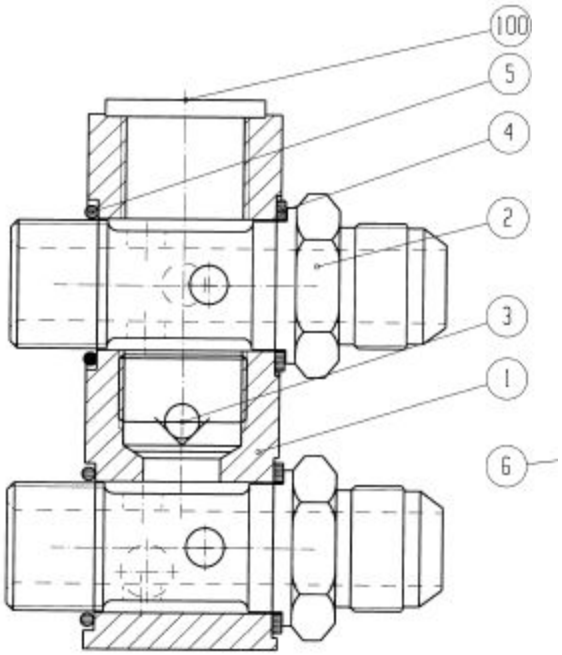


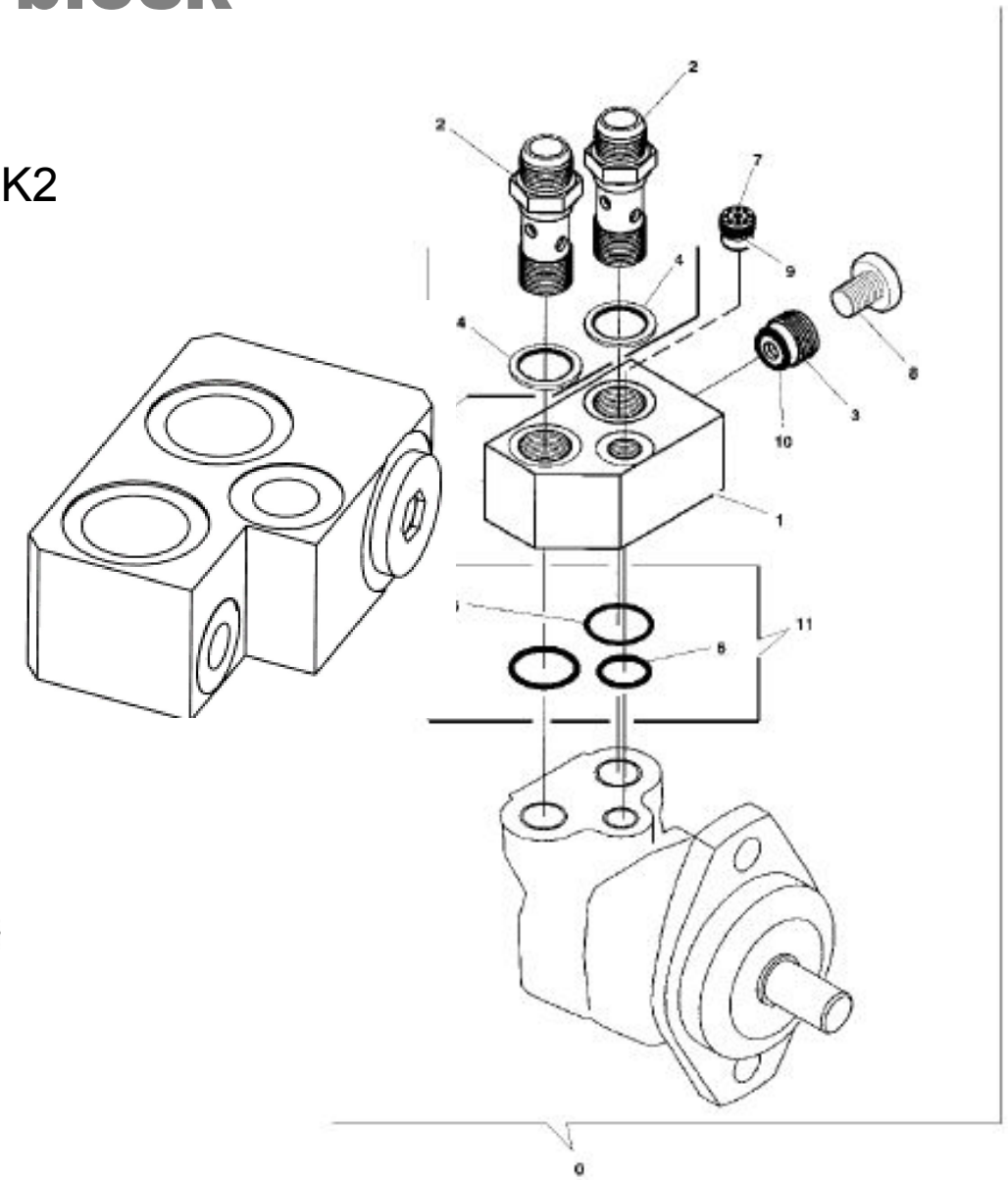




Anti cavitation block

Tool:
F046591 for F018836 pos 3
F062897 for F008653 pos 7 RK2

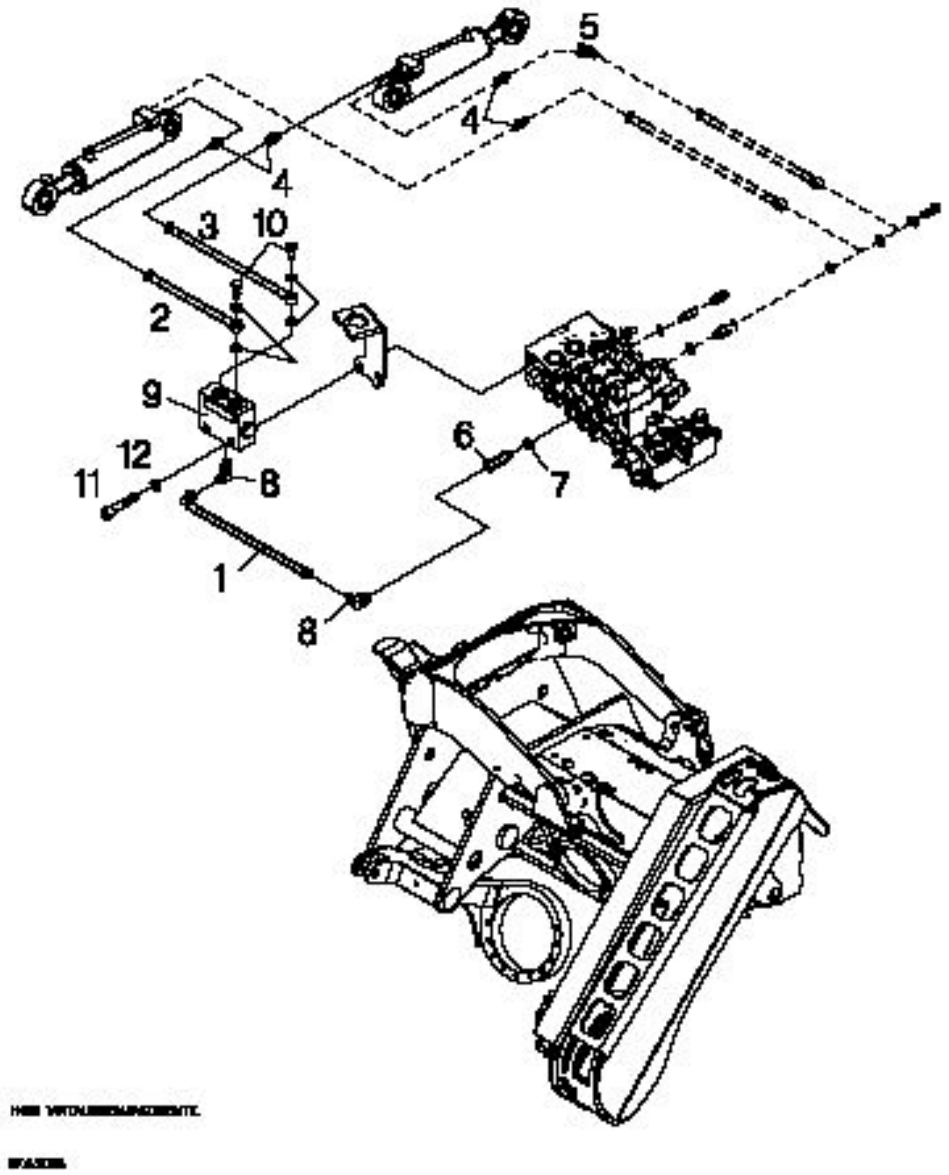




Flow divider

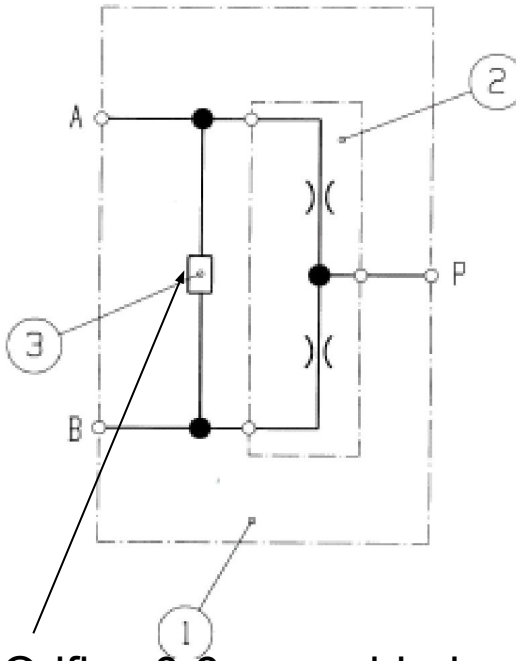
Flow divider for upper knives or Feeding Rollers

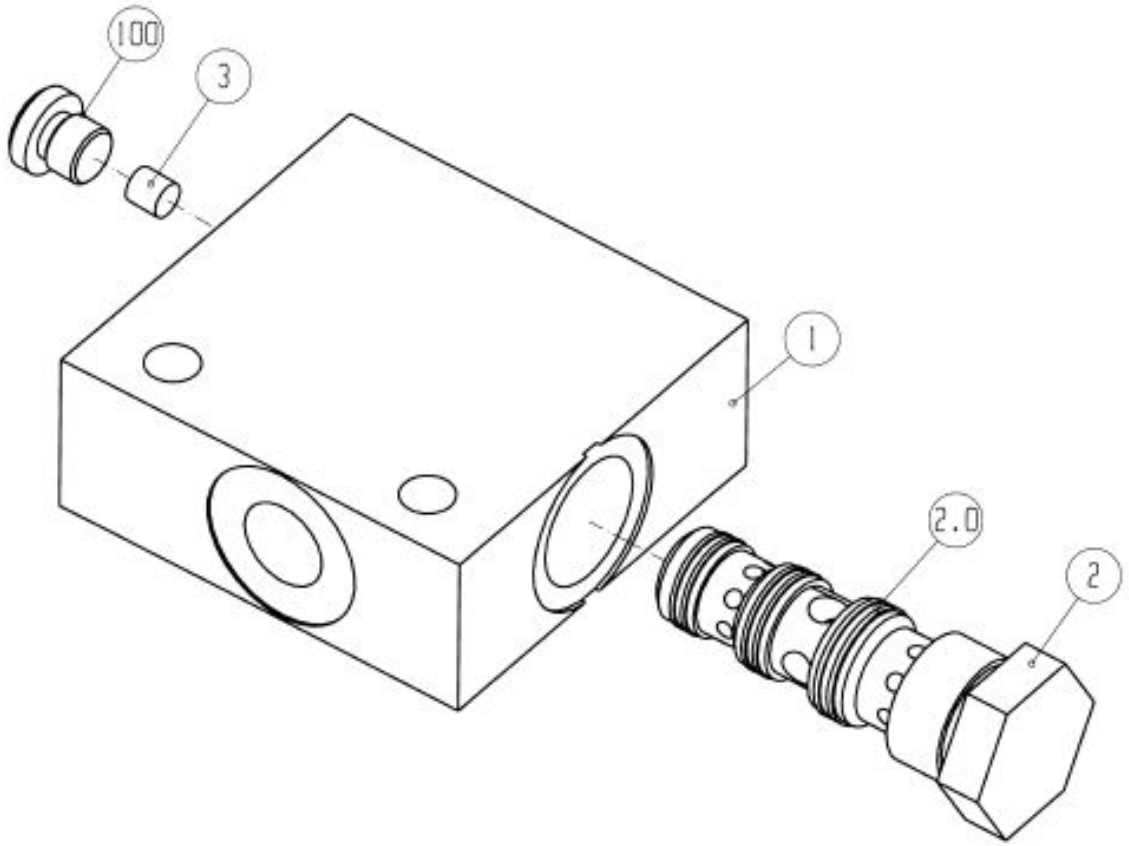
-Helps to pick logs from the pile
-Helps to rollers close same time



Flow divider for rollers or knives

F064309





Orifice 0,6 mm added

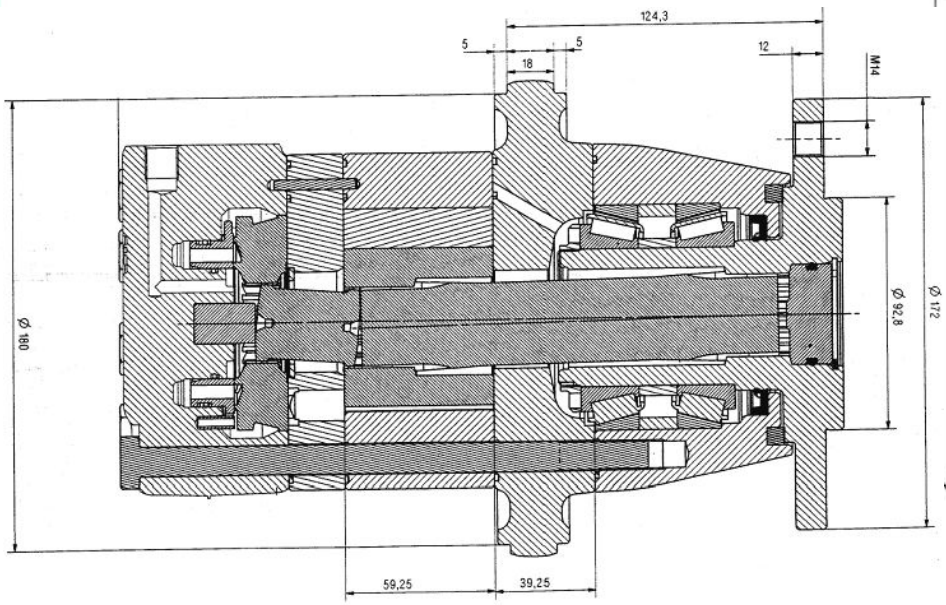
08/02 /2023 Waratah OM

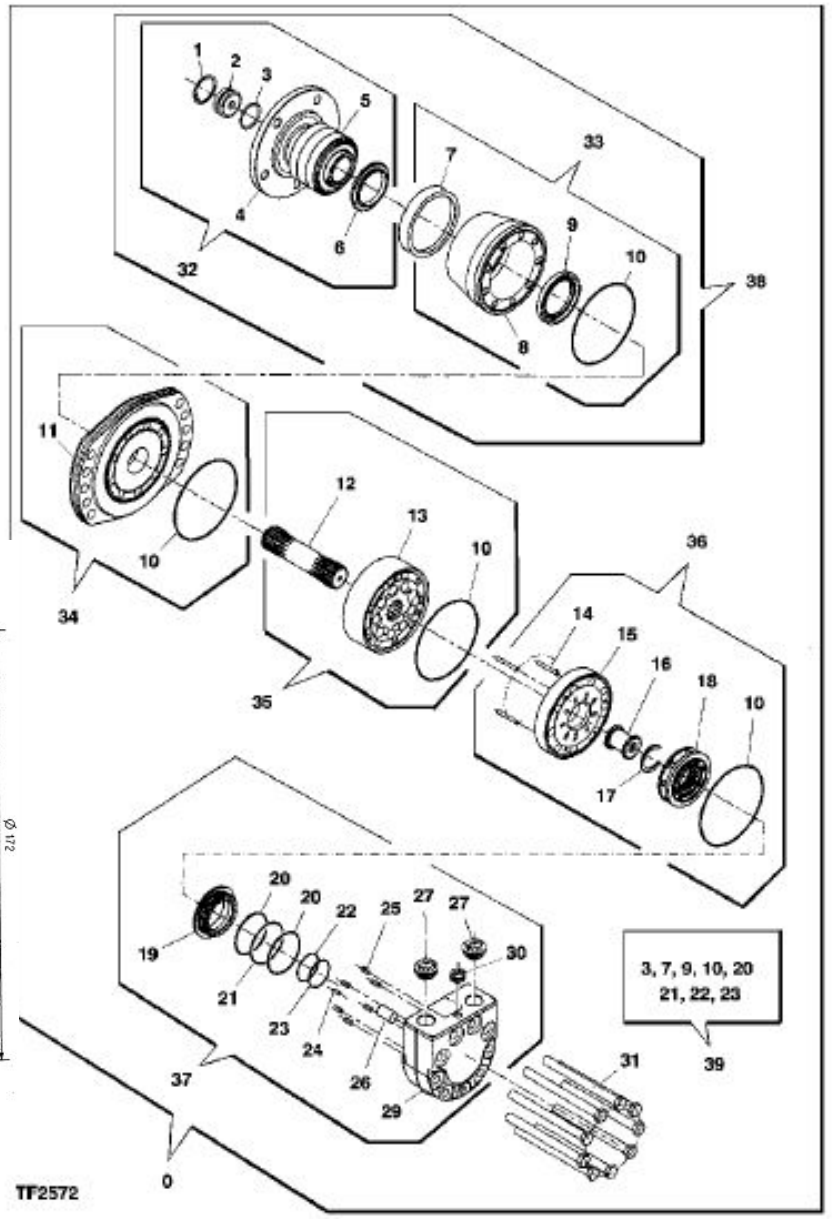
Special tools

Waratah OM				8.5.2006
Check valves and tools				
F-codes for valve	**Type**	**Thread**	**Tool**	**Momentti**
F008631	Hawe RK1	G1/4	F046592	10 Nm
F069999	Hawe RE1	G1/4	5 mm	10 Nm
F059996	EDI-system	G1/4	3 mm	4 Nm
F018124	Hawe RB1	G1/4	7 mm	15 Nm
F008653	Hawe RK2	G3/8	F062897	15 Nm
F018776	Hawe RB2	G3/8	6 mm	20 Nm
F067334	Lokomec	G3/8	F062897	70Nm
F018813	Hawe RK3	G1/2	F070194	30 Nm
F018814	Hawe RB3	G1/2	8 mm	40 Nm
F018836	Frutingen	G3/4	F046591	60 Nm

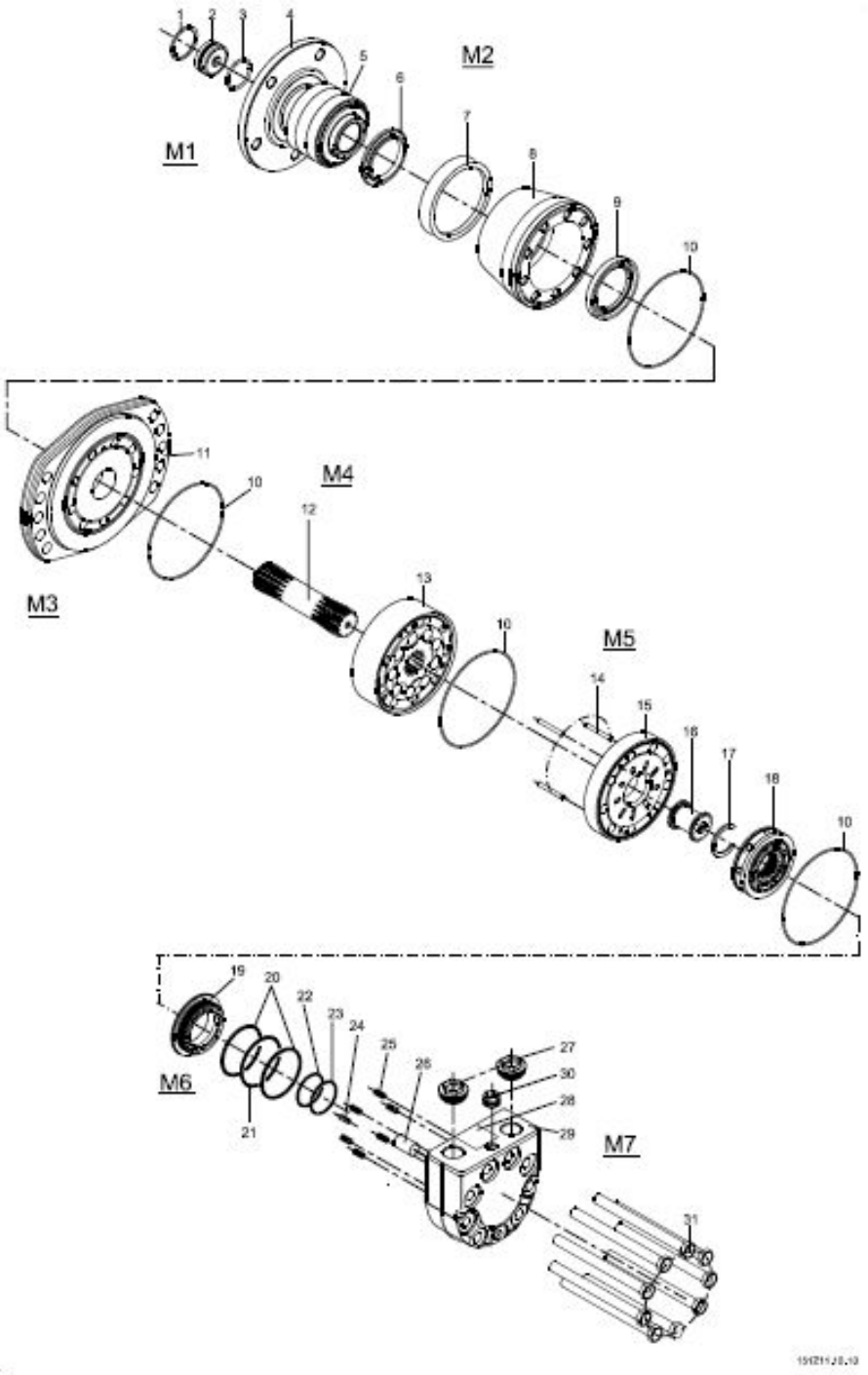
Hydraulic motor

Upper motor TMTW
400
500



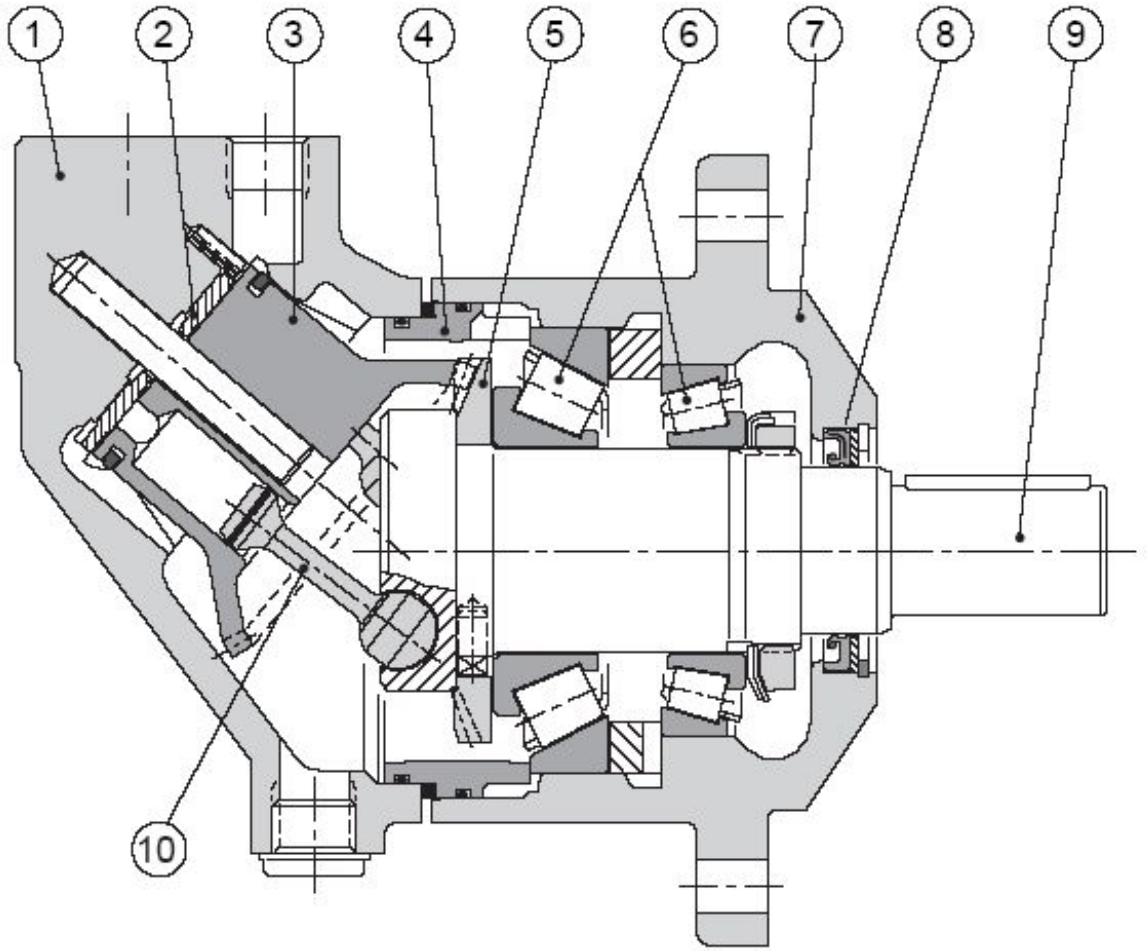


Hydraulic Motor TMTW



F11 cross section

1. Barrel housing
2. Valve plate
3. Cylinder barrel
4. Guide spacer with O-rings
5. Timing gear
6. Roller bearing
7. Bearing housing
8. Shaft seal
9. Output/input shaft
10. Piston with laminated piston ring



C0101 Työkalusarja

V00620 Silver tool kit

> yleistyökalut harvesteripään huoltoon

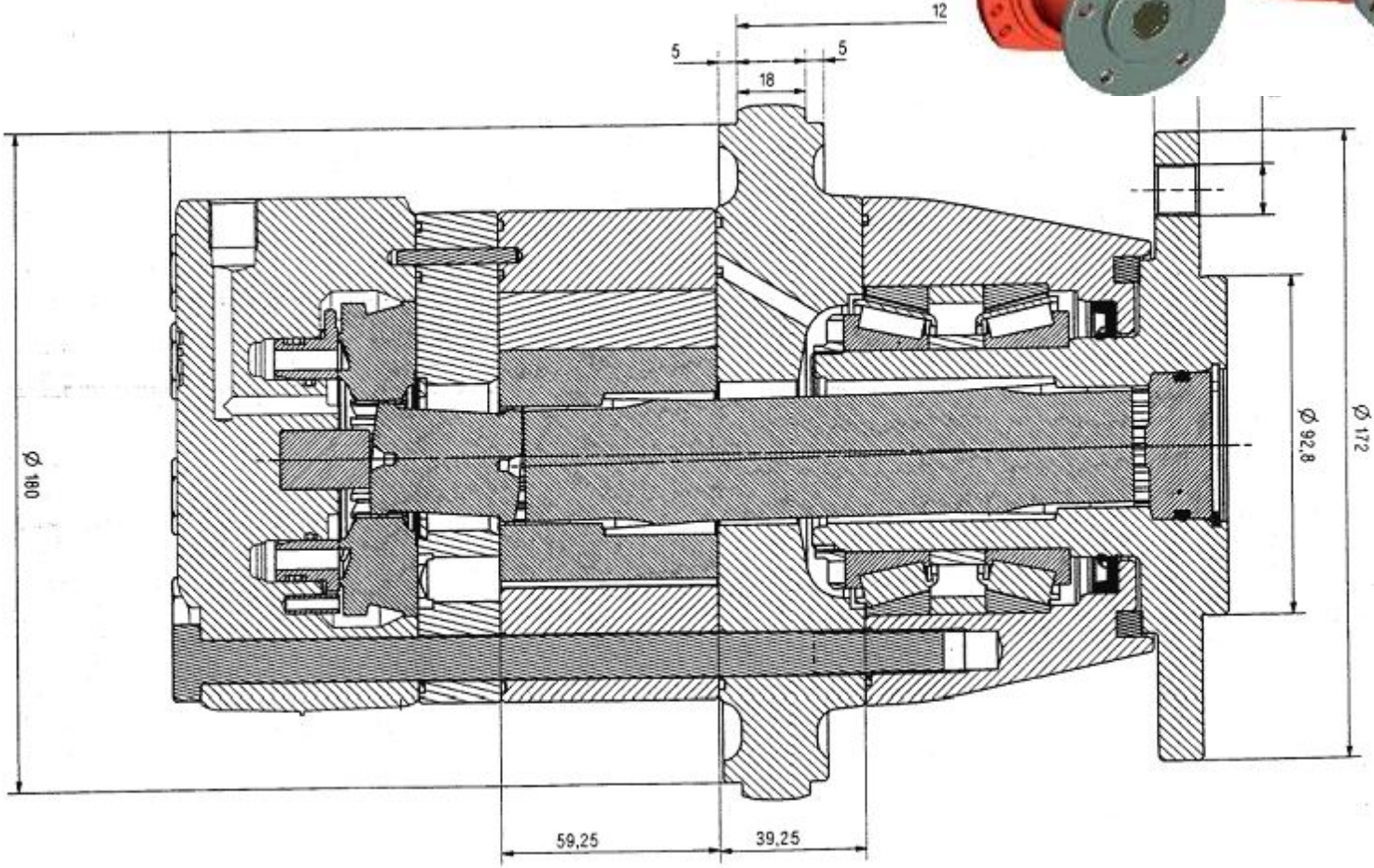
C0102 Mittarisarja

V00621 Gold tool kit

Sisältäen V00620 Silver tool kit &:

> painemittari, digitaalinen 600 bar
> liitinletku, 5.000 mm
> rasvaprässi
> yleismittari & paristo
> syöttörullannapan vedin
> Lokomec patruunan vedin

Feeding motors

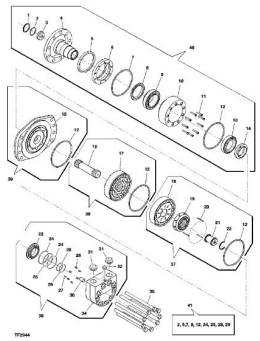


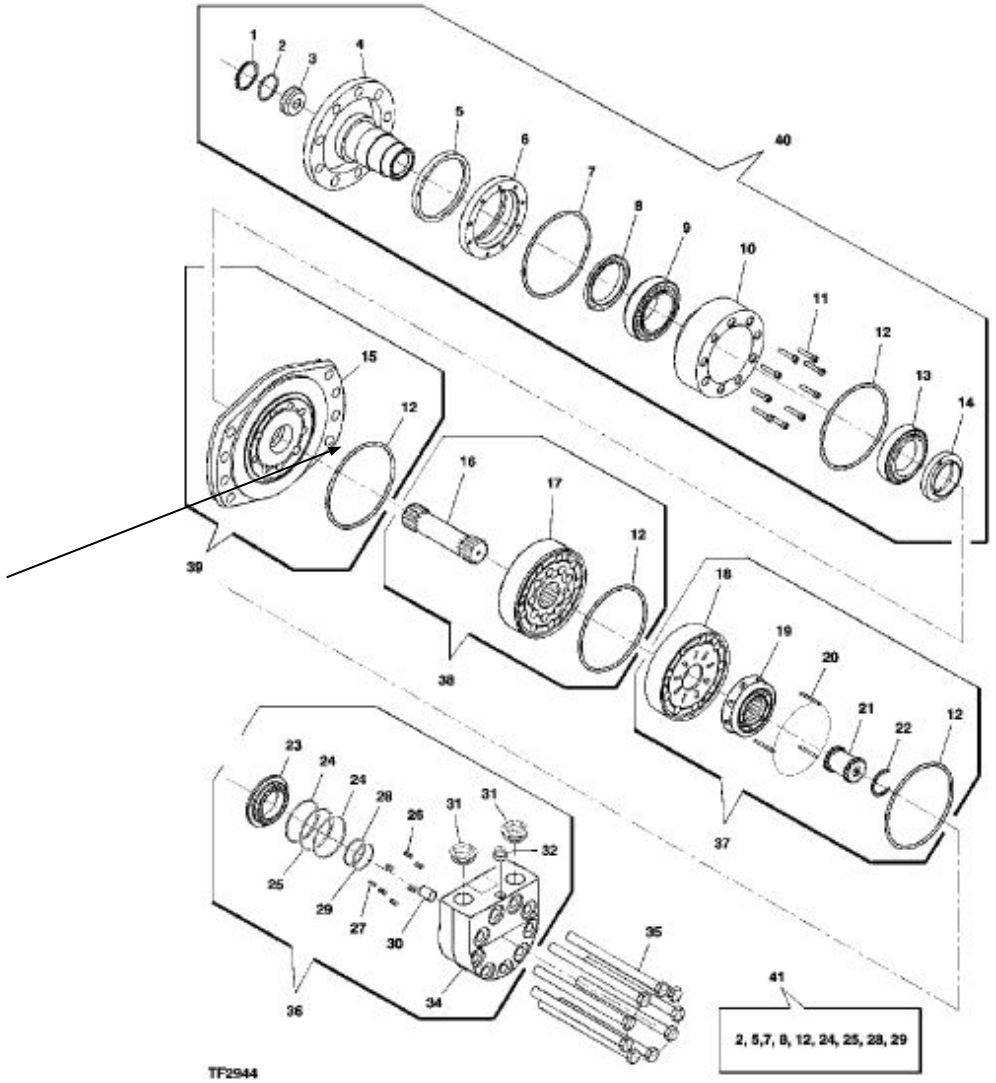
Feeding motors

Hydraulic motor

Down motor TMVW
630
800

Click Danfoss Power point
All motorts

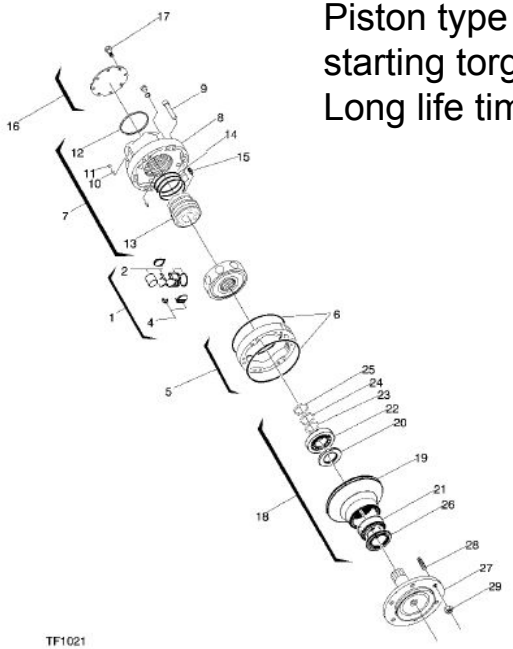




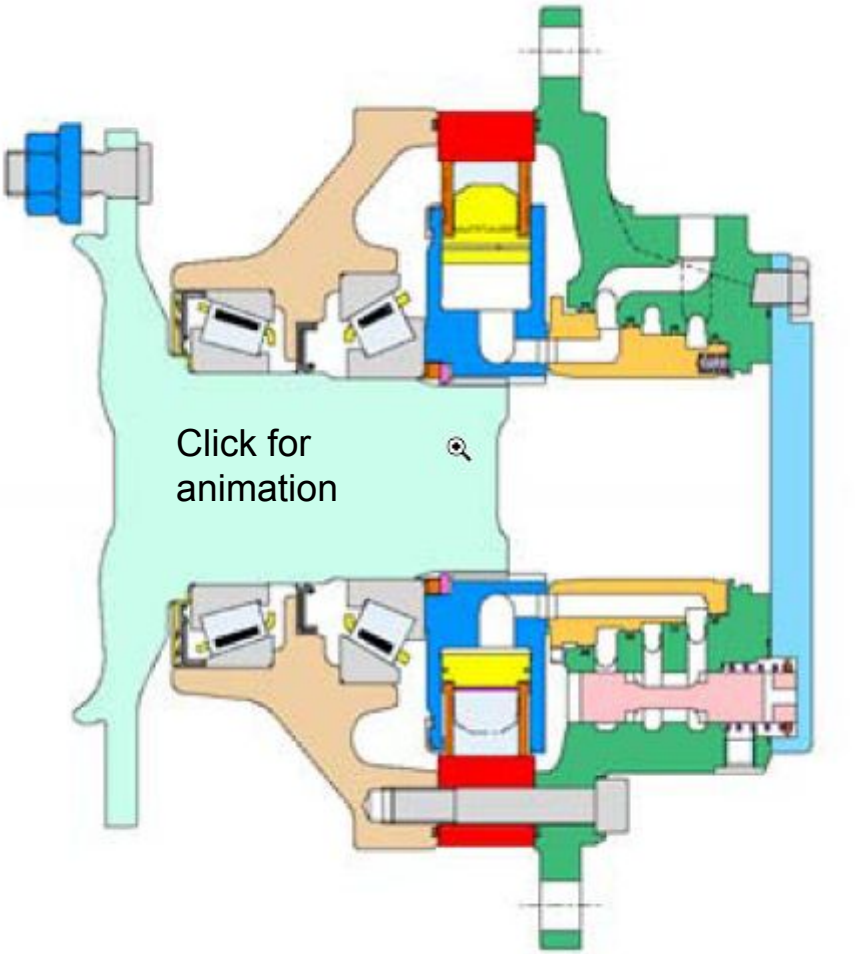
Hydraulic motor

Down motors
Poclain

780



Very stong bearings
Good fastening for rollers
Piston type motor, good starting torgue
Long life time

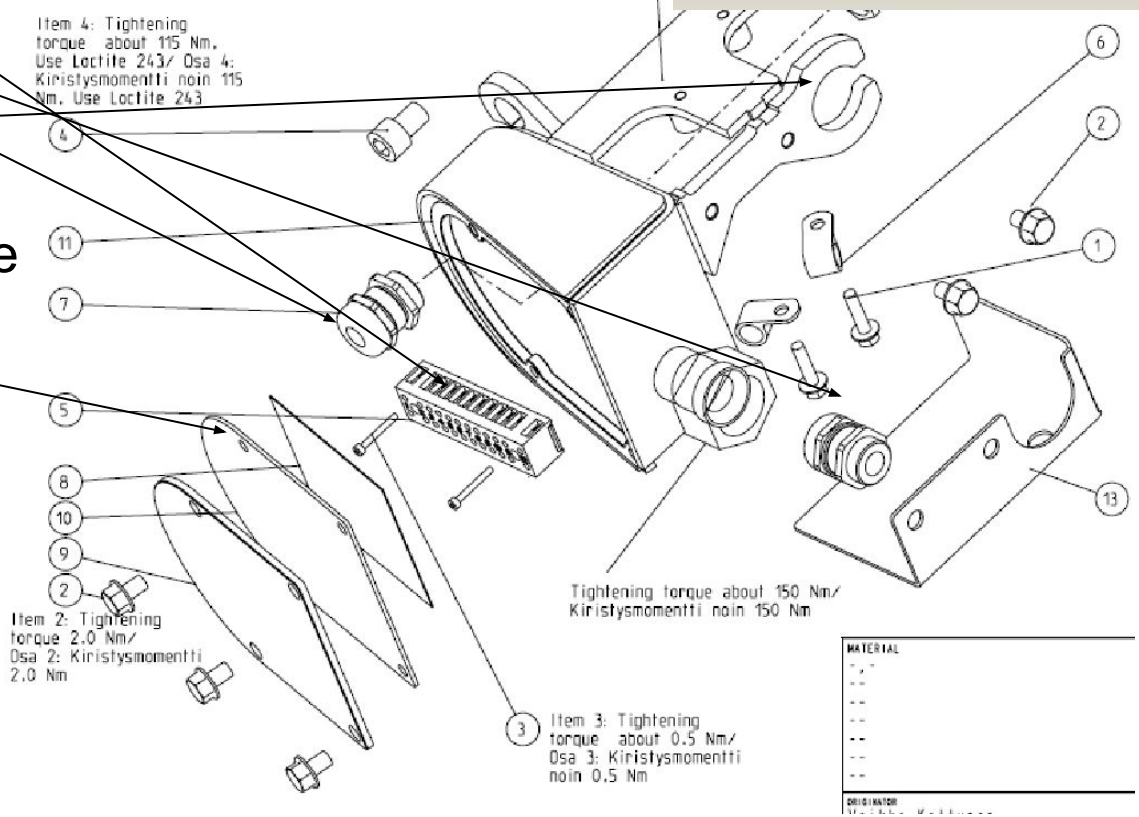


video

Connection box

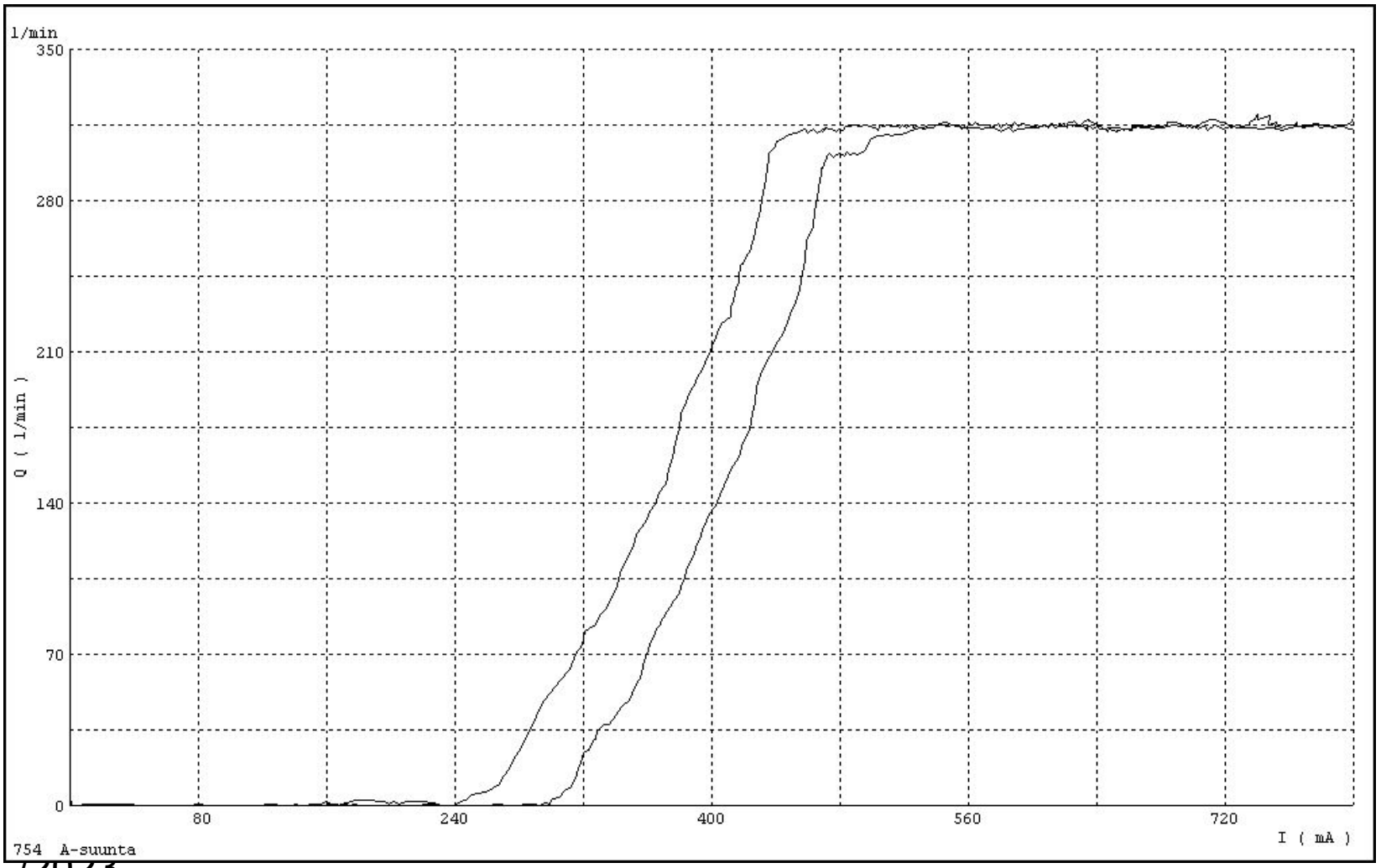
F645708
WJH480X000442…

”sugar bite” connector
Waterproof lead ins
Hose routing to crane
In the middle, no bending
Cower hoses greased inside
Rubber seal



T300, Feed parameters

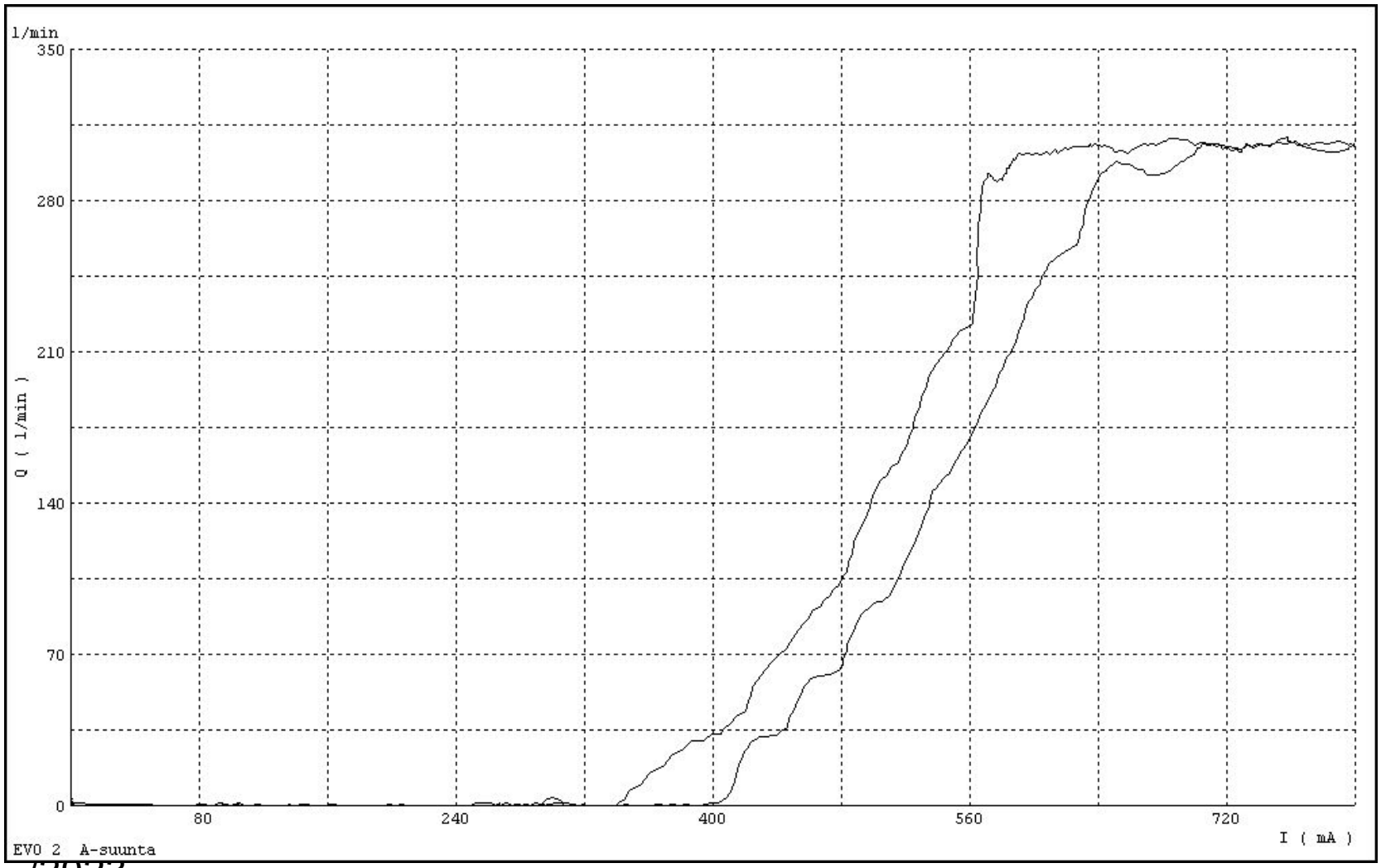
- 758 / 754 / 762C Feed Block function range



/2023

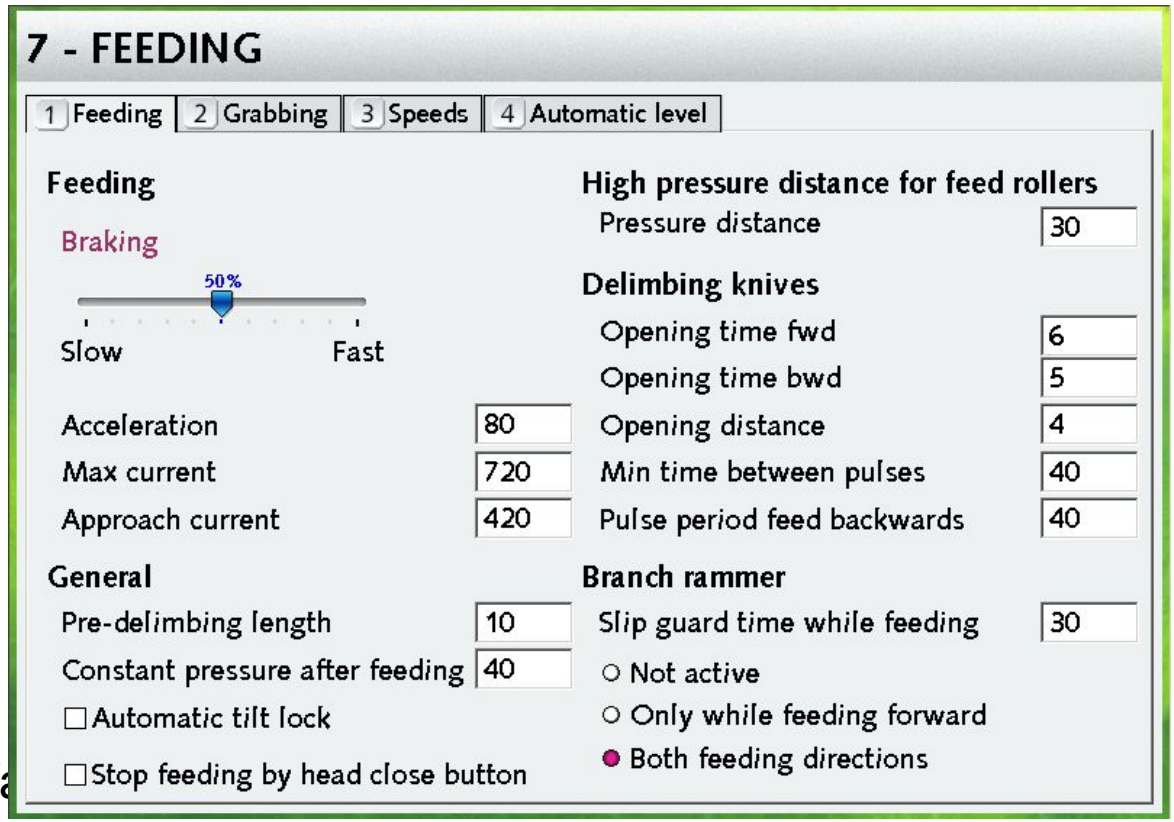
T300, Feed parameters

- EVO 2 Feed Block function range

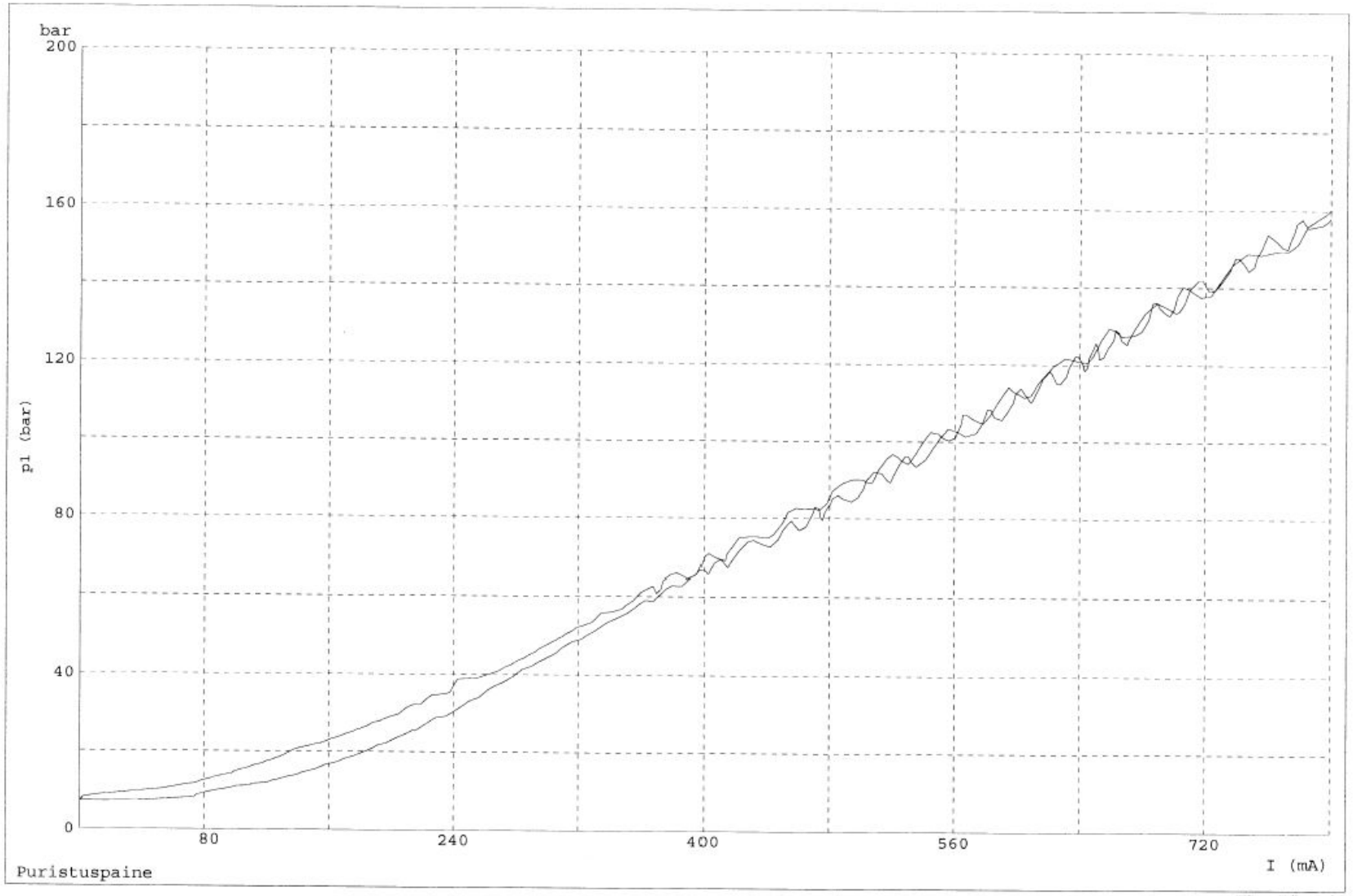


T300, Feed parameters

- EVO 2 Feed parameters
  - Longer range > higher acceleration value
  - Max current ~ 720 mA
  - Approach current ~ 420 mA



T300, Grabbing parameters



T300, Grabbing parameters

7 - FEEDING

1 Feeding | 2 Grabbing | 3 Speeds | 4 Automatic level

Lower DK pressure in relation to upper DK pressure	60	FR pressing max. current	845
DK high pressure interval	25	Upper DK max. pressure	780
DK high pressure pulse length	2	Lower DK max. pressure	590

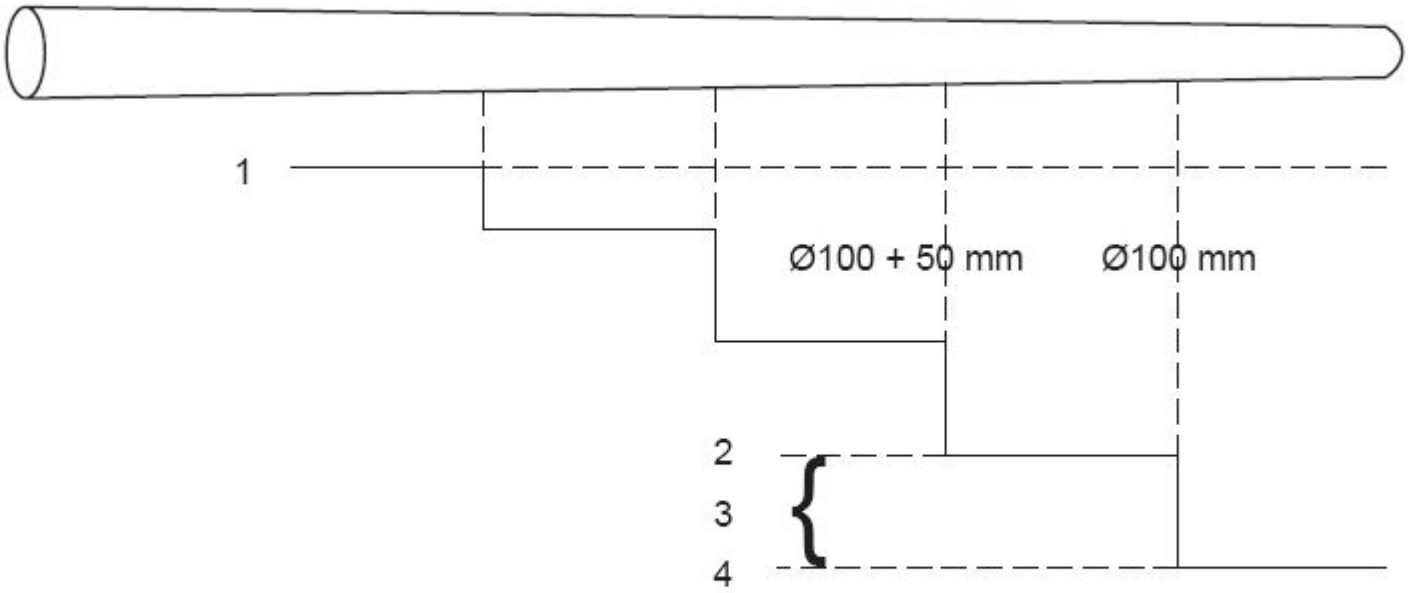
	Tall	Gran	Lövt	Blandat
FR pressing min. current	370	370	370	370
FR pressure increase	26	26	26	26
DK min. pressure current	350	350	350	350
DK pressure increase	18	18	18	18
Min. dia. of high pressure pulse	50	50	50	50
Max. dia. of high pressure pulse	200	200	200	200
Tilt down while feeding	☒	☒	☒	☒

Gentle stem handling

/2023

T300, Delimbing block parameters

Grabbing (menu 7-2)



Pressure increase diagram

1—Grabbing maximum current
2—Minimum current + pressure increase
3—Pressure increase
4—Grabbing minimum current

Continued on next page

T300, Grabbing parameters

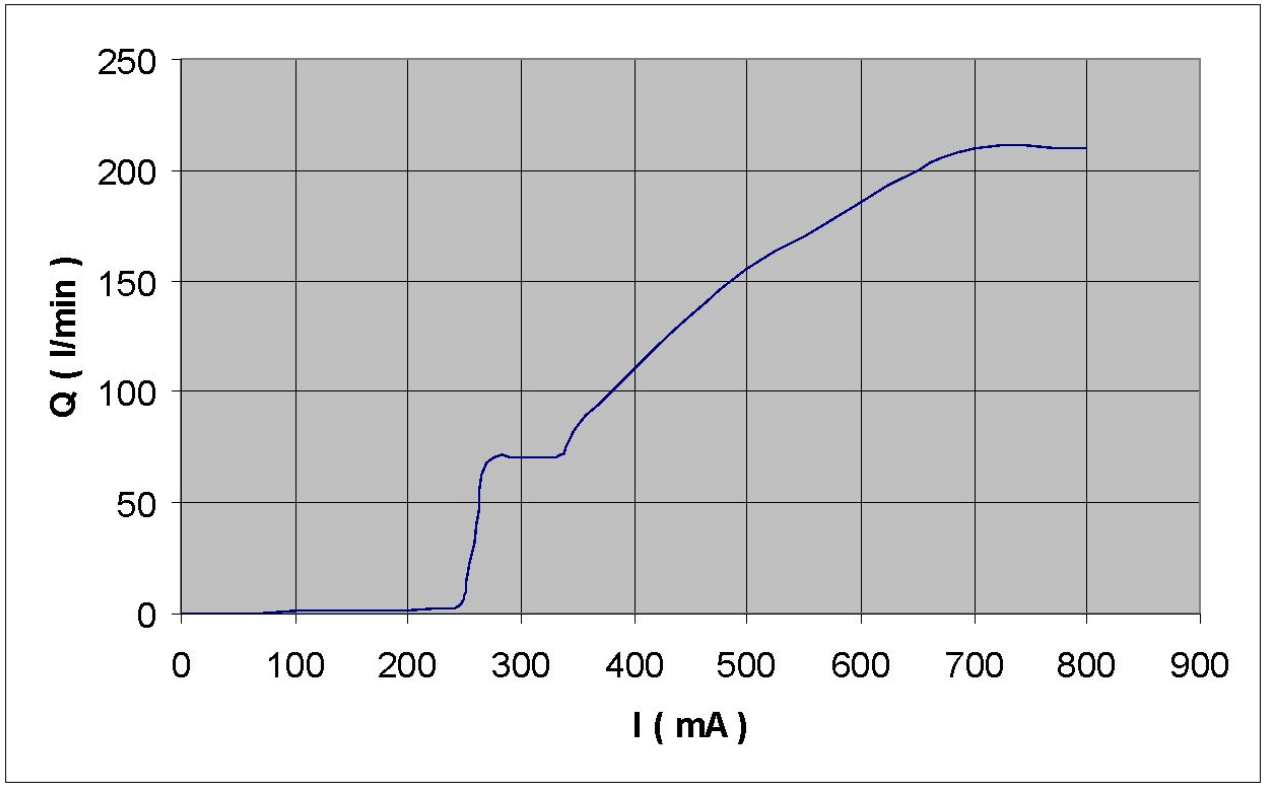
- EVO 2 Grabbing parameters
  - No mechanical limits or adjustments for min/max pressure

    > min and max current from T300
  - Too high max current may cause mechanical failures on cylinders, knives, roller arms. (limit by INI-file)
  - Pressure relation % for 4 roller heads
    - H480, **< 70 %**
    - H754, 758 **< 75 %**

mA	bar
0	6
75	9
125	15
219	25
275	35
297	40
351	50
396	60
441	70
487	80
531	90
575	100
617	110
663	120
707	130
751	140
795	150
843	160
887	170
1043	200
1222	230

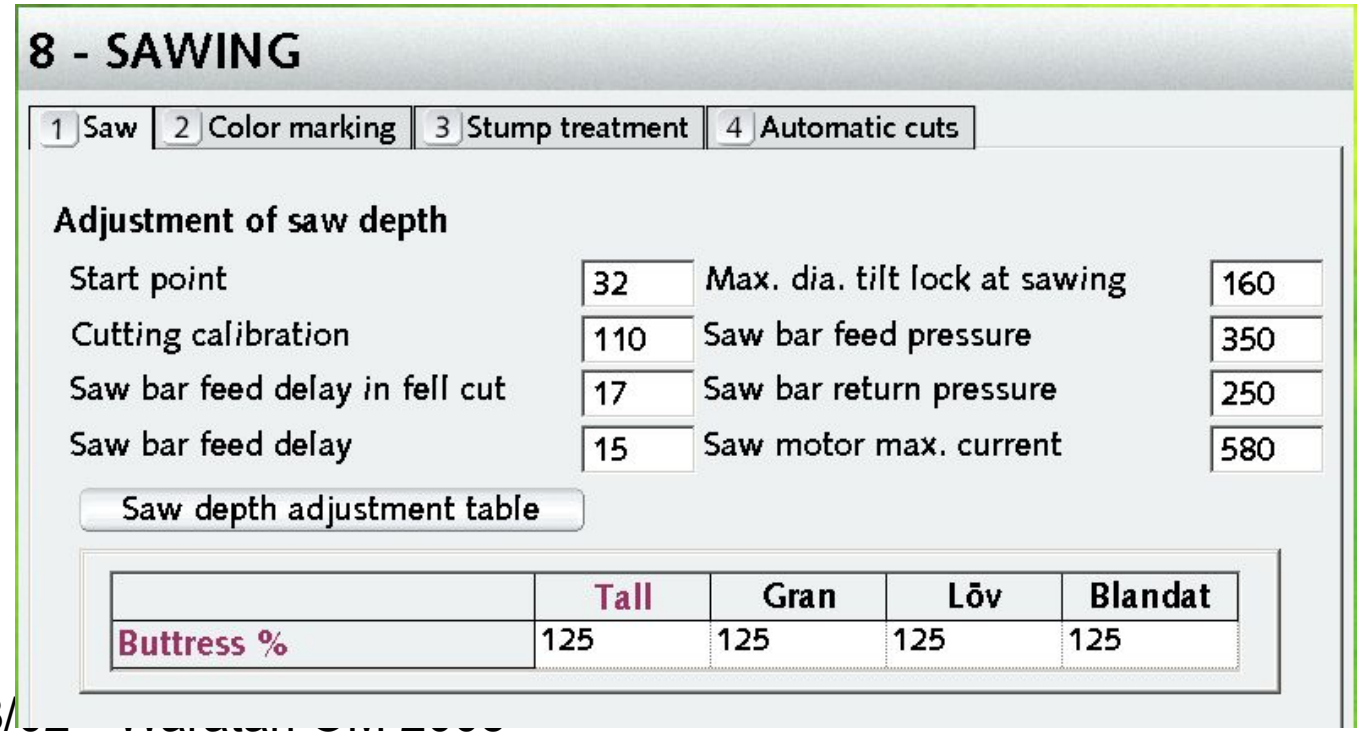
T300, Saw parameters

I (mA)	Q (l/min)
0	0
240	2
250	8
260	40
270	68
300	70
330	70
340	75
350	85
390	105
450	135
500	155
550	170
600	185
650	200
700	210
800	210



T300, Saw parameters

- Saw bar feed controlled by proportional valve
- Saw bar feed ~ 300 mA
- Saw bar return ~ 200 mA
- Saw motor max 600 mA, recommended ~550 mA



Troubleshooting head valve

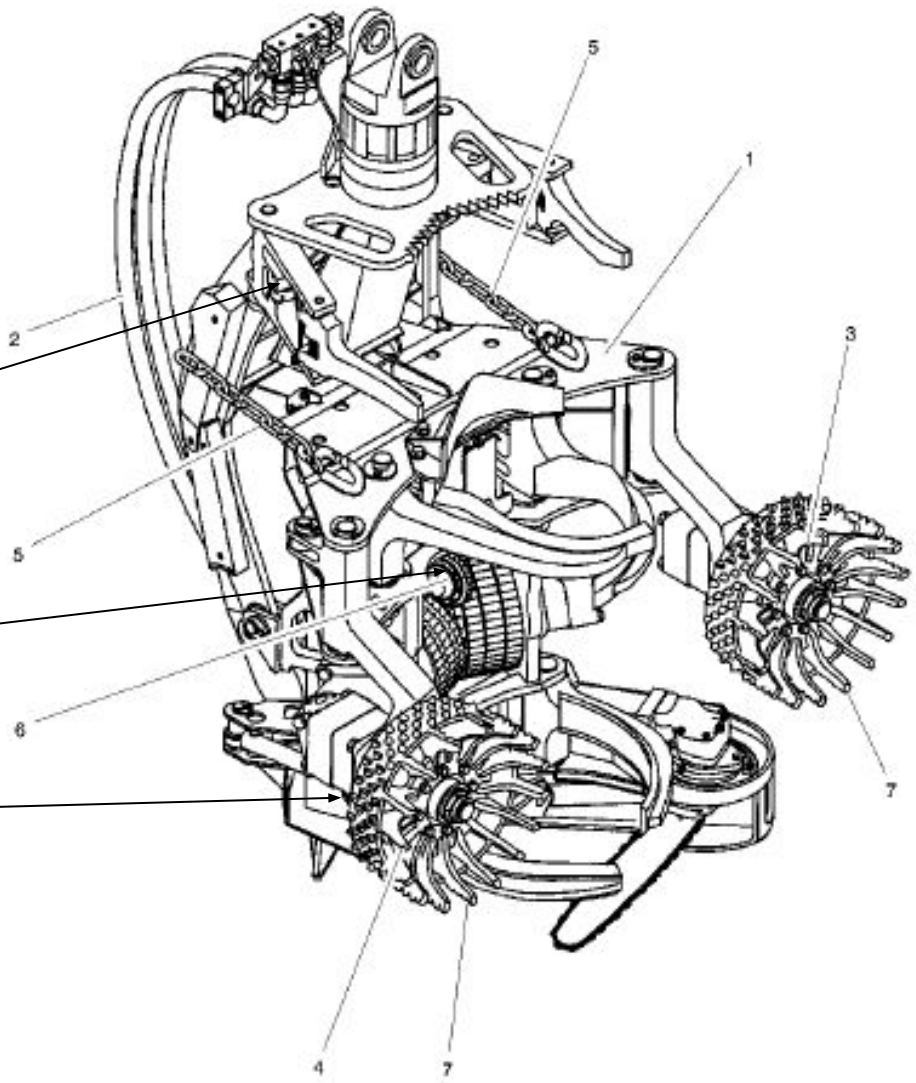
- Measure TMC based pressures from main pump. (Pressure line manual valve closed near cabin. To adjust > Service window in TMC)
  - Feed, ~280 bar
  - Saw, big diameters (head open), ~260 bar
  - Saw, small diameters (head closed), ~240 bar
  - Head close, ~180 bar
- This way you can eliminate a trouble caused from “harvester side” and then start to measure head pressures.

Multi tree handling device

Extra collecting arms

Lenght measuring wheel MTH

Special feeding rollers



waratah om
FORESTRY ATTACHMENTS

/2023

Eucalyptys deparking

1270D/H480

/2023

Tracked base machines

/2023

Prosessor

Windblow, Sweden

Canada

/2023

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FORESTRY ATTACHMENTS

Tracked base machines

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Tracked base machines

Tracked base machines

Tracked base machines

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FORESTRY ATTACHMENTS

Tracked base machines

Processor

Base machines

Base machines

Base machines

Automatics