H480C

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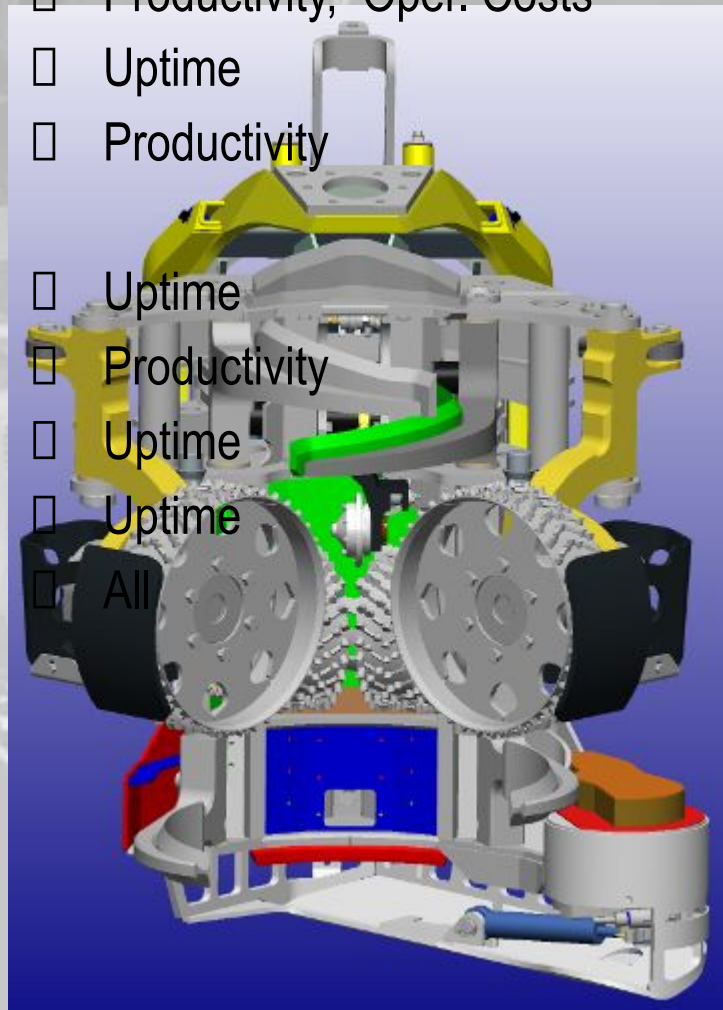
waratah

H480C 2009 Update: Design Goals

- Feeding performance optimization
- Upper feed rollers design rationalization
- Feeding geometry optimization (small / big trees)
- Optimization of lower feed motor lifetime
- Feeding path optimization
- Durability improvements
- Manufacturability improvements
- New options
- Other automations (mounting)

- Productivity, Oper. Costs
- Uptime
- Productivity
- Uptime
- Productivity
- Uptime
- Uptime
- All



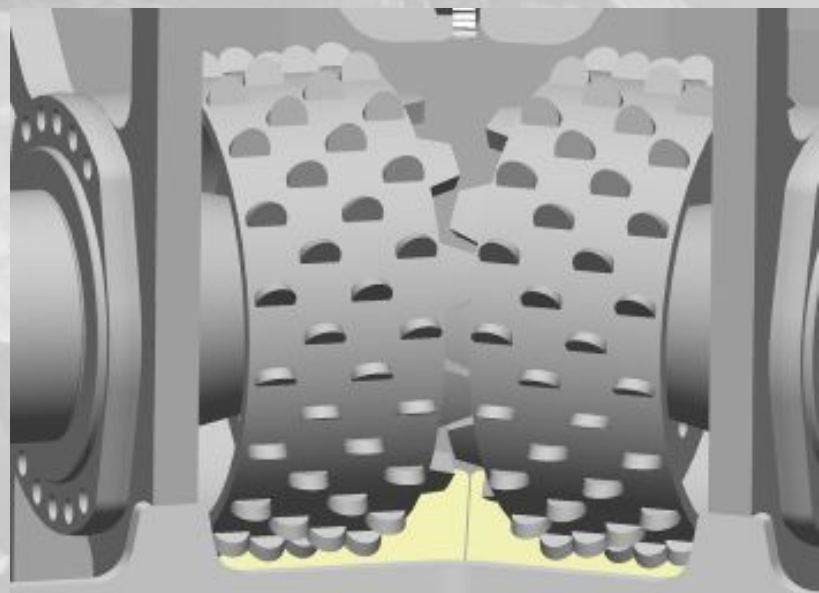
Comparison 758HD/H480/H480C

X=satisfactory
XX= good
XXX= excellent

	758HD	H480	H480C	Improved in H480C
Feeding small trees	X	X	XXX	angle of rollers
Holding big trees	X	X	XXX	angle of rollers
Delimbing small tre	X	X	XX	new fixed knive
Feeding motors	X	XX	XXX	Poclains,HDDanfoss, check valve in T line
Saw device OM	X	X	N/A	n/a in H480C
Saw device SC	X	X	XX	cylinder connected to drain
Saw motor	X	X	XX	Bucher option, 5 bar T-pressure
Cylinders	X	X	XX	new roller arm cylinders, improved weldin
Hosing	XX	XX	XXX	banjos away, new routings
Weight	XXX	XX	X	more durability with weight
lenght measuring	XX	XX	XXX	new measuring rollers, H09, Drain connect
Diameter measuring	XX	XX	XX	place for new sensors.
Delimbing knives	XX	XXX	XXX	Improved allready
Roller arms	X	XX	XXX	More steel for danfoss. Improved welding
Colour marking	X	XX	XXX	easy pump bleeding outside. Filters
Stump treatment	X	X	XX	possible to use urea in SC
Additional guarding	XX	XX	XXX	Simplified snow protection
Rocker plate	X	X	XXX	Fixed wear plate
Feed rollers	X	X	XX	more grip, less damage
Upper feed rollers	X	X	XX	better teehts, no stress for upper motors
Tilt frame	XX	XX	XXX	rubber stoppers.

Feeding Performance: Speed Ratio

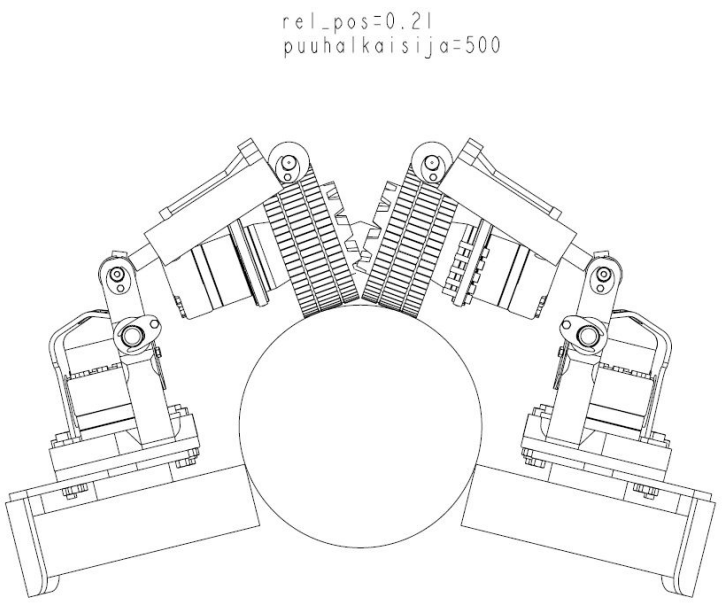
- Improve current speed ratio between upper and lower rollers
- Bigger M14 fastening bolts for upper motors
- reduce upper roller diameter
  - Affects to motor & roller location
  - Change gear to outer diameter to
    - Reduce loads
    - Reduce weight
    - Improves manufacturing
- H480C feeding power will be improved
  - Update will get new roller arms
  - (to improve small tree feeding and
  - big tree holding)
  - and new feed rollers (better grip)

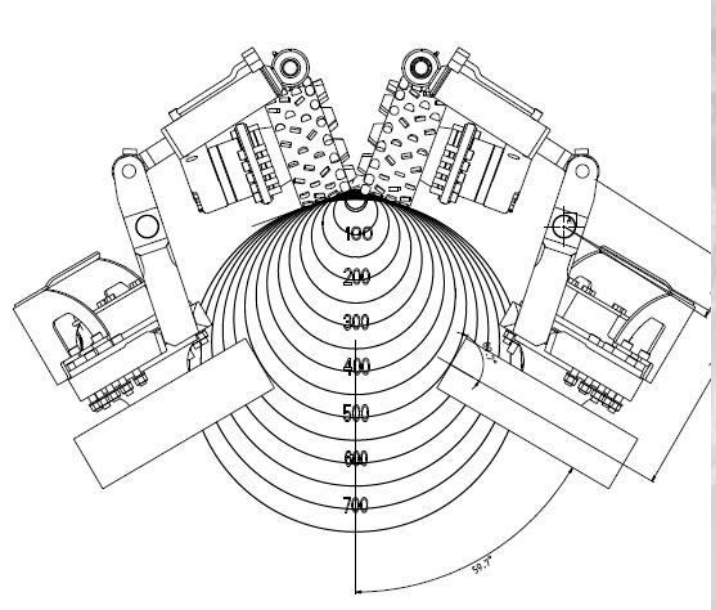


Feeding Performance: Tree holding

- Improve small tree feeding & big tree holding
  - New Roller arms for Danfoss & Poclain motors

Current H480 (D500)	The New H480C (D500)



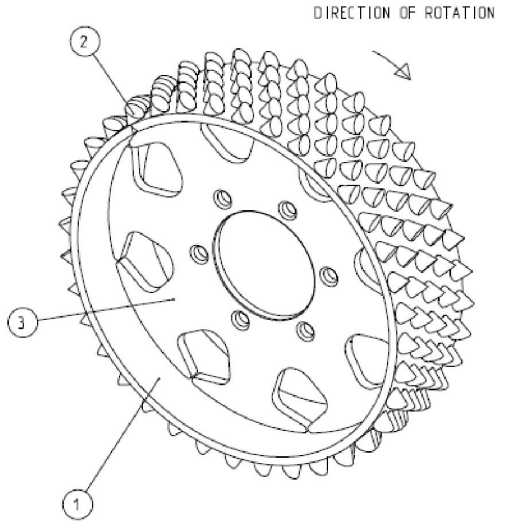


Feeding Performance: Roller Arms

- New stronger & re-designed Danfoss feed roller arms
  - Material change 70 mm 80 mm
  - Improved small tree feeding & big tree holding
- New re-designed Poclain roller arms
  - Improved small tree feeding & big tree holding
  - Slightly modified design
- NOTE! For old (=H480 Poclain & Danfoss + 758HD Poclain) heads new roller arms can be sold as an pair only

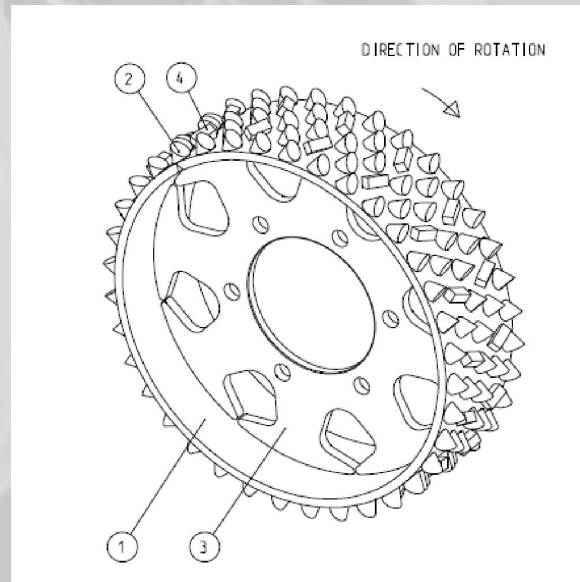
Feeding Performance: Lower Roller Spikes

- Currently 14mm spikes used on majority of feed rollers.
- Going to bigger spike (20mm) on lower feed rollers will guarantee better grip and durability.
- Less feeding damages due to better grip and spike design.



Feeding Performance: Lower Roller V-type

- Currently 14mm spikes/10*10 ribs used on majority of feed rollers.
- Going to bigger spike (20mm) on lower feed rollers will guarantee better grip and durability. Ribs made of 12*12
- Less feeding damages due to better grip and spike design.

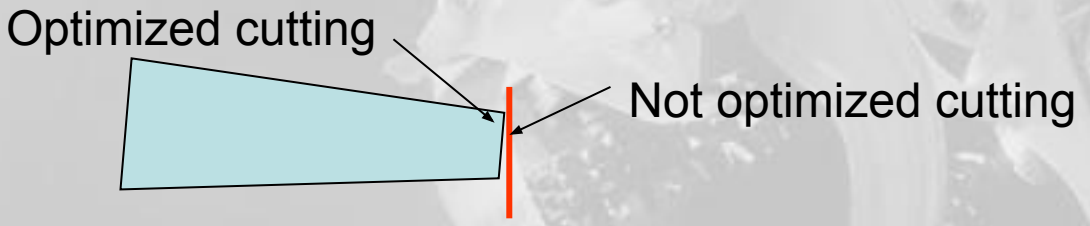


Feed motor durability

- Lower motors:
  - 5 bar back pressure to tank line (check valve)
  - Check valves to lower feed motor drain line to protect motors
  - New option: Poclain 630/Danfoss400.
  - Danfoss TMVW/TMTW HD feeding motors.
  - Right feeding ratio between upper and lower motors gives less stress. to hydraulics

Feeding path optimization

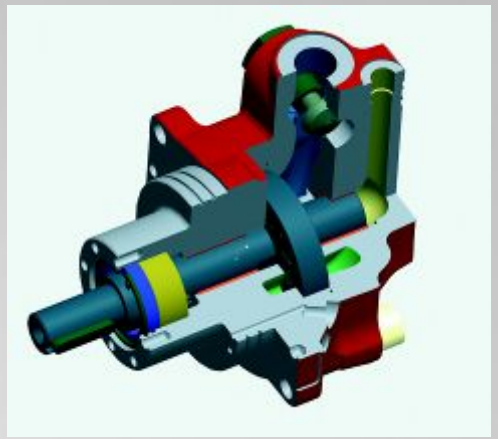
- Tree conicality is 1-1.5cm / 1 m Optimize cuts
  - Fixed top knife / upper feed rollers
  - Tree travel path needs to be optimized for delimbing
  - Note that big tree drops some amount (1 cm?) off from top knife
  - Has been done by upper motor/roller position



Sawing performance

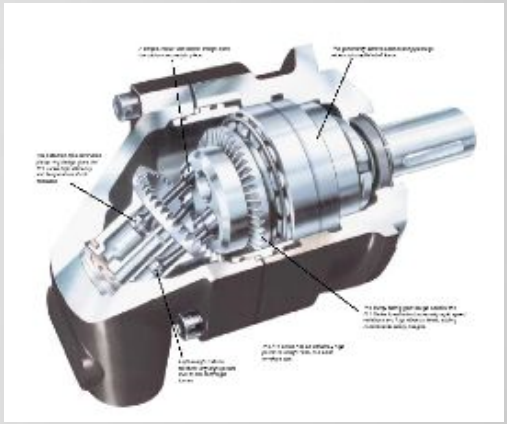
- Change for Saw bar feeding hydraulic coupling improves sawing performance
  - New EVO II valve block
  - New hose routing
  - Check valves to saw motor drain line to protect motors
- Parker saw motor durability
  - Drive wheel change 12 → 13 teeth
  - New compensator (F-code)
- New saw motor, Bucher 20 cc
  - Alternative for Parker
  - Requires new saw valve manifold (EVO II)
  - Available also as an field kit (for some models)

H480C Saw device



Alternative saw motors

Bucher 20 cc
-stands high revs
-10500 RPM
-not sensitive for cavitation



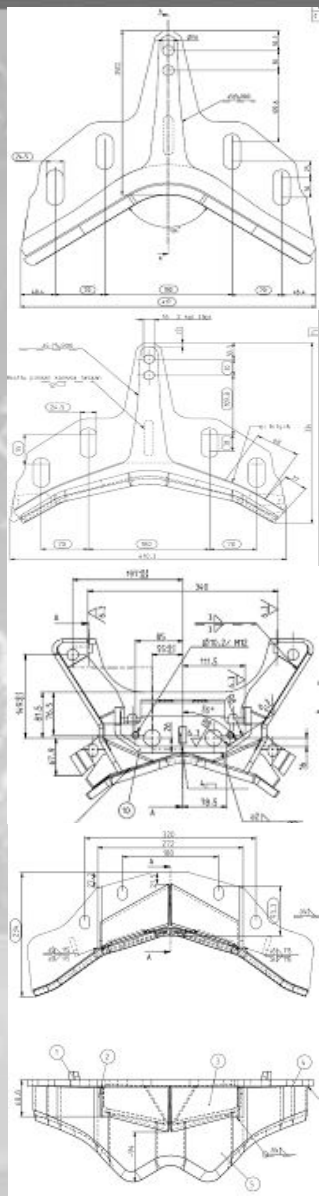
Parker 19 cc
-9000PRM
-Good hydraulic efficiency

Tilt frame and tilt end damping

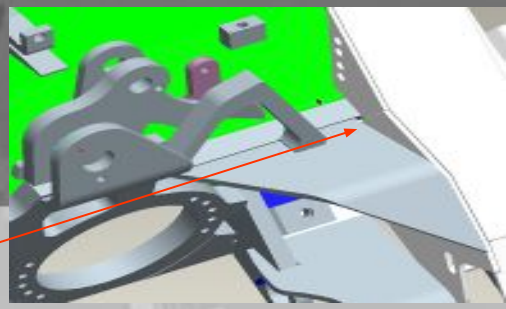
- New tilt brackets to mainframe (compare H414)
- Lifting up tilt causes heavy impacts to structures
- Current tilt cylinder F634639 has 20mm end damping
  - Because of mechanical structures, not all damping length is used
  - → Inefficient damping performance
- → Improve tilt up end damping:
  - Rubber dampeners (2 pcs) together with cylinder damping

Fixed top knife (ECR021746)

- Currently 5 different versions on price list + some test versions designed
- Good features connected to standard fixed knife ”contorta moustache knife”

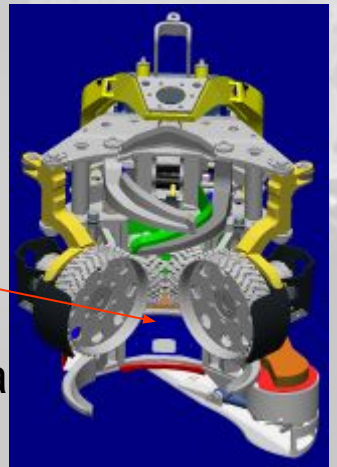


Saw box fastening & rear frame



- Better support to tilt stopper
  - (Some changes done already summer -08)

- 'J'- plate manufacturability improvement
- Simplify optional snow protection
- 'Flat' saw box plate with ring (compare H414)



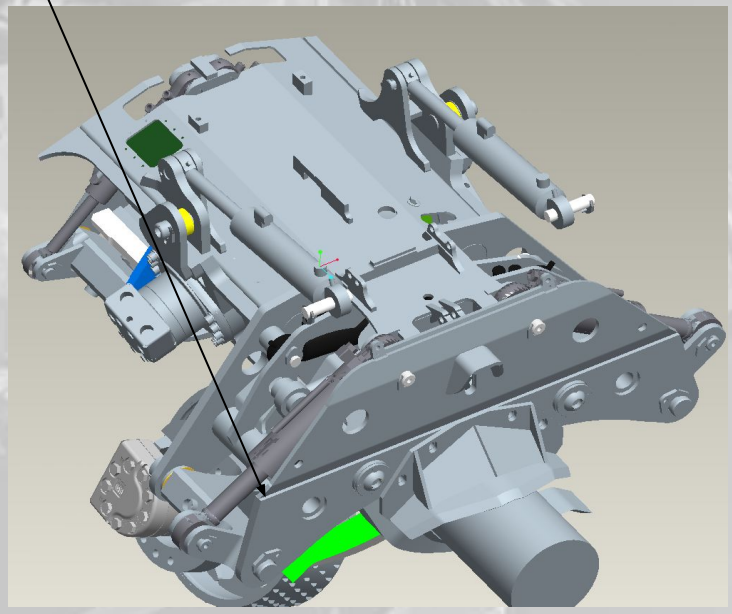
- Smooth rear portion

Rocker, Expander & Length measuring

- Replacing
  - Pin assembly F635772 (high warranty)
  - Straight and boggie style rockers
- By bolted ’service door / wear plate’

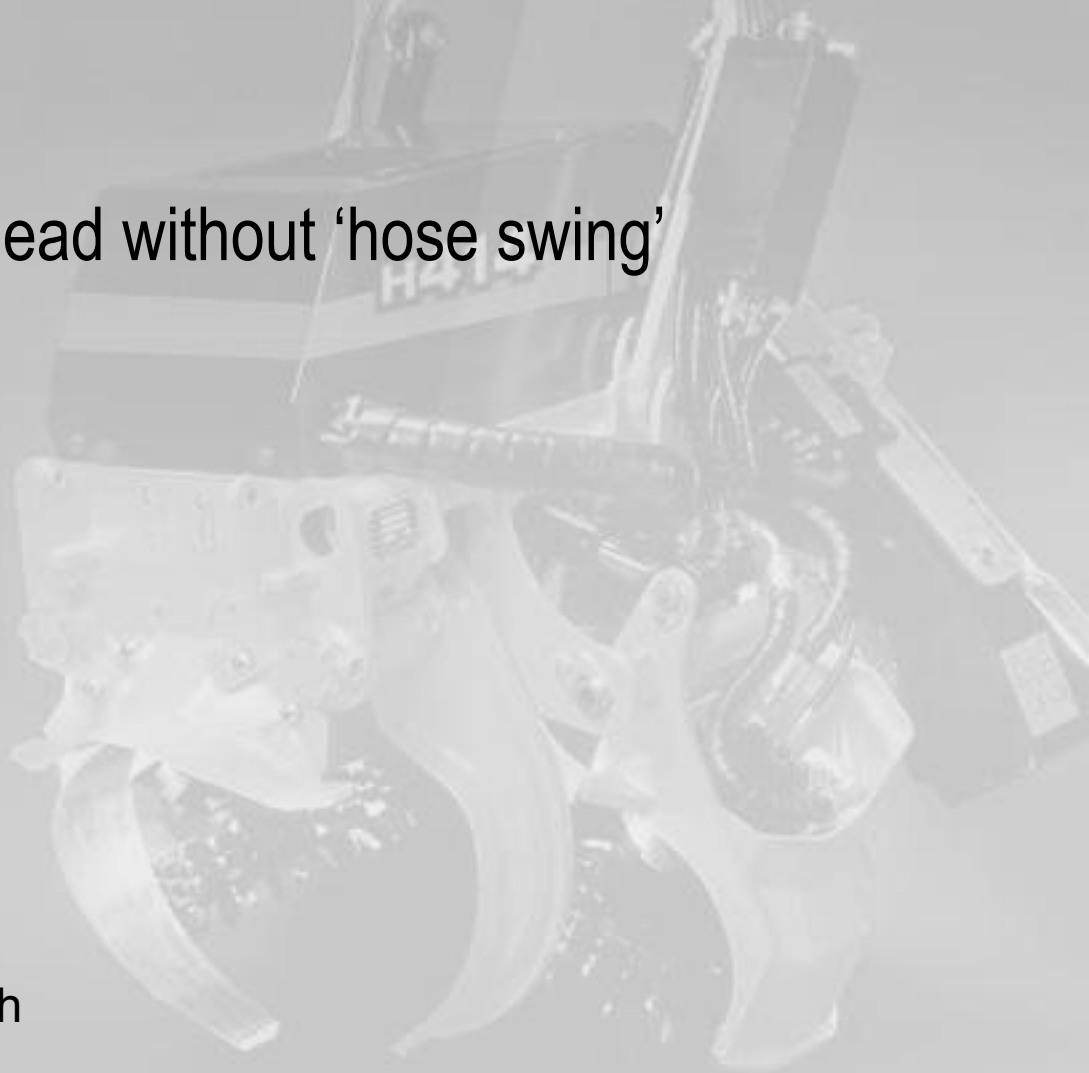
Cylinders

- New roller arm cylinders F074420
  - Better welding between rod & eye
    - (Will fit only to H480C roller arms)
- ‘Face plate’ shaped to protect cylinder fittings (see picture below)
- Welding improvement to front knife cylinder (F634640) since winter -09
  - Rod & eye connection

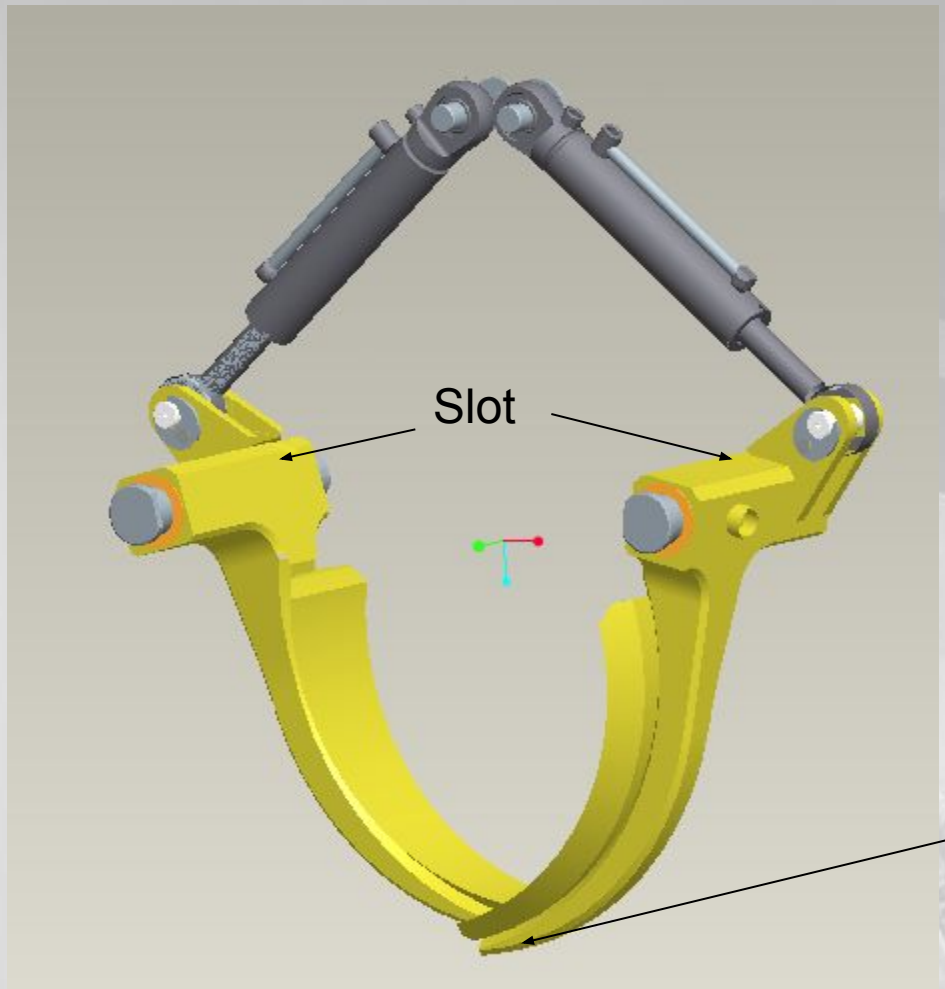


Misc

- Hoses from boom to head without ‘hose swing’



New rear knife cylinder.

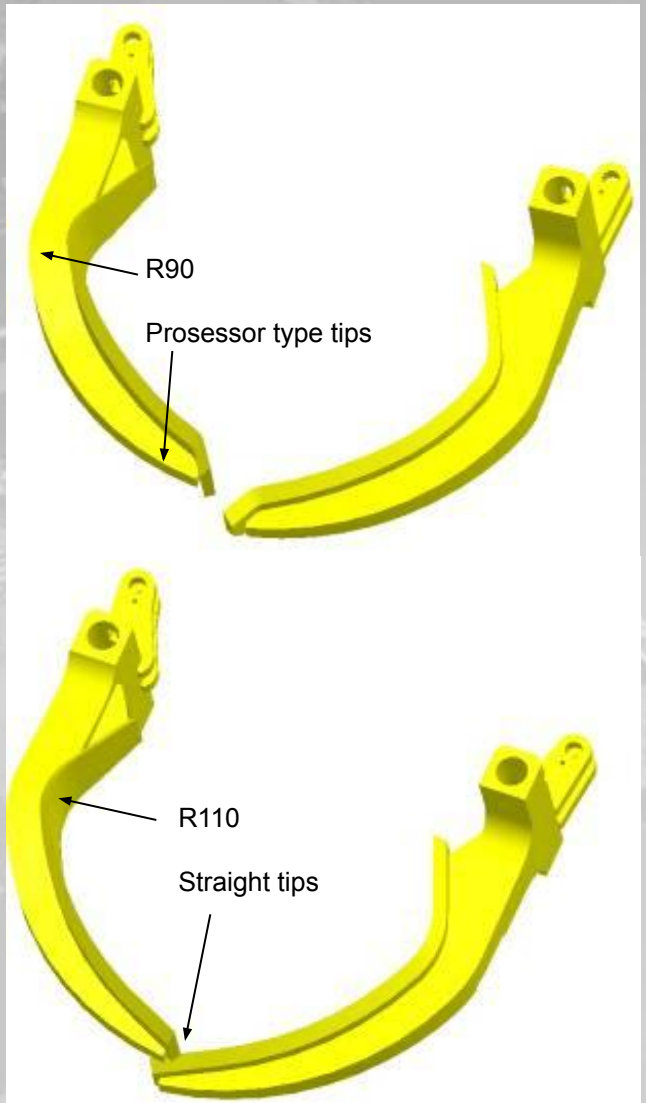


- Rod diameter increased from 20 mm to 25 mm
- Lenght of end cushion increased from 5 to 10 mm in both ends.
- …WJH48000333
- Rear knives lenghtened 30 mm

New front knives. WJH480H000519…

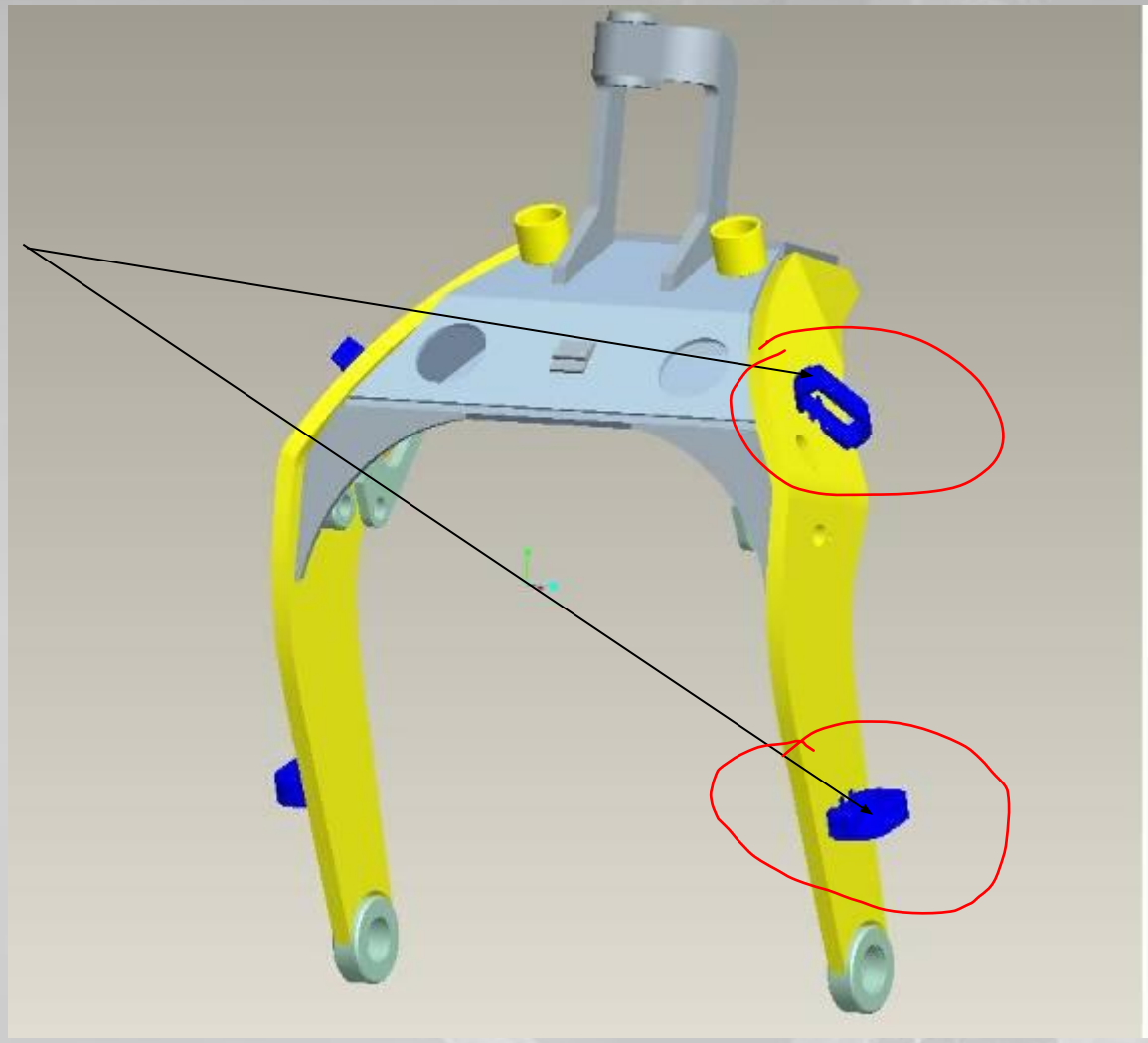
Standard, R90 radius
F646612
F646613

French version, R110 radius,
F646949
F646910



Tilt frame

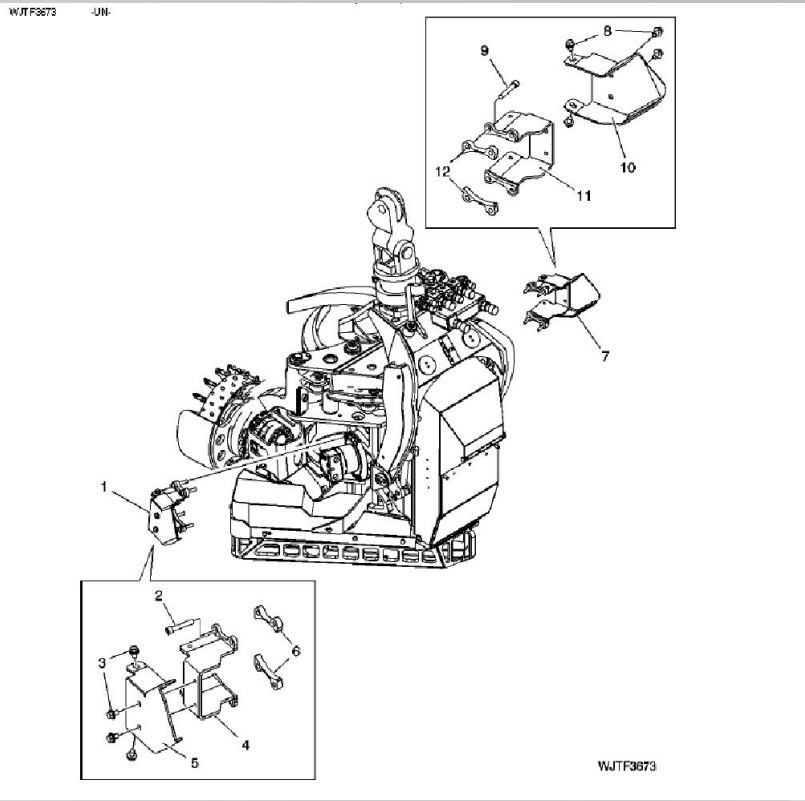
New tilt cover brackets

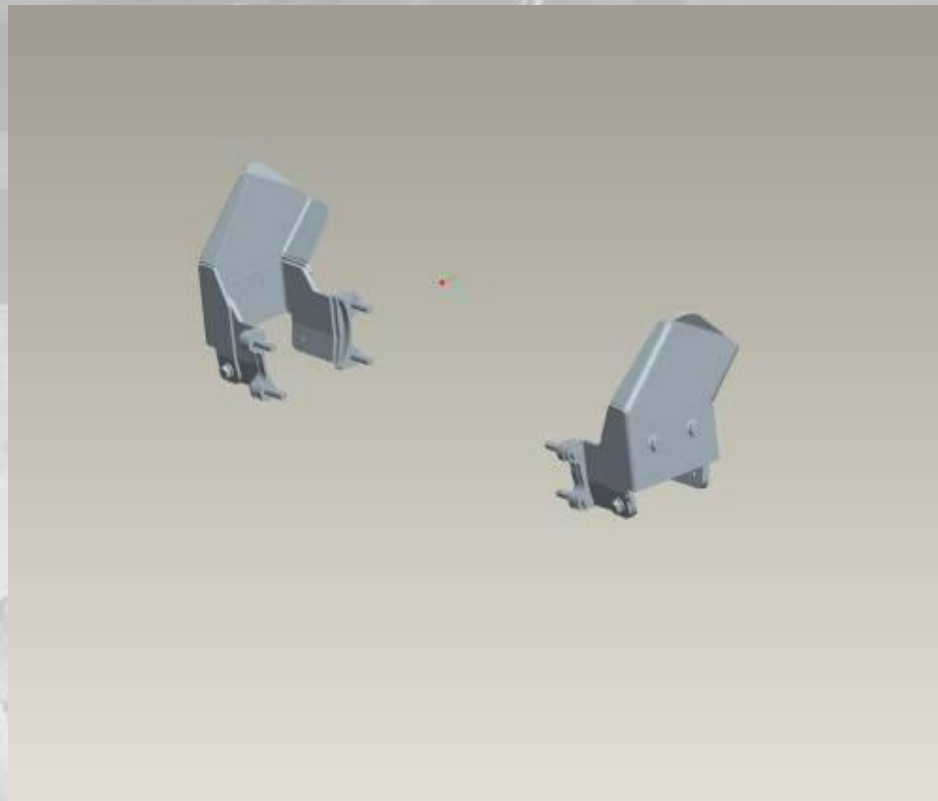


Upper knife shields (option)

Right F640571
Left F641116

V00758



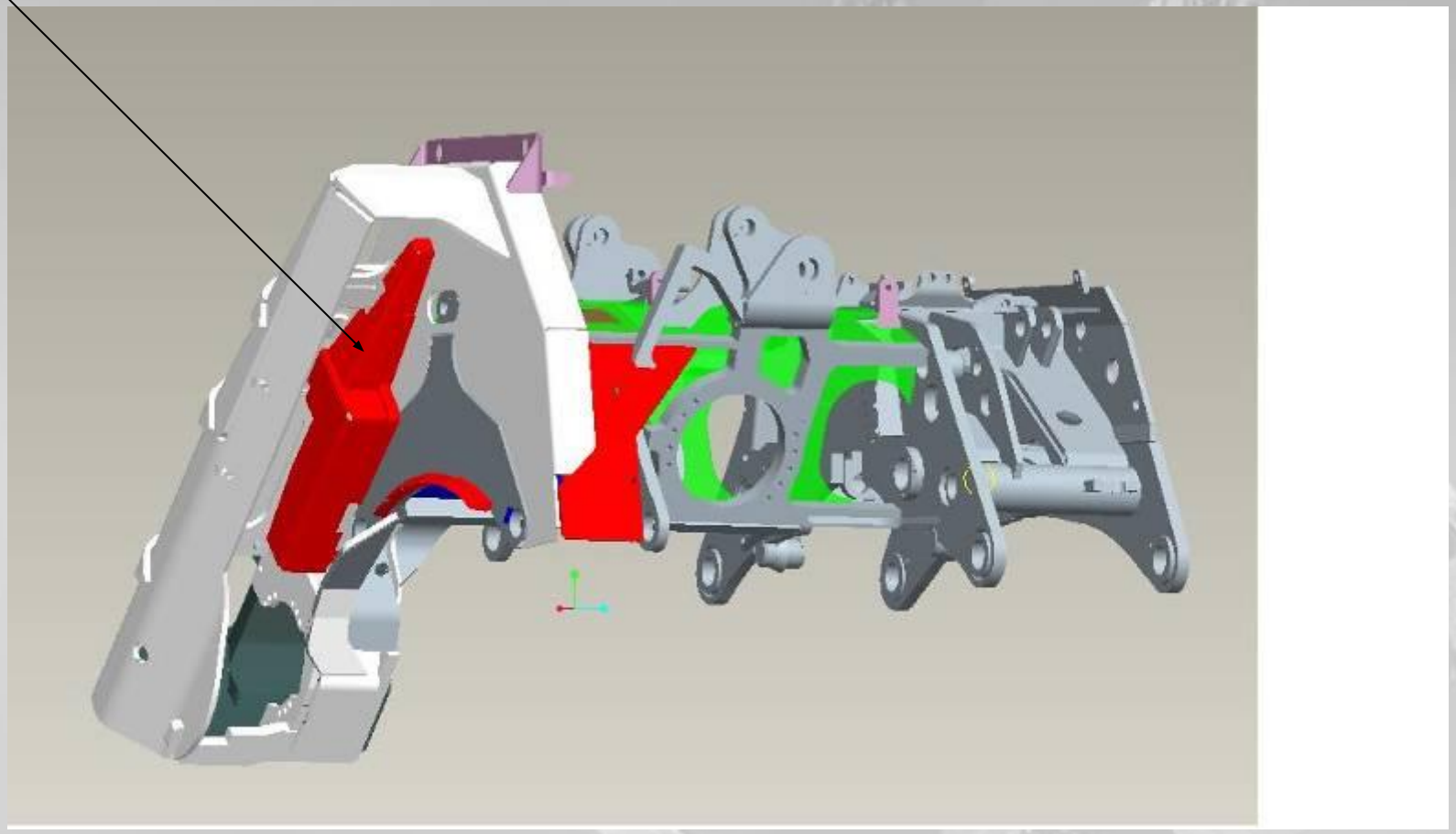


Feed Rollers

- Upper Rollers
  - V-type rollers
  - Thumbnail spikes gives traction
  - Euca rollers

- Down Rollers,
- Thumbnail rollers
  - MTH V-type rollers
  - Mense feeding rollers, conical type
  - Moipu feeding rollers
  - Euca feeding rollers
  - 20 dia,thumbnails v-type 12*12 bars

Better protection for SC saw unit



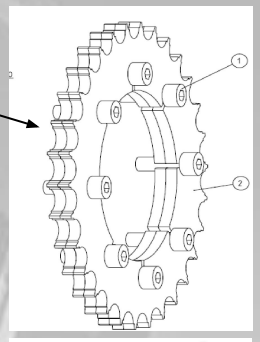
Measuring wheels H480/758HD

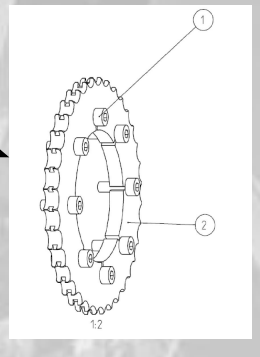
Big diameter:

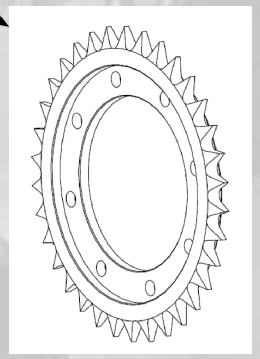
Narrow pl 6 sharp tips F655667 1, 2 tai 3 pcs
(replaces F645981)

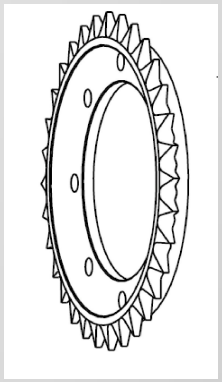
Special F645983
H270 F633609
Euca F645982
Canada F648841 2 pcs

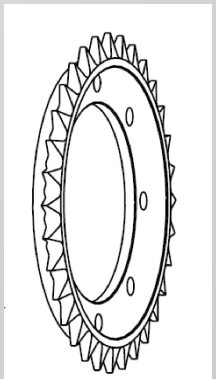
Notice: sharp tips

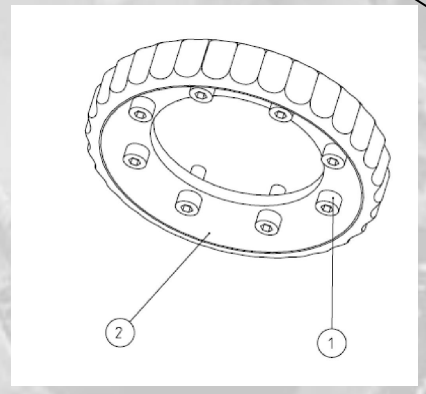












08/30/2023 Waratah

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.*

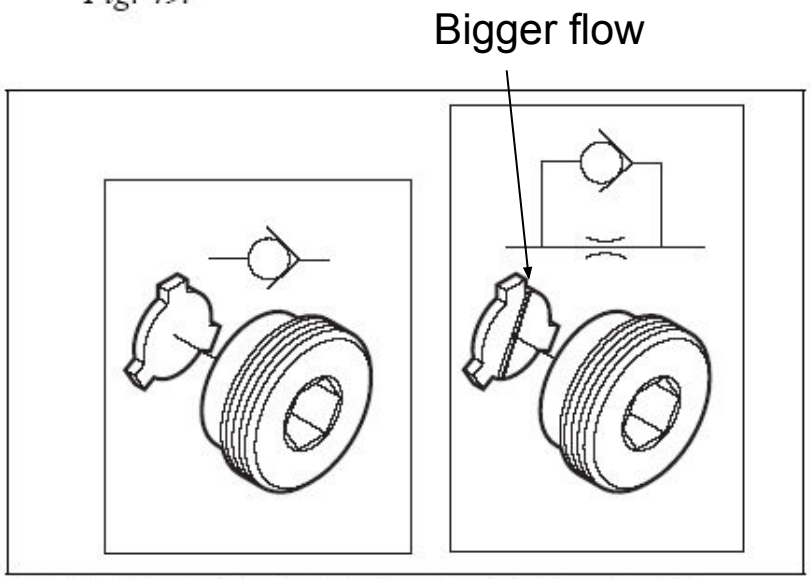
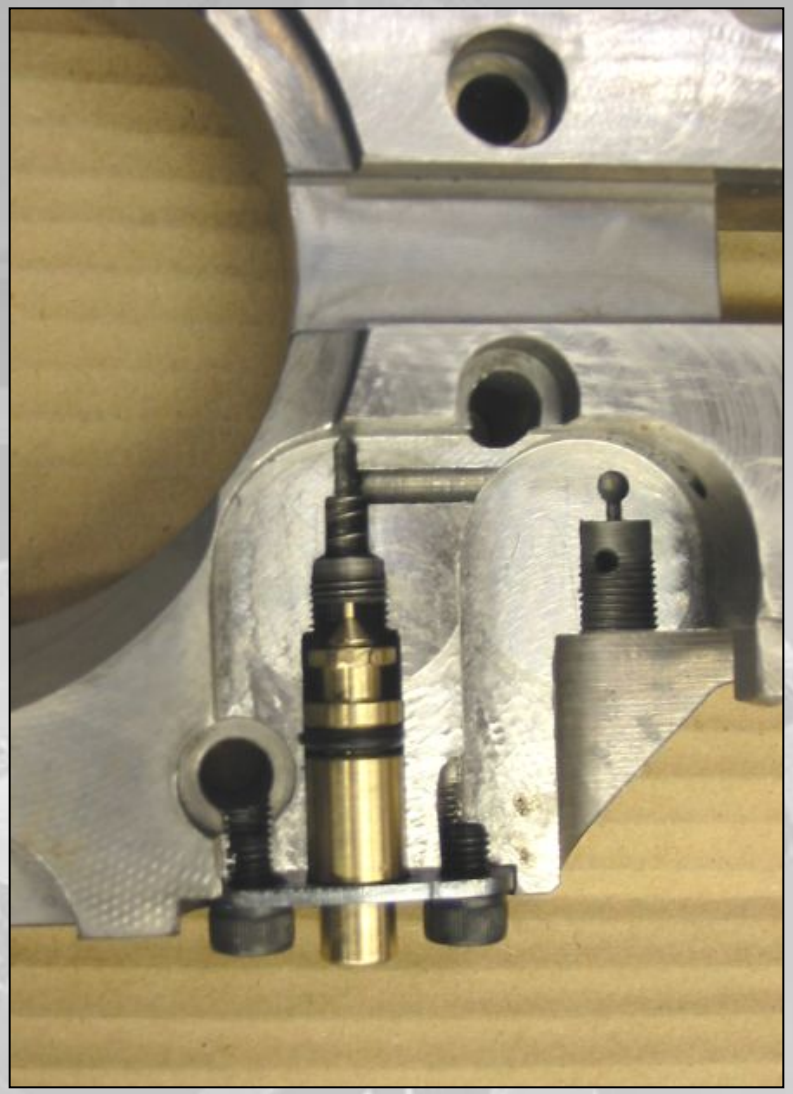


Fig. 49 Check valve / Restrictor check valve assembly



Saw valve

Saw manifold
40 bar pilot
pressure

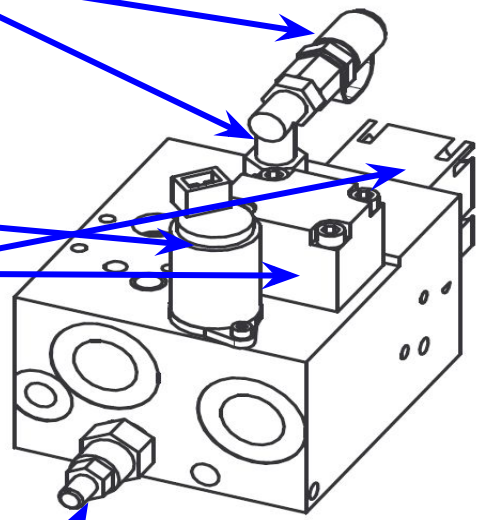
Control valve

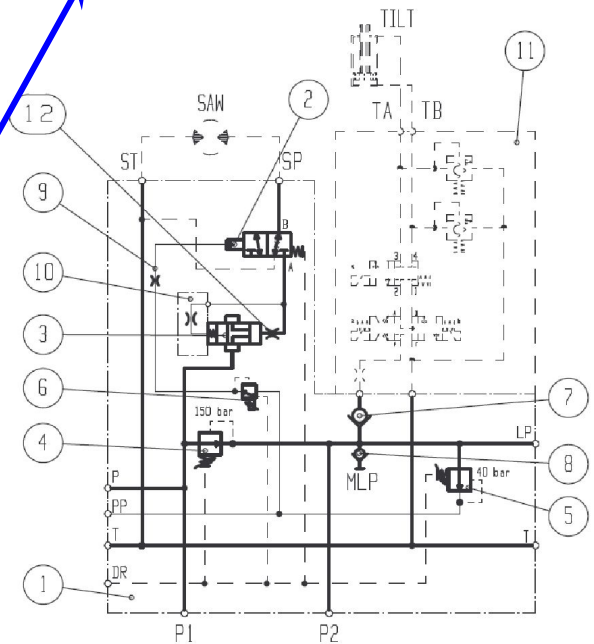
Compensator valve
Better spring

EJH480 #568…
EJH270E000616…
EJH290X000034

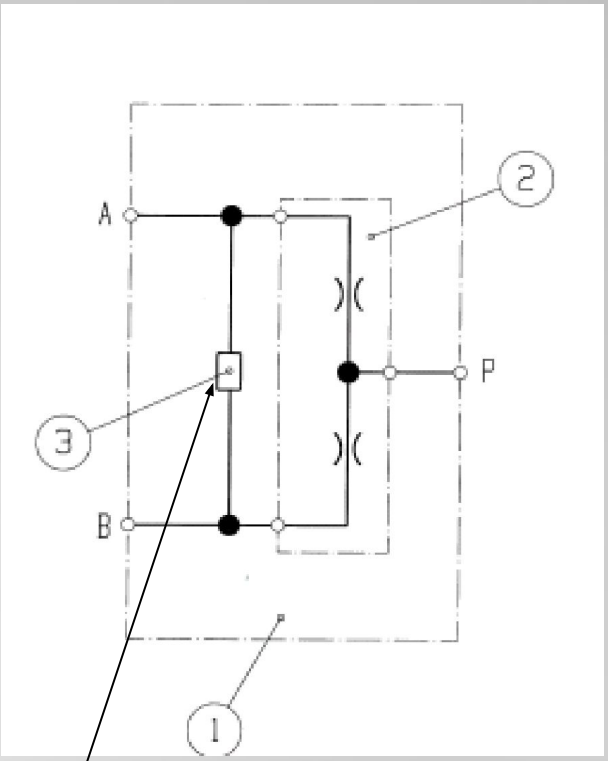
Tilt pressure

Pilot pressure

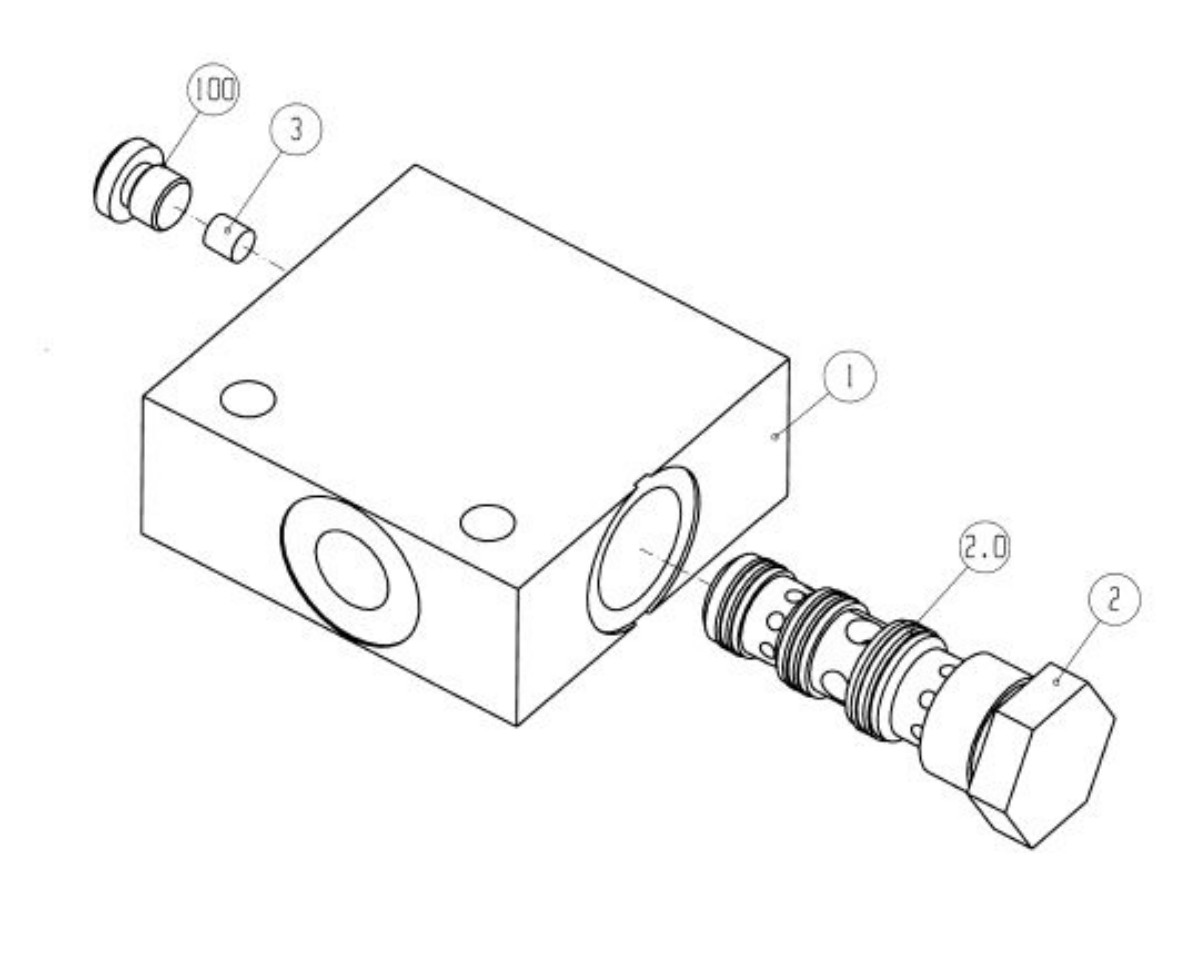




Flow divider for rollers or knives (F064309)



Orifice 0,6 mm added



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