

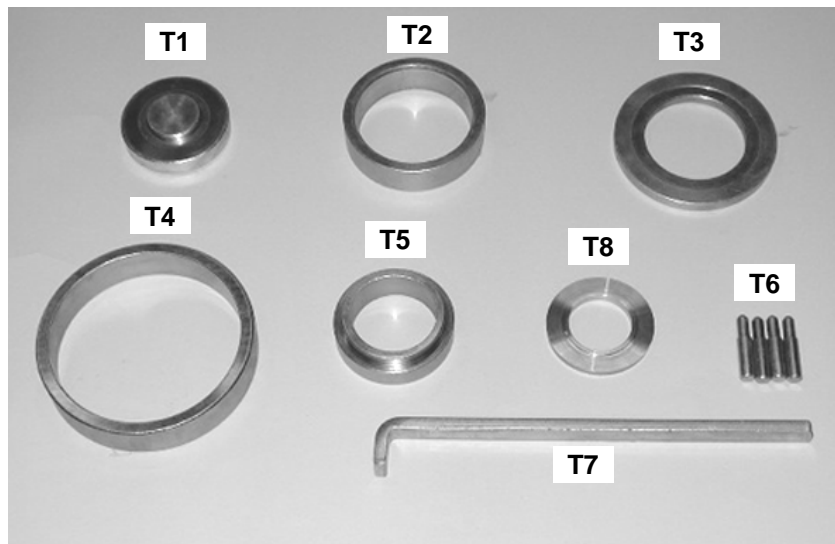
Date: 02.01.2013
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 INT.:

Model:
 Alle høstebjælker / All Cutterbars

Subject: Komplet renovering af høstebjælker
 Complete rebuilt of Cutterbars

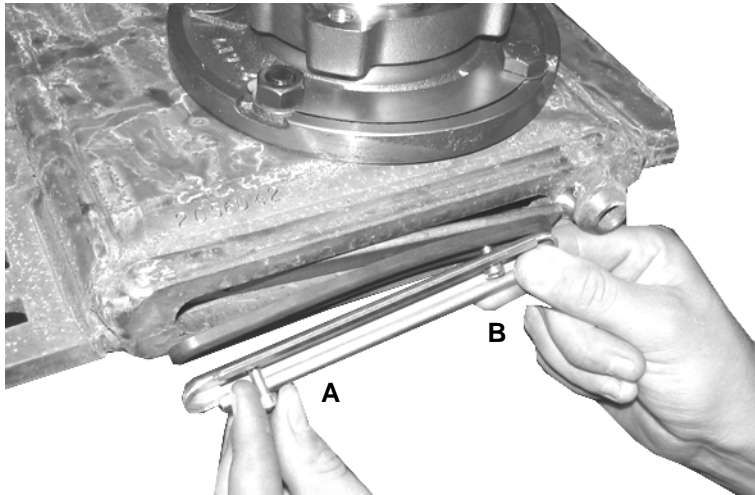
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**Værktøjssæt
Tool Kit**



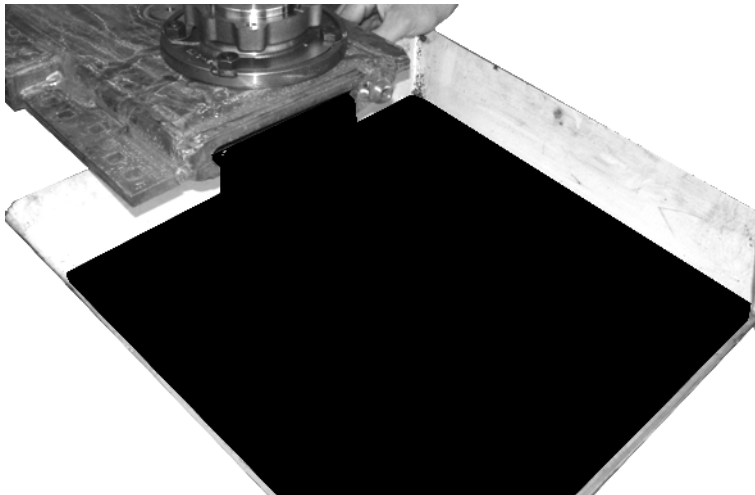
Værktøj Tool	Værktøjets funktion Function of the tool
T1	Værktøj med tap for centrering for demontering/montering af kugleleje i lejehus. Tools with pin for centering for disassembly / assembly of bearing in the bearing unit
T2	Værktøj med konisk hul til demontering/montering af kugleleje i mellemhjul. Tool with a conical hole for removal/fitting of bearing in the intermediate gear wheels.
T3	Værktøj med understøtning og centrering for montering af kugleleje i mellemhjul (bruges i kombination med værktøj T2). Tool equipped with support and centering for fitting of bearing in the intermediate gear wheels Tool equipped with support and centering for fitting of (used in combination with tool T2).
T4	Bruges ikke Not in use.
T5	Værktøj for understøtning ved montering af nav i lejehus (bruges i kombination med værktøj T8). Tool equipped with support for fitting of hub in the bearing unit (used in combination with tool T8).
T6	Værktøj til fiksering af specialmøtrik i høstebjælke. Tool for securing of special nut on the cutterbar.
T7	Værktøj for demontering/montering af specialmøtrik i høstebjælke. Tool for removal/fitting of special nut on the cutterbar
T8	Værktøj for understøtning ved montering af nav i lejehus (bruges i kombination med værktøj T5). Tool equipped with support for fitting of hub in the bearing unit (used in combination with tool T5).

Aftapning af olie Drainage of Oil



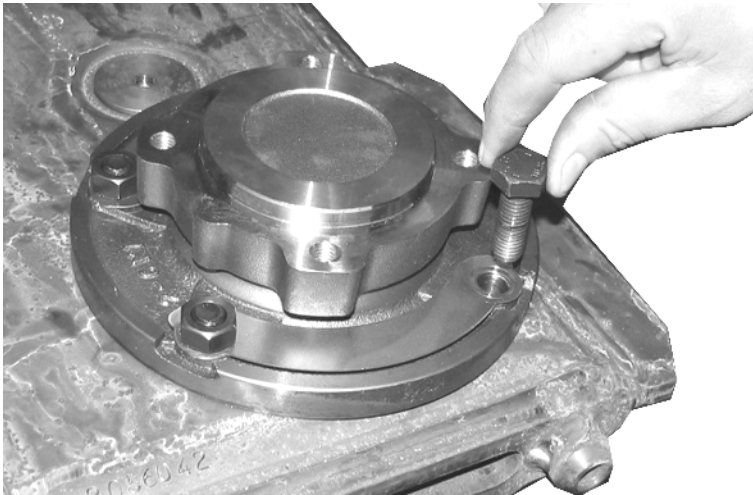
- Opstil et passende opsamlingskar til olien under enden af høstebjælken.
- Demonter skrue "A".
- Løsne skrue "B" en anelse.
- Demonter dæksel inklusiv pakning.

- Place a suitable receptacle below the end of the cutterbar.
- Remove screw "A".
- Loosen screw "B" a bit.
- Remove both the end cap and the gasket.



- Lad olien løbe ud i opsamlingskarret.
 - Lad den sidste rest af olie dryppe af høstebjælken i ca. 10 - 15 minutter.
-
- Let the oil to run into the receptacle.
 - Let the last of the oil drip of the cutterbar for approx. 10 - 15 minutes.

Demontering af lejeenhed Removal of the Bearing Unit

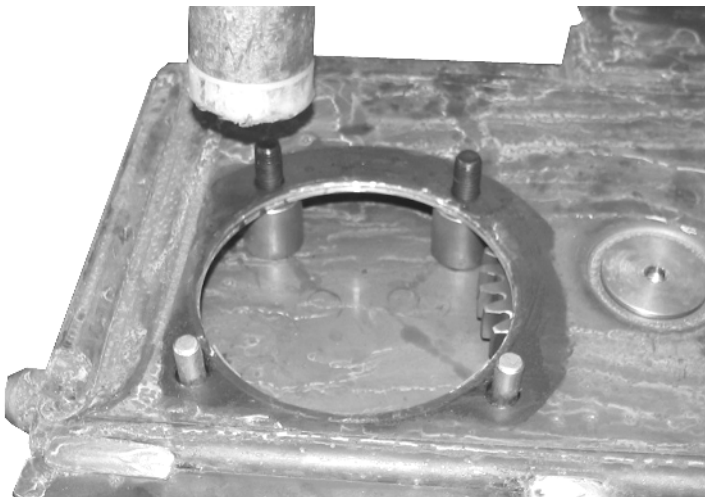


- Demonter de viste bolte og møtrikker.
- Fjern de viste låseblink.
- Demonter lejeenhed fra høstebjælken.

NB! Lejeenheden kan demonteres uden at olien skal tappes af høstebjælken. Inspektion af mellemhjul kan da foretages ned gennem hullet for lejeenheden.

- Remove the bolts and nuts shown.
- Remove the lock plates shown.
- Remove the bearing unit from the cutterbar.

NB! The bearing unit can be removed from the cutterbar without the oil is drained. the inspection of the intermediate gear wheel can be done by carry out the inspection through the hole of the bearing unit in the cutterbar.

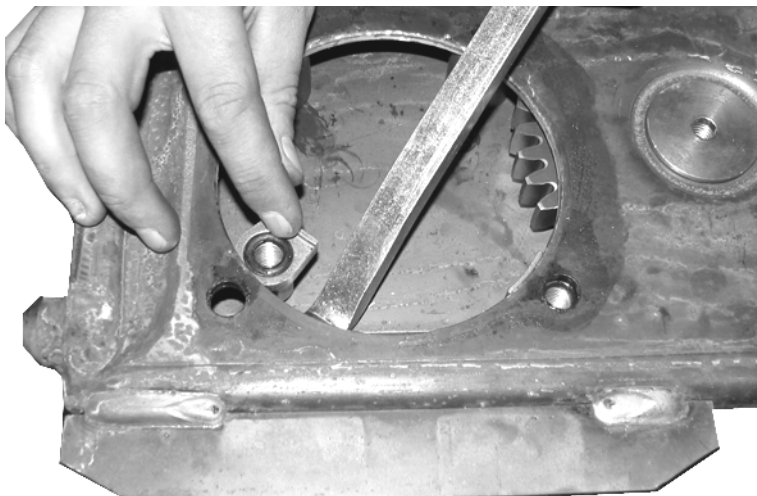


- Demonter de gennemgående bolte.

NB! De gennemgående bolte bruges kun i de yderste lejhuse i begge ender af høstebjælken.

- Remove the through bolts.

NB! The through-going bolts is only used in the outer bearing units in both ends of the cutterbar.



- Brug værktøj T7 som vist og pres pladekanten lidt op.
 - Demonter bøs for gennemgående bolte.
- NB!** De gennemgående bolte bruges kun i de yderste legehuse i begge ender af høstebjælken.

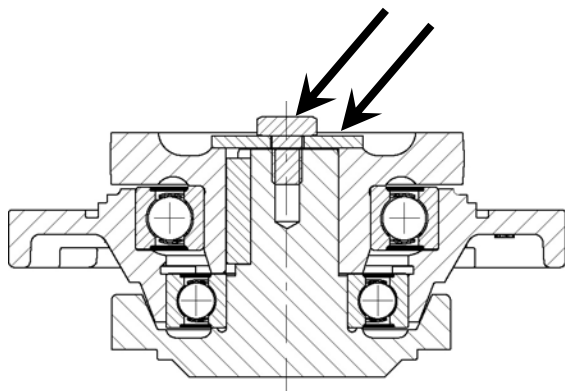
- Use tool T7 as shown and press the edge of the plate up a bit.
 - Remove the bushings for the through bolts.
- NB!** The through bolts is only used in the outer bearing units in both ends of the cutterbar.



- Brug værktøj T7 som vist og pres pladekanten lidt op.
- Demonter alle specialmøtrikker i høstebjælke.

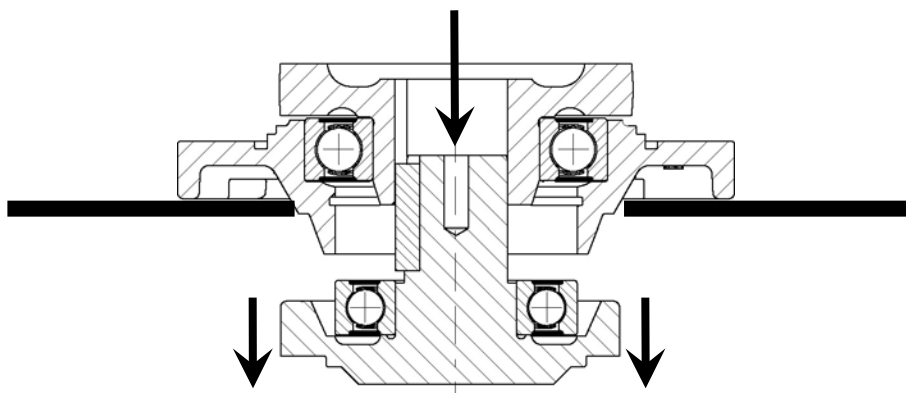
- Use tool T7 as shown and press the edge of the plate up a bit.
- Remove all the special nut in the cutterbar.

Udskiftning af leje Replacement of Bearing



- Demonter den viste låsebolt og skive.
NB! Bolten er monteret med LOCTITE 242.

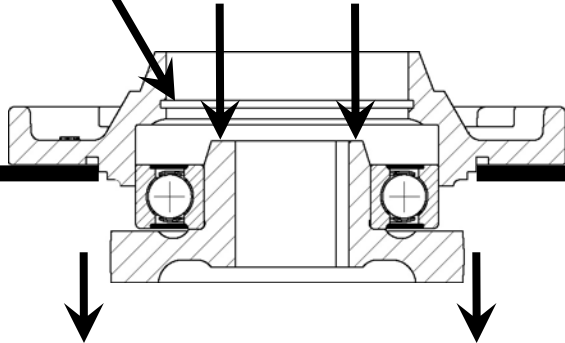
- Remove the lock bolt and washer shown.
NB! The bolt is secured with LOCTITE 242.



- Læg lejeenheden ind i en hydraulisk presse eller lignende som vist.
- Pres akslen ud af lejehuset.

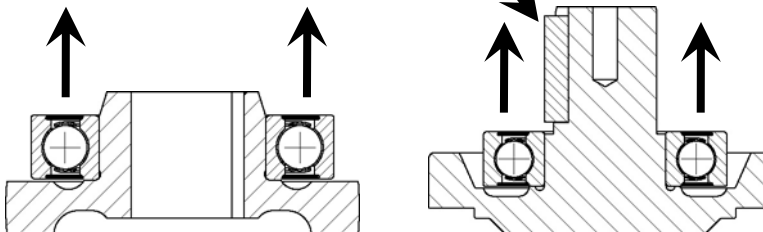
- Place the bearing unit in a hydraulic press or similar machine as shown.
- Force the shaft out of the bearing unit as shown.

Låsering
Circlip

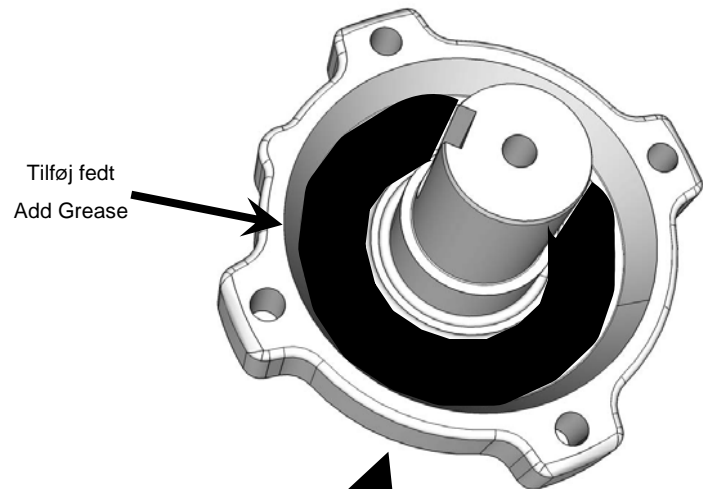


- Demonter låsering.
- Brug en hydraulisk presse og pres tandhjulet ud af lejehuset.
- Remove the circlip.
- Used the hydraulic press and force the gear wheel out of the bearing unit.

Demonter Feder
Remove the Key



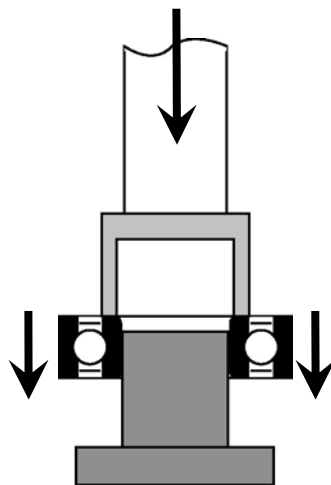
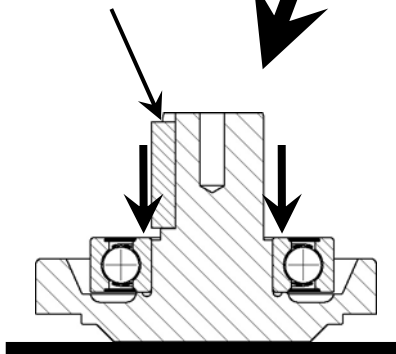
- Demonter feder.
- Brug en aftrækker eller lignende værktøj og fjern de gamle lejer.
- Remove the Key.
- By use of a puller or similar tool, remove the old bearings



•Fyld ca. 1/4 af det viste hulrum på navet imellem leje og flange med fedt af høj kvalitet.

•Fill approx. 1/4 of the groove shown on the hub between the bearing and the flange with high quality grease.

Monter Feder
Fit the Key



•Læg nav/tandhjul ind i en hydraulisk presse eller lignende som vist.

•Monter nye lejer.

•Monter feder.

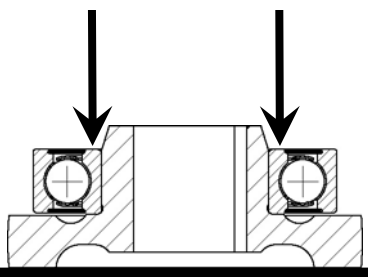
NB! Lejet skal altid trykkes på inderringen når det monteres.

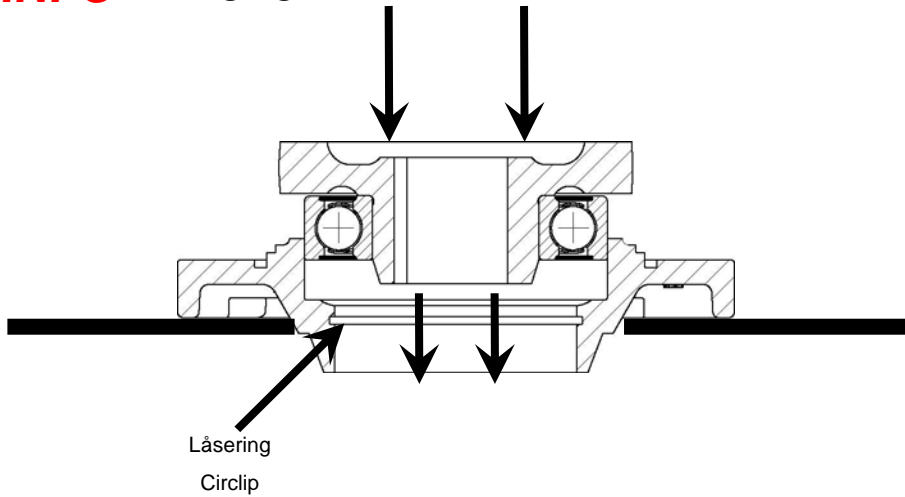
•Place the hub/gear wheel in a hydraulic press or similar machine as shown.

•Fit the new bearings.

•Fit the Key

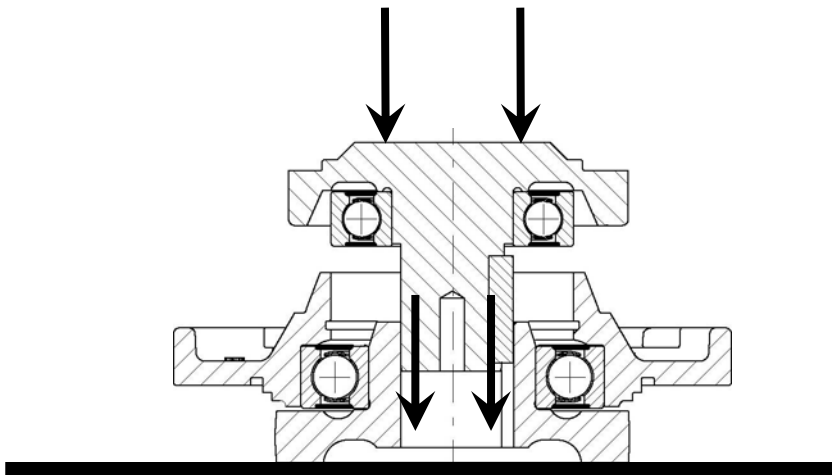
NB! The bearing must at all times be forced by the tool on the inner ring of the bearing when it is fitted.





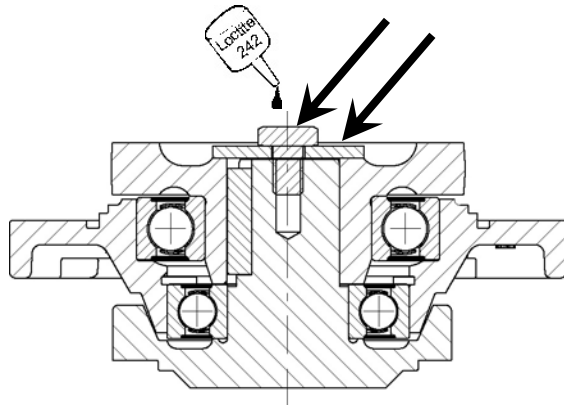
- Læg lejehuset ind i en hydraulisk presse eller lignende som vist.
- Pres tandhjulet i lejehuset som vist.
- Monter låsering.

- Place the bearing unit in a hydraulic press or similar machine as shown.
- Force gear wheel in the bearing unit as shown.
- Fit the Circlip.



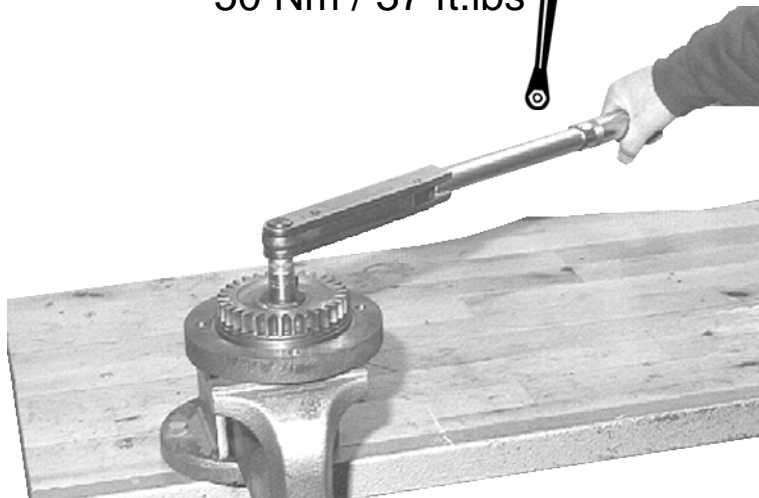
- Læg lejeenhederne ind i en hydraulisk presse eller lignende som vist.
- Pres navet i lejehuset som vist.

- Place the bearing units in a hydraulic press or similar machine as shown.
- Force the hub in the bearing unit as shown.



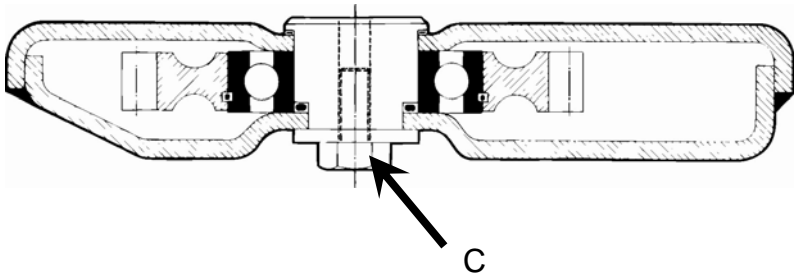
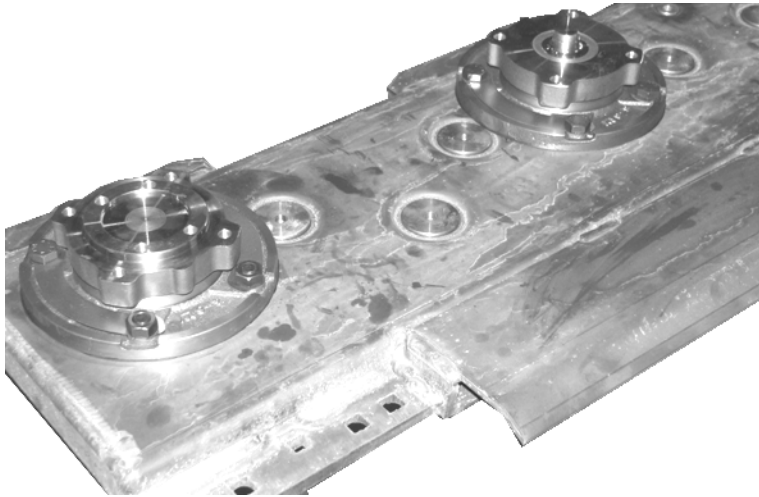
- Påfør LOCTITE 242 eller lignende produkt på bolten.
- Monter den viste låsebolt og skive.
- Add LOCTITE 242 or similar product on the bolt.
- Remove the lock bolt and washer shown.

50 Nm / 37 ft.lbs

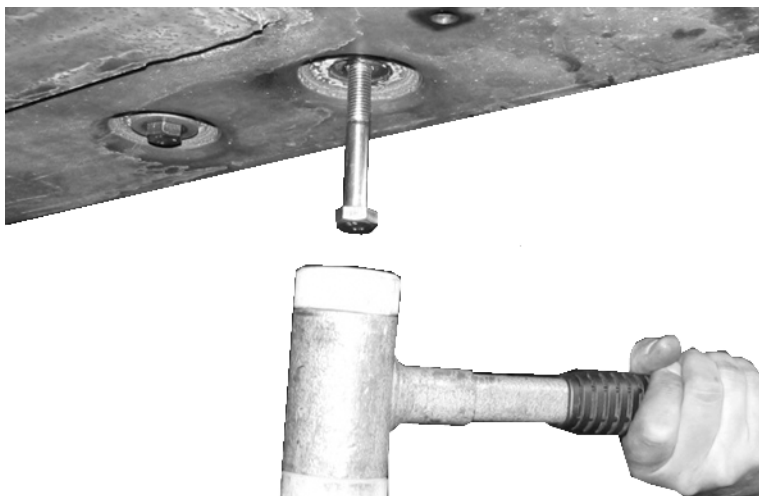


- Brug momentnøgle og spænd låsebolt til **50 Nm / 37 ft.lbs.**
- Tighten the lock bolt to **50 Nm / 37 ft.lbs.** by use of a torque wrench.

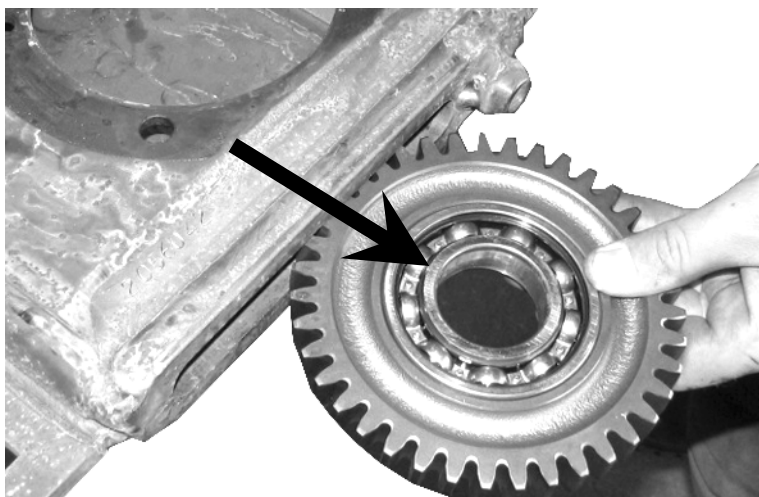
Demontering af mellemhjul (Kun høstebjælke med ulige antal høsteskiver)
Removal of the intermediate wheel (Cutterbars with odd numbers of cutting discs only)



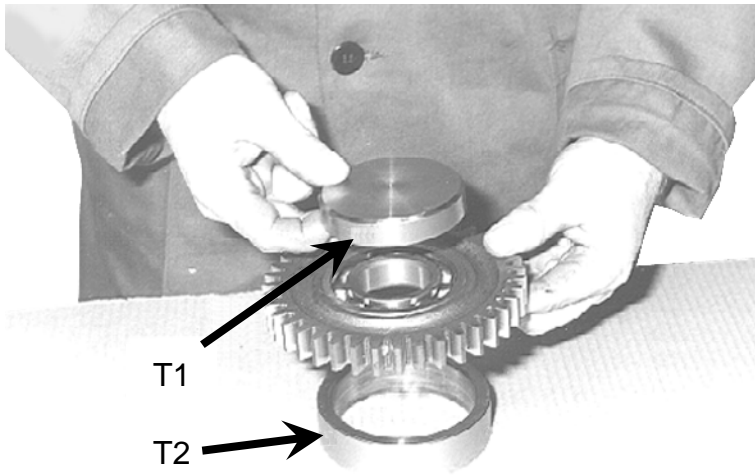
- Demonter bolt "C" på underside af høstebjælke.
- Remove bolt "C" on the under side from the cutterbar.



- Tag en længere bolt af samme størrelse og skru bolten ind i gevindhullet.
- Brug en hammer og slå akseltappen op.
- Use a longer bolt of the same size and screw the bolt in the shaft.
- Force the shaft out of the cutterbar by use of a hammer.

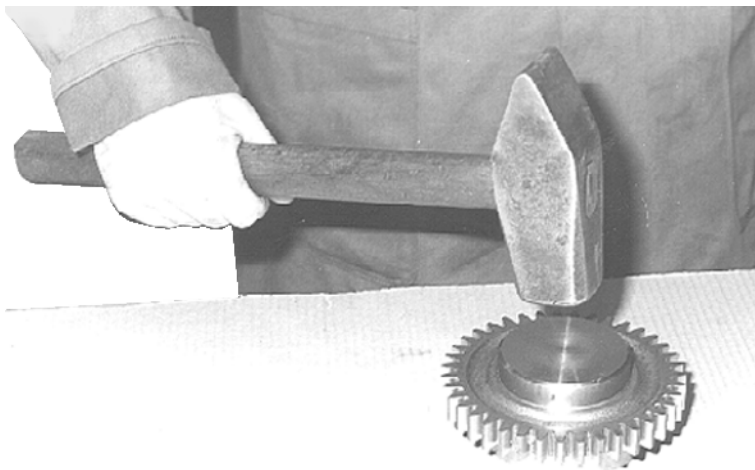


- Skub mellemhjulet ud igennem åbningen i høstbjælken.
- Guide the intermediate gear wheel out through the gap in the end of the cutterbar.

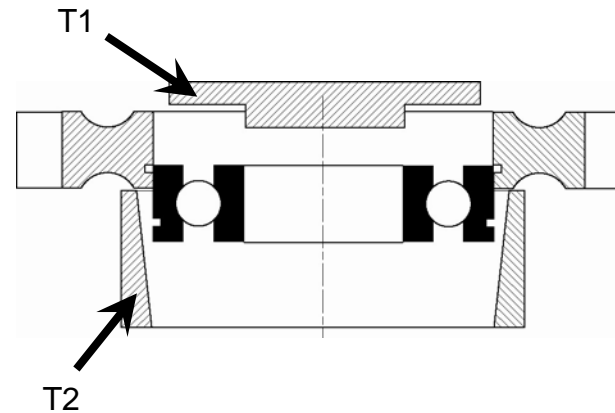


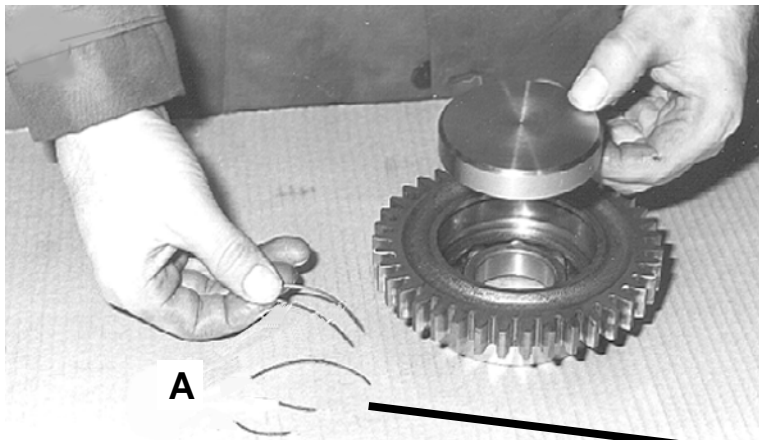
- Anbring mellemhjul oven på værktøj T2.
- NB!** Værktøjets største diameter skal vende opad.
- Anbring værktøj T1 oven på lejet i mellemhjulet som vist.

- Place the intermediate gear wheel on top of tool T2.
- NB!** The largest diameter of the tool has to be faced upwards.
- Place tool T1 on top of the bearing as shown.



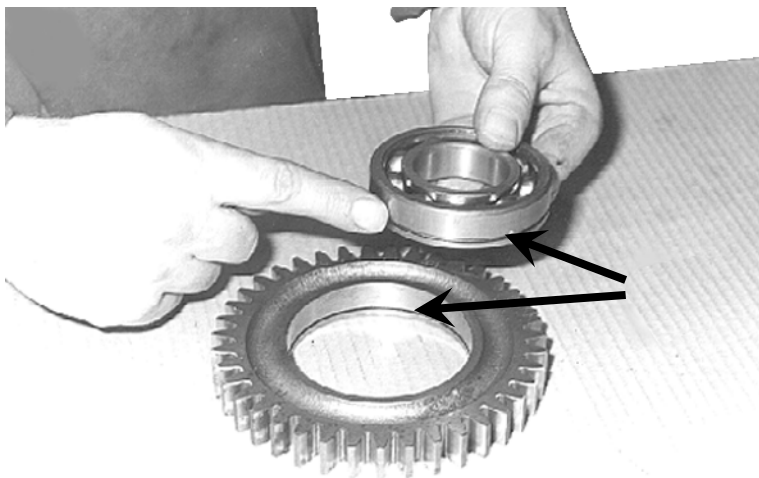
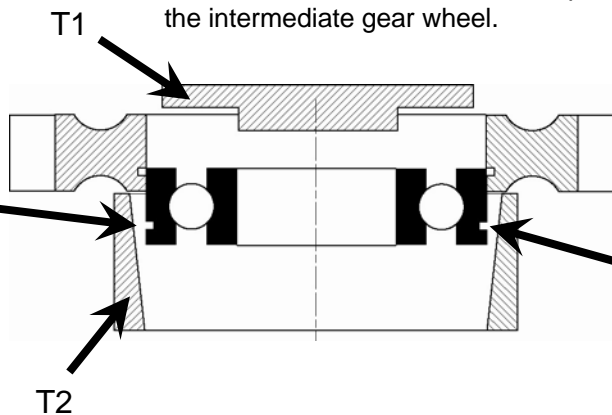
- Brug en hammer og slå lejet ud af mellemhjulet.
- Force the bearing out of the gear wheel by use of a hammer.





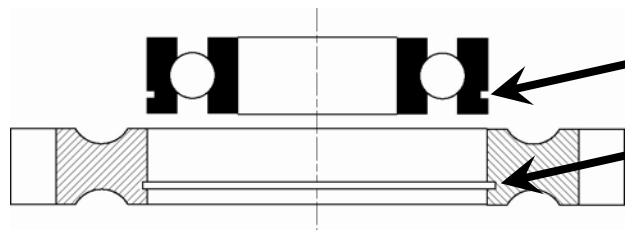
•Fjern værktøj T1 fra mellemhjulet og fjern alle dele af låsering "A" .
NB! Kontroller at alle sprængte dele (typisk 5 dele) fra låseringen er fjernet fra mellemhjulet.

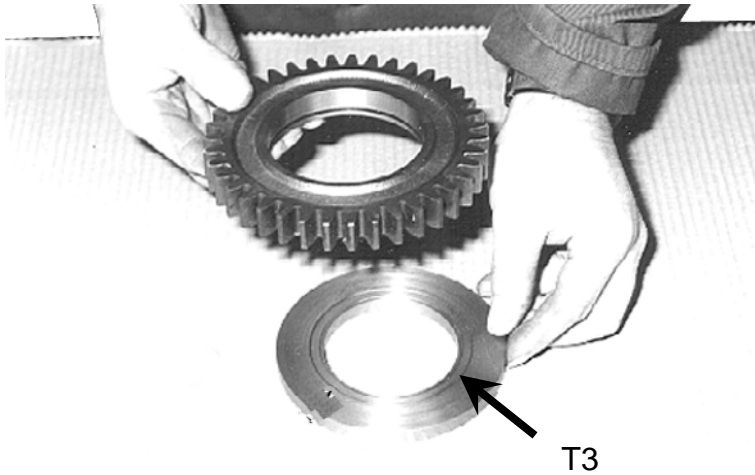
•Remove tool T1 from the gear wheel and remove all the broken parts (typically 5 pieces) of the circlip "A".
NB! Make sure that all the broken parts from the circlip is removed from the intermediate gear wheel.



•Kontroller at tandhjul og det nye leje vender rigtig.
NB! Rillen i lejet og rillen i tandhjulet skal vende nedad.

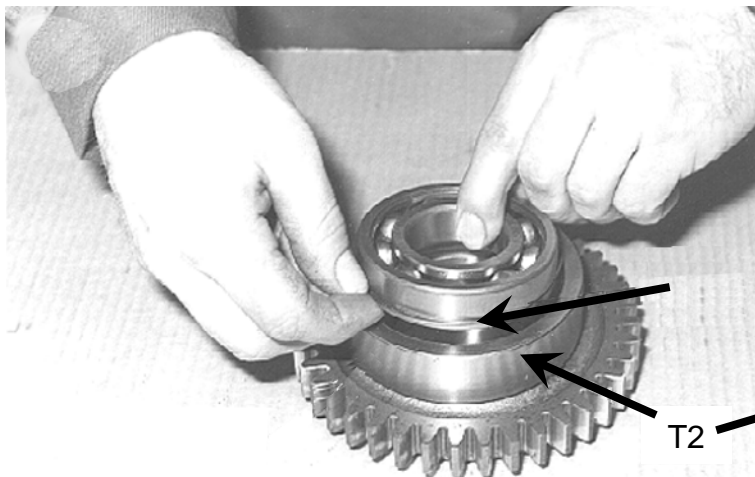
•Make sure the gear wheel and the new bearing is facing the right way.
NB! The groove in the bearing and in the gear wheel has be faced downward.





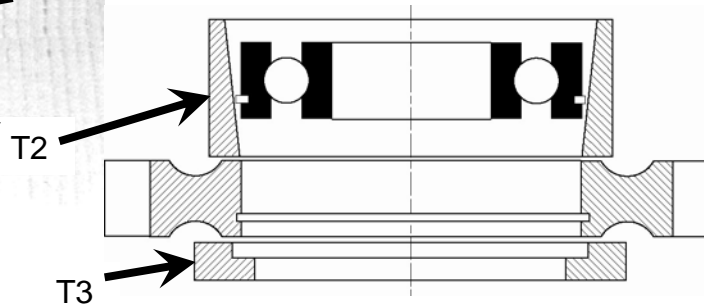
Anbring tandhjulet oven på værktøj T3.
NB! Den neddrejede flade skal vende opad.

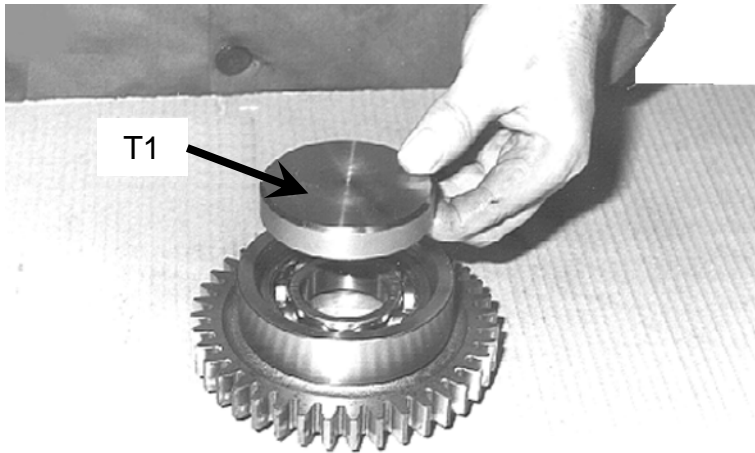
Place the gear wheel on top of tool T3.
NB! The recessed surface has to be faced upwards.



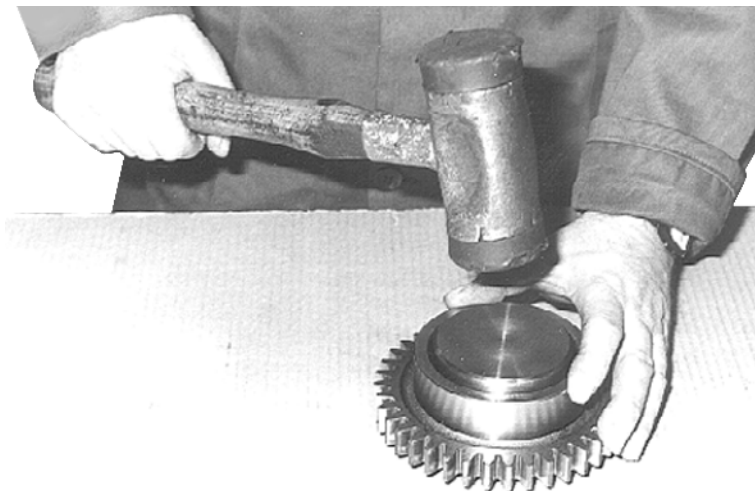
- Anbring værktøj T2 oven på tandhjulet.
- NB!** Værktøjets største diameter skal vende opad.
- Anbring den nye låsering i rillen på lejet.
- Læg lejet ned i det konusformede værktøj T2.

- Place tool T2 on top of the gear wheel as shown.
- NB!** The largest diameter of the tool has to be faced upwards.
- Place the new circlip in the groove on the bearing.
- Place the bearing in the cone shaped tool T2.

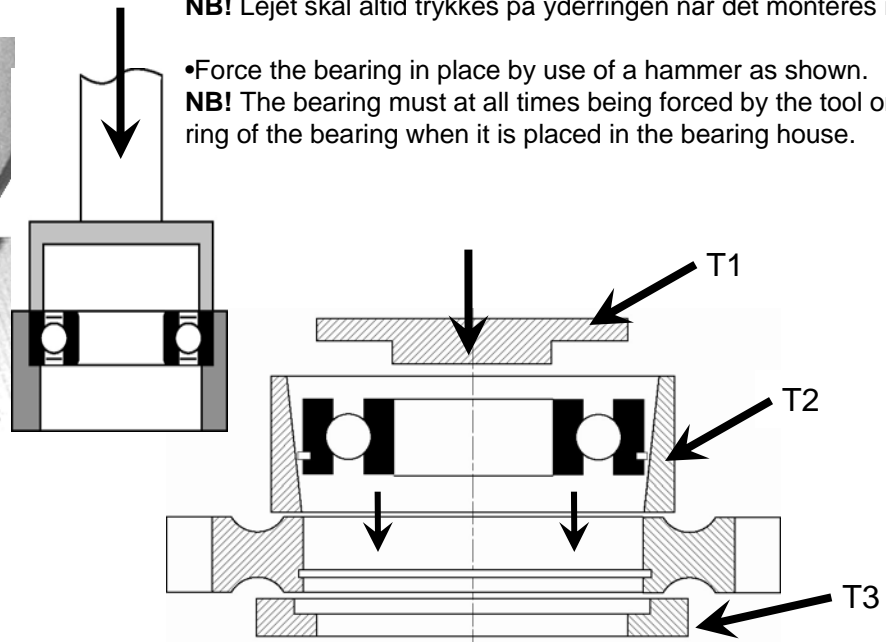




- Anbring værktøj T1 oven på lejet.
- Place tool T1 on top of the bearing as shown.



- Brug en hammer og slå lejet på plads i tandhjulet.
- NB!** Lejet skal altid trykkes på yderingen når det monteres i et lejehus.



- Force the bearing in place by use of a hammer as shown.
- NB!** The bearing must at all times being forced by the tool on the outer ring of the bearing when it is placed in the bearing house.

Montering af mellemhjul (Kun høstebjælke med ulige antal høsteskiver)

Fitting of the intermediate wheel (Cutterbars with odd numbers of cutting discs only)

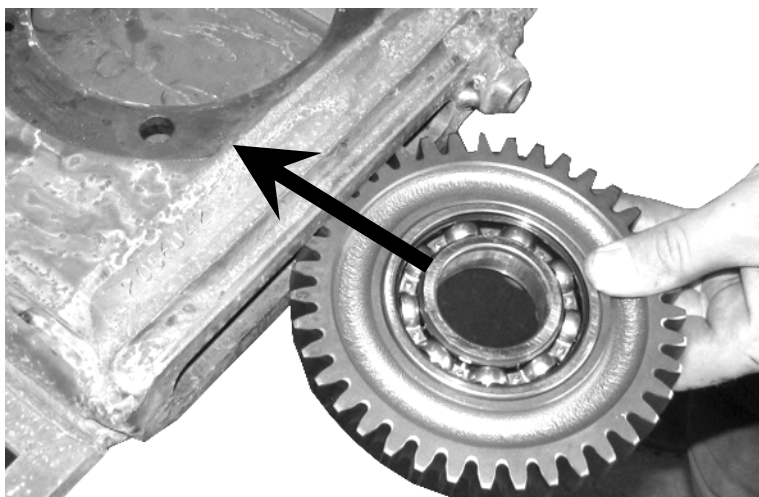
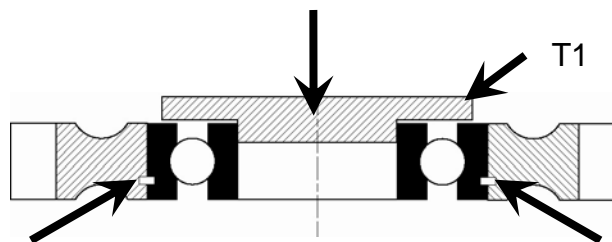


•Kontroller at lejet er låst fast af låsering.

NB! Slå på begge sider af lejet for at kontrollere at lejet er låst fast i tandhjulet.

•Make sure the bearing is locked and fixed by the circlip

NB! Force the bearing backward and forward a bit to check the bearing is locked and fixed in the gear wheel.

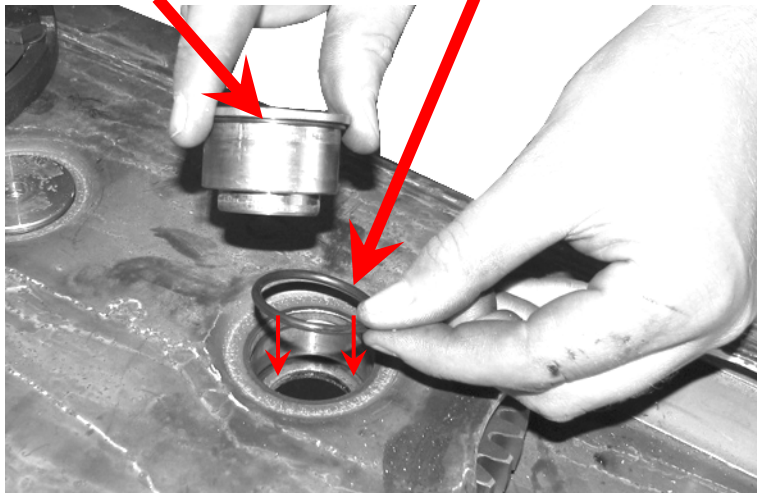


•Skub tandhjulene ind igennem åbningen i høstebjælken.

•Guide the gear wheel trough the gap in the cutterbar.

NB!
Tynd O-ring
Thin O-ring

NB!
Tyk O-ring
Thick O-ring

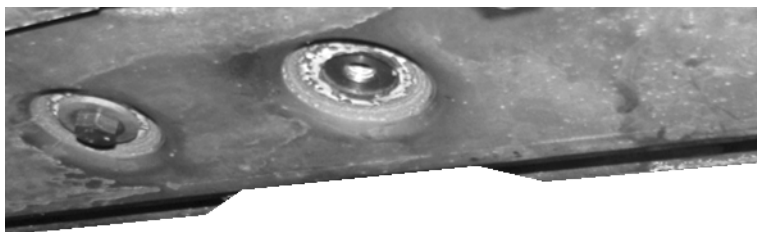


- Monter nye O-ringe på akseltap og i hul for akseltap.
- NB!** Anvend altid 2 stk. nye O-ringe ved montering.
- Monter mellemhjul.
- Monter og slå akseltappen forsigtigt ned igennem mellemhjulet.
- NB!** Kontroller at mellemhjulet er placeret lige over hullet for akseltappen ved montering.

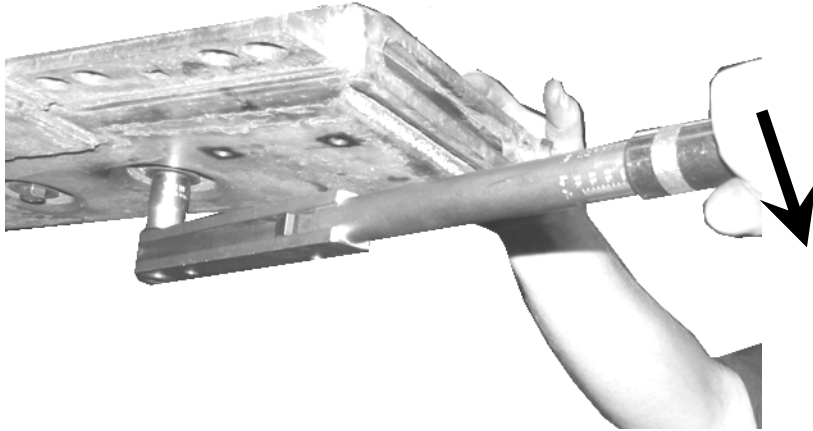
Fit new O-rings on the shafts and into the hole for the shafts.

NB! Always use new O-rings before fitting of the shafts.

- Fit the intermediate gear wheel..
- Place and carefully force the shafts through the gear wheels.
- NB!** Make sure the gear wheels is placed just under the hole for the shafts in the cutterbar when fitted.



- LOCTITE 242 påføres låsebolt og monteres i akseltap.
- The lock bolt is provide with LOCTITE 242 when fitted in the shaft.

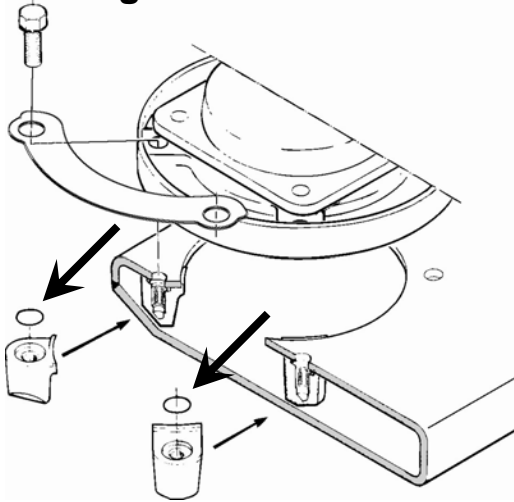


90 Nm / 66 ft.lbs

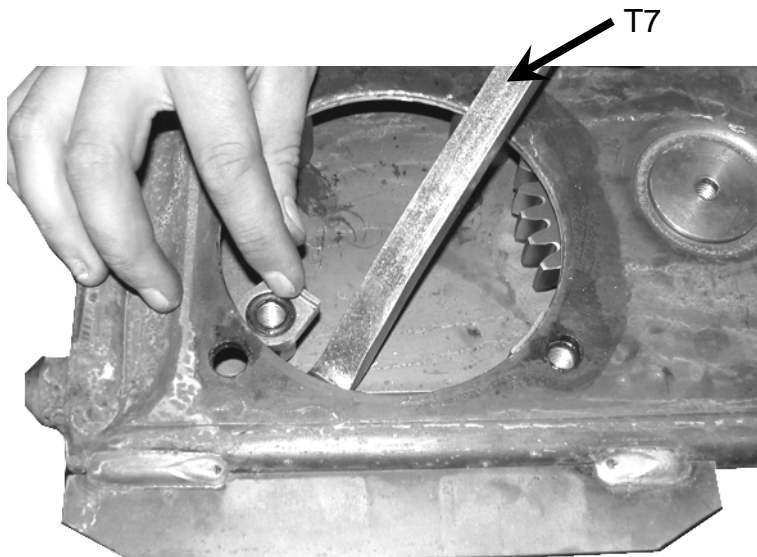


- Brug momentnøgle og spænd låsebolt til **90 Nm / 66 ft.lbs.**
- Tighten the lock bolts to **90 Nm / 66 ft.lbs.** by use of a torque wrench.

Montering af lejeenhed Fitting of the Bearing Unit

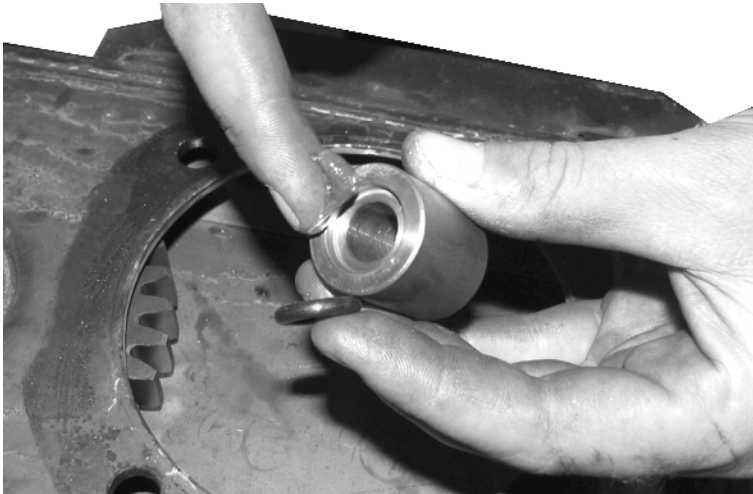


- Monter nye O-ringe i alle specialmøtrikker.
- All the special nuts is provided with new O-rings.

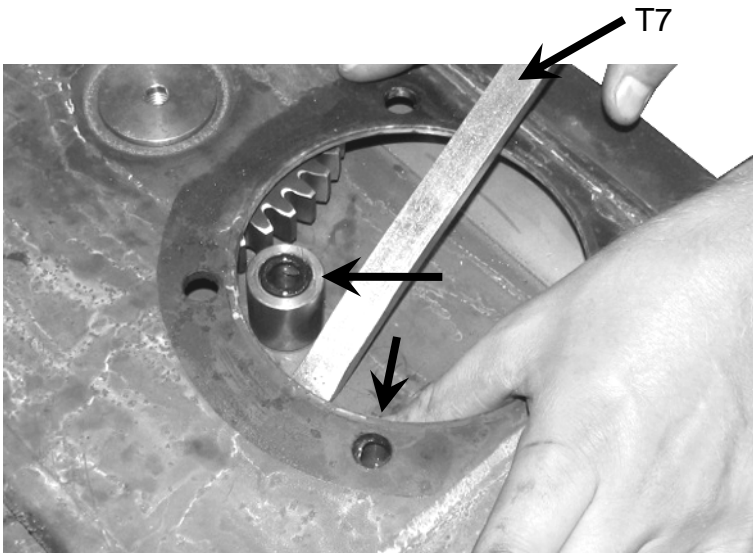


- Brug værktøj T7 som vist og pres pladekanten lidt op.
- Monter alle specialmøtrikker forsigtigt i høstebjælke.
- NB!** O-ring må ikke beskadiges ved montering.
- Force the edge of the plate up a bit by use of tool T7.
- Carefully place all the special nuts in the cutterbar.
- NB!** Do not damage the O-rings when the special nuts is placed in the cutterbar.

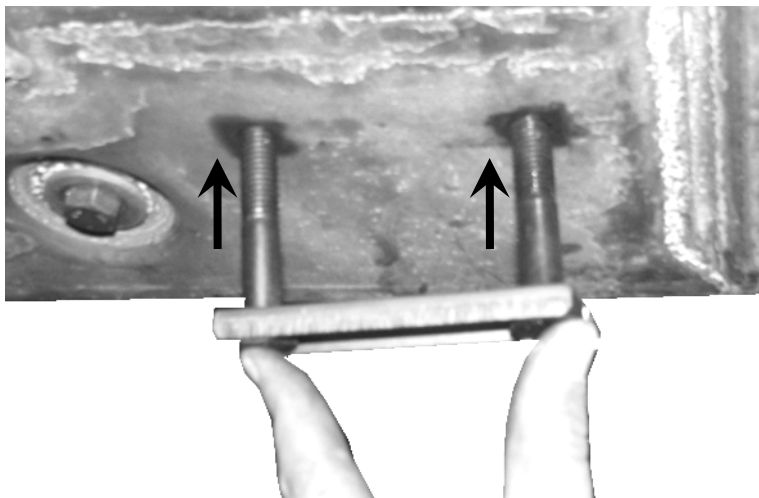
Kun de 2 yderste lejeenheder
The 2 outer Bearing Units only



- Påfør bøs for gennemgående bolte lidt fedt før O-ringe monteres.
- Add grease on the bushings before the O-rings is fitted in the bushings.



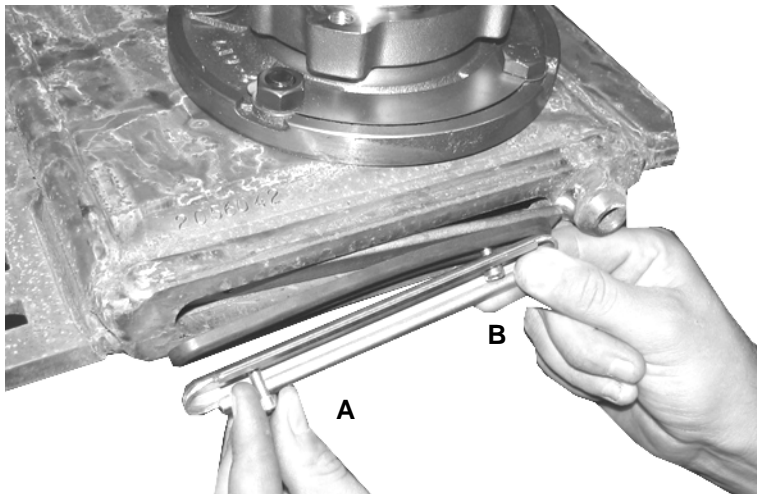
- Brug T7 som vist og pres pladekanten lidt op.
- Monter bøs for gennemgående bolte.
- NB!** O-ring må ikke beskadiges ved montering.
- Force the edge of the plate up a bit by use of tool T7 as shown.
- Place the bushings for the through-going bolts.
- NB!** Do not damage the O-rings when the special nuts is placed in the cutterbar.



•Monter bolte.
NB! Pas på ikke at beskadige O-ring i bøs.

•Fit the bolts.
NB! Do not damage the O-rings.

Påfyldning af olie Filling of oil

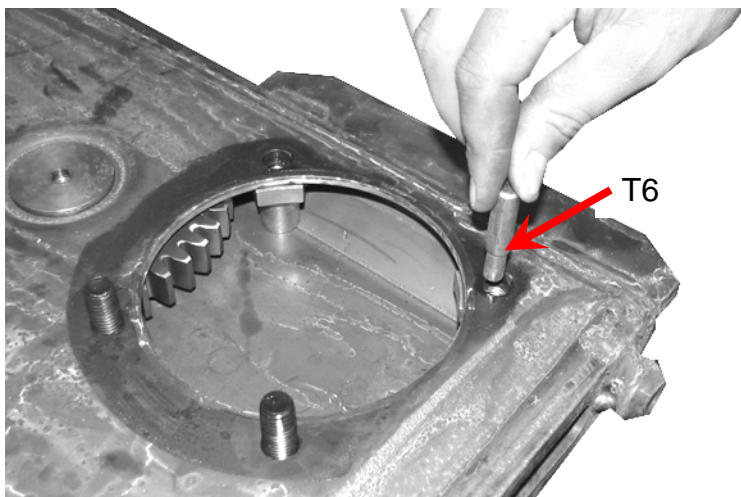


NB! Efter demontering af endedæksel skal der altid anvendes ny pakning ved montering.

- Endedæksel føres skråt ind i åbningen som vist på høstebjælken.
- Spænd endedæksel fast.

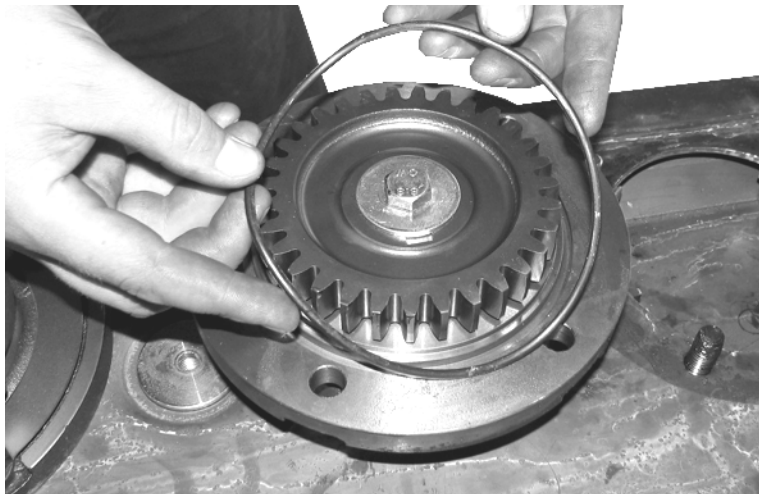
NB! Allways use a new gasket when the end cap is fitted.

- Guide the end cap in to the cutterbar as shown.
- Tighten the end cap.



• Monter værktøj T6 som vist.
Specialmøtrikker holdes på plads med værktøj T6.

- Place tool T6 as shown.
The special nuts in the cutterbar is been kept in place by using tool T6.



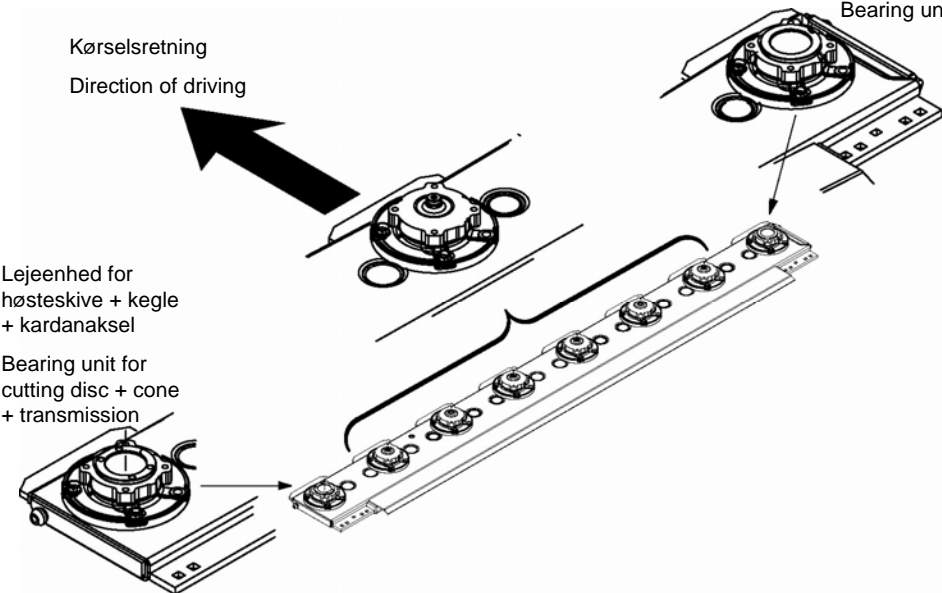
- Monter ny O-ring på lejeenheden.
- NB!** Kontroller at O-ringen er placeret korrekt i rillen på lejehuset.
- Monter lejeenhederne i bjælkehuset.
- Fjern værktøj T6 efter montering.
- NB!** Den sidste lejeenhed monteres ikke.

- Fit new O-rings on the bearing units.
- NB!** Make sure the O-ring is placed correct in the groove of the bearing unit.
- Fit the bearing units in the cutterbar.
- Remove tool T6 after fitting of the bearing units.
- NB!** Wait with the fitting of the last bearing unit.

Lejeenhed for høsteskive + kegle

Bearing unit for cutting disc + cone

Kørselsretning
Direction of driving



De 3 typer lejeenheder skal monteres i høstebjælken som vist.

The 3 types of bearing units has to be fitted as shown.

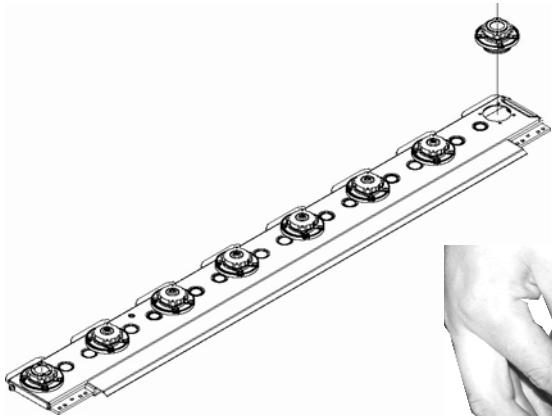
Lejeenhed for høsteskive + kegle + kardanaksel

Bearing unit for cutting disc + cone + transmission

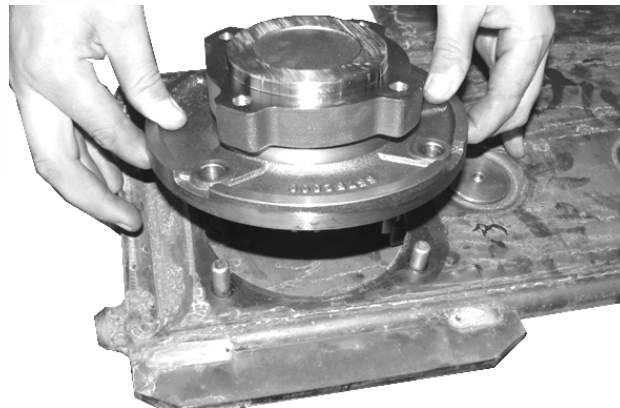


- Påfyld olie i bjælkehus.
- Fill oil in to the cutterbar.

Antal høsteskiver No. of Cutting Discs	Oliemængden Ltr. (ca.) Amount of oil Ltr. (approx.)
4	2,4
5	2,9
6	3,1
7	3,6
8	4,1
9	4,6
10	5,1



- Monter den sidste lejeenhed i høstebjælken.
- Fit the last bearing unit in the cutterbar.

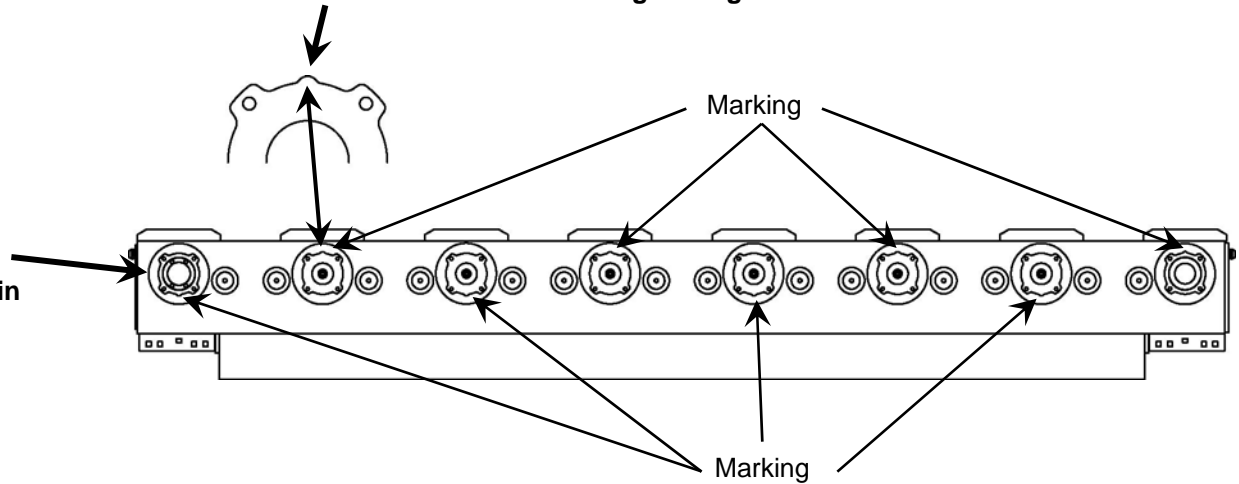


Synkronisering af lejeenhed Synchronization of Bearing Unit

Direkte drevne høstebjælker Direct driven cutterbars

Lige antal af høsteskiver
Even numbers of cutting discs
(4, 6, 8, 10 skiver / disc)

Drivlinie for hovedgear
Drive line for main gear box

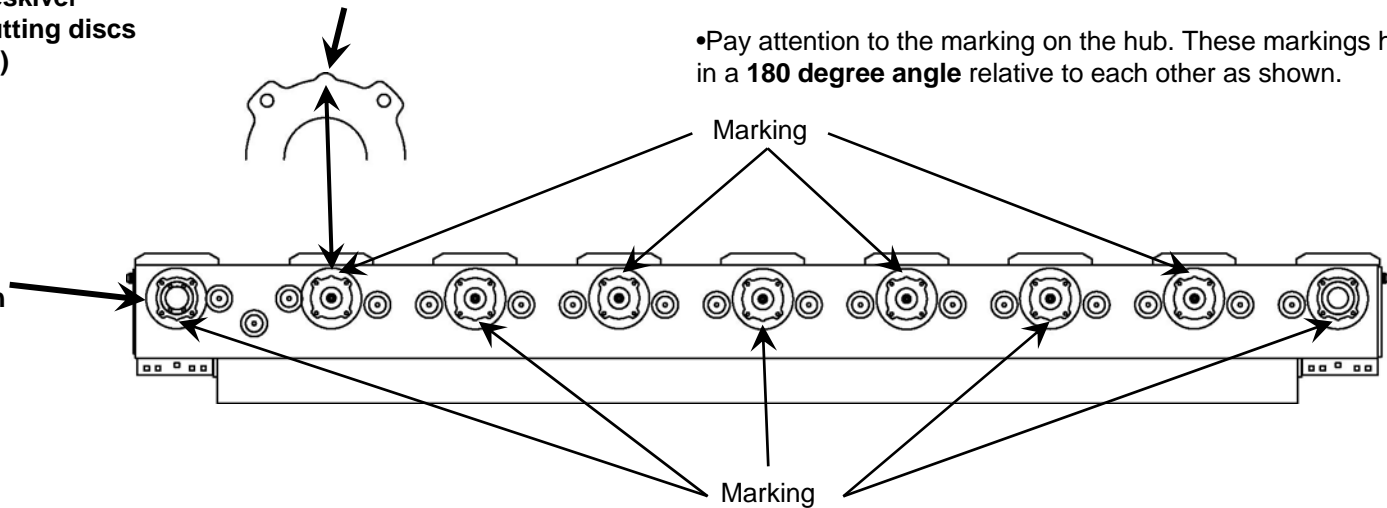


•Vær opmærksom på mærket på navet. Dette mærke skal være placeret **180 grader** i forhold til hinanden som vist.

•Pay attention to the marking on the hub. These markings has to positioned in a **180 degree angle** relative to each other as shown.

Ulige antal af høsteskiver
Odd numbers of cutting discs
(5, 7, 9 skiver / disc)

Drivlinie for hovedgear
Drive line for main gear box



•Vær opmærksom på mærket på navet. Dette mærke skal være placeret **180 grader** i forhold til hinanden som vist.

•Pay attention to the marking on the hub. These markings has to positioned in a **180 degree angle** relative to each other as shown.

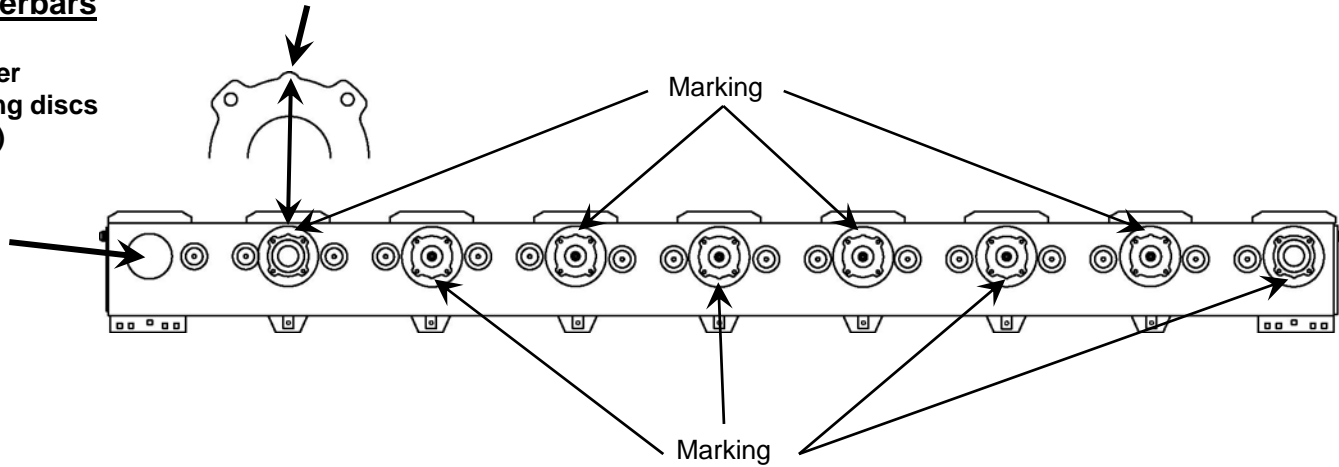
•Vær opmærksom på mærket på navet. Dette mærke skal være placeret **180 grader** i forhold til hinanden som vist.

•Pay attention to the marking on the hub. These markings has to positioned in a **180 degree angle** relative to each other as shown.

Indirekte drevne høstebjælker
Indirect driven cutterbars

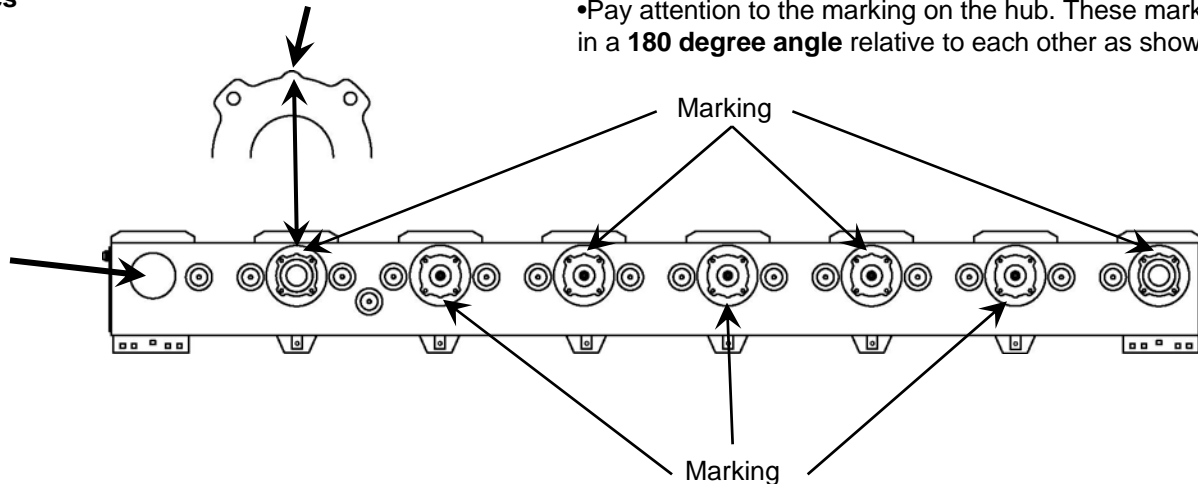
Lige antal af høsteskiver
 Even numbers of cutting discs
 (4, 6, 8, 10 skiver / disc)

Hovedgear
 monteret her
 Main gear box
 fitted here



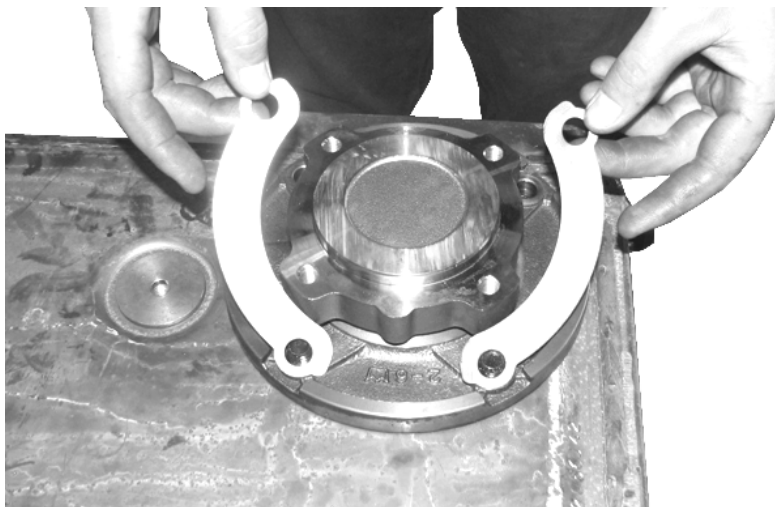
Ulige antal af høsteskiver
 Odd numbers of cutting discs
 (5, 7, 9 skiver / disc)

Hovedgear
 monteret her
 Main gear box
 fitted here



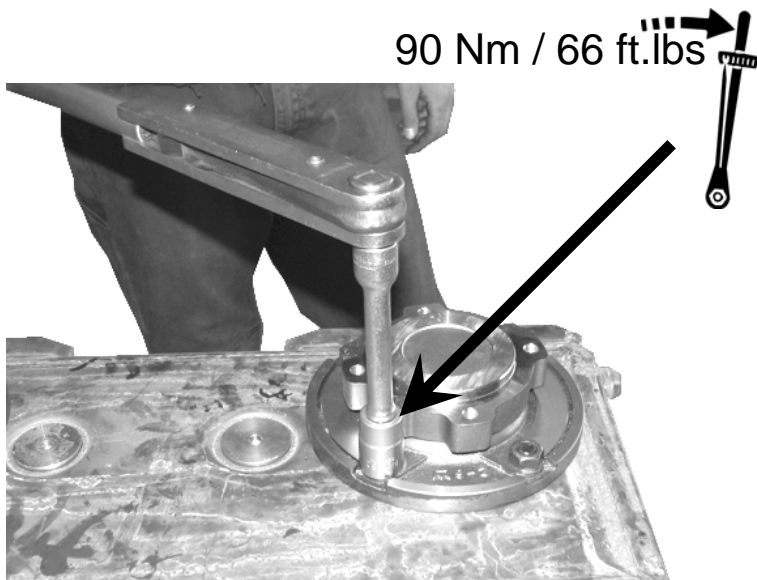
•Vær opmærksom på mærket på navet. Dette mærke skal være placeret **180 grader** i forhold til hinanden som vist.

•Pay attention to the marking on the hub. These markings has to positioned in a **180 degree angle** relative to each other as shown.



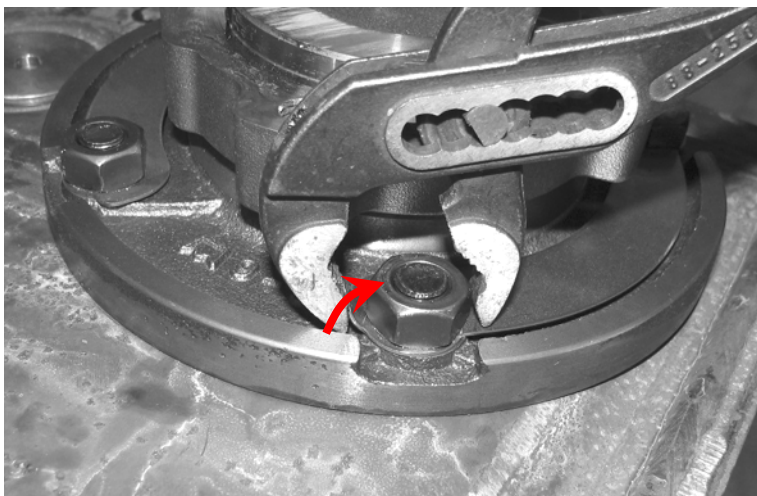
- Monter de nye låseplader på lejeenhederne.
NB! Efter demontering af lejeenhed skal der altid bruges nyt låseblik og nye bolte ved montering.

- Provide the bearing units with new lock plates.
NB! After removal of the bearing unit, new lock plates and new bolts has to be provided when fitting of the bearing unit.

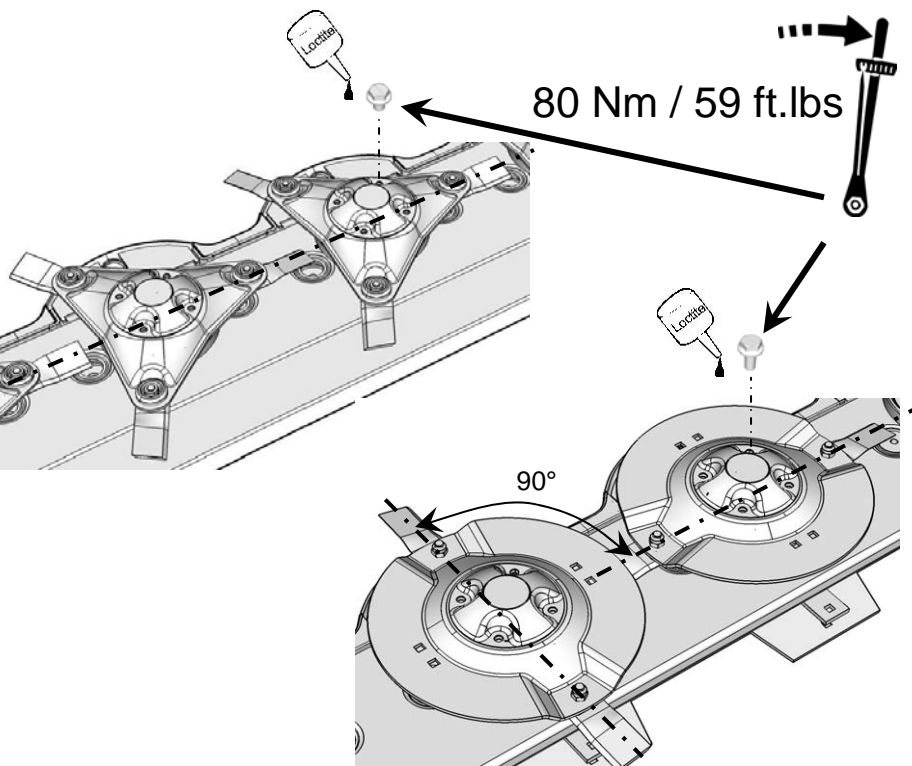


- Brug momentnøgle og spænd boltene på alle lejeenheder til **90 Nm / 66 ft.lbs.**
NB! Der må ikke anvendes LOCTITE eller tilsvarende på disse bolte, da boltene ikke kan demonteres igen når det skal adskilles.

- Tighten all the bolts on the bearing units to **90 Nm / 66 ft.lbs.** by use of a torque wrench.
NB! Do not use LOCTITE or similar product on these bolts when fitted. Then the bolts will not able to be removed from the nut during a disassemble.



- Buk låseblirket op omkring boltehovedet på alle bolte.
- Bend the lock plate around the head of the nut on all bolts.



- Monter høsteskiverne på lejeenhederne som vist.
- NB!** Husk at montere alle hatte på høsteskiverne.
- Tilføj LOCTITE 242 eller lignende produkt på alle bolte.
- Spænd boltene til **80 Nm / 59 ft.lbs** med en momentnøgle
- Place the cutting discs on the bearing units as shown.
- NB!** Don't forget the caps on top of the cutting discs.
- Apply LOCTITE 242 or similar product on all bolts.
- Tighten the bolts with a torque of **80 Nm / 59 ft.lbs** by use of a torque wrench.