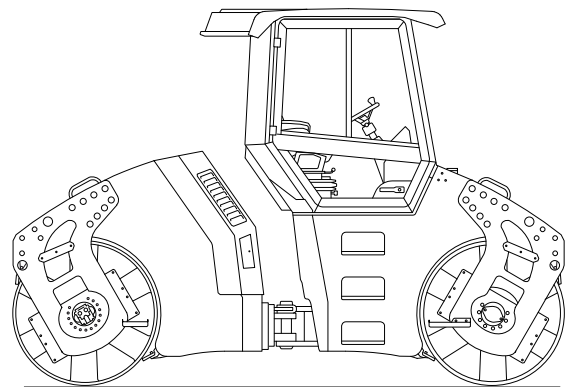


Workshop manual

**AV 70 X**  
Cummins



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**SYMBOLS OF THE SAFETY NOTICES:**



The notice warns of a serious risk of personal injury or other personal hazards.



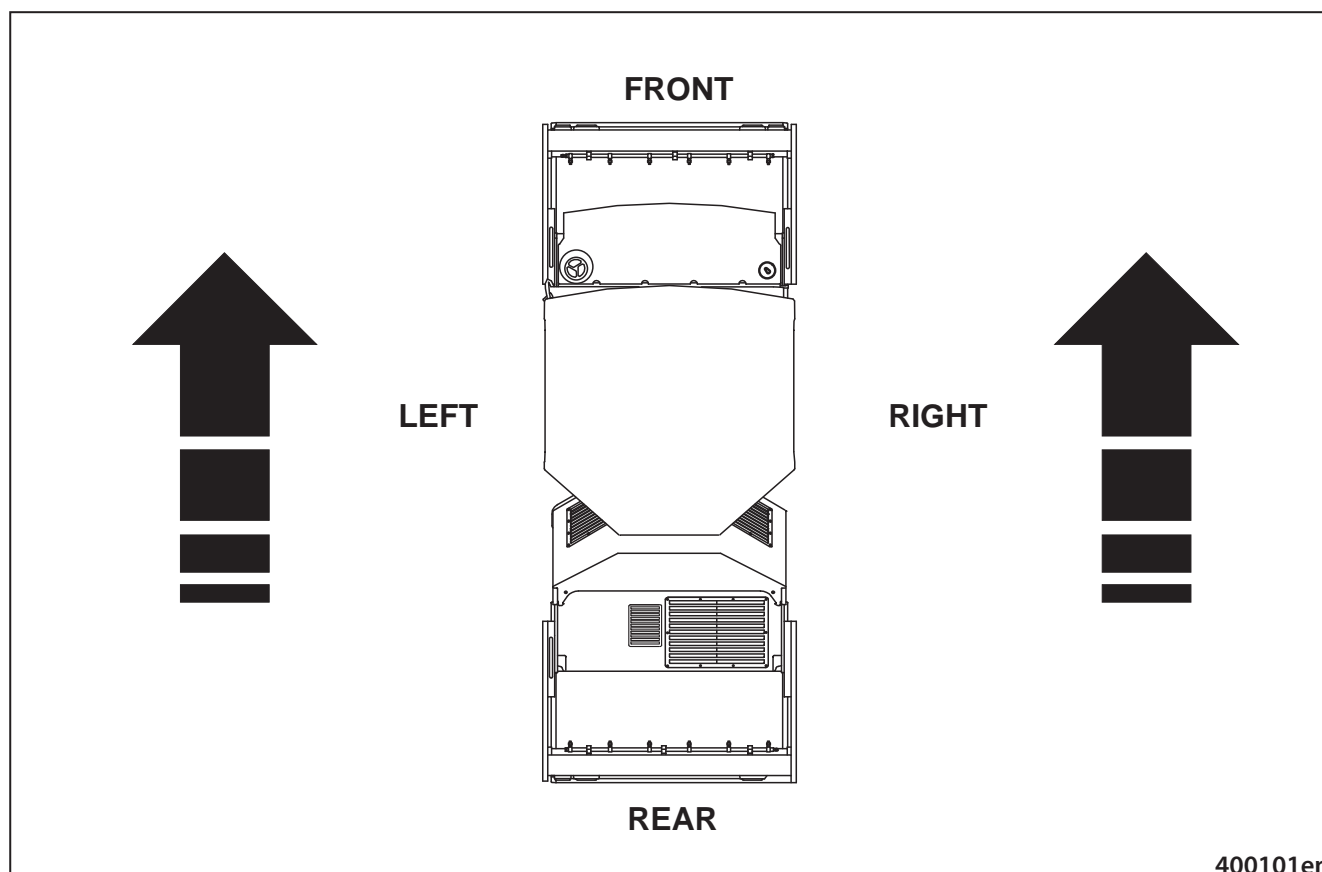
The notice warns of possible damages to the machine or its parts.



The notice warns of the necessity of environmental protection.

**! CAUTION !**

This Manual uses the terms like RH, LH, in the front, in the rear. These indicate the sides of the Machine viewed during forward drive.



## **3. Specification manual**

The Ammann machines are filled with engine oil of viscosity class SAE 15W-40 during production.


**Note**

Exceeding of the lower temperature limit does not damage the engine, it may only cause starting problems.

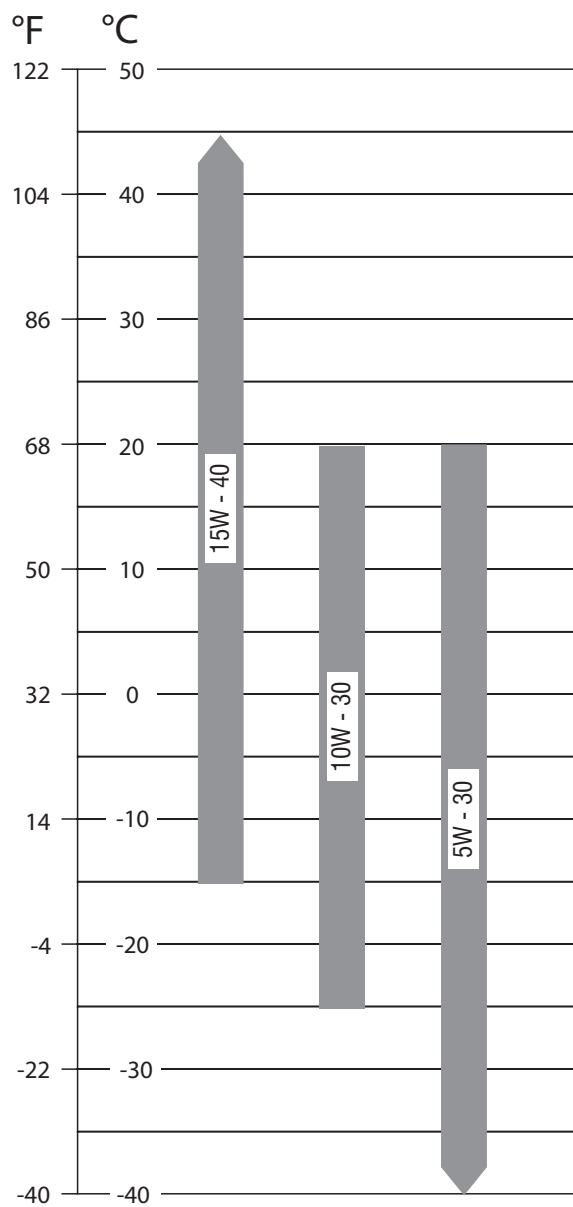
It is suitable to use general-purpose multi-grade oil in order that oil need not be exchanged because of ambient temperature changes.

Use of synthetic engine oils is permitted subject to the same performance and viscosity limitations of mineral (petroleum) based engine oils. The same oil change intervals must be applied to the synthetic oils that are applied to mineral (petroleum)based engine oils.

For easier start at temperatures below 0 °C (32 °F), SAE 10W-30 oil is recommended by the engine manufacturer.



**Exceeding the upper temperature limit must not last for long, taking into consideration reduced lubricating properties of oil.**



282N224T

## **6. Drum**

### 6.3. Remove auxiliary transmission

Remove travel hydromotor and disconnect revolution sensor connector. Remove aux. transmission unbraking, refer to Section 6.2.

Remove hose clamp.



Attach hose to Machine frame.



Hang RH side yoke onto the crane and remove step by step bolts used for mounting to the frame and to the cross beam.

**Note**

When reinstalling, please clean contact surfaces, tighten bolts with 390 Nm (288 lbft) torque to the frame, and with 200 Nm (148 lbft) torque to the cross beam.



Remove step by step bolts used for mounting the aux. transmission.

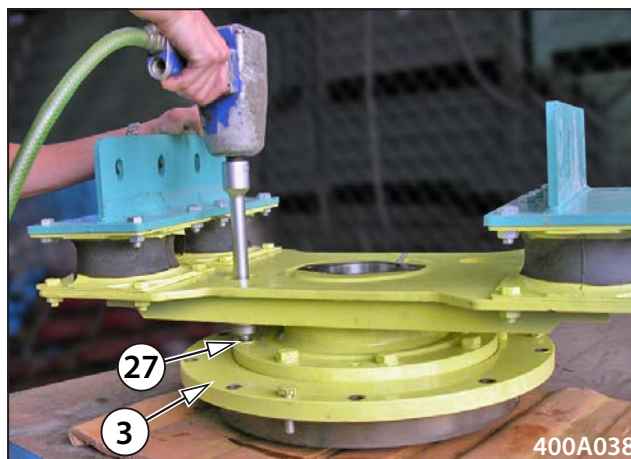
**Note**

When reinstalling, please clean contact surfaces, tighten bolts with 200 Nm (148 lbft) torque.



**Remove slew**

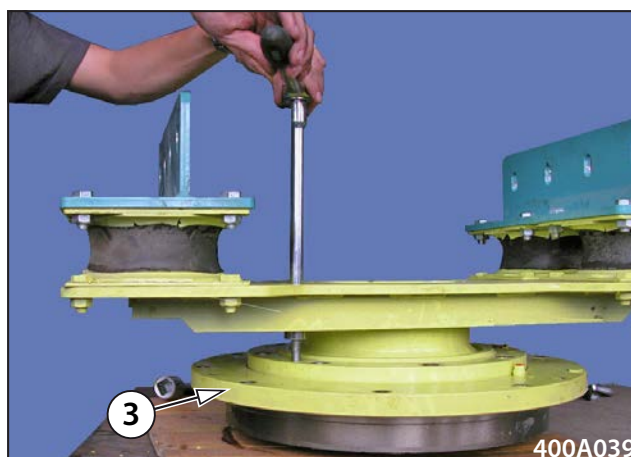
Remove bolts 27 for cover 3.



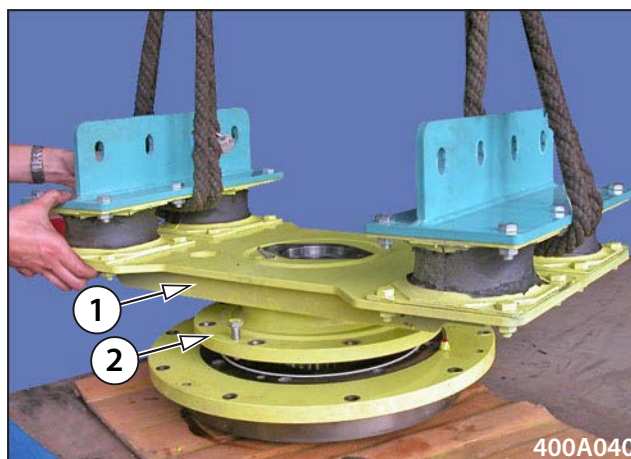
Push off evenly bedding 2 inside forcing-off holes (3x) away from cover 3 with the use of bolts 18.

**Note**

When reinstalling, please clean contact surfaces, use Loxeal 83-54 to cement bolts 27, tighten with 200 Nm (148 lbft) torque. We recommend packing ring to be replaced.



Hang hub 1 including bedding 2 onto the crane, lift and put aside.



Push off evenly bearing 13 with the use of three bolts M10.



**7.1. Preparation Work:**



**Cut off master switch!**

Remove cover.



400A190

Remove clip.



400A191

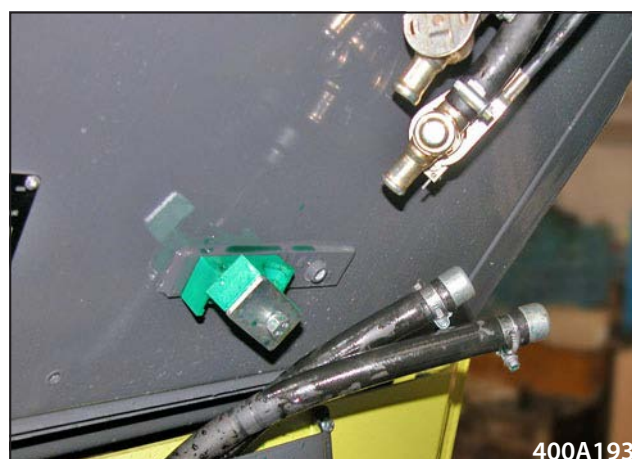
Remove engine hose pipes, blind.



**Catch cooling liquid from heater.**

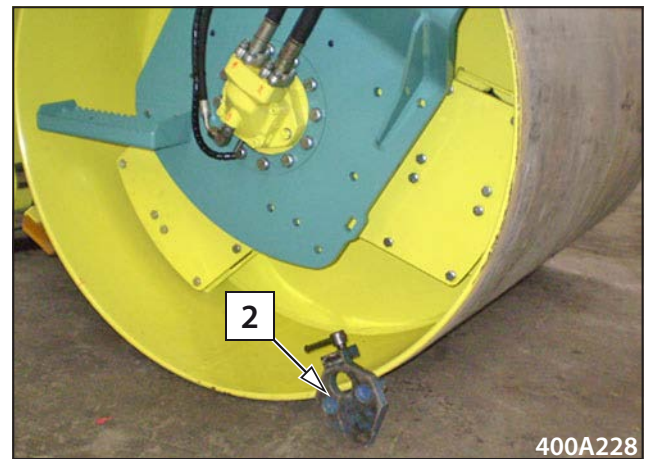


400D192



400A193

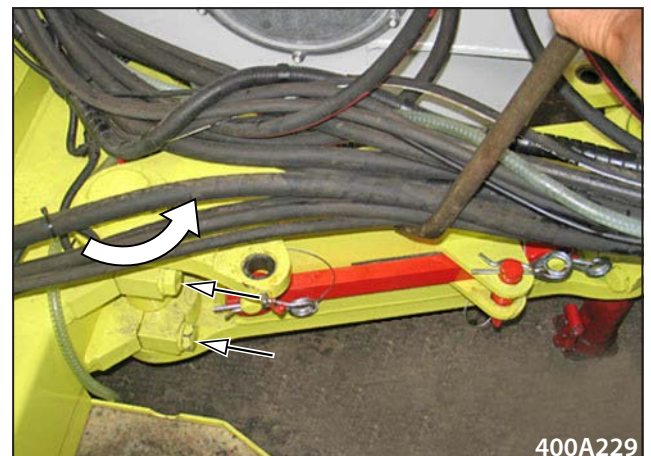
Secure front drum against any motion.



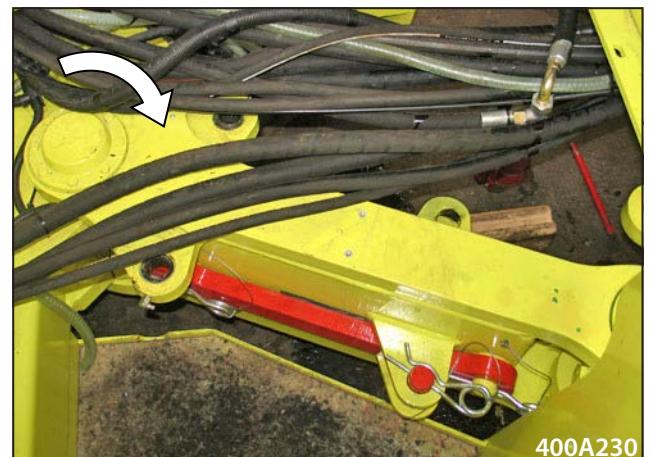
Swing steering joint to the right, slacken two bolts.

**Note**

Bolts have tightened with 900 Nm (664 lbft) torque.



Swing the joint to the left.



Remove clip for position sensors. Do not remove the sensors!

**Note**

When having put the Machine back to its original condition, please adjust zero position of steering joint, refer to Section 15.4.



## 8. Hydraulics

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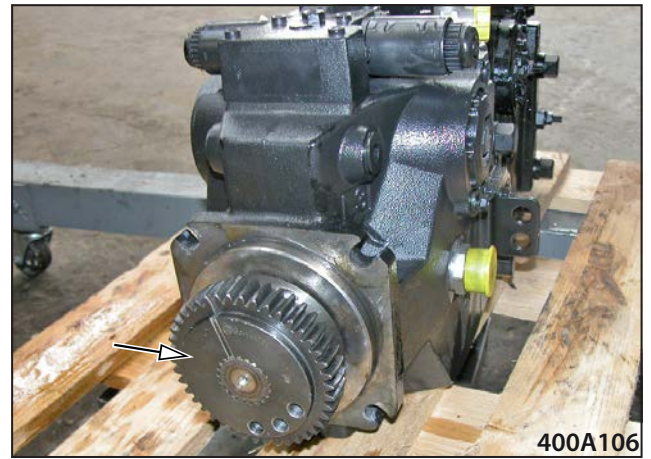
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Remove coupling.

**Note**

When reinstalling, please clean contact surfaces, tighten with 86 Nm (64 lbft) torque.



When pump is connected, tighten the bolts with 83 Nm (61 lbft) torque.



Remove flange.

**Note**

When reinstalling, please clean contact surfaces, tighten with 48 Nm (35 lbft) torque.



Remove coupling.

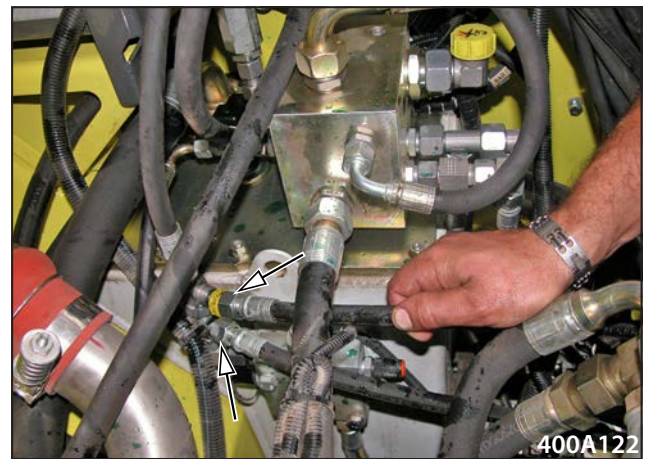
**Note**

When reinstalling, please clean contact surfaces, tighten with 48 Nm (35 lbft) torque.

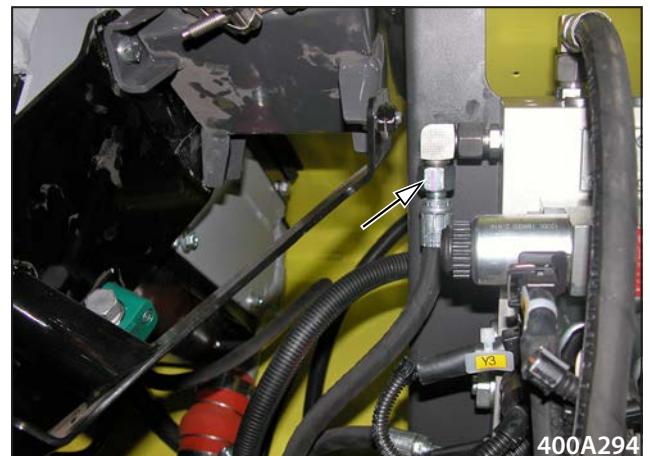


## **10. How to remove bonnet**

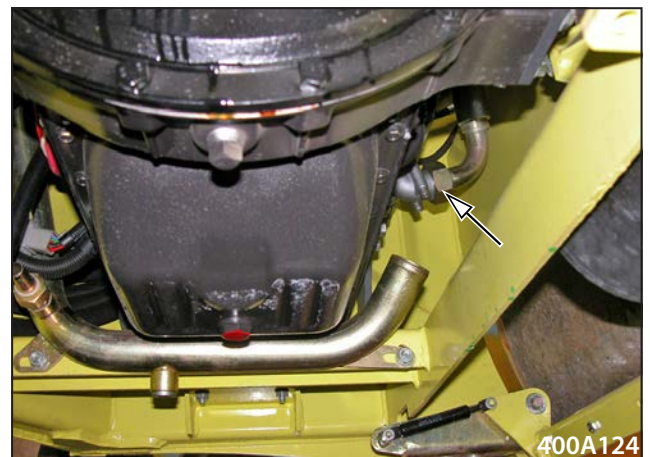
Remove pipe from flushing block.



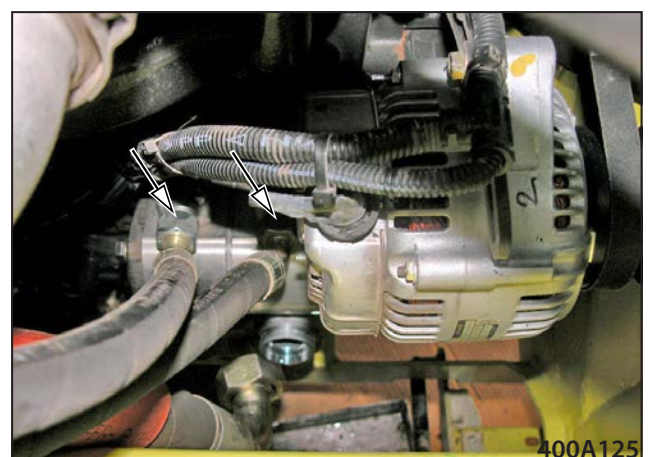
Remove pipe.



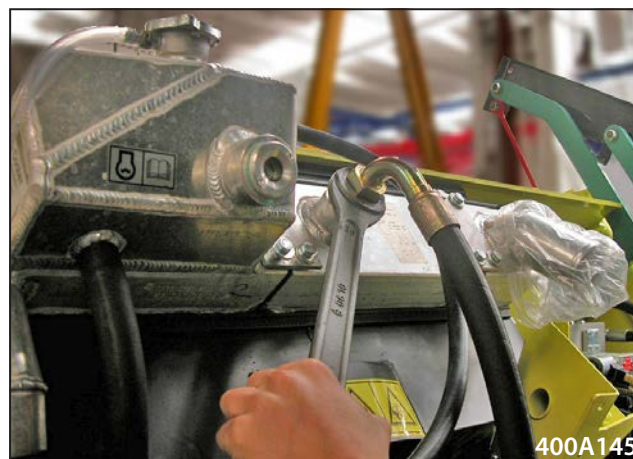
Remove intake pipe from steering pump. We recommend packing ring to be replaced.



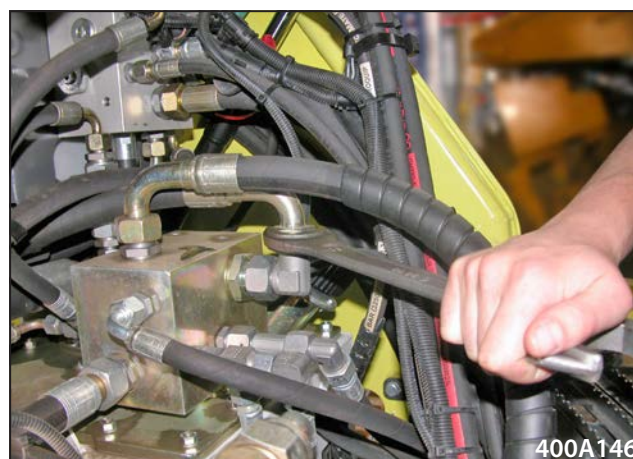
Remove discharge side pipe from steering pump. We recommend packing ring to be replaced.



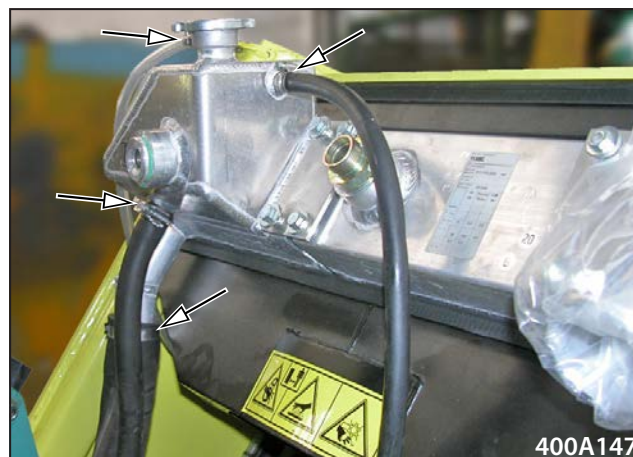
Remove hydraulic oil pipe from cooler, blind.



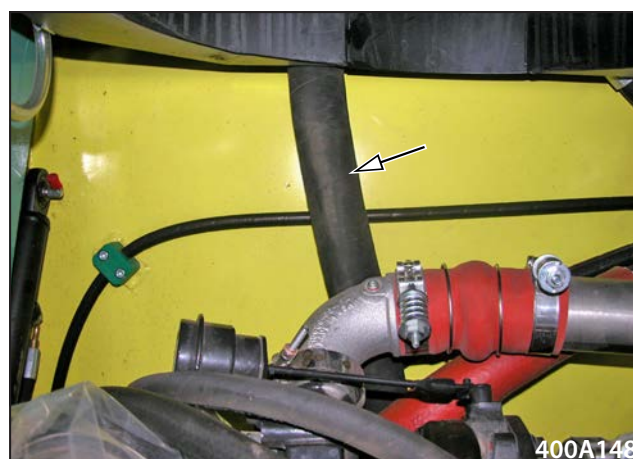
Remove hydraulic oil pipe from cube, drain hydraulic oil into containment receptacle, blind.



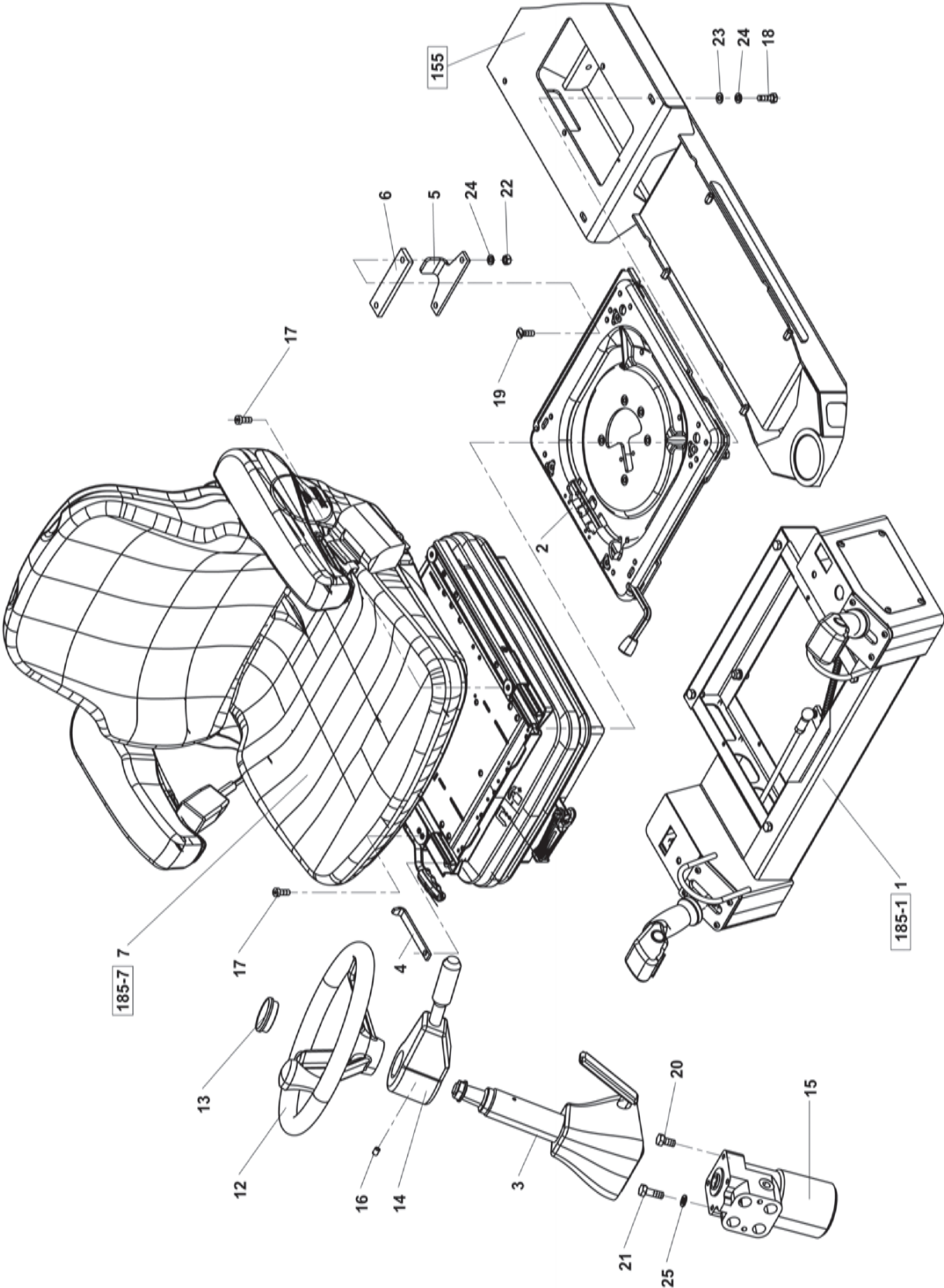
Remove cooling liquid hose from cooler surface.



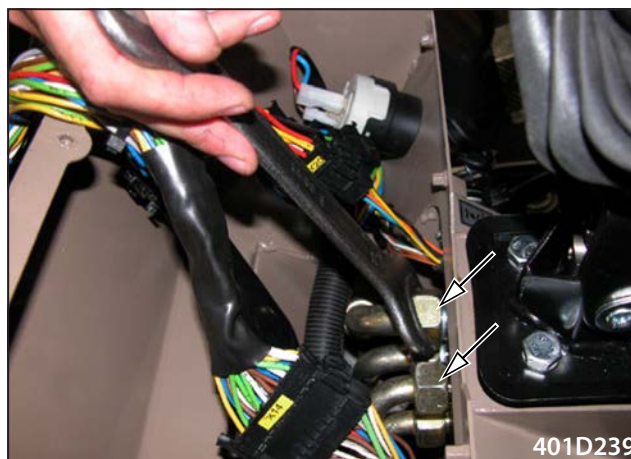
The return hose from cooler, remove it from underneath the engine.



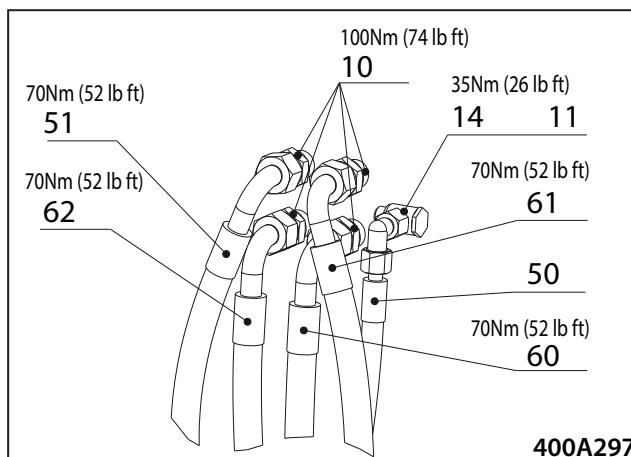
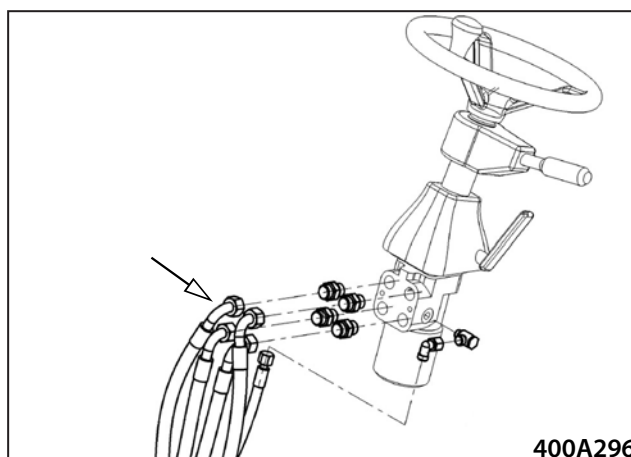
Seat



Remove connection of hydraulic servosteering hose pipes.

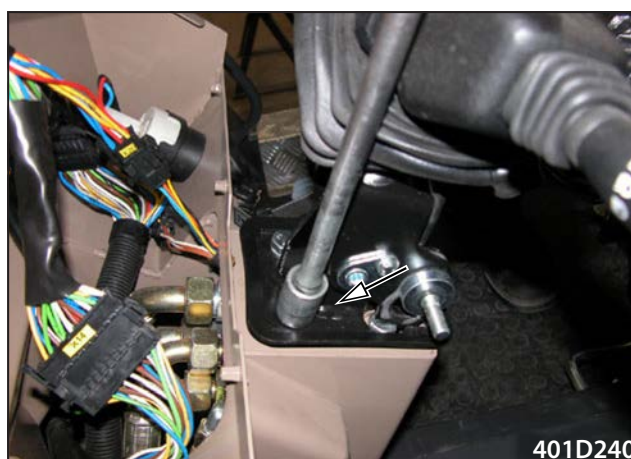


When remounting tighten the hoses and necks using the torque according to the picture.



Remove four screws for connecting steering column with servosteering, take out servosteering.

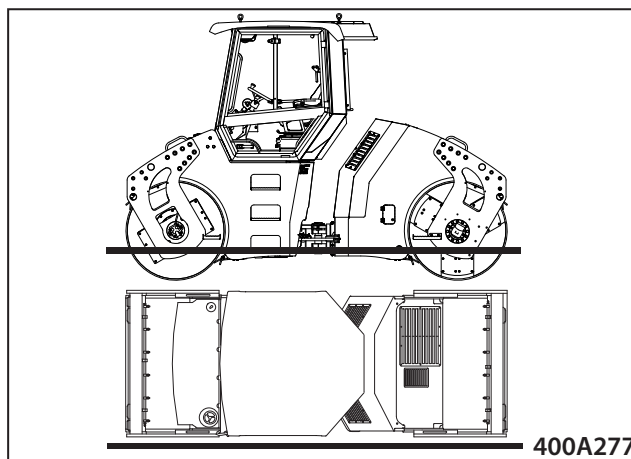
When reassembling glue bolts using Loxeal 83-54 and tighten them with the torque 30Nm.



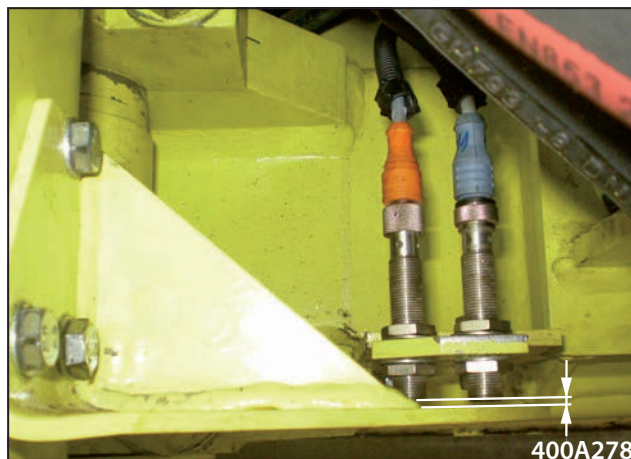
Failure	Cause	Remedy
Starter motor does not work in a reliable way. Low, inefficient performance	Battery not charged sufficiently	Charge battery
	Dirty and/or loosened connections in feeder cables (contact resistances)	Clean, tighten properly
	Battery failures (normally the start gets worse and worse, step by step)	Repair battery failure
	Starter motor carbons damaged	Replace carbons (normally commutator repair required)
	Dirty and burnt and/or unsoldered commutator	Clean with petrol or alcohol. When commutator is burnt and/or mica comes out in between plates (strong sparking during operation), please disassemble starter motor, and re-turn commutator. Mill out insulation, polish commutator. If required, solder again and/or replace armature.
	Broken and/or heated up carbons' springs	Replace spring
	Armature short-circuit	Replace armature
	Part of exciting coils is disconnected (broken)	Replace relevant pair of coils
	Failed starter motor switch (contact resistance)	Replace switch box
Broken exciting winding of stator at the lead to terminal of starter motor switch	Re-solder at lead point	
Loud operation of starter motor	Starter motor loosened at its flange	Tighten the screws
	Armature loosened (jammed within bearings)	Repair
	Mechanical failure (miscellaneous)	Repair defects
	Broken cover (max noise)	Repair, replace cover
Starter motor runs hot excessively, low performance	Short circuit within excitation circuit	Eliminate short circuit or replace relevant pair of coils

**15.4. Adjust zero position of steering joint**

Use batten placed full length to the Machine side, level the Machine (front and rear drum in one track).

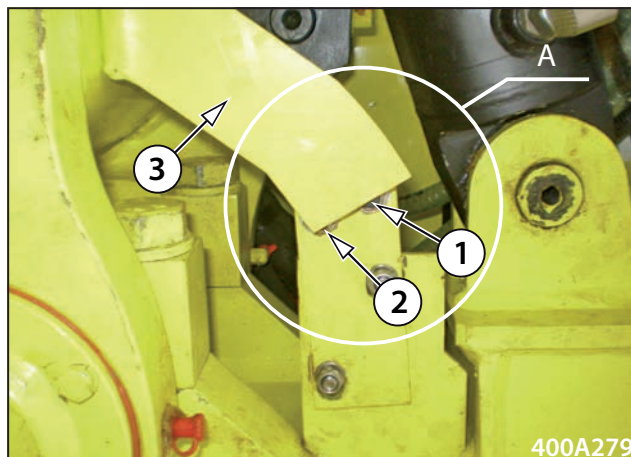


Adjust 1mm (0,039 in) gap between sensors and cam.

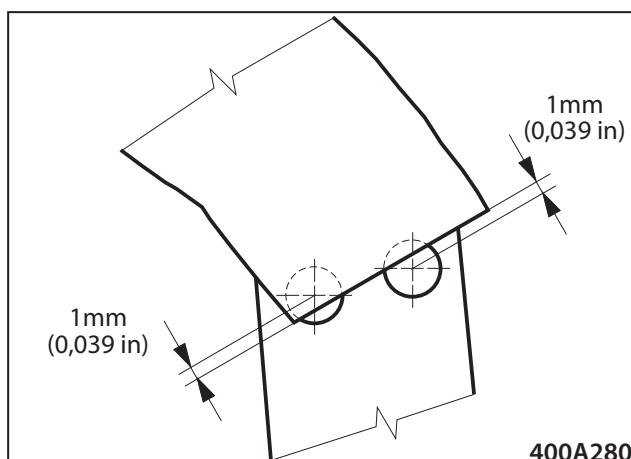


Turn ON key in switch box into "I" position (crab pilot lamp, and indicators on position pick-ups will light).

Adjust position of pick-ups 1 and 2 against cam 3, see Fig. (indicators on both pick-ups and the position pilot lamp must go OFF).



Adjustment - detail A

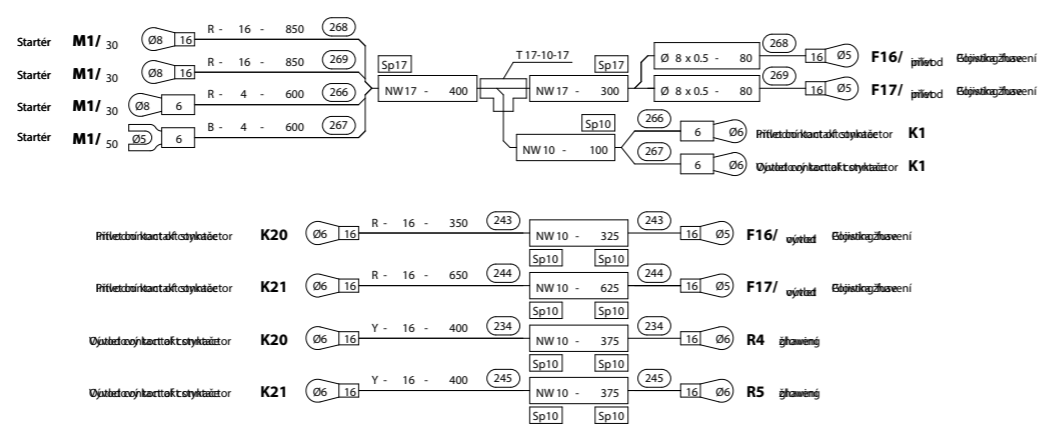
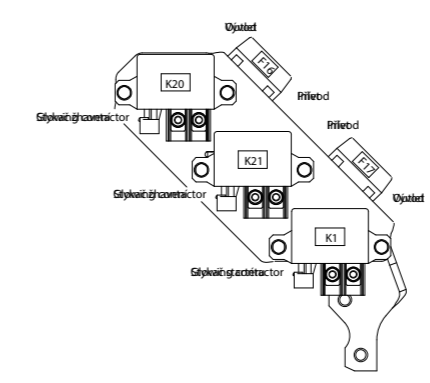
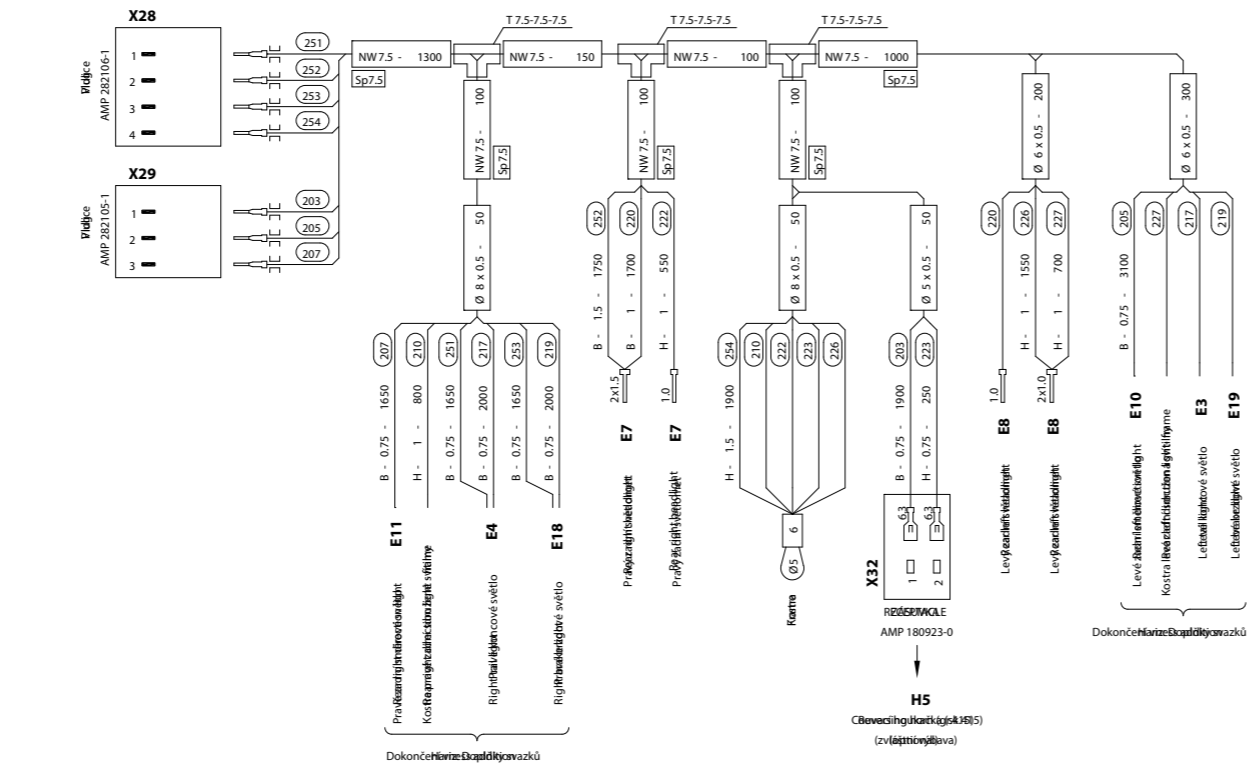


**AV70X Tier 3**  
**CABLE HARNESS #2** - Wiring system  
**Object Number: 24-181327**

**2.3**

**CABLE HARNESS LEGEND:**

- Faston
  - Ring connector
  - Duct connector
  - Splicing sleeve
  - Contact
  - Sealing plug
  - Sealing wire seal
  - Mask cut
  - Insulation sleeve
  - Spigot
  - Reducer
  - Clamp
  - Connector
  - End of line SEM straight
  - Resistor
  - Electrode holder
  - Electrode holder
  - Electrode holder
  - Rectangular connector
  - Plug connector
- Válto:**  
 Wire color: R - 1 - 1200 (100)  
 Splicing sleeve: Type, Light
- Kábel:**  
 H03W-F2X0.75 - 2500  
 Type, Light
- Csatlakoztató:**  
 NW13 - 700  
 Type, Light



**TABLE OF COLORS SYMBOLS:**

B	Bézs
C	Cék
H	Barna
M	Budra
R	Reda
S	Szék
Y	Zöld
Z	Élénk

CABLE HARNESS LEGEND:

- Faston
  - Ring terminal
  - Din connector
  - Spot-weld
  - Contact
  - Sealing plug
  - Solder wire seal
  - Maskout
  - Insulation sleeve
  - Spina
  - Reducer
  - Clamp
  - Terminal block
  - End of line SEM straight
  - Resistor
  - Diode
  - Soleno
  - Rectangular connector
  - Passive connector
- Válite:**  
 R - 1 - 1200 (100)  
 Wire color, Spine, Height, Válite number
- Kabel:**  
 H03W-F2X0.75 - 2500  
 Type, Height
- Ochrana hlávky:**  
 NW13 - 700  
 Type, Height

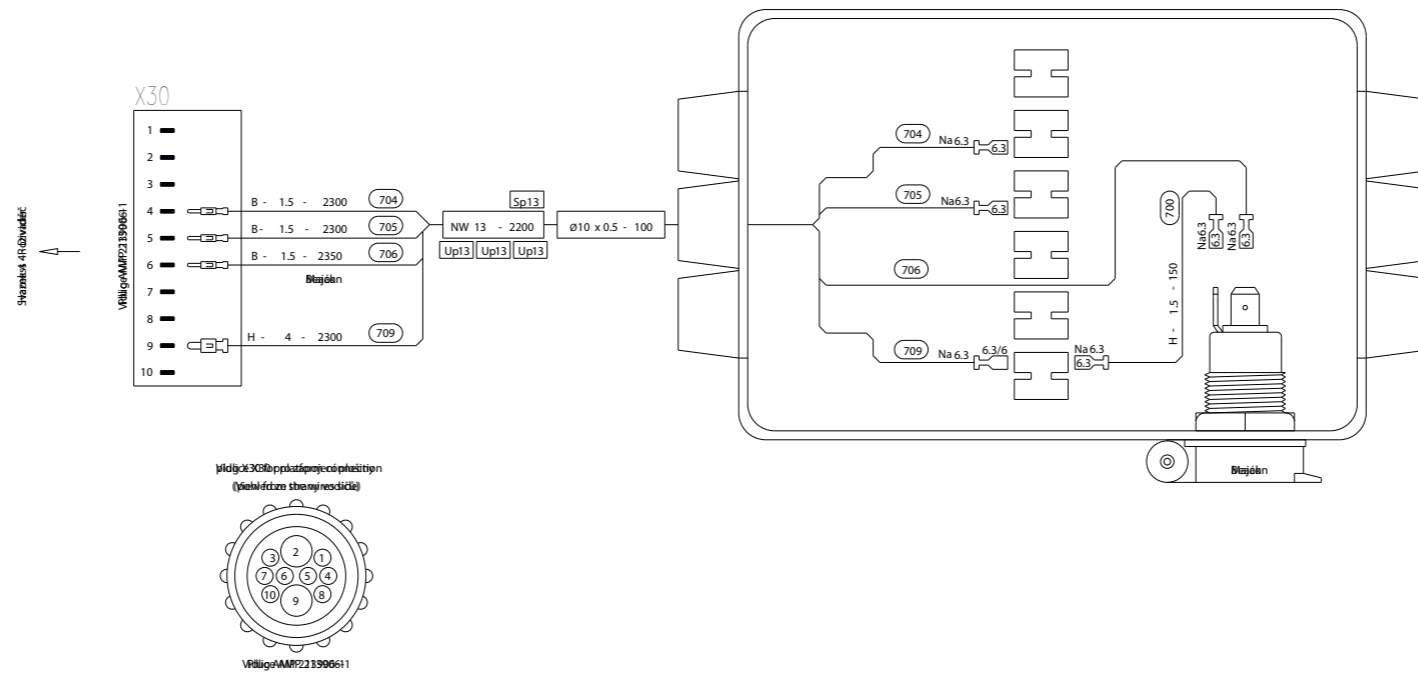
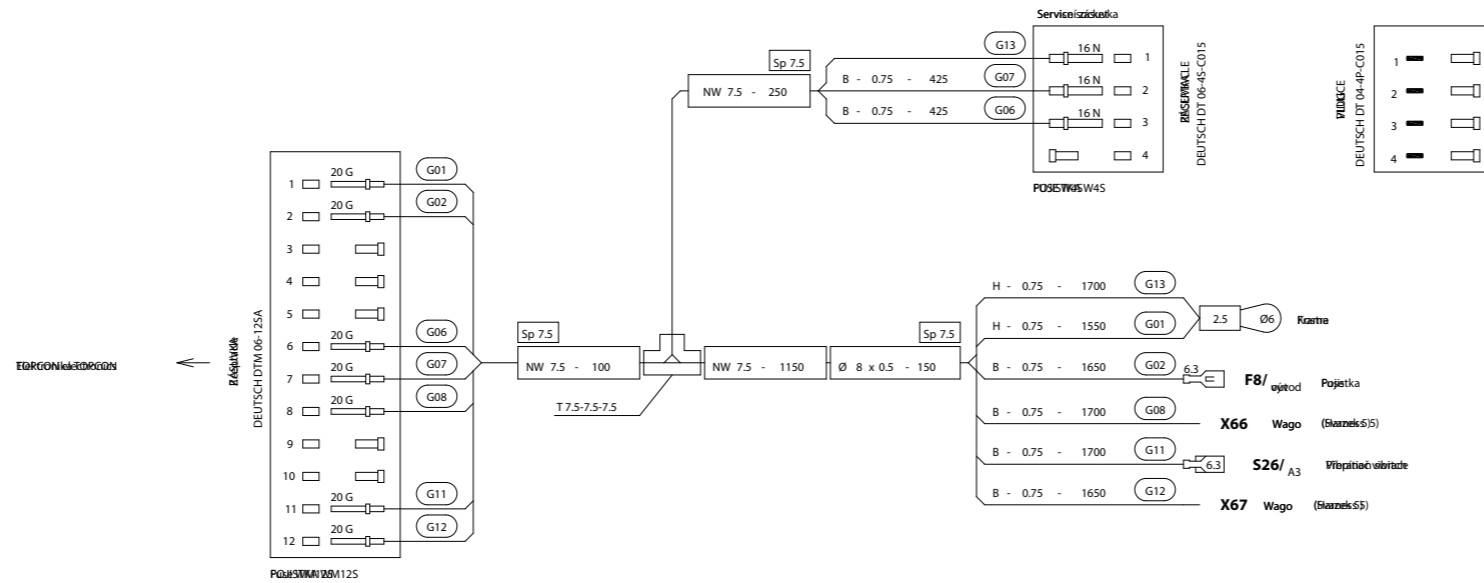


TABLE OF COLOR SYMBOLS:

B	Bílá
C	Černá
H	Modrá
M	Modrá
R	Červená
S	Černá
Y	Žlutá
Z	Černá



CABLE HARNESS LEGEND:

- Faston
  - Ring terminal
  - Dimpled terminal
  - Split terminal
  - Contact
  - Sealing plug
  - Sealing wire seal
  - Mask cut
  - Insulation sleeve
  - Spina
  - Reducer
  - Clamp
  - Terminal block
  - End of line SEM straight
  - Resistor
  - Inductor
  - Solenoid
  - Rectangular connector
  - Plug connector
- Válcové:**
- Wire color
  - Splice
  - Height
  - Wire number
- Kabel:**
- Typ
  - Úděl
- Ochranné blány:**
- Type
  - Úděl

TABLE OF COLOR SYMBOLS:

B	Modrá
C	Černá
H	Modrá
M	Modrá
R	Červená
S	Černá
Y	Žlutá
Z	Černá

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