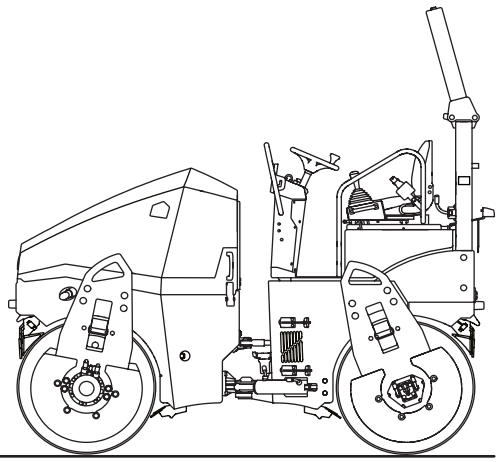
ARX 36-2
ARX 40-2
ARX 45-2

TANDEM ROLLER
KUBOTA V2403-M-E3B
EU Stage IIIA / U.S. EPA Tier 4i



WORKSHOP MANUAL

EDITION 07/2022 EN
ARX 36-2 KU St IIIA / T4i Product Identification Number 3000000
ARX 40-2 KU St IIIA / T4i Product Identification Number 3038822
ARX 45-2 KU St IIIA / T4i Product Identification Number 3042948

AMMANN

SAFETY NOTICES AND SIGNS:

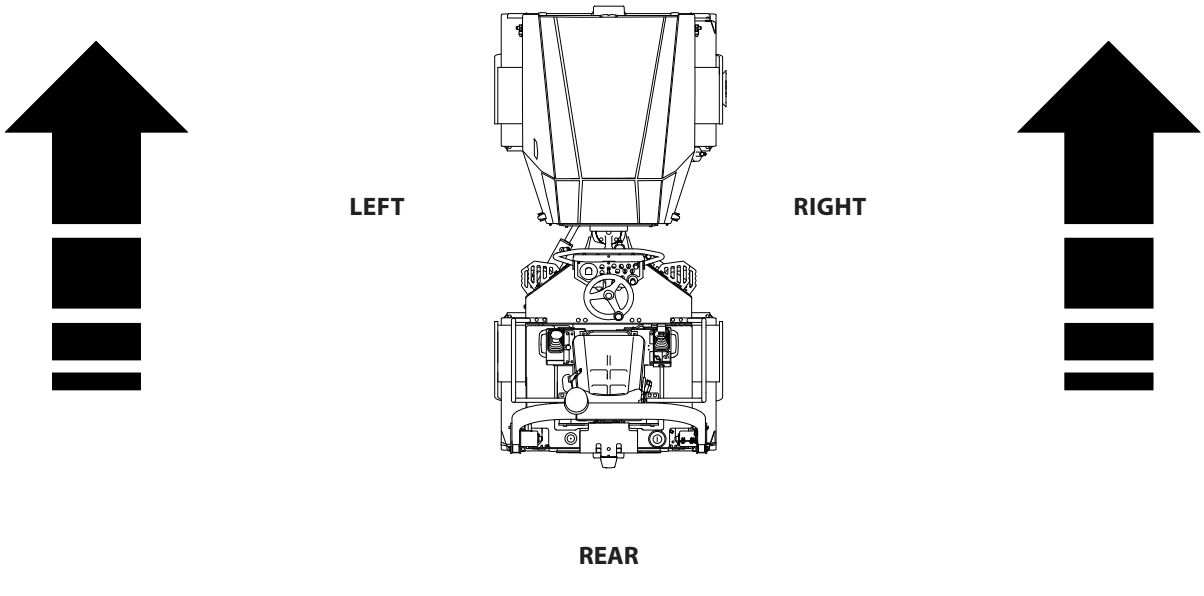
The notice warns of a serious risk of personal injury or other personal hazards.

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

The notice warns of the necessity of environmental protection.

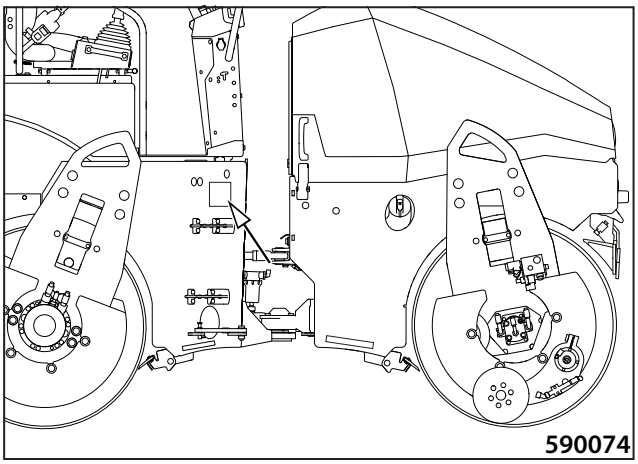
! CAUTION!

As used in this operating manual, the terms right, left, front and rear indicate sides of the machine moving forward.

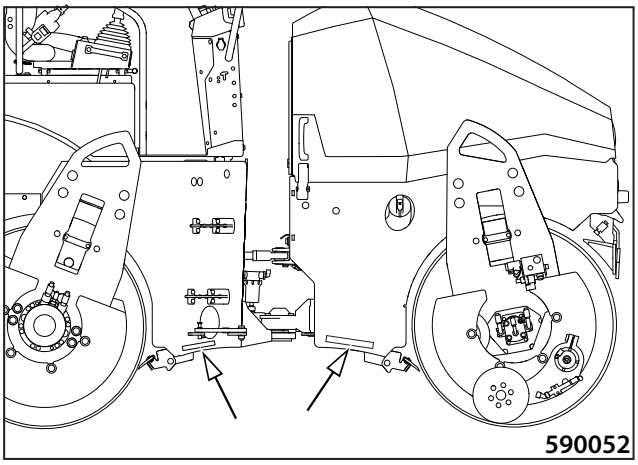


Nameplate position

Nameplate

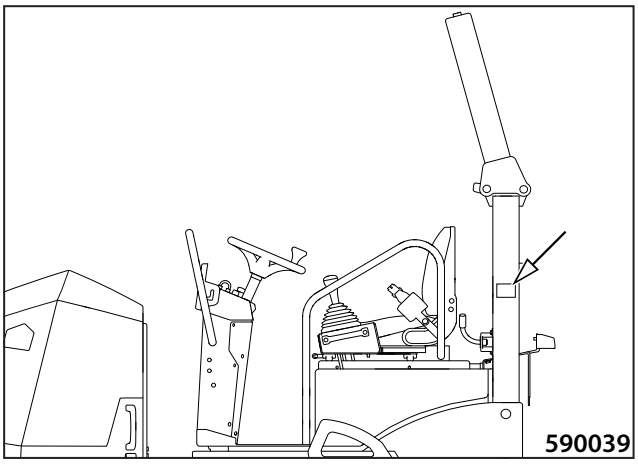


Serial number of the machine frame



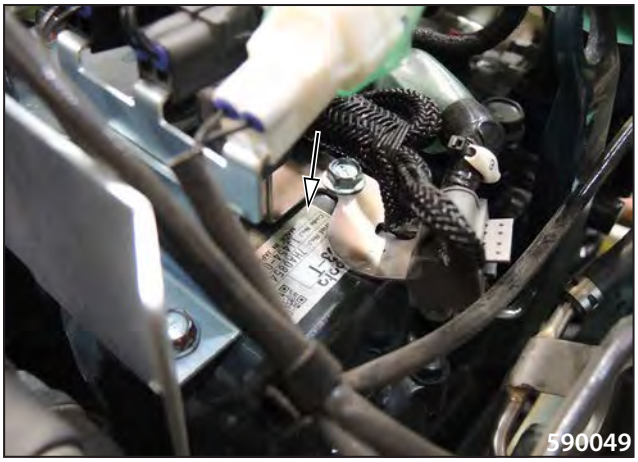
Position of the ROPS nameplate

ROPS nameplate



Engine nameplate position

Serial number of the Kubota engine



4.1.4 Hydraulic oil

For the hydraulic system of the machine, it is necessary to use only high-quality hydraulic oil grades according to ISO 6743/HV (equal to DIN 51524 part 3 HVLP).

Fill the machines normally with hydraulic oil that has cinematic viscosity of 46 mm^2/s at 40°C (104°F) ISO VG 46. This oil is most appropriate for its use within the widest range of ambient temperatures.

Synthetic hydraulic oil

The hydraulic system can be filled with synthetic oil, which if leakages occur will be degraded completely by micro-organisms present in water and soil.

Please consult always with oil manufacturer or dealer any switching from mineral oil to synthetic one or mixing the oils of various brands!

4.1.5 Lubricating grease

To lubricate the machine you must use plastic grease containing lithium according to:

ISO 6743/9 CCEB 2

DIN 51 502 KP2K-30

4.1.6 Emulsion

For sprinkling the tyres, use anti-adhesive emulsion of RHODOSIL EMULSION E1P with water in the mixing ratio of 1.5:100.

5.4.7 Swinging support

5.4.8 Replacement of joint head

Secure the machine.

Mount a lock against cranking.

Place the hydraulic jack to the centre of the swinging joint.

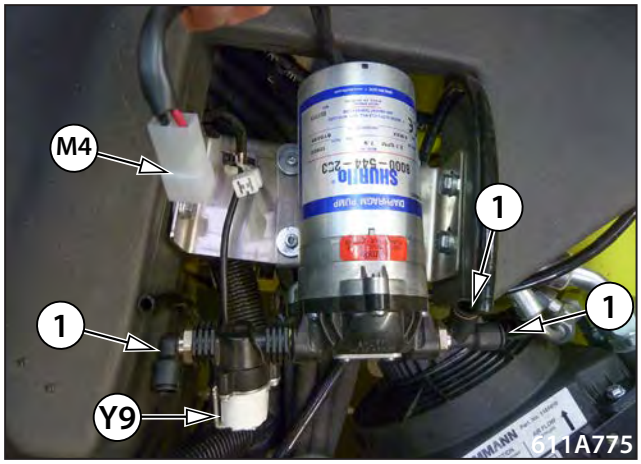
Slightly unload the roller.

Remove the lower sheet metal.

(3x) Disconnect water piping (1).

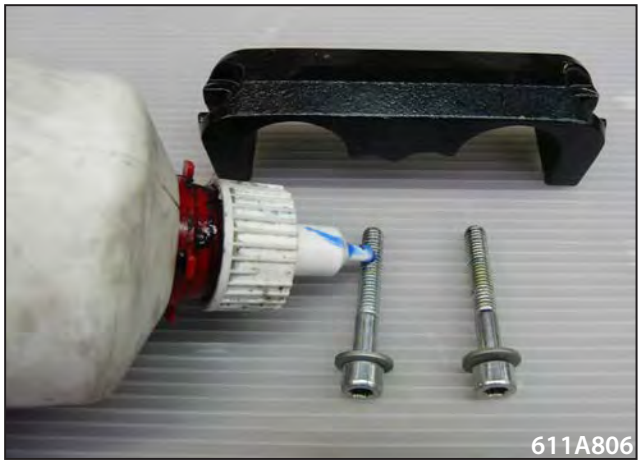
Disconnect the (M4) connector from the water pump.

Disconnect the (Y9) connector from the shut-off valve.



Secure the screws with a suitable adhesive, e.g. Loxeal 53-84

Install the clamp.

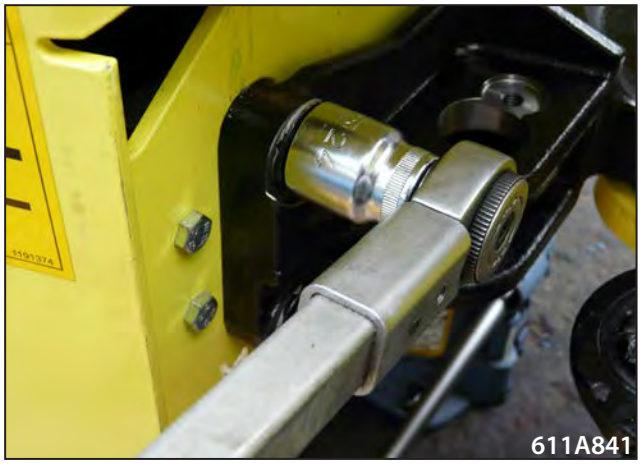


Re-install hose bundles.

Fix them using a cable coupling.

Mount the bearing flange to the chassis using hexagonal screws. Tighten tightly at the tightening torque of 210 Nm.

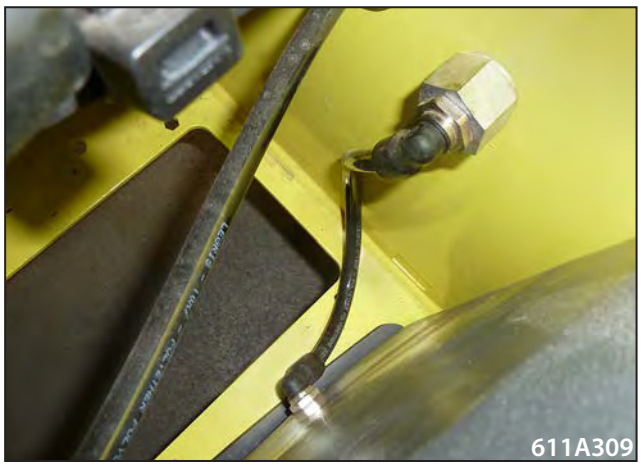

611A840


611A841

Apply the Würth motordich preparation on the bearing, flange and the lid.


611A842

Disconnect water piping.



Disconnect the X9 connector.

Mount the eye bolt (M8) in the front to the appropriate inner thread.

Now the water tank can be carefully taken out.

Remove the cotter pins on the front pins of the ROPS frame.

Remove the front pins of the ROPS frame.

Rotate the ROPS frame fixture.

Install the front pins and secure them with the cotter pins.

Remove the cotter pins of the rear pins of the ROPS frame.

Take out the ROPS frame fixtures.

Tighten the rear pins and secure them with the cotter pins.

Note:

Insert the cotter pins of the rear pins into the hole closer to the pin shoulder.

ROPS lifting

Remove the cotter pins of the rear pins of the ROPS frame.

Loosen the rear pins by ca. 1–2 turns.

Put the fixtures on the outside of the frame.

Place the fixtures on the frame so that the warning label (1) on the fixture points out of the machine.

Secure the rear pins with the cotter pins from the outside of the ROPS frame.

Note:

Insert the cotter pins of the rear pins into the hole further away from the pin shoulder.

Remove the cotter pins on the front pins of the ROPS frame.

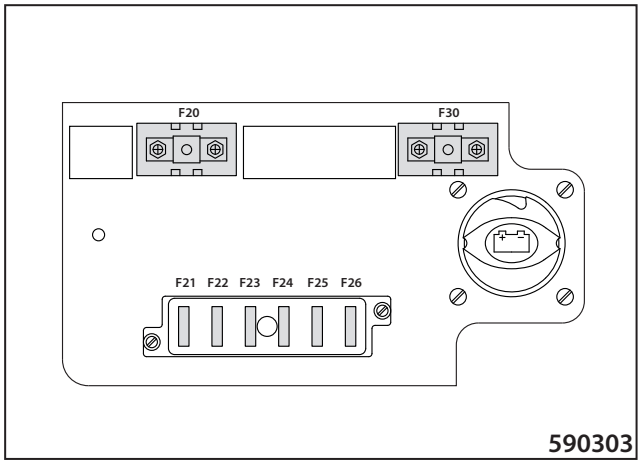
Put on the fixtures.

Secure the front pins with the cotter pins from the outside of the ROPS frame.

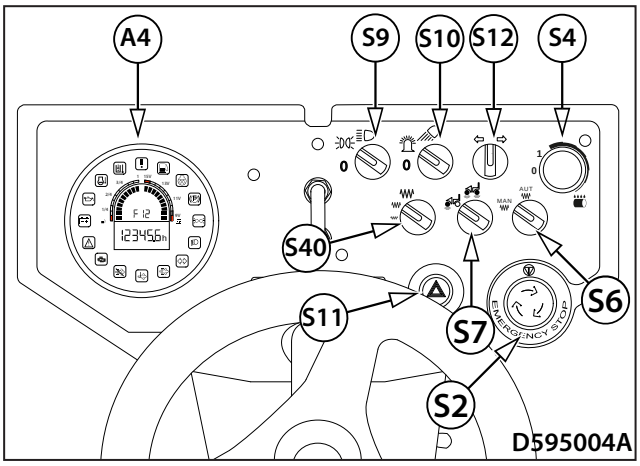
6.3.3 Relays and fuses in the engine compartment

Battery disconnector fuses

F20 – 70 A	main fuse
F21 – 35 A	Intake/holding coil – Intake coil
F22 – 7.5 A	Fuel pump
F23 – 5 A	Compaction module
F30 – 50 A	Glowing



6.3.4 Dashboard

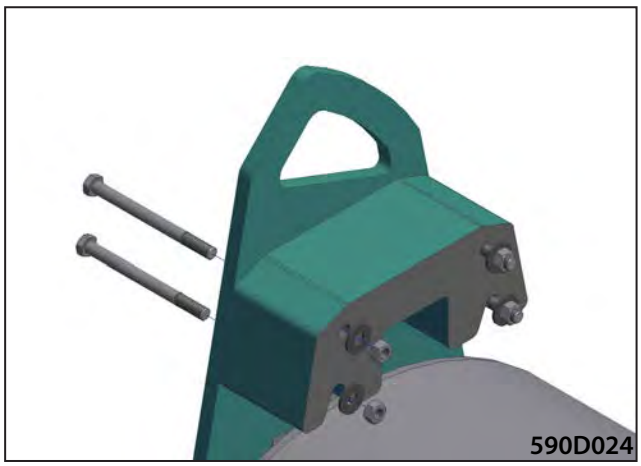


A4	Multifunctional display
S2	Emergency brake button
S4	Sprinkling potentiometer
S6	Automatic vibration mode
S7	Vibration, rear
S9	Parking light and low beam lights
S10	Rear headlamp switch
S11	Warning light switch
S12	Turn indicator switch

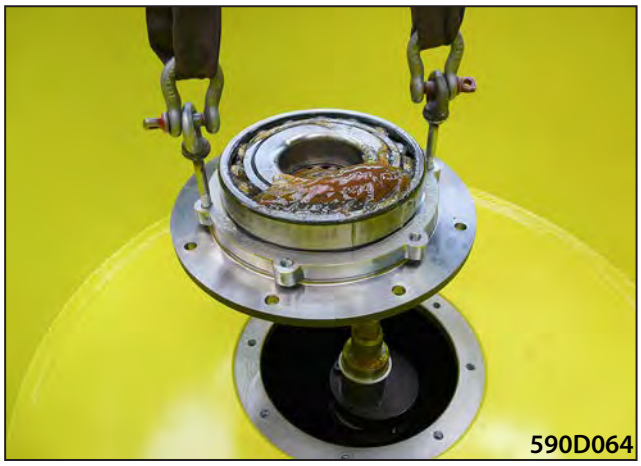
Note

Depending on the type of the machine and optional equipment the dashboard may not contain all the mentioned elements.

To hold from the inside, use a special key.



Raise the bearing flange from the roller drum and put it on the work bench.



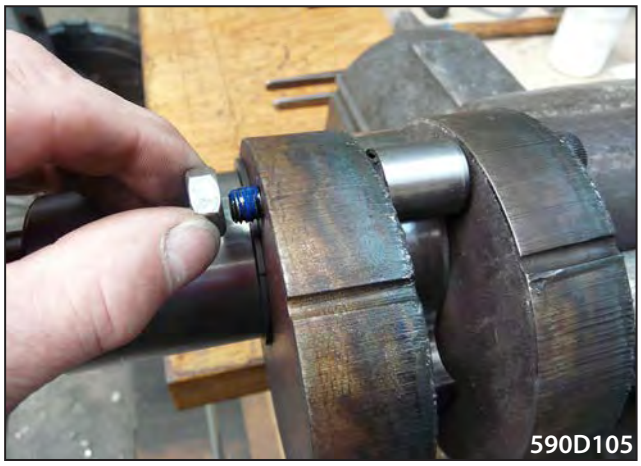
Take out the seal ring of the bearing.

Take out the inner retained ring.

Put the bearing flange under the press.

Push out the bearing of the vibrator.

Put on the hexagon nut M10 (size 17).



Tighten the nut with the torque of 16 Nm.

To hold the assembly on the other side, use the Alien wrench (size 6).

Note

Check free eccentrics and make sure that they move freely. They must move all round both anti-clockwise and clockwise.

Put clean SpeedySleeves into the special tool.

Note

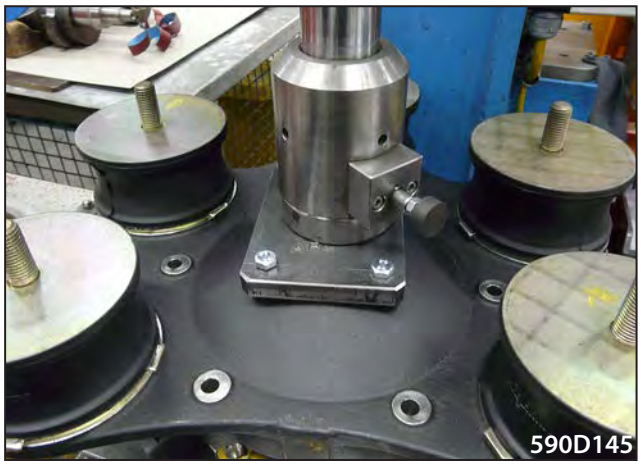
Special tools for the left and right side differ one from another.

Lubricate the (clean) shaft.

Apply an even layer of Loctite 603 on the bearing seats (on the shaft) for the right/left SpeedySleeve.

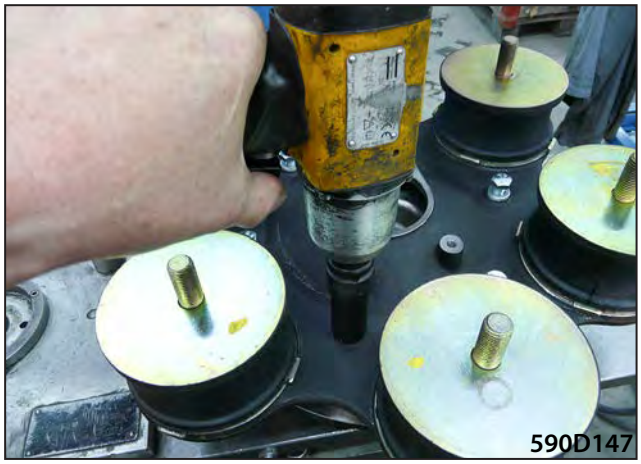
Align the wheel disk with the fastening ring.

Press in the wheel disk over the bearing.



Apply blue adhesive on six hexagon head screws M10×60 (size 17).

Install the screws and washers. Tighten with the torque of 50 Nm.



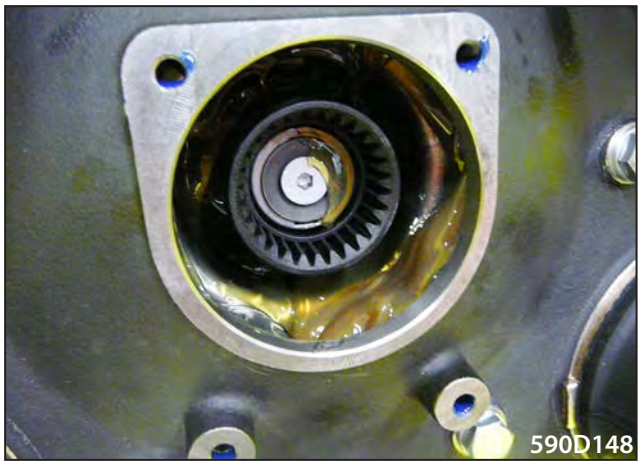
Material:

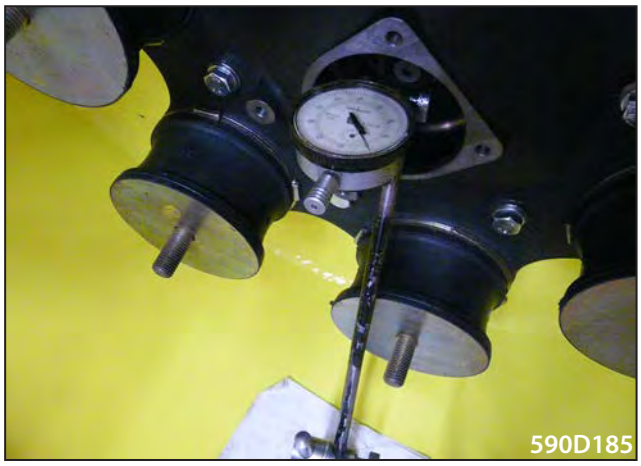
- Grease MOTOREX 174 with a low viscosity 250 g.

Apply grease on the flange housing of the drive bearing.

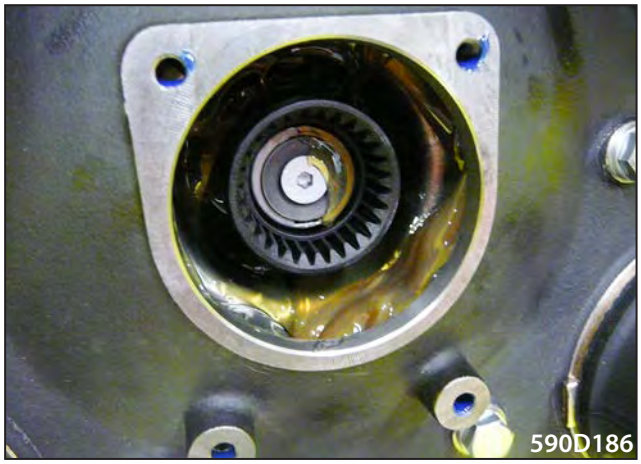
Note

Do not exceed the total amount of grease 250 g in the housing of the flange of the drive bearing.

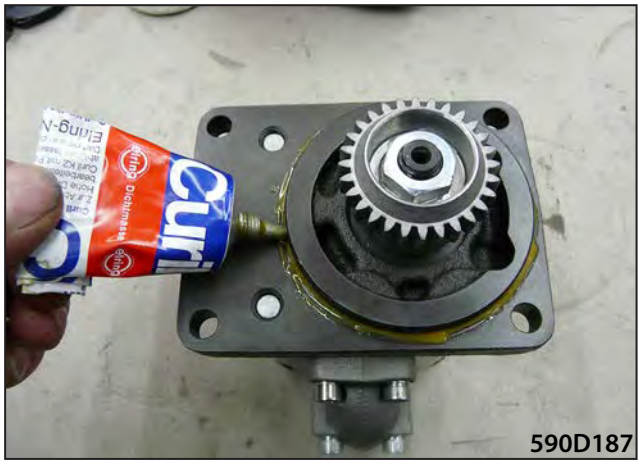




Insert the sleeve of the coupling.



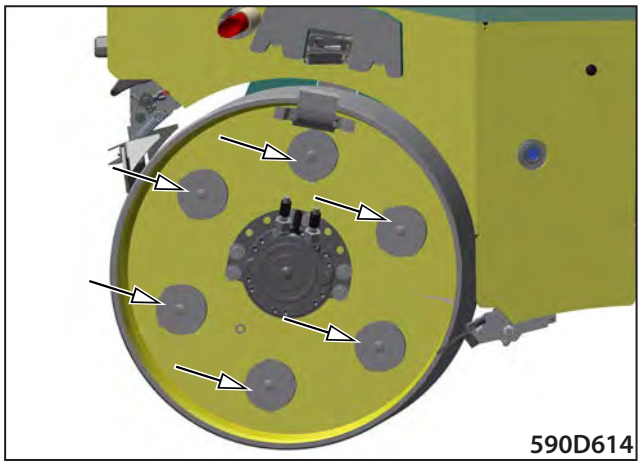
Apply Curil K2 on the flange of the vibration motor.



Insert the vibration motor.

Remove the rubber-metal elements from the drum.

Use installation tool pn 4-64614022_00.



Clean the area for mounting the new rubber-metal elements and the thread.

8 Rear drum

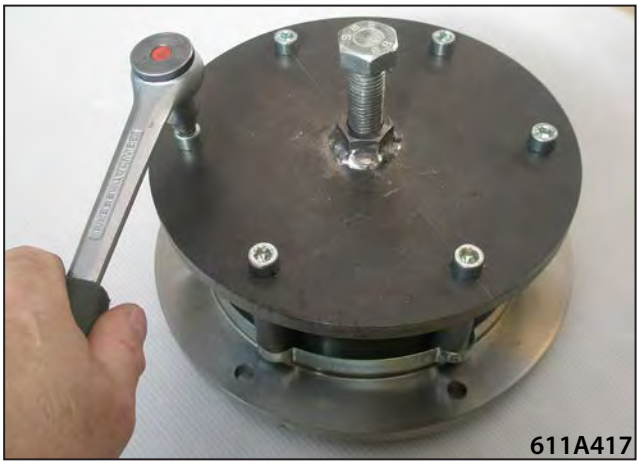
- Material:
- 114544? Thrust plate

Place the thrust plate on the centre of the shaft.


611A416

- Material:
- 1145447 Puller tool

Screw on the puller tool on the sealing flange.


611A417

Pre-load the tool using an impact wrench.


611A418

Heat up the bearing with a gas flame to release it.


611A419

Vibration bearing housing

Take out the bearing inner ring and wipe the inner space dry.

Mark the inner ring and the bearing. They fit each other and must not be confused.


611A451

- Material:
  - MOTOREX 174 liquid grease, 60 g

Grease the housing inside.


611A452

- Material:
  - 1143703 SpeedySleeve ring mounting tool
  - 1144040 Loctite 603 adhesive
  - 1136260 SpeedySleeve ring

611A453

Apply Loctite 603 inside the SpeedySleeve ring.

611A454

Measure the axial clearance of the vibration shaft of 1.4 mm ± 0.9 mm.

Mount the coupling onto the shaft.

Secure the threaded drill hole in the bearing support with a suitable adhesive, e.g. Loxeal 53-84

- Material:
  - Vibration motor
  - Würth motordich sealing mass

Apply Würth motordich agent on the vibration motor.

Clean the area for mounting the new rubber-metal elements and the thread.

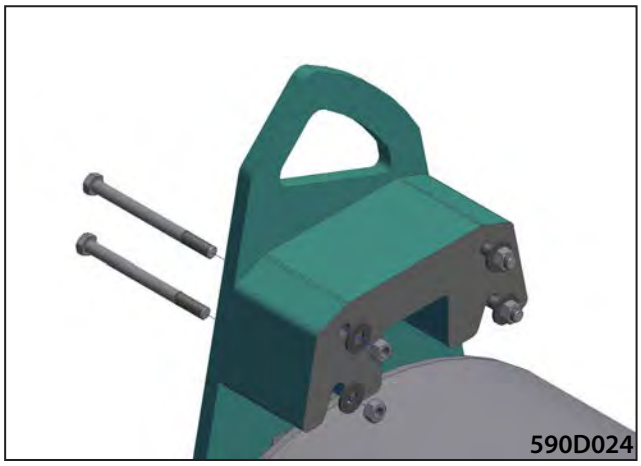
Mount new rubber-metal elements.

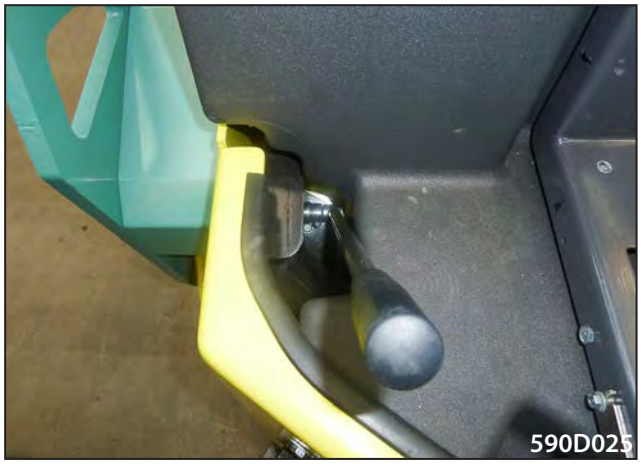
The tightening torque is 210 Nm.

Secure the rubber-metal elements with the LOXEAL 83-54 (re-moveable thread lock) adhesive.

Use installation tool pn 4-64614022_00.

To hold from the inside, use a special wrench.





(6x) Secure the M12x25 hexagonal screws with a suitable adhesive, e.g. Loxeal 53-84

Screw on the M12 screws firmly at a torque of 85 Nm.

Secure the screw joints with a suitable adhesive, e.g. Loxeal 53-84

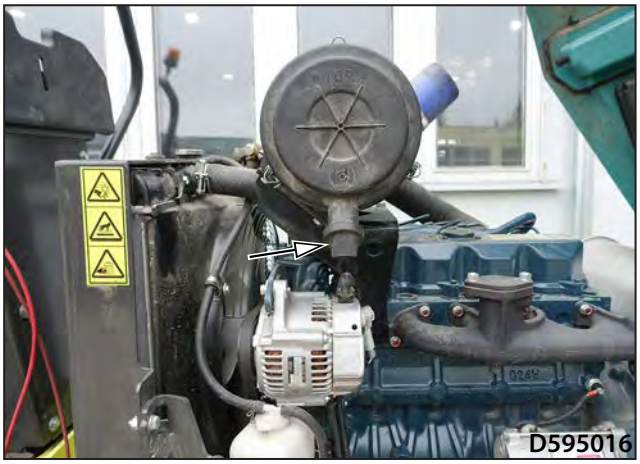
12 Vibration

15 Engine

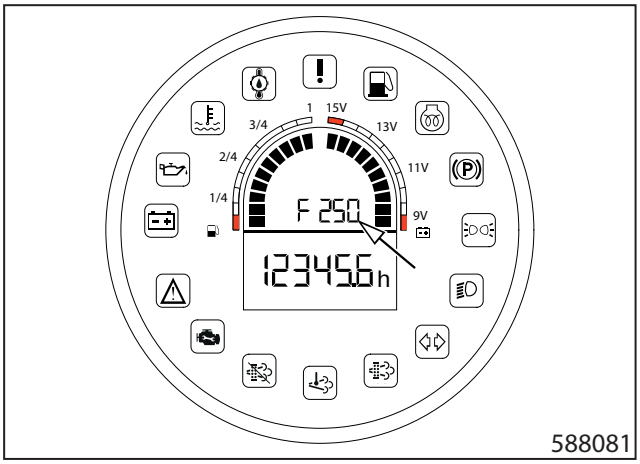
15.4.4 Inlet air filter

Drain of impurities

To empty impurities, press the drain of impurities of the inlet air filter at least once a week.



If the F250 error code appears on the display during operation of the machine, the cartridge must be replaced, however after 500 operation hours at the latest.



The manufacturer does not recommend you to clean the cartridges because there is a possibility of reducing the capacity by up to 40% and damaging the cartridge during the cleaning.

Remove the filter cap.

Take out the main cartridge.

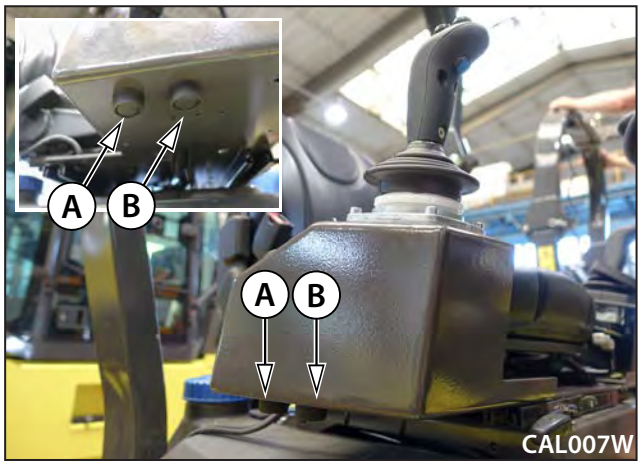
Air filter cartridge
Order number: 1503942

17 General procedures

17.4.1 Calibration mode

The calibration mode is used for:

- selecting the HARD/SOFT ramp for the working speed,
- setting the temperature units °C/°F,
- enabling/disabling the left travel lever,
- enabling / disabling the telematics,
- calibrating the minimum current of travel coils (according to Chapter 17.4.2).



CAL007W

Procedure to select parameters

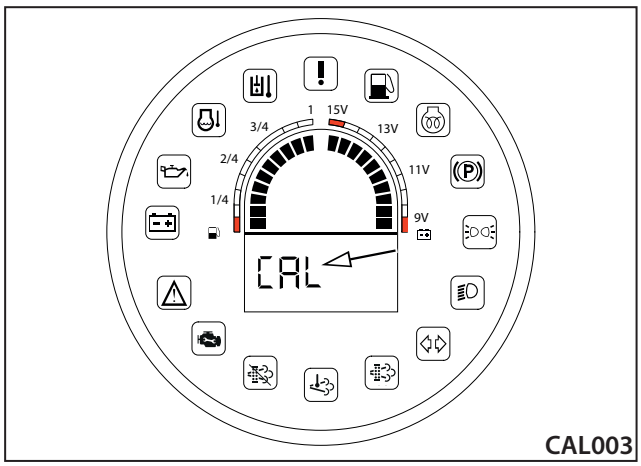
The following procedure is for the B1, B2 , B3 and B4 tabs. To calibrate the foil current (B5) proceed according to Chapter 17.4.2.

Turn the key in the ignition box to the "I" position.

Sit in the driver's seat (activation of the seat switch).

Set the travel control to the parking brake position "P".

Press the calibration button (B) for 5 seconds. While the button is held down, the display shows the "CAL" status.



CAL003

After 5 seconds, the display shows B1 and, at the same time, the error message indicator lamp (21) starts flashing. The error message indicator lamp (21) flashes for the duration of the calibration mode.

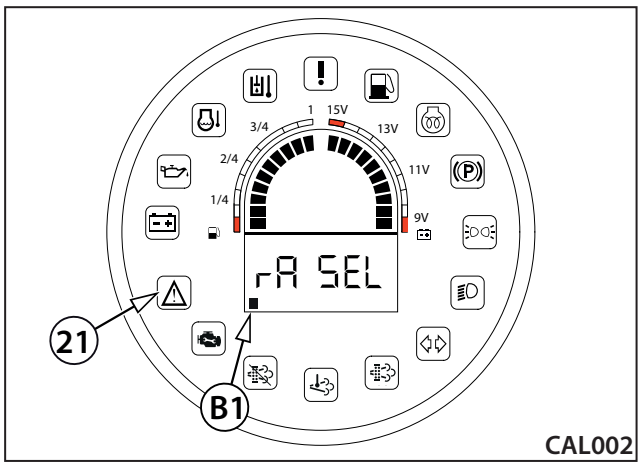
Use the select button (13) to select the tab and press OK (12) to confirm. The display will show the current state of the set parameter (e.g. SOFT when choosing the ramp – B1).

Note:

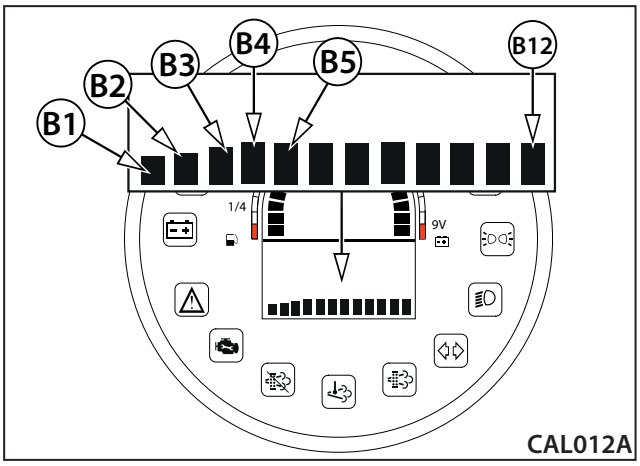
This does not apply to the B5 tab when the calibration of the minimum coil current of the travel pump is started by pressing the button.

Note:

To display the B5 tab, press the brake test button (A) for 5 seconds.



CAL002



CAL012A

Kubota engine errors

Error severity

- High – The engine failure indicator lamp is red.
- Medium – The error message indicator lamp is yellow.
- Low – The emergency stop indicator lamp is yellow.

If an engine error is displayed, stop the machine and contact service.

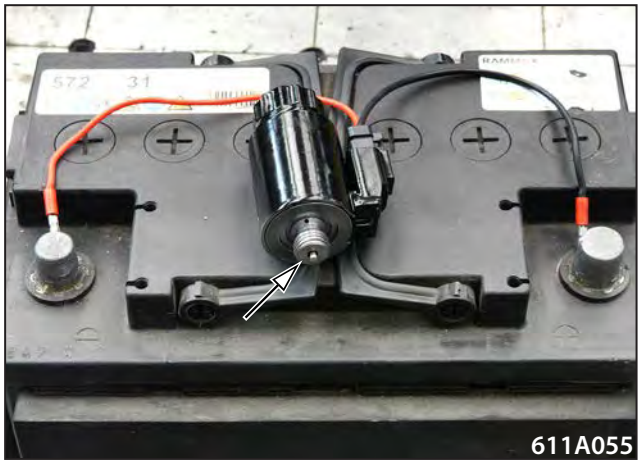
Error	Description	Error severity
F100	Pressure limiter emergency open	High
F101	SCV(MPROP) stuck	High
F102	Fuel leak (in high pressured fuel system)	High
F103	Rail pressure sensor: Low	High
F104	Rail pressure sensor: High	High
F105	Injector charge voltage: High	High
F106	Open circuit of harness/coil in 1st cylinder injector	High
F107	Open circuit of harness/coil in 3rd cylinder injector	High
F108	Open circuit of harness/coil in 4th cylinder injector	High
F109	Open circuit of harness/coil in 2nd cylinder injector	High
F110	Engine overheat	High
F111	Engine overrun	High
F112	Oil pressure error	High
F113	ECU FLASH ROM error	High
F114	ECU CPU (Main IC) error	High
F115	ECU CPU (Monitoring IC) error	High
F116	Injector charge voltage: Low	High
F117	Open circuit of SCV (MPROP)	High
F118	SCV (MPROP) drive system error	High
F119	Injector drive IC error or Open circuit	High
F120	Internal injector drive circuit short	High
F121	Sensor supply voltage 1: Low	High
F122	Sensor supply voltage 1: High	High
F123	No.1 & 4 cylinder injector short to +B or GND	High
F124	No. 2 & 3cylinder injector short to +B or GND	High
F125	Pressure limiter not open	High
F126	Rail pressure failure after pressure limiter open	High
F127	CAN2 Bus off	High
F128	CAN1 Bus off	High
F129	CAN-KBT Frame error	High
F150	MAF sensor: Low	High
F151	MAF sensor: High	High
F152	Emission deterioration	High
F153	Emergency Exhaust gas temperature sensor 0: High	High
F154	Emergency Exhaust gas temperature sensor 1: High	High
F155	Emergency Exhaust gas temperature sensor 2: High	High
F156	Excessive PM5	High
F157	High exhaust gas temp. after emergency high temp. DTC.	High

1 Measure resistance of the magnetic coil Y3/Y4.

1.1 The resistance value is approximately 6 Ohm.

1 Connect the voltage of 12 V to the magnetic valve.

2 The valve (arrow) must visibly switch on.



Change the position of the magnetic coil connector

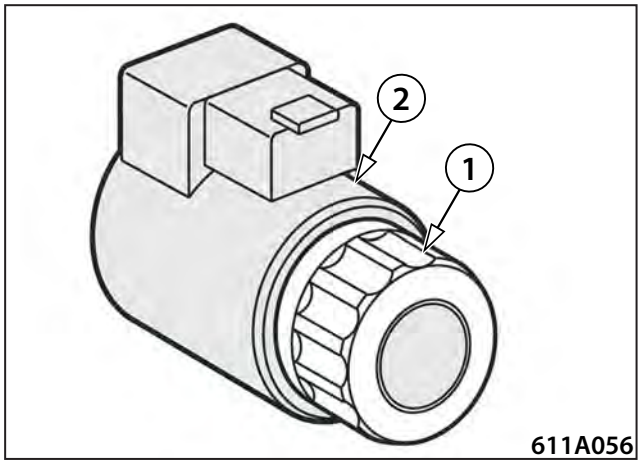
The position of the connector can be changed by turning the magnet body as needed.

1 Release the lock nut (1) of the magnet.

1.1 Turn the lock nut (1) by one turn to the left.

2 Turn the body of the magnet (2) to the required position.

3 Tighten the lock nut again. Tightening torque of the lock nut: 5+1 Nm.



1 Check the valve seat and cone for damage and contamination.

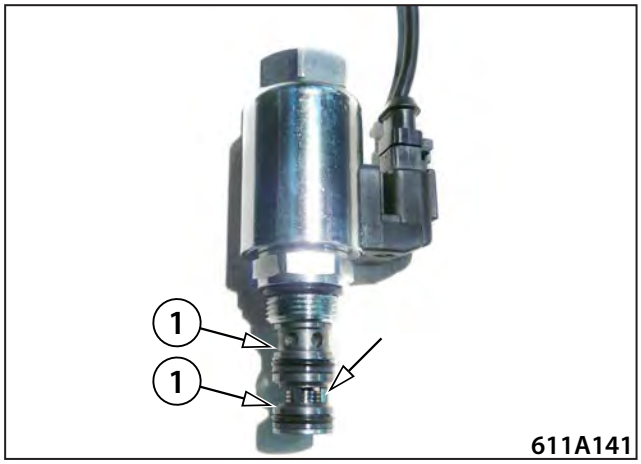
1 Tighten screwed joints/plugs firmly (90 Nm).

18.2.13.2 Magnetic coil

1 Connect the voltage of 12 V to the magnetic valve.

2 The valve (arrow) must visibly and audibly switched on.

3 Check seal rings (1) for damage.



1 Measure resistance of the magnetic coil.

1.1 The resistance value is 8 – 9 Ohm.

Note

When remounting the magnetic coil observe the torque of 50 Nm.

18.2.16 Brake test

18.2.16.1 Check of the parking brake

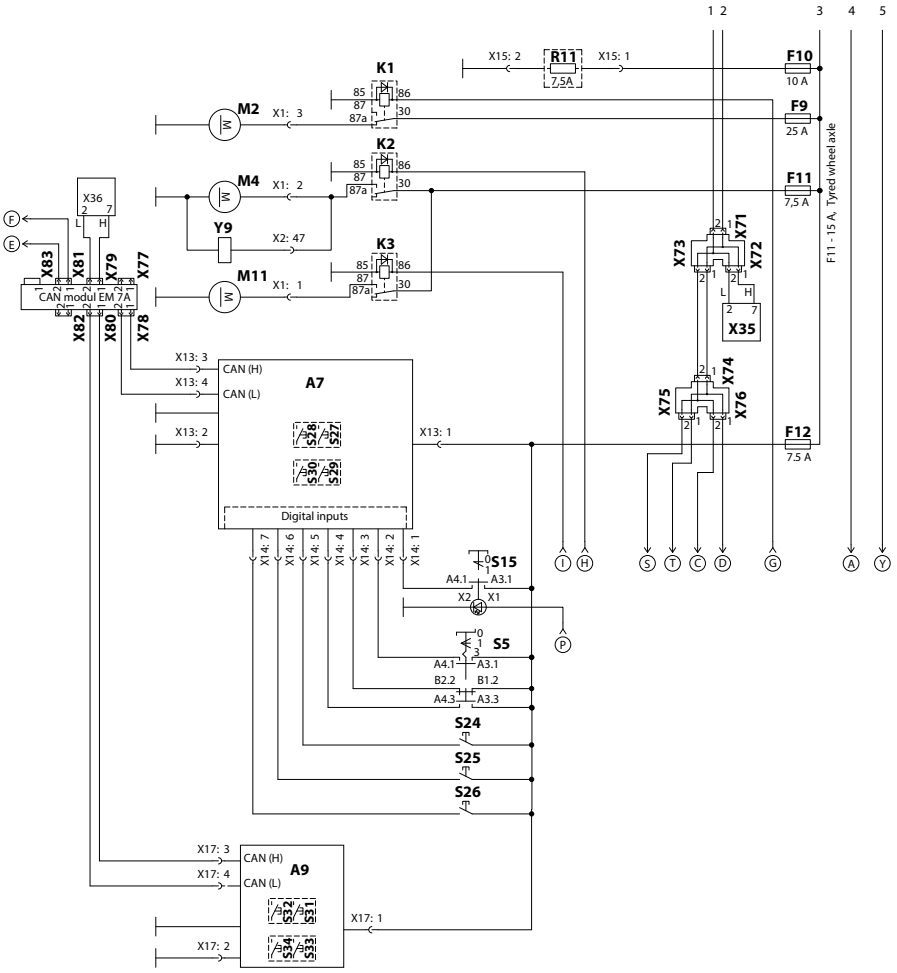
Check of the parking brake (chapter 11.2.1.1)

18.2.16.2 Check of the emergency brake

Check of the emergency brake (chapter 11.2.1.2)

18.2.16.3 Check of the service brake

Check of the service brake (chapter 11.2.1.3)

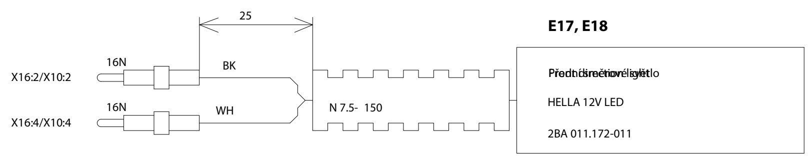

1 2
3
4
5
K1
K2
K3
M2
M4
M11
Y9
X1: 3
X1: 2
X1: 1
X2: 47
X15: 2
X15: 1
R11
7,5A
F10
10 A
F9
25 A
F11
7,5 A
F12
7.5 A
F11 - 15 A, Tyred wheel axle
X36
CAN modul EM 7A
X83
X81
X79
X77
X82
X80
X78
X71
X72
X73
X35
X74
X75
X76
A7
CAN (H)
CAN (L)
X13: 3
X13: 4
X13: 2
X13: 1
Digital inputs
S15
S5
S24
S25
S26
A9
X17: 3
X17: 4
X17: 2
X17: 1
S32
S31
S34
S33

38177D_2en

ARX4-2 Tier 4 interim

Světlo směrové přední / Front direction light

Objednací číslo / Part Number 34-129



LEGENDA: / CABLE HARNESS LEGEND:

- Faston
- Kabelové oko / Ring tongue
- Dutinka koncová / Wire ferrule
- Spojka trubičková / Butt splice
- Kontakt / Contact
- Záslepka / Plug
- Těsnění / Single wire seal
- Matice / Lock nut
- Návlek / Insulation sleeve
- Spona / Clip
- Redukce / Reducer
- Úpinka / Clamp
- T-Odbočka / T-Outlet
- Průchodka / Cable gland SEM straight
- Konektor faston / Connector faston
- Konektor DIN / Connector DIN
- Konektor Starter / Connector Starter
- Zásuvka / Receptacle connector
- Zástrčka / Plug connector

Vodič: / Wire: R – 1 – 1200 (100) — Barva / Wire color; Průřez mm² / Size mm²; Délka / Length; Číslo / Wire number

Kabel: / Cable: H03VV-F2X0.75 – 2500 — Typ / Type; Délka / Length

Ochranná hadice: / Protective hose: NW13 – 700 — Typ / Type; Délka / Length

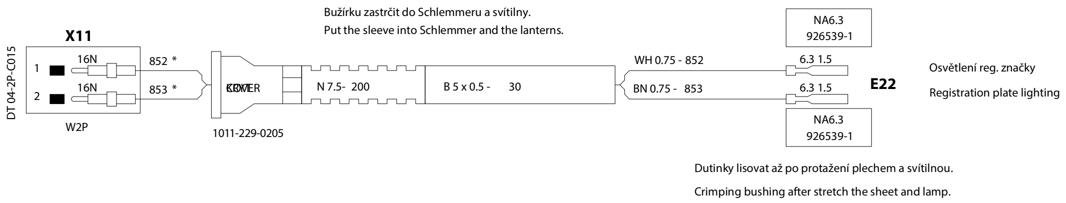
Tabulka barev vodičů / TABLE OF COLOR SYMBOLS:

WH	B	White / Bílá
BK	C	Black / Černá
BN	H	Brown / Hnědá
BU	M	Blue / Modrá
RD	R	Red / Rudá
GY	S	Grey / Šedá
YE	Y	Yellow / Žlutá
GN	Z	Green / Zelená

ARX4-2 Tier 4 interim

Registration plate lighting / Osvětlení SPZ

Part Number / Objednací číslo 34-185


Bužírku zastrčit do Schlemmeru a svítilny.
Put the sleeve into Schlemmer and the lanterns.
X11
DT 04-2P-C015
1
2
16N
16N
W2P
852 *
853 *
KRYT / COVER
1011-229-0205
N 7.5- 200
B 5 x 0.5 - 30
WH 0.75 - 852
BN 0.75 - 853
NA6.3
926539-1
6.3 1.5
6.3 1.5
NA6.3
926539-1
E22
Osvětlení reg. značky
Registration plate lighting
Dutinky lisovat až po protažení plechem a svítilnou.
Crimping bushing after stretch the sheet and lamp.

CABLE HARNESS LEGEND: / LEGENDA:

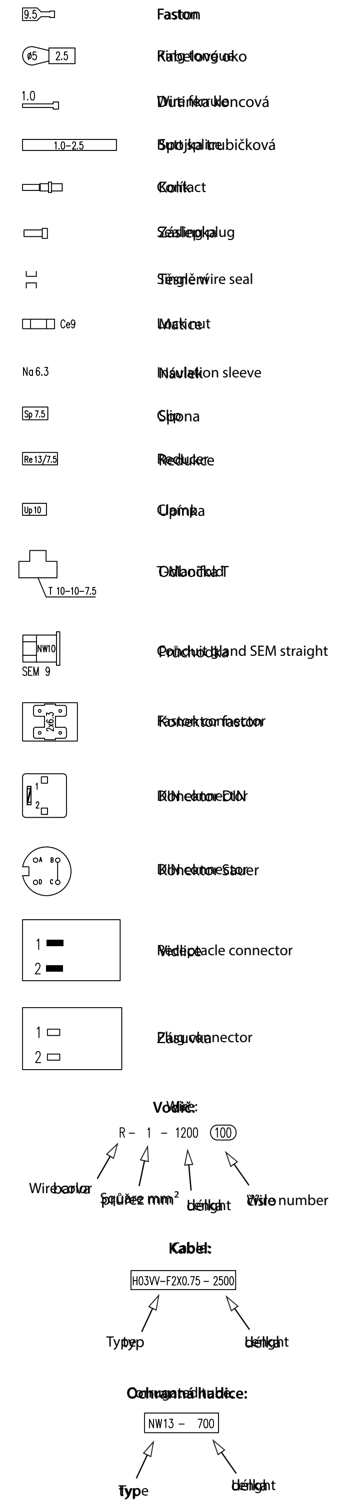

9.5
Faston
ø5 2.5
Ring tongue / Kabelové oko
1.0
Wire ferrule / Dutinka koncová
1.0–2.5
Butt splice / Spojka trubičková
Contact / Kolík
Seal plug / Záslepka
Wire seal / Těsnění
Ce9
Lock nut / Matice
Na 6.3
Insulation sleeve / Návlek
Sp 7.5
Clip / Spona
Re 13/7.5
Reducer / Redukce
Up 10
Clamp / Upínka
T 10–10–7.5
Outlet T / Odbočka T
NW10
SEM 9
Conduit gland SEM straight / Průchodka
2x6.3
Faston connector / Konektor faston
1
2
DIN connector / Konektor DIN
A B D C
Sauer connector / Konektor Sauer
1
2
Receptacle connector / Vidlice
1
2
Plug connector / Zásuvka
Wire: / Vodič:
R – 1 – 1200 (100)
Wire color / barva
Square mm² / průřez mm²
lenght / délka
Wire number / číslo
Kabel: / Cable:
H03VV–F2X0.75 – 2500
Type / Typ
lenght / délka
Ochranná hadice:
NW13 – 700
Type / Typ
lenght / délka

TABLE OF COLOR SYMBOLS: / Tabulka symbolů barev:

WH	B	White / Bílá
BK	C	Black / Černá
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YE	Y	Yellow / Žlutá
GN	Z	Green / Zelená