

SCORPION

6030 (K20 / 415-01)

6035 (K21 / 415-01)

7030 (K22 / 415-03)

7035 (K23 / 415-05)

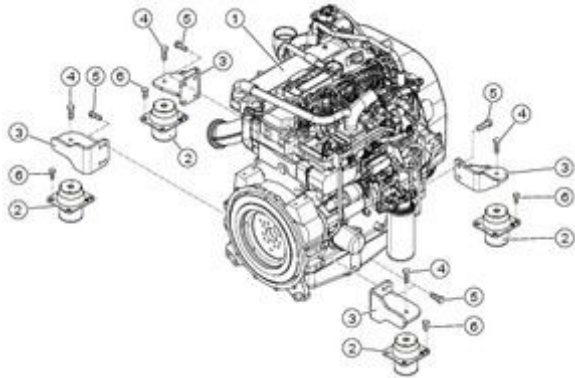
Repair manual

Validity of manual

Machine	Type	Sub-type	Vehicle identification number	
			from	to
SCORPION 6030	K20 (415-01)	200	415-010001	415-019999
SCORPION 6030	K20 (415-01)	210	415-010001	415-019999
SCORPION 6030	K20 (415-01)	300	415-010001	415-019999
SCORPION 6030	K20 (415-01)	310	415-010001	415-019999
SCORPION 6035	K21 (415-01)	200	415-010001	415-019999
SCORPION 6035	K21 (415-01)	210	415-010001	415-019999
SCORPION 6035	K21 (415-01)	300	415-010001	415-019999
SCORPION 6035	K21 (415-01)	310	415-010001	415-019999
SCORPION 7030	K22 (415-03)	200	415-030001	415-039999
SCORPION 7030	K22 (415-03)	210	415-030001	415-039999
SCORPION 7030	K22 (415-03)	300	415-030001	415-039999
SCORPION 7030	K22 (415-03)	310	415-030001	415-039999
SCORPION 7035	K23 (415-05)	200	415-050001	415-059999
SCORPION 7035	K23 (415-05)	210	415-050001	415-059999
SCORPION 7035	K23 (415-05)	300	415-050001	415-059999
SCORPION 7035	K23 (415-05)	310	415-050001	415-059999

	Special tool (II)	Pcs.
1	Ring bolt 00 0242 060 0	1

Technical specifications



	Value	CCN	Remark / designation	
1	350 kg		Deutz TCD 3.6 L4 diesel engine	
2	1.5 kg		Engine support	
3			Console	
4	79 Nm		Engine support console bolts	
5	79 Nm		Engine console bolts	
6	46 Nm		Engine support - machine frame bolts	
Tightening torques not specified, see "Introduction / Tightening torques" chapter				

Environment!

Lubricants and fuels can enter the atmosphere.

Risk of pollution

- ▶ Recover, store and dispose of lubricants and fuel according to the regulations in force with the appropriate containers.

CAUTION

Contact with hot liquids or machine parts.

Danger of burns

- ▶ Wear suitable protective clothing.
- ▶ Let liquids or machine parts cool down.
- ▶ Comply with instructions.

Removal



- Switch off and secure the machine against rolling away.

Operator's Manual

- Let the diesel engine cool down.
- Disconnect the battery isolating switch.
- Drain the coolant.
- Drain the engine oil.
- Disconnect the battery.
- Remove engine bonnet.
- Remove the alternator drive belt.
- Remove air conditioner compressor.
 - Do **not** remove the lines from the air conditioner compressor.
- Remove the air compressor.
- Remove the air filter housing.

Battery isolating switch

Operator's Manual

Operator's Manual

Battery

Engine bonnet

Diesel engine repair manual

Air filter housing



▫

- ▶ Unlock and disconnect cable connector (1).



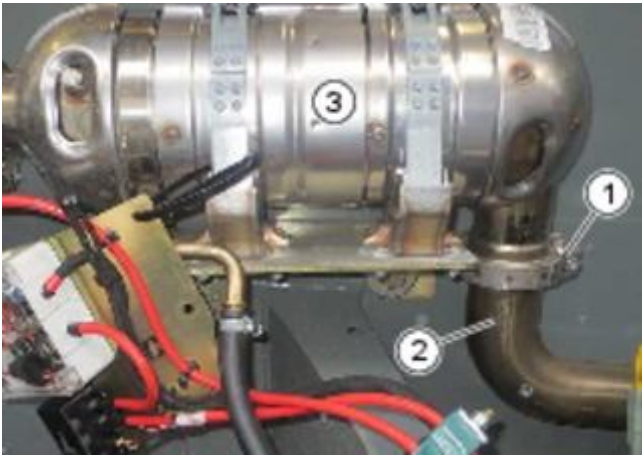
▫

- ▶ Remove the charge air hose (1).
- ▶ Remove the coolant hose (2).
- ▶ Remove the hydraulic oil hose (3). Plug all openings tightly.
- ▶ Mark and disconnect all connectors at (4).
- ▶ Disconnect connector (5) from sensor (B015-KRA).



⌘

- ▶ Mark laying of wiring loom (1) and remove wiring loom from the diesel engine.
- ▶ Remove the coolant hoses (2).



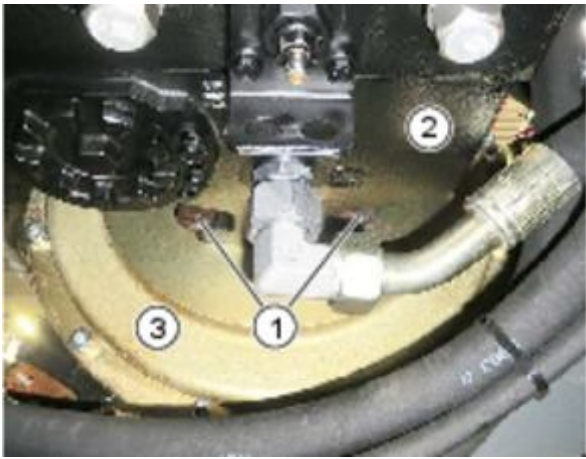
⌘

- ▶ Slacken off clamp (1).
- ▶ Unscrew exhaust gas pipe (2) from particulate filter (3).
 - ▶ Remove sealing ring between exhaust gas pipe and particulate filter.



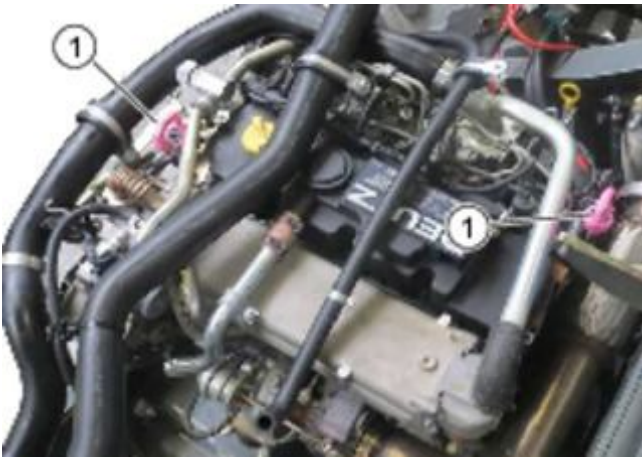
⌘

- ▶ Slacken off clamp (1).
- ▶ Pull hose (2) off of the turbocharger (3).
- ▶ Remove the coolant hose (4).
Plug all openings tightly.



⌵

- ▶ Secure the ground drive hydraulic pump (2) against falling down with suitable lifting straps.
- ▶ Unscrew all bolts (1).
Unscrew clutch (3) from the ground drive hydraulic pump (2).
- ▶ Unscrew the earthing strap.



⌵

⚠ WARNING

Lifting heavy components.

Risk of death or serious injury.

- ▶ Use a lifting tool with a sufficient bearing load.
- ▶ Use a lifting tool that operates reliably.
- ▶ Use the lifting tool on solid and even ground.
- ▶ Attach the lifting tool to the component at the intended or a suitable position.
- ▶ Only use faultless and sufficiently dimensioned lifting accessories.
- ▶ Protect lifting accessories against sharp corners and edges, for example using protectors.

Use special tool (II):

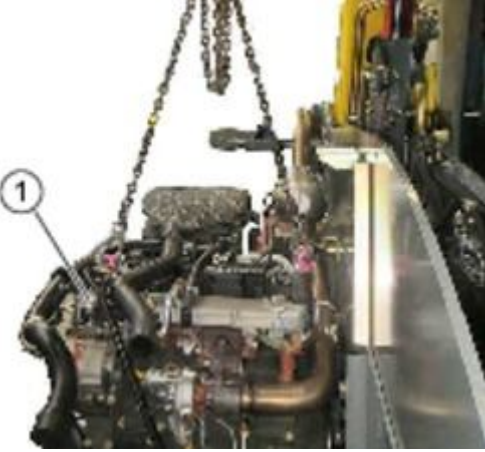
Diesel engine

- ▶ Screw on ring bolts from the special tools at (1).
- ▶ Suspend the diesel engine in a suitable lifting equipment.



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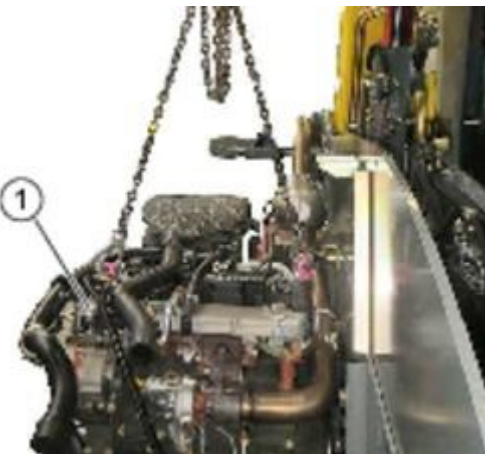
- ▶ Unscrew engine support bolts (1).



⌘

- ▶ Ensure that **all** cables and lines are disconnected from the engine.
- ▶ Lift out the diesel engine (1) carefully.

Installation



⌘

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- ▶ Insert diesel engine (1) with a suitable lifting device.



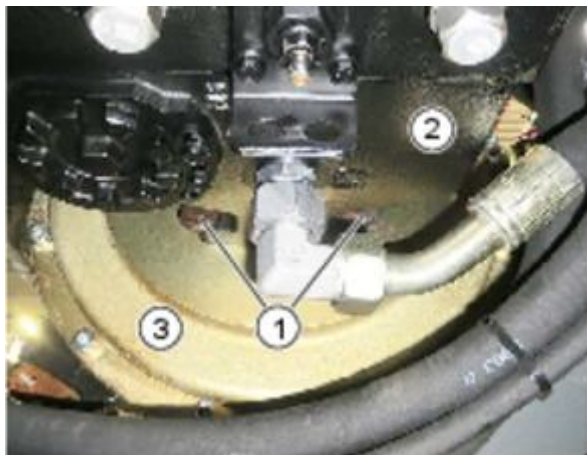
⌘

- ▶ Screw on engine support bolts (1).
Tightening torque:
Diesel engine



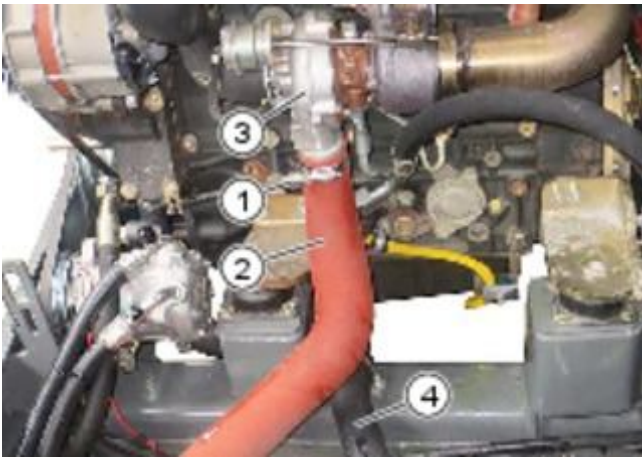
⌘

- ▶ Remove the lifting device from the diesel engine and unscrew ring bolts (1).



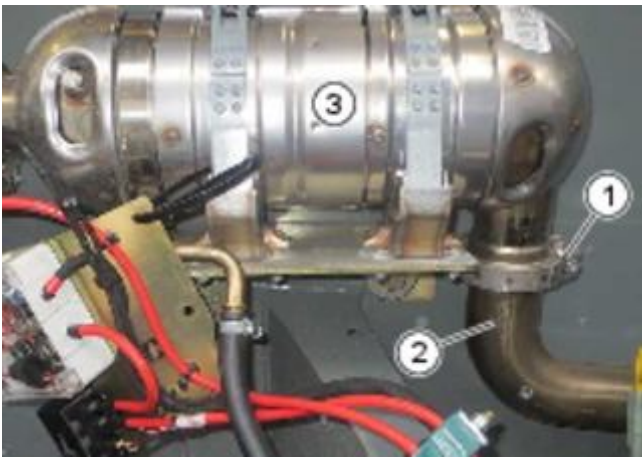
⌘

- ▶ Install ground drive hydraulic pump (2) on clutch (3).
- ▶ Tighten all bolts (1).
Tightening torque:
Diesel engine
- ▶ Bolt down the earthing strap.



D

- ▶ Fit the coolant hose (4).
- ▶ Install hose (2) on turbocharger (3).
- ▶ Screw on clamp (1).



D

- ▶ Install exhaust gas pipe (2) on particulate filter (3).
 - ▶ Ensure that the sealing ring between exhaust gas pipe and particulate filter is installed.
- ▶ Screw on clamp (1).



D

- ▶ Fit the coolant hoses (2).
- ▶ Install wiring loom (1) on the diesel engine, using the marks.



- ▶ Plug connector (5) on sensor (B015-KRA).
 - ▶ Connect all connectors at (4), using the marks.
 - ▶ Fit the hydraulic oil hose (3).
 - ▶ Fit the coolant hose (2).
 - ▶ Install the charge air hose (1).
- All necessary tightening torques:
[Engine radiator](#)



- ▶ Connect cable plug (1).

- Install the air filter housing.

[Air filter housing](#)

- Install the air compressor.

- Install air conditioner compressor.

- Install the alternator drive belt.

Diesel engine repair manual

- Install the engine bonnet.

[Engine bonnet](#)

- Connect the battery.

[Battery](#)

- Top up engine oil.

Operator's Manual

- Top up coolant.

Operator's Manual

- Connect the battery isolating switch.

[Battery isolating switch](#)

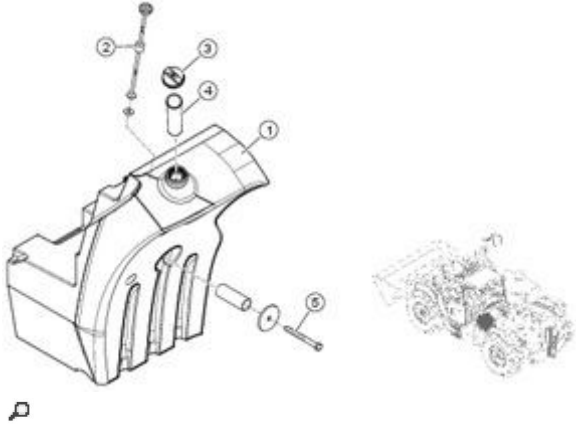
Fuel tank

Work preparation

Utilities:

- ▶ Sealing agents and glue:
LOCTITE 243 - 60 0571 153 1

Technical specifications



	Value	CCN	Remark / designation	
1	45 kg		Fuel tank SCORPION 9055 - 7044 Capacity: approx. 235 litres	
1	20 kg		Fuel tank SCORPION 7035 - 6030 Capacity: approx. 120 litres	
2		B001-KRA	Fuel measuring device	
3			Fuel filler cap	
4			Filling screen	
5	195 Nm		Fuel tank mounting bolt - Insert bolt with LOCTITE 243.	
Tightening torques not specified, see "Introduction / Tightening torques" chapter				

Draining the fuel

CAUTION

Swallowing of fuels.

Poisoning hazard.

- ▶ When swallowing fuel, consult a doctor immediately.
- ▶ Keep fuels outside of the reach of children.

NOTICE

Lubricants and fuels end up in the environment.

Environmental pollution

- ▶ Collect and store lubricants and fuels in suitable containers and dispose of them properly.

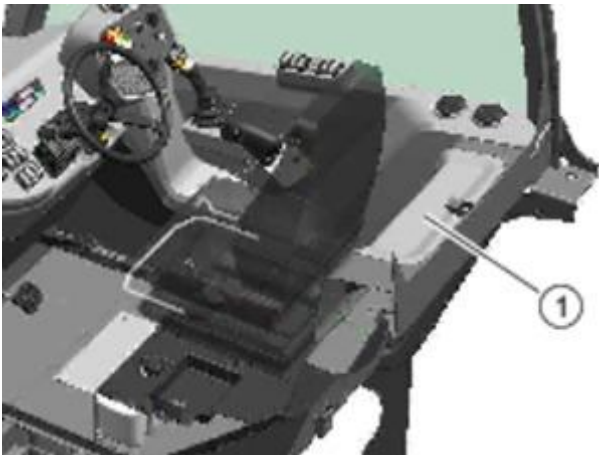
-
- ▶ Park the machine on level ground.
 - ▶ Switch off and secure the machine.
 - ▶ Open the fuel filler cap and remove the filling screen.
 - ▶ Clean the filler opening area before opening the fuel filler cap.
 - ▶ Pump off the fuel with a pump and collect the fuel in a sufficiently large container.

Capacity of fuel tank:

Fuel tank

Removing the fuel level sensor

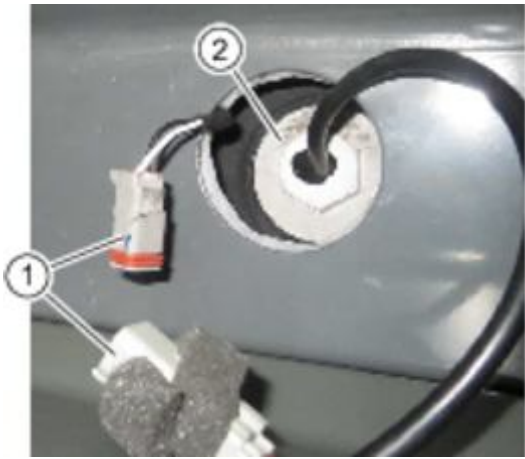
- ▶ Disconnect the battery isolating switch.
Battery isolating switch



- ▶ Open cover (1).



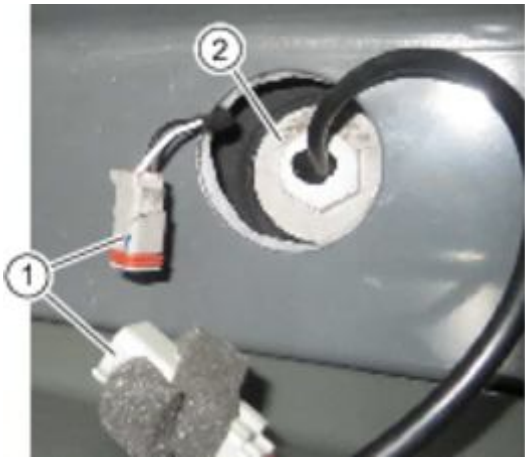
- ▶ Remove cover (1).



D

- ▶ Disconnect cable plug (1).
- ▶ Unscrew and remove fuel level sensor (2).

Installing the fuel level sensor



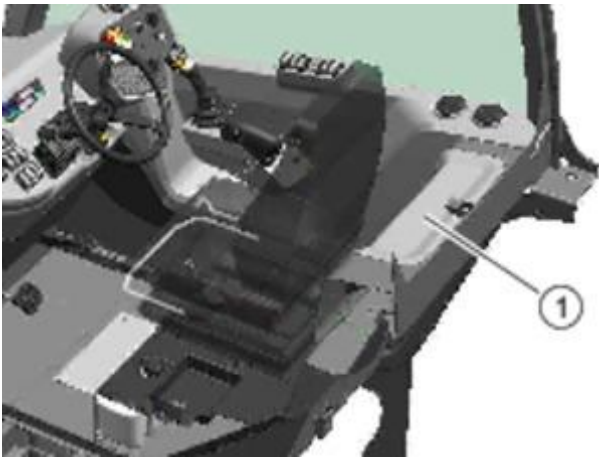
D

- ▶ Insert and screw on fuel level sensor (2).
- ▶ Connect cable plugs (1).



D

- ▶ Insert cover (1).



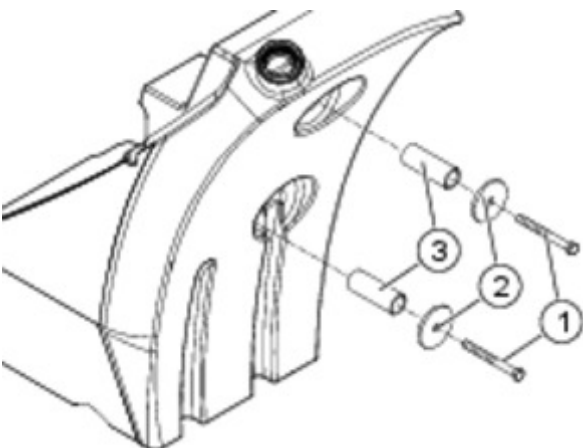
- ▶ Close flap (1).
- ▶ Connect the battery isolating switch.
Battery isolating switch

Removal

- ▶ Disconnect the battery isolating switch.
Battery isolating switch
- ▶ Remove the rear left wheel.
- ▶ Remove the rear left mud guard.
Mud guard
- ▶ Drain fuel.
Fuel tank
- ▶ Remove the fuel level sensor.
Fuel tank



- ▶ Remove the floor plate (1).
- ▶ Mark position of suction line (2) and unscrew it.
- ▶ Mark position of return line (3) and unscrew it.
- ▶ Unscrew bracket (4).



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