| Document Title: **Superstructure, removing** | Function Group: **710** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

# Superstructure, removing

**Op nbr 710-001**

1. Park the machine in the service position D. See 091 Service positions.
   Position the machine on flat, firm and level ground, free from any obstructions or interference.
   When the engine is running, the hydraulic line is under high pressure. Stop the engine, and remove the residual pressure inside the hydraulic line by operating the control lever smoothly 3-4 timeswith the ignition key at "ON" position. Turn the ignition key to "OFF" position.

2. Remove the hydraulic oil hoses, stopper screw, seal cover fixing screws, clamp and seal covers from center passage.

   **NOTICE**

   **When a hose has been disconnected, plug both the hose and the connection immediately. The hoses should be marked for correct connection.**

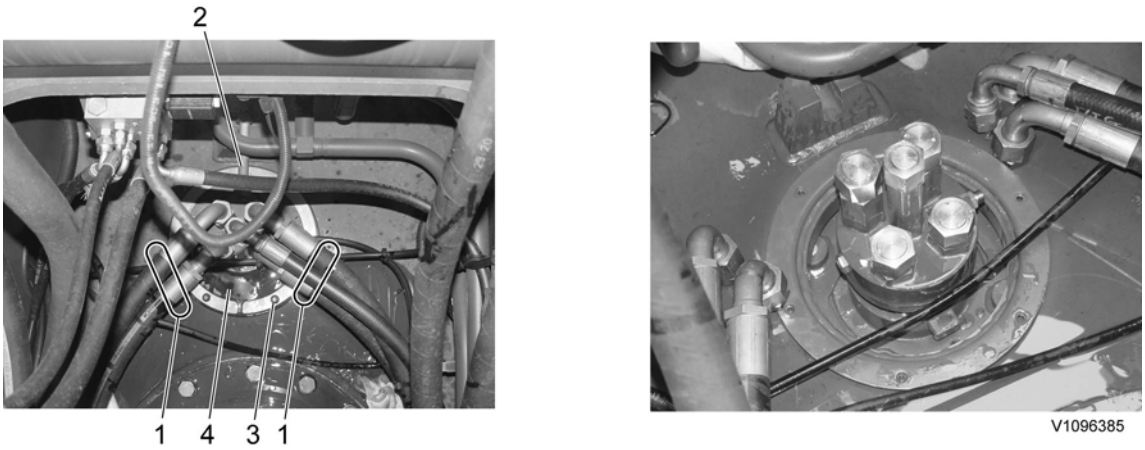


**Figure 1**
**Removal, hydraulic hoses**

1. Hydraulic oil hoses
2. Stopper screw
3. Seal cover fixing screw
4. Seal cover

3. Remove the two lifting points covers from the top of counterweight. See 716 Counterweight, removing.

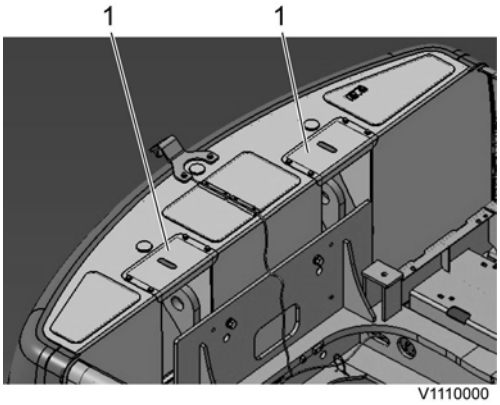


**Figure 2**
**Removal, lifting points covers (1)**

4. **WARNING**
**Risk of personal injury. Very heavy object.**

**WARNING**
**The parts are heavy. Take appropriate safety cautions when handling them.**

**WARNING**
**Never lift the machine with a person in the cab.**

**WARNING**
**Always use classified cables, lifting straps, shackles and hooks with sufficient lifting capacity.**

Hold the superstructure with wire ropes (cables).
Check the superstructure weight. See 710 Machine weight, specifications.
Check the wire ropes length (cables). Refer to the operators manual for further operation or cab in lifting machine decal. See Operating instructions, Transporting machine, Lifting machine.

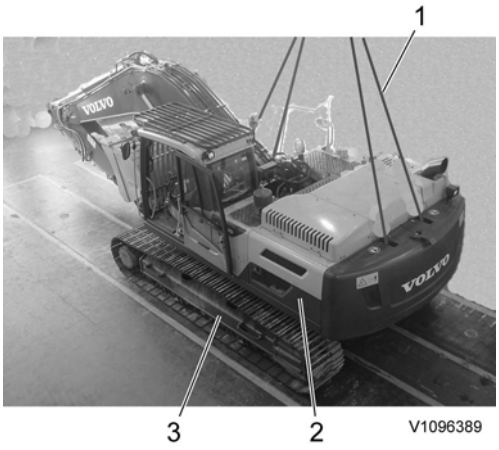


**Figure 3**
**Lifting superstructure**

1. Wire rope (cable)
2. Superstructure
3. Undercarriage

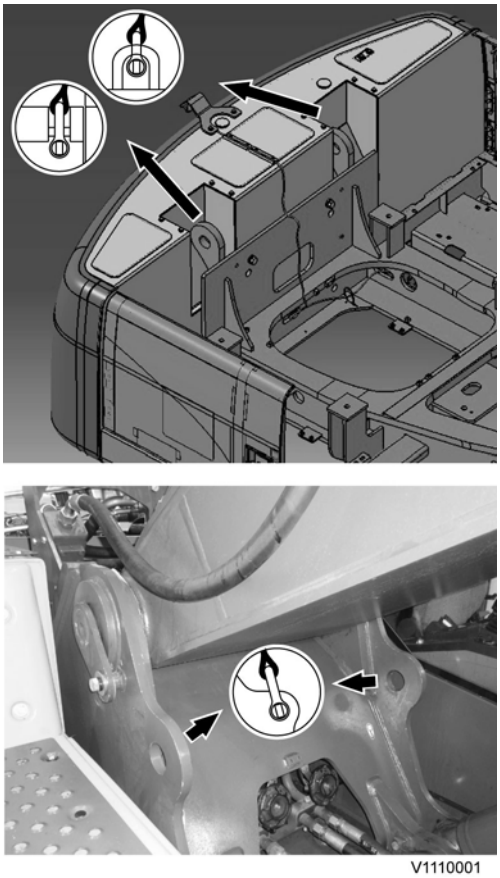


**Figure 4**
**Lifting points**
**NOTE!**
As shown in the decal for lifting, connect lifting wire ropes (cables) or slings with sufficient strength for the machine weight at the lifting points correctly.

After installation of all hoisting equipment, lift the machine a little to check its balance, if satisfactory, lift it slowly and evenly.

5. Remove the superstructure mounting screws from the swing ring gear.

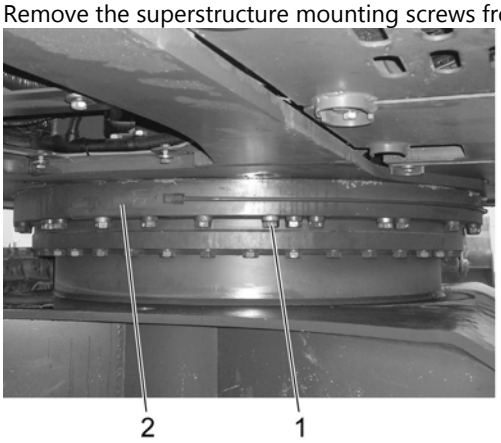



**Figure 5**
**Removal, superstructure mounting screws**

1. Superstructure mounting screw
2. Swing ring gear

6. **WARNING**

**The superstructure is heavy. Pay attention to safe footing and the area around the crane before proceeding to remove or install the superstructure.**

Remove the superstructure slowly and lower onto the 4 jacks safely.
Maintain good visibility of the machine at all times during the lift. And continuously check that the machine is level.

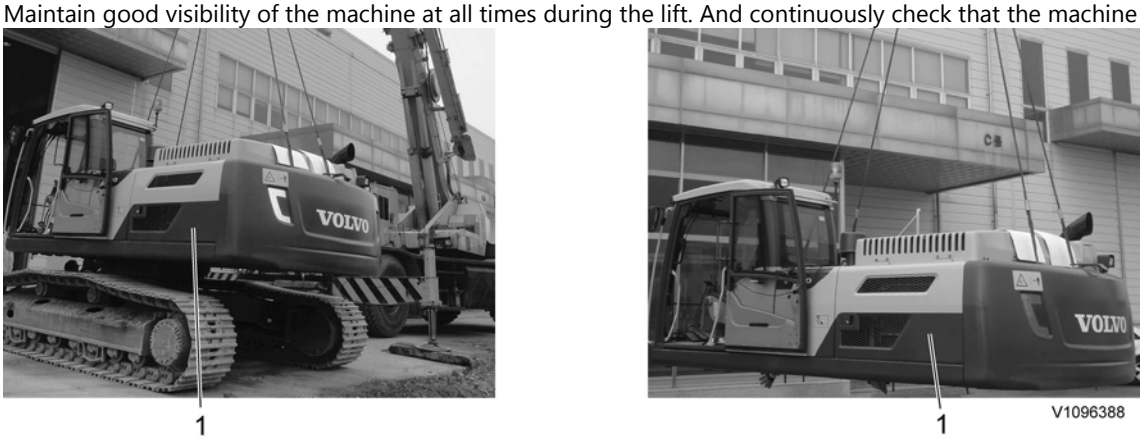


**Figure 6**
**Removal, lifting superstructure (1)**

| Document Title: **Superstructure, installing** | Function Group: **710** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

# Superstructure, installing

**Op nbr 710-002**

1. **WARNING**
   **Risk of personal injury. Very heavy object.**

   **WARNING**
   **The parts are heavy. Take appropriate safety cautions when handling them.**

   **WARNING**
   **Never lift the machine with a person in the cab.**

   **WARNING**
   **Always use classified cables, lifting straps, shackles and hooks with sufficient lifting capacity.**

   Hold the superstructure with wire ropes (cables).
   Check the superstructure weight. See 710 Machine weight, specifications.
   Wire ropes length (cables). Refer to the operators manual for further operation or cab in lifting machine decal. See Operating instructions, Transporting machine, Lifting machine.

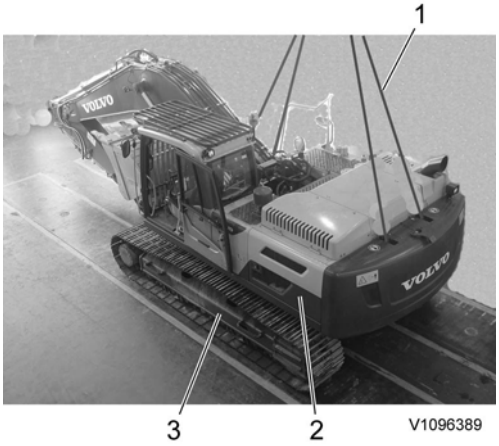


**Figure 1**
**Lifting superstructure**

1. Wire rope (cable)
2. Superstructure
3. Undercarriage

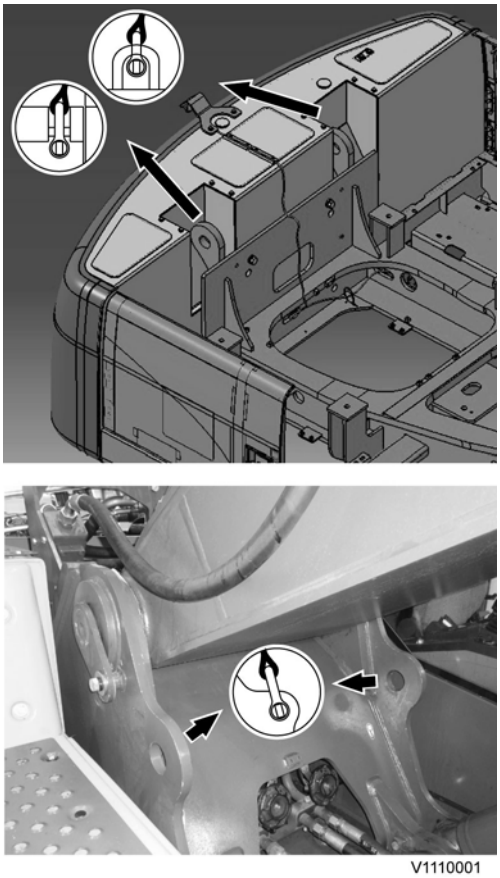


**Figure 2**
**Lifting points**
**NOTE!**
As shown in the decal for lifting, connect lifting wire ropes (cables) or slings with sufficient strength for the machine weight at the lifting points correctly.

After installation of all hoisting equipment, lift the machine a little to check its balance, if satisfactory, lift it slowly and evenly.

2. Thoroughly clean the mounting surface.
   Before replacing the superstructure, apply sealing compound to the mounting surface.
   **NOTE!**
   If impurities remain, adhesion with bond agent is not good.

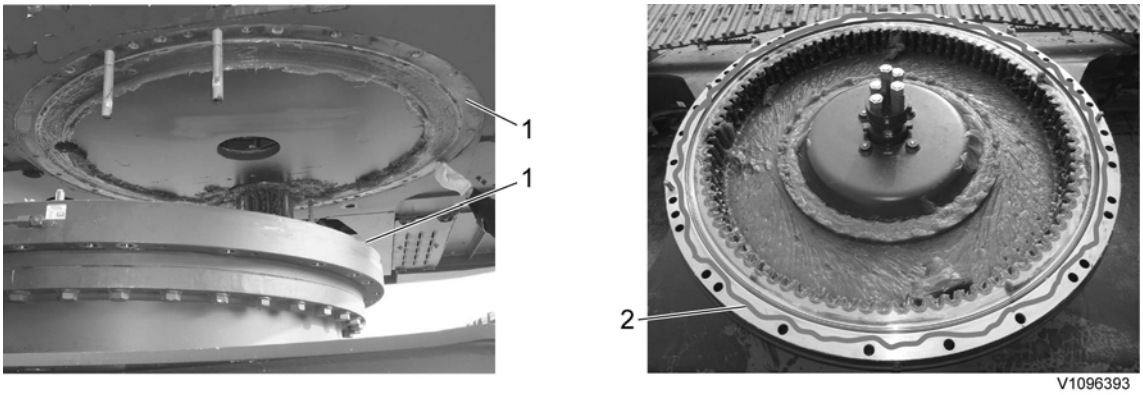


**Figure 3**
**Clean the mounting surface**

1. Clean the mounting surface
2. Sealing compound

3. **WARNING**

**The superstructure is heavy. Pay attention to safe footing and the area around the crane before proceeding to remove or install the superstructure.**

Lift the superstructure and install it to the swing ring gear.
Maintain good visibility of the machine at all times during the lift. And continuously check that the machine is level.
**NOTE!**
Match the "S" mark (soft zone position) on inner race and the plug on outer race.

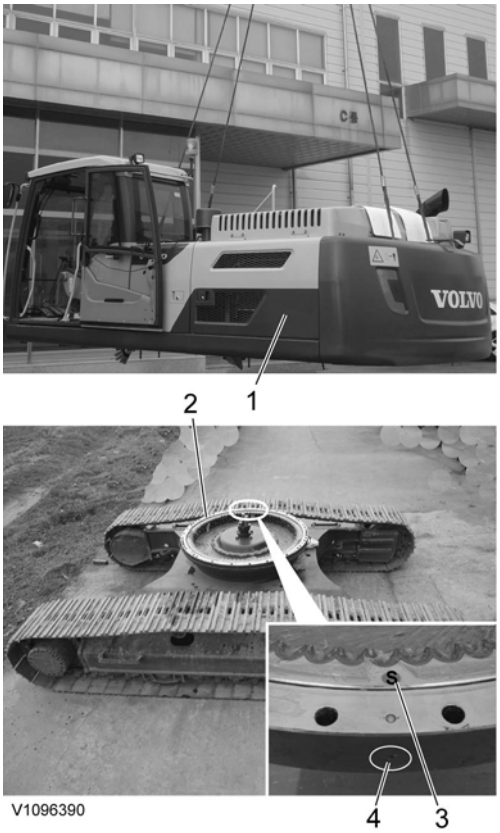


**Figure 4**
**Installation, superstructure**

1. Superstructure
2. Swing ring gear
3. "S" mark inner race (soft zone position)
4. Plug outer race

4. Install the superstructure mounting screws from the swing ring gear. Tightening torque. See 492 Swing ring gear, description. Apply Loctite #277 or equivalent locking fluid.


**Figure 5**

**Installation, superstructure mounting screws**

1. Superstructure mounting screw
2. Swing ring gear

5. Remove the wire rope (cable) at the lifting points.
   Install the seal covers, seal cover fixing screws, stopper screw, clamp and hydraulic oil hoses from center passage.
   Tightening torque, seal cover fixing screw: 22.6 ±1.96 Nm (2.3 ±0.2 kgf m) (16.6 ±1.4 lbf ft)
   Apply Loctite #277 or equivalent locking fluid.

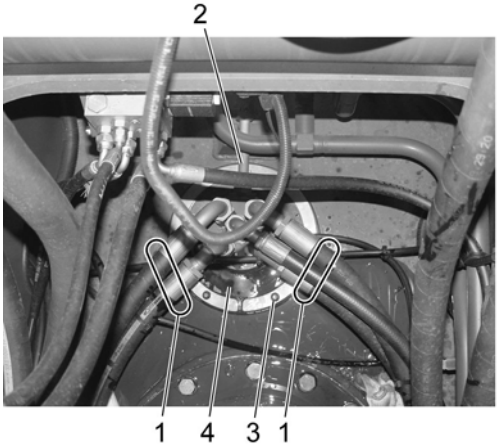



**Figure 6**
**Installation, hydraulic hoses**

1. Hydraulic oil hoses
2. Stopper screw: 242.2 ±24.5 Nm (24.7 ±2.5 kgf m) (178.3 ±18 lbf ft)
3. Seal cover fixing screw
4. Seal cover
5. Stopper screw: 15 mm (0.59 inch)

6. Install the two lifting points covers from the top of counterweight. See tightening torque. 716 Counterweight, tightening torques.

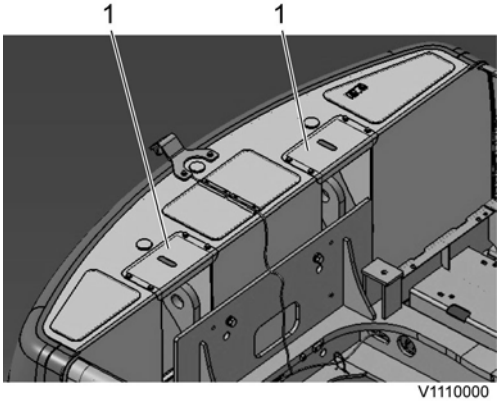


**Figure 7**
**Installation, lifting points covers (1)**

7. Check the operation of the swing, hydraulic oil hoses and swing ring gear mounting screws.

VOLVO
Construction Equipment

**Service Information**

| Document Title: | Function Group: | Information Type: | Date: |
|---|---|---|---|
| **Counterweight, description** | **716** | **Service Information** | **2015/4/2 0** |
| Profile: **EXC, EC330C LD [GB]** | | | |

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# Counterweight, description

**Casting type**

The counterweight is a counterbalancing weight that is located at the rear of the machine. The counterweight is designed in order to give the machine extra weight in the back end in order to counter the weight that is located at the front of the machine, in particular the boom and dipper arm.

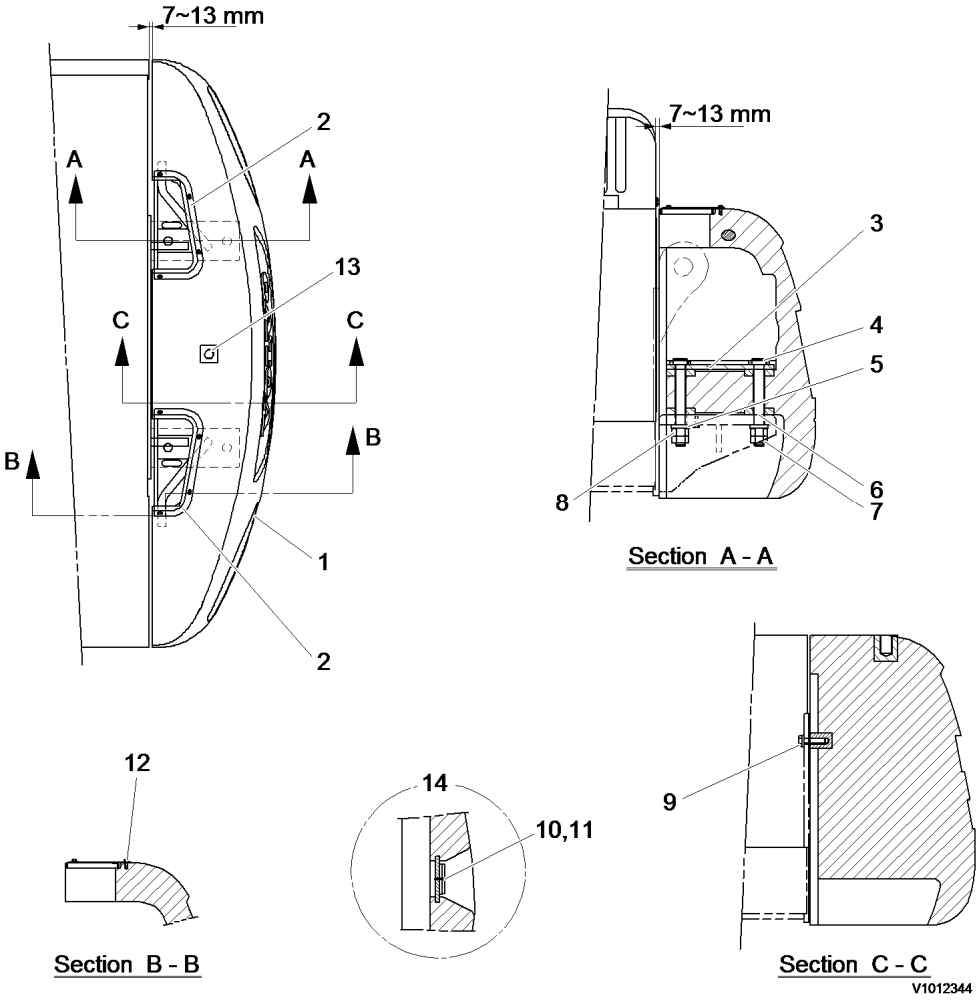


**Figure 1**
**Counterweight, structure**

| | | | | | |
|---|---|---|---|---|---|
| 1 | Counterweight | 6 | Shim | 11 | Screw |
| 2 | Cover | 7 | Lock nut | 12 | Screw |
| 3 | Plate | 8 | Nut | 13 | Plug |
| 4 | Screw | 9 | Screw | 14 | Reflector mounting |
| 5 | Spacer | 10 | Reflector | | |

| Document Title: **Counterweight, description** | Function Group: **716** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

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# Counterweight, description

**Fabrication type**

The counterweight is a counterbalancing weight that is located at the rear of the machine. The counterweight is designed in order to give the machine extra weight in the back end in order to counter the weight that is located at the front of the machine, in particular the boom and dipper arm.

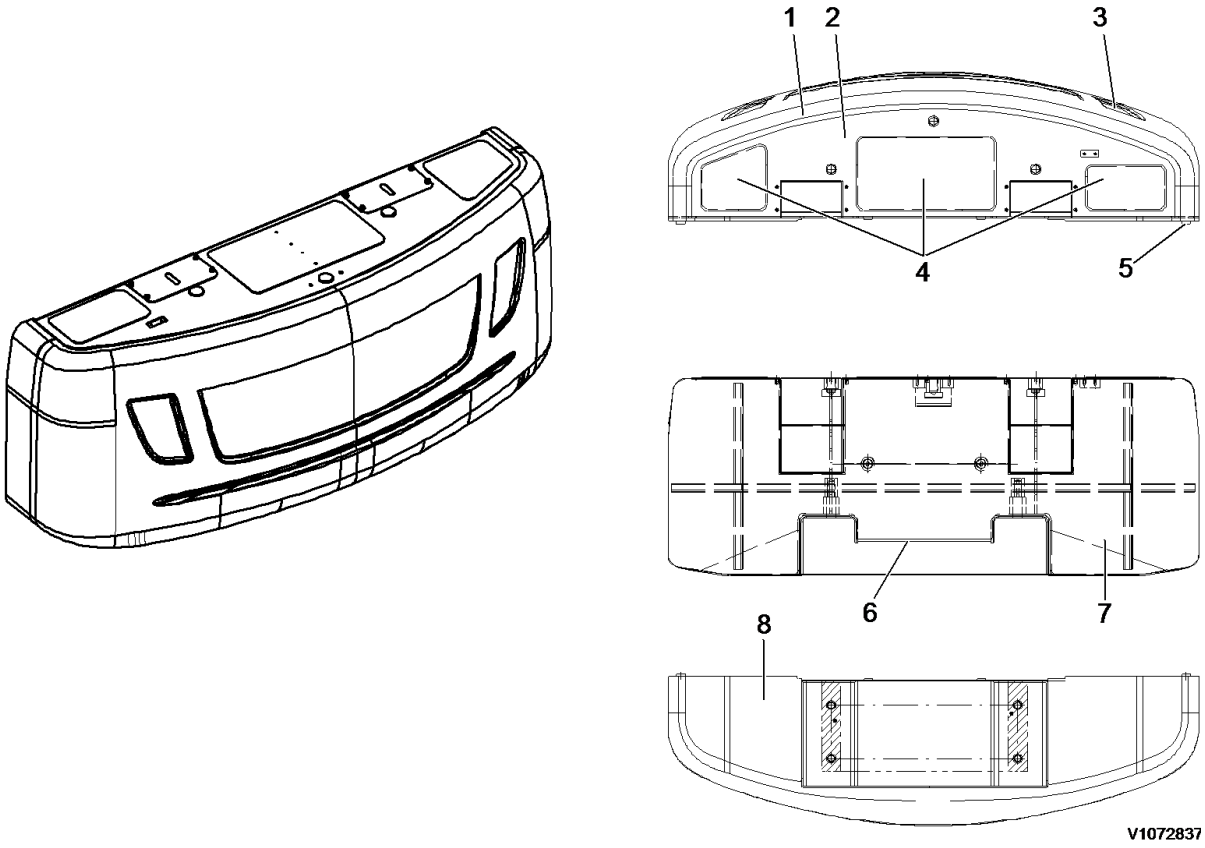


**Figure 1**
**Counterweight, structure**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Body | 2 | Plate | 3 | Reflector | 4 | Cover |
| 5 | Stopper | 6 | Base | 7 | Side plate | 8 | Under cover |

| Document Title: **Counterweight, removing** | Function Group: **716** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

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# Counterweight, removing

**Casting type**

**Op nbr 716-001**

**WARNING**

**The counterweight is heavy. Take care in performing removal. To lift the counterweight, use certified wire ropes in good condition, of adequate load rating and length.**

**WARNING**

**Heavy lift. Make sure that no persons are under the counterweight when it is lifted.**

1. Position the machine on flat, firm and level ground, free from any obstructions or interference.
   Position the boom and arm with the bucket on the ground.

2. Stop the engine and turn the battery disconnect switch is off position.

3. Remove the two covers and plug from the top of the counterweight.

4. As shown in the illustration, install each eye bolt (B), connect lifting cables or slings of sufficient strength for the counterweight at each lifting point.
   **NOTE!**
   The rate of the length for lifting cables (A) and balance cables (C) is 1 : 0.7.

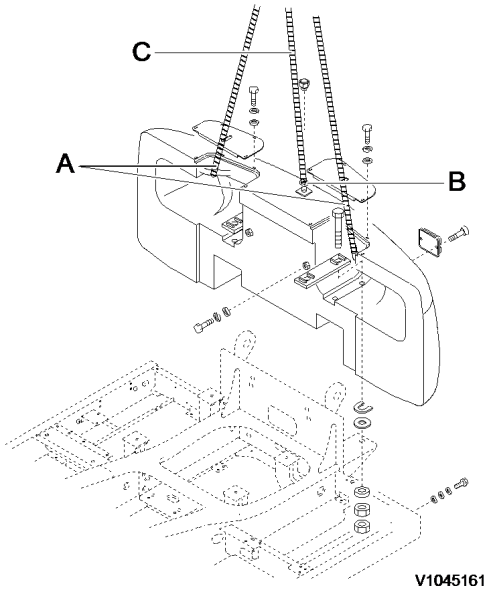


**Figure 1**
**Attach wire slings**

A. Lifting cables

B. Eye bolt
C. Balance cable

5. Remove the engine room under cover and then remove screws (9) using socket wrench.

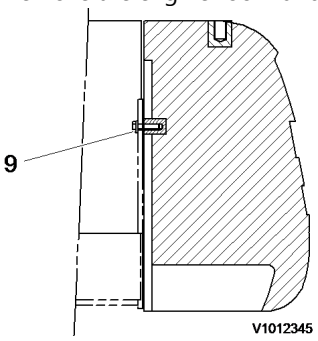


**Figure 2**
**Removal, screws**
**NOTE!**
Install the engine room cover after removing counterweight.

6. Remove lock nut (7) and nut (8), using socket wrench or power wrench.

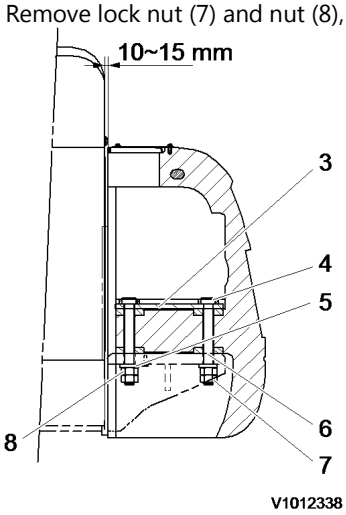


**Figure 3**
**Removal, lock nut**

7. Lift the counterweight just a little, and after confirming safety all around, lift it up and out.

| Document Title: **Counterweight, removing** | Function Group: **716** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

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# Counterweight, removing

**Fabrication type**

**Op nbr 716-001**

**WARNING**

**The counterweight is heavy. Take care in performing removal. To lift the counterweight, use certified wire ropes in good condition, of adequate load rating and length.**

**WARNING**

**Heavy lift. Make sure that no persons are under the counterweight when it is lifted.**

1. Position the machine on flat, firm and level ground, free from any obstructions or interference.
   Position the boom and arm with the bucket on the ground.
   Place the machine in the Service position B. see 091 Service positions.

2. Remove the plugs on the top surface of the counterweight and install eye bolts (2)

3. Attach wire slings (1) to eye bolts (2) and lift until there is no slack in the wire ropes.
   **NOTE!**
   Recommendation length of wire slings to keep counterweight level.

   A = 2100 mm (82.7 inch), B = 2050 mm (80.7 inch)

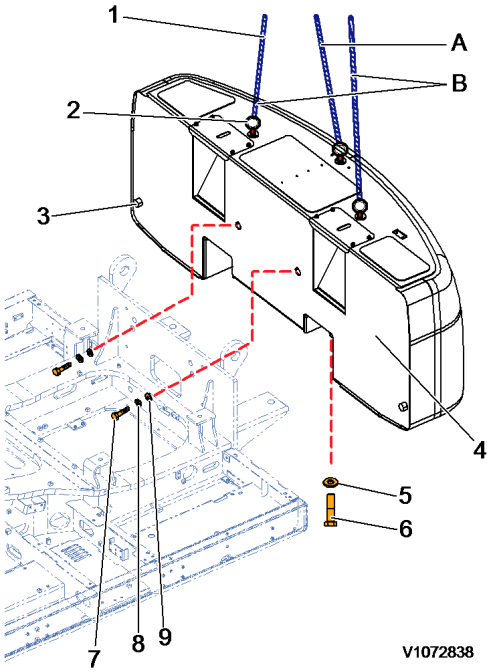


**Figure 1**

4. Remove the engine room under cover then remove screw (7), spring washer (8) and plain washer (9).
5. Remove screw (6), spacer (5).
6. Lift the counterweight just a little, and after confirming safety all around, lift it up and out.
7. Remove the counterweight and securely support the counterweight.
8. Install the engine room under cover.

| Document Title: **Counterweight, fitting** | Function Group: **716** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

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# Counterweight, fitting

**Casting type**

**Op nbr 716-002**

**WARNING**

**Lift the counterweight just a little, and after confirming safety and horizontal position, proceed to install it.**

**WARNING**

**Heavy lift. Make sure that no persons are under the counterweight when it is lifted.**

1. Position the machine on flat, firm and level ground, free from any obstructions or interference.
   Position the boom and arm with the bucket on the ground.

2. Attach wire slings to the lifting eyes at the top surface of the counterweight and lift to the desired position.
   **NOTE!**
   The ratio of the length for lifting cables (A) and balance cables (C) is 1 : 0.7.

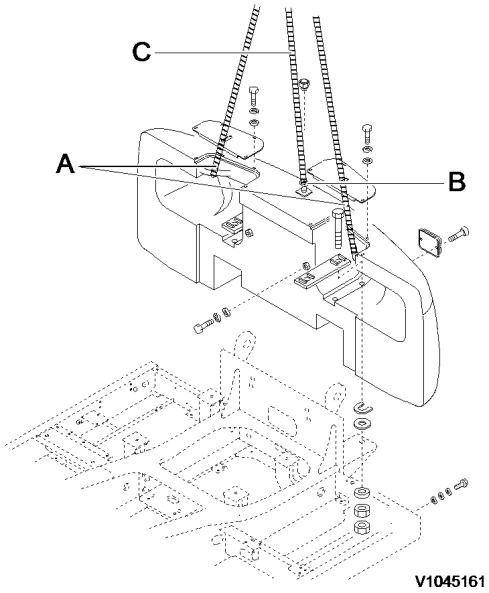


**Figure 1**
**Installation, counterweight**

A. Lifting cables
B. Eye bolt
C. Balance cable

3. Tighten nut (8) to the specified torque and then tighten lock nut (7).
   **NOTE!**
   Apply loctite 277 on threads of screws (4).

**NOTE!**
Maintain the clearance (left and right) within 7 - 13 mm.

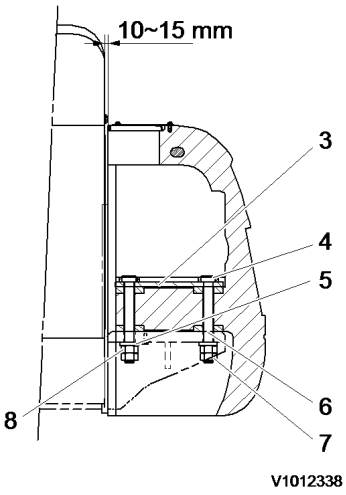


**Figure 2**
**Tightening, lock nut**

4. Remove the engine room under cover and match the screws hole. and then install and tighten screws (9) to the specified torque. See tightening torque, 716 Counterweight, tightening torques.
   **NOTE!**
   Apply loctite 277 on threads of screws (9).

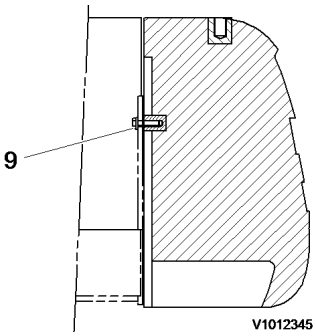


**Figure 3**
**Tightening, screws**

5. install the engine room under cover.

6. Install the two covers and remove the eye bolts.
   Assemble the plug to the top of counterweight.

| Document Title: **Counterweight, fitting** | Function Group: **716** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

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# Counterweight, fitting

**Fabrication type**

**Op nbr 716-002**

**WARNING**

**Lift the counterweight just a little, and after confirming safety and horizontal position, proceed to install it.**

1. Position the machine on flat, firm and level ground, free from any obstructions or interference.
   Position the boom and arm with the bucket on the ground.
   Place the machine in the Service position B. see 091 Service positions.

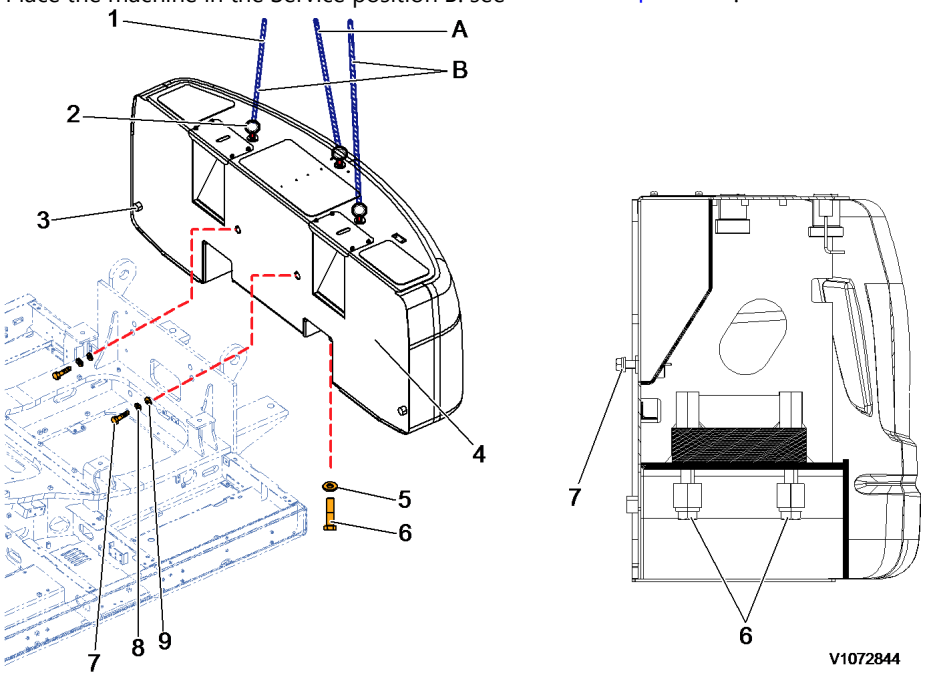


**Figure 1**

2. Engage the control lockout lever securely.
3. Clean the surfaces of counterweight mounting before fitting.
4. Remove the engine room under cover.
   **NOTE!**
   Recommendation length of wire slings to keep counterweight level.

   A = 2100 mm (82.7 inch), B = 2050 mm (80.7 inch)

5. Lower the counterweight to the mounting face at the rear of the superstructure.

6. Match the screw hole. Insert spacer (5) and tighten mounting screw (6).
   **NOTE!**
   Coat the screws with "Loctite 277"

7. Install plain washer (9), spring washer (8) and tighten screw (7) then install engine room under cover.
   **NOTE!**
   Coat the screws with "Loctite 277"

8. Remove the eye bolts and install the plugs.
   **Tightening torque**

| No. | Specifications |
|---|---|
| Screw (6) | 1900 ±190 Nm (193 ±19 kgf m) (1394 ±137 lbf ft) |
| Screw (7) | 885 ±88 Nm (90.2 ±9 kgf m) (651 ±65 lbf ft) |

**NOTE!**
Keep Top, bottom, left and right clearance to be equal. (A= 10~15mm, 0.4~0.6 in)

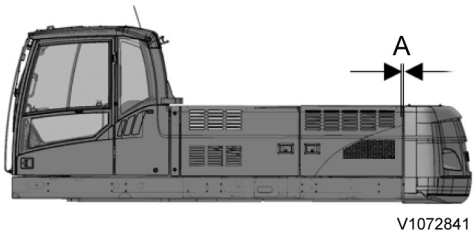


**Figure 2**

| Document Title:<br>**Undercarriage, description** | Function Group: | Information Type:<br>**Service Information** | Date:<br>**2015/4/2 0** |
|---|---|---|---|
| Profile:<br>**EXC, EC330C LD [GB]** | | | |

# Undercarriage, description

Undercarriage consists of idlers, recoil springs, top and bottom rollers, sprockets, track links, track frame and track guards.

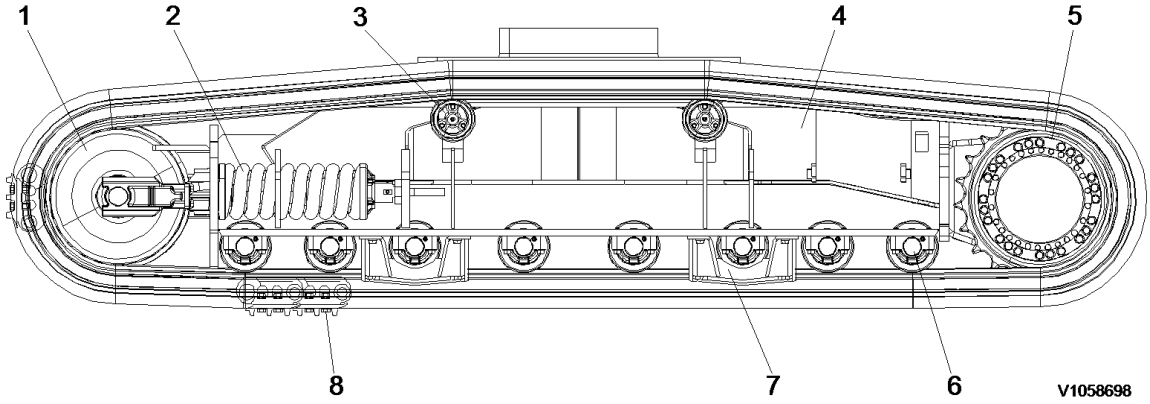


**Figure 1**
**Structure, undercarriage**

| | | | | | |
|---|---|---|---|---|---|
| 1 | Idler | 4 | Track frame | 7 | Track guard |
| 2 | Recoil spring | 5 | Sprocket | 8 | Track link |
| 3 | Top roller | 6 | Bottom roller | | |

VOLVO
Construction Equipment

**Service Information**

| Document Title: **Selection of track shoes** | Function Group: **775** | Information Type: **Service Information** | Date: **2015/4/2 0** |
|---|---|---|---|
| Profile: **EXC, EC330C LD [GB]** | | | |

# Selection of track shoes

Choose suitable track shoes to match the ground conditions.

**Method of selecting shoes**

Confirm the category from the list of uses in the "Category" table then use the "Selection" table to select the shoe.
Categories “B” and “C” are wide shoe, so there are restrictions on their use.Therefore, before using, check the restrictions and consider carefully the conditions of use before selecting a suitable shoe width. If necessary, give the customer guidance in their use. When selecting the shoe width, select the narrowest possible within the range that will give no problem with flotation and ground pressure. If a wider shoe than necessary is used, there will be a large load on the shoe, and this may lead to bending of the shoe, cracking of the links, breakage of the pins, loosening of the shoe screws, or other problems.

**Category, track shoes**

| Category | Use | Precautions when using |
|---|---|---|
| A | Rocky ground, normal soil | Travel in low speed when traveling on rough ground with obstacles such as large boulders and fallen trees. |
| B | Soft ground | Travel in high speed only on flat ground. When it is impossible to avoid traveling over obstacles, lower the travel speed to approximate half of low speed.<br>**NOTE!**<br>Cannot be used on rough ground where there are large obstacles such as boulders and fallen trees. |
| C | Extremely soft ground (swamp ground) | Use only for ground where “A” and “B” are impossible to use.<br>Travel in high speed only on flat ground. When it is impossible to avoid traveling over obstacles, lower the travel speed to approximate half of low speed.<br>**NOTE!**<br>Cannot be used on rough ground where there are large obstacles such as boulders and fallen trees. |

**Selection, track shoes**

| Specifications | Category |
|---|---|
| 600 mm grouser | A |
| 700, 800 mm grouser | B |
| 900 mm grouser | C |
| 600 mm double grouser | A |

| Document Title:<br>**Idler, description** | Function Group: | Information Type:<br>**Service Information** | Date:<br>**2015/4/2 0** |
|---|---|---|---|
| Profile:<br>**EXC, EC330C LD [GB]** | | | |

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# Idler, description

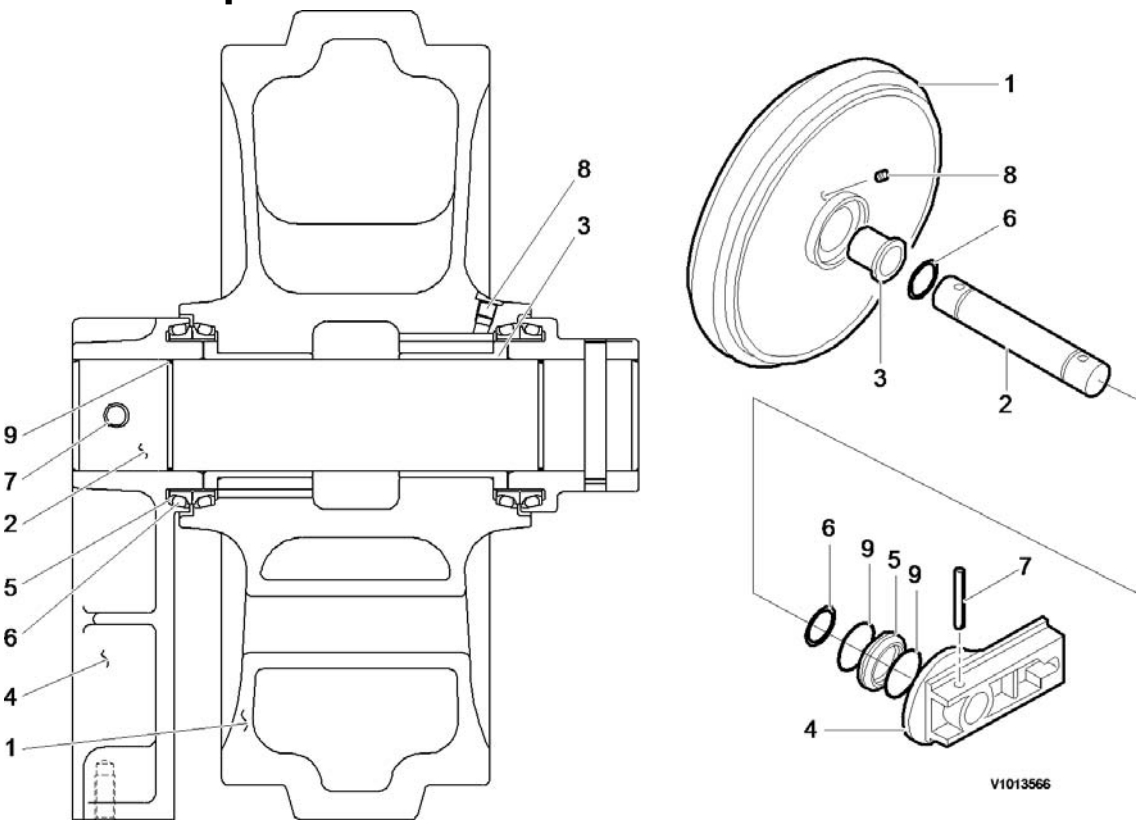


**Figure 1**
**Structure, idler**

1. Idler wheel
2. Shaft
3. Bushing
4. Support
5. Seal ring
6. O-ring
7. Pin
8. Plug
9. O-ring (Shaft)

| Document Title:<br>**Idler, description** | Function Group: | Information Type:<br>**Service Information** | Date:<br>**2015/4/2 0** |
|---|---|---|---|
| Profile:<br>**EXC, EC330C LD [GB]** | | | |

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# Idler, description

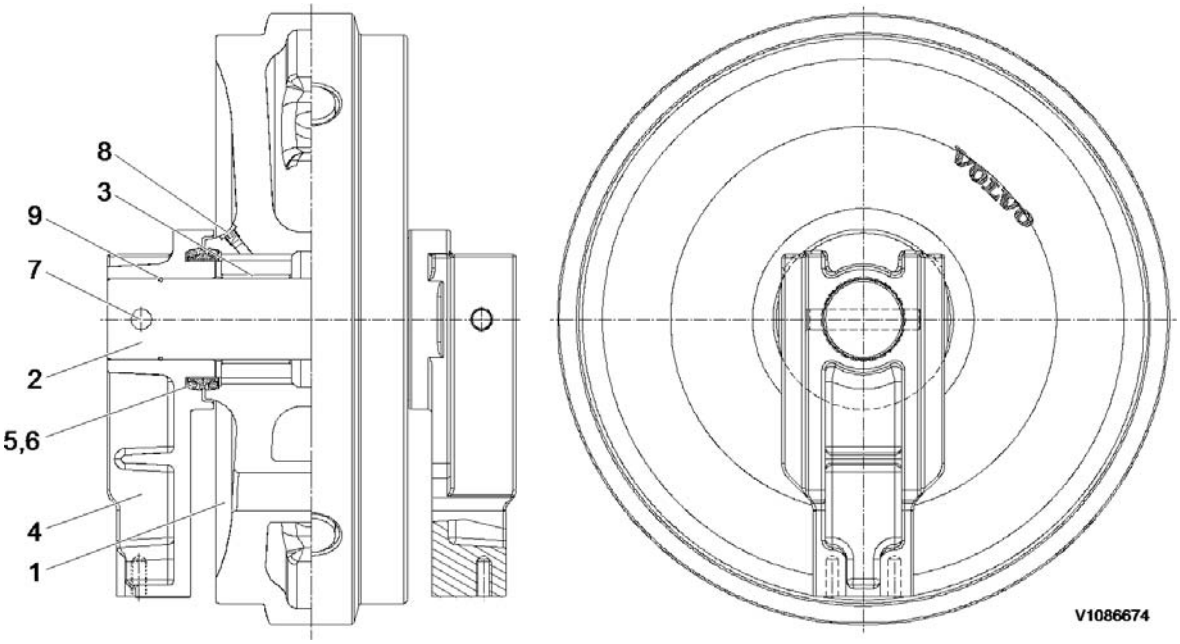


**Figure 1**
**Structure, idler**

1. Idler wheel
2. Shaft
3. Bushing
4. Support
5. Seal ring
6. O-ring
7. Pin
8. Plug
9. O-ring (Shaft)