



TA 1531-0015

Technical Instruction

Installation Instructions for Catalytic Converters



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Shut down the engine in accordance with Technical Instruction no. 1100-0105 and secure it against unauthorised restarting in accordance with Technical Instruction 2300-0010.

The catalytic converter must have cooled down completely before removal.

You can speed up the cooling process by removing the insulation from the module and opening the maintenance cover/manhole.



Observe the Safety Instructions as per Technical Instruction TA 2300-0005 and wear the appropriate "Personal Protective Equipment".

1 Option A: Catalytic converters without mounting flange (secured with pressure clamps)

The fixing method with pressure clamps described in Section 1.1 should not be used for catalytic converters without D 518 mm flanges. These catalytic converters are installed lying horizontally and are adequately secured by their own weight. No pressure clamps are therefore included in the scope of supply of these catalytic converters. These catalytic converters are fitted with handles for ease of handling.

1.1 Description of the concept

This instruction applies to the installation of catalytic converters without a flange. To fix the installation position, the catalytic converters must be clamped with pressure clamps cut to length on site (not applicable to catalytic converters with 518 mm diameter). Rings are supplied for each specific module to seal possible bypass flows. These rings must be installed in the chamber along with the catalytic converter.

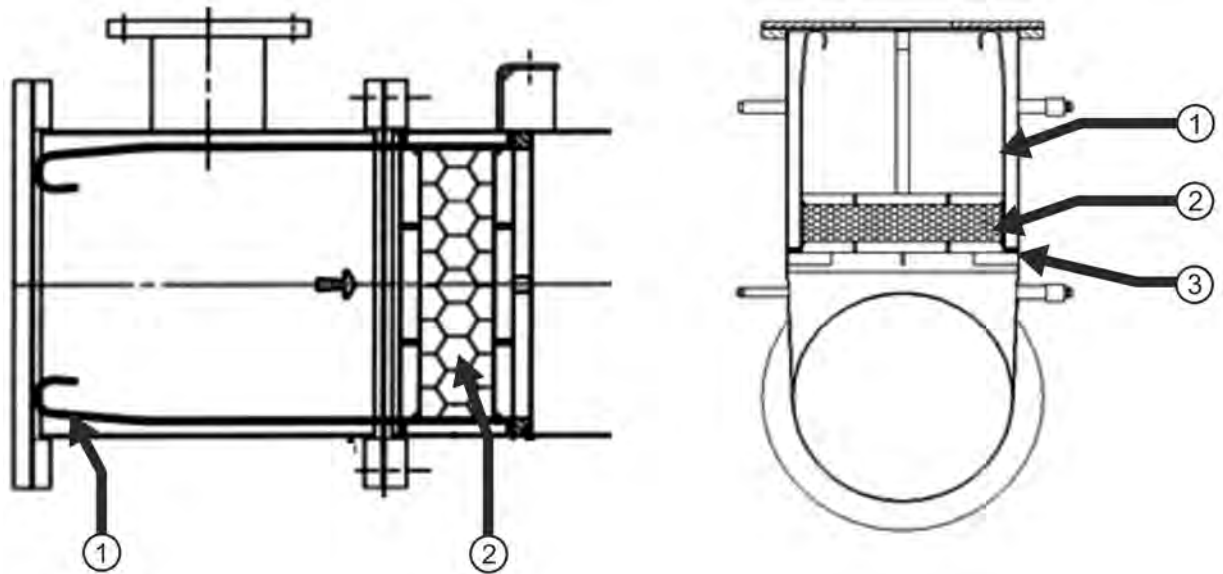


Figure 1: Example of a vertically-installed catalytic converter without a ring (left) and a horizontally-installed catalytic converter with a ring (right)

① Pressure clamp	③ Ring
② Catalytic converter	



The scope of supply must include 4 pressure clamps and, where appropriate, a ring! Exceptions: No pressure clamps are included in the scope of supply for catalytic converters without a flange of diameter D = 518 mm.

1.2 Assembly instructions for catalytic converter installation



Find out the installation dimensions before fitting the pressure clamps to the catalytic converter.

1.2.1 Finding out the pressure clamp length

You can find out the length of the pressure clamp by taking a series of simple measurements.

Measurement Distance between maintenance cover and converter support (value A)

1:

Measurement Height of catalytic converter \Rightarrow normally 140 or 170 mm (value B)

2:

Measurement Height of spacer ring, if any (value C) \Rightarrow Observe the note below

3:



Note: Some rings are fitted from the side \Rightarrow in this case, do not subtract value C.
Determine the length of the clamp by subtracting the values.

$$\text{Value A} - \text{Value B} - \text{Value C} = \text{Pressure clamp length}$$

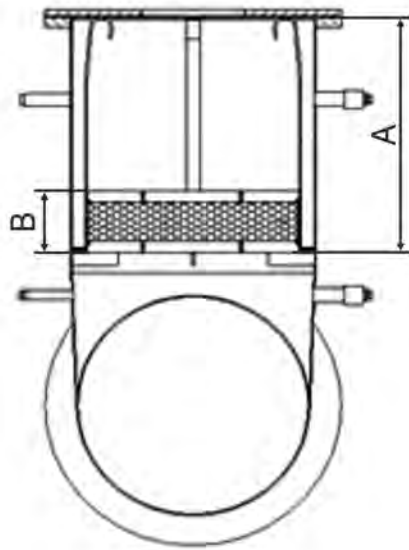


Figure 2: Determining the values A and B before fitting the pressure clamp. Value C is not needed in this case, as the spacer ring is fitted from the side.

1.2.2 Fitting the pressure clamp to the catalytic converter

After cutting the 4 pressure clamps supplied to the required length (see above), weld them to the jacket of the catalytic converter.



Figure 3: Example of a catalytic converter with pressure clamps welded to it

The component obtained is then installed in the catalytic converter chamber, as shown in the example in Figure 1.

1.2.3 Installing catalytic converters with pressure clamp and ring

A ring is fitted underneath or to the side of the catalytic converter to seal off any bypass flows. However, this does not apply to all modules. Catalytic converters can be installed either horizontally or vertically.

Horizontal installation:

In the case of horizontal installation, any ring supplied is placed below or beside the catalytic converter on the converter support and, if necessary, secured with a few spot welds. Make sure that the gap between the ring and the catalytic converter chamber is as small as possible. The opening of the ring should be on the longitudinal weld seam on the exhaust gas heat exchanger inlet chamber. The next step is to fit or insert the catalytic converter with the attached pressure clamps and close the converter chamber.

Vertical installation:

In the case of vertical installation, the ring is fixed to the converter with a few spot welds and then inserted into the converter chamber. This system is clamped in the converter chamber when the chamber is closed.

2 Option B: Catalytic converters with mounting flanges (secured with split pins or bolts)

2.1 Description of the concept

This instruction applies to the installation of catalytic converters with a flange. In order to fix the installation position, the catalytic converters must be secured with split pins to the dowels in the silencer or converter chamber. In many modules, they are secured by bolts fitted with double lock nuts. The catalytic converters to be installed have 4 mounting holes in the flange which are used for suspending them. The holes are either DN14 (old converters) or DN16 (new converters) in order to allow for possible manufacturing inaccuracies or changes in dimensions during engine operation (e.g. deformation of the fastening).

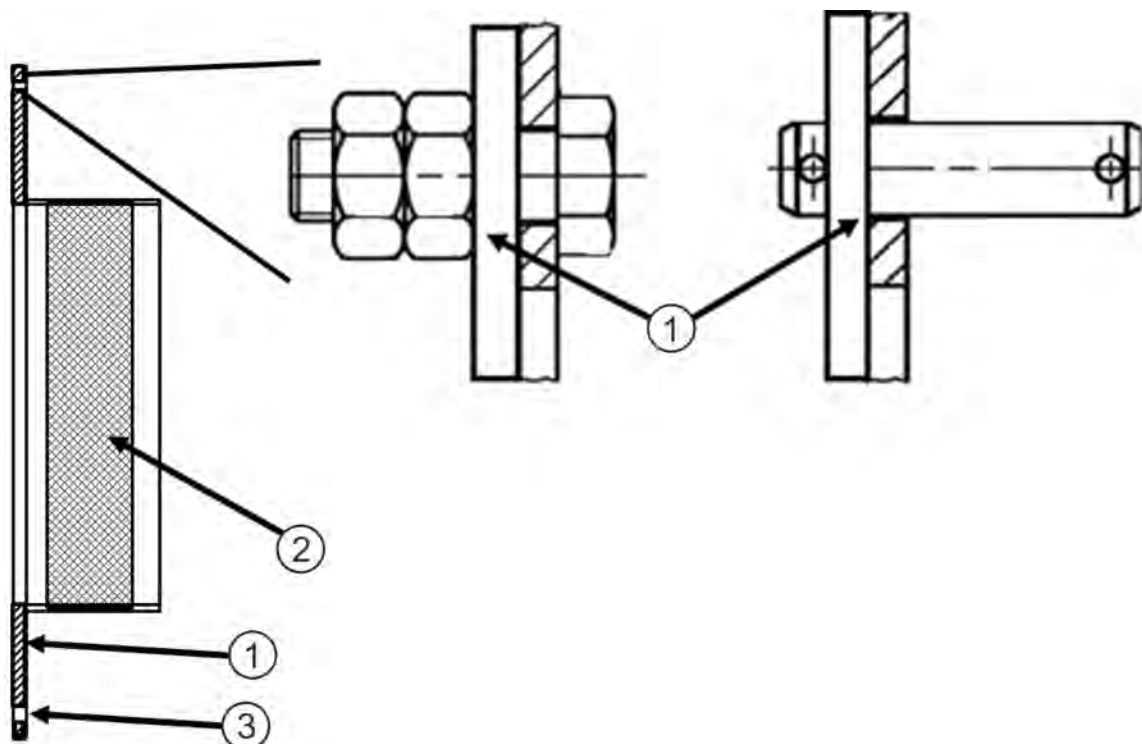


Figure 4: Catalytic converter assembly with bolt with double lock nuts (left) and split pins (right).

① Catalytic converter flange	② Catalytic converter
③ Mounting hole	



Note: The operation of the engine makes the nuts difficult to loosen. Spray or smear the nuts with high-temperature paste before assembly to ease subsequent removal of the nuts.



Note: Always use 4 split pins, part no. 102390, when securing catalytic converters with split pins.

2.2 Assembly instructions for catalytic converter installation

Once the module has cooled, remove the split pins from the dowels or the nuts from the bolt (**see the note above**), so that you can remove the catalytic converter and replace it. New catalytic converters are secured with split pins or nuts with lock nuts.



Note: Once the converters have been installed, check the gap between the rear wall and the converter flange and note it in the service report.

Finally, close the catalytic converter chamber again and replace the insulation.

3 Option C: Fixing the catalytic converter in the exhaust manifold

3.1 Description of the concept

This instruction applies to the direct installation of catalytic converters with a flange into the exhaust manifold. The catalytic converter is fixed in place by means of a bolted joint between two pipe flanges. A short section of pipe or a compensator is generally fitted in front of the converter to allow assembly or disassembly. An example of a possible design is shown in Figure 5. All flanges are fitted with gaskets.

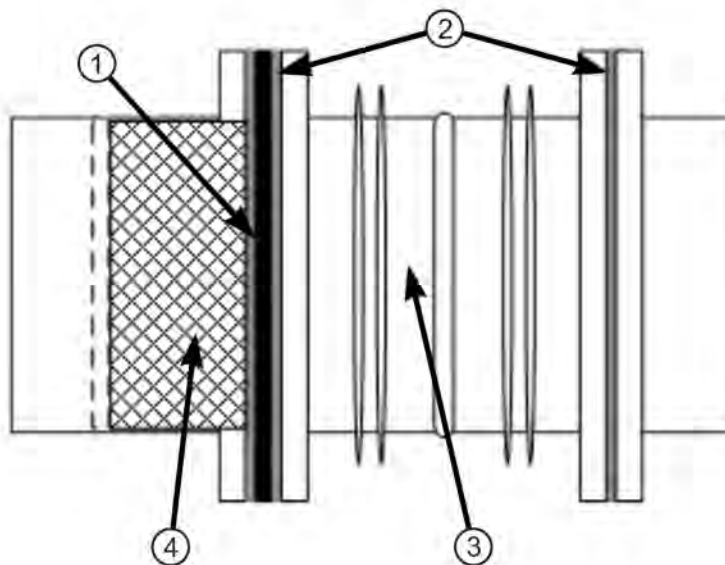


Figure 5: Catalytic converter assembly directly inside the exhaust pipe with compensator

① Catalytic converter flange	③ Compensator
② Seal	④ Catalytic converter

3.2 Assembly instructions for catalytic converter installation

After removing the insulation, undo all the bolted joints on the flange. Next, remove the short section of pipe or the compensator from the exhaust manifold and replace the catalytic converter. When installing, put back all the gaskets and screw in the pipe section or compensator to the catalytic converter and the exhaust manifold.

4 Revision code

Revision history			
Index	Date	Description / Revision summary	Expert Auditor
2	10.04.2019	GE durch INNIO ersetzt / GE replaced by INNIO	Stojiljkovic T. <i>Pichler R.</i>
1	25.07.2013	Aktualisierung / Update	Bilek <i>Hillen</i>
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