

Valve Cover Conversion Kit with Flange Safety Device for Spark Plug Leads for MAN® E32 Series Gas Engines

Who is this Installation Instruction Targeted to?

This installation instruction is intended for personnel responsible for the setup, operation, maintenance and repair of gas engines. Expertise in the operation of gas engines and basic knowledge of electronic ignition systems are required.

Persons who are only authorized to operate the gas engine shall be trained by the operating company and shall be expressly instructed concerning potential hazards.

Functional Description

The available valve cover conversion kit with two safety flanges reduces the hazard on plants that during engine operation a defective spark plug or a spark plug damaged by improper installation or parts thereof can be ejected from the cylinder like a projectile.

The two safety flanges in the flange support fix the spark plug lead directly on the MOTORTECH valve cover and close the spark plug shaft so far that the ejection of components is prevented.

By locking and unlocking the safety flanges, the spark plug lead can be replaced without first having to remove the valve cover itself.

The valve cover conversion kit fits all engines of the MAN® E32 series, consists of a valve cover, two safety flanges, two hexagon head screws and a valve cover gasket and is used exclusively for fixing the spark plug lead to the valve cover.

Any other use shall be considered improper use and will result in the voiding of all warranties.

Certification

The valve cover conversion kit is certified according to the following directive:

CE

- Machinery Directive 2006/42/EC
 - EN ISO 12100:2010 – Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)

Safety Instructions



Use of MOTORTECH spark plug leads with groove necessary!

When using the MOTORTECH valve cover conversion kit, MOTORTECH spark plug leads, which are provided with a groove into which the two safety flanges fully engage in order to fix the spark plug lead on the valve cover, must also be used.

If other spark plug leads are used, their function cannot be guaranteed and will invalidate any warranty.

If you have any questions, please contact MOTORTECH.



Risk of injury!

To prevent injury from escaping components, the following points must be observed when installing the valve cover conversion kit:

- Ensure that the flanges are aligned correctly during installation, the writing on the safety flanges must be visible.
- Check the fastenings regularly.
- Check the valve cover regularly for cracks and damages and replace it immediately if necessary.
- In accordance with MAN®'s safety concept, MAN® gas engines converted with the valve cover conversion kit must no longer be operated without safety flanges.
- Service, maintenance and replacement of engine parts may only be carried out when the engine is stopped.
- There is a risk of burns on hot surfaces. Allow the engine to cool down before starting any work.
- For your own safety, the personal protection equipment, e.g. safety shoes and gloves, must be worn during all work on the engine.
- Residual risks (e.g. due to material fatigue) cannot be excluded. It is therefore forbidden to stay close the engine during operation.
- Only use spare parts supplied by MOTORTECH for the maintenance of the device.



Assembly and disassembly work on the MAN® gas engine

Before carrying out any assembly and disassembly work on the MAN® gas engine, read the documentation or respectively the repair manual from MAN® for the relevant engine. Shut down the engine before installing the valve cover and allow it to cool down.

Disassembly of the Original MAN® Valve Cover

The valve cover has three fixing screws with which it is fastened to the engine.

1. Remove the original MAN® valve cover.



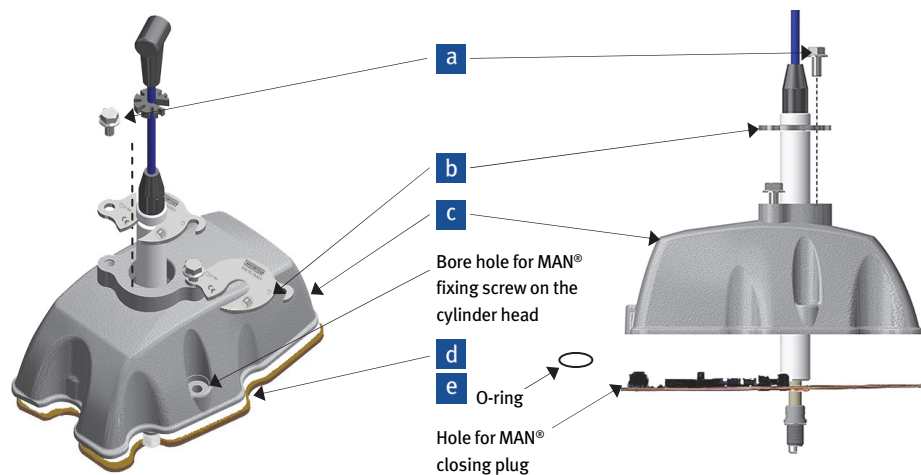
Assembly steps and tightening torques

The exact work steps for mounting und dismantling the MAN® valve cover and the exact tightening torques of the MAN® fixing screws can be found in the documentation or respectively in the repair manual from MAN® for the relevant engine.

The guide tube (see MAN® repair manual) remains on the respective cylinder head during conversion and is not replaced.

Keep the MAN® fixing screws and the MAN® closing plug for further assembly.

Components and Scope of Supply

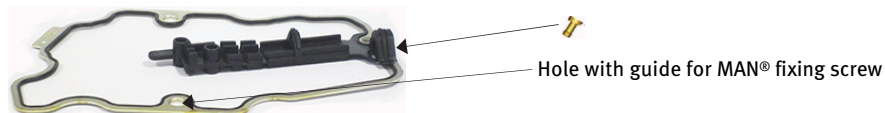


Scope of Supply

Pos.	Description	Pieces	Pos.	Description	Pieces	Pos.	Description	Pieces
a	Hexagon head screw	2	c	Valve cover	1	e	O-ring	1
b	Safety flange	2	d	Valve cover gasket	1			

Assembly of the MOTORTECH® Valve Cover

- Clean all the sealing surfaces.
- Replace the O-ring on the guide tube.
- Insert the MAN® closing plug (not included in the scope of supply) into the opening of the supplied valve cover gasket:



- Insert the supplied valve cover gasket **d** with the guides in the holes for the MAN® fixing screws on the right and left in the corresponding drilled holes on the engine.
- Now place the MOTORTECH valve cover **c** with its central opening on the guide tube on the engine (see MAN® repair manual).
- Reinsert the MAN® fixing screws (not included in the scope of supply) in the bore holes and tighten them (tightening torques see MAN® repair manual).
 - The MOTORTECH valve cover is mounted now.

- Mount both safety flanges **b** into the flange support of the MOTORTECH valve cover (see figure below). The safety flanges must each be rotatable at one screw.
 - The two safety flanges are now fixed to the MOTORTECH valve cover.

Mounting of the Spark Plug Lead

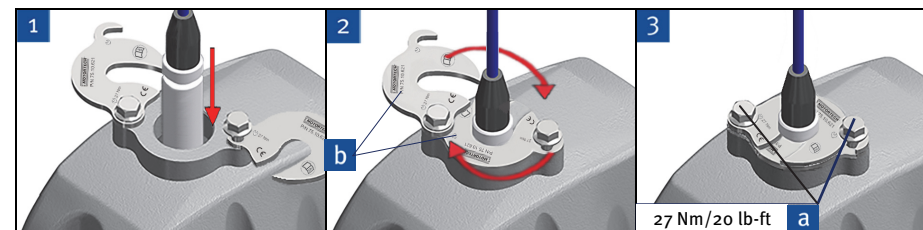
- Mount the spark plug lead in the spark plug well.



Spring-loaded spark plug connection

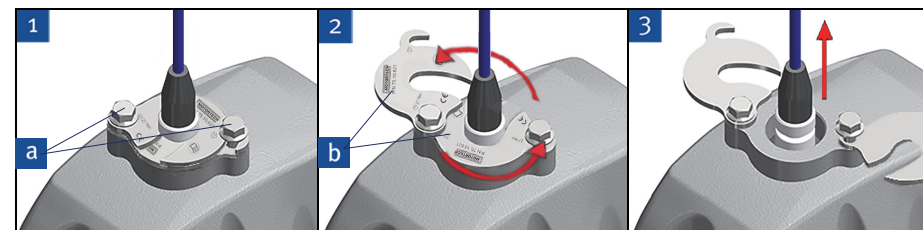
The spark plug connection of the spark plug lead is spring-loaded. When plugging the spark plug lead to the spark plug, therefore, no snapping on the terminal contact is noticeable. The spark plug lead is pushed into its position by the safety flanges.

- Turn both safety flanges **b** so that the central opening is positioned exactly into the groove of the spark plug lead and the hook on the flange encloses exactly the opposite hexagon head screw.
- Tighten the two hexagon head screws **a** that fix the safety flanges to the valve cover with a torque of 27 Nm (20 lb-ft).
 - The spark plug lead is now locked by the flanges and secured on the MOTORTECH valve cover with two hexagon head screws.



Removal of the Spark Plug Lead

- Loosen the two hexagonal head screws **a** that fix the safety flanges to the MOTORTECH valve cover.
- Turn the safety flanges **b** to the side.
- Remove the spark plug lead from the spark plug well.
 - The spark plug lead has been removed.



EU-Konformitätserklärung

EU Declaration of Conformity



Die Firma:
The company:

MOTORTECH GmbH
Hogrevestr. 21-23
29223 Celle
Deutschland (Germany)

erklärt in alleiniger Verantwortung, dass das Produkt:
declares in sole responsibility that the product:

Ventildeckelumrüstsatz
Valve Cover Conversion Kit

Verwendungszweck:
intended purpose:

Einsatz an Gasmotoren der Serie MAN® E32
to be used on MAN® E32 series gas engines

übereinstimmt mit den Bestimmungen folgender EU-Richtlinie:
complies with the provisions of the following EU Directive:

Maschinenrichtlinie 2006/42/EG
Machinery Directive 2006/42/EC

unter Berücksichtigung folgender Norm:
under consideration of the following standard:

EN ISO 12100:2010

Die Kennzeichnung des Produktes ist:
The marking of the product is:

P/N 64.01.055

Bevollmächtigter für die Zusammenstellung der
relevanten technischen Unterlagen:
Person authorised to compile the relevant technical
documentation:

MOTORTECH GmbH
Hogrevestr. 21-23
29223 Celle
Deutschland (Germany)

Diese Erklärung wird abgegeben durch:
This declaration is submitted by:

Name: Robert Virchow

Stellung im Unternehmen: Geschäftsführer
Position in company: Managing Director

Celle, 2018-09-17

Ort, Datum
Place, date

rechtsverbindliche Unterschrift
Legally binding signature