SAFETY PRECAUTIONS *For detailed sketch, see 900-2*

X	Stopped engine
X	Shut off starting air supply – *At starting air receiver*
X	Block the main starting valve
X	Shut off starting air distributor/distributing system supply
	Shut off safety air supply – *Not ME engines*
X	Shut off control air supply
X	Shut off air supply to exhaust valve – *Only with stopped lubricating oil pumps*
X	Engage turning gear
	Shut off cooling water
	Shut off fuel oil
X	Stop lubricating oil supply
	Lock the turbocharger rotors

Data

Ref.	Description	Value	Unit
D06-218	Angle Encoder cover	20/42	kg
D06-219	Angle Encoder bracket	47	kg

The task-specific tools used in this procedure are shown on the plates at the end of this chapter or in the chapters indicated by the first three digits in the plate number, e.g. **P90951** refers to chapter 909.

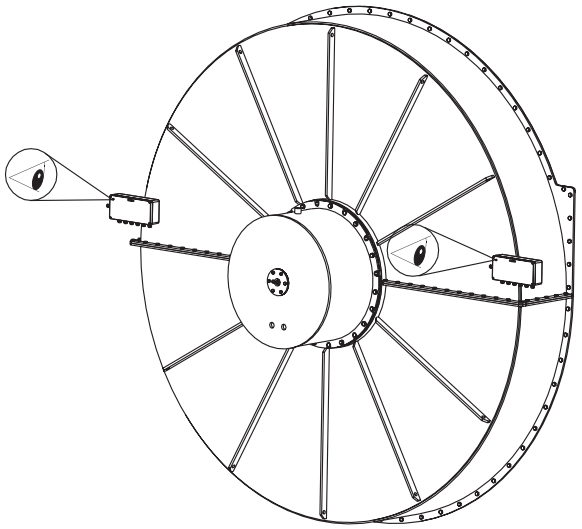
Plate	Item No.	Description
P91356		Lifting Tools, Etc.
P91366	73	Dial Gauge and Stand Tool

1. Check that power is supplied to the **T**acho **S**ignal **A**mplifier box.
   Turn the crankthrow for cylinder 1 towards TDC. The LED indicator on TSA-A lights up when TDC is reached.

2. Check the TDC of cylinder 1 against the mark on the turning wheel.

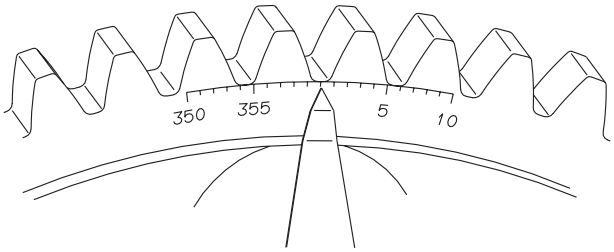
3. Turn the engine a further 45 degrees in the engines rotational direction. The LED on TSA-B should now turn on.

1.



M9026-0201C01

2.



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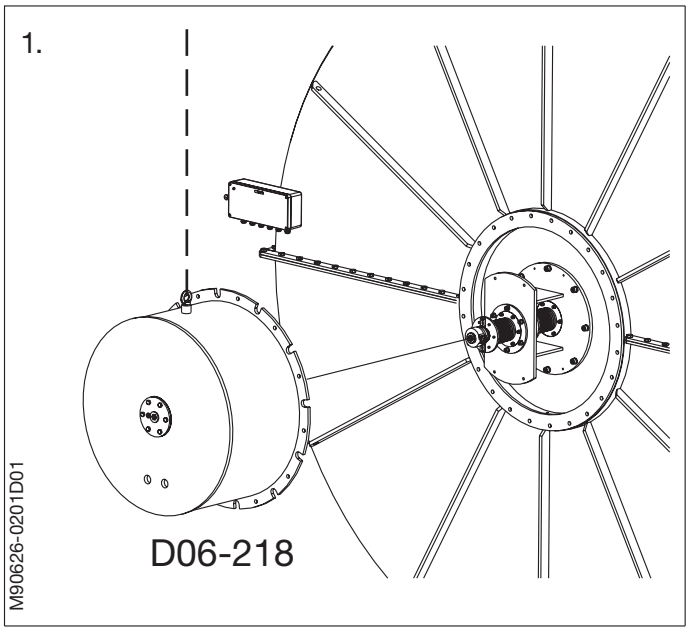
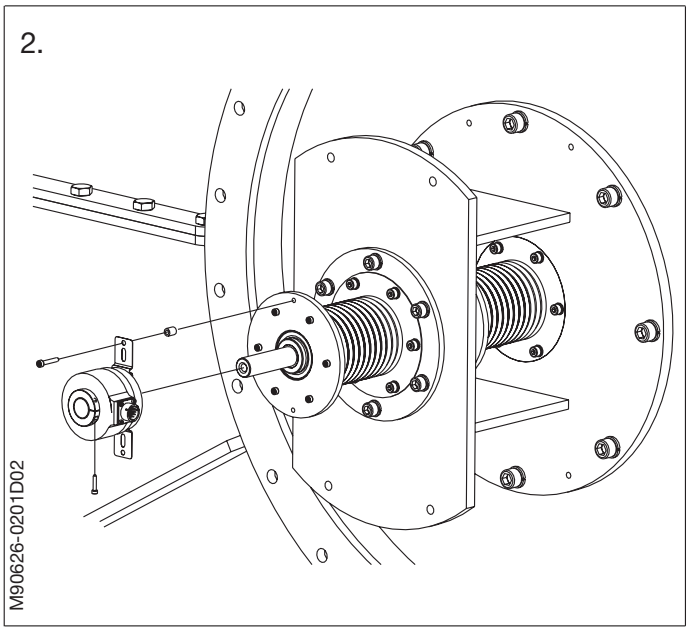
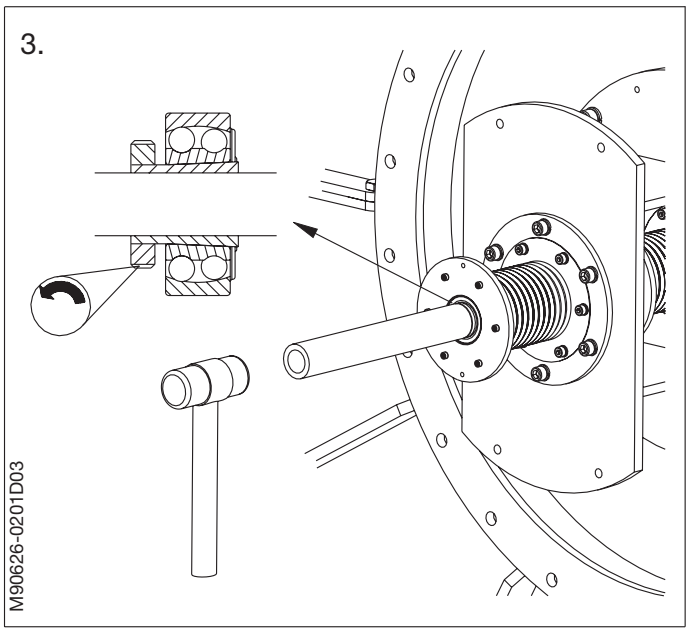






1. Use a tackle to lift off the angle encoder cover where applicable.

2. Tag the electical plugs “Inner encoder” and “Outer encoder” before disconnecting them.

   Loosen the screws as shown and pull the outer encoder off.

3. Loosen the locking washer and use a hook wrench to unscrew the locking nut on the bearing adapter sleeve. The locking nut should be unscrewed so far that the nut covers the thread on the end of the sleeve.

   Slide a piece of pipe onto the axle. Tap the end of the pipe with a mallet to loosen the bearing adapter sleeve.

   Unscrew the locking nut and remove the locking washer.

4. Unscrew the outer screws on the flange and remove the compesator.

5. The inner encoder and compensator is dismantled in the same way as the outer encoder and compensator.

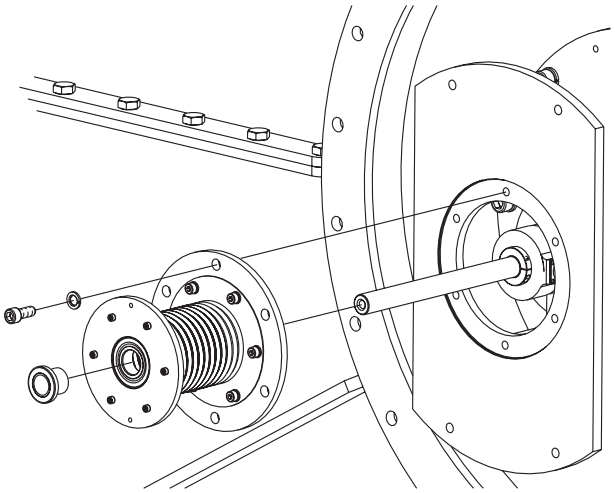
6. If it is necessary the mounting bracket can be dismantled.

   Use a tackle and lifting strap to secure the bracket.

   Unscrew the screws in the base plate and remove the bracket.

Note!
Due to the need for realignment the mounting bracket should only be dismounted when it is absolutely necessesary.

4.



M90626-0201D04

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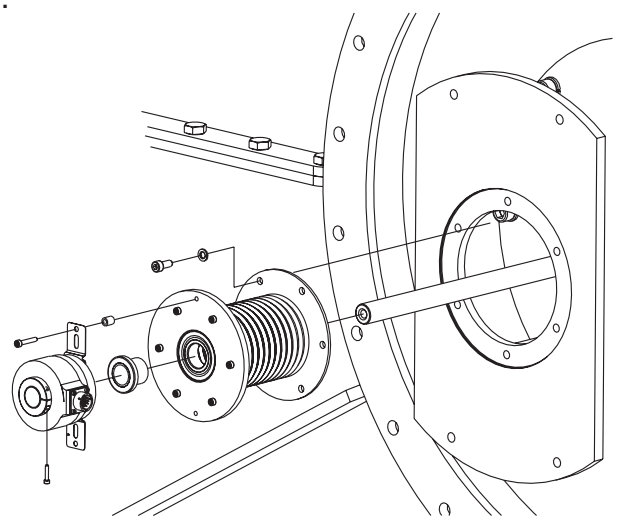

M90626-0201D05

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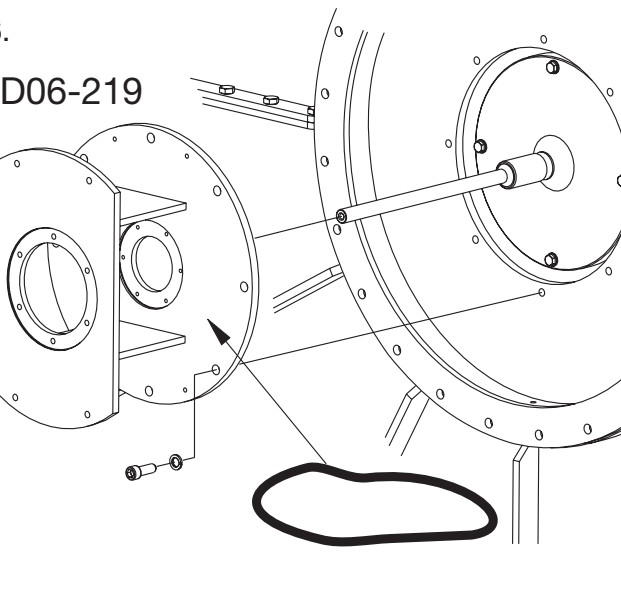

M90626-0201D06

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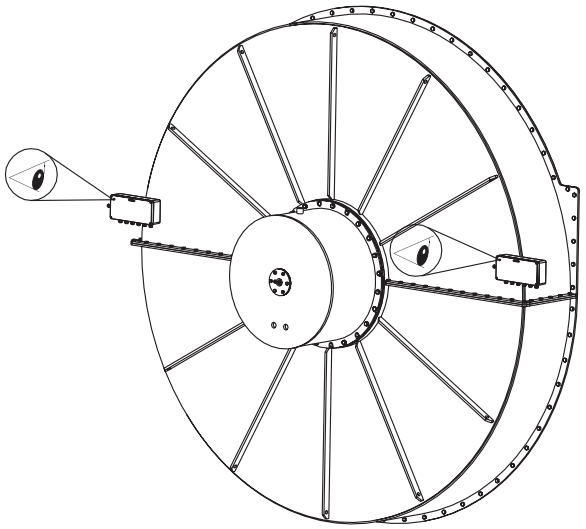

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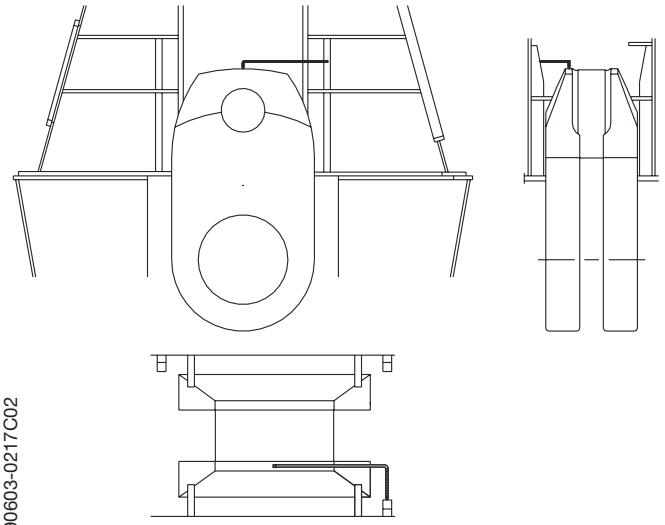
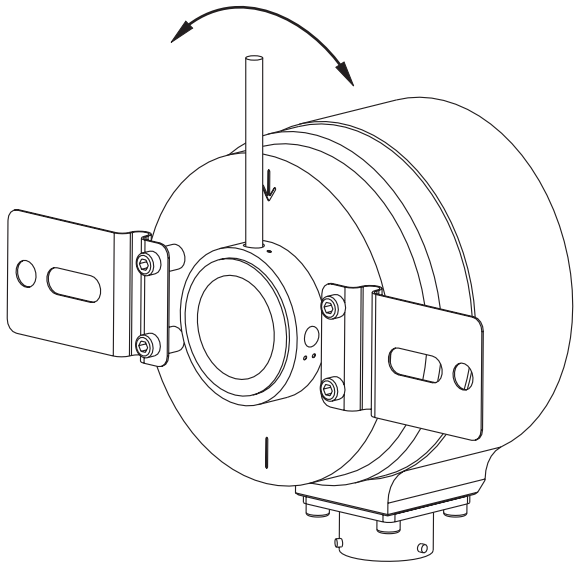


M90603-0217C02

5.



M90626-0201O05

1. Use a tackle to lift off the angle encoder cover where applicable.

2. Turn the crankthrow for cylinder 1 to TDC.

3. Check the TDC position with the pin gauge on the cranckthrow.

Note!
Before using the pin gauge, check the measurement from tip to tip with the value stamped on the pin gauge, and/or the check-marks stamped on the fore end of the cylinder frame.

4. Loosen the clamping ring on the inner encoder. (TSA-A).

5. Use a mandrel or a drill to turn the encoder hollow shaft in the ahead direction until the indicator light turns on.

   If the indicator light is already on, turn in the ahead direction until it goes off and then until it turns on again. Tighten the clamping ring.

6. Turn the engine 45 degrees in the engines rotational direction and repeat the procedure in section 4 and 5 on the outer angle encoder. (TSA-B).

Note!
When adjusting the outer angle encoder a CLOCKWISE turning engine must be turned 45 degrees in the CLOCKWISE direction and an ANTICLOCKWISE turning engine must be turned 45 degrees in the ANTICLOCKWISE direction.

7. Mount the angle encoder cover where applicable.

   This concludes the mechanical adjustment of the angle encoders.

   If the software settings need to be adjusted please contact MAN B&W Diesel A/S

1. Mount the mounting bracket. Use a dial gauge to ensure a maximum deviation from "X" of ± 0.3 mm around the center shaft.

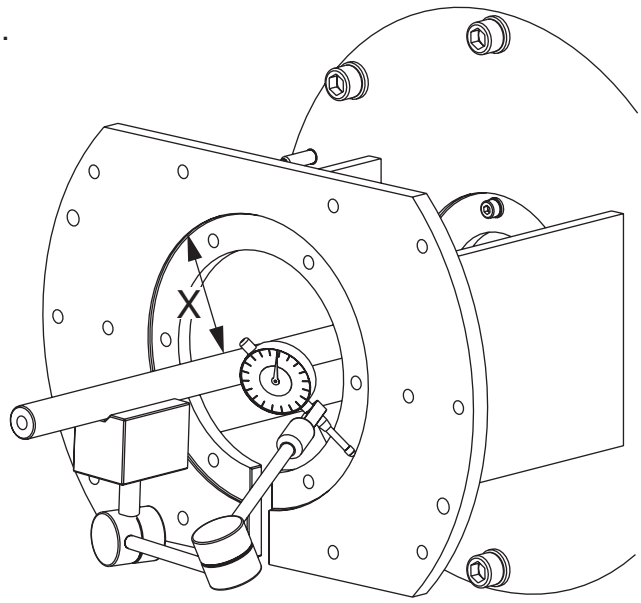
   "X" is the distance between the centre shaft and the rim of the compensator mounting recess.

2. Loosely assemble the bearing sleeve, locking washer, locking nut and compensator. Slide the assembly onto the axel and mount the screws.

   Tighten the locking nut to surface contact, then tighten a further 60° using a hook wrench.

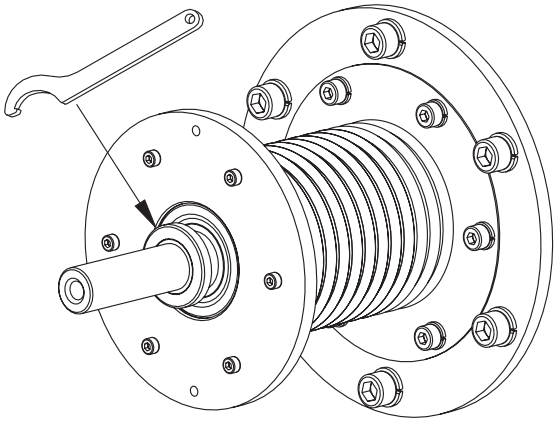
3. Perform a basic adjustment of the angle encoder by turning the hollow shaft to a position where the dot; in case of a clock-

1.



M90626-0204M01

2.



M90626-0201M02

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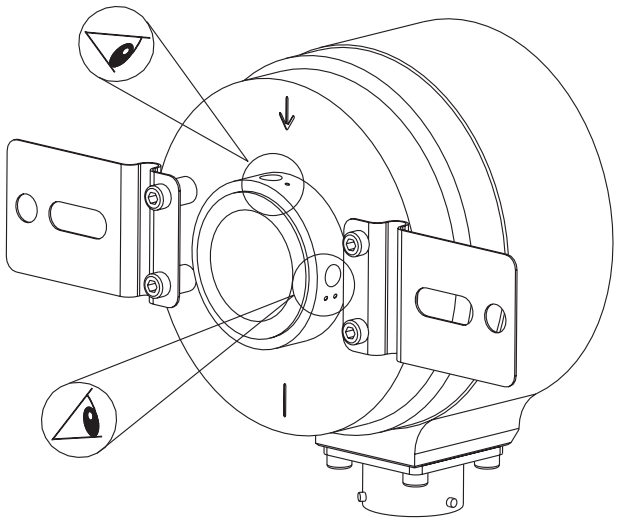

M90626-0201M03

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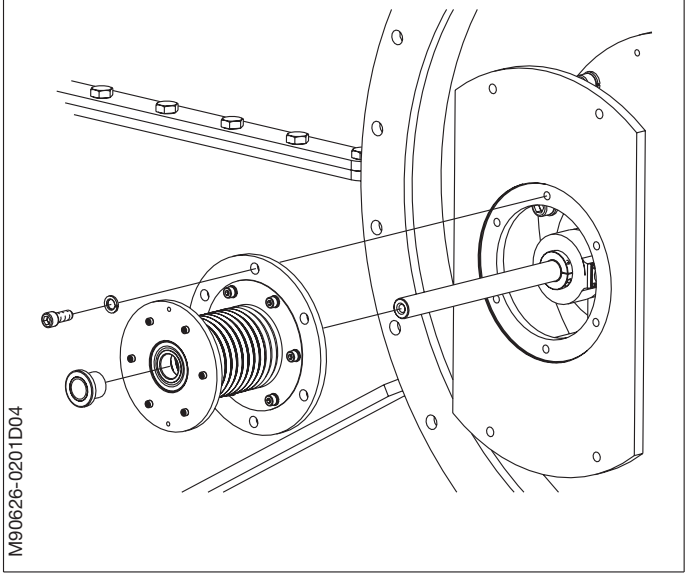

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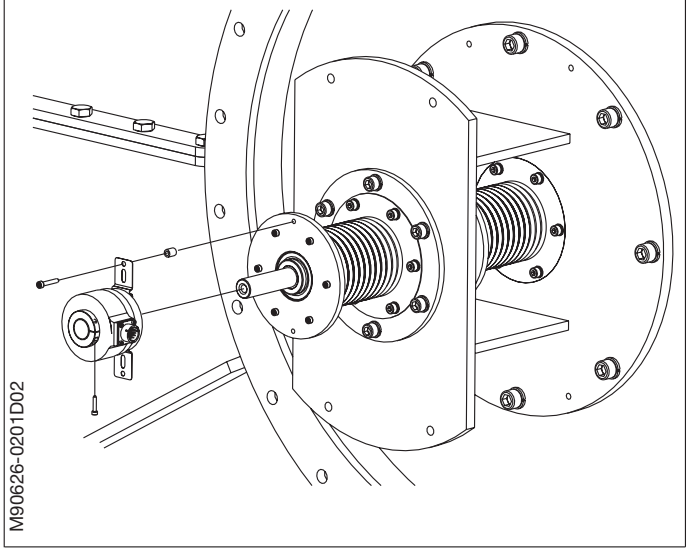
6.



M90626-0201D02

wise turning engine or the two dots in case of a counter clockwise turning engine, are in line with the arrow.

4. Mount the inner encoder on the shaft.

   Adjust the encoder according to M906-26.3

5. Mount the outer compensator with bearing in the same way as shown in section 2.

6. Perform a basic adjustment on the outer encoder as shown in section 3 and mount the encoder on the shaft.

7. Adjust the encoder according to M906-26.3

8. Use a tackle to lift and mount the angle encoder cover where applicable