

for MITSUI—MAN B&amp;W engines,

## Periodical check of TACHO system

**No.201**
**APPROVED**
**N.Osako**
**CHECKED**
**PREPARED**
**K.Kaneko**
**ENGINE TYPE**

All ME-C/ME-B engines

**DATE**
**2019.03.29**

For ME engines the TACHO system (encoders on the fore end of crankshaft and pick-up sensor(s) on the flywheel) is equipped to detect crankshaft angle, and to control main engine. Although ME-ECS system watches the consistency of crankshaft angle with each sensor to avoid serious trouble in case the angle signal from encoder drift from crank shaft angle, because it is very important system to control main engine, we hereby recommend to check TACHO system periodically from the view of a preventive action.

### Recommended checking procedure and period

1. Crankshaft angle and encoder signal (period: every month)

When engine is stop, confirm the actual crankshaft angle (fig.1) and displayed value on MOP monitor (fig.2) is matched.

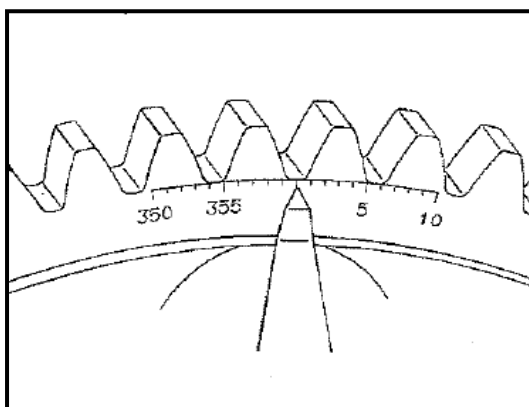


fig.1 Crankshaft angle

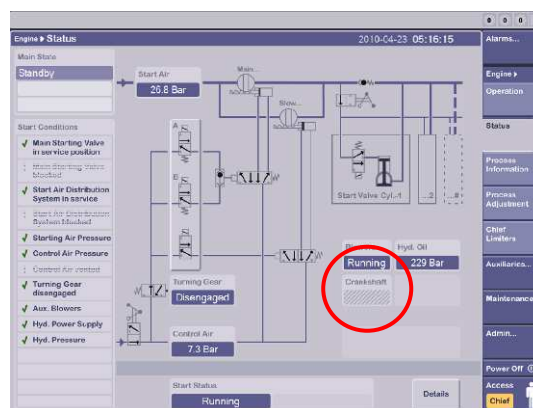


fig.2 angle signal from encoder on MOP

ME-C: "Engine -> Status"

ME-B: "Maintenance -> Function Test  
-> Tacho -> Detail"

### PRIORITY

**IMMEDIATELY**

**AT FIRST  
OPPORTUNITY**

**WHEN  
CONVENIENT**

**OTHERS**


Mitsui E&S Machinery Co., Ltd.  
Diesel Technical Investigation Group  
Quality Assurance Department  
Tamano Machinery Factory  
1-1, Tama 3-chome, Tamano, Okayama 706-8651, Japan  
TEL 0863-23-2534 / FAX 0863-23-2772  
E-mail: demail@mex.co.jp



Sometime encoder signal is not displayed on MOP after reset ME equipment.

In case of that it will be resumed after a few turns of crankshaft rotating or air run.

- Execute TACHO function test (period: every 6 months)  
TACHO function test can be executed from MOP monitor "Maintenance -> Function Test-> Tacho" (fig.3).  
Follow the instruction displayed on MOP monitor.



Fig.3 TACHO function test

- Encoders and pick-up sensor(s) detection angle (period: every 6 months)  
A standard TACHO system has TSA-A/TSA-B (fig.4) on the fore end wall and pick-up sensor at flywheel (fig.5).  
There is LED on each equipment and confirm each LED lights on during proper crank angle are shown on the below table.

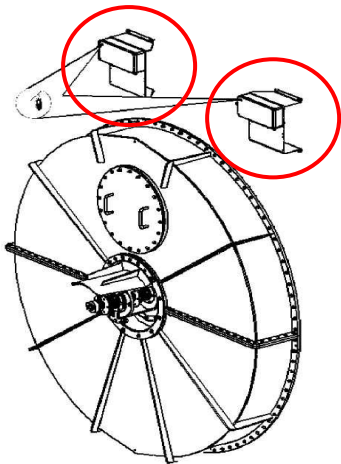


Fig.4 TSA-A and TSA-B on Fore end

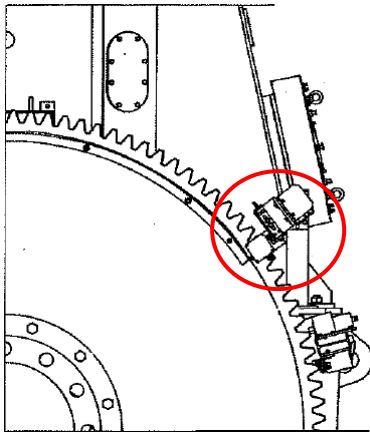


Fig5. Pick-up sensor at flywheel

equipment	LED light angle
TSA-A	0°- 180°
TSA-B	45°- 225°
Pick-up sensor	90°- 270°

4. Looseness of encoder (period: every 3 months)

Check condition of the encoder fixing bolts for shaft and expansion joint, and condition around the shaft by visual inspection.

Further inspect the related parts ( spring plates and cable connector etc.) if there are abnormal or disconnection.

For detail inspection and adjusting procedure, please refer to instruction manual Vol.2 "Maintenance" chapter 906.

If any abnormality is found through the check, re-adjust the TACHO system or consult MES.