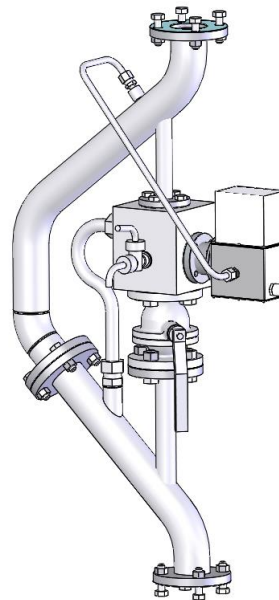


Real time cylinder condition monitoring system

IHI

2020-2-10 TFD5-SD-CT-001_rev0
2020-2-18 TFD5-SD-CT-001_rev1



- The piston sliding condition can be monitored in real time.
- Countermeasures can be applied **to avoid cylinder liner damage.**

IHI Power Systems Co., Ltd.

Solution business department

With the regulation of sulfur content in fuel, uncertainties such as mixing stability are added. **Then it is very important to constantly monitor the sliding condition of the piston ring to avoid cylinder liner damage.**

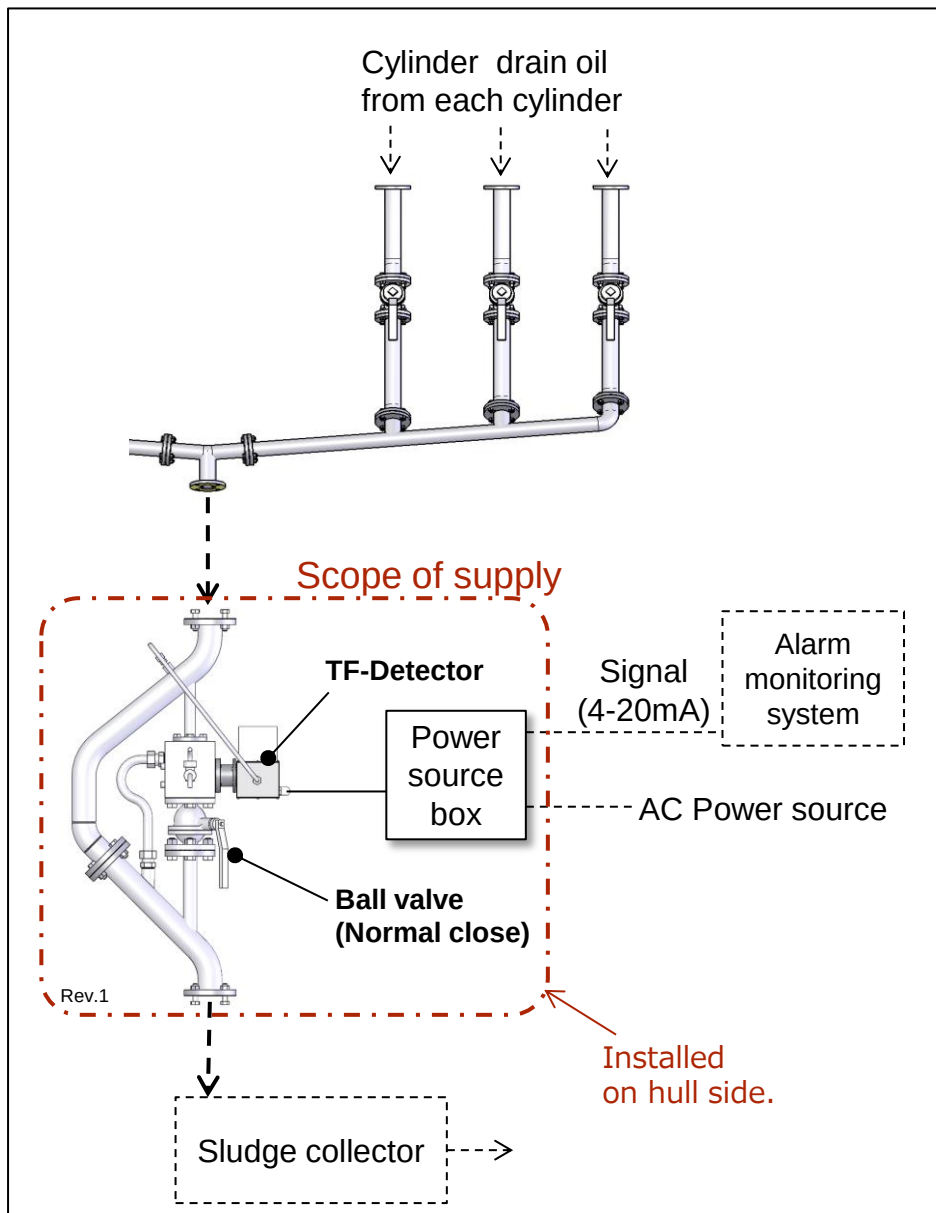
- By monitoring the iron powder concentration in the cylinder drain, the **sliding condition of the piston ring can be grasped almost in real time.**
- As a result, it is possible to quickly detect changes in the sliding condition of piston ring, and **take timely measures to prevent damage of the cylinder liner.**
- In addition, **it is easier to investigate the cause** of the change in the sliding condition.

Note

The cylinder temperature monitoring system is just damage detection, so damage cannot be avoided.

TF-Detector is a jointly developed product of IHI Power Systems Co., Ltd. and MEIYO ELECTRIC Co.,Ltd.
TF-Detector has a wealth of experience in continuously measuring iron powder concentration in cylinder drain oil which contains many sludge.

System overview and performance



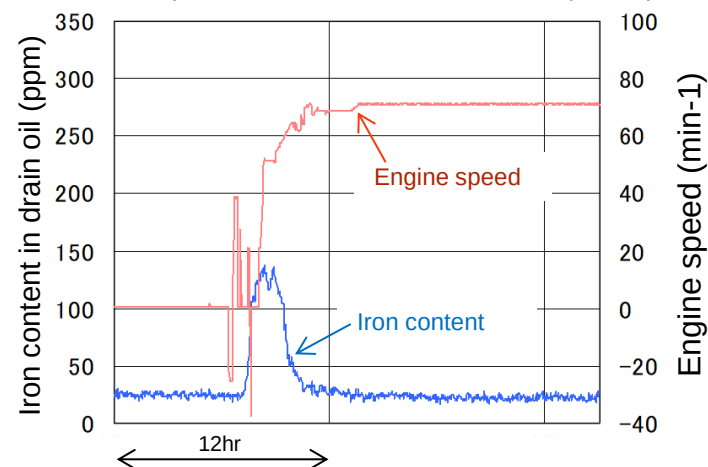
The TF-Detector can **continuously measure iron powder content** in ppm (parts per million) even if the drain oil contains a lot of sludge.



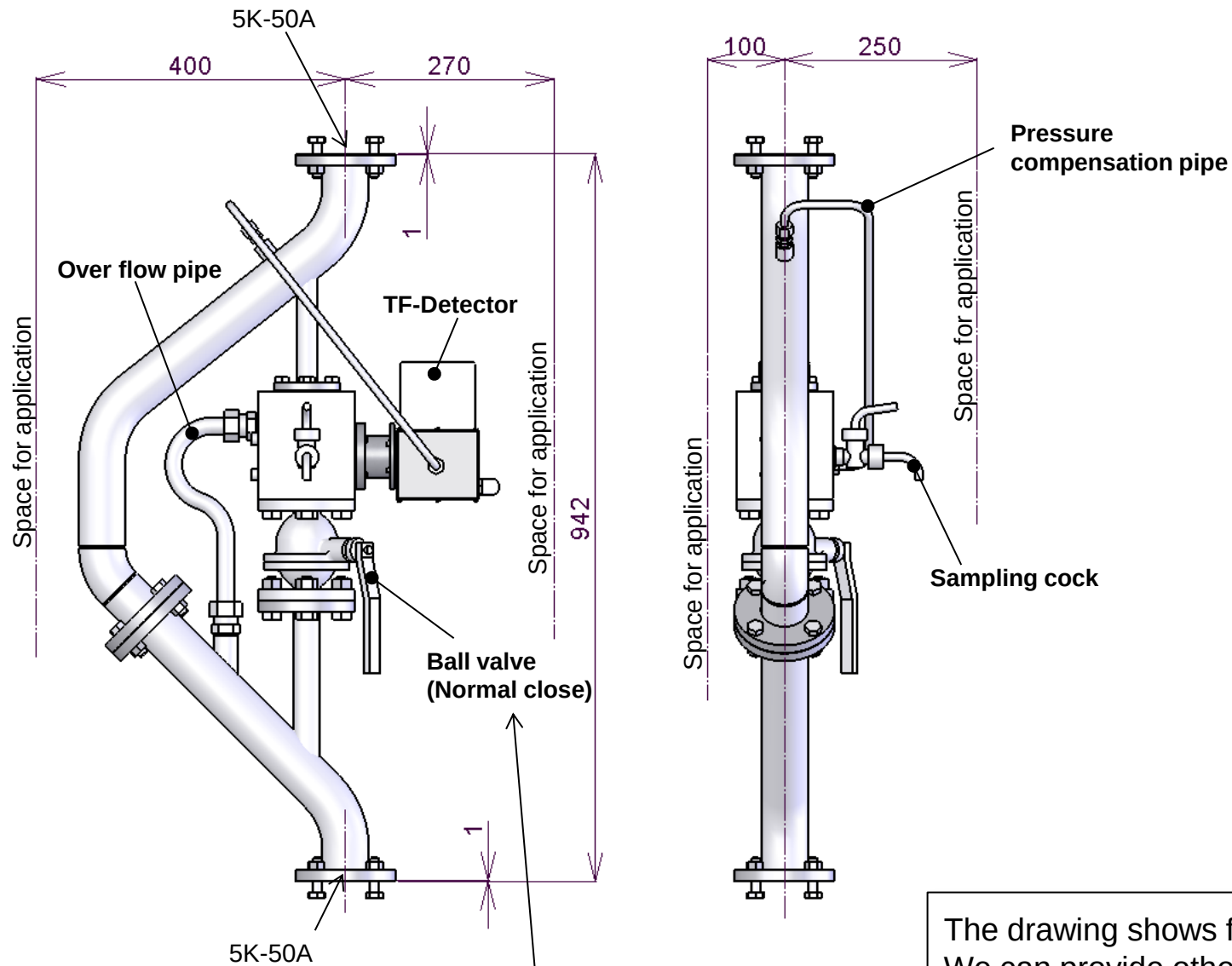
Drain oil contains a lot of sludge, but TF-Detector works properly by **patented technology**.

Piston sliding condition can be monitored in real time. Therefore some measures can be applied **to avoid damage of cylinder**.

Example : Iron content trend graph at engine start
(TF-Detector is installed in individual cylinder.)



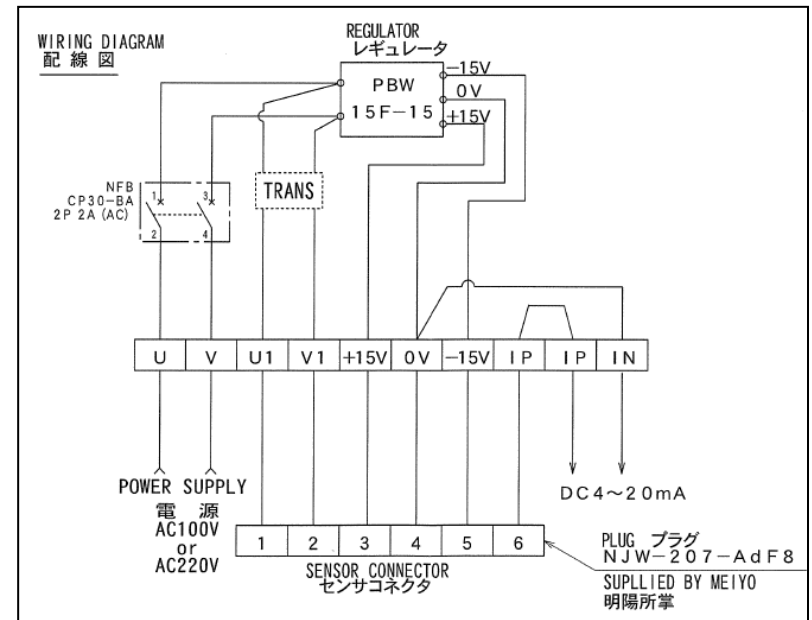
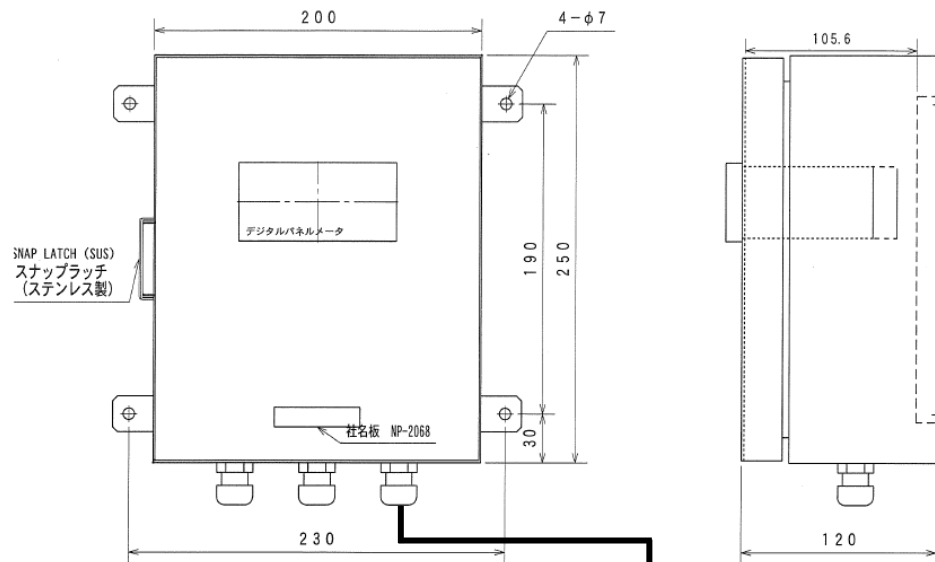
Unit for TF-Detector and piping



Open the ball valve about twice a day for about one minute to discharge sludge.

The drawing shows for 50A pipe size.
We can provide other pipe size.
Please contact us.

Unit for Power source box



POWER SUPPLY
供給電源: AC100Vφ1 — AC220Vφ1

OUTPUT POWER SUPPLY
出力電源: AC100Vφ1
DC±15V

MASS
質 量: 3.7kg

MATERIAL: STEEL
材 質: 鋼製

COLOR
塗 装 色: 5Y7/1

CABLE GLAND
ケーブルグランド

- ① for POWER SUPPLY
供給電源用
 - ② for OUTPUT SIGNAL DC4-20mA
出力信号用 DC4-20mA
 - ③ for TF-DETECTOR
鉄粉濃度計用
- with cable (2m) & plug (NJW-207-AdF8)
ケーブル 2m 及び プラグ NJW-207-AdF8 付属

Cable length should
be informed.

Connector
NJW-207-AdF8

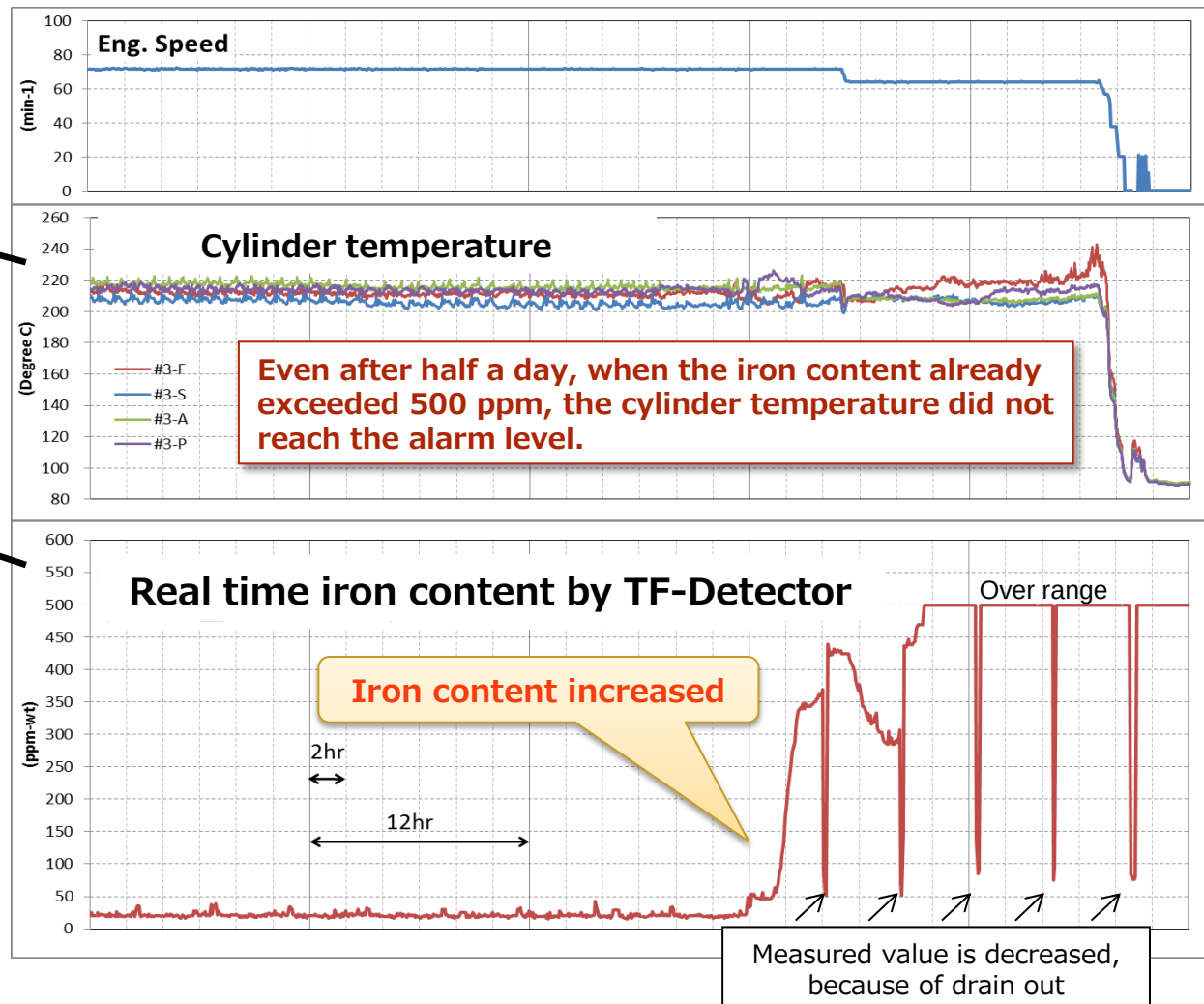
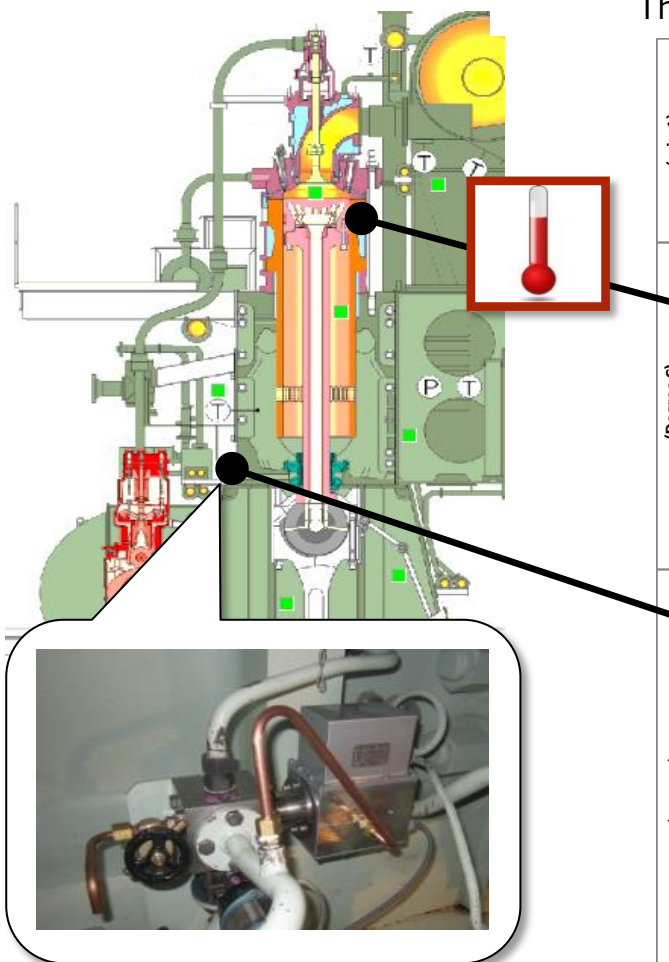
Connector
NJW-207-PM8

TF-Detector

Example of monitoring

The effectiveness of condition monitoring by continuous measurement of iron powder content is clear.

This is an example of measuring the iron powder content in individual cylinders.



Selection item	Please select and fill in the specification	Note
Flange size	☐ 5k-50A (JIS) ☐ 5k-80A (JIS)	Contact us, if other size is needed.
Ball valve type	☐ Manual ☐ Automatic	Automatic valve can be provide, but we need some time to preparation.
Cable length	() m	Length from TF-Detector to power source box.
Supply AC power(V)	() V	100V – 220V
Supply AC power(Hz)	☐ 50Hz ☐ 60Hz	
Paint	primer paint	Please do the finish painting.

Rev.1

Contact information

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 E-Mail : ips-parts-b@ihi-g.com
ips-parts-a@ihi-g.com

