MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

Nov. 08, 2011

T-S-016 / 766-90169

# ASKANIA® type pressure Governor Production Stop and Replacement with Electronic Governor

**REASON FOR SUGGESTION:**

## 1. ASKANIA® TYPE PRESSURE CONTROLLER (PRESSURE GOVERNOR) PRODUCTION STOP

MCO has announced that OKAYA SEIRITSU ENGINEERING Co., Ltd. will terminate the production of ASKANIA® type pressure controller (Pressure governor). The vendor's after service plan for the products is listed as follows.

2016/3/31 Ending of a new sale of ASKANIA® controllers

2021/3/31 Ending of a maintenance of ASKANIA® controllers

2022/4/1 Closing a business of ASKANIA® controllers

Considering the above situation, we recommend that the present mechanical speed and pressure governor to be replaced with the electronic governor as mentioned next item.

## 2. REPLACEMENT FROM MECHANICAL GOVERNOR TO ELECTRONIC GOVERNOR

MCO offers the electronic governor update for steam turbines which are equipped with the mechanical governor. Since 90's, MCO have been applying the electronic governor which has the advantages as follows.

1) Improve reliability and maintenance
   - Fewer friction parts (such as gears) can prevent troubles from troubles due to wear.
   - The dual tachometer pickup system permits the turbine to continue operation even in failure.
   - Easy maintenance
   - Excellent control stability and response

2) Excellent in energy saving and automation

   The turbine can be fully controlled (including automatic start and stop) from the control room. It can be incorporated in the entire plant operation system through electric signals.

   For more information, please contact MCO service office.

**DETAILS OF SUGGESTION :**

The outline of improvement is as follows: (See the attached drawing: Attachment (1))

1) Use the front bearing pedestal cover as it is.
2) Remove the governor driving gear.
3) Use the electric detection method for the over speed trip system provided for the governor drive shaft.
4) Install an electric/hydraulic converter at the ends of the reset levers for the governing valve and the extraction control valve.
5) Replace the governor pinion gear at the tip of the rotor with a revolution detection gear

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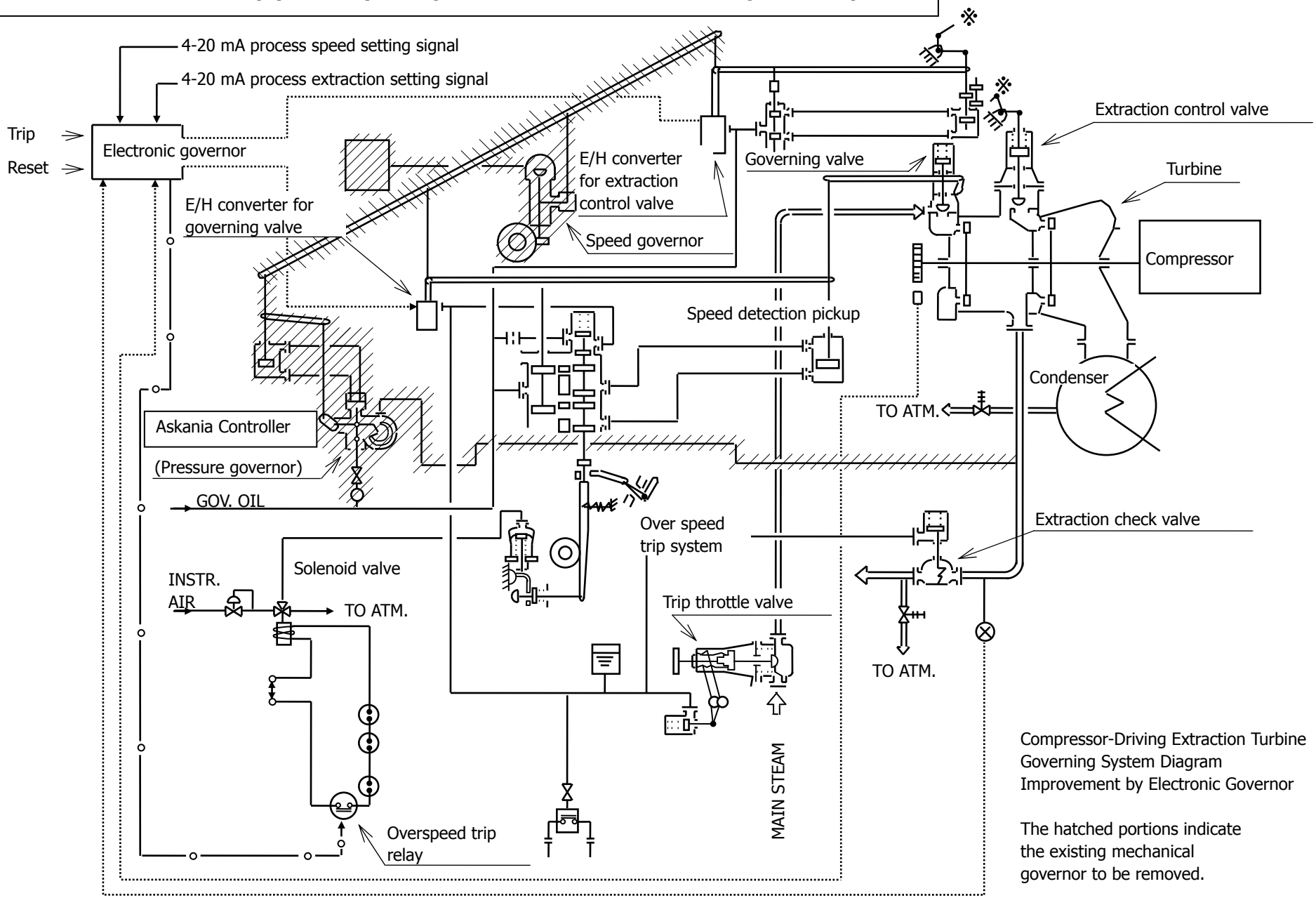
# T-S-016 Attachment (1)-1/3 (Example of Extraction Condensing Turbine)




Compressor-Driving Extraction Turbine
Governing System Diagram
Improvement by Electronic Governor

The hatched portions indicate
the existing mechanical
governor to be removed.

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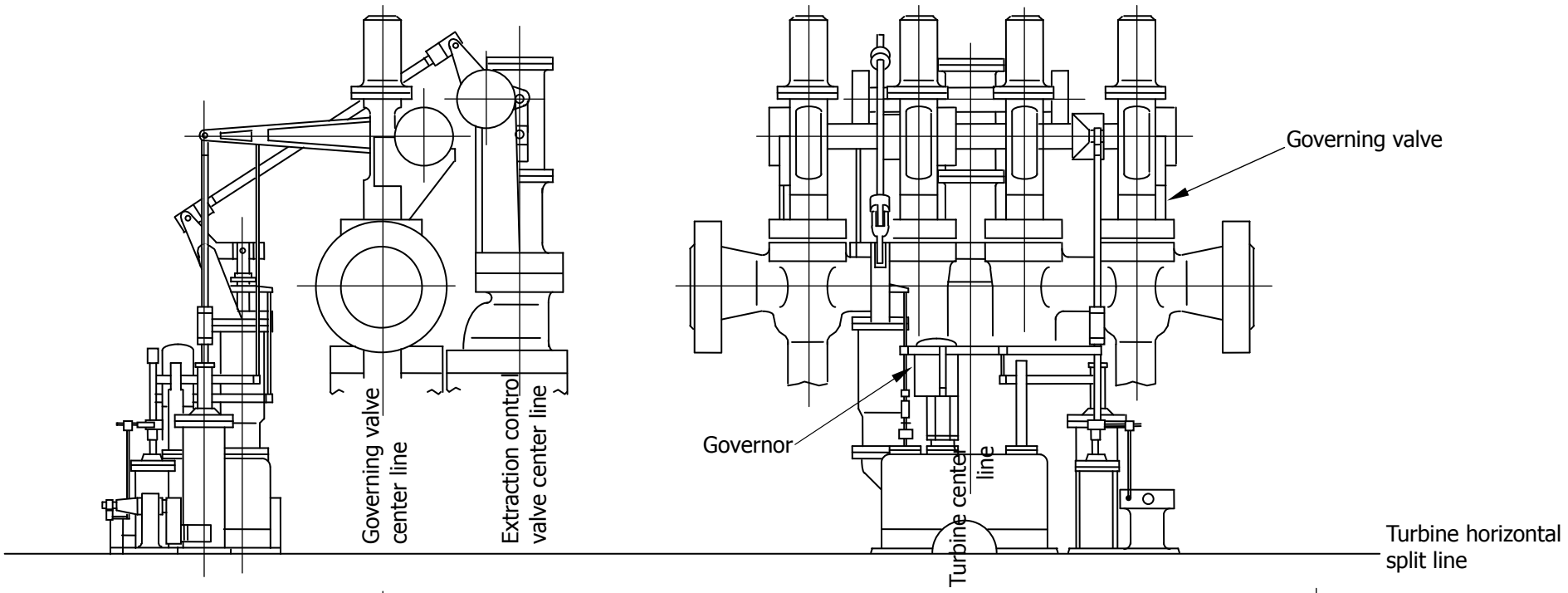
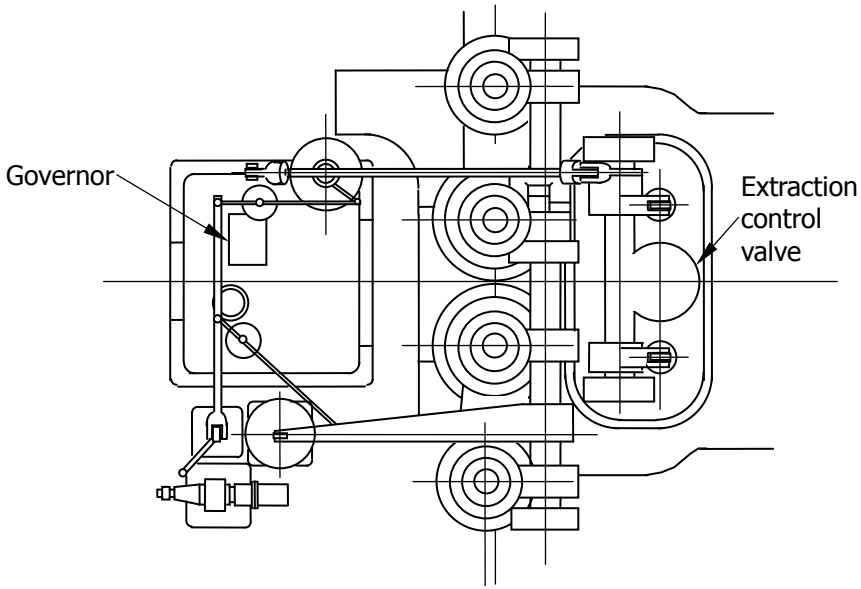
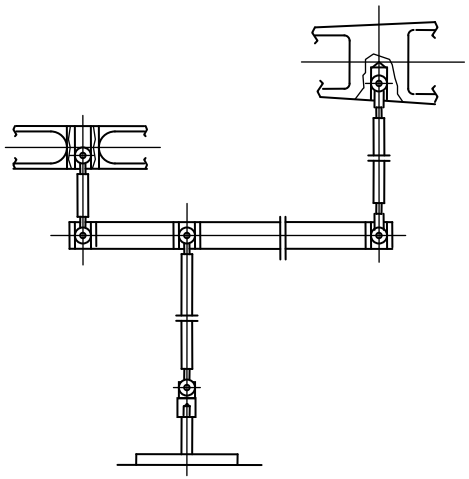
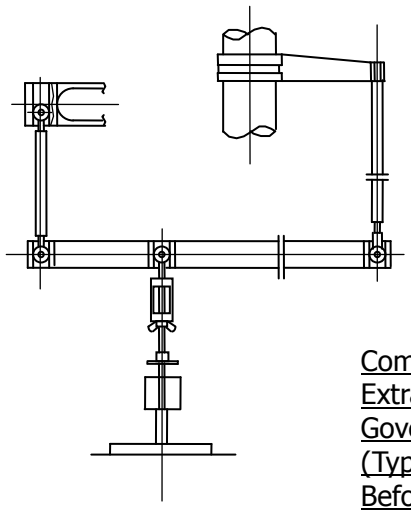
**T-S-016 Attachment (1)-2/3**



Detail of governing valve restoring lever



Detail of extraction control valve restoring lever

Compressor-Driving Extraction Turbine Governing System Assembly (Typical) Before Improvement (Mechanical Governor)

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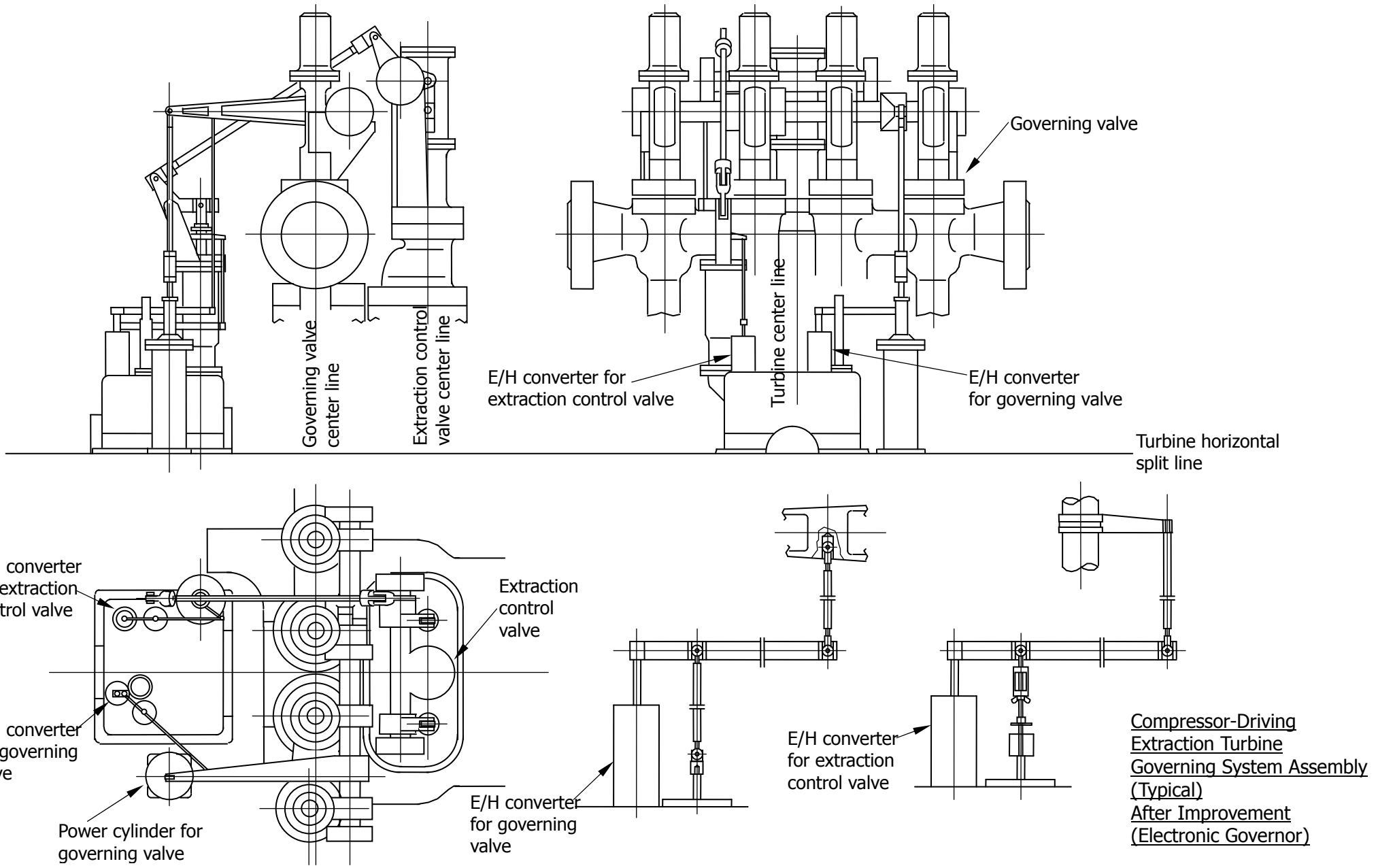
**T-S-016 Attachment (1)-3/3**




Compressor-Driving
Extraction Turbine
Governing System Assembly
(Typical)
After Improvement
(Electronic Governor)