

CASE HISTORY REPORT

Inpro-Seal-Europe : 2002-04

INPRO / SEAL

CUSTOMER : TOTALFINAELF

LOCATION : Feyzin – Lyon – FRANCE

INDUSTRY : REFINERY &
STEAM CRACKING PLANT

END PRODUCT : GASOLINE &
Ethylene – Propylene - Styrene

GOALS TO ACHIEVE:

- Eliminate the lubrication oil contamination, by the steam.
- Increase the during life of sleeve bearing

Maintenance Operation in 1995 :

- Installation of 3 Bearing Isolators **INPRO/SEAL**.

Planned Plant Stoppage - 1997:

- Nothing to declare for this equipment. The turbine has not been opened.

Until today, any incident has been noted for this equipment.

Planned Plant Stoppage - 2003:

- Opening of the turbine, for inspection of sleeve bearing and Inpro/Seal Bearing Isolator, with the Distributor

Following this control, no special wear of sleeve bearing has been noted. The steam turbine restarts without new spare parts.

CONCLUSION WITH INPRO/SEAL BEARING ISOLATORS:

- Goal of ZERO Contaminant in 7 years: ACHIEVE!
- Goal of ZERO troubleshooting in 7 Years: ACHIEVE!
- NO Replacement of labyrinths after 7 Years Running: BONUS!

= MTBF OF STEAM TURBINE 7 YEARS

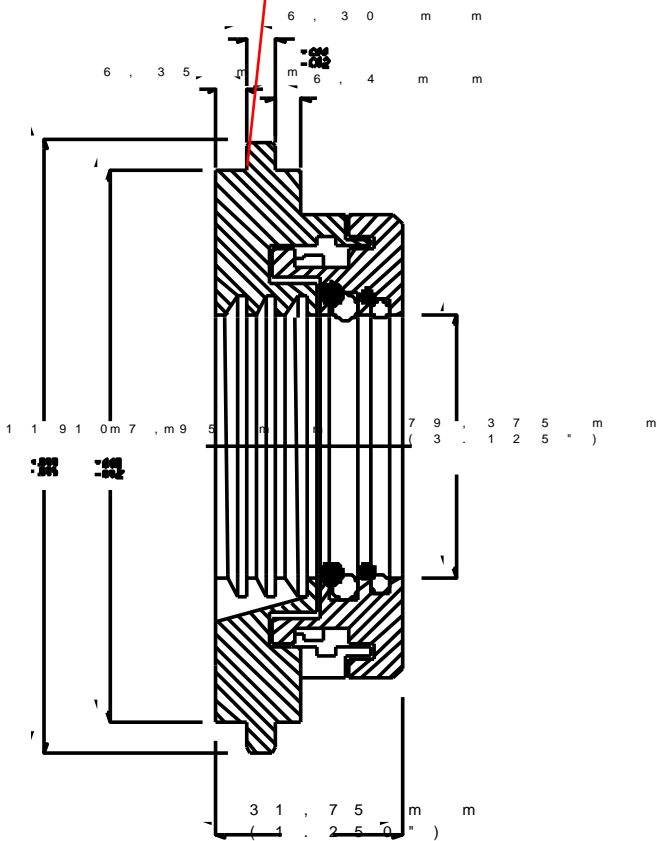
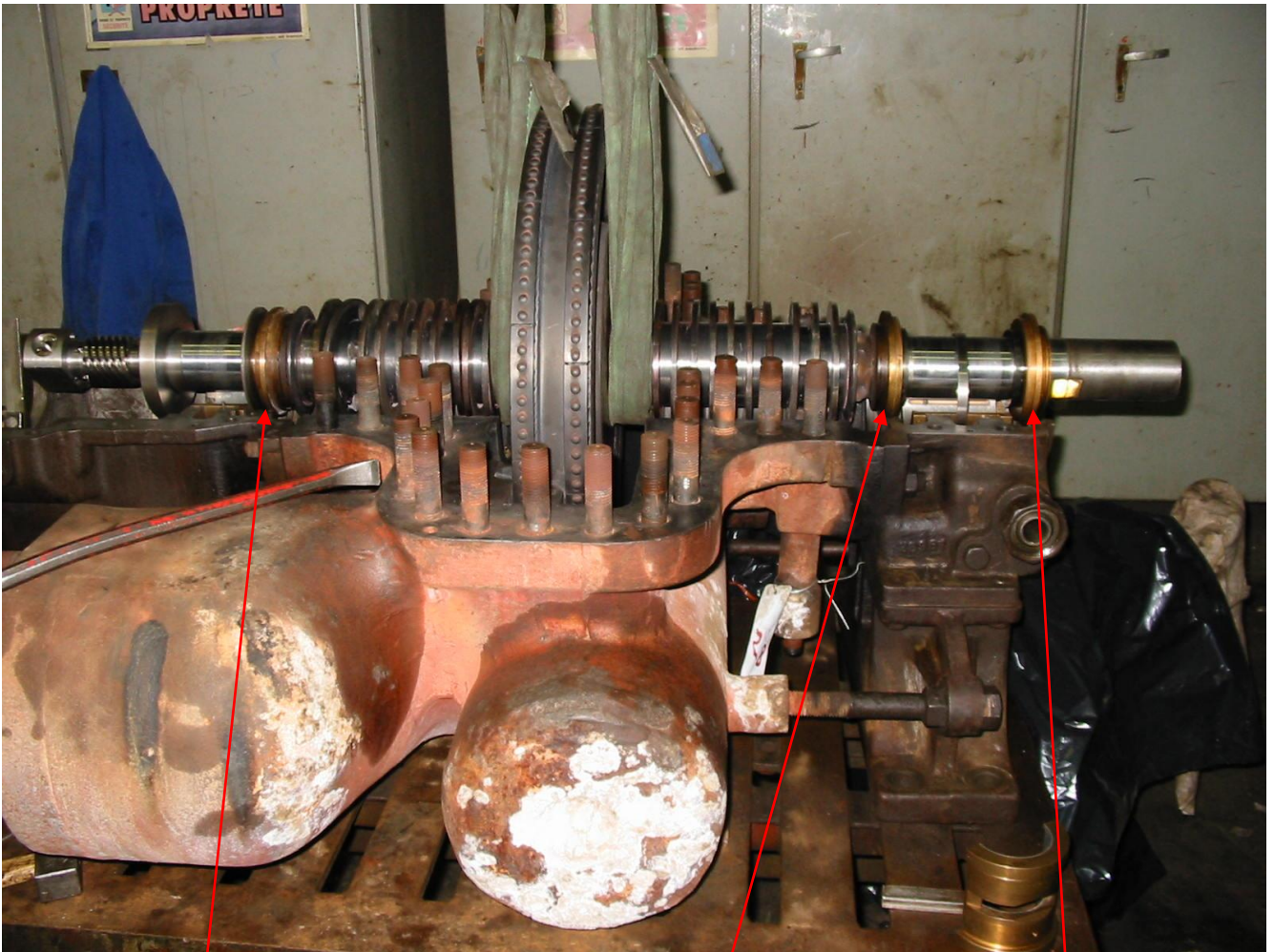
TECHNICAL DETAILS :

Manufacturer: WORTHINGTON – Dresser-Rand - S2RHA

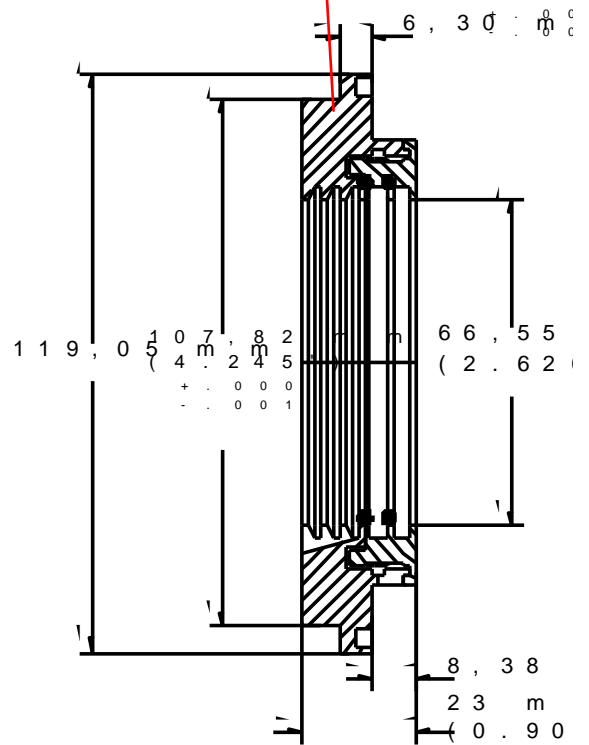
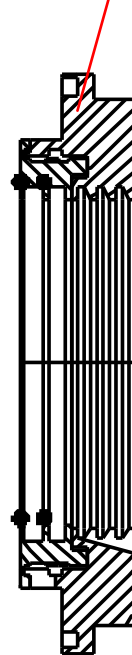
Shaft sizes: 2.620" & 3.125".

Inpro B.I : TYPICAL TURBINE DESIGN – 2 Pieces T0011 & SPECIAL

PLANT STOPPAGE MARCH 2003 – Turbine TP 102

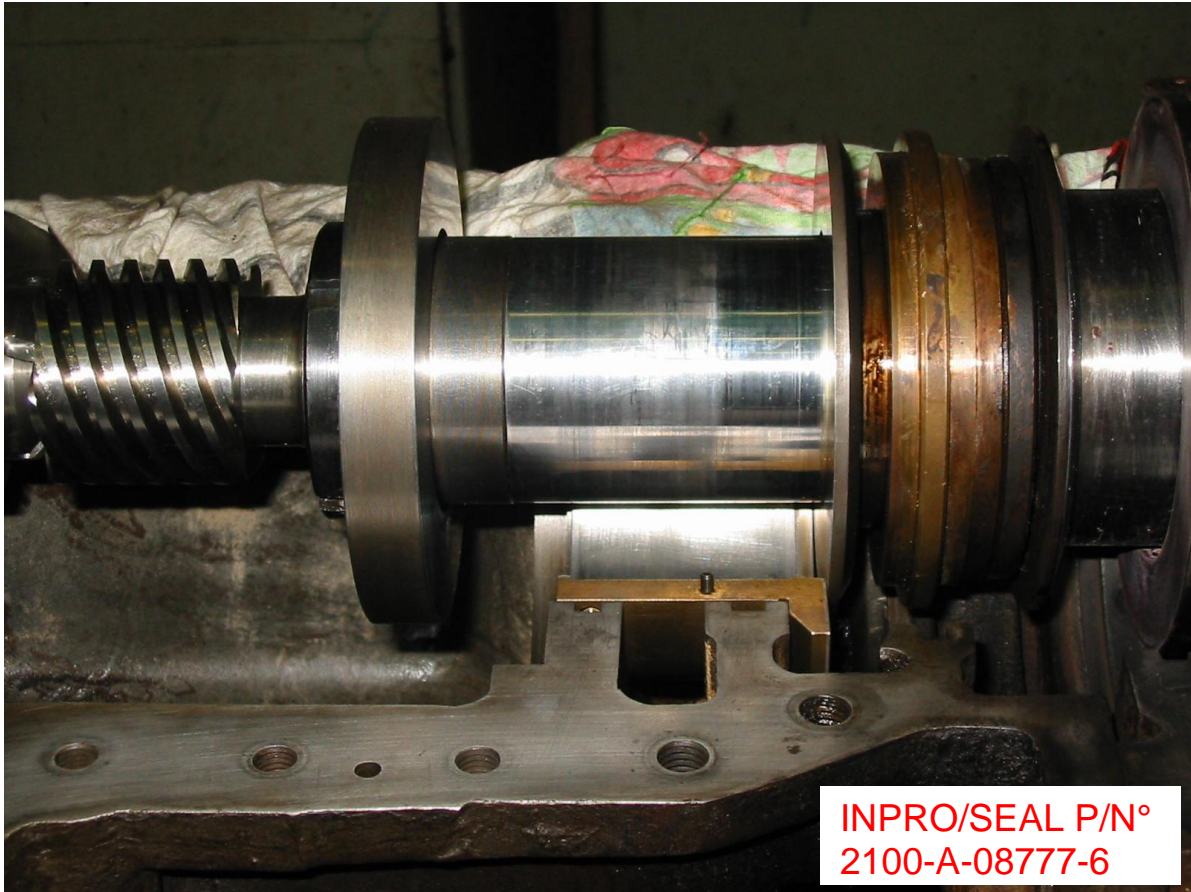


INPRO / SEAL P/ N°
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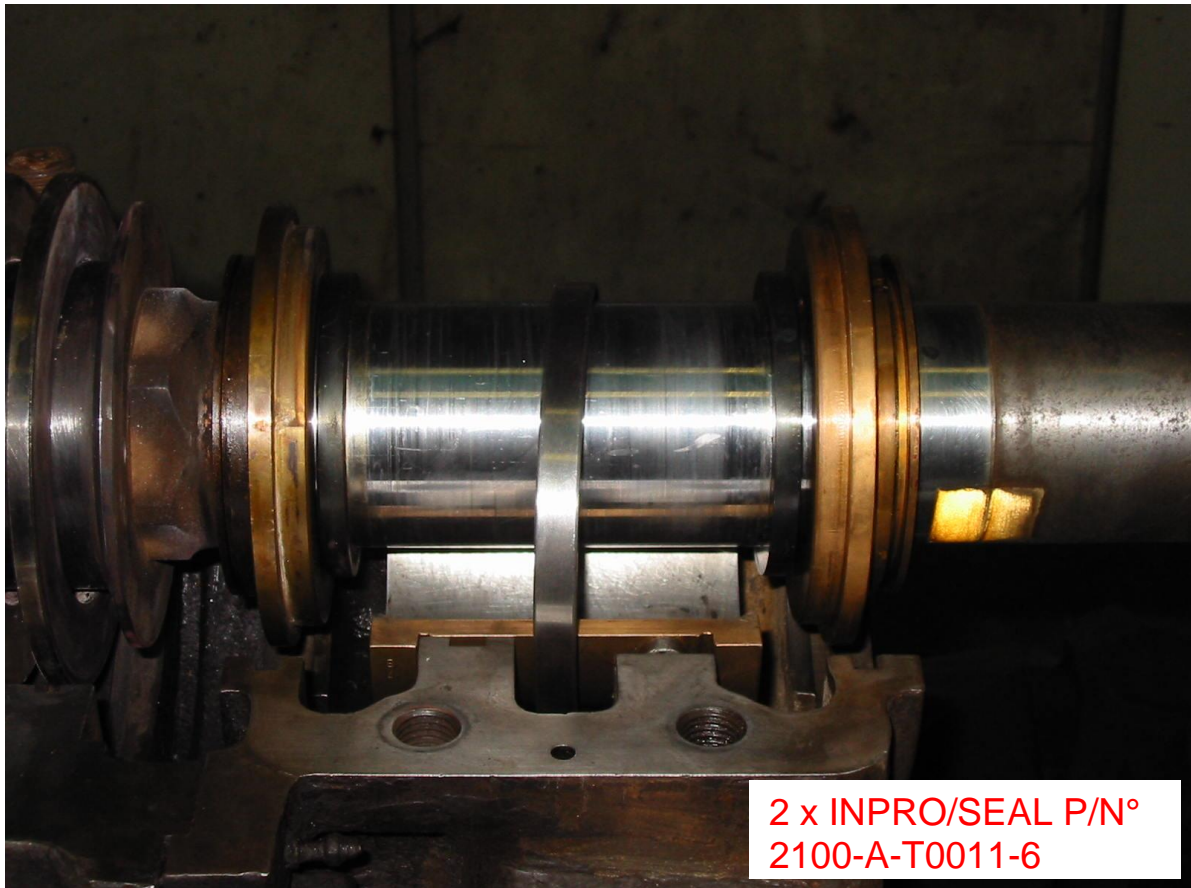


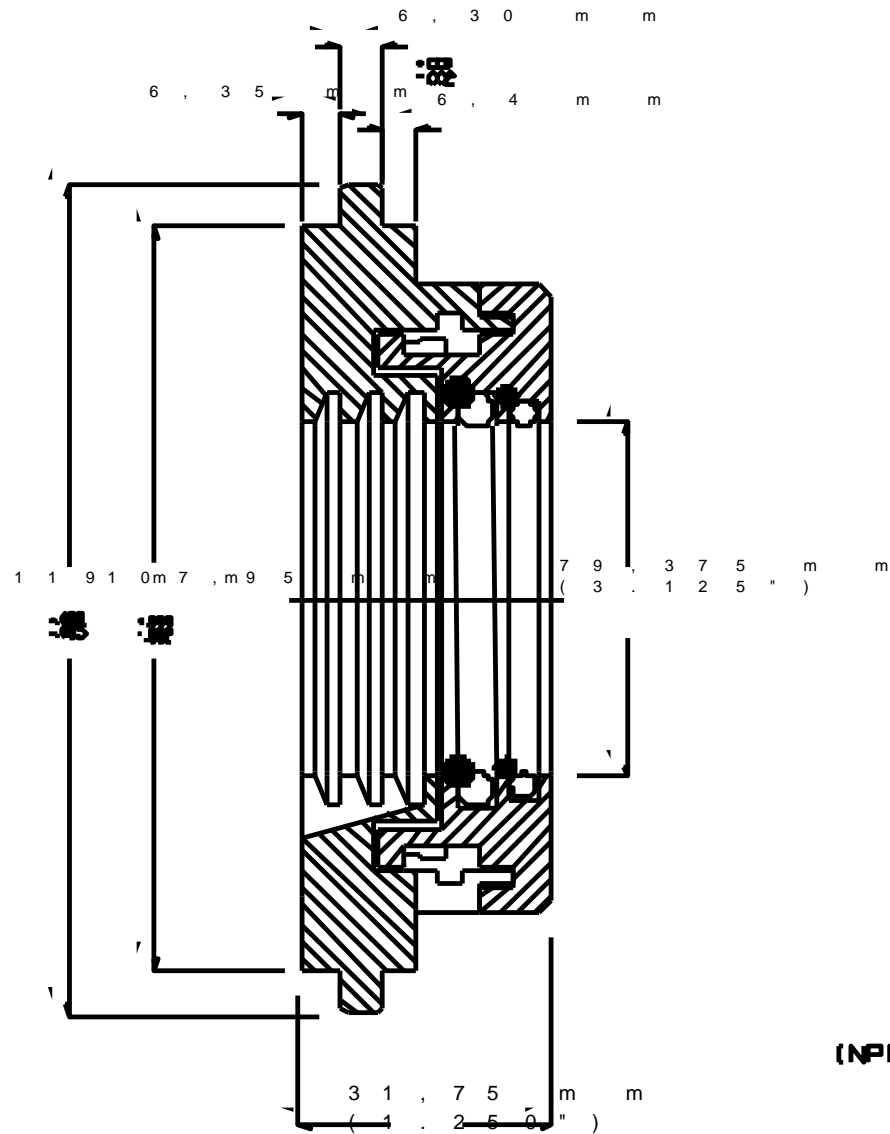
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ELF FEYZIN TP 102 GOVERNOR SIDE




ELF FEYZIN TP 102 COUPLING SIDE

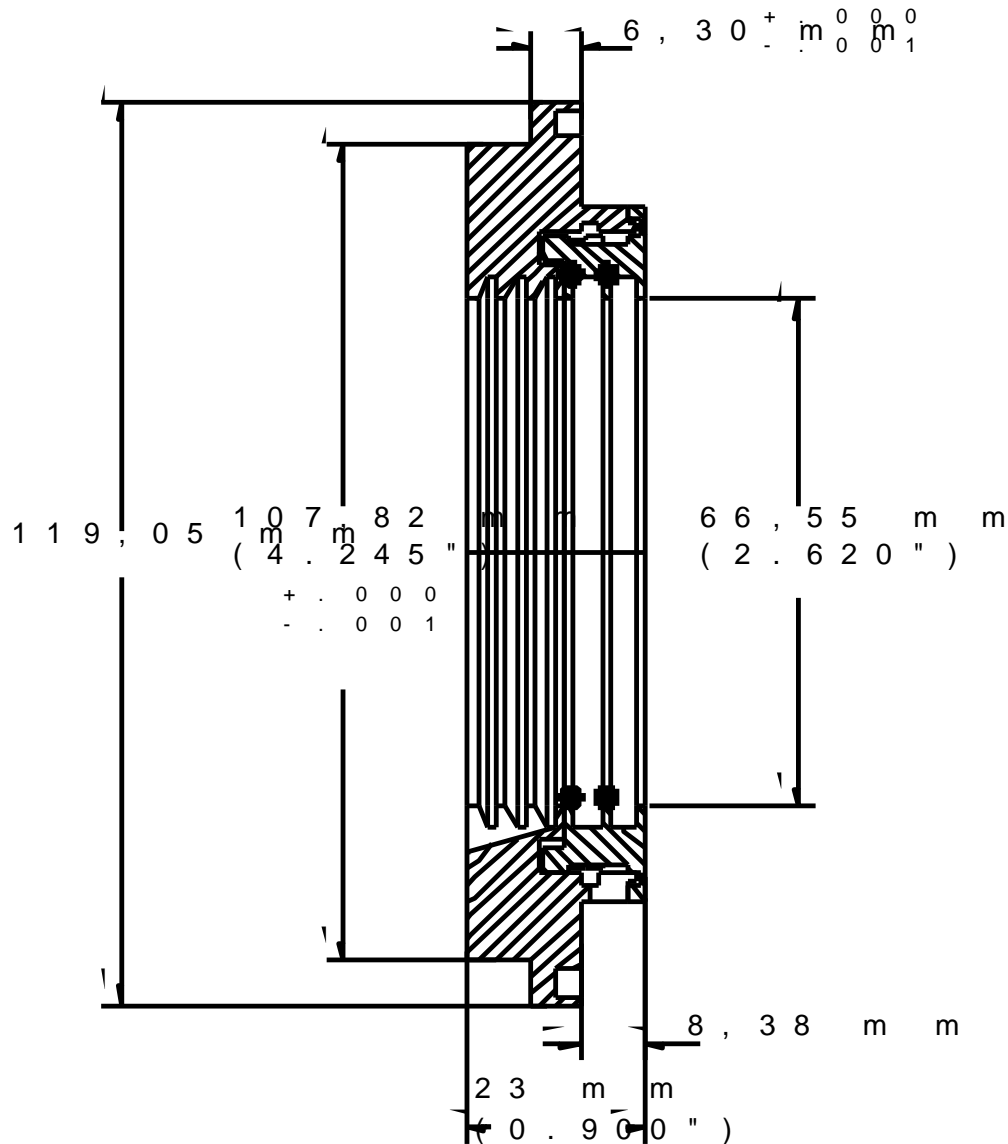




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ALL AFLAS O-RINGS

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REVS:				DATE 16 APR 98 Plan Ref : AND OTHERS PENDING 069291-20 03-01		
REVS:						



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INPRO/SEAL
 BEARING ISOLATOR
 TN05864
 DATE 30 NOV 01
 AND OTHERS PENDING



Plan Ref
 069291-2003-02