



भारतीय रेल (रेल मंत्रालय)
डीजल रेल इंजन कारखाना
वाराणसी-२२१००४, भारत
INDIAN RAILWAYS (MINISTRY OF RAILWAYS)
DIESEL LOCOMOTIVE WORKS
VARANASI-221004, INDIA



No. dlw.m.65.262

DESIGN BULLETIN

Date: 21.10.2014

1. **Design Bulletin no.:** DB/01/2014/23
2. **Subject:** Measurement of Exhaust Gas Temp (ETG) at turbo inlet on HHP locomotive.
3. **Background:** Failure of Power Assembly & Exhaust valve.
4. **Objective:** To measure EGT at turbo inlet scroll through non-contact thermometer (Laser Gun) and establish its correlation with ETG of engine.

5. Detail of exercise/study/Investigation:

A) Engine Test Bed Readings :

- Instrument Used: Non contact Thermometer, Model No. **-FLUKE-63 IR Thermometer.**
- Exhaust Gas Temperature (EGT) have been measured over turbo inlet scroll from 01 meter approx. distance at Engine test bed /DLW in 02 Engines. 05 readings on each engine have been taken during 30 minutes span. Readings are as under;:

S/No	Engine No..	Power at 8 th notch (BHP)	Temp (°C) recorded through thermocouple fitted on turbo inlet scroll	Temp (°C) taken by Non-Contact Thermometer/Laser Gun (FLUKE-63 IR Thermometer)
01	1384	4057	450, 455, 468, 460 & 470 (range of variation approx. 20°C)	385, 382, 396, 388 & 406 (range of variation approx. 24°C)
02	1388	4099	453, 446, 459, 450 & 463 (range of variation approx. 17°C)	399, 377, 400, 386 & 392 (range of variation approx. 23°C)

- DLW test procedure for 16-710G3B Engine (Technical Specification no. Misc-195) specified Exhaust Gas Temperature (EGT) as 435-535°C.

(Thermocouple fitted on Turbo Inlet Scroll)

(Temp. taken by Laser Gun at LTS on Turbo Inlet Scroll from right side turbo end)



