



Bharat Heavy Electricals Ltd
Boiler Auxiliaries Plant
Ranipet-632 406

EDC / AIR PREHEATERS
TECHNICAL SPECIFICATION
Effective Date: 02.08.2019

Specification No : RAH 560

Rev. No : 00

Page No : 01 of 03

01 Item : Multimedia Cleaning Device for 35 size RAPH (Cold End)

02	Application	Multimedia cleaning device would be used for cleaning the Air Preheater Heating elements 'On Load' with steam and 'Off Load' with high pressure water.
03	Location	At Cold End in the Flue Gas duct as shown in page 03 of 03.
04	Surroundings	Outdoor installation in dusty, humid and corrosive atmosphere of Coal / Oil fired Utility / Industrial Boilers. Ambient Temperature 50°C.
05	Power Supply	415 V, 3 Ph, 50 Hz, AC
06	Duty / Duration of operation	Intermittent. Once in a shift of 8 hours or more frequently to suit site requirement.
07	Flue Gas Temperature (Lance exposure Temp.)	Working Condition (at Gas Outlet) : 125°C. Design Condition (at Gas Outlet) : 100°C
08	Flue Gas Pressure (Lance exposure Pre.)	Working Condition (at Gas Outlet) : - 250 mmWC Design Condition (at Gas Outlet) : - 660 mmWC
09	Lance Design Pressure	250 kg/cm ² (g)
10	Blowing Medium	1. Steam with 310 °C to 350 °C (110°C to 150 °C superheat) at 14 Kg/cm ² (g) to a maximum of 17 kg/ cm ² (g). 2. In the absence of steam, air at 6.33 Kg/cm ² (g) will be used through steam nozzles. 3. Service water at pressure of 100 to 200 bar.
11	Blowing time & traverse speed	Vendor to specify to suit the rotor speed of 1 rpm. Speed shall not exceed 75 mm per Minute for steam blowing.
12	Blowing method	During forward/return travel with incremental movement and dwell periods for high pressure water & steam cleaning. Step distance shall ensure complete coverage of cleaning radius. Steam nozzles shall be venturi type & HP water nozzles shall be of Solid jet type.
13	Control Requirement	PLC Control Panel to be interfaced with DCS / DDCMIS. Panel to accept signal for steam cleaning start & HP water cleaning start for each cleaning device connected to control panel.
14	Local Push Button	Required.

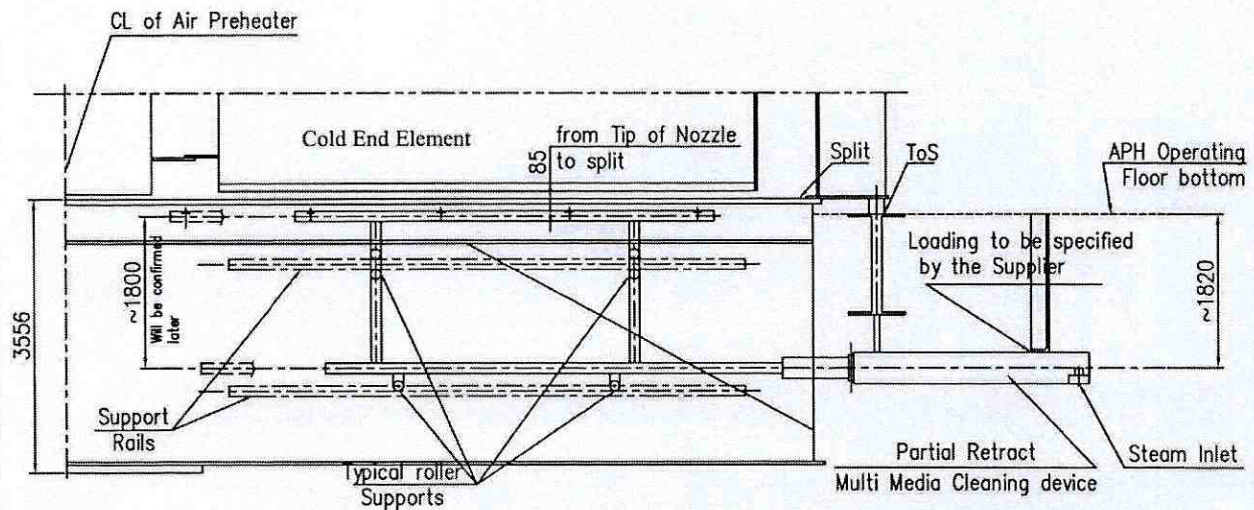
15 Scope of supply :

- Multimedia Cleaning device main assembly including steam lance & high pressure water lance, Carriage / Drive mechanism, Motor of IE3 class, Poppet valve assembly, Limit Switches, Pressure switch and Pressure Gauge with isolating valve for Steam line, Pressure switch and Pressure Gauge with two isolating valves in series for HP Water line, Air relief & scavenging valve, supporting lug, Lifting lug, Local stop / Emergency push button etc.
- Lance extension assembly with nozzles for Steam and high pressure water.
- Wallbox / Sleeve assembly.
- Companion flange together with gaskets studs and nuts, for connecting the steam supply pipe to the poppet valve inlet flange.
- Companion flange with gaskets, studs and nuts for High pressure water line.
- Internal supports including roller supports.

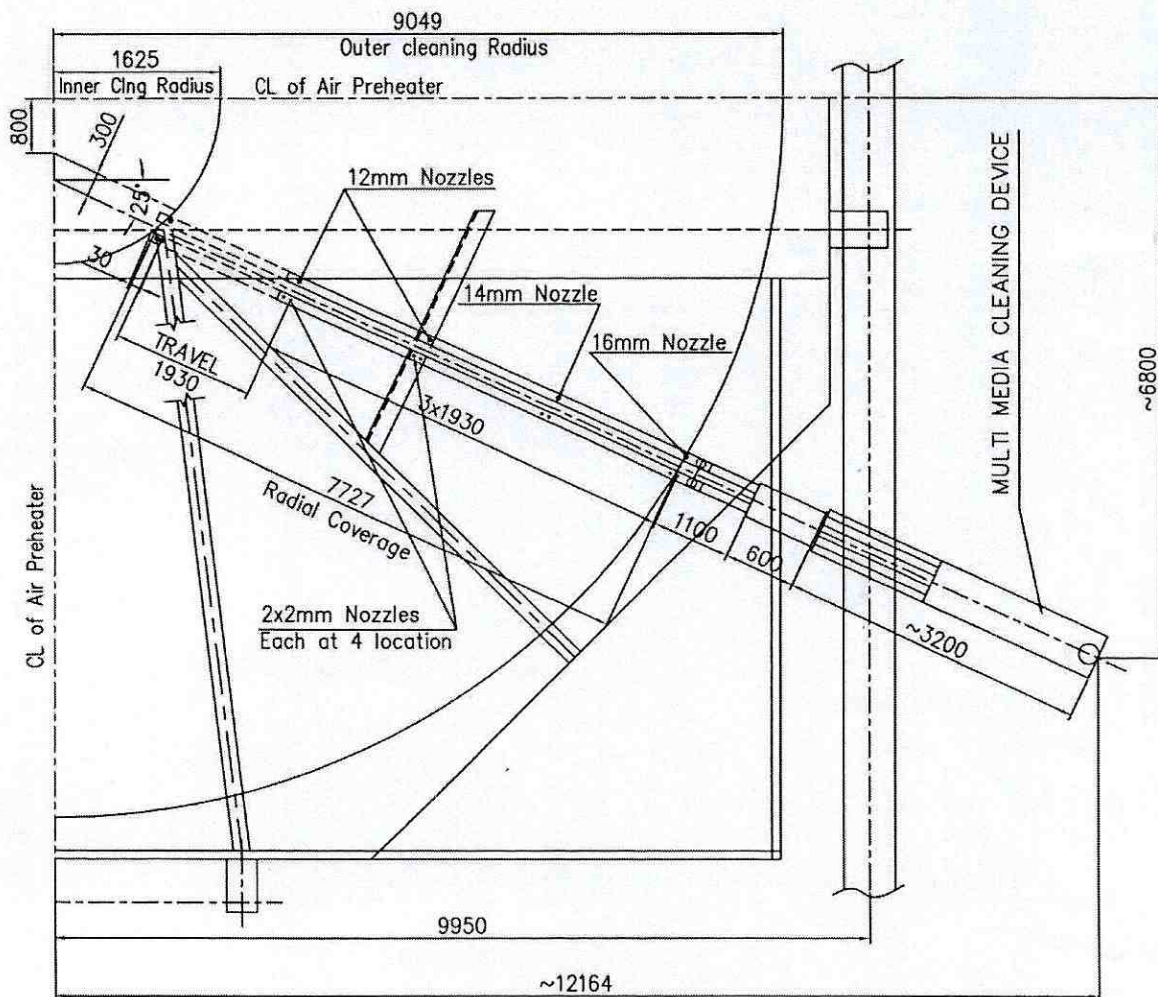
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Specification No : RAH 560	Rev. No : 00	Page No : 02 of 03
	g) Common PLC Control System with PLC Panel and Local Contactor Panel confirming to IP55. The incoming supply of 415 V, 3 Ph, 50 Hz, AC will be provided, supplier shall provide all applicable wiring of the equipment. h) Erection & Commissioning supervision for one week (excluding travel duration) per boiler. i) Set of Special tools. j) Spares for 3 years operation as per Enquiry.	
16 General :	a) Codes & Standards applicable for Mechanical, Electrical components and Protection class of equipment against climatic condition also shall be specified. Only latest revision shall be referred for all the Standards specified. b) The vendors shall submit the technical offer for Multimedia cleaning device along with following details. i) Confirmation to Scope of supply as per Clause 15. ii) Vendor shall confirm the No. of nozzles and the travel length as shown in page 03 of 03. iii) Materials of construction for various components like drive components, lances, nozzles, PLC Panel etc. iv) Preliminary drawing of the equipment along with terminal points and Total weight. v) Motor KW rating. vi) Write-up indicating the working principle and controls. vii) List of special tools with approx. weight. viii) Steam consumption details at 14 kg/cm² superheated steam with 110 deg Superheat and air consumption at 6.33 kg/cm². ix) Water consumption details at 200 bar and at 100 bar. x) Blowing time for Steam and High pressure water. c) The vendor shall submit the following, after placement of order for our approval. i) Power & control schematics, wiring diagram, cable schedule & Panel drawings ii) General arrangement drawing of the equipment with bill of materials, weight detail, Internal & External support detail, loading detail and Terminal point details. iii) List of despatchable items with weight & quantity. iv) IBR certification for valves. d) Quality plan. e) 6 Hard copies and one Soft copy of Erection and O & M manual after order. f) List of Recommended Spares for three years of operation with approx. weight. Vendor to indicate charges for erection/commissioning supervision separately for one week. Per Diem charges for additional man days shall also to be indicated separately in the offer.	
17 Painting	a) Surface preparation and Painting shall be as per painting schedule for Multimedia device / Cleaning device / PGMA 52338.	
18 Inspection	a) Inspection by BHEL. b) Necessary Test & Material Compliance Certificates shall be submitted.	
19 Multimedia cleaner General Arrangement details, Location & Support Arrangement :	Refer page 03 of 03.	

Partial Retract Multi media Cleaning device General Arrgt.



Partial Elevation



Plan View