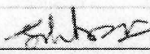
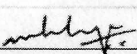
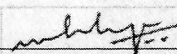




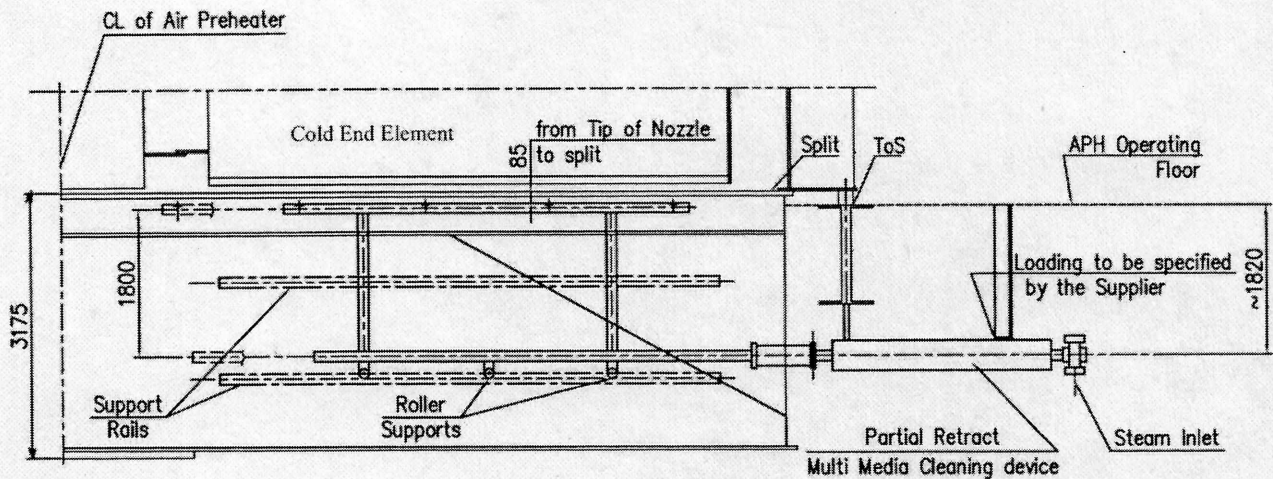
Bharat Heavy Electricals Ltd
Boiler Auxiliaries Plant
Ranipet-632 406

EDC / AIR PREHEATERS
TECHNICAL SPECIFICATION
Effective Date: 20.07.2017

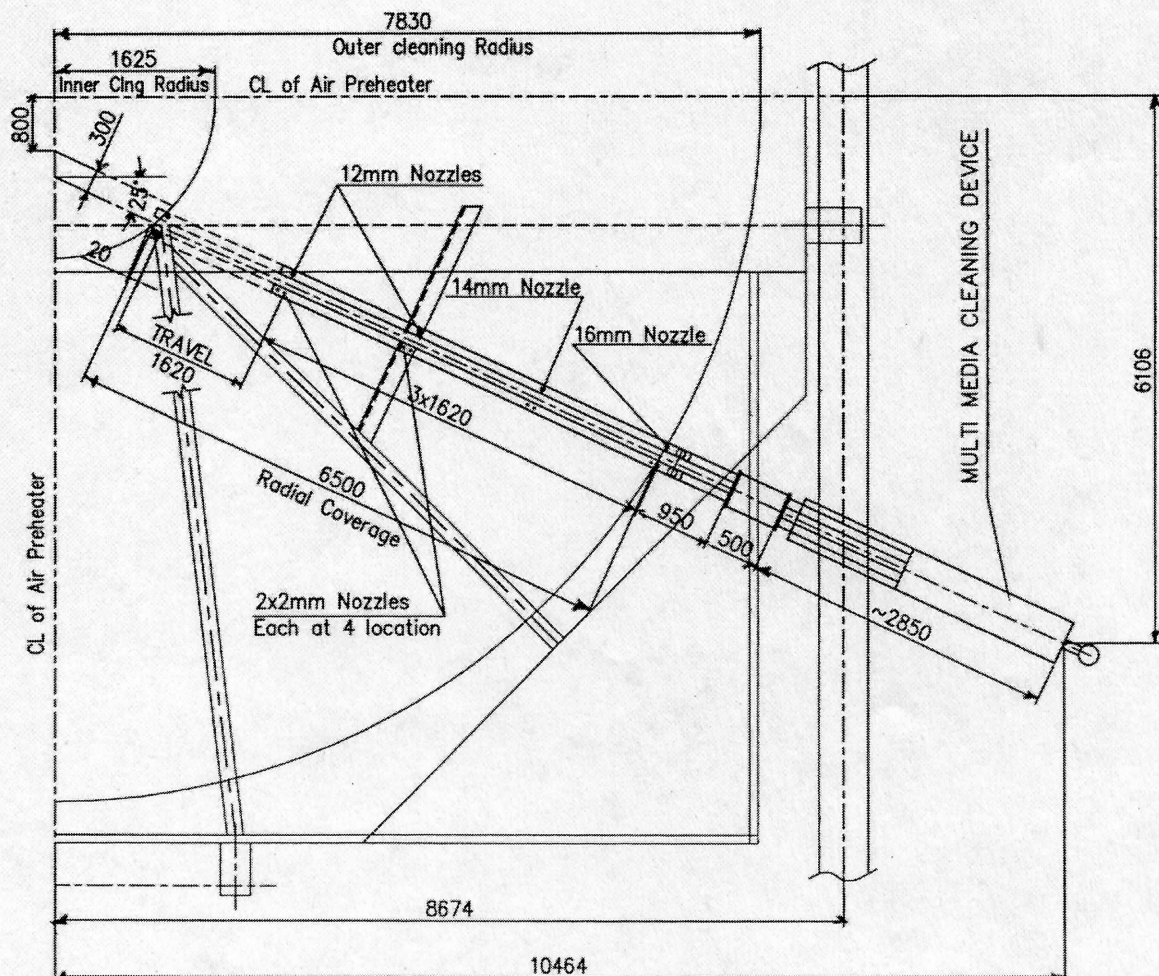
Specification No : RAH 519			Rev. No : 01	Page No : 01 of 03	
01	Item : Multimedia Cleaning Device for 33.5 size RAPH (Cold End)				
02	Application	Multimedia cleaning device would be used for cleaning the Air Preheater Heating elements 'On Load' with steam and 'Off Load' with high pressure water.			
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 (110°C superheat) at 14 Kg/cm² (g) to a maximum of 17 kg/ cm² (g). 2. In the absence of steam, air at 6.33 Kg/cm² (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 1.24 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. Continuous movement for Steam.			
13	Control Requirement	PLC Control Panel to be interfaced with DCS / DDCMIS.			
14	Local Push Button	Required.			
15	Scope of supply : a) Multimedia Cleaning device main assembly including steam lance & high pressure water lance complete with nozzles, Carriage / Drive mechanism, Limit Switches etc. b) Wallbox / Sleeve assembly. c) Poppet valve assembly with connecting tube for Steam and Valve for Water line. d) Companion flange together with gaskets studs and nuts, for connecting the blowing medium supply pipe to the poppet valve inlet flange. e) 2 x 90 deg elbows and mating connections for extension for Multimedia cleaning device. f) Air relief / scavenging valve. g) Pressure switch and Pressure Gauge with isolating valve for Steam and Water line. h) Support arrangement including roller supports.				
01	27.07.17				Page 03, Dimensions updated.
00	04.07.17	S.B	R.S.B	R.S.B	FRESH ISSUE
Rev.No	Date	Prepared	Checked	Approved	Record of Revisions.

Specification No : RAH 519	Rev. No : 01	Page No : 02 of 03
16	General : i) Common PLC Control System with PLC Panel and Local Contactor Panel. The incoming supply of 415 V, 3 Ph, 50 Hz, AC will be provided, supplier shall provide all applicable wiring of the equipment. Local stop / Emergency push button along with equipment. j) Erection & Commissioning supervision for one week. 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) Detailed scope of supply despatchable partwise with quantity and exclusions. 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. v) Total weight and weight of despatchable parts shall be indicated in the drawing. vi) Motor KW rating. vii) Write-up indicating the working principle and controls. 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. ii) General arrangement drawing of the equipment with bill materials and weight detail and Terminal point details. iii) Support Requirement & Loading details. d) Quality plan. e) 6 copies of Erection and O & M manual after order. f) List of Recommended Spares for three years of operation and Special tools list. g) Vendor to indicate charges for erection/commissioning supervision separately for one week.	
17	Painting a) All external surfaces requiring painting shall be cleaned by Power Tool as per surface preparation standard St3 (SSPC – SP3). b) Then 2 coats of Red Oxide Zinc Phosphate (IS : 12744) primer paint shall be applied to have a dry film thickness of 60 microns. c) Finally, 2 coats of synthetic enamel (IS : 2932) finish paint of colour Verdigris Green - Shade no : 280 of IS : 5 shall be applied to have a dry film thickness of 40 microns. d) Total dry film thickness shall be 100 microns (minimum) after final coat.	
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