

**DIRECTOR GENERAL BORDER SECURITY FORCE**  
**(PROVISIONING DIRECTORATE (Mod Cell))**

**Expression of Interest**

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The Sub-group of Technical Experts on Surveillance Equipment's constituted by MHA vide their letter No. IV-1017/18/2001-Prov-I dated 05 Jul 2002 held its meeting at BSF Headquarters on 23<sup>rd</sup> April 2014 and subsequent dates to formulate the QRs of '**Laundry Machine**'.

**QUALITATIVE REQUIREMENT OF LAUNDRY MACHINE**

Heavy Duty Laundry Machine must comprises the facility of **Washer Extractor, Dry-cleaning Machine, Drying Tumbler, Vacuum Finishing Table, Attachments & Accessories For Vacuum Finishing Tables, Steam Generator** with a facility of electrically operated, multi solvent computer controlled, front load of 30 Kg Capacity. The system should qualify following standards :-

**1.1:-Washer Extractor:-** Washer Extractor, High Spin, Soft Mount, 30 kg Capacity, Electric Heated, Front Loading, Open Pocket. Stainless Steel Cabinet. Computer Controlled.

<b>SL NO.</b>	<b>PARAMETER</b>	<b>DETAILED SPECIFICATION</b>
1	Capacity (Approx.)	30kg dry weight of 100% cottons per charge.
2	Outer Cabinet	Stainless steel 304 quality front, sides, top & back covers. S.S. Front Door interlocked with drive.
3	Outer Drum	Stainless steel of 304 quality duly reinforced to support front door, bearing housing, springs, electric motor & shock absorbers.
4	Inner Cylinder	Stainless steel of 304 quality. Dimpled perforations. Coned S.S. Back-End-Plate with tapered S.S. bush at the center. Push fit Main Shaft, easy to dismantle.(Carbon Steel shall not be used anywhere on the cylinder.)
5	Suspension	Coil springs & hydraulic shock absorbers.
6	Bearing Housing	Cast Iron one piece bearing housing with extra wide roller & ball bearings packed with lubricants & sealed. Self lubricating seals for water tightness & for lubricant tightness of bearings.
7	Drive	Single motor with Variable Frequency Drive for various speeds for wash, distribution, low, normal & high spin extract.
8	In built Programmable	Fully programmable microprocessor with not less than 30 customized or preset processes with step by

	Logic Controller(PLC)	step LED instructions for cycle advance, variable time signal, process modification & diagnostic checks.
9	Soap Dispenser	5 compartment in-built soap dispenser for powder & liquid detergents, each fitted with independent water solenoid valve & pressure jet. Optional provision for external liquid dosing.
10	'G' Force at Final Extract	350 G.
11	Inner Cylinder Volume (Approx.)	300-320 ltrs.
12	Clear Door Opening (Approx.)	500 -505 mm.
13	Electric Motor Size (Approx.)	5.5 KW, 415V, 3Phase, AC.
14	Water Inlet (Approx.)	25-30 mm (0.75" BSP) Solenoid valve operated.
15	Electric Heating Load (Approx.)	12 / 18 KW.
16	Drain (Approx.)	65 -70mm (2.5" BSP) Motorized, non clog Drain Valve.
17	Electric Supply	415V $\pm$ 5%, 3Phase, 50 Hz, AC.

**1.2:-Dry-cleaning Machine:-** Dry-cleaning Machine, Multi Solvent. High Spin. Soft Mount, Computer Controlled. 30 Kg Capacity. Front Loading, Open Pocket. 16 Preset Programs. Top Suspension with Hydraulic Cushions. Single Motor Variable Frequency Drive. 2 Solvent Tanks with Twin Pumps Upto 80% Solvent Recovery.

SL NO	PARAMETER	DETAILED SPECIFICATION
1	Main Body	Formed out of steel plates & channel base frame front, side, top & back covers not less than 1.2mm thickness. Die pressed S.S door with spring loaded S.S door latch & electromagnetic / pneumatic door interlock.
2	Inner Cylinder	Stainless steel perforated inner cylinder of S.S. 304 Quality & not less than 2mm thickness. Back end plate hydraulically deep drawn & Coned with taper S.S bush at the center. Continuous welding on the entire cylinder.
3	Bearing Housing	Close grained cast iron bearing housing with 2 Nos. extra wide roller bearings packed with lubricants & sealed. Triple seal arrangements. 2 seals for solvent tightness with self lubricating arrangement, one seal for lubricant tightness of bearings.
4	Drive	Single motor with variable frequency inverter drive for various speeds for wash, distribution, low, normal & high spin extract.
5	In built Programmable Logic Controller(PLC)	Microprocessor with not less than 16 programmes for light & dark shades with step by step LED screen.

6	Types of Solvent	DF 2000 / MTO / HYDRO-CARBON
7	Basket Size (Approx.)	900 X 500 mm Depth
8	Basket Volume	Not less than 300-320 ltrs.
9	Final Extract Speed	Not less than 800 RPM for Ø 900
10	'G' Force at Final Extract	Not less than 320 Gs.
11	Number of Tanks	02 Nos.
12	Solvent Storage Capacity	Not less than 90 Liters for each tank
13	Motor	5.5 KW (7 HP) 415V, 3-Phase, AC.ABB / SIEMENS / NGEF or Equivalent
14	Pump Motor	0.37 KW (1/2 HP) 415V, 3-Phase, AC.
15	Solvent Recovery After Final Extract	Not less than 70%
16	Door Opening	Not less than Ø 500 mm
17	Electric Supply	415V ±10%, 3-Phase + N, 50 Hz AC

**1.3:-Drying Tumbler:-** 30kg Capacity. Electric Heated. Stainless Steel Cylinder. Microprocessor Control. Reversible with Cool Down Feature.

SL NO	PARAMETER	DETAILED SPECIFICATION
1	Capacity (Approx.)	30kg dry weight of 100% cottons per charge.
2	Outer Cabinet	Double walled for heat insulation. Hot painted. Front & back service only. Can be joined together for multiple installation.
3	Inner Cylinder	Stainless steel 304 grade perforated inner cylinder. Back end plate reinforced with M.S. Channel/Trunion.
4	Electric Controls	Auto digital time control for drying & cool down time. Auto digital temperature control.
5	Drive	Main & idler drive through V belts & pulleys running on self aligning ball bearings encased in Plummer blocks.
6	Suction Blower	Aluminum cast suction blower driven by independent blower motor. Optimized air flow.
7	Steam Radiator	Formed out of copper coils & aluminum fins suitable for 8kg steam pressure.
8	Lint Screen	Self cleaning lint screen removable from the front.
9	Clear Door Opening (Approx.)	Ø 650 -660 mm.
10	Inner Cylinder Volume (Approx.)	600-610 ltrs.
11	Drive Motor (Approx.)	0.75 KW, 415V, 3-Phase, AC. ISI Marked or Equivalent.
12	Blower Motor (Approx.)	0.75 KW, 415V, 3-Phase, AC. ISI Marked or Equivalent.
13	Exhaust (Approx.)	210 x 210.
14	Electric Heating	24 KW

	Load (Approx.)	
15	Electric Supply	415V ±5%, 3-Phase + N, 50 Hz AC.

**1.4:-Vacuum Finishing Table:-** Rectangular table top, Padded with silicon padding. Powerful suction. Thermostatically controlled stainless steel table heater. Extended exhaust duct with lighting device. Provision for swiveling type arm assembly for instant changeability of various bucks.

SL NO	PARAMETER	DETAILED SPECIFICATION
1	Table Top Size	1200mm X 750mm
2	Main Body	Formed out of steel sheets/plates. Shot blasted & hot painted. All components easily accessible.
3	Table Top	Aluminum plate of minimum 2.5mm thickness perforated flat top padded with high porosity & heat resistant silicon padding.
4	Suction Blower	Heavy duty 0.5HP centrifugal blower driven by independent blower motor activated by spring loaded full length foot pedal work in conjunction with sturdy micro switch.
5	Exhaust	Extended exhaust duct with lighting device.
6	Heater	Full stainless steel in-built heater of minimum 1KW capacity. Thermostatically controlled.
7	Electric Supply	230V ±5%, 3-Phase + N, 50 Hz AC
8	Die cast sole plate	Die cast sole plate with minimum 18 Nos. built-in moisture traps. 100% Dry steam. Rubberized handle with concealed soft micro switch. Thermostatically controlled heating element. 220mm. Sole Plate Size: 120mm X 220mm. Teflon shoe. Aluminium armoured & spring loaded.

**Note- All firms are requested to comment upon the above mentioned QRs and furnish original OEM Brochures/ catalogues. Firms are also requested to quote their Model Name/ Number being offered on the proposed QRs.**

The Sub-group has decided to upload the QRs on MHA/ BSF website for 15 days to invite the views/ comments/ suggestions of prospective bidders to make the QRs more broad based.



**(Rishipal Singh)**  
Second-In-Command (Mod)