

**TECHNICAL SPECIFICATIONS**  
**Precision surface grinder**

**STT-0058**

	Requirement	Vendor confirmation /Remark
1	<b>PURPOSE :</b>	
	The machine must be capable of precision grinding of blade roots & shrouds to meet requirement of blade assembly in ST casings.	
	Various alloy steels including high tem. & creep resistant alloy steels of material grade 21Cr Mo V47, 17Cr Mo V511 etc.and forged steels.	
	The machine offered must be completely independent unit in ready to operate condition & scope of supply should include flood coolant & filtration arrangement with splash guard, lamp for light for easy working, electromagnetic chuck suitable for the table of machine and equipped with all accessories, diamond dresser etc.	
3.1.1	Table clamping area 600x300mm.	
3.1.2	No. and size of T-slots in table Supplier to indicate	
3.1.3	Longitudinal traverse more then 600mm	
3.1.4	Cross traverse More then 200mm	
3.1.5	Vertical traverse from table more then 350mm	
3.1.6	Max height of spindle centre above table.Supplier to indicate.	
3.1.7	Table speed (infinitely variable) up to 18M/Min.	
3.1.8	Feed for longitudinal traverse. Supplier to indicate	
3.1.9	Feed for cross traverse. Supplier to indicate	
3.1.10	Transverse fine feed by hand/graduation.Supplier to indicate	
3.1.11	Least count of hand wheel for vertical travel.Supplier to indicate	
3.1.12	Least count of hand wheel for transverse travel.Supplier to indicate	
3.1.13	Rapid vertical transverse feed. Supplier to indicate	
3.1.14	Automatic continuous transverse feed(mm/stroke).Supplier to indicate	
3.2.1	Size of grinding wheel in mm 250x20xD76.2	
3.2.2	Grinding wheel speed. Supplier to indicate.	
3.3.1	Grinding wheel head motor Min. 2.0KW.	
3.3.2	Hydraulic pump motor Min. .75 KW.	
3.3.3	Coolant pump motor Min. 0.1 KW.	
3.3.4	Coolant Flow rate.Supplier to indicate.	
3.3.5	Coolant Tank Capacity. Supplier to Indiacite.	

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4 ACCESSORIES:		
	Following accessories are required with the machine offered.	
4.1	Electromagnetic chuck with power supply & control unit (size 600x300mm) with clamp 1 No.	
4.2	Electric lamp mounted on machine 220volts 1No.	
4.3	Grinding wheel 5 Nos. Suitable for creep resistant alloy Steels.	
4.4	All electricals equipment should be suitable for 3phase, 415 volts, 50Hz AC supply and control voltage 220 V	
4.5	Balancing mandrel.	
4.6	Hydraulic power pack.	
4.7	Coolant filter ,dust collector and splash guard 1 No each.	
4.8	One set of standard tools for normal operation like spanners, allen keys etc.	
5.1	Machine will be complete with hydraulic (equipment) i.e. pump & motor with closed loop recycling & cleaning arrangement for coolants.	
5.2	There should be no leakage of hydraulic / lubrication oil from the machine during operation or idle time.	
5.3	No tandem pump should be used in hydraulic system & elsewhere.	
5.4	Machine must be of rigid construction & vibration free column supporting the wheel spindle must be of robust construction.	
5.5	Motors, control panels, bearing & other parts supporting the wheel. Details to be furnished.	
5.6	Overall size of the machine, weight, standard colour and noise level to be indicated. Desired paint colour: Apple Green	
5.7	All the electrical control equipment and switchgears should be of Siemens make.	
5.8	First fill of M/C oil , lubricating oil and coolant will be done by supplier. The supplied machine should be complete in all respect in ready to operate condition.	
5.9	Electrical wiring length 30 meter along with proper connectors to be provided by the supplier. BHEL will provide power mains only.	
5.10	One 3-phase, 20Amp, MCBDB should be attached to the control panel or base (whichever fixed) having industrial socket and plug.	
	Party must offer following items with price:-	
6A	Essential spares ( As applicable) :	
6.1	One number of each type of pumps used in hydraulic , lubrication and coolant circuit with motor.	
6.2	Five number of each type filter elements used in hydraulic , lubrication and coolant circuit.	
6.3	One number of each type direction control, pressure relief, pressure switch , flow switch , flow control valve , level switch , pressure gauge ,pressure reducing and non return valves used in hydraulic , lubrication and coolant circuit.	
6.4	Complete one set of sealing used in machine,	
6.5	Complete one set of hose pipes used in machine.	
6.6	Complete one set of compression/tension spring used in machine.	
6.7	Seal kit for Hydraulic cylinder used in machine for table movement ,wheel head travel etc.	

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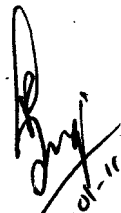
6.8	Roller used if any.	
6.9	1 no of each type of bearing used in machine	
6.10	HRC Fuses - 10 No. each type	
6.11	3-phase, 20Amp, MCB-DB.having industrial socket and plug. - 2 No.	
6.12	Push button - 5 Nos. each type	
6.13	Selector switch - 5 Nos. each type	
6.14	Contactors / Relays - 5 Nos. each type	
6.15	MCB/MPCB - 2 Nos. each type	
6.16	Overload relays - 2 Nos. each type	
6.17	Single phase preventer - 2 Nos. each type	
6.18	Solenoid Valve Coil - 10 Nos. each type	
6.19	Magnetic/Demagnetic Electronic Controller Main Unit - 2 No.	
6.20	Magnetic/Demagnetic Electronic Controller Remote Unit - 2 No.	
6.21	Timer - 02nos.	
6B	Recommended spares for 2 years of trouble free operation of machine.To be offered.	
<b>COMMISSIONING</b>		
7.1	Supplier's representative to supervise the erection (civil works) of the machine done by BHEL at Haridwar.	
7.2	Commissioning of the complete equipment supplied will be carried out by the supplier at our works. Machine, its controls and accessories will be tested as per agreed norms confirming to International/National standards.	
7.3	FINAL ACCEPTANCE SHALL BE MADE BY (bhel) AT Haridwar following successful erection & commissioning and achieving the specified accuracy.	
	Supplier to furnish details of foundation after 2 weeks of placement of PO. Foundation bolts, nuts, plates, etc will be supplied by the party.	
	TC & GC for the complete equipment to be furnished alongwith the supply. Equipment must be guaranted against any design and manufacturing defect for a minimum period of 24 months from the date of commissioning.	
10.1	3 sets of operating and maintenance manual which must contain following in additional to their standard manual in English language.	
10.2	Hydraulic, lubrication and coolant circuit diagram with description, specification and make of each element including hose pipes of each circuits.	
10.3	Assembly diagram of each subassemblies of machine with marked parts list with the specification of each componenets.	
10.4	Full documents to be given on CD also.	
10.5	Electrical manual should clearly describe the working of components with functioning of interlocks provided.	

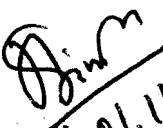
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11	<b>AMBIENT CONDITIONS:</b>	
	Machine is required to operate at following conditions.	
	Ambient temp. 5 to 50 deg. C	
	Relative humidity up to 95%	
	Power supply 415±10%, 3 phase, 50Hz±3%	
	BHEL will carryout pre despatch inspection at supplier works for a mutually agreed period to confirm the compliance with given specification and performance. Training related to operational and maintenance aspects.	
13.1	Supplier Should be OEM (Original Equipment Manufacturer)	
13.2	Supplier should have supplied atleast 2 machines of similar or bigger size in last three years. Provide the address , name and contact of persons for those customers.	
	a)- Product catalouge containing complete techincal specification indicating the model offered must be enclosed along with the offer.	
	b)- Point wise details must be furnished by the supplier.	

  
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