

1.MICROPROCESSOR CONTROLLED AUTOMATIC INJECTION MOULDING MACHINE (200T)
For Processing of PVC Material

S.No	Items	Specification
Make & Model : To be specified by Bidders		
1	Clamping Tonnage	200T
2	Screw Diameter	Min60mm
3	L/D Ratio	Min 20
4	Maximum Daylight	950 mm and above
5	Distance Between Tie Bar	500 x 500 mm and above
6	Platen Size	To be specified by Bidder
7	Minimum Mould Thickness	250mm or less
8	Ejector Stroke (Multi Stage & Multi Point)	Minimum 150 mm and above
9	Shot Capacity for RPVC	Minimum900gms
10	Injection Pressure	Minimum 1500 bar
11	Screw speed	Multi Stage -please specify
12	Motor	Please quote for servo motor drive type
13	Total connected load	Please specify
14	Multi stage Air Ejection	Please specify and quote
15	Robot Interface	Please specify and quote
16	Hot Runner Interface	Please specify and quote
17	Hydraulic Multiple core pulling attachment	Please specify and quote(For Minimum 2 core)
18	Water inlet/ outlet manifold for Mould cooling	Please specify and quote(For Minimum 10in & 10 out)
19	Other Features	<ul style="list-style-type: none"> • TFT Colour Display with Touch Screen • Nitrided Screw & barrel • Auto Lubrication • Servo Drive • Insert Moulding programme • Precise & Pressure Control • Digital setting of Extruder RPM • Printer interface with USB port • Auto Heat Start up & shut down • Customised set up menu • Seal at screw end
20	Essential Accessories	<p>Bidder to include following essential accessories apart from standard accessories for effective utilization of machinesuch as :</p> <ul style="list-style-type: none"> • Ring Plunger Set -1No • Hopper loader of Reputed make for PVC Powder material-1No (Throughput Capacity : Min 100kg/hr Three Phase MOC : Aluminium alloy and SS304 Alarms: Audio alarm in case of fault. Control : Microprocessor based control with digital display Function: Automatic loading without human intervention for regrind & virgin material.) <p>Mould clamping blocks with bolts-1 Set</p>

21	Installation & Training	Minimum of 05 days training for three candidates at machine manufactures site.
		Also on site training (Basic & Advanced level) including providing two sets of operating and maintenance manuals and other reference manuals for getting quality output and longer trouble free life of machine.
22	Manufacturer's credential	Should have sizable installations of same model worldwide and at least two same or similar model in India.
23	References	Tenderer shall give complete contact details of existing customers having such supply in India along with Clients certificate.
24	Safety requirements	The machine or set of machines supplied to meet objective shall be able to operate without any risk or hazard without any additional protection, provision, training or guarding devices and meet current international standard.
25	Availability of spares and consumables	Tender shall include list of all essential spares and consumables to be provided with replacement time prescribed for each such item and its availability within reasonable time period. In case if any such item is likely to be out of availability within service period of machine, such item shall be included in initial supply. However, bidder need to specify clearly the standard accessories with quantity, item wise in the bid which shall be supplied along with machine.
26	Technical support and Service	Availability of technical support in the area of application and service both within the country. The tenderer shall have local service and application office and infrastructure to attend by visit within 48 hours of need.
27	Warranty and guarantee	The machine shall be warranted for at least three(03) years for free replacement of spare and service against any design, manufacturing and workmanship defects from the date of installation & commissioning.

2.MICROPROCESSOR CONTROLLED AUTOMATIC INJECTION MOULDING MACHINE (350T)
For Processing of PVC Material

S.No	Items	Specification
Make & Model : To be specified by bidders		
1	Clamping Tonnage	350T
2	Screw Diameter	Min 70mm
3	L/D Ratio	Min 20
4	Maximum Daylight	1600 mm and above
5	Distance Between Tie Bar	700mm x 700 mm and above
6	Platen Size	To be specified by Bidder
7	Minimum Mould Thickness	350mm or less
8	Ejector Stroke (Multi Stage & Multi Point)	Minimum 200 mm and above
9	Shot Capacity for RPVC	Minimum 1500gms
10	Injection Pressure	Minimum 1500 bar
11	Screw speed	Multi Stage -please specify
12	Motor	Please quote for servo motor drive type
13	Total connected load	Please specify
14	Multi stage Air Ejection	Please specify and quote
15	Robot Interface	Please specify and quote
16	Hot Runner Interface	Please specify and quote
17	Hydraulic Multiple core pulling attachment	Please specify and quote(For Minimum 2 core)
18	Water inlet/ outlet manifold for Mould cooling	Please specify and quote(For Minimum 10in & 10 out)
19	Other Features	<ul style="list-style-type: none"> • TFT Colour Display with Touch Screen • Nitrided Screw & barrel • Auto Lubrication • Servo Drive • Insert Moulding programme • Precise & Pressure Control • Digital setting of Extruder RPM • Printer interface with USB port • Auto Heat Start up & shut down • Customised set up menu • Seal at screw end
20	Essential Accessories	Bidder to include following essential accessories apart from standard accessories for effective utilization of machine such as :
		<ul style="list-style-type: none"> • Ring Plunger Set -1No
		<ul style="list-style-type: none"> • Hopper loader of Reputed make for PVC Powder material-1No (Throughput Capacity : Min 100kg/hr Three Phase MOC : Aluminium alloy and SS304 Alarms: Audio alarm in case of fault. Control : Microprocessor based control with digital display Function : Automatic loading without human intervention for regrind & virgin material.)
		Mould clamping blocks with bolts-1 Set
21	Installation & Training	Minimum of 05 days training for three candidates at machine manufactures site.

		Also on site training (Basic & Advanced level) including providing two sets of operating and maintenance manuals and other reference manuals for getting quality output and longer trouble free life of machine.
22	Manufacturer's credential	Should have sizable installations of same model worldwide and at least two same or similar model in India.
23	References	Tenderer shall give complete contact details of existing customers having such supply in India along with Clients certificate.
24	Safety requirements	The machine or set of machines supplied to meet objective shall be able to operate without any risk or hazard without any additional protection, provision, training or guarding devices and meet current international standard.
25	Availability of spares and consumables	Tender shall include list of all essential spares and consumables to be provided with replacement time prescribed for each such item and its availability within reasonable time period. In case if any such item is likely to be out of availability within service period of machine, such item shall be included in initial supply. However , bidder need to specify clearly the standard accessories with quantity item wise in the bid which shall be supplied along with machine.
26	Technical support and Service	Availability of technical support in the area of application and service both within the country. The tenderer shall have local service and application office and infrastructure to attend by visit within 48 hours of need.
27	Warranty and guarantee	The machine shall be warranted for at least three (03) years for free replacement of spare and service against any design, manufacturing and workmanship defects from the date of installation & commissioning.

3.Compounding Mixer (Hot & Cold)

Sl. No	Items	Specification
Make & Model : To be specified by Bidders		
1	Material to be Mixed	PVC +Filler+ Additives
2	Final product	PVC Compound
3	Batch Weight	40 to 50 Kg
4	No of Batches per Hr.	4-5
5	Resulting Throughput	160-200Kg/hr
6	Process Conditions	
7	a. Heating up of the material in HSM to	Approx 120°C
	b. Cooling down of Material in CM to	Approx 55 -60°C
8	Required Process Media	
	a. Cooling Water inlet temperature	To be specified by bidder
	b. Requested cooling water capacity	To be specified by bidder
	c. Air Required	To be specified by bidder
9	Total connected Load	18 to 20Kw
10	Electr. Power Supply	Operation Voltage: 415V,50Hz Control Voltage: 230Volts,50Hz
11	Features	<p>Mixing Container : Material should be stainless steel SS 304 or better, reinforced base shell in wear-exposed area, with jacket made of Stainless Steel for insulation, for possible additional heating or cooling in pressure less operation.</p> <p>Interior mirror polished surface finish to avoid depositing of material surface finish 9 to 11 µmRz</p> <ul style="list-style-type: none"> •Should be specially designed bottom curvature of mixer container for homogeneous free flowing dry blend and to ensure built up of Frictional Heat efficiently to remove moisture and to prepare the best quality of compounding. • The container should be jacketed with the provision of water circulation. <p>Dischage: The discharge gate should be pneumatically operated. All parts in contact should be made from high quality material</p> <p>Lid: Should be made from suitable material with necessary accessories and should incorporate chemical adding port . option for pneumatic & manual opening.</p>

		<p>Locking Mechanism: Safety switch should be integrated in the locking mechanism to prevent restart of motor when lid is opened.</p> <p>Mixing Tool: Material:SS 304,self-cleaning blades, variable tool speed upto 800RPM or above.</p> <p>Variable –speed motor: 15kW, 2800 RPM or better</p> <p>Control Cabinet: Powder coated protected with rubber gasket for dusting.</p>
	Specification for Cooler Mixer	
12	Mixture/Product	PVC Compounding
13	Process	Cooling Process and slow speed Physical mixing
14	Average batch Size	40Kg/batch
15	Batch Time	8 to 10 mins
16	Required Water Flow rate	To be specified by bidder
17	Inlet Water temperature	To be specified by bidder
18	Mixing Vessel Capacity(Usable)	280 to 300Ltrs
19	Features	<p>Mixing Container : Material should be Stainless Steel SS 304 or better, reinforced base shell in wear-exposed area, with jacket made of Stainless Steel for insulation, for possible additional heating or cooling in pressure less operation. • The Jacket should be designed specially with cooling water circulation channels to achieve the desired mixture temperate effectively</p> <p>Discharge: The discharge gate should be pneumatically operated.All parts in contact should be made from high quality material</p> <p>Lid: Should be made from suitable high quality material with necessary accessories and should incorporate chemical adding port .</p> <p>Locking Mechanism: Safety switch should be integrated in the locking mechanism to prevent restart of motor when lid is opened</p> <p>Mixing Tool: Material:SS 304,self-cleaning blades, Tool speed approx. 70 to 80RPM .</p> <p>Single speed motor: 4 kW, 1500 RPM or better</p>
20	Installation & Training	Onsite training including providing two sets of operating and maintenance manuals and other reference manuals for getting quality output and longer trouble free life of machine to be supplied with machine.

21	References	Tenderer shall give complete contact details of existing customers having such supply in India.
22	Safety requirements	The machine or set of machines supplied to meet objective shall be able to operate without any risk or hazard without any additional protection, provision, training or guarding devices and meet current international standard.
23	Availability of spares and consumables	Tender shall include list of all essential spares and consumables to be provided with replacement time prescribed for each such item and its availability within reasonable time period. In case if any such item is likely to be out of availability within service period of machine, such item shall be included in initial supply. . However , bidder needs to specify clearly the standard accessories with quantity, item wise being supplied along with this machine.
24	Technical support and service	Availability of technical support in the area of application and service both within the country. The tenderer shall have local service and application office and infrastructure to attend by visit within 48 hours of need.
25	Warranty and guarantee	The machine shall be warranted for at least Two years for free replacement of spares and service against any design, manufacturing and workmanship defects from the date of installation & commissioning.

4.Air Cooled Water Chiller

Sl. No	Items	Specification
Make & Model : To be specified by Bidders		
1	Type	Air cooled
2	Cooling Capacity	10TR
3	At Water Temperature	15°C
4	And Ambient Temperature	40°C
5	Operating Control Temperature	+10°C upto + 25°C
6	Double Compressor(Scroll type Compressor)	9 to 10 KW or equivalent
7	Ambient Temperature For Compressor	Max. 60°C
8	Max Flow to Process	250 LPM
9	Max Pressure Bar	3.2Bar or equivalent
10	Reservoir capacity	180Ltr or above
11	Process Connection	Shall be confirmed at the time of order
12	Electr. Power Supply	415V,50Hz,3 Phase
13	Features	<ul style="list-style-type: none"> • Large sized air cooled condenser design • High Pressure High Flow Process Pump of reputed Make • High Flow, Low noise, axial flow fan • LP/HP(Refrigerant) Gauge • Reputed make smart microprocessor/PLC • Large Size, Shell & Tube type Condensor Design • CFC Free Refrigerant • All material used should be of reputed make .
14	Installation & Training	Onsite training including providing two sets of operating and maintenance manuals and other reference manuals for getting quality output and longer trouble free life of machine to be supplied with machine.
15	References	Tenderer shall give complete contact details of existing customers having such supply in India along with Clients certificate.
16	Safety requirements	The machine or set of machines supplied to meet objective shall be able to operate without any risk or hazard without any additional protection, provision, training or guarding devices and meet current international standard.
17	Availability of spares and consumables	Tender shall include list of all essential spares and consumables to be provided with replacement time prescribed for each such item and its availability within reasonable time period. In case if any such item is likely to be out of availability within service period of machine, such item shall be included in initial supply. However , bidder needs to specify clearly the standard accessories with quantity ,item wise being supplied along with this machine.

18	Technical support and service	Availability of technical support in the area of application and service both within the country. The tenderer shall have local service and application office and infrastructure to attend by visit within 48 hours of need.
19	Warranty and guarantee	The machine shall be warranted for at least Two years for free replacement of spares and service against any design, manufacturing and workmanship defects from the date of installation & commissioning.