

<b>Summary Sheet for Processing Machineries &amp; Equipments</b>		
<b>S. No.</b>	<b>Name of the Equipment</b>	<b>Qty (No's)</b>
1	Microprocessor Controlled Automatic Injection Moulding Machine-80-100 Ton	6
2	Hot Air Oven	1
3	Dehumidifying Drier Unit	1
4	Dry Mixer /Tumble Blender For Plastics Granules	1
5	Mould Temperature Controller Units (MTC)	1
6	Scrap Grinder	1
7	FRP Cooling Tower- 50 TR	1
8	Semi Automatic Vertical Injection Moulding Machine 30-40 Tons	1
9	Semiautomatic Horizontal Injection Moulding Machine 30-40 Tons	1
10	Pipe Extrusion Unit With Jockey Extruder For Line Marking	1
11	RPVC Pipe Extruder(Twin Screw With Post Extrusion Equipment)	1
12	Single Layer Extrusion Blown Film Unit With Corona Treater	1
13	Multilayer Extrusion Blown Film Unit	1
14	High Speed Mixer	1
15	Automatic Blow Molding Machine-1/2 Litre	2
16	Microprocessor Controlled Single Layer Double Station Extrusion Blow Moulding with Parison Programming, Capacity - 1 Litre	2
17	Air Compressor	1
18	Rotational Moulding Machine- 100-300 Litre	1
19	Pulveriser	1
20	All Electric Microprocessor Controlled Automatic Injection Moulding Machine 180-200T	1
21	Microprocessor Controlled Automatic Injection Moulding M/C – 250-275T	1
22	Extruder Recycling Machine	1
23	Automatic Thermoforming Machine	1
24	Hydraulic Compression Moulding Machine 30-40 Tons	1
25	Screen Printing Machine	1
26	Film Cutting and Sealing Machine	1
27	Ultrasonic Welding Machine	1
28	Hot Plate Welding Equipment	1
29	Agglomerator	1
30	Hopper Drier With Automatic Loader Unit	1
31	Cast Film Extruder	1
32	PET Preform Stretch Blow Molding Machine	1
33	Pad Printing Machine	1
34	Electro Hydraulic Training kit with Programmable Logic Control (PLC) Interface	2
35	Electro Pneumatic Training kit with Programmable Logic Control (PLC) Interface	2



## TECHNICAL SPECIFICATION FOR PROCESSING EQUIPMENT & MACHINERIES

### 1.MICROPROCESSOR CONTROLLED AUTOMATIC INJECTION MOULDING MACHINE 80-100 Ton

S. No.	Description	Units	Specification
<b>Injection Unit</b>			
1	Shot Capacity (In GPPS)	g	120 and above
2	Screw Diameter	mm	30-40
3	Screw L/D Ratio	-	Specify
4	Injection Pressure	bar	Min. 1600 and above
5	Injection Speed	mm/sec	Specify
6	Injection Rate	cc/sec	95 and above
7	Plasticizing Rate (Gpps)	gm/sec	Specify (higher will be preferred)
8	Max. SCREW SPEED	rpm	Specify
9	Heating Capacity	kw	Specify
10	Bi-Metallic Screw Barrel	-	(Optional) Specify and Quote
<b>Clamping Unit</b>			
11	Clamp Force	ton	80-100
12	Mould Opening Stroke	mm	min. 350 and above
13	Maximum Daylight	mm	Min. 700 and above
14	Minimum Mould Height	mm	Max.150
15	Maximum Mould Height	mm	Min. 350 and above
16	Platen Size	mm	Min. 500 x 500 above
17	Distance Between Tie Rod	mm	Min. 310 x 310 above
18	Ejector Stroke	mm	Minimum 100 (Multi point and Multi Stage) Specify
19	Ejector Force	ton	Specify
20	Mould Weight Capacity	kg	Specify
21	Hydraulic Multiple core pulling unit	-	specify and quote (Minimum 2 core pulling)
22	Multi stage Air Ejection	-	Specify and Quote (Minimum 2 point)
23	Clamping Mechanism	-	Specify
<b>General</b>			
24	T Slot Platen	-	Specify and Quote (T Slot is Preferred)
25	Latest Square Platen	-	Specify and Quote
26	Latest Technology Injection unit on LM guides	-	Specify and Quote
27	Robot Interface	-	Specify and Quote
28	Hot Runner Inerface	-	Specify and Quote (Minimum 4 Zones))
29	Interface for Gas Assisted Injection	-	Specify and Quote
30	Water inlet & outlet manifold for Mould cooling	-	Min. 8/8 Channel
31	Computer connectivity	-	Specify
32	Hopper loader cum drier	-	Specify and Quote for suitable capacity
33	Essential/Standard spares	-	Specify and Quote (Standard Tool Kit, NRV, Thermocouple, Band Heater, Short/Extended Nozzle, SSR, Proximity Switch, Limit Switch, Mould Clamps, T-Nut and Studs, Etc.,)
34	MTC (Oil Type)	-	Specify and Quote
35	Safety	-	Specify the Special safety provisions
36	Motor / Pump Type	-	SERVO
37	Motor load	-	Specify
38	Machine Dimensions(LxWxH)	-	Specify
39	Total connected load	-	Specify
40	Max. Power consumption @ full machine capacity	-	Specify (lower power consumption will be preferred)

## 2. HOT AIR OVEN

1	Capacity	Ltr	200 and above (100 kg)
2	Display		Digital
3	Inner Size (WxDxH)	cm	specify
4	Heater Load	Kg/Hr	Please Specify and quote
5	No. Of Shelves	nos	6 -10
6	Temperature Range	C	Upto 300
7	Temperature Uniformity		+/- 2 deg C
8	Insulation	-	Please Specify and quote
9	Safety Device	-	Thermostat/ please specify and quote
10	Type	-	Forced Convection System/ others
11	Temperature Controller	-	Digital Temperature Controller Cum Indicator
12	Inner & Outer Body	-	Made out of Stainless Steel
13	Power		Please Specify & Quote
14	Electrical Supply	-	Please Specify & Quote
15	Essential Spares	-	Please Specify & Quote

## 3. DEHUMIDIFYING DRIER UNIT

S. No.	Description	Units	Specification
1	Drying Bin Volume	Ltr	100-125
2	Dry air quantity	m3/hr	Please specify
3	Dew point	°C	Please specify
4	Temperature range	°C	60-140
5	Connected load	KW	Please specify
6	Dimensions	-	Please specify
7	Machine Tonnage	Ton	Upto 300 Tons
8	Throughput	(kg/hr)	Upto 80 kg/hr
9	Materials to be used	-	PC,PET,NYLON,PBT,POM,SAN, ACRYLIC,HIPS,ABS
10	Standard accessories	-	Please quote
11	Safety	-	Appropriate safety features to be provided, Alarm etc
12	Scope of conveying System	-	Auto Loader –To feed material to Dehumidifier and subsequently to Injection Moulding.

## 4. DRY MIXER /TUMBLE BLENDER FOR PLASTICS GRANULES

S. No.	Descriptions	Units	Specification
1	Container capacity(Min. - Max.)	Kg	100 - 125
2	Rotating speed	rpm	Please specify
3	Vessel/Container		Rotor blade and Vessel should be made out of SS
4	Safety	-	Appropriate safety features to be provided
5	Machine dimensions	-	Please Specify

### 5. MOULD TEMPERATURE CONTROLLER UNITS (MTC)

Sr. No	Description	Units	Specification
1	Operating Temperature	°C	upto 200°C
2	Fluid		Oil
3	Flow rate	LPM	Min. 60 LPM and above
4	Heating capacity	KW	Please specify and quote
5	Pressure	Bar	Min. 3.5 Bar and above
6	Heating Pipe		Stainless Steel
7	Standard accessories		Please specify and quote
8	Safety	-	Appropriate safety features to be provided like Pump Reversal, Oil Shortage, overheating/Pump overload etc
9	Machine dimensions(LxWxH)		Please specify and quote
10	Machine Tonnage Capacity	Ton	Upto 300 Tons
11	Throughput	Kg	Upto 80 Kg
12	Essential spares		Please specify and quote
			<ul style="list-style-type: none"> <li>• Accurate digital readout of process temperature against set point <math>\pm 1^{\circ}\text{C}</math></li> <li>• Easy to service and maintain : Side panels easily openable</li> <li>• Tubular cooling coil and stainless steel heater</li> <li>• Reliable and high performance pump</li> <li>• All moveable parts in contact with the water medium made of stainless steel</li> </ul>

### 6. SCRAP GRINDER

Sr. No	Description	Units	Specification
1	Output per hour	Kgs	Min. 200 Kgs to 500 Kgs
2	Main motor	H.P	Pls Specify and quote
3	Blade metal	-	High Carbon High Chromium Die Steel.
4	Blade length	-	Pls Specify and quote
5	Fixed blades	-	Min. 4 nos
6	Rotating blades	-	Min. 6 nos
7	Spare fixed blades	-	Min 4 nos
8	Spare rotary blades	-	Min. 6 nos
9	Mesh plate	mm	Mesh size (10 mm)
10	Mesh plate	mm	Mesh size (6 mm)
11	Vibro magnet filter	-	<ul style="list-style-type: none"> <li>• It should be placed below the output area of scraps.</li> <li>• The magnet filter will vibrate for filtrating the scraps from metal particles.</li> </ul>
12	Mouth area	mm	900mmX600 mm(Minimum)
13	Dimension (Length mm X Width mm X Height mm)	mm	Please Specify and quote
14	Material To be Grind		HDPE, LLDPE, PP, ABS, HIPS. Nylon & PC

### 7. FRP COOLING TOWER- 50 TR

S.No.	Description	Units	Specification
<b>FRP Induced draft cross flow type with basin</b>			
1	Capacity	TR	50
2	Water flow rate	LPM	Please specify and quote
3	Hot water temperature	°C	50
4	Cold water temperature	°C	28
5	Wet bulb temperature	°C	Please specify and quote
6	Inlet, outlet connection size	mm/inch	Please specify and quote
7	No. of Motor/HP/RPM		Please specify and quote
8	All fastners, nut, bolts etc should be made of SS		
9	Machine Dimensions	-	Please specify

**8. SEMI AUTOMATIC VERTICAL INJECTION MOULDING MACHINE 30-40 TONS**

<b>Injection Unit</b>			
1	Shot Capacity (in GPPS)	g	Min. 40
2	SCREW DIAMETER	mm	25-40
3	SCREW L/D RATIO	-	
4	INJECTION PRESSURE	bar	Min.1200 and above
5	INJECTION Speed	mm/sec	Specify
6	INJECTION RATE	cc/sec	Min. 35 and above
7	PLASTICIZING RATE (GPPS)	gm/sec	Specify (higher will be preferred)
8	Max. SCREW SPEED	rpm	Min. 170
9	Heating Capacity	kw	Specify
10	Bi-metallic Screw Barrel	-	(Optional) Specify and Quote
<b>Clamping Unit</b>			
11	CLAMP FORCE	ton	30-40
12	Mould Opening Stroke	mm	Min. 180 and above
13	MAXIMUM DAYLIGHT	mm	340 and above
14	MINIMUM MOULD HEIGHT	mm	Specify
15	Maximum Mould Height	mm	Min. 150 and above
16	PLATEN SIZE	mm	Specify
17	DISTANCE BETWEEN TIE ROD	mm	min. 210 x 210 and above
18	EJECTOR STROKE	mm	Min 10 and above
19	EJECTOR FORCE	ton	Min. 3.5 and above
20	MOULD WEIGHT CAPACITY	kg	Specify
21	Clamping Mechanism	-	Specify
<b>General</b>			
22	Control System	-	Specify and Quote
23	T Slot Platen	-	Specify and Quote (T Slot is Preferred)
24	Water inlet & outlet manifold for Mould cooling	-	Min. 4/4 Channel
25	Hopper Capacity	Kg	Specify and Quote for suitable capacity
26	Essential/Standard spares	-	Specify and Quote (Standard Tool Kit, Thermocouple, Band Heater, Short/Extended Nozzle, SSR, Proximity Switch, Limit Switch, Mould Clamps, T-Nut and Studs, Etc.,)
27	MTC (Oil Type)	-	Specify and Quote
28	Safety	-	Specify the Special safety provisions
29	Motor load	-	Specify
30	Machine Dimensions (LxWxH)	-	Specify
31	Total connected load	-	Specify
32	Max. Power consumption @ full machine capacity	-	Specify (lower power consumption will be preferred)
33	One Mould to be supplied with machine		Specify and Quote

**9. SEMIAUTOMATIC HORIZONTAL INJECTION MOULDING MACHINE : 30-40 TONS**

<b>Injection Unit</b>			
1	Shot Capacity (in GPPS)	g	Min. 35 and above
2	SCREW DIAMETER	mm	20-30
3	SCREW L/D RATIO	-	18:1 - 21:1
4	INJECTION PRESSURE	bar	Min.1600
5	INJECTION Speed	mm/sec	Specify
6	INJECTION RATE	cc/sec	Min. 20
7	PLASTICIZING RATE (GPPS)	gm/sec	Specify (higher will be preferred)
8	Max. SCREW SPEED	rpm	Min. 170
9	Heating Capacity	kw	Specify
10	Bi-metallic Screw Barrel	-	(Optional) Specify and Quote
<b>Clamping Unit</b>			

11	CLAMP FORCE	ton	30-40
12	Mould Opening Stroke	mm	Min. 180
13	MAXIMUM DAYLIGHT	mm	Min.350
14	MINIMUM MOULD HEIGHT	mm	Specify
15	Maximum Mould Height	mm	Min. 155 and above
16	PLATEN SIZE	mm	Specify
17	DISTANCE BETWEEN TIE ROD	mm	Min. 210 x 210 above
18	EJECTOR STROKE	mm	Min. 13
19	EJECTOR FORCE	ton	Min. 4
20	MOULD WEIGHT CAPACITY	kg	Specify
21	Clamping Mechanism	-	Specify

<b>General</b>			
22	Control System	-	Specify and Quote
23	T Slot Platen	-	Specify and Quote (T Slot is Preferred)
24	Water inlet & outlet manifold for Mould cooling	-	Min. 4/4 Channel
25	Hopper Capacity	Kg	Specify and Quote for suitable capacity
26	Essential/Standard spares	-	Specify and Quote (Standard Tool Kit, NRV, Thermocouple, Band Heater, Short/Extended Nozzle, SSR, Proximity Switch, Limit Switch, Mould Clamps, T-Nut and Studs, Etc.,)
27	MTC (Oil Type)	-	Specify and Quote
28	Safety	-	Specify the Special safety provisions
29	Motor load	-	Specify
30	Machine Dimensions (LxWxH)	-	Specify
31	Total connected load	-	Specify
32	Max. Power consumption @ full machine capacity	-	Specify (lower power consumption will be preferred)
33	One Mould to be supplied with machine	-	Specify and Quote

### 10. PIPE EXTRUSION UNIT WITH JOCKEY EXTRUDER FOR LINE MARKING

S. NO.	Descriptions	Units	Specification
1	Polymer to be processed	-	LDPE / HDPE / PP
2	<b>Screw Diameter</b>	mm	30 – 45mm
3	L/D Ratio		Please specify
4	Output	Kg / hr	Please specify
5	Pipe / Tube Outside Dimensions	mm	16 - 110 mm dia Pipe
6	Calibration / Sizing/Cooling tank Vacuum Operated with Suitable Stainless Steel Cooling Tank with arrangement of Re-circulating Water for cooling.	-	Please specify
7	Haul off unit (Suitable Haul off Unit with PLC control)		Please specify
8	Cutter - Synchronized cutter to be incorporated for both flexible and rigid pipe/tube.	-	Please specify
9	Die Size - 16 mm & 90 mm	mm	Please quote
10	Total Connected Load	Kw	Please Specify
11	Control System	-	Microprocessor/ PLC Controls/ Computer Integrated Control
12	Safety	-	Appropriate safety features to be provided
13	Standard spares	--	Please specify and quote



## 11. RPVC PIPE EXTRUDER (TWIN SCREW WITH POST EXTRUSION EQUIPMENT)

Sr. No	Description	Units	Specification
1	Output per hour	kg/Hr	100 to 120 kg/Hr
2	Pipe Outside Dimension	mm	20-110 mm dia Pipe
3	L/D Ratio	-	18:1
4	Motor Capacity	HP	25 HP
5	Screw RPM	RPM	0-60 RPM
6	Material To be Process	-	PVC
7	Calibration / Sizing/Cooling tank Vacuum Operated with Suitable Stainless Steel Cooling Tank with arrangement of Re-circulating Water for cooling.		Please Specify and Quote
8	Haul off unit- (Suitable Haul off Unit with PLC control)		Please Specify and Quote
9	Cutter - Synchronized cutter to be incorporated for rigid pipe.		Please Specify and Quote
10	Die Size	mm	20 mm & 110 mm
11	Others	•	<ul style="list-style-type: none"> <li>• Superior Quality of product.</li> <li>• Higher output at lower power consumption.</li> </ul>

## 12. SINGLE LAYER EXTRUSION BLOWN FILM UNIT WITH CORONA TREATER

S.No.	Descriptions	Units	Specification
<b>Model :</b>			
1	Screw Diameter	mm	30 – 40
2	Screw Speed	RPM	Please specify
3	Screw L/D Ratio	-	Please specify
4	Extruder Output	Kg/hr	20-35
5	Film Thickness	Micron	Please specify
6	Material to be processed		HM/HDPE/LLDPE/UHMHDPE
7	LFW	mm	Please specify
8	Control System	-	Microprocessor
9	Plant should have either rotating/Oscillating Die/Oscillating nip	-	Please quote
10	Melt temperature sensor & Melt Pressure transducers	-	Please specify and quote
11	Separate Die for HMHDPE & LLDPE	-	Please quote
12	Total connected load	KW	Please quote
13	Corona Treater	-	Please quote
14	Safety	-	Appropriate safety features to be provided
15	Machine dimensions	mtr	Please specify
16	Essential Spares	-	Please Specify & Quote

### 13.MULTILAYER EXTRUSION BLOWN FILM UNIT

S.No.	Descriptions	Units	Specification
1	Extruder -Three layer	3 nos.	Multipurpose single screw
2	Screw Diameter	mm	25 – 35
3	Screw Speed	RPM	specify and quote
4	Screw L/D Ratio	-	specify
5	Extruder Output	Kg/hr	Min. 30 and above
6	Main Motor	HP	Specify and quote
7	Drive Type	-	Specify and quote
8	Film Thickness	Micron	20-150
9	Line Speed	Mtrs/Min	Specify and quote
10	Material	-	All Thermoplastic materials
11	Heating system	-	PID Temperature controller system in all Zones including die
12	Heaters capacity	kw	Specify and quote
13	Lay Flat Width	mm	250 -1000
14	Control System- Microprocessor type	-	specify and quote
15	Plant should have either rotating/Oscillating Die/Oscillating nip, Melt temperature sensor & Melt Pressure transducers, Synchronised Winder control, cooling air ring, irish ring withgusseting device and slitting with dual winder.	-	specify and quote
16	Nip Roller Closing mechanism	-	specify and quote
17	Suitable Die sets to be provided	-	specify and quote
18	Corona Treater	-	specify and quote
19	Power Consumption	KW	Specify
20	Safety	-	Appropriate safety features to be provided
21	Essential Spares	-	Specify & Quote

#### 14.HIGH SPEED MIXER

S.No.	Descriptions	Units	Specification
1	Mixing capacity	Kg	35-50
2	Drive (Dual Speed)		Please Specify & Quote
3	Mixing Time	Min	8-12
4	Rotar speed	Rpm	Please Specify & Quote
5	Vessel/ Container		Made out of double walled with water cooling facility, inner wall, rotor blade and wiper should be made out of SS, Hot and Cold Mixture Suitable for PVC
6	Power Supply		Please Specify & Quote
7	Safety		Appropriate safety features to be provided
8	Drive control Pannel with Temp,Torque,& Timer with Hooter		Please Specify & Quote
9	Temperature indicator/timer		Please Specify & Quote
10	Essential Spares		Please Specify & Quote

#### 15. SEMI-AUTOMATIC BLOW MOLDING MACHINE-1/2 LITRE

S. No.	Descriptions	Units	Specification
1	Container Capacity		Upto 500 ml
2	Screw Diameter		25 - 40 mm
3	Screw Speed	RPM	Please specify
4	Mould Opening Stroke	mm	Please specify
5	Min. Mould Thickness	mm	Please specify
6	Connected load	KW	Please specify
7	Parison control System	Points	Please specify and quote
8	Hot knife/ wire cutter		Please specify & quote
9	Clamping force	Ton	Please specify
10	Single station with Single Head		Please specify & quote
11	M/C Dimension (LXWXH)	mtr.	Please specify
12	Moulds to be supplied for 200 ml, 500 ml along with machine	Each one no.	Please specify & quote
13	De-flashing system	-	Please specify & quote for Auto deflashing
14	Control System	-	Microprocessor/ PLC /PID Controller - Please specify and quote
15	Safety	-	Appropriate safety features to be provided
16	Essential spares	-	Please specify & quote

**16. MICROPROCESSOR CONTROLLED SINGLE LAYER DOUBLE STATION EXTRUSION  
BLOW MOULDING WITH PARISON PROGRAMMING, Capacity - 1 LITRE**

<b>S. No.</b>	<b>Descriptions</b>	<b>Units</b>	<b>Specification</b>
1	Container Capacity	ml	500 - 1000
2	Die Diameter	mm	20-80
3	Screw Diameter	mm	40-50
4	Screw L/D	--	20:1 - 22: 1
5	Output (Plasticizing Capacity)	Kg/Hr.	0-75
6	Mould Height	mm	Min. 200 and above
7	Mould Width	mm	Min. 180 and above
8	Mould Thickness	mm	170 and above
9	Mould opening Stroke	mm	150 and above
10	Clamping Force (Desirable)	Ton	Specify and quote
11	Extruder Drive Motor	KW(HP)	Specify and quote for power efficient
12	Servo Hydraulic Motor	KW(HP)	Specify and quote for power efficient
13	Heating Load	KW(HP)	Specify and quote for power efficient
14	Total Connected load	KW(HP)	Specify and quote for power efficient
15	Parison control System	Points	Kindly quote for multipoint parison control system for Minimum 100 point
16	Hot knife/ wire cutter		specify & quote
17	Double Station with Single Head		specify & quote
18	Moulds to be supplied for 1000ml & 500 ml along with machine	Each one	specify & quote
19	Control System	-	Microprocessor/Computer Integrated control
20	Angular Blowing Attachment		specify & quote
21	De-flashing system	-	specify & quote
22	Safety	-	Appropriate safety features to be provided
23	Machine Dimension (LxWxH)	mtr.	specify & quote
24	Essential spares	-	specify & quote
25	<b>Optional Spares</b>		
a.	Water Inlet/Outlet Manifold for mould cooling		specify & quote
b.	Bottom Bowing System		specify & quote
c.	Double Head Attachment and Double station		specify & quote

### 17. AIR COMPRESSOR

S.No	Descriptions	Units	Specification
1	Working Pressure	Bar	30-35
2	Capacity	Ltr	Min. 500 & above
3	Mounting Type	-	Please specify
4	Connected load	KW	Please specify
5	Machine Dimensions (LxWxH)	-	Please specify
6	Moisture Separator	-	Please specify & Quote
7	Other requirement	-	Automatic cut off system after pressure builtup and automatic ON when pressure loss
8	Safety	-	Appropriate safety features to be provided like Alarm, pressure relief value, etc.

### 18. ROTATIONAL MOULDING MACHINE- 100-300 litre

S.No.	Descriptions	Units	Specification
1	Type of machine	-	Single station bi-axial with suitable type arm capacity of mounting molds of 100-300 Litres.
2	Oven Chamber	-	SS Construction with adequate insulation and an inspection window. Top loading system with ladder for multilayer tanks.
3	No. of station	No.	Single
4	Burner	-	LPG Burner with safety features system
5	Re-circulating Blower	-	Made of stainless steel
6	Arms	-	Heavy duty arm to take up a mould of 100-300 litre. (biaxial rotation)
7	Machine Dimension	mm x mm	Please Specify & quote
8	<b>Additional Features :</b>		
i)	Mould	-	Please Quote two suitable mould(Cube & Water tank)
ii)	Laser gun for surface temperature measurement (range ambient to 250°C)	-	Please Quote
9	Safety	-	Appropriate safety features to be provided
10	Essential Spares	-	Please Specify & Quote
11	Multilayer attachment/ accessories		Please specify and Quote

## 19. PULVERISER

S. No.	Description	Units	Specification
Model :			
1	Pulveriser type	-	Disc Mill
2	Disc diameter	mm	Please specify
3	Raw Material Used	-	LLDPE
4	Output	kg/Hr	60 - 80
5	Particle size	US Mesh	35 - 45
6	Vibro siever	-	Please specify
7	Air lock valve	-	Please specify
8	Blower Motor	HP	Please specify
9	Water Cooling at		Starter ,Rotar ,Main Shaft
10	Main Mill motor	HP	Please specify
11	Connected load	KW	Please specify
12	Machine Dimensions	-	Please specify
13	Control Panel	-	PLC control
14	Safety		Appropriate safety features to be provided, Alarm etc

**20. ALL ELECTRIC MICROPROCESSOR CONTROLLED AUTOMATIC INJECTION MOULDING  
MACHINE 180-200T**

<b>Sl. No</b>	<b>Descriptions</b>	<b>Unit</b>	<b>Specification</b>
	<b>Injection Unit</b>		
1	Shot Capacity (in GPPS)	g	Min. 200 and above
2	SCREW DIAMETER	mm	40-55
3	SCREW L/D RATIO	-	20:1 to 22:1
4	INJECTION PRESSURE	bar	Min. 1600
5	INJECTION Speed	mm/sec	Min. 250
6	INJECTION RATE	cc/sec	Min. 250
7	PLASTICIZING RATE (GPPS)	gm/sec	Min. 30
8	Max. SCREW SPEED	rpm	Specify
9	Bi-metallic Screw Barrel	-	(Optional) Specify and Quote
10	Heating Capacity	kw	Specify
	<b>Clamping Unit</b>		
11	CLAMP FORCE	ton	180-200
12	Mould Opening Stroke	mm	Specify
13	MAXIMUM DAYLIGHT	mm	(1000 and above) Specify
14	MINIMUM MOULD HEIGHT	mm	max.200
15	Maximum Mould Height	mm	Min. 550 and above
16	PLATEN SIZE	mm	min. 750 x 750 and above
17	DISTANCE BETWEEN TIE ROD	mm	Min. 500 X 500 and above
18	EJECTOR STROKE	mm	Minimum 100 (Multi point and Multi Stage) Specify
19	EJECTOR FORCE	ton	Specify
20	MOULD WEIGHT CAPACITY	kg	Specify
21	Hydraulic Multiple core pulling unit	-	specify and quote (Minimum 2 core pulling)
22	Multi stage Air Ejection	-	Specify and Quote (Minimum 5 point)
	<b>General</b>		
23	T Slot Platen	-	Specify and Quote (T Slot is Preferred)
24	Latest Square Platen	-	Specify and Quote
25	Latest Technology Injection unit on LM guides	-	Specify and Quote
26	Robot Interface	-	Specify and Quote
27	Hot Runner Interface	-	Specify and Quote (Minimum 4 Zones)
28	Interface for Gas Assisted Injection	-	Specify and Quote
29	Water inlet & outlet manifold for Mould cooling	-	Min. 10/10 Channel
30	Computer connectivity	-	Specify
31	Hopper loader cum drier	-	Specify and Quote for suitable capacity
32	Essential/Standard spares	-	Specify and Quote (Standard Tool Kit, NRV, Thermocouple, Band Heater, Short/Extended Nozzle, SSR, Proximity Switch, Limit Switch, Mould Clamps, T-Nut and Studs, Etc.,)

33	MTC (Oil Type)	-	Specify and Quote
34	Safety	-	Specify the Special safety provisions
35	Machine Dimensions(LxWxH)	m	Please specify and Quote
36	Total connected load	-	Specify
37	Max. Power consumption @ full machine capacity		Specify (lower power consumption will be preferred)

## 21. MICROPROCESSOR CONTROLLED AUTOMATIC INJECTION MOULDING M/C 250-300T

S.No	Descriptions	Units	Specification
1	Clamping Tonnage	Tons	250-300 T
2	Screw Diameter	mm	45-70
3	Maximum Daylight	mm	1200 and above
4	L/D Ratio	-	Please Specify
5	Opening Stroke	mm	500 and above
6	Distance Between Tie Bar	mm x mm	590x 590 and above
7	Platen Size	mm x mm	750X750
8	Shot Capacity Minimum	Gms	Min 750 and above
9	Injection Pressure	bar	1873 and above Multi- Stage
10	Injection Rate	Cc / sec	345 and above
11	Pump Drive	KW	12
12	Hydraulic Multiple core pulling unit	-	Please specify and quote
13	Multi stage Air Ejection - Upto 5 Stage	-	Please specify and quote
14	Hot Runner Interface	-	Please specify and quote
15	Hydraulic Multiple core pulling attachment	-	Please specify and quote
16	Water inlet/ out let manifold for Mould cooling	-	Please specify and quote
17	Bimetallic screw barrel	-	Please specify and quote
18	Computer connectivity	-	Please specify and quote
19	Spares like NRV set, Hopper etc.	-	Please specify and quote



## 22. EXTRUDER RECYCLING MACHINE

S.No	Descriptions	Units	Specification
1	Screw Dia	mm	70 - 80
2	L/D Ratio	--	Please specify and quote
3	Materials	--	Most of the thermoplastics
4	Output	Kg/hr	70-100
5	Temp.	°C	Upto 400
6	Feeding system	--	Suitable Main & Side Feeding systems
7	Downstream equipment's		Please specify and quote
8	Strand die		Specify number of strands
9	Stainless Steel Cooling Trough		Please specify and quote
10	Strand Pelletizer (Synchronized cutter to be Incorporated for Strand.)		Please specify and quote
11	Standard Accessories		Please specify and quote
12	Mixing elements & others		Please specify and quote
13	Spares		Please specify and quote
14	Control- Microprocessor type		Microprocessor With display of Screw Torque & die Head Melt Pressure Please specify and quote

## 23. AUTOMATIC THERMOFORMING MACHINE

S.No	Descriptions	Units	Specification
1	Forming Area (Min.)	mm	550 x 300 & above
2	Forming Depth / Draw	mm	Please specify and quote
3	Max. Sheet Width	mm	Please specify and quote
4	Sheet Thickness (Min. -Max.)	mm	Please specify and quote
5	Top heating	kW	Please specify and quote
6	Bottom heating	kW	Please specify and quote
7	Material to be formed	-	PS/ PP/ PE /PET/PVC etc.
8	Plug assisted attachment	-	Please specify and quote
9	Vacuum Forming / Pressure Forming.	-	Please specify and quote
10	Sheet roll feeding/ Disposal after forming system Attachment	-	Please specify and quote
11	Safety	-	Appropriate safety features to be provided
12	Other Features	-	Please specify and quote
13	Essential Spares	-	Please Specify & Quote
14	Demonstration Multi cavity mould for products like cup, tray, etc.	-	Please specify and quote
15	Connected load	KW	Please specify and quote
16	Compressor		Please Specify and quote

## 24. HYDRAULIC COMPRESSION MOULDING MACHINE 30-40 TONS

S.No	Descriptions	Units	Specification
1	Capacity/Capability	Ton	30 -40 Tons, For processing Thermoset Plastics like PF, UF, MF,SMC/DMC etc.,
2	Platen size	mm	Min. 300 x 300
3	Day Light	mm	Min. 400
4	Heating system for platen and mould		Please Specify & Quote
5	Maximum Working Temperature	° C	upto 350
6	Working Pressure	bar	Please Specify & Quote
7	Control System		Microprocessor/PLC Controls/Computer Integrated control
8	Demo mould	--	Please specify and quote for one mould for a typical product with Ejection System
9	Safety	-	Appropriate safety features to be provided
10	Essential Spares	--	Please Specify & Quote
11	Machine dimensions (LxWxH)	mtr	Please Specify & Quote
12	Total Connected load	KW	Please specify

## 25. SCREEN PRINTING MACHINE

S. No.	Descriptions	Units	Specification
1	Print Area	mm	Min 200mm X 300 mm
2	Screen Frame Size	mm x mm	Min. 500 mm x 500 mm
3	Max off-Contact	mm	10
4	Max substrate Thickness	mm	5 ~ 7 mm (Depends on mesh tension)
5	Screen Frame Thickness	inch	1.0" ~ 1.5"
6	Power Consumption	-	Please specify and quote
7	Essential spares		Please specify and quote

## 26. FILM CUTTING AND SEALING MACHINE

S. No.	Descriptions	Units	Specification
1	Sealing length	-	15" - 20"
2	Seal width	mm	300 & above
3	Heating Element		Upper and lower Jaw heating element
4	Press operation		Manual Foot Pedal
5	Safety	-	Appropriate safety features to be provided
6	Other features	--	Suitable Timer & buzzer to be incorporated
7	Essential Spares	-	Please Specify & Quote
8	Machine dimensions (LxWxH)	mtr	Please specify

## 27. ULTRASONIC WELDING MACHINE

S.NO.	Descriptions	UNITS	SPECIFICATION
1	Type		Table Model
2	Ultrasonic Output	W/KHz	Please specify
3	Material to be welded	-	All Thermoplastics
4	Welding Surface	mm	50 – 100
5	Control System	-	Microprocessor
6	Generator Data	W	Please Specify
7	Convertor Data	KHz	Please Specify
8	Safety	-	Appropriate safety features to be provided
9	<b>Other Features:</b>		
	Suitable die set for welding of toys, gift articles, etc.,	-	Please specify and quote
10	Essential Spares	-	Please Specify & Quote
11	Machine dimensions	-	Please Specify

## 28. HOT PLATE WELDING EQUIPMENT

S. No.	Descriptions	Units	Specification
1	Type	--	Portable
2	Material		HDPE, PP, etc.
3	Working temperature	°C	180 to 300°C
4	Time to reach welding temperature	-	10 min.
5	Jigs & fixtures for holding pipes etc.	-	Please specify and quote
6	Safety	-	Appropriate safety features to be provided
7	spares	-	Please specify and quote
8	Machine dimensions	-	Please Specify

## 29. AGGLOMERATOR

S. No.	Descriptions	Units	Specification
1	Drum Diameter	mm	Please specify
2	Drum material		SS material
3	Capacity	Kg	60-100
4	Stationary blades	no.	Please specify
5	Rotating blades	no.	Please specify
6	Standard accessories		
7	Pneumatic operated Lid		Please specify and quote
8	Water cooled bearing bed		Please specify and quote
9	Nitrided blades		Please specify and quote
10	Main motor	kw	Please specify
11	Machine dimensions	-	Please Specify

### 30. HOPPER DRIER WITH AUTOMATIC LOADER UNIT

S. No.	Descriptions	Units	Specification
1	Drying Bin Volume	Ltr	75-120
2	Air Volume	m3/hr	80-120
3	Temperature range	°C	60-150
4	Standard accessories	-	Please specify and quote
5	· Accurate digital readout of process temperature against set point $\pm 1^{\circ}\text{C}$		
6	Connected load	KW	Please specify and quote
7	Dimensions	-	Please specify and quote
8	Control	-	Microprocessor control
<b>Loader Specification</b>			
9	Storage volume	Ltr	Please specify and quote
10	Connected load	KW	Please specify and quote
11	Material Throughput	kg/hr	Please specify and quote
12	Safety	-	Appropriate safety features to be provided, Alarm etc
13	Standard accessories	-	Please specify and quote

### 31. CAST FILM EXTRUDER

S. No.	Description	Units	Specification
1	Extruder	1 nos	Multipurpose single screw
2	Screw Diameter	mm	25 – 40
3	Screw Speed	rpm	Please specify
4	Screw L/D Ratio	-	Please specify
5	Extruder Output (LDPE)	Kg/hr	10 -20 (lowest preferred)
6	Die type	-	Flat coat hannger die
7	Die adjustable lip opening	mm	0.3 to 2.0 mm
8	Minimum Film Thickness LDPE	Microns	10
9	Max Sheet Thickness	mm	1.5
10	Max. film/Sheet width	mm	300
11	Max. Roll widths	mm	350
12	Main Chill Roll Diameter	mm	Please specify
13	Polishing & Lower Chill Diameter	mm	Please specify
14	Temp. range for The Water tempering Unit	Deg C	Please specify
15	Roll Stack & Nip Rolls Speed range	m/min	Please specify
16	Winder Speed	rpm	Max. 130
17	Machine suitable for Raw material	-	All Thermoplastic materials
18	Heating system	-	PID Temperature controller system in all Zones including die
19	Control System	-	Microprocessor type
20	Melt temperature sensor & Melt Pressure transducers, Synchronised Winder control,	-	Please specify and quote
21	Suitable Die set	-	Please quote
22	Safety	-	Appropriate safety features to be provided
23	Essential Spares	-	Please Specify & Quote
24	Machine Dimensions	-	Please specify

### 32. PET PREFORM STRETCH BLOW MOLDING MACHINE

S. No.	Description	Units	Specification
1	Production Per Hour	Nos. (Two cavity)	1000-1200
2	Blowing Capacity	ML	1000
3	Bottle Specification	mm	Max. Dia.80-85 mm/Height 280mm
4	Mold Opening Distance	mm	100
5	Compressed Air Required	---	70cfm,30bar,17.5Kw(25 HP)
6	Chilled Water Required	---	100C
7	Heating Power	KW	Please specify

### 33. PAD PRINTING MACHINE

S. No.	Description	Units	Specification
1	Cliche Size	mm	210X100X10
2	Printing Image Max.	mm	Ø85
3	Print Capacity Max.	Stroke/Hr.	400
4	Height Of Object Max.	Mm	90
5	Tampon Stock Max.	Mm	75
6	Force Of Pressure Max.	N	829
7	Control	--	Electro-Pneumatic
8	Control Voltage	V	24
9	Electric Supply	Hz	220 V,50
10	Pneumatic Connection	Bar	Working Pressure 5-6
11	Air Consumption	---	1.43m <sup>3</sup> /Hr.
12	Dimension(LXHXW)	Mm	850x1600x1000
13	Weight	Kg	250

### 34. ELECTRO HYDRAULIC TRAINING KIT WITH PROGRAMMABLE LOGIC CONTROL (PLC) INTERFACE

Sl. No	Equipment Name and details	Quantity
The Training Kit system should consist the following Elements;		
01	<b>Manifold (Pressure &amp; Tank )</b>	Each 1 No.
02	4/2 Way leaver operated Spring return valve	1No.
03	4/3 Way Double Solenoid operated valve	1 No.
04	4/3 Way lever operated detent type valve	1 No
05	4/3 Way lever operated Spring return valve	1 No
06	Sequence valve (Working Pressure: Approx 40 bar)	1No.
07	Bi Direction flow control valve	1 No.
08	Hydraulic Double acting cylinder <ul style="list-style-type: none"> <li>• Double acting cylinder : 40mm x 150 mm stroke</li> <li>• Double acting cylinder : 40mm x 300 mm stroke</li> </ul>	Each 1 No.
09	Bi directional Hydraulic motor	1 No.
10	Pressure switch	1 No
11	Hydraulic Tee	2 No.
12	Pressure gauge Size: 2.5" Maximum pressure: Approx 40 bar	1 No.
13	Set of Hoses Flexible hoses - 1/4" ID with Quick release sockets on both ends <ul style="list-style-type: none"> <li>• Hose Length 1000mm, Qty – 8 Nos.</li> <li>• Hose Length 1500mm, Qty -2 Nos.</li> </ul>	2 sets
14	Unidirectional flow control valve	1 No.
15	<b>Hydraulic power pack (Approx. 50 bar)</b> Cast Aluminium Tank 20Ltr. Gear Pump 5.1LPM with ball valve Electric motor 1 HP 1440 RPM 230VAC, Oil Breather Oil level indicator, suction filter / Strainer, Relief valve.	1 No.
16	Flow meter	1 No.
17	Proximity switch (Inductive, Capacitive, Optical)	Each1 No.
18	Single acting cylinder (40mm x 150 mm stroke)	1 No.
19	Bi- direction flow control valve	1 No.
20	PLC	Yes
21	Electric limit switch	1 No.
22	I/O Card	1 No.
23	Relay Card	1 No.
24	Timer box	1 No.
25	<b>Other Requirements</b> <ul style="list-style-type: none"> <li>• Using actual new industrial standard valves and components</li> <li>• All components should be mounted on the frame.</li> <li>• All device should run Smooth and silent operation</li> <li>• Working medium: Oil</li> <li>• Warranty: Minimum 1 Year</li> <li>• Symbolic charts &amp; experimental circuit diagrams to be provided</li> <li>• Operating Manuals to be provided</li> </ul>	

**35. ELCTRO PNEUMATIC TRAINER KIT PROGRAMMABLE LOGIC CONTROL  
(PLC) INTERFCE**

<b>Sl. No.</b>	<b>Equipment Name and details</b>	<b>Quantity</b>
The Training Kit system should consist the following Elements;		
01	Filter Regulator Combination with Lubricator (FRL Unit) with pressure gauge <ul style="list-style-type: none"> <li>Flow rate – Approx. 400-500 ltr./min</li> <li>Maximum supply pressure – 10 bar</li> <li>Minimum operating flow – 12 ltr./min</li> </ul>	1 No.
02	Pressure manifold distributor block <ul style="list-style-type: none"> <li>Make: Aluminium</li> <li>Pressure manifold with minimum 6 nos. of self sealing fittings</li> </ul>	1Set
03	3/2 way Push Button actuated NC direction control valve	1 No.
04	3/2 Way solenoid / Pilot operated valve	Each 1 No
05	Pressure Relief valve	1 No.
06	One way flow control adjustable valve	1 No.
07	Pressure gauge <ul style="list-style-type: none"> <li>Material – SS with wetted brass parts Connection</li> </ul>	1No.
08	5/2 way valve with selector switches <ul style="list-style-type: none"> <li>Design – Spool type</li> </ul>	1 No.
09	5/2 way double solenoid valve <ul style="list-style-type: none"> <li>Design – Spool type</li> <li>Arrangement to make quick electrical connection and dis-connection on the valve itself</li> </ul>	1 No.
10	Uni directional Flow control valve <ul style="list-style-type: none"> <li>Material –Aluminium with anodized finish</li> </ul>	1 No.
11	Shuttle Valve (OR valve) <ul style="list-style-type: none"> <li>Material – Aluminium with anodized finish</li> </ul>	1 No
12	AND valve <ul style="list-style-type: none"> <li>Material – Aluminium with anodized finish</li> </ul>	1 No.
13	Throttle valve	1 No.
14	Flow meter <ul style="list-style-type: none"> <li>Range - Up to 500 ltr./min approx.</li> </ul>	1 No.
15	Double acting cylinder <ul style="list-style-type: none"> <li>Material – Aluminium</li> <li>Stroke – 100 mm approx.</li> <li>Type – Tie rod cylinder</li> </ul>	2 No.
16	Single acting cylinder <ul style="list-style-type: none"> <li>Material – Aluminium</li> <li>Stroke – 200 mm approx.</li> </ul>	1 No.
17	Tee piece with fittings Union T fitting & Union Y fitting: – Each 1 no. Size – Suitable for tubes with 4 dia Outer Diameter Material – Plastic body	2 Sets
18	Pneumatic Counterbalance valve With adjustable load	1 No.
19	Electrical Limit Switch Qty.	1 No.
20	Proximity switch	3 No.
21	Power Supply Unit – Electrical <ul style="list-style-type: none"> <li>Input: 230 V, 50 Hz</li> <li>Output: 24 V DC, 5 A</li> <li>Two tapings for output power, one On-Off Switch and an Indicator.</li> <li>ABS Enclosure</li> </ul>	1 No.

22	Relay Unit <ul style="list-style-type: none"> <li>• The device has three relays with terminals and two buses for power supply.</li> <li>• Contact set 4 change – over switches</li> <li>• ABS Enclosure</li> </ul>	-
23	PLC	Yes
24	Tubing	Pls. specify
25	Other Requirements <ul style="list-style-type: none"> <li>• Using actual new industrial standard valves and components</li> <li>• All components will be mounted on the frame.</li> <li>• Working medium: Compressed Air</li> <li>• Warranty: Minimum 1 Year</li> <li>• Symbolic charts &amp; experimental circuit diagrams to be provided</li> <li>• Operating Manuals to be provided</li> </ul>	-



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