

SPECIFICATIONS

“ Design, Fabrication, Supply, Installation & Commissioning of (Surface-mount technology) SMT Line” including ESD flooring, Pneumatic line, Screw compressor, Aluminium Partition, AC System, storage Solutions etc and other miscellaneous items/solutions (On Turnkey Basis)

Qty. – 01 Set

A) Scope of SMT Line:

Setup of new complete of SMT line machine set up for assembly of SMD components on Printed Circuit Boards (PCB) as per the details provided on Turnkey Basis.

The SMT Line shall be capable of assembling the following SMD components on the PCB.

The lists of package types are for guidance purpose only and actual may vary:

SMD Components used for Assembly of:**Table 1.0**

1. BOM of Sugamya Cane- for SMD components									
1	Resistor (SMD)	Package	0805(2012 metric)	1206(3216 metric)	MMB 0207	1210 (5025 metric)			Total Quantity
		Quantity	17	1	1	1			
2	Capacitor (SMD)	Package	0805(2012 metric)	1206(3216 metric) Tantalum Capacitor					
		Quantity	11	4					
3	LED (SMD)	Package	0805(2012 metric)						
		Quantity	4						
4	IC	Package	SOT-23-3	SOT-23-5	TQFP-32Pin	SOP-8	SOT-23-6	SOIC-8	
		Quantity	2	1	1	1	2	1	
5	Diode (SMD)	Package	SOD-123-2	DO-214AC					
		Quantity	2	2					
6	Connector /Switch	Package	USB(SMD) (105164-0001)	Tactile Switch (DTSM-32S-B)					
		Qty	1	1					
TOTAL									53

Table 2.0

2. BTE		
SMD Component	Qty	Type
IC	1	QFN32
IC	1	VSSOP 8 (US8)
IC	1	VSSOP 10(MSOP10)
IC	1	SC70-5
IC	1	SOT23-6
IC	01	SON 6
Resistor/capacitor	02	0201
Resistor/capacitor	14	0402

Resistor/capacitor	01	0603
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Table 3.0

<u>Other Package Requirements</u> (Considering available package in Market)
Package Type
QFN- All types
SOIC- All types
SOP- All types
SON- All Types
BGA- All Types
LGA- All Types
SIP - All Types
QFP- All Types
SOT- All Types
DO- All Types
SOD- All Types
SOJ- All Types
QFJ- All Types
TCP- All Types
CSP- All Types
0102, 0201,0402, 0603,1812,2512

The Bidder shall be able to prove out the assembly line as per details given below:

PCB ASSEMBLY SCOPE			
S.No	Description	Saugmaya Cane	Behind the Ear BTE
1	Total No. of components per PCB	58	30
2	No. of PCB to be produced per Year	1 Lakh	5 Lakh
3	Maximum PCB size (L x B)	78 x 22	20 x 7
4	Working hours/day	8 Hours/Shift	8 Hours/Shift
5	Min Package of component used	0805/ minimum size	0201
6	Max Package of component used	1210, MMB 02027	0603
7	PCB type	Double Sided	Double Sided
8	PCB material	FR4	FR4
9	PCB thickness	1.6 mm	0.4
10	IC SMT Package (Whether it is in reel of Stick)	Reel, Tray, Strip	Reel, Tray, Strip
11	IC lead pitch	0.5 mm ,1.27mm	0.5mm
12	Micro Controller Package	TQFP	QFN
13	Micro Controller Size	9.25 mm x 9.25 mm	5 mm x 5 mm
14	Minimum lead pitch of Micro controller	0.5 mm	0.5 mm

B) The Broad layout of SMT Line is as below. (Bidder to submit their layout with Bid)

Space available for the SMT line – 20 x 15 Mtr² approx.

Bidder is required to submit the detailed layout of machines proposed by them for establishment the complete SMT line.

The List of proposed M&C for SMT Line is as follows:

C) For SMT Section

1.) FULLY AUTOMATIC SCREEN PRINTER BRAND NEW QTY- 01 (Set)		
1	Printer Type	Fully Automatic SMT Stencil Printer with 2D Vision System
2	Squeegee Type – METAL (SS)	Double Squeegee Head
3	Cycle Time (Including Printing and cleaning)	≤15 Sec
4	PCB Size (i) Minimum (ii) Maximum	50 mm x 50 mm 510 mm X 460 mm
5	Stencil Size	736 mm x 736 mm (29" x 29")
6	Clamp Unit	Edge Clamp Unit (Automatic setting type)
7	Print Accuracy	±25 micron @ 3 sigma or better
8	Repeatability	±15 micron @ 3 sigma or better
9	Printing Inspection	2D Solder Paste Vision Inspection
10	Printing Surface Height	Automatic Adjustment of Printing Surface Height
11	Under Stencil Cleaning	Automatic Under stencil cleaning system
12	Auto Conveyor Width Adjustment	Auto Conveyor Width Adjustment at least between 50 mm to 460 mm
13	Print Position Alignment	Graphic Layer Based Alignment Feature/Optical based
14	Power	230 VAC, 1-Ph, 50Hz Power Supply
15	Weight of Machine (Minimum)	1000kg
16	Control Methods & Interface	PC (Window compatible PC with installed original Window 10 or latest operating system) Control , Automatic integration and synchronization with entire SMT line, PLC control / SMEMA compatible.
17	Desktop Computer (i) i7 or Latest (ii) Minimum 1Tb SSD hard disk (iii) Minimum 16GB RAM (iv) Minimum 64-bit operating System with Minimum 8 Cores (v) Monitor Size- Minimum 21.5 Inch (Vi) Resolution- FHD (1920 x 1080) Display (Vii) Operating System – Original Window 10 or latest operating system (Viii) UPS- One, rating at least 1 KVA, Make- APC	Desktop Computer with Monitor Screen Should be Self Assembled by Dell, HP, Acer, Asus with compatible OS window 10 or latest.
18	Anti-vibration PAD/Mechanism	Yes
19	Additional Accessories	(i) Double metallic Squeegee-2 Set (ii) Cleaning paper role system- 2 Set

2.) AUTOMATIC PCB MAGAZINE LOADER		QTY- 01
1	PLC control / SMEMA compatible	
2	LED TFT touch Screen Control Panel (Size- 9 Inch Minimum)	
3	Transfer Height 900mm +/- 20mm	
4	Magazine Size - 450 X 400 X 550mm - to 535mm x 530mm x 570mm	
5	PCB Size (i) Minimum - 50mm x 50mm (ii) Maximum - 510 mm x 460mm (Shall be adjustable types)	
6	Step Pitch: Four Step pitch selection (1-4) (10, 20, 30, 40 mm)	
7	Transmission Direction from Left to Right	
8	Magazine Loading Capacity - 02 nos.	
9	Power Supply: 230 VAC±10% , 1-Ph, 50Hz	

3.) PICK AND PLACE MACHINE		QTY-01
Sr. No.	Parameters	Machine Specification
1	Equipment	A brand new fully automatic, software control, modular SMT line. The system shall have a versatile machine using modular concept. The machine shall be user friendly & capable of handling the latest SMT components being used in electronic industries. Refer table 1.0 to 3.0
2	Placement Rated Speed in CPH	30,000 CPH (Rated), IPC-20,000 CPH (minimum).
3	Digital Multi Scan Camera	4MP Camera (Minimum)
4	PCB Soft Stopper	Shall have provision for PCB soft stop
5	PCB Warpage Handling	Closed loop with placement program for auto adjustment of vertical height component placement head (Z-axis)
6	PCB Warpage Detection Technology	By Laser/Optical
7	Fiducial Camera (Resolution)	Colour Fiducial Camera required of 2MP (minimum)
8	Applicable PCB	Min PCB size (L x W): 50 x 50 mm or less, Max PCB size (L x W): L 510 x W 460 mm or more, PCB Thickness: At least between 0.4 to 5mm PCB Material: glass epoxy, metal core & others.
9	Multi Conveyor System (3 Stage- Input and Output Buffer & Standard Placement Stage)	Utilizing a laser sensor/optical sensor to measure the board length, providing optimum board handling at least between 50mm x 50mm to 510mm (L) X 460mm (W)
10	Board positioning	Shall be - Board grip unit, front reference, auto conveyor width adjustment
11	Component Placement range (Minimum & Maximum)	Smallest size: (0.2mm x 0.1mm-0201 metric code) Maximum Component Size: 120 mm x 90 mm <ul style="list-style-type: none"> All size of chip component like, crystal LED, array resistor, SOD, SOT, SOIC, PLCC, LCC, QFP, VQFN, QFN, BGA, LGA, µBGA, CSP, COB, POP etc. Support for components packaged in tapes, sticks, reels and trays. Refer table 1.0 ,2.0 and 3.0
12	Component Placement Height (Component Height + Board Thickness)	At least up to 25mm
13	Board Transfer Speed (Variable)	At Least 900mm/sec or better

14	Placement Head Type (Head shall be capable to placement all the components in given components package table 1.0, Table 2.0, Table 3.0 & Sl. No.11.)	<ul style="list-style-type: none"> Head with multiple nozzle and able to match speed as mentioned in Sl. No.2. It shall be capable to handle all type of components types as mentioned in table 1.0, Table 2.0, Table 3.0 & Sl. No.11. Automatic selection and exchange of Nozzles. Placement heads and nozzles covering entire components. Must be placement Force Control Head with closed loop feedback
15	PCB Positioning correction methods (Mechanism)	Shall be available in the machine - with Fiducial
16	Components pick up check And position correction	Vacuum & vision check shall be available in the machine for Position correction.
17	Placement accuracy	$\pm 40\mu\text{m}$ or better at $\pm 3\sigma$ (CHIP) & $\pm 30\mu\text{m}$ or better at 3σ (IC)
18	Automatic Nozzle Changer	Nozzle ID automatically and easily recognizable
19	Machine capacity & type of feeder	Machine shall have accommodated 72 (8mm Feeder Space) or higher single intelligent electronic feeders of 8 mm size. Feeders Must be Electronic intelligent.
20	Feeder working	Machine shall be capable to accommodate Multi-Stick Feeder: 4 nos Tray (min) or better and 4 nos tray feeder at a time along with other feeders
21	Feeder requirement	Electronic Intelligent with Multi Pitch feeder: <ul style="list-style-type: none"> i. 8 mm: 45 nos, ii. 12mm: 5 nos, iii. 16mm: 3 nos iv. 24mm: 2 nos, v. 32mm: 1 nos, vi. Multi-Stick Feeder: 4 nos, vii. Tray (min) or better: 4 nos.
22	Feeder Type	<ul style="list-style-type: none"> i. Electronic intelligent type Feeder ii. Tape splicing to be supported
23	Machine programming system	On the machine as well as Offline teaching facility required
24	Program software capability	CAD Conversion and ASCII data conversion required
25	Power Supply	3 Phase, 415 V AC $\pm 10\%$, 50 Hz $\pm 1\%$
26	Pneumatic Air supply	5-6 Cubic Feet Per Minute (CFM) at 5 - 6Bar
27	Environmental condition	Room Temperature 25 deg. (Range from 10 deg. to 35 deg. Celsius), humidity: 45 to 60%
28	Program data- Import & Export	Program input by LAN cable or USB Pen drive
29	Component recognition	<ul style="list-style-type: none"> By high-speed, high-resolution digital camera 3D Laser/Automatic CCD camera Vision or both Component recognition using 3D laser/Vision system or both On the fly component check or automatic component checking
30	Desktop Computer (i) i7 or Latest (ii) Minimum 1Tb SSD hard disk (iii) Minimum 16GB RAM (iv) Minimum 64-bit operating System with Minimum 8 Cores (v) Monitor Size- Minimum	Desktop Computer with Monitor Screen Should be Self Assembled by Dell, HP, Acer, Asus with compatible OS window 10 or latest.

	<p>21.5 Inch (Vi) Resolution- FHD (1920 x 1080) Display</p> <p>(Vii) Operating System – Original Window 10 or latest operating system</p> <p>(viii) UPS- One, rating at least 1 KVA, Make- APC</p>	
31	Standard Functions	Component pick up error automatic recovery function, Pick up location teaching function, Pick up priority function, Programming sorting function, Pick up & placement UP/DOWN axis control function, Pick up position (X/Y) correction control function, Placement coordination teaching function Application for BGA/CSP, Pattern program optimization software
32	Machine signal light	Multi colors signal light tower
33	Safety compliance with alarm	Compliance with CE standards compulsory required
34	Hard Disk Drive-Machine (Program Safety Point of View)	At least 500 GB x 2 Units (RAIDI Mirroring Protection) and shall be capable of storing minimum 50 Program at a time.
35	Machine Memory capacity (Capacity to store no. of program)	<ul style="list-style-type: none"> • Number of steps for programming: Maximum 10,000 steps • Number of programs registered: Maximum 5000 programs • Component library : 10,000 items • items Image library : 4,000 items • items Feeder library : 200 items • items Supply library : 200 items • items Pallet library : 500 items • items Tray library : 500 items • items Nozzle library: 200 items
36	Control Methods and interface	PC control, Automatic Integration and synchronization with entire SMT line, PLC control/SMEMA Compatible
37	Anti Vibration Pad/Mechanism	Yes
38	Weight (Minimum)	1000kg (Approx)
39	Dimension	2000x1850x1500 (Approx)

4.) REFLOW OVEN		QTY -01
1	Number of heating zones	10 Zone (10 Top & 10 Bottom Heating Zones)
2	Number of Cooling zones	2 Nos Air Cooled (Min)
3	Length of heating zones (Minimum)	Heating Tunnel length of 3800 mm or more
4	Convection Heating Zone	Hot Air Convection Heating Type
5	Temperature setting range	At least between 30°C to 300 °C
6	Accuracy of Temperature control Heating Zone	Within +/-1°C
7	Tower Light	<ul style="list-style-type: none"> i. Yellow: warning ii. green: OK iii. Red: Abnormal

8	Capability to accommodate PCB width (At least between)	(i) Minimum - 50 mm x 50 mm (ii) Maximum - 510 mm X 460 mm
9	Rails width adjustment	Electrical Adjustment
10	Component clearance	i. Clearance Above Pins 30mm ii. Clearance Below Pins 25mm
11	Fixed front Rail side	Shall be provided
12	PCB transmission mode	Chain + mesh
13	Conveyer speed range (at least between)	300mm-1800 mm/min
14	Cooling method	Forced air
15	Chain lubrication	Automatic with Solenoid Valve
16	Desktop Computer (i) i7 or Latest (ii) Minimum 1Tb SSD hard disk (iii) Minimum 16GB RAM (iv) Minimum 64-bit operating System with Minimum 8 Cores (v) Monitor Size- Minimum 21.5 Inch (vi) Resolution- FHD (1920 x 1080) Display (vii) Operating System – Original Window 10 or latest (viii) UPS- One, rating at least 1 KVA, Make- APC	Desktop Computer with Monitor Screen Should be Self Assembled by Dell, HP, Acer, Asus with compatible OS window 10 or latest.
17	Profiling Software	Standard Inbuilt Profiler as Standard on machine.
18	UPS	Only for Conveyer and Control System
19	PCB counter	Shall be provided
20	Conveyor Direction	Left to Right
21	SMEMA INTERFACE	Shall be provided of latest version
22	Centre Support for PCBs	Shall be provided
23	Edge Pin Length	5-6 mm
24	Hood Cover open/close	Electrically driven
25	Power Supply , Normal power consumption	3 Phase, 415 V AC+/- 10%, 50 Hz±1%, Steady State Power Consumption around 10 to 15 KW (Max)
26	Control Methods and interface	PC control, Automatic Integration and synchronization with entire SMT line, PLC control/SMEMA Compatible
27	Abnormal Alarm	Shall be provided
28	Anti Vibration Pad/Mechanism	Yes
29	Temperature Measurement	Thermocouple
30	Conveyor Height (Transport level)	900±30mm
31	Weight (Minimum)	2500kg
32	Dimension (Minimum)	6000 to 6500 mm (L) 1350 to 1700mm (W) 1200 to 1600mm (H)

5.) AUTOMATIC PCB MAGAZINE UNLOADER		QTY – 01
1	PLC control / SMEMA compatible	
2	LED TFT touch Screen Control Panel (Size- 9 Inch Minimum)	
3	Transfer Height (Working level): 900mm +/- 20mm	
4	Magazine Size-450X400X550mm - , Shall be adjustable type	
5	PCB Size : Minimum- 50mm x 50mm Minimum 510 mm x 460mm	
6	Step Pitch: Four Step pitch selection (1-4) (10, 20, 30, 40 mm)	
7	Transmission Direction from Left to Right	
8	Magazine Loading Capacity - 02 nos.	

6.) LINKING CONVEYOR 0.5Mtr		QTY – 04
1	Transport Height	900mm+/- 20mm
2	Transfer Direction	Left to right
3	Operation Side	Front of the machine
4	Fixed Rail	Front of the machine
5	Interface	SMEMA
6	Conveyer concept	ESD Flat belt
7	Belt Speed	0.5- 9 m/min adjustable
8	PCB edge support	3mm
9	Components clearance	bottom 30mm
10	Control	Motor Control Drive
11	Power supply	230 VAC±10%, 1-Ph, 50Hz Power Supply
12	Load bearing (Minimum)	1.5Kg / PCB

7.) NOZZLE CLEANING		QTY – 01
1	Cleaning Quantity	All nozzle at a time
2	Mounter Type (Selectable)	Yamaha/Juki/Fuji/ ASMPT & equivalent.
3	Nozzle Specifications	Various Size Of nozzles
4	Working	One-button access
5	Operation Panel	7” Touch Screen (Optional)
6	Various Size of Nozzles	01005 ~ 2125
7	Water Level & Air Pressure	Alarm
8	Cleaning Solution	DI Water Required
9	Operating Voltage	Ac 110V-250V 50-60Hz
10	Working Pressure	0.5-0.6 MPA
11	Air Supply	Compressed clean dry air
12	Air Consumption	250NL/Min

8.) INSPECTION CONVEYOR 1 Mtr		QTY – 02
1	PCB size at least between 510mm length x 460mm Width	
2	SMEMA Compatible	
3	7mm Flat belt conveyer	
4	Speed control of 0.5-9M/Min.	
5	With Electronic Control Box	
6	Platform Material – ESD Rubber Material /Aluminum Alloy	
7	Power Supply : 230V ± 10% ACV , 1 Phase, 50Hz	

9.) MANUAL OPTICAL INSPECTION		QTY – 01
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1	FEATURES-ZOOM. AUTO-FOCUS. PICTURE CAPTURE- DESIGNED TO BE INSTALLED DIRECTLY ON SMT LINE'S 0.5MTR LINK /1 M INSPECTION CONVEYORS	
2	MAGNIFICATION	0 -22X (STD 22X - 130X DIGITAL)
3	VGA O/P	1920 X 1080 (60FPS) — 50/60HZ
4	RESOLUTION	2.1 MEGA PIXEL (I080P FULL HD O/P) (Minimum)
5	FOV FULL ZOOM OUT	200mm X 100mm to 300mm X 120mm
6	FOV FULL ZOOM IN	25MM X 15MM
7	INSPECTION HEIGHT	120 — 250 MM
8	WORK AREA	400MM X 350MM
9	WHITE BALANCE	AUTO
10	INSPECTION LOCATION	LASER POINTER SHOWS EXACT LOCATION
11	INPUT POWER	230VAC, 50HZ

10.) SOLDER PASTE MIXER		QTY – 01
1	Mixing Method	Sun-Planetary motion of bowls
2	Timer	Electronic timer settable from 0.1 Minute to 30 Minute
3	Paste Jar Sizes	Universal Adapter can take 500gm Jars, maximum 2 qty
4	Balancing	By two solder jars at both ends or dummy weight at one end
5	Dummy Weight	500-550gm
6	Safety features	Door Micro Switch
7	POWER	AC220V±10%, 50Hz

11.) SMT STENCIL CLEANER		QTY – 01
1	Full Pneumatic Logical Control	
2	4 Layer Filtration	
3	Solution Reusable	
4	Stainless Steel Materials	
5	Maximum stencil size- 750×750×40mm	
6	Liquid Cleaner - 30 L	
7	Tank capacity – 30 L Minimum	
8	Best liquid volume usage-22 ~ 35 L	
9	Cleaning method-360° rotating liquid spray cleaning and compressed air drying	
10	Cleaning time-3 ~ 10 mins (solder paste)	
11	Drying time-3 ~ 10 mins	
12	External air source-0.45 ~ 0.7 (Mpa)	
13	Air consumption-400-600 L/Min	

12.) DRY CABINET (160L)		QTY – 01
1	IC/ PCB	Moisture proof
2	Humidity Control Range	20%-60%
3	Size (approx)	450mm*450mm*1010mm or Suitable
4	Humidity range is selected according to products	Controllable
5	Capacity (Minimum)	160 L

13.) STENCIL STORAGE RACK		QTY – 01
1	Covered	3 Side
2	No of Partitions	2
3	Stencil Size (max)	23" X 23" & 29" X 29"
4	Capacity of stencil storage (Minimum)	20 Nos

14.) SMD COMPONENTS STORAGE RACK		QTY – 03
1	No of Drawers	24
2	Material	ESD SAFE

15.) SMD CHIP COUNTER		QTY – 02
1	Material Belt Gap (Pitch Size)	4,8,10,12,16,24,32,44,56 MM
2	Material Belt Width	8,12,16,24,32,44,56 MM
3	Power Source-	AC-260 V, 50Hz

16.) FEEDER TROLLEY		QTY – 02
1	Description	40PCS each
2	Layers	2

17) PCB STORAGE TROLLEY		QTY – 02
1	Vertical Position (Minimum)	03 Nos
2	Quantity	Shall store 300 PCB
3	Wheels	4 Wheels ESD safe

Note:- All necessary equipments/conveyors/connections between above machines shall be supplied by bidders as a part of turnkey project to make the SMT Line fully functional. No extra equipment shall be provided by ALIMCO and same shall be proved out.

c) Utility

1) ESD FLOORING		
1	Thickness	1.5 mm
2	No. of Layers	2 - 3 Layers
3	Material	ESD Safe

2) MAGAZINE RACKS (SMT. DEPT)		QTY – 10
1	ESD rating	104—106Ω、Max Temp (130°C)
2	Dimension	460×400×563 mm, 50 slot Max
3	PCB Size	460×(50—330) mm
4	Top & Bottom	Steel panel
5	Width adjustment	Screw lock

3) PCB CUTTER		QTY - 05
1	Hand-held PCB Cutter	To cut the Multiple Panel PCB

4) ESD Safe SMD COMPONENTS TROLLEY		QTY – 01
1	Wheel Type	ESD safe
2	No of Layers	5
3	Surface Finish	SS
4	Size	450 * 1200 * 1800mm
5	Wheels	4 Wheels

5) SOLDER PASTE LEAD FREE Suitable for SMT Machine (In amount of 0.5 KG) 0.3% SILVER:		QTY – 20kg
1	Grade	Sn99Ag0.3Cu0.7

2	Type	Lead Free
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6) FLUX (LTRS.) Suitable for SMT Machine		QTY – 15 L
1	Type	No Clean Flux
2	Temperature	100-120°C

7) SOLDER WIRE - LEAD FREE (In Role of 0.5Kg)		QTY – 50
1	Metal Alloy	Sn99.3/Cu0.7
2	Type	Lead Free
3	Size	18/20/22 Gauge

8) HOT AIR Rework SOLDERING STATION (Weller, Hakko, JBC)		QTY – 02 sets
1	Power	600-700W
2	Temperature Range	100°C~500°C
3	Pump	Fan type pump
4	Air flow	100-120L/min
5	Suitable Components Package	Refer table 1.0 ,2.0 and 3.0

9) ESD APRON		QTY – 50
1	Material	98% Polyester & 2% Conductive Fiber
2	Feature	ESD safe
3	Surface Resistance	9 [^] 6 - 11 [^] 6 Ohms

10) ESD CAP		QTY – 50
1	Material	98% Polyester & 2% Conductive Fiber
2	Feature	ESD safe
3	Surface Resistance	10 [^] 6 Ohms

11) WRIST BAND		QTY – 50
1	Material	PVC ESD Safe
2	Feature	ESD Safe Anti Static Wrist Band

12) ESD SLIPPER		QTY – 50 Sets
1	Material	Rubber ESD safe
2	Feature	ESD

13) SHOE COVER DISPENSOR WITH 100 SHOE-COVERS		QTY - 01
1	Material	Aluminum Alloy
2	Clamp Type	O Type
3	Capacity	100 Nos Shoe Cover at a Time

14) SPLICING TAPE for all given size of package of components		QTY : 20 Sets
1	Type of Product	Splice Tape (to join SMD components during production)
2	Size	8,12,16,24,32,44MM

15) UTILITY		
1.	EARTHING PIT	8
2.	AIR COMPRESSOR (70CFM) ,20HP at 6-8 bar, Screw type with Compatible refrigerated air dryer of suitable capacity along with aluminum piping. (i) Storage Tank Capacity- At least 500 L (ii) Make- Ingersoll Rand, Atlas Copco, ELGI.	1
3.	PNEUMATIC LINE WITH PNEUMATIC ACCESSORIES (FRL)- FILTER/REGULATOR/LUBRICATOR	1
4.	UPS 20KVA (THREE PHASE)	1
5.	ELECTRICAL PANEL AND ELECTRICAL BOX (FUSE HOLDER/ CHANGER)	1
6.	VOLTAGE STABILIZER (75KVA)	1
7.	WIRING/CABLE TRAY/MCB/ETC. (i) Make- L & T, Havells, Schneider.	1
8.	FUME EXTRACTOR SYSTEM WITH FILTERS AND DUCTING FOR WAVE REFLOW OVEN	1

Delivery Period:

The delivery period including installation & commissioning and training of Surface mount technology (SMT) Line at the destination mentioned in **Para 1 on page no. 02** of the tender documents will be 3 months from the date of placement of Purchase Order/work contract.

WARRANTY:

The entire plant inclusive of all system/ accessories should be covered under comprehensive warranty for a period of 24 months from the date of commissioning & complete set up running/functioning of machines including preventive maintenance.

Note

1. Machine should be supply with all accessories including all the tools and manual including Installation, Commissioning & Training will be provided to our staff for free of cost at our center.
2. Vendor should undertake that they will execute comprehensive AMC including spares and labour for the period of 03 years after the expiry of warranty/defect liability period as per the requirement of ALIMCO and the AMC shall not exceed 2%,3% & 4% of basic value of the machine/plant during 3rd, 4th& 5th year respectively from the date of successful installation & commissioning of the machine/plant/item/equipment”.
3. Voltage stabilizer for the machine to be provided by the vendor
4. Vendor to provide suitable online UPS (20 KVA) for power backup.
5. Suitable capacity Screw type air compressor with refrigerated dryer along with piping to be provided by bidder.
6. Machine foundation details and drawings with specifications to be provided by the tenderer. Vendor to arrange machine foundation work, if required, for the installation of items/ equipments/ system/ machine/ plant.
7. ESD flooring for the proposed location (15m x20m) is in bidder’s scope. Enclosure along with false ceiling, Aluminium partition, Paneling, glass work, Air conditioning system.
8. Sufficient suitable cable, cable tray, Circuit breaker, panel, fittings to connect the machine from power source is in Vendor’s scope. If system/machine/plant requires separate electrical panel that will be in vendor’s scope.
9. Suitable ducting with fume extractor with filter to be provided by the vendor.
10. Ultrasonic Stencil Cleaner to be provided by the vendor.
11. Vendor to ensure operation and maintenance training for 15 days, at ALIMCO premises.
12. Dedicated Earthing pit for each machine shall be in vendor’s scope.
13. Integration of all the machines will be in vendors scope.

14. Automatic Integration and synchronization with entire SMT line, PLC control/SMEMA Compatible
15. Consumables of Entire machines systems during the warranty period of 24 months shall be in the Vendor Scope.
16. The loading/unloading of machine & other components of supply and their handling at destination site is in the scope of vendor.
17. Breakdown calls to be attended within 72 hrs. Physically or within 48 hrs. Through tele-diagnostic.
18. Total power consumption (in kW) to be provided by the tenderer.
19. Bidders to furnish the latest Safety Standards Compliance of all relevant safety norms & regulation of Govt. of India of the system shall be in vendor scope.
20. 3D view of plant and as built drawing in CAD format of the plant/system to be submitted by vendor at the time of QAP.
21. 3D model and 2D manufacturing drawing of associated fixtures, special manufacture tools shall be provided by the vendor.
22. Vendor shall take full responsibility for the adequate stability and safety of all site operations and installation & commissioning as per the latest safety manuals published by Indian Standards Institution Statutory rules regulations and provisions of order conditions etc. and in case of default, Vendor shall solely be responsible and indemnify the corporation for any loss or damage caused to the ALIMCO for any violation of concerned laws.
23. Three (03) set of operation & Maintenance manuals in hard copy & soft copy along with the electrical drawing to be provided by the bidder with supply.

S.No	Description Make	Preferred Make
1	PLC	Allen Bradley / Mitsubishi / Siemens
2	PLC IO	Allen Bradley / Mitsubishi / Siemens
3	EtherNet Adaptor	Allen Bradley / Mitsubishi / Siemens
4	HMI	Allen Bradley / Mitsubishi / Siemens
5	SMPS	Allen Bradley / Mitsubishi / Siemens
6	VFD	Allen Bradley / Mitsubishi / Siemens
7	Choke	Allen Bradley / Mitsubishi / Siemens
8	Transformer	Amruta / VA
9	MCB/MPCB	Siemens/Schneider with NO & NC contact
10	Contactora	Siemens/Schneider with NO & NC contact
11	Panel	Rittal/ Bartakke
12	Panel AC	Advance cooling /Rittal
13	Indicator/PB/SS	Schneider/Tecknic
14	Single Phase preventer	Minilec / Equivalent
15	Safety replay (For Emergency) with two port	AB / Siemens
16	Limit switch	Schneider/Omron with indication/ Teknic
17	Proximity/Inductive sensor	IFM/Omron/ P&F
18	Relay Board / Relay	Omron / Phonix Solid state relay/ Connectwell Slim Relay
19	EtherNet Switch	Allen Bradley / Siemens
20	Geared Motor	SEW / Nord/ Bonfiglioli
21	Panel terminals	Wago - Push type (without screw type) / Connectwell
22	Panel Fan	Rexnord
23	DBR	Allen Bradley / Siemens
24	Panel Hooter / Tower Lamp	PATLITE / Target
25	Bearings	FAG/SKF/New Ball Bearing/ Precision Bearing
26	Plummer Block	SKF / NTN/ FYH
27	Pneumatic Cylinder / Pipe/ Fittings /NRV / Air Controller / FRL / Booster /	SMC/Festo/Norgren
28	Drag Chain	Igus
29	UPS	APC / ATRIS

30	Caster wheels	Pioneer / Rexello
31	Gear box	SEW/Bonfiglioli/Premium
32	LED Digital display	LG / SAMSUNG / Panasonic
33	Steel Structure (Angles / Channels / Square Tubes / Rectangular Tubes / Beams)	SAIL/VIZAG/APOLLO/JINDAL/ESSAR / MAHAVIR STEEL/TATA
34	Plates, Sheets and Flats	SAIL/VIZAG/APOLLO/JINDAL/ESSAR / MAHAVIR STEEL/TATA
35	Hardware/Fasteners	TVS/LPS/UNBRAKO
36	Primer & Paint	Asian Paint/Berger/Nerollac
37	Lighting Fixtures	Philips/Crompton/Havel/Bajaj/Panasonic