

SPACER MACHINE

INPUT:-

1. SPACER (N) & SPACER (0.75GM)

- a) OD=36 - 0.2 MM.
- b) HEIGHT= 14.5±0.15 MM.
- c) PAPER DISC SIZE OF BOTTOM DIA 27.5 MM.
- d) PAPER DISC SIZE OF UPPER DIA 31.5 MM.

2. SPACER (E) & SPACER (WP)

- a) OD= 35.56 - 0.25 MM.
- b) HEIGHT=30.48 - 0.25 MM.
- c) PAPER DISC SIZE OF BOTTOM DIA 19.05±0.2 MM.
- d) PAPER DISC SIZE OF UPPER DIA 27.43±0.2 MM.

3. CHEMICAL - 15 (GRANUALS SIZE 1400 MICROS)

4. LDPE WASHER

- a) DIA=28.5 ± 0.1 MM.
- b) DIA=31.0 ± 0.2 MM.

5. PS COLLAR.

- a) THICKNESS=6.5 ± 0.1 MM.
- b) ID=12.5 ± 0.1 MM.
- c) OD=26.7 ± 0.1 MM.

6. ADHESIVE (PREFERABLY FEVICOL SR).

PROCESS:-

1. **SPACER (N):-**

- a) PASTE THE PAPER DISC OF DIA 27.5 MM AT BOTTOM OF SPACER.
- b) FILL CHEMICAL – 15 (GRANULES FORM) 3.5±0.1 GM.
- c) PLACE DISC OF DIA 31.5 MM ON THE TOP OF CHEMICAL – 15 (GRANULES FORM).
- d) PLACE & PUSH FIT LDPE WASHER OF DIA 31.0 ± 0.2 MM OVER PAPER DISC IN THE SPACER.
- e) APPLY ADHESIVE COATING AT THE SURFACE OF LDPE WASHER.

2. **SPACER (0.75 GM):-**

- a) PASTE THE PAPER DISC OF DIA 27.5 MM AT BOTTOM OF SPACER.
- b) PLACE PS COLLAR IN THE SPACER.
- c) FILL CHEMICAL – 15 (GRANULES FORM) R 0.75 GM.
- d) PLACE DISC OF DIA 31.5 MM ON THE TOP OF CHEMICAL – 15 (GRANULES FORM).
- e) PLACE & PUSH FIT LDPE WASHER OF DIA 31.0 ± 0.2 MM OVER PAPER DISC IN THE SPACER.
- f) APPLY ADHESIVE COATING AT THE SURFACE OF LDPE WASHER.

3. **SPACER (E):-**

- a) PASTE THE PAPER DISC OF DIA 19.05 ± 0.2 MM AT BOTTOM OF SPACER.
- b) FILL CHEMICAL – 15 (GRANULES FORM) 3.5±0.1 GM.
- c) PLACE DISC OF DIA 27.43 ± 0.2 MM ON THE TOP OF CHEMICAL – 15 (GRANULES FORM).
- d) PLACE & PUSH FIT LDPE WASHER OF DIA 28.5 ± 0.1 MM OVER PAPER DISC IN THE SPACER.
- e) APPLY ADHESIVE COATING AT THE SURFACE OF LDPE WASHER.

4. **SPACER (WP):-**

- a) PASTE THE PAPER DISC OF DIA 19.05 ± 0.2 MM AT BOTTOM OF SPACER.
- b) FILL CHEMICAL – 15 (GRANULES FORM) 7 ± 0.2 GM.
- c) PLACE DISC OF DIA 27.43 ± 0.2 MM ON THE TOP OF CHEMICAL – 15 (GRANULES FORM).

d) PLACE & PUSH FIT LDPE WASHER OF DIA 28.5 ± 0.1 MM OVER PAPER DISC IN THE SPACER.

e) APPLY ADHESIVE COATING AT THE SURFACE OF LDPE WASHER.

OUTPUT:-

1. SPACER (N)
2. SPACER (E)
3. SPACER (WP)
4. SPACER (0.75 GM)

RATE:- 1000 NOS/HOUR

QUALITATIVE/REQUIREMENTS:-

1)	ALL MOVING PARTS OF MACHINE SHOULD BE CORROSION RESISTANT, FLAME AND SPARK PROOF AND MADE OF ISI / CLASS APPROVED QUALITY MATERIAL.
2)	IN CASE OF MALFUNCTIONING, THE MACHINE SHOULD HAVE AUTOMATIC TRIPPING SYSTEM ALONG WITH AUDIO AND VISUAL INDICATORS
3)	MACHINE SHOULD HAVE EARTHING FACILITY/STATIC DISCHARGE PANEL
4)	ALL ELECTRICAL EQUIPMENT'S/COMPONENTS FITTED IN THE MACHINE SHOULD BE OF REPUTED BRAND AND OF ISO CERTIFIED COMPANY.
5)	MACHINE SHOULD HAVE SEPARATE HUMAN MACHINE INTERFACE (HMI)/CONTROL PANEL FACILITY
6)	MACHINE SHOULD OPERATE PREFERABLE ON PLC CONTROL OF IEC-61131 STANDARD
7)	MACHINE SHOULD WORK PREFERABLY ON PNEUMATIC BASE.
8)	TUBES CONNECTING THE MACHINE TO PNEUMATIC MACHINE SHOULD BE OF REQUISITE DIMENSIONS AND ISI MAKE.
9)	MACHINE SHOULD HAVE AUTOMATIC LOADING AND UNLOADING SYSTEM
10)	MACHINE SHOULD HAVE DIGITAL DISPLAY TO INDICATE FINISHED NO'S OF PRODUCTS.
11)	MACHINE SHOULD HAVE FACILITY OF DETECTION OF OMISSION AND MALFUNCTIONING AT ANY STAGES OF PROCESS AND SHOULD HAVE FACILITY TO SEPARATE THE REJECTED/ DEFECTIVE SPACER
12)	MACHINE SHOULD BE ABLE TO OPERATE WITHIN OPERATING TEMPERATURE $25 \pm 10^{\circ}$ C AND OPERATING HUMIDITY $40 \pm 15\%$.

13)	ALL ELECTRIC WIRING AND ELECTRICAL COMPONENTS SHOULD BE PROPERLY CASED AND FLAME PROOF AND EASILY ACCESSIBLE FOR REPAIR AND MAINTENANCES.
14)	MACHINE SHOULD BE COMPACT TO SAVE SPACE AND EASY TO ACCESS FOR REPAIR AND MAINTENANCES.
15)	BASIC STRUCTURE OF MACHINE SHOULD BE MADE OF ISI / CLASS APPROVED QUALITY METAL, RESISTANT TO CORROSION / RUSTING AND FLAME
16)	USER MANUAL WITH REQUIRED ILLUSTRATIONS TO BE PROVIDED WITH MACHINE.
17)	INSTRUCTION ON REPAIR & MAINTENANCE TO BE PROVIDED WITH MACHINE.
18)	RUNNING SPARE PARTS WITH ILLUSTRATED LIST SHOULD BE PROVIDED WITH MACHINE.
19)	OPERATIONAL TRAINING SHOULD BE ARRANGED FOR 1 WEEKS FOR MINIMUM 15 PERS.
20)	REPAIR AND MAINTENANCE TRAINING SHOULD BE ARRANGED FOR 1 WEEKS FOR MINIMUM 10 PERS.
21)	SPECIFIC GAUGES AND MAINTENANCE TOOLS SHOULD BE PROVIDED WITH MACHINE.
22)	<p><u>GUARANTEE / WARRANTY:-</u></p> <p>x) MACHINE SHOULD HAVE 2 YEARS GUARANTEE / WARRANTY AFTER COMMISSIONING.</p> <p>xi) PREVENTIVE MAINTENANCE ONCE IN 3 MONTH DURING GUARANTEE / WARRANTY PERIOD.</p> <p>xii) GUARANTEE/ WARRANTY WILL BE COMPREHENSIVE i.e INCLUSIVE OF SPARE PARTS.</p>
23)	AMC PERIOD SHOULD BE 05 YEARS AFTER EXPIRY OF GUARANTEE / WARRANTY PERIOD.

SPACER MACHINE

SL NO	QUALITATIVE / REQUIREMENTS	METHODOLOGY	COMPLIED / NOT COMPLIED
1	ALL MOVING PARTS OF MACHINE SHOULD BE CORROSION RESISTANT, FLAME AND SPARK PROOF AND MADE OF ISI / CLASS APPROVED QUALITY MATERIAL.	The firm should submit national / International accredited Lab test report for this aspect	
2	IN CASE OF MALFUNCTIONING, THE MACHINE SHOULD HAVE AUTOMATIC TRIPPING SYSTEM ALONG WITH AUDIO AND VISUAL INDICATORS	The firm should submit national / International accredited Lab test report for this aspect & Physical Verification by BOOs	
3	MACHINE SHOULD HAVE EARTHING FACILITY/STATIC DISCHARGE PANEL.	Physical Verification by BOOs	
4	ALL ELECTRICAL EQUIPMENTS/COMPONENTS FITTED IN THE MACHINE SHOULD BE OF REPUTED BRAND AND OF ISO CERTIFIED COMPANY.	The firm should submit national / International accredited Lab test report for this aspect	
5	MACHINE SHOULD HAVE SEPARATE HUMAN MACHINE INTERFACE (HMI)/CONTROL PANEL FACILITY	Physical Verification by BOOs	
6	MACHINE SHOULD OPERATE PREFERABLY ON PLC CONTROL OF IEC-61131 STANDARD.	The firm should submit national / International accredited Lab test report for this aspect	
7	MACHINE SHOULD WORK PREFERABLY ON PNEUMATIC BASE.	Physical Verification by BOOs	
8	TUBES CONNECTING THE MACHINE TO PNEUMATIC MACHINE SHOULD BE OF REQUISITE DIMENSIONS AND ISI MAKE.	Physical Verification by BOOs	
9	MACHINE SHOULD HAVE AUTOMATIC LOADING AND UNLOADING SYSTEM	Physical Verification by BOOs	
10	MACHINE SHOULD HAVE DIGITAL DISPLAY TO INDICATE FINISHED NOS OF PRODUCTS.	Physical Verification by BOOs	
11	MACHINE SHOULD HAVE FACILITY OF DETECTION OF OMISSION AND MALFUNCTIONING AT ANY STAGES OF PROCESS AND SHOULD HAVE FACILITY TO SEPARATE THE REJECTED/ DEFECTIVE SPACER	Physical Verification by BOOs	

PO

M-1

M-2

M-3

M-4

Co-M-1

Co-M-2

Co-M-3

Co-M-4

12	MACHINE SHOULD BE ABLE TO OPERATE WITHIN OPERATING TEMPERATURE 25 ± 10° C AND OPERATING HUMIDITY 40 ±15%.	Physical Verification by BOOs	
13	ALL ELECTRIC WIRING AND ELECTRICAL COMPONENTS SHOULD BE PROPERLY CASED AND FLAME PROOF AND EASILY ACCESSIBLE FOR REPAIR AND MAINTENANCES.	The firm should submit national / International accredited Lab test report for this aspect & Physical Verification by BOOs	
14	MACHINE SHOULD BE COMPACT TO FIT IN TO SAVE SPACE AND EASY TO ACCESS FOR REPAIR AND MAINTENANCES.	Physical Verification by BOOs	
15	BASIC STRUCTURE OF MACHINE SHOULD BE MADE OF ISI / CLASS APPROVED QUALITY METAL, RESISTANT TO CORROSION / RUSTING AND FLAME	The firm should submit national / International accredited Lab test report for this aspect	
16	USER MANUAL WITH REQUIRED ILLUSTRATIONS TO BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
17	INSTRUCTION ON REPAIR & MAINTENANCE TO BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
18	RUNNING SPARE PARTS WITH ILLUSTRATED LIST SHOULD BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
19	OPERATIONAL TRAINING SHOULD BE ARRANGED FOR 1 WEEKS FOR MINIMUM 15 PERS.	Physical Verification by BOOs	
20	REPAIR AND MAINTENANCE TRAINING SHOULD BE ARRANGED FOR 1 WEEKS FOR MINIMUM 10 PERS.	Physical Verification by BOOs	
21	SPECIFIC GAUGES AND MAINTENANCE TOOLS SHOULD BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
22	GUARANTEE / WARRANTY:- i) MACHINE SHOULD HAVE 2 YEARS GUARANTEE / WARRANTY AFTER COMMISSIONING. ii) PREVENTIVE MAINTENANCE ONCE IN 3 MONTH DURING GUARANTEE / WARRANTY PERIOD. iii) GUARANTEE/ WARRANTY WILL BE COMPREHENSIVE i.e INCLUSIVE OF SPARE PARTS.	Physical Verification by BOOs	
23	AMC PERIOD SHOULD BE 05 YEARS AFTER EXPIRY OF GUARANTEE / WARRANTY PERIOD.	Physical Verification by BOOs	

PO [Signature] M-1 [Signature] M-2 [Signature] M-3 [Signature] M-4 [Signature] Co-M-1 [Signature] Co-M-2 [Signature] Co-M-3 [Signature] Co-M-4 [Signature]