

DIMENSION MEASURING MACHINE FOR ALUMINIUM COMPONENTS**Input**(i) Name of Hardware: **Shell Body 126 mm** (Drg No.TSS-0241 attached)**Dimensions to be measured**

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Height	126.00 + 0.50
02	Outer Dia	38.10 to 38.35
03	Inner Dia	36.60 to 36.80
04	Distance between E/Holes	40.00 ± 0.20
05	Distance from edge to 1 st E/Hole	40.00 ± 0.20
06	Dia.of Emission Hole	4.76 ± 0.20 x 4 Holes

(ii) Name of Hardware: **Shell body for WP Shell** (Drg No.TSU/R&D/04 attached)**Dimensions to be measured**

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Height	172.40 - 0.50
02	Outer dia	38.20 ± 0.10
03	Thickness	1.00 ± 0.05
04	Emission Hole Dia x 04 Nos	4.76 ± 0.20
05	Distance between Emission holes	47.76 ± 0.20
06	Distance from edge to 1 st Emission hole	61.00 ± 0.20
07	Weight	35 ± 5 gms

(iii) Name of Hardware: **Shell body 126 mm (Dummy)**(Drg No.TSS – 0245 attached)**Dimensions to be measured**

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Height	126.00 ± 0.50
02	Outer Dia	38.10 to 38.35
03	Inner Dia	36.60 to 36.80

(iv) Name of Hardware: **Modified Al. Plug** (Drg No.TSS-0236 attached)**Dimensions to be measured**

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Outer Dia	34.30 - 0.20
02	Under cut Outer Dia	33.00 - 0.10
03	Collar OD	36.00 - 0.20
04	Collar Thickness	3.17 ± 0.05
05	Big hole Dia	6.50 + 0.10
06	Small hole Dia	3.00 - 0.10
07	Height	18.50 ± 0.10
08	Weight	40 - 1 gm

PO

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M-2

M-3

M-4

Co-M-1

Co-M-2

Co-M-3

Co-M-4

(v) Name of Hardware: **Al. Plug for Dummy Shell** (Drg No. JSU/R&D 248A attached)

Dimensions to be measured

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Outer Dia	34.30 - 0.20
02	Under Cut OD	33.00 - 0.10
03	Collar OD	36.00 - 0.20
04	Collar thick ness	3.17 ± 0.05
05	Height	18.50 ± 0.10
06	Weight	47 - 1 gm

(vi) Name of Hardware: **Al. Cartridge Case 45 mm with BCC** (Drg No. TSS-0242(CAD) attached)

Dimensions to be measured

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Height	45 ± 0.20
02	OD	38.20 to 38.40
03	ID	36.30 - 0.10
04	Step OD	39.40 ± 0.20
05	Collar OD	43.30 to 43.50
06	Collar thickness	3.15 + 0.10
07	Collar to Step Height	17.00 ± 0.20
08	BCC Big hole Dia	5.08 - 0.03
09	BCC small hole Dia	2.54 ± 0.13

(vii) Name of Hardware: **Al. Cartridge Case Assy for MSL (E)** (Drg No. TSU/R&D/79(CAD) attached)

Dimensions to be measured

S/No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Height	61.75 ± 0.20
02	Outer Dia	38.20 to 38.40
03	Inner Dia	36.30 - 0.10
04	Step OD	39.40 + 0.20
05	Collar OD	43.30 to 43.50
06	Hole Dia	6.10 + 0.10
07	Nylon Disc way ID	25.00 + 0.20
	<u>Al. Disc</u>	
01	Outer Dia	22.80 + 0.10
02	Thickness	2.00 + 0.20
	<u>Nylon Disc</u>	
01	Outer Dia	25.00 + 0.20
02	Inner Dia	22.80 - 0.10
03	Hole Dia	1.50 - 0.10
04	Height	3.30 ± 0.10

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(viii) Name of Hardware: Al. Cartridge Case for WP Shell (Drg No. 181 R&D 01A (CAD) attached)

Dimensions to be measured

S No.	Parameters	Dimensions as per drg. with deviations allowed in mm
01	Height	23 - 0.20
02	Outer Dia	38.20 to 38.40
03	Inner Dia	36.30 - 0.10
04	Step OD	39.40 - 0.20
05	Collar OD	43.30 to 43.50 (43.4 ± 0.10)
06	BCC Big Hole Dia	5.08 - 0.05
07	BCC small hole Dia	2.54 ± 0.13
08	Collar thickness	3.15 - 0.10
09	Collar to Step Height	17.00 - 0.20

Output

Passed - _____ Numbers

Rejected - _____ Numbers


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 ALONGWITH AUDIO AND VISUAL INDICATORS.
3)	MACHINE SHOULD HAVE EARTHING FACILITY/STATIC DISCHARGE PANEL
4)	ALL ELECTRICAL EQUIPMENTS/COMPONENTS FITTED IN THE MACHINE SHOULD BE OF REPUTED BRAND AND OF ISO CERTIFIED COMPANY
5)	SHOULD BE ABLE TO COUNT AND SEGREGATE ACCEPTED & REJECTED QUANTITY OF INSPECTED HARDWARES ENUMERATING SPECIFIC FAULT.
6)	<u>CALIBRATION:-</u> i) MACHINE ERROR SHOULD BE ZERO. ii) CAN MEASURE UPTO 0.001MM iii) CALIBRATION CERTIFICATE IS REQUIRED FROM CLASS APPROVED AUTHORITIES.
7)	DIGITAL READING WITH PROGRAMMABLE MEASUREMENT AS PER DRAWING.
8)	MACHINE SHOULD BE ABLE TO CHECK WHOLE BODY ANODIZING ALSO.
9)	MACHINE SHOULD BE ABLE TO MEASURE ALL THE PARAMETERS OF HARDWARES BASED ON PRE-PROGRAMMED INPUT
10)	MACHINE SHOULD HAVE PROVISION TO ADJUST DIMENSION VALUES AND FIX REVISED DIMENSIONS.
11)	ALL ELECTRIC WIRING AND ELECTRICAL COMPONENTS SHOULD BE PROPERLY CASED AND FLAME PROOF AND EASILY ACCESSIBLE FOR REPAIR AND MAINTENANCES.



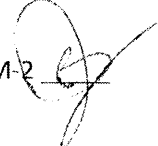


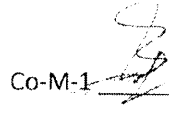
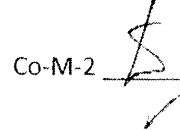
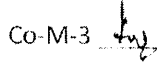

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12)	MACHINE SHOULD BE COMPACT TO SAVE SPACE AND EASY TO ACCESS FOR REPAIR AND MAINTENANCES.
13)	BASIC STRUCTURE OF MACHINE SHOULD BE MADE OF ISI / CLASS APPROVED QUALITY METAL, RESISTANT TO CORROSION / RUSTING AND FLAME
14)	USER MANUAL WITH REQUIRED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



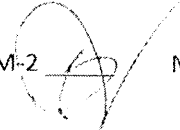





PO  M-1  M-2  M-3  M-4  Co-M-1  Co-M-2  Co-M-3  Co-M-4 

DIMENSION MEASURING MACHINE FOR ALUMINUM COMPONENTS

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 ALONGWITH 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	SHOULD BE ABLE TO COUNT AND SEGREGATE ACCEPTED & REJECTED QUANTITY OF INSPECTED HARDWARES ENUMERATING SPECIFIC FAULT.	Physical Verification by BOOs	
6	CALIBRATION:- i) MACHINE ERROR SHOULD BE ZERO. ii) CAN MEASURE UPTO 0.001MM iii) CALIBRATION CERTIFICATE IS REQUIRED FROM CLASS APPROVED AUTHORITIES.	The firm should submit national / International accredited Lab test report for this aspect	
7	DIGITAL READING WITH PROGRAMMABLE MEASUREMENT AS PER DRAWING.	Physical Verification by BOOs	
8	MACHINE SHOULD BE ABLE TO CHECK WHOLE BODY ANODIZING ALSO.	Physical Verification by BOOs	
9	MACHINE SHOULD BE ABLE TO MEASURE ALL THE PARAMETERS OF HARDWARES BASED ON PRE-PROGRAMMED INPUT	Physical Verification by BOOs	
10	MACHINE SHOULD HAVE PROVISION TO ADJUST DIMENSION VALUES AND FIX REVISED DIMENSIONS.	Physical Verification by BOOs	

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11	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	
12	MACHINE SHOULD BE COMPACT TO FIT IN TO SAVE SPACE AND EASY TO ACCESS FOR REPAIR AND MAINTENANCES.	Physical Verification by BOOs	
13	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.	
14	USER MANUAL WITH REQUIRED ILLUSTRATIONS TO BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
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16	RUNNING SPARE PARTS WITH ILLUSTRATED LIST SHOULD BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
17	OPERATIONAL TRAINING SHOULD BE ARRANGED FOR 1 WEEKS FOR MINIMUM 15 PERS.	Physical Verification by BOOs	
18	REPAIR AND MAINTENANCE TRAINING SHOULD BE ARRANGED FOR 1 WEEKS FOR MINIMUM 10 PERS.	Physical Verification by BOOs	
19	SPECIFIC GAUGES AND MAINTENANCE TOOLS SHOULD BE PROVIDED WITH MACHINE.	Physical Verification by BOOs	
20	<u>GUARANTEE / WARRANTY:-</u> 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	
21	AMC PERIOD SHOULD BE 05 YEARS AFTER EXPIRY OF GUARANTEE / WARRANTY PERIOD.	Physical Verification by BOOs	

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