

**CNC Tube Bending Machine & its Software**  
**(On Turn-key basis)**

Code No. \_\_\_\_\_

Qty. – 01 Set

**PURPOSE:** CNC tube bending machine for bending of MS/Al/SS tubes.

**SPECIFICATIONS:**

SL. NO.	DESCRIPTION OF REQUIREMENT	REQUIRED
1	Scope	
1.1	Maximum tube size (Diameter X thickness)	At-least up-to 29 X 2 (mm) or more; Ferrous and Aluminium tubes
1.2	Minimum tube size (Diameter)	14 mm or less
1.3	Maximum Bend radius	At-least up to 160 mm
1.4	Minimum Bend radius	1.5 x Diameter
1.5	Tube length for bending operation	At-least up-to 3 meter
1.6	Bend angle range	At-least up to 180°
1.7	Direction of bending	Left and Right
1.8	Operations	All Electric
1.9	Working height of tube mandrel	Min. 1000 mm
1.10	Offline programming (Bending, Drawing, Networking and Nesting) software for 3D graphic programming from offline computer with check for part feasibility and machine programme optimization (should be compatible with .Step files, .iges files, .Dxf files etc.)	Vendor to confirm
1.11	Suitable system (laptop) along with post-processor for 3D graphic programming on PC	Confirm
2	Tooling : Tool Set for MS & AL Tubes (including mandrel tie rods, dies and clamp brackets etc.) as per attached drawings for the bending parts	1 set each (Refer attached drawing)
2.1	MS Tube ERW-C1 (1 set)	17.08mm OD X 0.9 mm thk
2.2	MS Tube ERW-C1 (1 set)	19.05mm OD X 1 mm thk
2.3	MS Tube ERW-C1 (1 set)	22.23mm OD X 1.63 mm thk
2.4	MS Tube ERW-C1 (1 set)	25.4mm OD X 1.25 mm thk
2.5	MS Tube ERW-C1 (1 set)	25.4mm OD X 1.63 mm thk
2.6	MS Tube ERW-C1 (1 set)	28.6mm OD X 1.63 mm thk
2.7	ERW Steel tube STKM11A	19.5mm OD X 1 mm thk
2.8	ERW Steel tube STKM11A	25.4mm OD X 1 mm thk
2.9	ERW Steel tube STKM11A	22.2mm OD X 1.4 mm thk
2.10	Aluminium 6063 T6	25.4mm OD X 2 mm thk
2.11	Aluminium 6063 T6	22.2mm OD X 2 mm thk
3	Axis controls (Ref. attached schematic)	
3.1	Carriage movement (X)	Min. 2000 mm
3.2	Bend angle (Y)	Min. 190°
3.3	Plane rotation of the tube (Z)	At-least up to 540°
3.4	Bend head rotation (R)	Min. 300°
3.5	Horizontal bend head movement (Q)	± 475 mm
3.6	Clamping right hand (W <sub>3</sub> )	Min. 165 mm

3.7	Clamping left hand (W <sub>5</sub> )	Min. 165 mm
3.8	Mandrel extraction (U <sub>2</sub> )	Max. 600 mm
3.9	Pressure die right hand (W <sub>4</sub> )	Min. 150 mm
3.10	Pressure die left hand (W <sub>6</sub> )	Min. 150 mm
3.11	Right follower die (U <sub>4</sub> )	Min. 120 mm
3.12	Left follower die (U <sub>5</sub> )	Min. 120 mm
4	Controller	
4.1	Control	Siemens SIMOTION / Fanuc / Equivalent OEM control (vendor to submit equivalency document)
4.2	Processor	Min. Intel core i7 version of processor with min. 4 GB RAM 32 GB solid state drive
4.3	Connection	Min. 2 Ethernet & 2 USB connections
4.4	Panel	Min. 12" colour monitor touch screen operator panel with keyboard
4.5	Digital drives	Siemens / Fanuc / ABB / OMRON
5	Function which enables the automatic generation of bend compensation data including spring back compensation for specific material as per attached drawings	Confirm
6	Machine Speed, accuracy and stroke	
6.1	Maximum tube displacement axis speed (X)	At-least 1400 mm/sec
6.2	Displacement axis speed tolerance	± 0.05 mm
6.3	Maximum bending axis speed (Y)	At-least 300 <sup>0</sup> /sec
6.4	bending axis speed tolerance	± 0.05 <sup>0</sup>
6.5	Maximum tube rotation axis speed (Z)	At-least 400 <sup>0</sup> /sec
6.6	tube rotation axis speed tolerance	± 0.05 <sup>0</sup>
6.7	Maximum head horizontal displacement axis speed (Q)	At-least 800 mm/sec
6.8	head horizontal displacement axis speed tolerance	± 0.1 mm
6.9	Maximum head rotation axis speed (R)	At-least 120 <sup>0</sup> /sec
6.10	head rotation axis speed tolerance	± 0.05 <sup>0</sup>
7	Other features	
7.1	Automatic Tube loading/ Unloading Station	Capacity 1 Ton or more
7.2	Ability to detect seam, hole slot and re-orient the bending line as per requirement	Confirm
7.3	Remote diagnostic capability (Machine should be capable of remotely connecting to OEM server and troubleshooting the problems to that)	Confirm
8	Detail of Necessary Lubrication and safety devices	Vendor to specify and confirm
8.1	Lubrication tank capacity	Min. 6 ltr.
9	Following necessary accessories/spares for successful operation of machine, should be provided by vendor	Confirm
9.1	Proximities & Limit switches	02 Sets
9.2	CNC Panel Board Keys	02 Sets
9.3	Oil seals (all sizes)	03 Set

9.4	O rings	03 set
9.5	Timing belt	03 Set
9.6	Wiper dies	02 Set
9.7	Pressure dies	01 Set
9.8	Fuses	03 Set
9.9	Ferrules	03 set
10	Machine compliance with CE/equivalent norms	Confirm
<b>B</b>	<b>OTHER CONDITION</b>	
11	Electrical System to be designed for	
11.1	3 Phase, 415V ( $\pm$ 10%)	Confirm
11.2	Frequency: 50 Hz ( $\pm$ 3%)	Confirm
11.3	Protection level	IP54 or better
12	Complete electrical system with tropicalization for Indian condition +5°C to +50°C temp and RH 100%	Confirm
13	Service	
13.1	In case of global OEM, the authorized Indian Service Partners must be certified by manufacturer	Confirm
13.2	Contact person name, address with details such as e-mail, contact no. to be provided by the vendor	Vendor to specify
14	Additional features	
14.1	Machine to have capability to handle voltage and current fluctuation	Confirm
14.2	Power backup required for min 15 minutes for CNC control system	Confirm
15	Separate list of consumable.	Vendor to provide list along with cost
16	Supplier shall undertake to supply machine spares/accessories up to minimum 10 years from date of supply as appendix-11	Confirm
17	Vendor to Submit the detail layout of machine	Vendor to submit along with technical details
18	Documentation: Following documents (3 sets of hard copy and 1 set of soft copy) along with delivery will be required	Confirm
18.1	Operating instruction	Confirm
18.2	Installation and Commissioning instructions	Confirm
18.3	Preventive maintenance instructions	Confirm
18.4	Lubrication chart & parameter list	Confirm
18.5	Lifting instruction mentioned in packing list.	Confirm
18.6	Detailed invoice and packing list of all items and all other accessories enclosed in respective boxes	Confirm
19	Training at site	
19.1	Operation and Programming	4 Week
19.2	Preventive maintenance training	1 Week
20	Prove-out:	
20.1	Vendor to perform complete trial run and prove out	Confirm
20.2	Vendor has to prove-out on 5 complete sets at ALIMCO premises after installation and commissioning (Refer attached tender drawings).	Confirm
21	Delivery period including installation and commissioning: within 6 months	Confirm
22	Vendor to deliver machine at "ALIMCO Kanpur site"	Confirm
23	Packaging and Transportation is in scope of vendor	Confirm

24	Installation and Commissioning should be done within 21 days on receipt of machine at site by the vendor. All necessary calibrations shall be done by vendor before handover the machine.	Confirm
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**DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:**

The delivery period including installation & commissioning of the machines at the destination mentioned in Para 1 on page no. 02 of the tender documents will be 06 months from the date of placement of Purchase Order/work contract.

**WARRANTY:**

The machine inclusive of all system/accessories should be covered under warranty for a period of 24 months from the date of commissioning.

**Note:**

1. Machine shall be supplied with 3 sets of comprehensive operation and maintenance manual.
2. Breakdown calls to be attended within 72 hrs. Physically or within 24 hrs. through tele-diagnostic.
3. Civil foundation details and drawings with specifications to be provided by the tenderer. Vendor to arrange any civil foundation work, if required, for the installation of machine.
4. Total power consumption (in kW) to be provided by the tenderer.
5. The Bus-bar trunking (BBT) line for electricity has been provided at 8.5 meter height. Sufficient suitable cable, cable tray, Circuit breaker, fittings to connect the machine from power source is in Vendor's scope.
6. Compressed air pipeline is available in the work center (Air pressure available will be approx. 4.5 to 6 bar), all necessary fittings, air dryer, air booster as per machine requirements, is in vendor scope.
7. ALIMCO will install machine at a temporary location during first installation. After the new facility is ready, the same will be shifted to that. Vendor to quote separate price for dismantling, re-installation and re-commissioning of machine at new facility. The price to be quoted separately in price-bid. The order of same will be release separately at ALIMCO discretion.
8. Vendor to ensure operation and maintenance training for 7 days, at OEM premises. ALIMCO will bear the cost of travelling, lodging and fooding.
9. Vendor to ensure, to supply additional quantity of oil and lubricants for at-least two more fills along with initial fill.

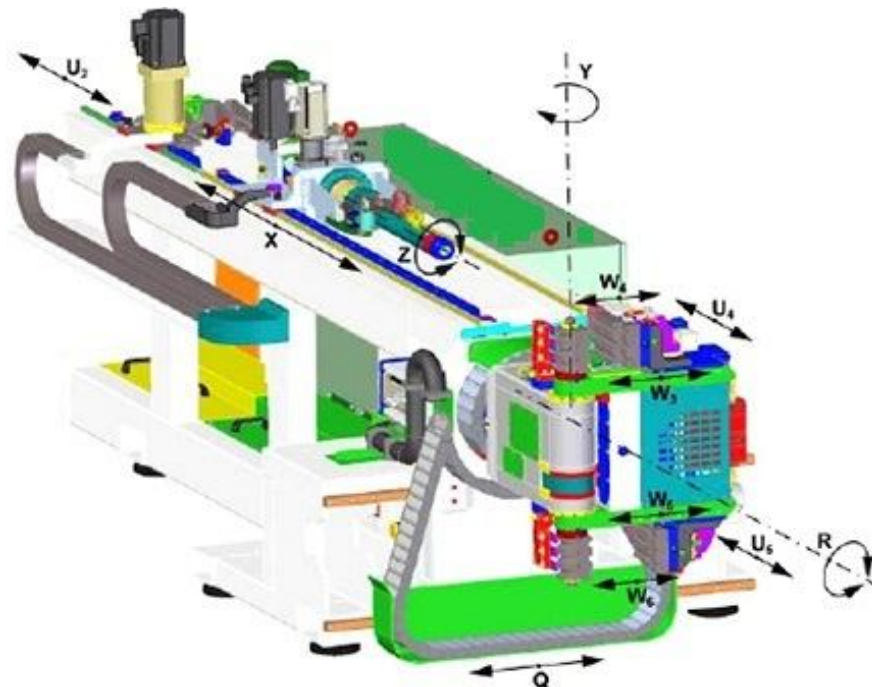
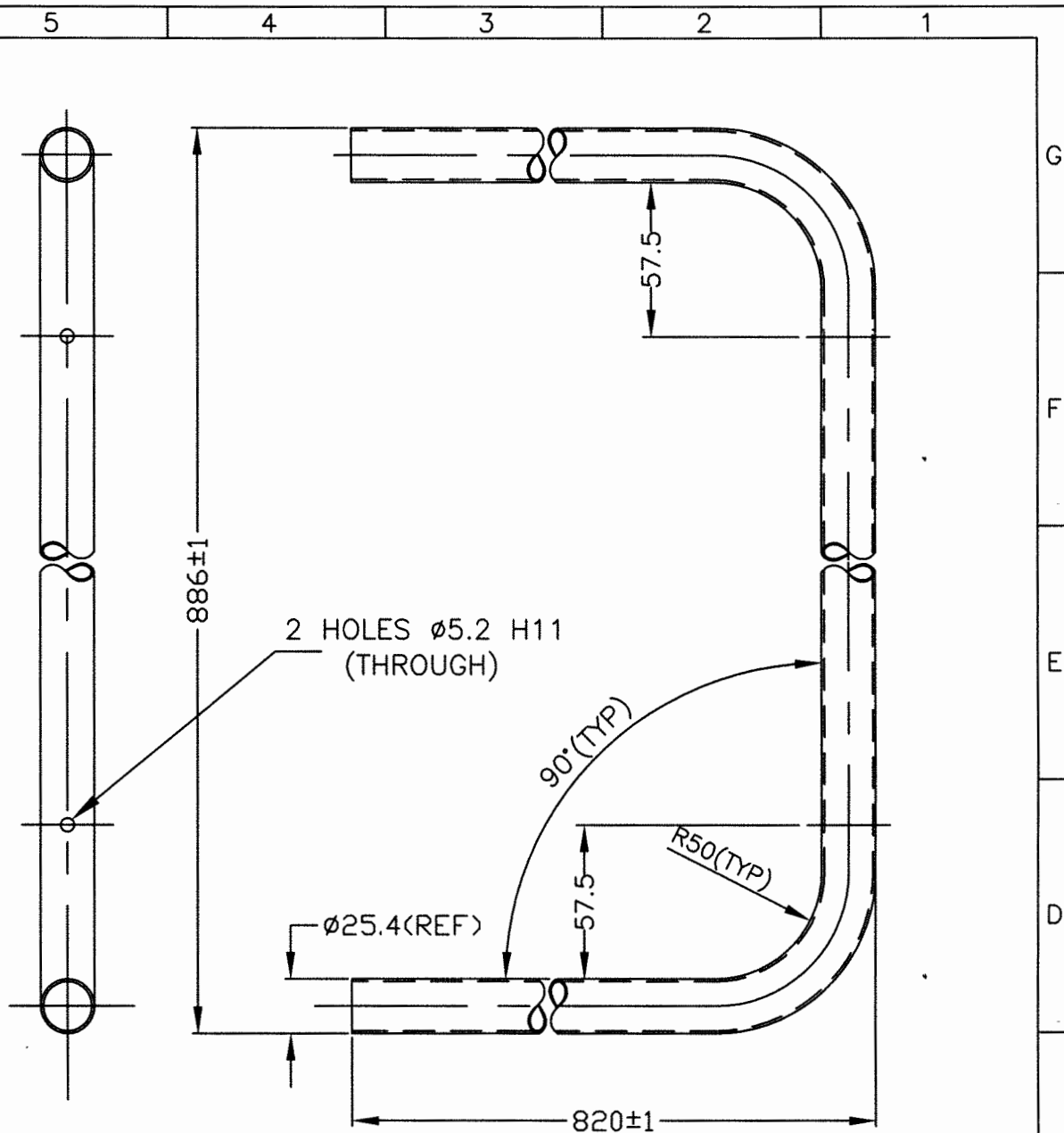


Fig.: Schematic of CNC Tube Bending Machine (for reference)



**NOTE:-**

1. REMOVE SHARP EDGES & CORNERS

4	—	DIMS 57.5 & 2 HOLES Ø5.2H11 ADDED	14.08.15	<i>[Signature]</i>
3	—	DRAWING REDRAWN	2.5.13	<i>[Signature]</i>
SNo.	REGION	REVISION	DATE	SIGN

**REVISIONS**



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OF INDIA  
KANPUR

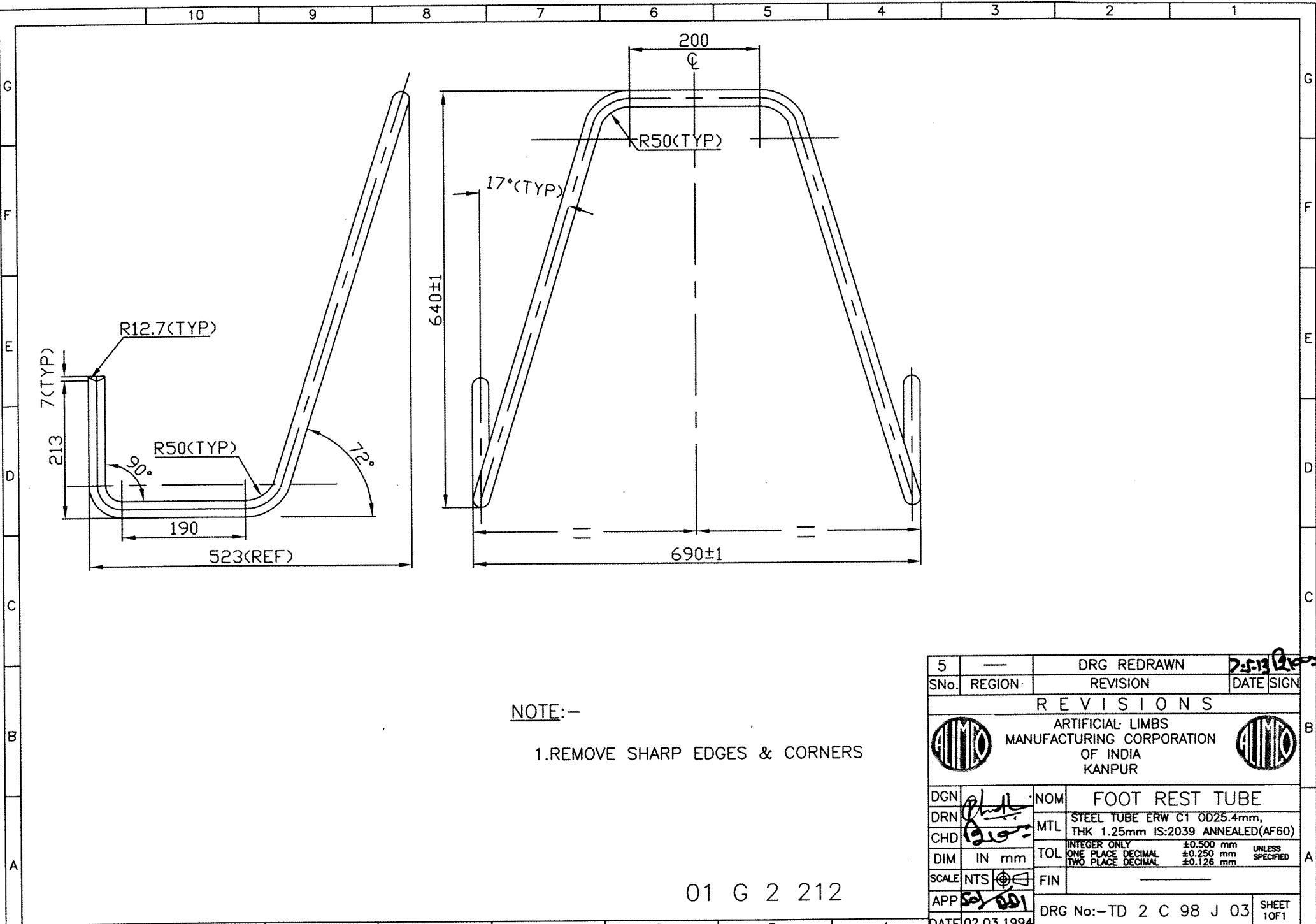


DGN	<i>[Signature]</i>	NOM	REAR LOOP	
DRN	<i>[Signature]</i>	MTL	STEEL TUBE ERW C1 OD25.4mm THICK1.25mm ANNEALED IS:2039(AF60)	
CHD	<i>[Signature]</i>	TOL	INTEGER ONLY ±0.500 mm ONE PLACE DECIMAL ±0.250 mm TWO PLACE DECIMAL ±0.126 mm	UNLESS SPECIFIED
DIM	IN mm	FIN		
SCALE	NTS			
APP	<i>[Signature]</i>	DRG No:-	TD 2 C 98 J 01	SHEET
DATE	02.03.1994			

01 J 03 001

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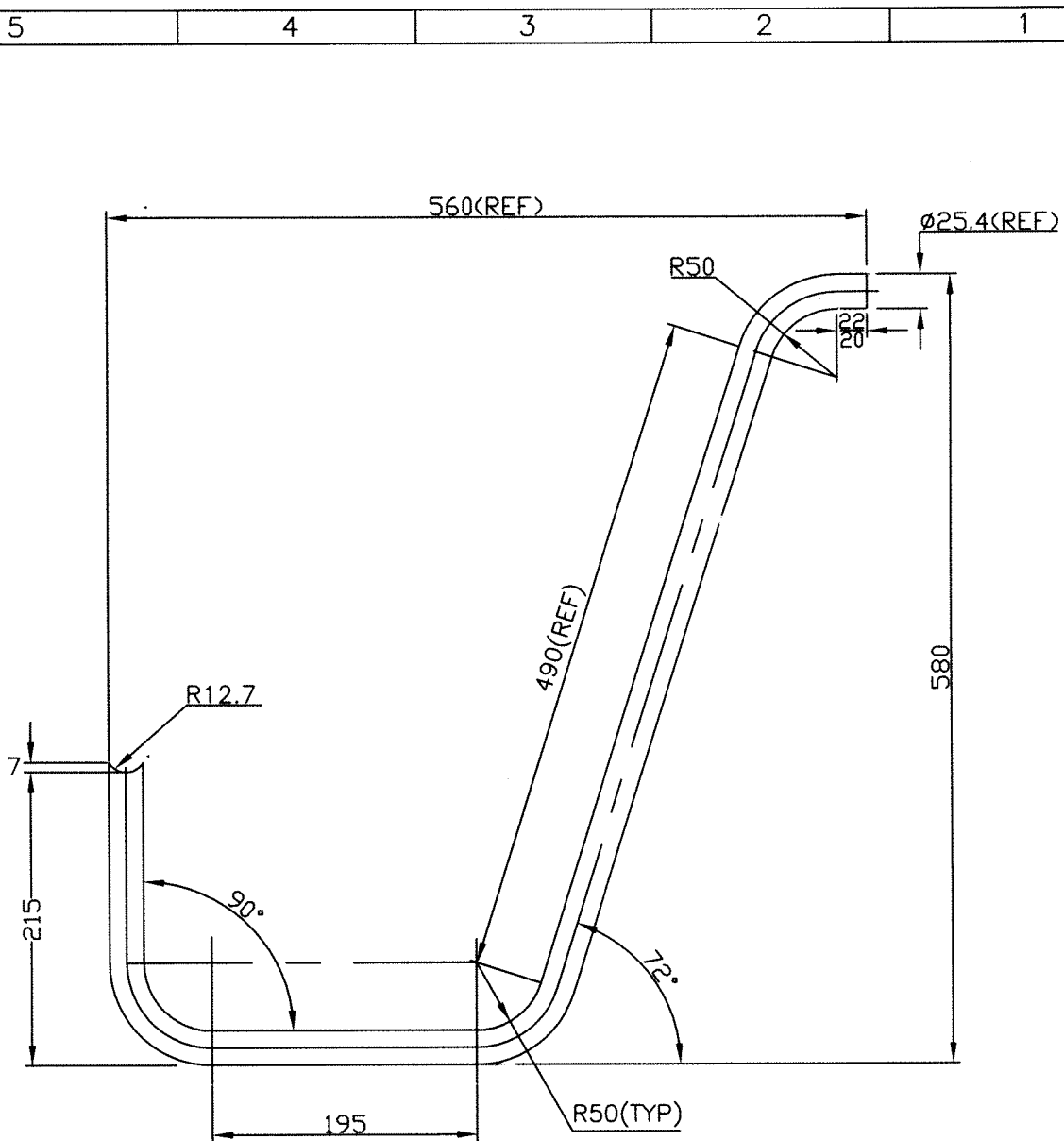


NOTE:--

1.REMOVE SHARP EDGES & CORNERS

01 G 2 212

5	—	DRG REDRAWN	2.5.13
SNo.	REGION	REVISION	DATE SIGN
REVISIONS			
		ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR	
DGN	<i>Phul</i>	NOM	FOOT REST TUBE
DRN	<i>Phul</i>	MTL	STEEL TUBE ERW C1 OD25.4mm, THK 1.25mm IS:2039 ANNEALED(AF60)
CHD	<i>Phul</i>	TOL	INTEGER ONLY ±0.500 mm UNLESS SPECIFIED ONE PLACE DECIMAL ±0.250 mm TWO PLACE DECIMAL ±0.126 mm
DIM	IN mm	FIN	—
SCALE	NTS	APP	<i>Phul</i>
DATE	02.03.1994	DRG No:--TD 2 C 98 J 03	SHEET 10F1



**NOTE:-**

1.REMOVE SHARP EDGES & CORNERS

4	—	DRAWING REDRAWN	2-5-93	Q101
SNo.	REGION	REVISION	DATE	SIGN

**R E V I S I O N S**



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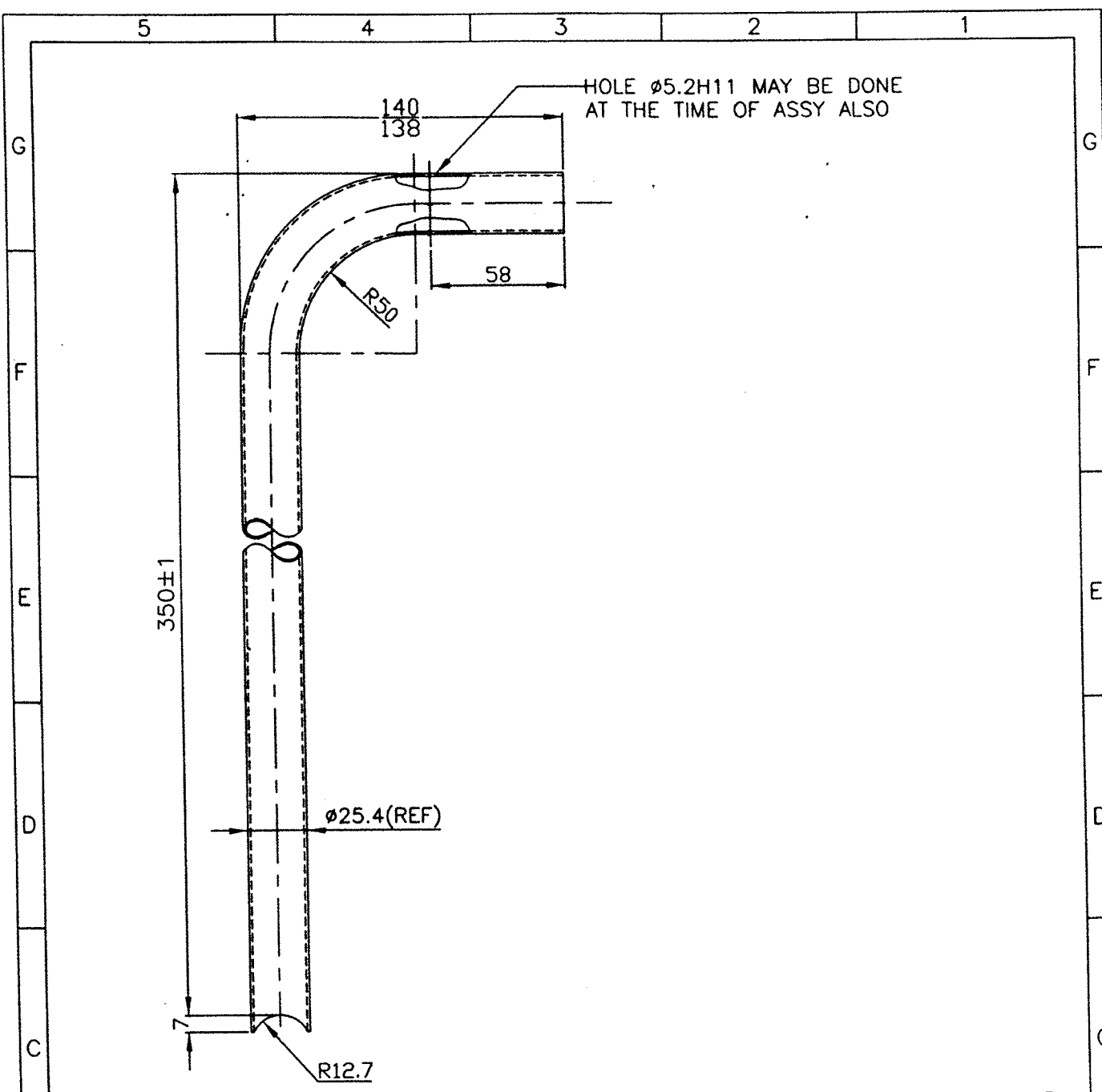


DGN	CHK	NOM	CENTRAL TUBE	
DRN	CHK	MTL	STEEL TUBE ERW C1 OD25.4mm THICK1.25mm ANNEALED IS:2039(AF60)	
CHD	CHK	TOL	INTEGER ONLY ±0.500 mm	UNLESS SPECIFIED
			ONE PLACE DECIMAL ±0.250 mm	
			TWO PLACE DECIMAL ±0.126 mm	
SCALE	NTS	FIN	—	
APP	Sel	DATE	DRG No:-TD 2 C 98 J 04	SHEET 10F1
			02.03.1994	

01 J 03 003

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4



HOLE  $\phi 5.2H11$  MAY BE DONE AT THE TIME OF ASSY ALSO

**NOTE:-**  
1. REMOVE SHARP EDGES & CORNERS

7	E-5	DIM 350±1 WAS 355±1	10.7.14	<i>[Signature]</i>
6	—	DRAWING REDRAWN	7.5.13	<i>[Signature]</i>
SNNo.	REGION	REVISION	DATE	SIGN

REVISIONS



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MANUFACTURING CORPORATION  
OF INDIA  
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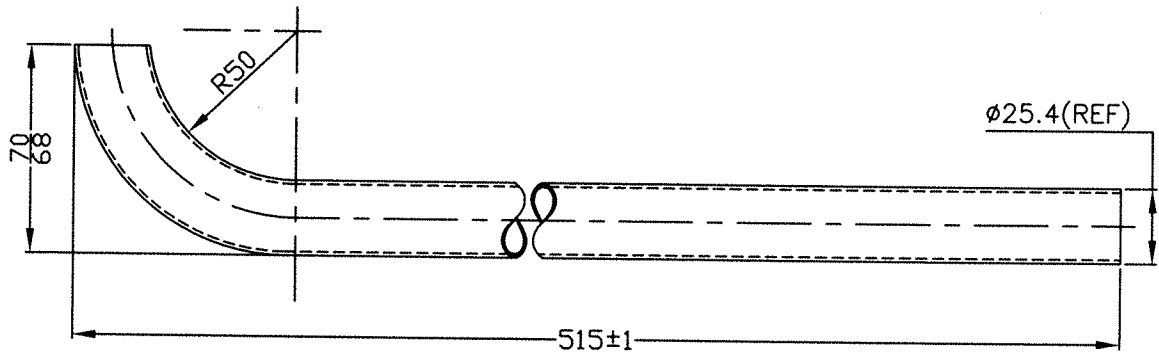


DGN	<i>[Signature]</i>	NOM	LOOP SUPPORT TUBE	
DRN	<i>[Signature]</i>	MTL	STEEL TUBE ERW C1 OD25.4mm, THICK1.25mm ANNEALED IS:2039(AF60)	
CHD	<i>[Signature]</i>	TOL	INTEGER ONLY	±0.500 mm UNLESS SPECIFIED
			ONE PLACE DECIMAL	±0.250 mm
			TWO PLACE DECIMAL	±0.126 mm
DIM	IN mm	FIN	—	
SCALE	NTS		—	
APP	<i>[Signature]</i>		DRG No:-TD 2 C 98 J 05	
DATE	02.03.1994		SHEET 10F1	

01 J 03 004

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**NOTE:-**

1.REMOVE SHARP EDGES & CORNERS

4	—	DRAWING REDRAWN	7.5.13	<i>[Signature]</i>
SNo.	REGION	REVISION	DATE	SIGN

**R E V I S I O N S**



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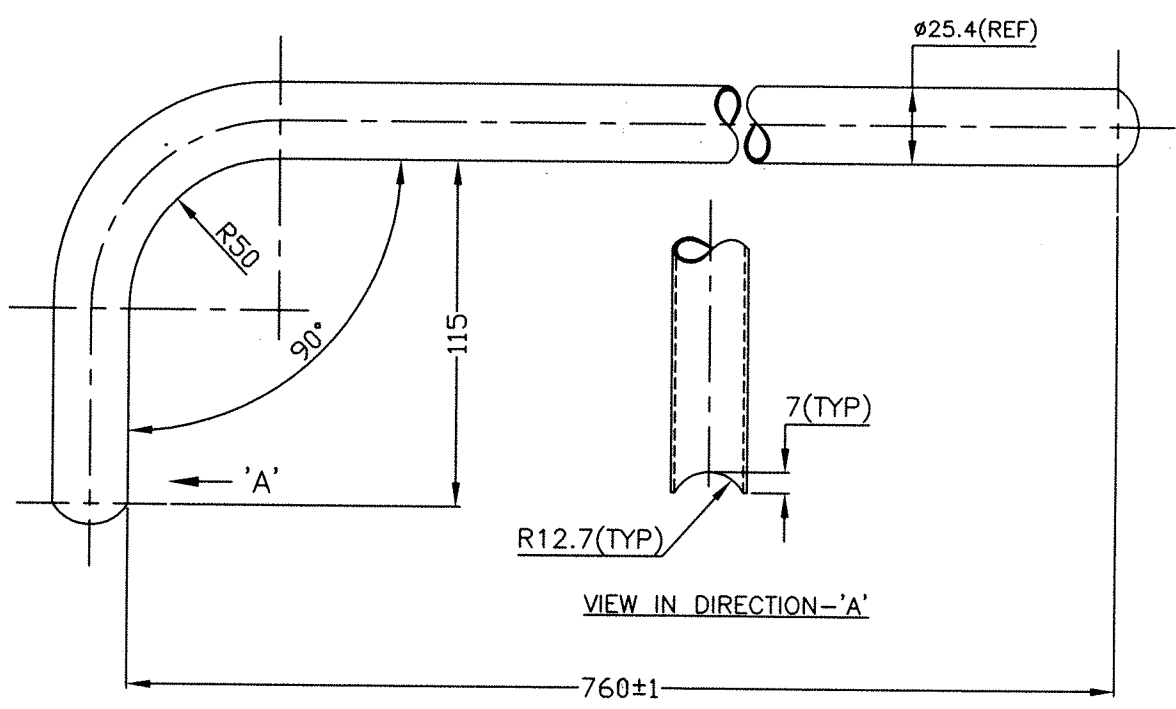


DGN	<i>[Signature]</i>	NOM	SIDE SUPPORT TUBE	
DRN	<i>[Signature]</i>	MTL	STEEL TUBE ERW C1 OD25.4mm, THICK1.25mm ANNEALED IS:2039(AF60)	
CHD	<i>[Signature]</i>	TOL	INTEGER ONLY	±0.500 mm
DIM	IN mm		ONE PLACE DECIMAL	±0.250 mm
			TWO PLACE DECIMAL	±0.126 mm
SCALE	NTS	FIN	UNLESS SPECIFIED	
APP	<i>[Signature]</i>			
DATE	02.03.1994	DRG No:-	TD 2 C 98 J 06	SHEET 10F1

01 J 03 005

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4



**NOTE:-**  
1. REMOVE SHARP EDGES & CORNERS

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SNo.	REGION	REVISION	DATE	SIGN

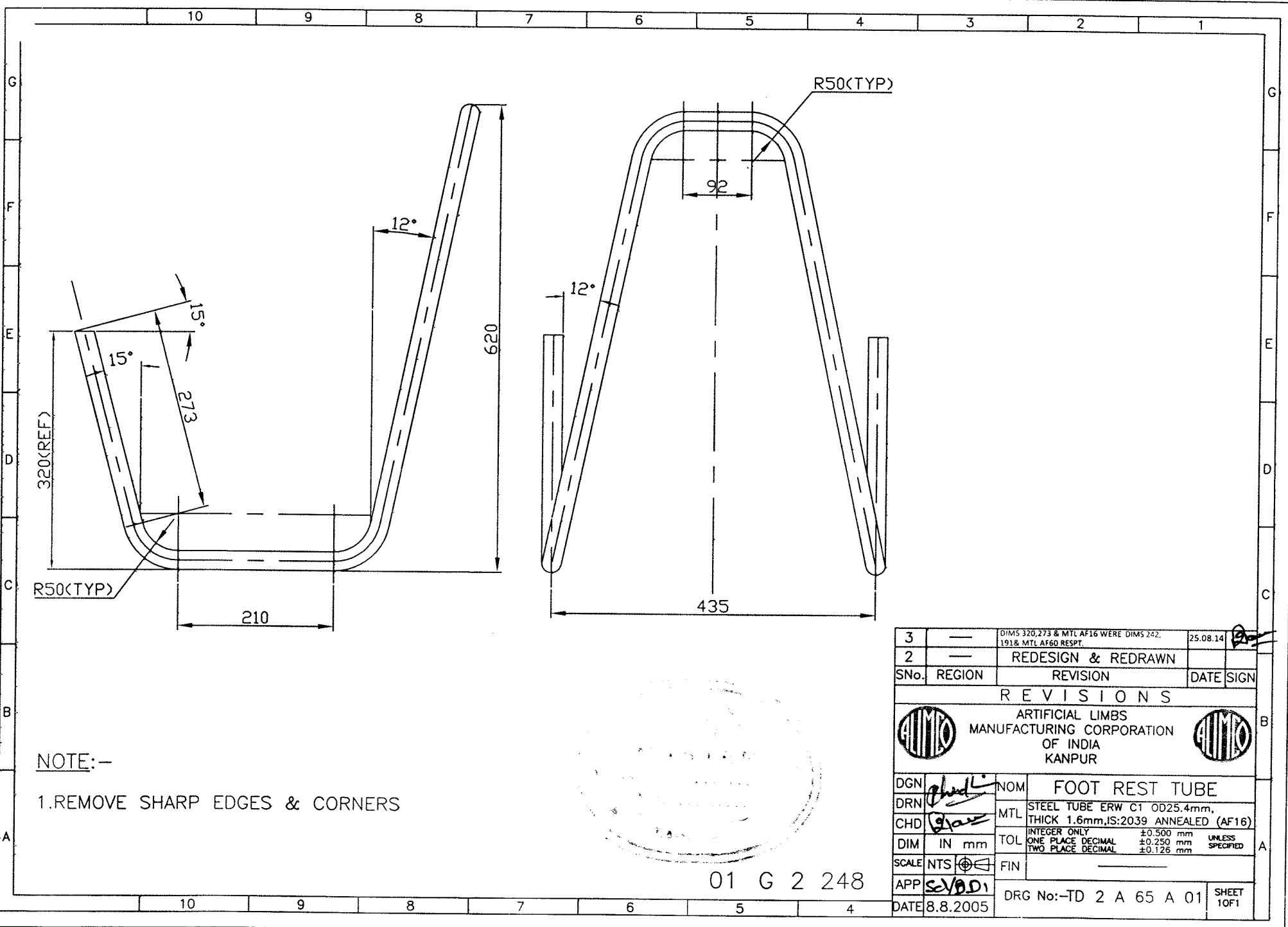
**R E V I S I O N S**

**ARTIFICIAL LIMBS**  
**MANUFACTURING CORPORATION**  
**OF INDIA**  
**KANPUR**

DGN	<i>[Signature]</i>	NOM	REAR LOOP MEMBER	
DRN	<i>[Signature]</i>	MTL	STEEL TUBE ERW C1 OD25.4mm, THICK1.25mm ANNEALED IS:2039(AF60)	
CHD	<i>[Signature]</i>	TOL	INTEGER ONLY ±0.500 mm	UNLESS SPECIFIED
DIM	IN mm		ONE PLACE DECIMAL ±0.250 mm	
SCALE	NTS	FIN	TWO PLACE DECIMAL ±0.126 mm	
APP	<i>[Signature]</i>			

01 J 03 007

DATE	02.03.1994	DRG No:-	TD 2 C 98 J 08	SHEET	10F1
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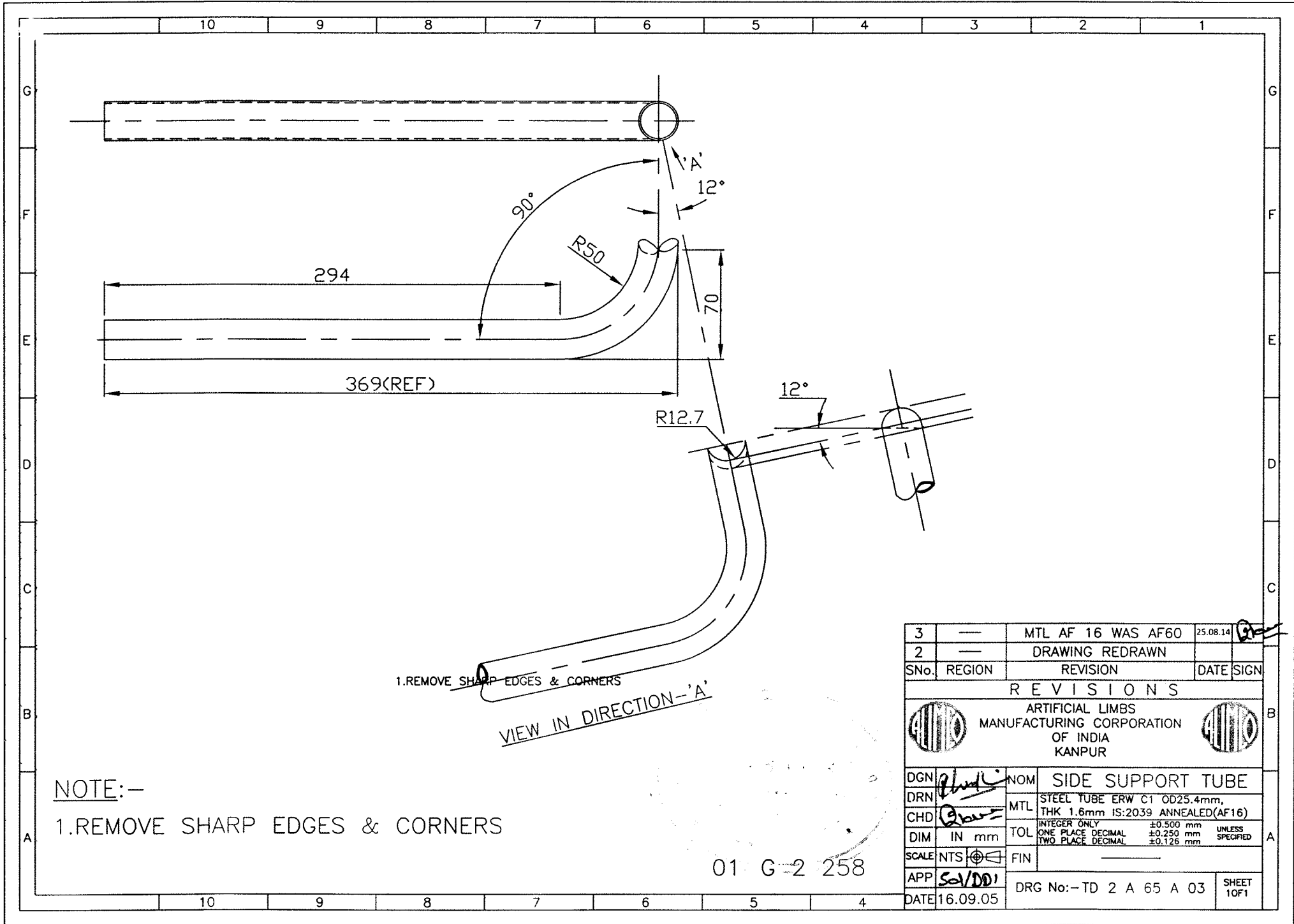


NOTE:--  
1. REMOVE SHARP EDGES & CORNERS



01 G 2 248

3	---	DIMS 320,273 & MTL AF16 WERE DIMS 242, 191& MTL AF60 RESPT.	25.08.14	
2	---	REDESIGN & REDRAWN		
SNo. REGION		REVISION	DATE	SIGN
REVISIONS				
		ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR		
DGN		NOM	FOOT REST TUBE	
DRN		MTL	STEEL TUBE ERW C1 OD25.4mm, THICK 1.6mm,IS:2039 ANNEALED (AF16)	
CHD		TOL	INTEGER ONLY ±0.500 mm ONE PLACE DECIMAL ±0.250 mm UNLESS SPECIFIED TWO PLACE DECIMAL ±0.126 mm	
DIM	IN mm	FIN		
SCALE	NTS			
APP				
DATE	8.8.2005	DRG No.:-TD 2 A 65 A 01	SHEET 10F1	

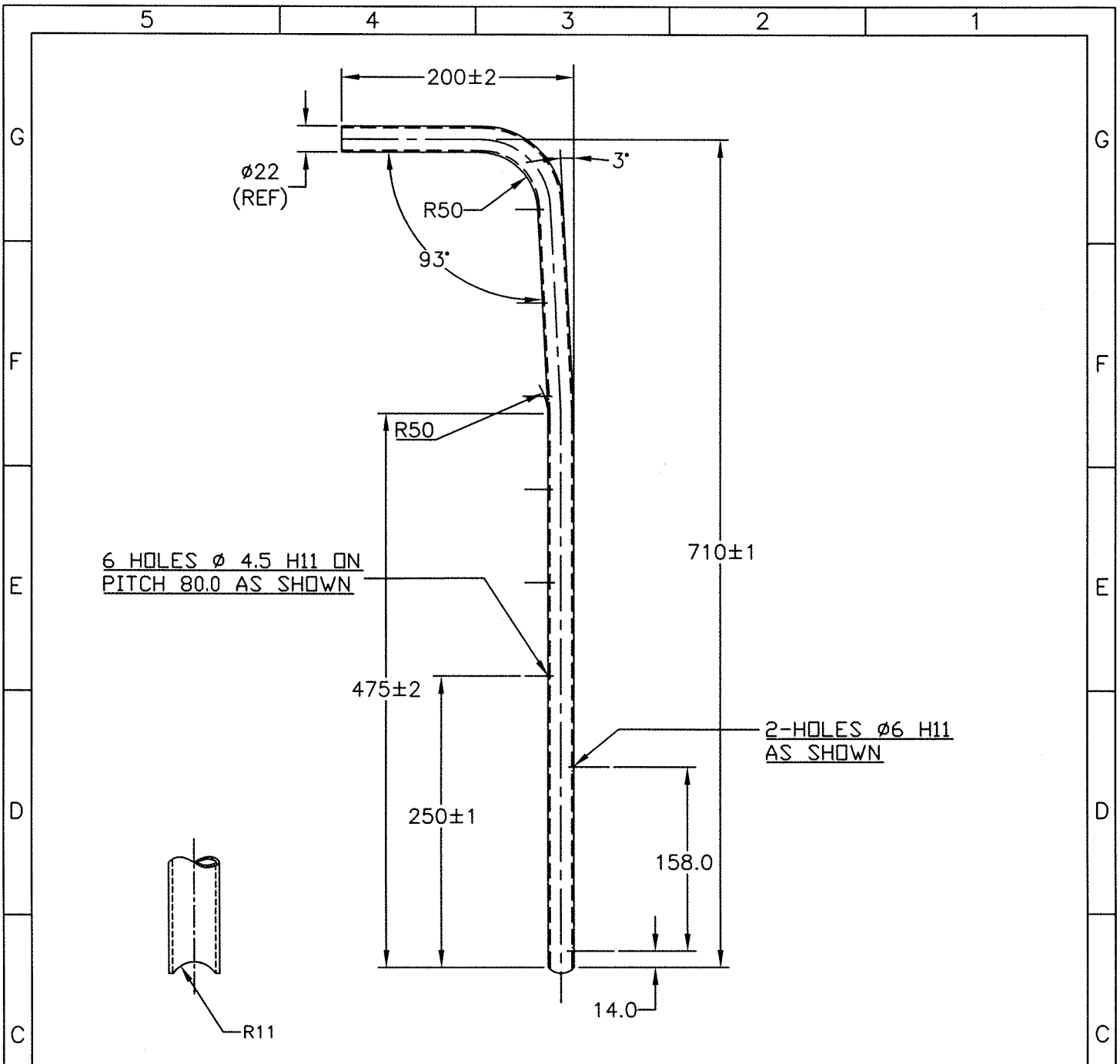


1.REMOVE SHARP EDGES & CORNERS  
 VIEW IN DIRECTION-'A'

NOTE:-  
 1.REMOVE SHARP EDGES & CORNERS



01 G-2 258

3	---	MTL AF 16 WAS AF60	25.08.14	
2	---	DRAWING REDRAWN		
SNo.	REGION	REVISION	DATE	SIGN
REVISIONS				
ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR				
DGN		NOM	SIDE SUPPORT TUBE	
DRN		MTL	STEEL TUBE ERW C1 OD25.4mm, THK 1.6mm IS:2039 ANNEALED(AF16)	
CHD		TOL	INTEGER ONLY ±0.500 mm ONE PLACE DECIMAL ±0.250 mm TWO PLACE DECIMAL ±0.125 mm UNLESS SPECIFIED	
SCALE	NTS	FIN		
APP		DRG No.:-	TD 2 A 65 A 03	SHEET 10F1
DATE	16.09.05			

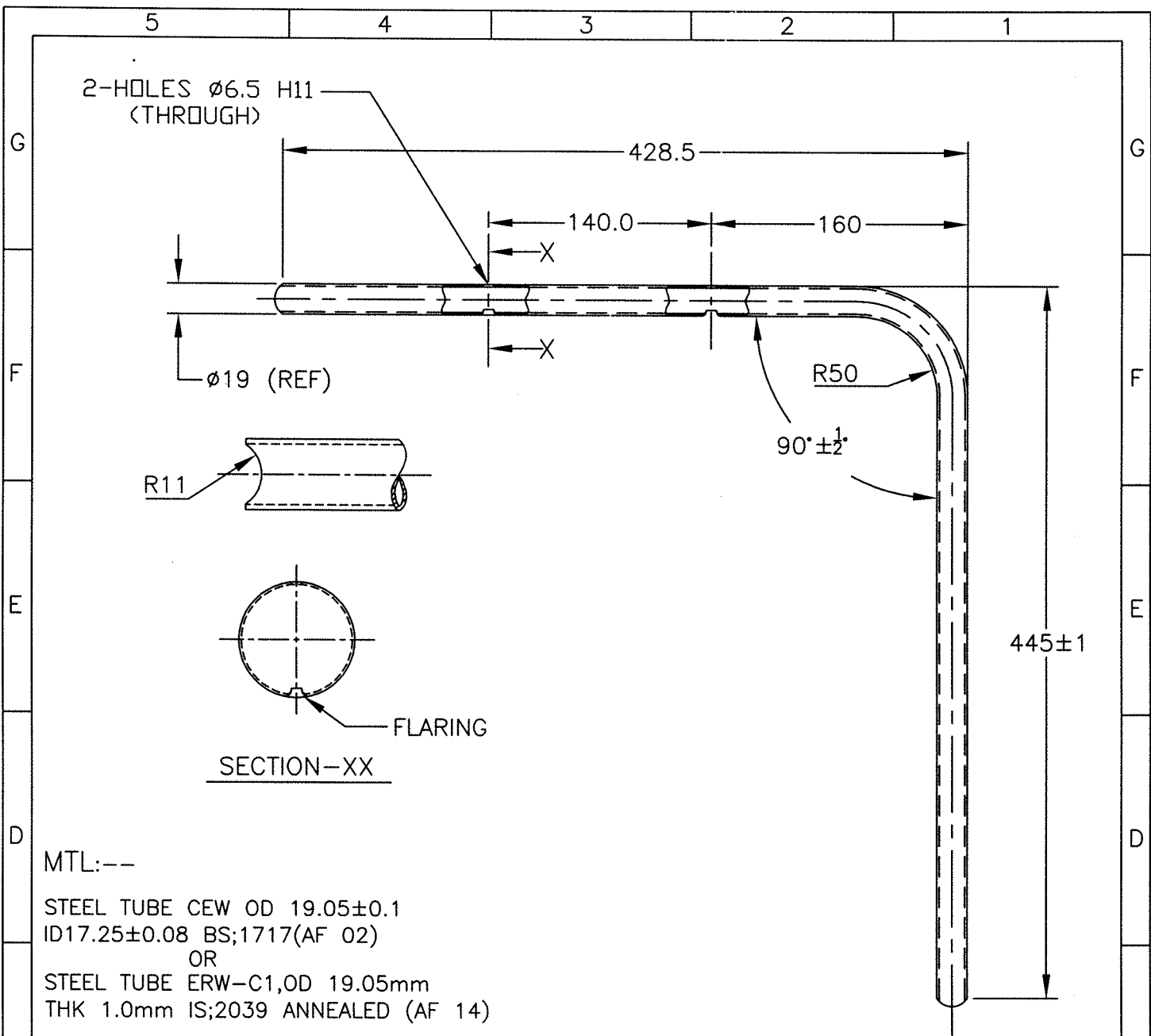


NOTE:-

1. REMOVE SHARP EDGES & CORNERS.

1.	—	DRAWING REDRAWN	03.12.14	<i>Raj</i>
SNO.	REGION	REVISION	DATE	SIGN
R E V I S I O N S				
 ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR 				
DGN		NOM	TUBE REAR	
DRN	<i>Ashish</i>	MTL	STEEL TUBE ERW-C1 OD 22.23mm THICK 1.6mm IS:2039, ANNEALED (AF13)	
CHD	<i>Raj</i>	TOL	INTEGER ONLY ±0.500 mm ONE PLACE DECIMAL ±0.250 mm TWO PLACE DECIMAL ±0.126 mm UNLESS SPECIFIED	
DIM	<i>in mm</i>	FIN	—	
SCALE	NTS			
APP	<i>Sol/DD1</i>			
DATE	25.09.1982		DRG No:-TD 2 C 51 A 01	
			SHEET 10F1	

01	K	5	160
5		4	



MTL:---

STEEL TUBE CEW OD 19.05±0.1  
 ID 17.25±0.08 BS;1717(AF 02)  
 OR  
 STEEL TUBE ERW-C1, OD 19.05mm  
 THK 1.0mm IS;2039 ANNEALED (AF 14)

NOTE:---

1. REMOVED SHARP EDGES & CORNERS.
2. DRILL 2-HOLES  $\phi 6.5H11$  & FLARE UP TO PROVIDE C'BORE FOR CSK HEAD SCREW.
3. AXIS OF HOLES TO BE IN THE PLANE OF TUBE WITH IN  $\pm 2^\circ$ .

15.	---	DRAWING REDRAWN	03.12.14	<i>20</i>
SNo.	REGION	REVISION	DATE	SIGN

REVISIONS

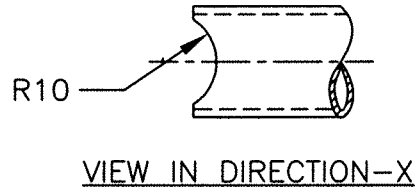
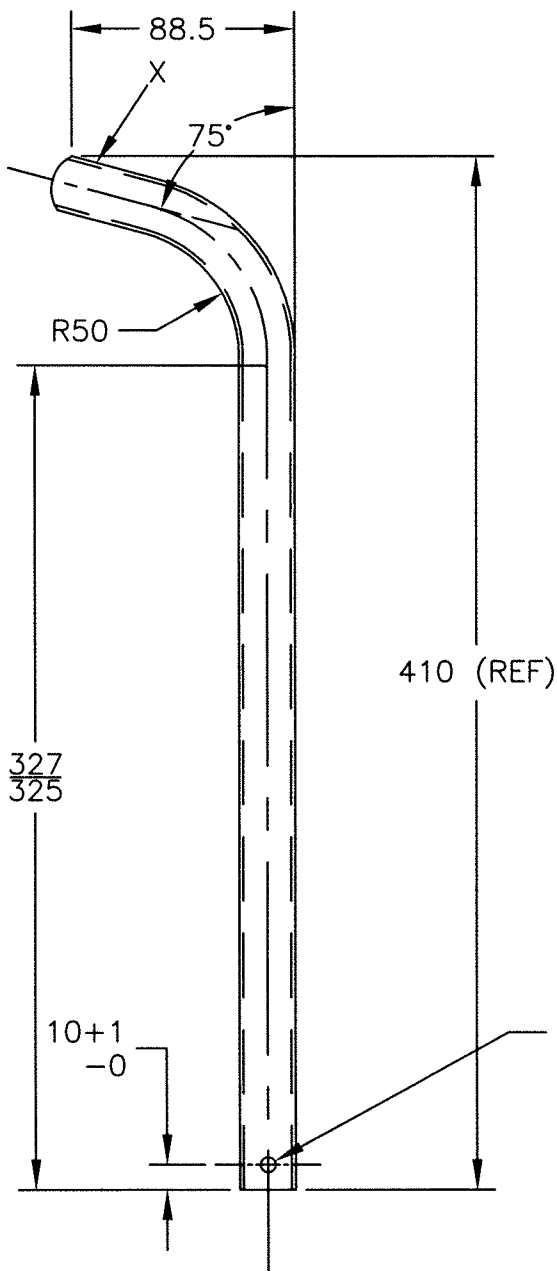


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DGN		NOM	TUBE ARM REST	
DRN	<i>Ashish</i>	MTL	INDICATED	
CHD	<i>20</i>	TOL	INTEGER ONLY $\pm 0.500$ mm	UNLESS SPECIFIED
DIM	<i>IN mm</i>		ONE PLACE DECIMAL $\pm 0.250$ mm	
			TWO PLACE DECIMAL $\pm 0.126$ mm	
SCALE	NTS $\text{---}$	FIN	---	
APP	<i>Sd/DD1</i>	DRG No:--TD 2 C 51 A 02		SHEET 10F1
DATE	25.09.1982			

01	K	5	161
5			4



NOTE:--

1. REMOVE SHARP EDGES & CORNERS.

17.	---	DRAWING REDRAWN	14.01.15	<i>Sign</i>
SNo.	REGION	REVISION	DATE	SIGN

REVISIONS

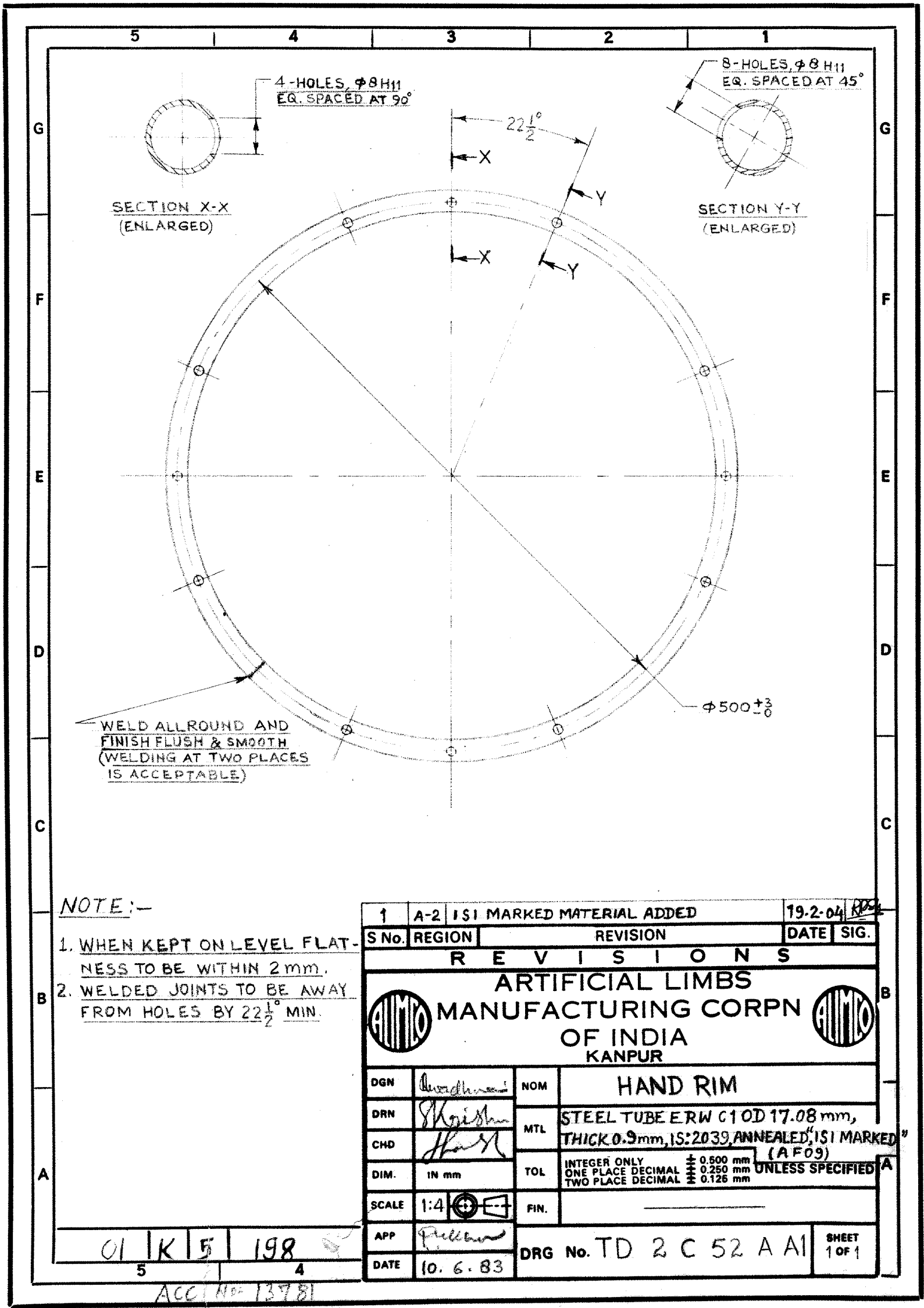


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DGN		NOM	TUBE MAIN FOOT REST SUPPORT	
DRN	<i>Ashish</i>	MTL	STEEL TUBE ERW-C1 OD 22.23mm	
CHD	<i>Shaw</i>		THK 1.6mm IS:2039 ANNEALED(AF13)	
DIM	IN mm	TOL	INTEGER ONLY ±0.500 mm	UNLESS SPECIFIED
			ONE PLACE DECIMAL ±0.250 mm	
			TWO PLACE DECIMAL ±0.126 mm	
SCALE	NTS	FIN	---	
APP	<i>Sa/DD1</i>		DRG No:--TD 2 A 02 A 05	
DATE	26.05.1978		SHEET 10F1	

01	K	5	003
5			4

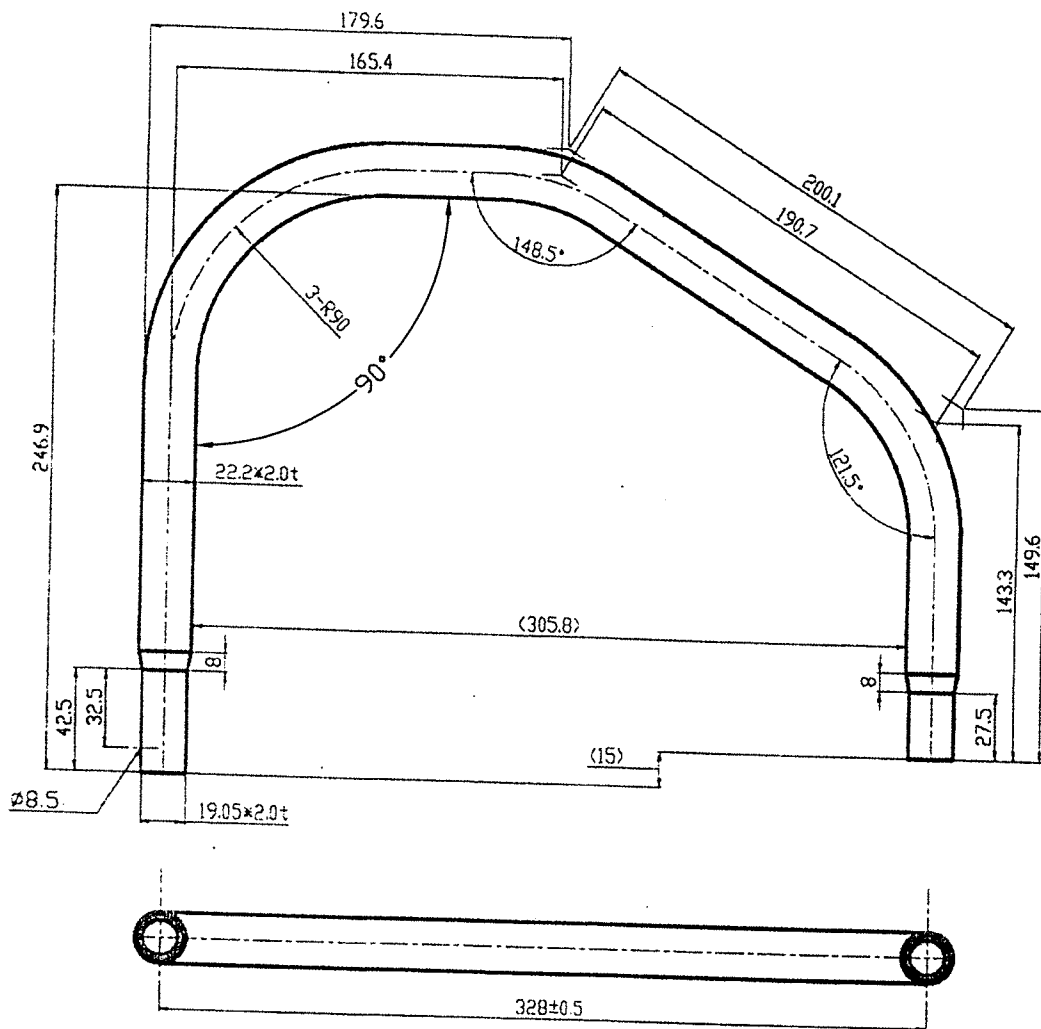





1	A-2	ISI MARKED MATERIAL ADDED	19.2.04	<i>RS</i>
S No.	REGION	REVISION	DATE	SIG.
<b>R E V I S I O N S</b>				
<b>ARTIFICIAL LIMBS MANUFACTURING CORPN OF INDIA KANPUR</b>				
DGN	<i>Aradhana</i>	NOM	HAND RIM	
DRN	<i>Shrishan</i>	MTL	STEEL TUBE ERW C1 OD 17.08 mm, THICK 0.9 mm, IS: 2039, ANNEALED, ISI MARKED (AF09)	
CHD	<i>Harsh</i>	TOL	INTEGER ONLY $\pm 0.500$ mm ONE PLACE DECIMAL $\pm 0.250$ mm TWO PLACE DECIMAL $\pm 0.125$ mm UNLESS SPECIFIED	
DIM.	IN mm	FIN.		
SCALE	1:4			
APP	<i>Pillay</i>	DRG No.	TD 2 C 52 A A1	SHEET 1 OF 1
DATE	10.6.83			

01 | K | 5 | 198

ACC No: 13781





SNo.	REGION	REVISION	DATE	SIGN
<b>REVISIONS</b>				
 <b>ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR</b> 				
DGN	ASHISH	NOM	ARM REST TUBE CURVED	
DRN		MTL	ALUMINIUM 6063 - T6 (BENDING QUALITY)	
CHD	SHIV PAL	HEAT TREATMENT	_____	
DIM	IN mm	SURFACE TREATMENT	_____	
SCALE	NTS 			
APP	VISHAL	DRG No:- TD 2 B 36 E 01		REV 0
DATE	15.01.2018			SHEET 1 OF 1

Tolerance wherever not specified

Dim	Tolerance Range		
1 - 16	± 0.2	± 0.3	± 0.4
17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 0.12	± 1.5

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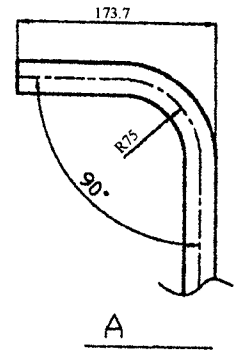
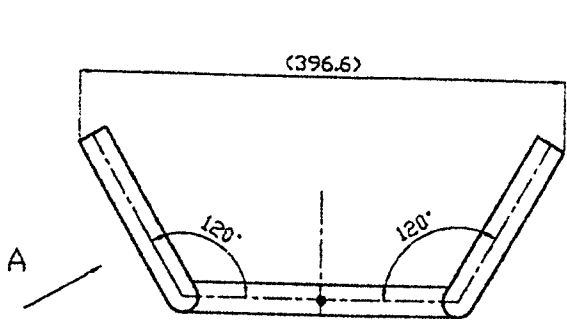
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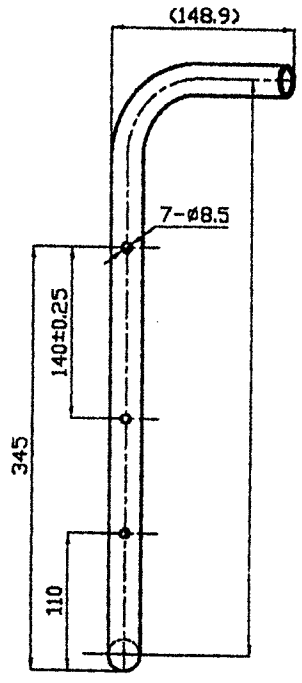
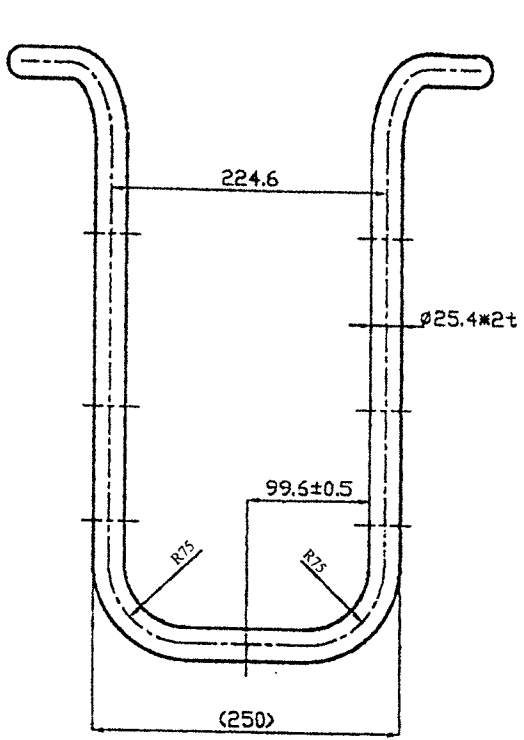


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SNo.	REGION	REVISION	DATE	SIGN
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REVISIONS



ARTIFICIAL LIMBS  
MANUFACTURING CORPORATION  
OF INDIA  
KANPUR



DGN	ASHISH	NOM	PUSH HANDLE TUBE	
DRN	SHIV PAL	MTL	ALUMINIUM 6063 - T6 (BENDING QUALITY)	
CHD		HEAT TREATMENT	_____	
DIM	IN mm	SURFACE TREATMENT	_____	
SCALE	NTS			
APP	VISHAL	DRG No:- TD 2 B 36 D 01	REV 0	SHEET 1 OF 1
DATE	15.01.2018			

Tolerance wherever not specified

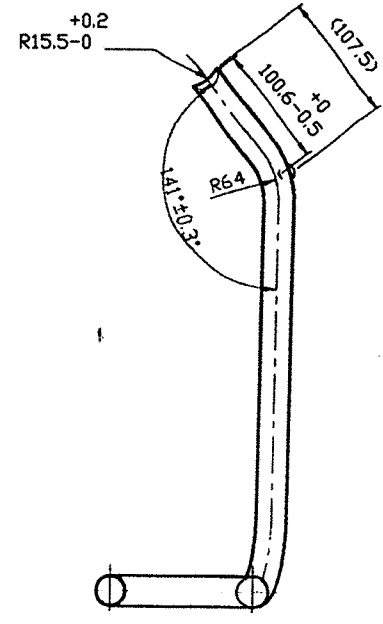
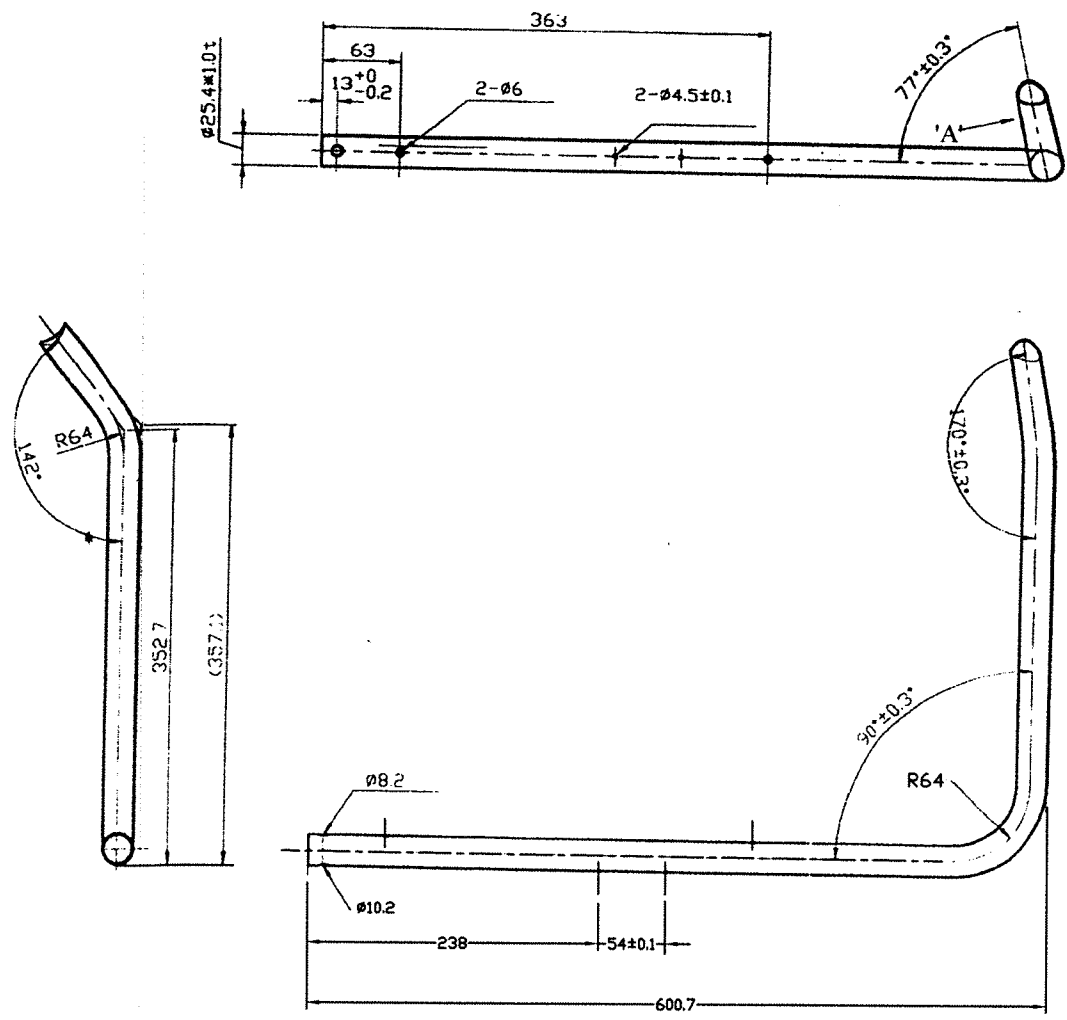
Dim	Tolerance Range		
1 - 16	± 0.2	± 0.3	± 0.4
17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 0.12	± 1.5

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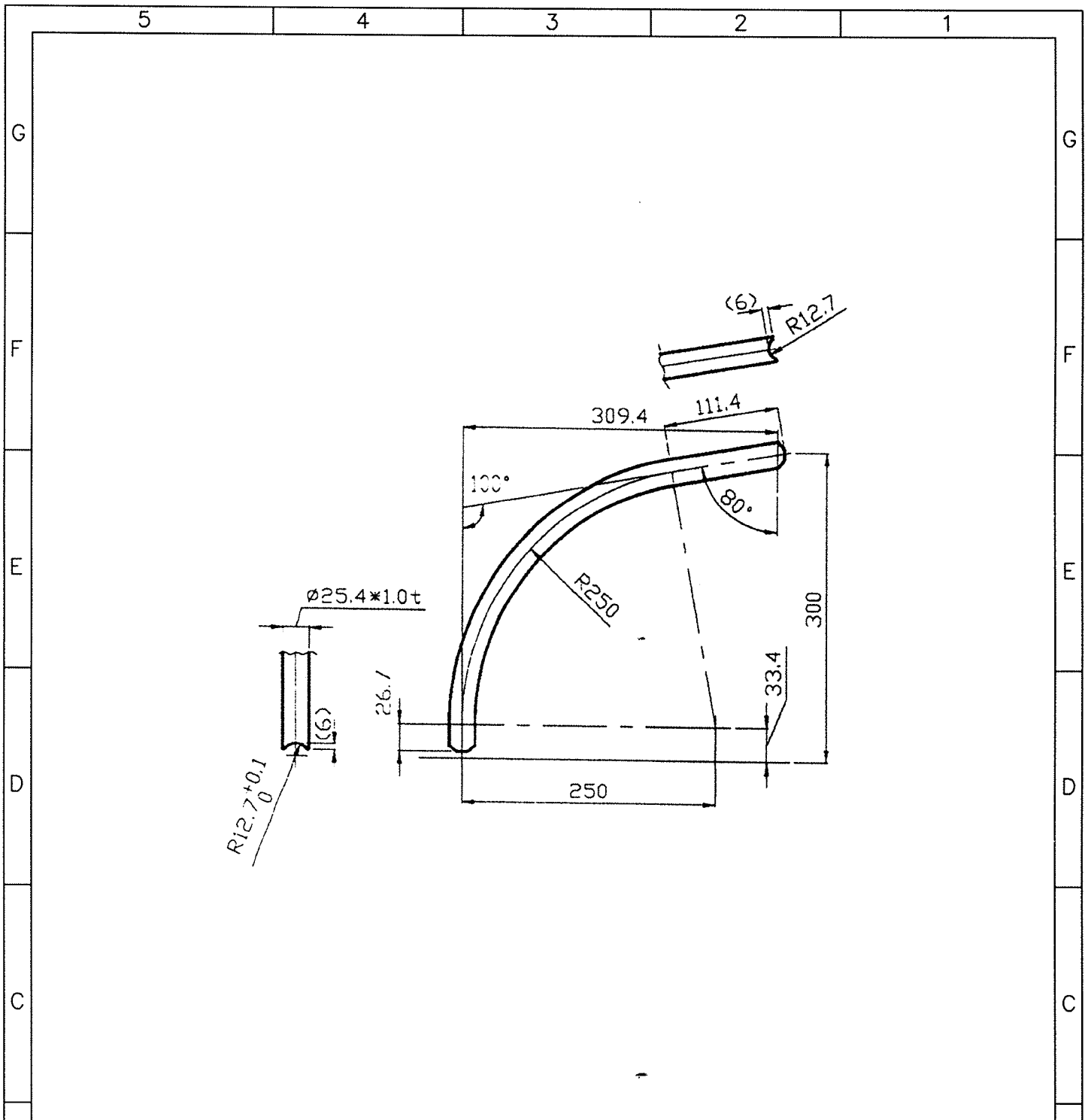


VIEW IN DIRECTION 'A'

SNo.	REGION	REVISION	DATE	SIGN
<b>REVISIONS</b>				
ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR				
DGN	ASHISH	NOM	BACK REST TUBE - L	
DRN		MTL	STEEL TUBE ERWI, IS:3074 Ø 25.4x1mm THICK	
CHD	SHIV PAL	HEAT		
DIM	IN mm	TREATMENT		
SCALE	NTS	SURFACE		
APP	VISHAL	TREATMENT		
DATE	09.02.2018	DRG No:- TD 2 B 37 B A1	REV 0	SHEET 1 OF 1

Tolerance wherever not specified

Dim	Tolerance Range		
1 - 16	± 0.2	± 0.3	± 0.4
17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 0.12	± 1.5



SNo.	REGION	REVISION	DATE	SIGN
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**R E V I S I O N S**

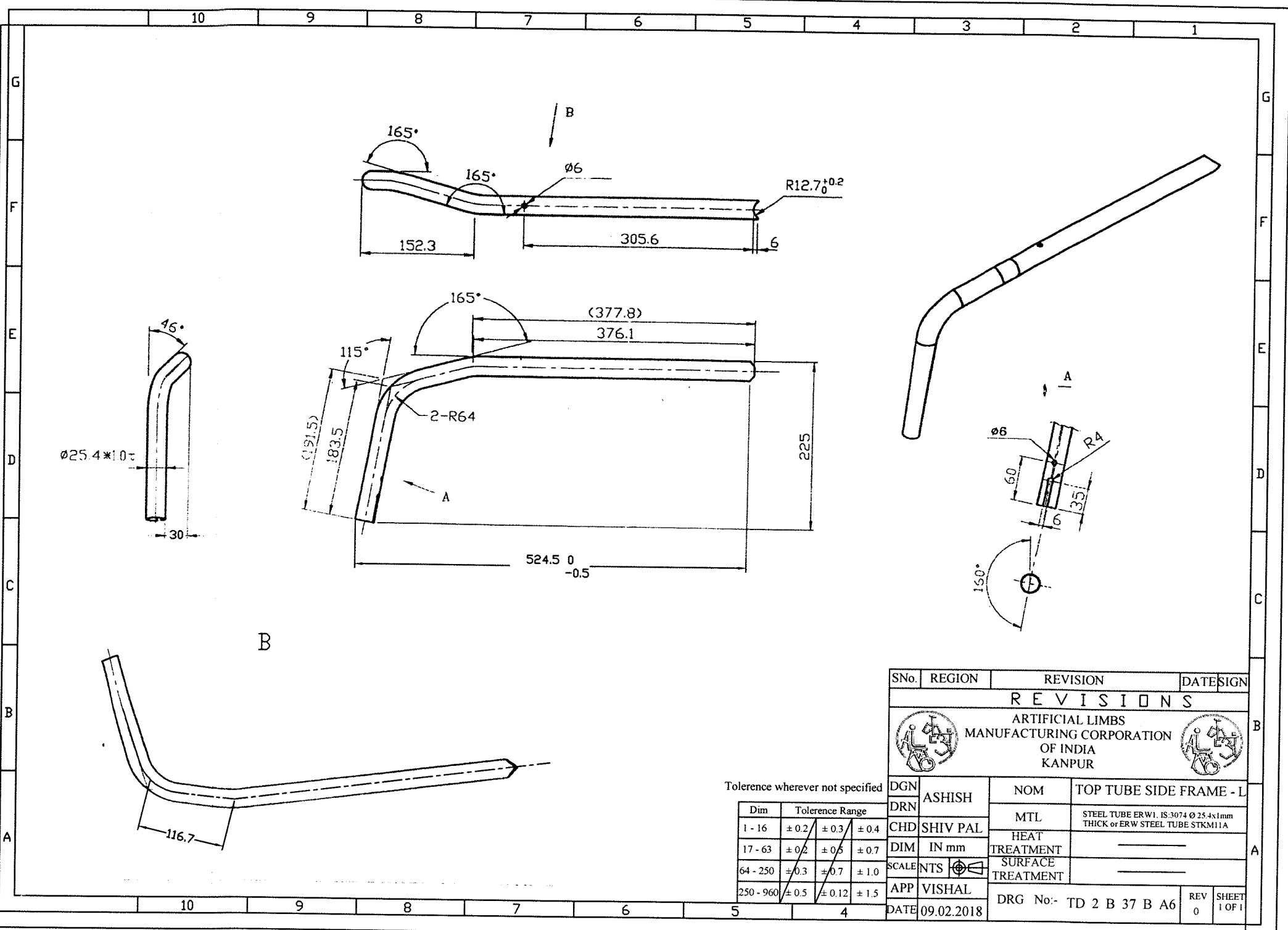


ARTIFICIAL LIMBS  
MANUFACTURING CORPORATION  
OF INDIA  
KANPUR

DGN	ASHISH	NOM	ARM REST TUBE
DRN		MTL	STEEL TUBE ERW1, IS:3074, Ø25.4x1mm THICK
CHD	SHIV PAL	HEAT TREATMENT	_____
DIM	IN mm	SURFACE TREATMENT	_____
SCALE	NTS		
APP	VISHAL	DRG No:- TD 2 B 37 B A2	REV 0 SHEET 10F1
DATE	09.02.2018		

Tolerance wherever not specified

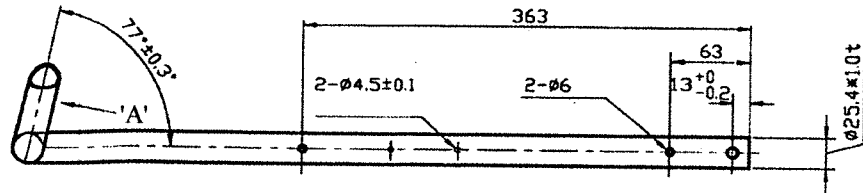
Dim	Tolerance Range		
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17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 0.12	± 1.5



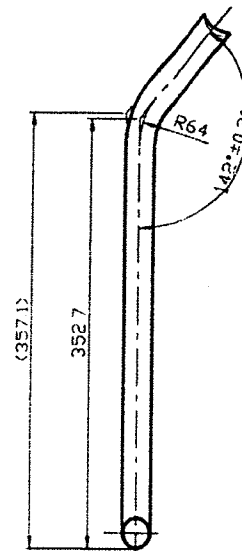
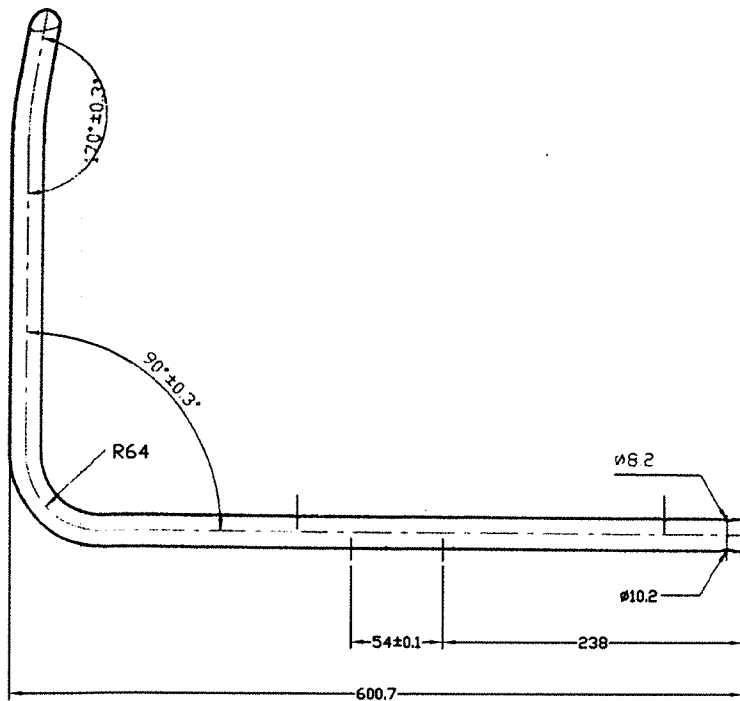
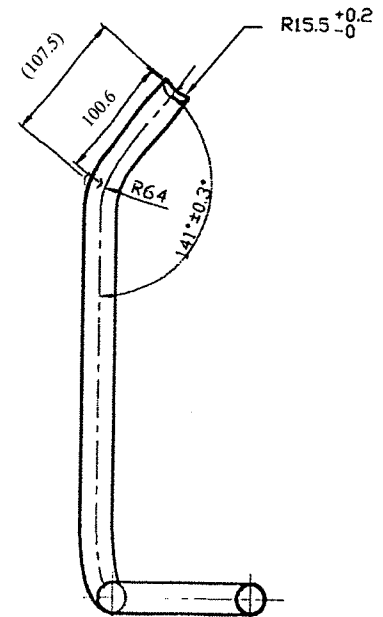
SNo.	REGION	REVISION	DATE	SIGN
<b>REVISIONS</b>				
ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR				
DGN	ASHISH	NOM	TOP TUBE SIDE FRAME - L	
DRN	SHIV PAL	MTL	STEEL TUBE ERW1. IS:3074 Ø 25.4x1mm THICK or ERW STEEL TUBE STKM11A	
CHD	SHIV PAL	HEAT	_____	
DIM	IN mm	TREATMENT	_____	
SCALE	NTS	SURFACE	_____	
APP	VISHAL	TREATMENT	_____	
DATE	09.02.2018	DRG No:- TD 2 B 37 B A6	REV	SHEET
			0	1 OF 1

Tolerance wherever not specified

Dim	Tolerance Range		
1 - 16	± 0.2	± 0.3	± 0.4
17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 0.12	± 1.5



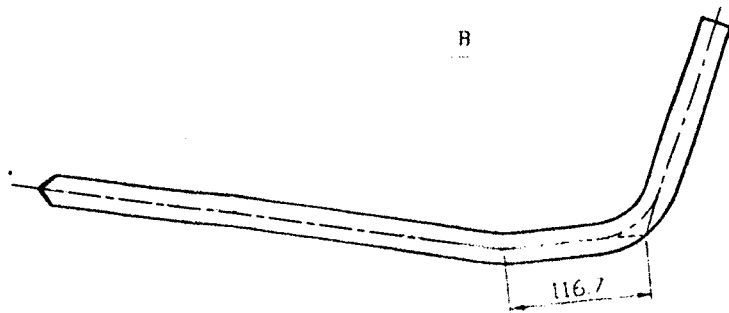
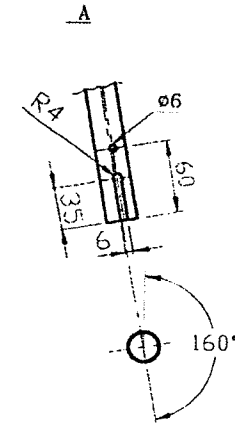
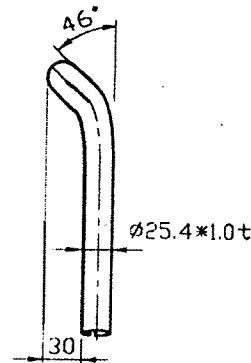
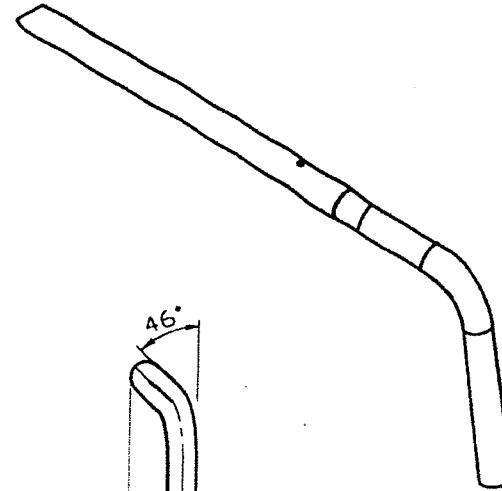
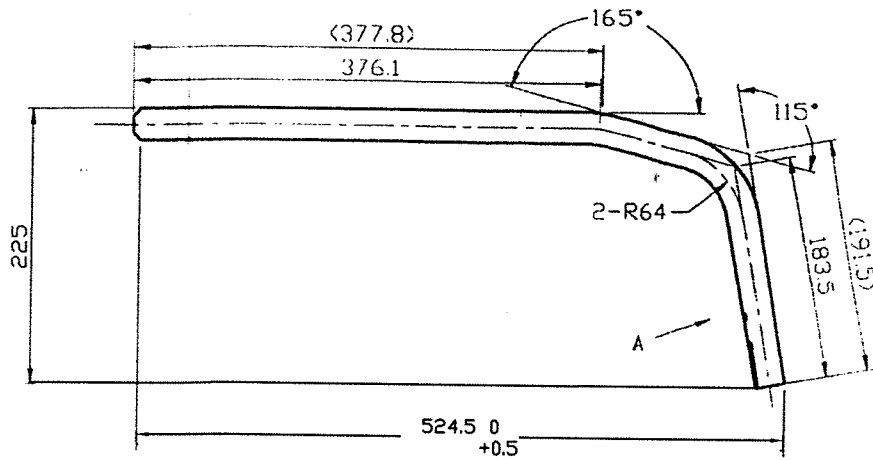
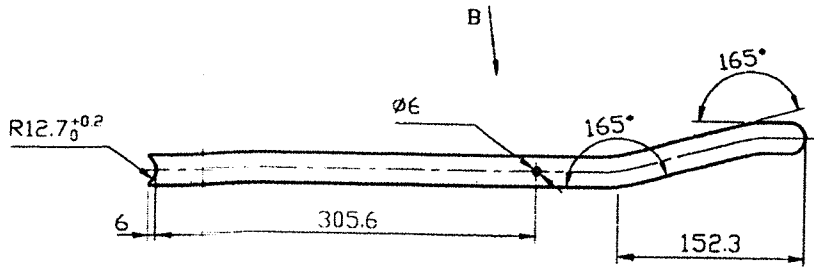
VIEW IN DIRECTION 'A'



SNo.	REGION	REVISION	DATE	SIGN
<b>REVISIONS</b>				
ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR				
DGN	ASHISH	NOM	BACK REST TUBE - R	
DRN	SHIV PAL	MTL	STEEL TUBE ERW1, IS:3074 Ø 25.4x1mm THICK	
DIM	IN mm	HEAT TREATMENT	_____	
SCALE	NTS	SURFACE TREATMENT	_____	
APP	VISHAL	DRG No:- TD 2 B 37 C A1	REV	SHEET
DATE	09.02.2018	0	1	OF 1

Tolerance wherever not specified

Dim	Tolerance Range		
1 - 16	± 0.2	± 0.3	± 0.4
17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 1.2	± 1.5



SNo.	REGION	REVISION	DATE	SIGN
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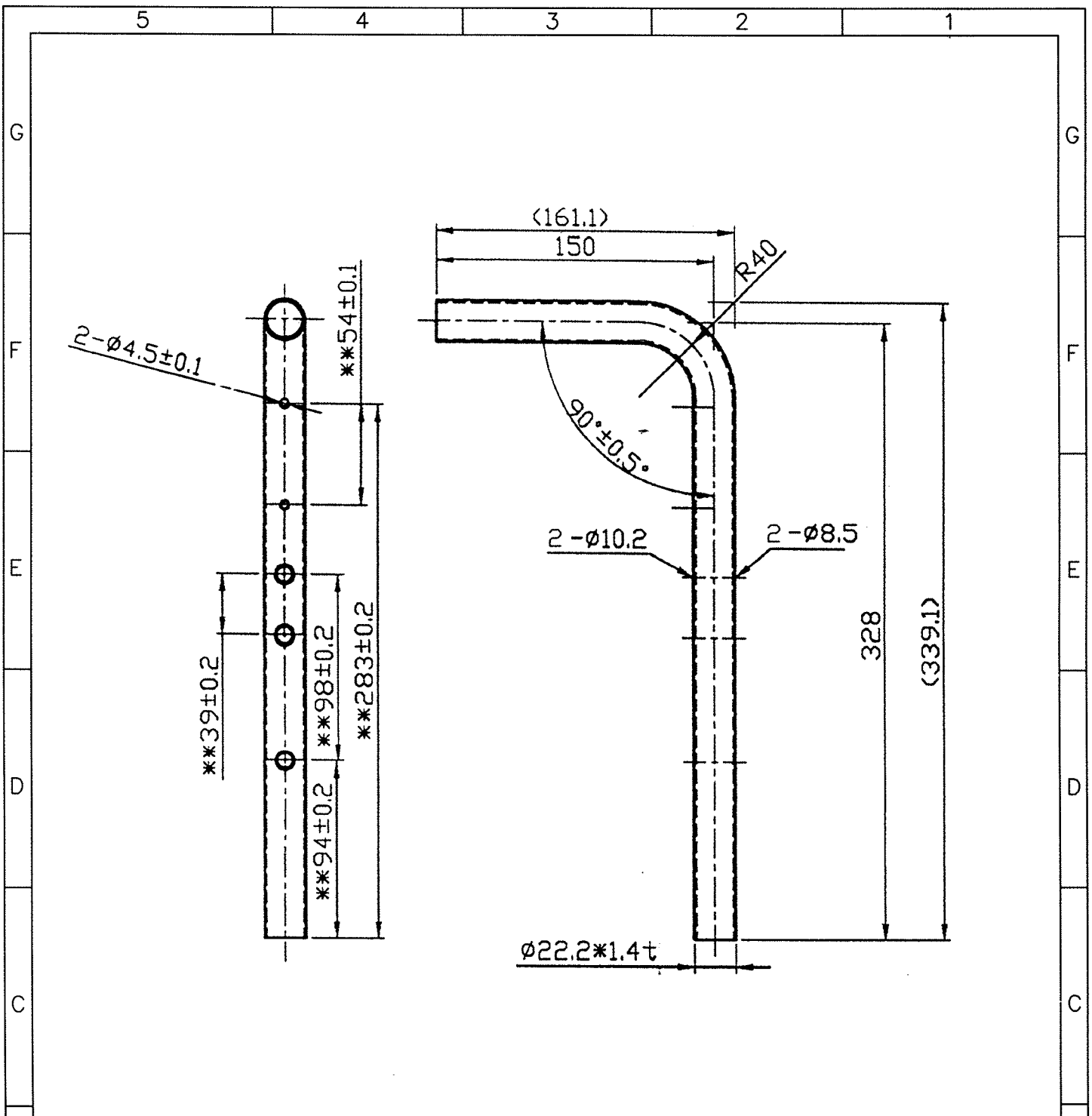
ARTIFICIAL LIMBS  
MANUFACTURING CORPORATION  
OF INDIA  
KANPUR



Tolerance wherever not specified

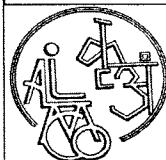
Dim	Tolerance Range		
1 - 16	$\pm 0.2$	$\pm 0.3$	$\pm 0.4$
17 - 63	$\pm 0.2$	$\pm 0.5$	$\pm 0.7$
64 - 250	$\pm 0.3$	$\pm 0.7$	$\pm 1.0$
250 - 960	$\pm 0.5$	$\pm 1.12$	$\pm 1.5$

DGN	ASHISH	NOM	TOP TUBE SIDE FRAME - R
DRN		MTL	STEEL TUBE ERW1, IS:3074, \phi 25.4x1mm THICK
CHD	SHIV PAL	HEAT	
DIM	IN mm	TREATMENT	
SCALE	NTS	SURFACE	
APP	VISHAL	TREATMENT	
DATE	09.02.2018	DRG No:- TD 2 B 37 C A2	REV 0 SHEET 1 OF 1



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**R E V I S I O N S**



ARTIFICIAL LIMBS  
MANUFACTURING CORPORATION  
OF INDIA  
KANPUR



DGN	ASHISH	NOM	PUSH HANDLE EXTENSION TUBE	
DRN		MTL	STEEL TUBE ERW1, IS:3074, Ø22.2x1.4mm THICK	
CHD	SHIV PAL	HEAT	_____	
DIM	IN mm	TREATMENT	_____	
SCALE	NTS	SURFACE	_____	
APP	VISHAL	TREATMENT	_____	
DATE	09.02.2018	DRG No:- TD 2 B 37 E A1	REV 0	SHEET 1 OF 1

Tolerance wherever not specified

Dim	Tolerance Range		
1\ 16	± 0.2	± 0.3	± 0.4
17 - 63	± 0.2	± 0.5	± 0.7
64 - 250	± 0.3	± 0.7	± 1.0
250 - 960	± 0.5	± 0.12	± 1.5

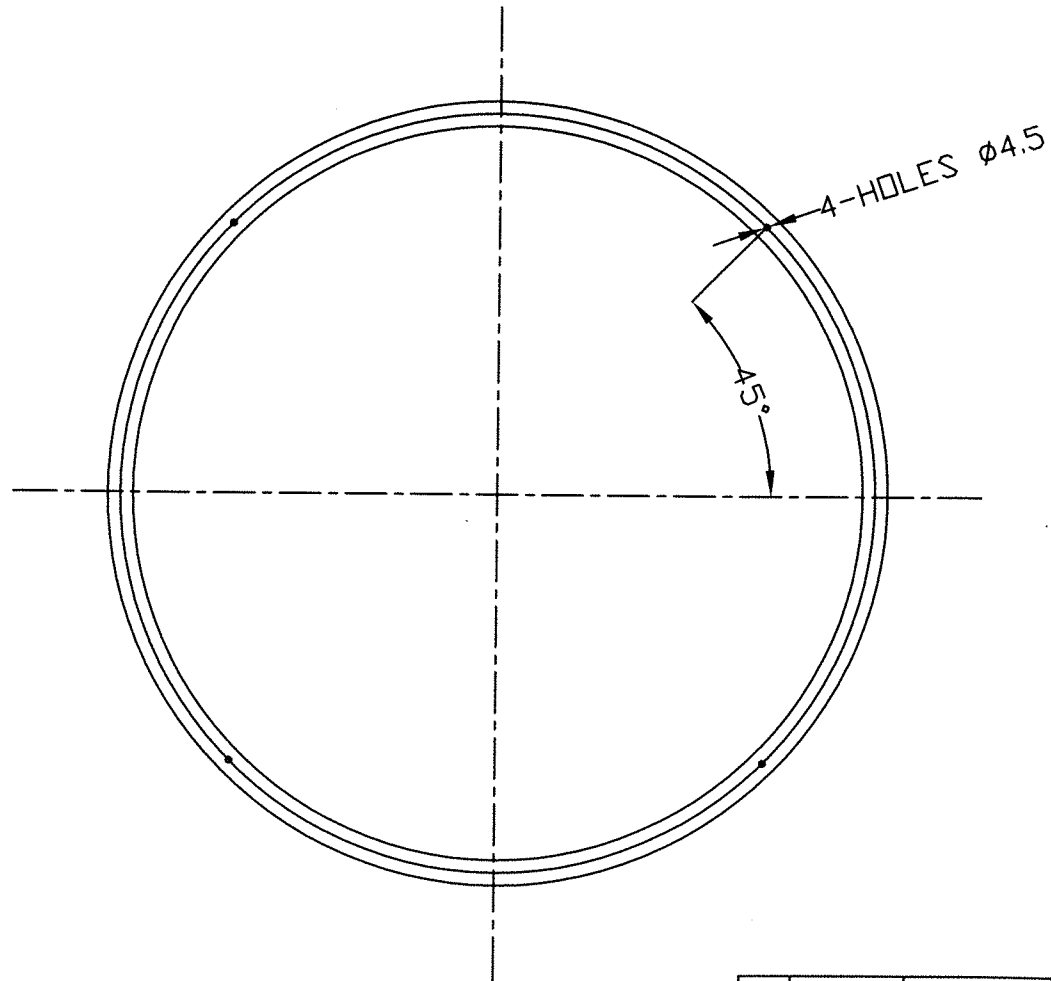
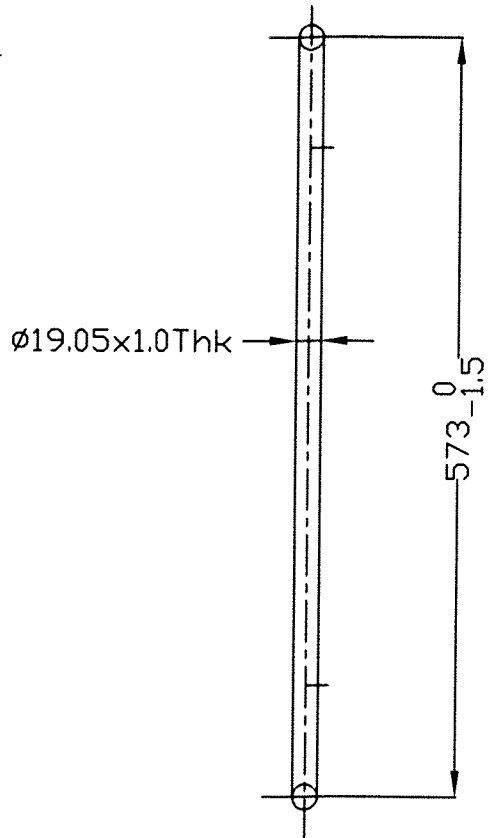
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SNo.	REGION	REVISION	DATE	SIGN
R E V I S I O N S				
		ARTIFICIAL LIMBS MANUFACTURING CORPORATION OF INDIA KANPUR		
DGN	ASHISH	NOM	PUSH RING TUBE	
DRN		MTL	STEEL TUBE ERWI, IS:3074, Ø25.4x1mm THICK	
CHD	SHIV PAL	HEAT	—	
DIM	IN mm	TREATMENT	—	
SCALE	NTS	SURFACE	—	
APP	VISHAL	TREATMENT	—	
DATE	15.01.2018	DRG No:-	TD 2 B 36 J C1	REV 0 SHEET 1 OF 1

10 9 8 7 6 5 4