ANNEXURE -A

SPECIFICATIONS:	"ANODIZINGPLANT"	Qty. – 01Set.

CodeNo.	

Scope: Design, fabrication, manufacturing, supply, installation& commissioning of anodizing plant with prove-out of plant capacity.

Purpose: To perform Anodizing on different parts used in mobility aids e.g. Axilla, Walking stick, Tri-pod, Tetra Pod, etc.

S.No.	Description of requirement	Required			
1	Components	Aluminum Parts of Walking Aids like Axilla, Walking stick, Tri-pod, Tetra Pod, etc.			
2	Dimensions of largest component	As per attached drawing, (Max. length of 1300 mm approx.)			
3	Surface Area of Largest component (axilla: side tube)	As per attached drawings			
4	Output Desired	Total72,000 Components (All sizes) per year i.e. 6000 Nos. per month i.e. 250Nos. per day.			
5	No. of Parts / Batch	50 Nos.			
6	Tank Section (in mm) (Internal dimension/working area)	Min. 1000Wx 18 accommodate 50		ngle Carrier Bar) at least arts	
7	Available Floor Space	Max. 23m x 6m			
8	Method of Handling	Component jigged, suspended on Carrier Bar (with GM 'V' Blocks) which is carried with help of manually operatedMotorized mono-rail crane with ON/OFF switch,forward,reverse,up-down operation			
		Process sequence	Temp. (in °C)	Tank MOC	
		Load / Unload	-	Steel channel/angles	
		Hot soak Degreasing	75-80	SS 316L (thickness :3.0mm)	
10	Process Sequence	Single Water Rinse	RT	PP Thickness: 20mm(min.)	
		Caustic Etching	50	Base material MS thickness: 5mm Fibre glass coating of 3.0mm(min)	
		C.F. Rinse	RT	PP Thickness: 20mm(min.)	
		De-oxidation	RT	PP Thickness: 20mm(min.)	
		C.F. Rinse	RT	PP Thickness: 20mm(min.)	
		Anodizing	Below 8°C	A. Base material: MS thickness:5mm, Lead lining (inside)thickness:5mm, FRP(outside)Thickness:3.0mm Insulation (outside) with Rockwool of thickness:50mm(desitity-60kg/m3) B. Cooling Coil (all around except bottom) made of Titaniun OD-25.4mmx thickness 0.9mm(min)	

1				
		C.F. Rinse	RT	PP
		C.I . Kilise	KI	Thickness : 20mm(min.)
		Nickel Acetate sealing	85-90°C	SS 304 thickness : 3.0 mm
		Boiling Water Sealing	98-100 °C	SS 304 thickness : 3.0 mm
		Hot air drying	100 °C	SS 304 thickness : 3.0 mm
11	Load / Unload stand with 'V' location	Min.1 set (on each	n tank)	
	saddles			
	Process tanks made of MS, SS, and PP complete with essential fittings			
12	such as thermal insulation, water inlet,	1 Lot		
12	drain outlet, overflow/scum chamber/	1 200		
	lip type exhaust ducting, 'V' location			
	saddles, anode/cathode supportbars, air agitation coils, heaters,			
	thermocouple.			
	Reinforcement to avoid bulging of			
12.1	tank:- (i) PP Tank:- suitable	Confirm		
	(i) PP Tank:- suitable reinforcement (min.50X 25 mm			
	thick support rib			
	at a distance of maximum			
	450mm) (ii) MS & SS Tank:- suitable			
	reinforcement (min. 50 X 50			
	X5 mm thick support rib at a			
	distance of maximum 450mm)			
13	COOLING SYSTEM			
	Min.15TR capacity chilling unit			
13.1	(forcoolingand maintaining the	1 Set		
	temperature of anodizing bath.)			
	The compressor unit shall have 02			
	years warranty plus 03 years minimum			
	extended warranty. A. Both Heat Exchanger & pump			
	(Min. 2 H.P.) is made up of acid			
	resistant materialspecifically SS316L .			
	B. Piping for all connections from			
	tank outlet to chiller unit is made			
	up ofPVC.			
14		Confirm		
	Make: Kraft Powercon/ Munk Rectifier/ Italtecno/Jindal			
	IGBT solid state rectifier with digital			
	type ammeter, voltmeter & Amp-Min			
14.1	/ Amp-Hr. meter, PLC communication air cooled design with	1 Set		
	AC cooling and remote operated			
	pendant, with PLC hook up facility			
	and voltage ramping profile			
	programmer. Capacity Min. 30Volts / 1000Amps.			
15	FILTERATION			
	PP body, plate type filtration units			
15 1	with seal-less magnetic pump,	1 Cat		
15.1	complete with inlet/outlet hoses, pressure gauge, pressure switch for	1 Set		
	auto cut off, carbon treatment			
	chamber, PP ball valves and PP			Page 2of 4

	strainer etc.			
	Capacity: 6000 LPH			
16	FUME EXTRACTION SYSTEM			
	Fume Extraction unit fitted with Lip			
	Duct, V belt Driven by 7.5 HP,3			
16.1	phase dynamically balanced impeller	1 Set		
10.1	complete standard unit of capacity for	1 bet		
	4500CFM(min) makes: Crompton/			
	Bharat Bijlee/ Siemens /			
	HindustanPP/FRP water washed			
	Fume Scrubber complete with water			
	spray nozzles, circulation pump, pall			
	Rings, misteliminator and centrifugal			
	seal-less pump. The chimney height			
	should be 15 meter form the ground			
18	MATERIAL HANDLING SYSTEM			
10.1	Single Work Carrier Bar. DC current	437		
18.1	with Cu Alloy, 'V' block and lifting arms suitable to operate with	6 Nos.		
	monorailon fully automatic			
	operations.			
18.2	Monorail operated Crane 250 kg	1 No.		
	capacity.			
18.3	Floor Mounted Structure for above	1 Lot		
	Crane. Centralized Control Panel to monitor			
	and control accessories, such as			
18.4	heaters, digital temperature	1 No.		
	controllers, complete with overload			
	contactors,relay,indicating lamps,			
	ON/OFF switch, starters etc for all			
18.5	items of supply. Work Platform with FRP gratings with	1 Lot		
16.5	MS strip of 25x5mm thick(min)	1 LOI		
19	Post Coating Cleaning	Confirm		
20	OTHER REQUIREMENTS			
20.1	Electrical system to be designed for			
	following			
20.1.1	Electrical System: 415 V, 3Phase, 50	Confirm		
20.1.2	Hz supply	G . C		
20.1.2	Protection level: IP 54 or better	Confirm		
20.1.3	Complete system to be tropicalized for	Confirm		
	Indian conditions (up to 50°C and RH 100%)			
		Confirm		
20.2	2500litre per change, TDS less than 1	 ······		
20.2	All civil work / foundation, details and			
20.3	drawings will be required from	Confirm		
	tenderer within 15 days from the	- 		
	release ofPO/WO			
	ALIMCO will provide power supply till			
20.4	work center, rest all work will be in the	_	Confirm	
	tenderer (including panels and cabling f			
	Chemicals and consumables required fo			
20.5	initial make-up and three months mainted Chemical's preferred makes: CMP Pvt.		Confirm	
	Coventya (India)/ Grauer & Weil (I) ltd			
20.6	•		Confirm	
20.6	Vendor to provide detail of power & air requirement Confirm ACCESSORIES			
<i>L</i> 1	ACCESSORIES			

	Turbine Blower (Min. 5 HP, 3 Phase, energy efficient) (For	
21.1	supply of dust & oil free air for agitation in alltanks).	1 Set
	supply of dust & off free an for agracion in arranges.	
	O:1 Chianna (for many and of ail/ahim for m	
21.2	Oil Skimmer (for removal of oil/skim from	Min.1 Set
	Degreasing Bath).	
21.3	Pneumatically operated top cover Lids for Sealing &	Min.3 Set
	Drying Tanks.	
21.4	Hot Air Blower / Radiator (3 Phase, energy efficient) for	Min. 1 Set
	Drying Tank	
21.5	Titanium Jigs (for various components to be anodized).	Min. 20 Nos.
22	SERVICES LINE	
22.1	PP/PVC piping for plain water supply.	1 Lot
22.2	PP/PVC piping forDMwater supply.	1 Lot
22.3	PP/PVC piping for chilled water circulation.	1 Lot
22.4	PP/PVC piping for air supply.	1 Lot
22.5	PP/PVC piping for drains & overflows.(min 50 each connecting	1 Lot
	to 150 mm final drain pipe)	
22.6	AC field cabling from Monorail Hoist with cable track /	1 Lot
	trolley.	
22.7	AC field cabling/wiring from control panel to all electrical	11 -4
22.7	machines of supply. (with cable tray & support structure)	1 Lot
	· · · · · · · · · · · · · · · · · · ·	
22.8	Conductive Copper bus bar or cable connections between	1 Lot
	rectifiers & process tanks with support structure.	
22.9	PP/FRP connecting ducts from lip ducts on tanks to	1 Lot
	Scrubber to Exhaust fans (with support structure).	
22.10	PP/FRP chimney with weather cowl (with support	1 Lot
	structure)3mtrs. Above factory shed	
22.11	Erection & assembly of plant at site.	1 Lot
22.12	Chemical Commissioning with approved sample trials	Confirm
	for 7 days of Plant operation.	
22.12	Vendor has to successfully prove out 5 cycles of	Confine
22.13	Anodizing plating at ALIMCO premises during prove- out.	Confirm
	Same shall be verified by ALIMCO.	
22	For Commissioning of the Plant (preparation of chemical baths	Confine
23	& process trials), Vendor shall depute expertchemist to guide operators for min. 2 weeks.	Confirm
24	Operation and Maintenance training at site, after	Min. 15 days
	successful installation and commissioning of plant	-
25	Chemicals / Consumables (for Initial Makeup & 3	Confirm
	Months Maintenance)	
26	Spares for 1 Year Maintenance	
26.1	Monorail Crane	1 Lot
26.2	Process Tank Heaters	1 Lot
26.3	PT-100 Rated Sensor	1 Lot
26.4	Pneumatic Accessories	1 Lot
26.5	Control Panel	1 Lot
26.6	Filter Unit.	1 Lot
26.7	Centrifugal Exhaust Fan & Scrubber	1 Lot
26.8	Turbine Blower	1 Lot
26.9	Chilling Unit	1 Lot
26.10	Rectifier	1 Lot
26.11	Spares for Oil Skimmer	1 Lot
27	Service	
27.1	TheauthorizedServicePartner(Name&Address)must	Confirm
2,.1	becertifiedbymanufacturerandshowninthequotation	
		· · · · · · · · · · · · · · · · · · ·

28	Vendor to include all items even if not mentioned above for necessary successful operation of plant on turnkeybasis as per design.	Confirm.
29	Drawing of component (maximum size) is attached with the tender document. To get clarity on variety of components to be plated, tenderer to visit ALIMCO Kanpur site and obtain acknowledgement certificate /slip for same, from competent authority.	
30	Drawing Design with complete layout and all electrical diagram/drawing (03 sets)to be provided by the party	confirm

DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:

The delivery period including installation & commissioning of anodizing plant at the destination mentioned in Para 1 on page no. 02 of the tender documents will be04months from the date of placement of Purchase Order/workcontract.

WARRANTY:

The entire plant inclusive of all system/accessories should be covered under warrantyfor a period of 24 months from the date of commissioning. The compressor unit for chilling unit shall have 02 years warranty plus 03 years minimum extended warranty.

Note:- To cover the extended warranty of 03 years on Compressor unit of chilling unit, Tenderer has to submit an undertaking to submit the Performance Bank Guarantee of 5% of total Order value for 03 years.

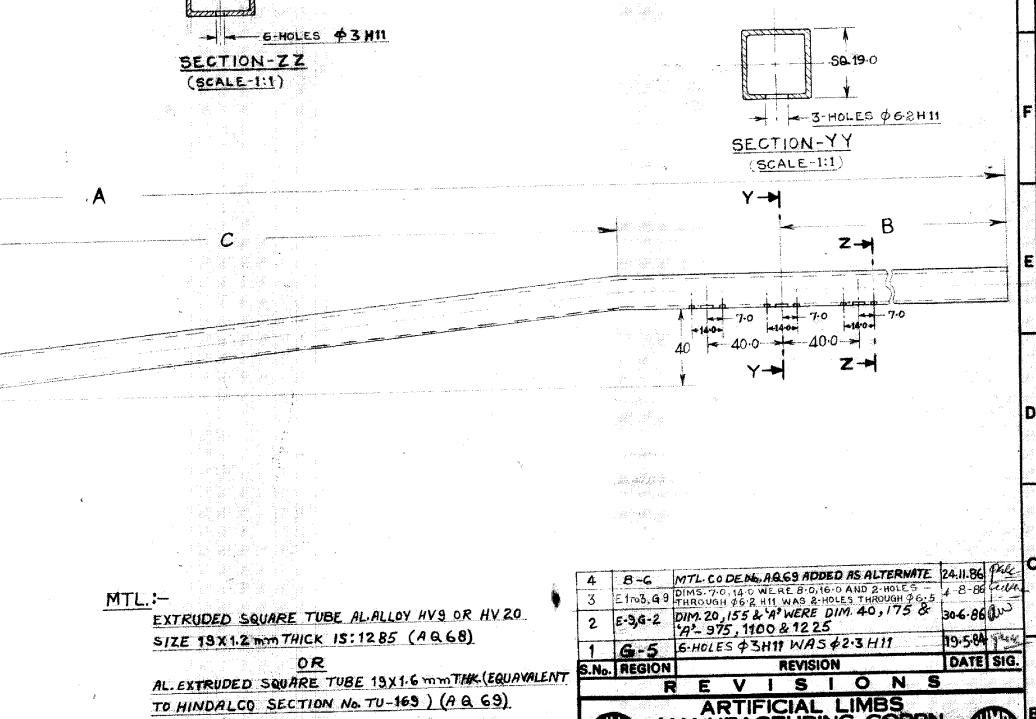
Note:

- Sketch/figureof tank attached at enclosure-A & B are indicative and for reference purpose only. Vendor has
 to fabricate & supply as per their design.
- 2. Items/Machine shall be supplied with 3 sets of comprehensive operation and maintenance manual.
- 3. Breakdown calls to be attended within 48hrs.
- 4. Supply to be done on Turnkey Basis. ALIMCO shall provide electrical supply point near to the place of installation.
- 5. Civil foundation details and drawings with specifications to be provided by thetenderer.
- 6. Total power consumption (in KW) to be provided by thetenderer.
- 7. Abbreviations:

RT - Room temperature MOC

Material of construction

MS - Mildsteel
SS - Stainless steel
PVC - Polyvinylchloride
PP - Polypropylene
FRP - Fibre reinforcedplastic



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S.No. REGION REVISION DATE SIG.

ARTIFICIAL LIMBS

ARTIFICIAL LIMBS

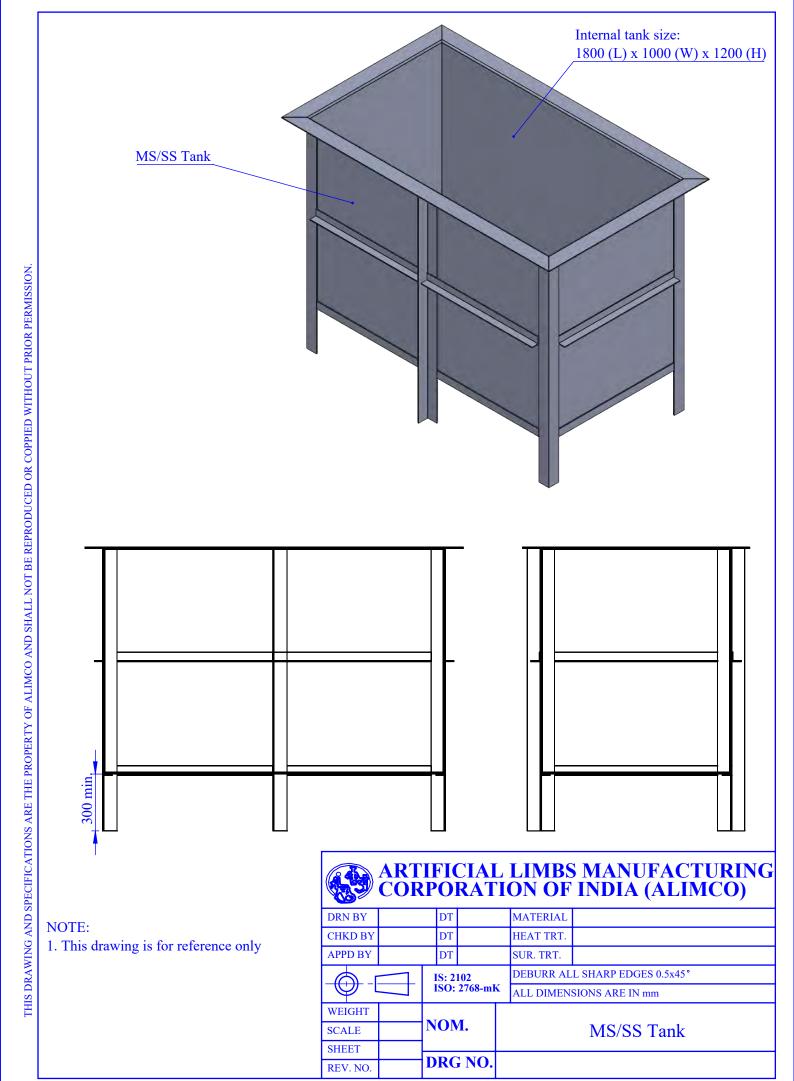
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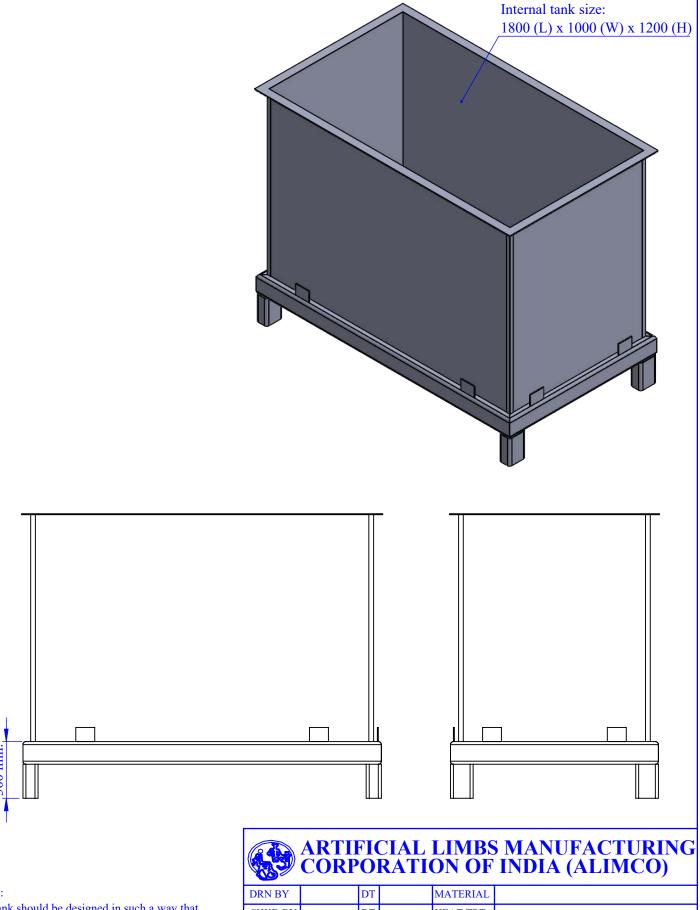
KANPUR

DGN. Quitant Nom. SIDE TUBE.

ORN. H. S. W. S. W. S. L. S. L.







Note:

- 1. Tank should be designed in such a way that the ground clearance of tank will be at least 300 mm
- 2. This drawing is for reference only

1					
DRN BY		DT		MATERIAL	
CHKD BY	HKD BY DT			HEAT TRT.	
APPD BY	APPD BY DT			SUR. TRT.	
		IS: 2102		DEBURR ALL SHARP EDGES 0.5x45°	
		ISO:	2768-mF	ALL DIMENSIONS ARE IN mm	
WEIGHT			_		
SCALE		NON	/1.	PP TANK	
SHEET					
REV. NO.		DRC	3 NO.	•	

