

GIGA SOLUTIONS LIMITED

PROGRAMABLE CONTROLLED TRANSPORTER OPERATED

ENIG LINE

PLANT TYPE	:	1 set side arm transporter
PROCESS	:	ENIG
P.C.BOARD SIZE	:	Typical: 356mmX458 mm (14"x18") Max: Min:
BOARD THICKNESS	:	0.4mm - 2mm (To be confirmed by Giga Solutions)
FLIGHT BAR LOADING	:	6 pcs/basket, 1 basket/Fly-bar ,Pitch 15mm incline 20mm
TANK SIZE	:	300mm(L)x700mm(W)x700mm(H)
MACHINE CYCLE	:	30 min
OUTPUT PER DAY	:	
OUTPUT PER MONTH	:	
HEATING MEDIUM	:	ELECTRIC HEATER
HEATING-UP TIME FROM AMBIENT: TO OPERATING TEMPERATURE	:	2.5 HOUR
AMBIENT TEMP	:	15 °C(in winter)
ELECTRICITY SUPPLY	:	380V , 3Ph , 50Hz
MACHING DIMENSIONS	:	Length M Width M Height M

GENERAL SPECIFICATION

CUSTOMER : TAZDIS
M/C TYPE : Side Arm TYPE x1SETS

SUBJECT : ENIG
CYCLE TIME : 30 MINUTES

Basic Temp : 15 Degree

HEATING TIME : 2.5 HOURS

DATE : 2005.03.01

Quotation No: QN04C110-5

TANK NO.	PROCESS	SEQUENCE	I/T (Min)	PROCESS TEMP. (°C)	TANK SIZE			VOL. (L)	TANK/LINING MTRL	O/F	WATER INLET		DRAIN TYPE		ELECTRIC HEATER COOLING	AGITATION		EXHAUST /SYS (M³/Min)	AUTO DOSING	FILTER PUMP (LPM)	RECTIFIER UNIT (V/A/SET)	CIR. PUMPS (LPM)	WASTE WATER	REMARKS	
					L	W	H				DI	CW	TD	BD		AIR	M								
					mm																				
1	LOAD/UNLOAD	1/23	--	--	300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	HOT DI RINSE	22	--	60	300	700	700	116	PP	--	O	--	--	O	TEFLON 3kw	--	M	--	--	--	--	--	R2	--	
3	DI RINSE	21	--	--	300	700	700	116	PP	O	O	--	O	O	--	O	M	--	--	--	--	--	R2	--	
4	DRAGOUT RINSE	20	--	RT	300	700	700	116	PP	--	--	O	--	O	--	O	M	--	--	15 bag type 15 1um PVDF+PP	--	--	R2	--	
5	IMMERSION GOLD	19	--	90	300	700	700	116	20t NPP	--	O	--	--	--	TEFLON 3kw x2	--	M	8	--	--	--	--	--	R1	--
6	CW RINSE	4	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
7	CW RINSE	3	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
8	ACID CLEAN	2	5-7	60	300	700	700	116	PP	--	--	O	--	O	TEFLON 3kw TEFLON 1kw	--	M+B	8	--	--	--	--	C1	40 mm	
9	MICRO ETCH	5	1-2	30	300	700	700	116	PP	--	--	O	--	O	--	O	M+B	8	--	--	--	--	C1	No cooling coil	
10	DRAGOUT	6	RT	RT	300	700	700	116	PP	--	--	O	--	O	--	O	M	--	--	--	--	--	R1	--	
11	CW RINSE	7	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
12	HOT SULPHURIC DIP	8	1-2	60	300	700	700	116	PP	--	--	--	--	O	TEFLON 3kw	--	M	8	--	--	--	--	C1	--	
13	CW RINSE	9	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
14	CW RINSE	10	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
15	PRE DIP	11	1-2	RT	300	700	700	116	PP	--	--	--	--	O	--	M	8	--	--	--	--	--	C1	--	
16	CATALYST	12	4-6	40	300	700	700	116	PP	--	--	--	--	O	TEFLON 1kw	--	M+B	10	--	--	--	--	C1	No FILTER	
17	CW RINSE	13	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
18	POST DIP	14	1-2	RT	300	700	700	116	PP	--	--	--	--	O	--	M	8	--	--	--	--	--	C1	--	
19	CW RINSE	15	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R1	--	
20	ELECTROLESS Ni	16	20	90	300	700	700	116	20t NPP	O	O	--	O	O	TEFLON 3kw x2	O	M+B	16	Supply by CTM	PVDF+PP PVDF Piping 30 5um	--	--	C1	Air Agitation under heater(Itype) have drain v.no	
21	CW RINSE	17	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R2	--	
22	CW RINSE	18	--	--	300	700	700	116	PP	O	--	O	O	O	--	O	M	--	--	--	--	--	R2	--	
OFF Line Nitric Acid storage tank,SUS316 PUMP ,use hose PVC piping																									
Nikle and Gold tank add heat insulator layer (25 mm foam PE)																									

DEFINITIONS :

B=Bumping
BD=Bottom Drain
C=Concentrate
C/F=Counterflow
CT=Carbon Treatment

FRP=Fibre Reinforced Plastics
HR=Hard Rubber
LS=Level Sensor
M=Mechanical
NPP=Natural PP

O/F=Over Flow
PE=Polyethylene
PP=Polypropylene, grey
PVC=Polyvinylchloride
QZ=Quartz

R=Rinse
SS-304 Stainless Steel
SS-316 Stainless Steel
ST=Sump Tank
SV=Solenoid Valve

TD=Top Drain
TE=Teflon
TI=Titanium
TPH=Turnover/H
V=Vibration Unit

GIGA SOLUTIONS LIMITED

TAZDIS PROJECT

QUOTATION

Messrs : TAZDIS
 Subject : ENIG Line
 Time of Delivery : 60-70 WorkDays after P/O validity
 Place of Delivery : **FOB SHENZHEN**
 Terms of Payment :
 Validity : 30 Days

Our Ref. : QN04C110-R6
 Date : 2005.03.08
 Tel. : 44-24-76666228
 Fax : 44-24-76666265
 Contact :
 1.Mr Jack Soor
 2.Mr R. Dhokia

ITEM	DESCRIPTION	Q'TY	UNIT	UNIT PRICE	AMOUNT
One	Main Equipment			USD	USD
1	Main Control panel (include power , transporter side equipment control three part) USE CE standard:control voltage AC110V,DC24V (excluding primary power wiring)	1	Set		
2	Programme Control PLC brand :OMRON/Janpan Program: 3 Sets of processes	1	Set		
3	In-line Plant Wiring and cable ducting multiple core wire,SUS304 stainless steel cable duct	1	Set		
4	SUS304 stainless steel cable duct and cable chain for transporter	1	Sets		
5	Position tab and accessories	1	Set		

6	Baseframe Rail Structure M'trl: SUS-304 Hoists' Rail M'trl: SUS-304	1	Set
7	Side arm type Transporters M'trl: S.S41,sand blast and epoxy coating Epoxy coating color:STD orange red type of Join Expert	1	Sets
8	Overall Mechanical Agitation System Horizontal , ±25mm Oscillation: 9-14RPM with inverter control	1	Sets
9	Flight Bars: MAT:SUS316	6	Sets
10	UPE Saddle and accessories	1	Sets
11	Process Tanks M'trl: refer to the specification sheet Tilted Structure of Tank's Bottom drainage outlet position :bottom	1	Set
12	In-tank fitting and piping Inlet/outlet water piping Air Agitation Piping Solution Filter/Circulation Piping Piping and accessories standard: JIS	1	Sets
13	Main supply and drainage piping water supply Piping Low pressure Airsupply Piping Drainage piping Piping and accessories standard: JIS	1	Sets
14	Cooling water supply sytem and solenoid control CANCELLED THIS ITEM	1	Sets
15	Piping for filter conection a) Immersion Gold , PVDF x1 sets, b) E'less Ni, PVDF x1 sets c)stage 4# Dragout Rinse: PP x1 sets,	1	Set
16	Tank side exhaust hood,and manifod hood and	1	Sets

	in-line main duct (Main duct 355mm diameter) Total exhaust fume value 66CMM Exclude exhaust fan and fume scrubber			
17	Load/Unload frame and solution tray	1	Set	
18	Low pressure air blower and attached coling piping Brand: Hitachi 2.5M ³ /Min 1200mmaq	1	Sets	
19	Thermocontrollers	7	Sets	
20	Level Sensors for Filter, Circulating Pump and Electric Heater	11	Sets	
21	Packing and inland Freight Charge (FOB SHENZHEN)	1	Set	
22	Installation on Customer's Site Charge (including: air-tickets, accomodations and training fee)	1	Set	
TWO Side equipment				
1	Filter TAIWAN Brand: SUPER a) Immersion Gold , PVDF/15LPM x1 sets, b) E'less Ni, PVDF/15 LPMx1 sets c)Stage4# Dragout rise, PP/15LPMx1sets	1	Set	
2	Cylinder shocked,2pcs cylinder/set,0-25mm E'less Ni, 1set, Catalyst, 1 set Micro Etch, 1 set Cleaner, 1 set Compress Air system equipment component:SMC/Japan Exclude Compressure machine	4	Sets	
4	Basket, SUS316 ,PVC Coating	6	Sets	

5	Electric Heaters (Heat-up time: 2.5 hour) Brand: N+B/china	1	Set	
	a) Imersion Gold, Teflon 3KW x2Sets			
	b) E'less Ni, Teflon 3KW x2Sets			
	c) Hot DI Rinse, Teflon 3KW x2Sets			
	d) Catalyst, Teflon 1KW x1Sets			
	e) Micro Etch, Teflon 1KW x1Sets			
	f) Cleaner, Teflon 3KW x1Sets			
	g) Hot sulphuric Dip, Teflon 3KW x1Sets			

The following items are not included in this quotation (But we must discuss the items not listed in the Contract.) :

- 1 Load and Unload Auto-matic Device
- 2 D.I. System and Storage Tank
- 3 Chillers System
- 4 Waste Water Treatment System and Storage Tank
- 5 Air Compressor
- 6 FRP Anti-corrosion Floor Making
- 7 Primary wirings and pipings for utilities
- 8 Unloading, unpacking and move to the site Charge
- 9 Site preparation, ready for machine installation
- 10 Scrubber(From Scrubber to Plating Line Exhaust Duct)

Delivery:

60-70 work days signing of this contract by both parties

Payment:

Warranty:

Tax(es):