



BANGLADESH ORDNANCE FACTORIES (BOF)

Gazipur Cantonment, Gazipur 1703.

RE: INVITATION FOR EXPRESSION OF INTEREST (EOI)

1. BOF is interested to undertake various projects to establish various production line/plant. Details of the projects are given in the website (www.bof.gov.bd/projects2020)

<u>Ser.</u>	<u>Project Name</u>
a.	Establishment of Electro/Chrome Plating Line

2. Deadline for Expression of Interest (EOI) submission 15 March 2020.

REQUEST FOR EXPRESSION OF INTEREST (EOI) OF ESTABLISHMENT OF ELECTRO/CHROME PLATING LINE

SL	Name	Description	Remarks
1.	Agency / Procurement Entity Name	Bangladesh Ordnance Factories (BOF)	
2.	Budget and source of funds	BOF Government Budget (MOD	
3.	Project Name	Establishment of Electro/Chrome Plating Line.	
4.	EOI Closing date and time	15 March 2020	
5.	Description and address of official inviting EOI	Bangladesh Ordnance Factories (BOF). Gazipur Cantt. Gazipur 1703	
6.	Contact details of Official Inviting EOI	Deputy Director Planning Wing BOF, Gazipur Cantonment. Gazipur 1703 Telephone.: 9204613 Ext 4052 E-mail: ddplgbof@yahoo.com Mobile: 01769044052	
7.	The client reserves the right to reject all EOIs	Yes	
8.	Brief description of Projects		

1.	Name of the Plant	Establishment of PLC Based Automated Cryogenic Electro Plating Plant
2.	Qty	01 (One)
3.	Specifications:	
	a. Purpose	Supply and installation of PLC based automated Cryogenic Electro plating line in order to carry out chromium plating of different types of small arms and other components and copper, silver, nickel, gold & other plating are on requirement basis).
	b. Job description	<p><u>Chrome plating (Job & Dimensions)</u></p> <p><u>Rifle</u></p> <p>(1) <u>Barrel.</u></p> <p style="margin-left: 20px;">(a) Job Length = 440mm</p> <p style="margin-left: 20px;">(b) Dia (od) = 21.5mm (Max),14.45 (Min)</p> <p style="margin-left: 20px;">(c) Dia (id) = 7.68 mm before plating</p> <p style="margin-left: 20px;">(d) Dia (id) = 7.62 mm after plating</p> <p style="margin-left: 20px;">(e) Plating Thickness = 0.03 mm</p> <p>(2) <u>Piston.</u></p> <p style="margin-left: 20px;">(a) Job Length = 272 mm</p> <p style="margin-left: 20px;">(b) Plating Length = 56.6 mm</p> <p style="margin-left: 20px;">(c) Dia (od) = 13.90 mm before plating</p> <p style="margin-left: 20px;">(d) Dia (od) = 14.18 mm after plating</p> <p style="margin-left: 20px;">(c) Plating Thickness = 0.14 mm</p> <p>(3) <u>Gas regulator.</u></p> <p style="margin-left: 20px;">(a) Job Length = 60.78 mm</p> <p style="margin-left: 20px;">(b) Plating Length = 20.15 mm</p> <p style="margin-left: 20px;">(c) Dia (od) = 13.41 mm before plating</p> <p style="margin-left: 20px;">(d) Dia (od) = 13.70 mm after plating</p> <p style="margin-left: 20px;">(e) Plating Thickness = 0.145 mm</p> <p>(4) <u>Rear sight Knob.</u></p> <p style="margin-left: 20px;">(a) Job Length = 38 mm</p> <p style="margin-left: 20px;">(b) Plating Length = 4 mm</p> <p style="margin-left: 20px;">(c) Dia (od) = 13.80 mm before plating</p> <p style="margin-left: 20px;">(d) Dia (od) = 13.93 mm after plating</p> <p style="margin-left: 20px;">(e) Plating Thickness = 0.65 mm</p> <p>(5) <u>Locking knob.</u></p> <p style="margin-left: 20px;">(a) Job Length = 7.66 mm</p> <p style="margin-left: 20px;">(b) Plating Length = 4 mm</p> <p style="margin-left: 20px;">(c) Dia (od) = 13.80 mm before plating</p> <p style="margin-left: 20px;">(d) Dia (od) = 13.93 mm after plating</p> <p style="margin-left: 20px;">(e) Plating Thickness = 0.65 mm</p> <p>(6) <u>Bayonet.</u></p> <p style="margin-left: 20px;">(a) Job Length = 275 mm</p> <p style="margin-left: 20px;">(b) Plating Length = 165 mm</p> <p style="margin-left: 20px;">(c) Job Thickness = 10.70 mm before plating</p> <p style="margin-left: 20px;">(d) Job Thickness = 10.73 mm after plating</p> <p style="margin-left: 20px;">(e) Plating Thickness = 0.015 mm</p> <p>(7) <u>LMG Barrel.</u></p> <p style="margin-left: 20px;">(a) Job Length = 520mm</p> <p style="margin-left: 20px;">(b) Dia (od) = 21.47mm (Max),16.05 (Min)</p>

	<p>(c) Dia (id) = 7.68 mm before plating (d) Dia (id) = 7.62 mm after plating (e) Plating Thickness = 0.03 mm</p> <p>(8) <u>60 mm Mor Gun Barrel.</u> (a) Job Length = 550mm (b) Dia (od) = 70.81mm (Max),68.07 (Min) (c) Dia (id) = 60.80 mm before plating (d) Dia (id) = 60.76 mm after plating (e) Plating Thickness = 0.02 mm</p> <p>(9) <u>82 mm Mor Gun Barrel.</u> (a) Job Length = 1400 mm (b) Dia (od) = 95 mm (Max),89 (Min) (c) Dia (id) = 82.04 mm before plating (d) Dia (id) = 82 mm after plating (e) Plating Thickness = 0.02 mm</p>																		
c. Available space for plant area	Lx Wx H= 27.13 M x11.89M x6.1M																		
d. Production Capacity(per day)	<p>(1) Rifle Barrel = 100 Pcs (2) Piston = 140 Pcs (3) Gas Regulator = 140 Pcs (4) Rear sight knob = 140 Pcs (5) Locking knob = 140 Pcs (6) LMG Barrel = 40 Pcs (7) 60 mm Mor Gun Barrel = 8 Pcs (8) 82 mm Mor Gun Barrel = 8 Pcs</p>																		
e. Accuracy of plating	To be mentioned																		
f. Controlling system	Cryogenic																		
g. Power supply	3 phase, 380 ~ 420 V/200 ~ 220 V, 50 HZ																		
h. Operating Temperature	To be mentioned																		
i. Operating Pressure	To be mentioned																		
k. Number of lines	To be mentioned																		
m. Tank	<p>Mat: Casted PVC/PP or to be mentioned (all tanks) Total Qty: To be mentioned as per requirement Size(L x W x H) To be mentioned</p>																		
n. Copper, silver, Gold, Nickel line/other plating line	Single arrangement for each item to be mentioned.																		
p. Rectifier 1500 Amp (Minimum)	<p>Specification</p> <table border="1"> <tr> <td>(1) Quantity</td> <td>To be mentioned as per requirement.</td> </tr> <tr> <td>(2) Control system</td> <td>To be mentioned</td> </tr> <tr> <td>(3) LCD display contents</td> <td>Voltage, Ampere, Working Over temp, Error etc</td> </tr> <tr> <td>(4) Protection method</td> <td>Input over voltage/under voltage, Over current, Output short/over heating self protection</td> </tr> <tr> <td>(5) Operating temp</td> <td>To be mentioned</td> </tr> <tr> <td>(6) Ambient temp</td> <td>To be mentioned</td> </tr> <tr> <td>(7) Ampere control</td> <td>To be mentioned</td> </tr> <tr> <td>(8) Temperature control</td> <td>Cryogenic</td> </tr> <tr> <td>(9) Ambient humidity</td> <td>50 ~90 %</td> </tr> </table>	(1) Quantity	To be mentioned as per requirement.	(2) Control system	To be mentioned	(3) LCD display contents	Voltage, Ampere, Working Over temp, Error etc	(4) Protection method	Input over voltage/under voltage, Over current, Output short/over heating self protection	(5) Operating temp	To be mentioned	(6) Ambient temp	To be mentioned	(7) Ampere control	To be mentioned	(8) Temperature control	Cryogenic	(9) Ambient humidity	50 ~90 %
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(7) Ampere control	To be mentioned																		
(8) Temperature control	Cryogenic																		
(9) Ambient humidity	50 ~90 %																		

	(10) Timer capacity	Hrs, min, sec minimum 12 hours with retentive memory during power failure
	(11) Polarity change system	Automatic Forward/Reverse by Timer
	(12) Country of origin	To be mentioned
	(13) Country of manufacturer	To be mentioned
	(14) Country of assembly	To be mentioned
q. Exhaust blower fan with motor	Specification	
	(1) Quantity	To be mentioned as per requirement.
	(2) Size(L x W x H)	900mm x 900mm x 400mm
	(3) Flow rate, Q	28,000~30,000 m ³ /hr
	(4) Noise	To be mentioned
	(5) Speed	To be mentioned
	(6) Blade	To be mentioned
	(7) Blade diameter	To be mentioned
	(8) Power supply	3 phase, 380 ~ 420 V 0.75 ~ 2.0 KW
r. Over head crane 01 ton	Specification	
	(1) Quantity	To be mentioned as per requirement.
	(2) Capacity	1000 Kg
	(3) Lifting Height	Minimum 07 Meter
	(4) Lifting speed	Minimum 4m/min
	(5) Traveling speed	Minimum 20m/min
	(6) Rope	Steel wire rope, Dia: 8 mm
	(7) Power supply	3 Phase, 380V AC, 50Hz
	(8) Country of origin	To be mentioned
	(9) Country of manufacturer	To be mentioned
	(10) Country of assembly	To be mentioned
s. Cooling system	(1) System	Cryogenic
	(2) Technical control parameters	To be mentioned
	(3) Power supply	380 ~ 420 V/200 ~ 220 V, 50 HZ
	(4) Cooling refrigerant	To be mentioned
	(5) Country of origin	To be mentioned
	(6) Country of manufacturer	To be mentioned
	(7) Country of assembly	To be mentioned
t. Fittings and accessories	(1) Copper flat bar 100 mm × 10 mm	if required
	(2) Brass round bar ø 35 mm	if required
	(3) Ms seam less pipe for steam line	if required
	(4) GI pipe for water line	if required
	(5) Lead pipe ø 25 mm	if required
	(6) SS Valves, Nipple, Socket, Tee, Elbow, Reducer etc. for Water, Steam & Air line	if required
u. Operating voltage & Current	Max and Min Operating voltage & Current to be mentioned	
v. Power supply	380~420V/200-220V, 50 Hz	
w. Other requirements	(1) Time and temperature auto calculation with compensation time (2) Alarm system both for completion of task or any kinds of faults/difficulties (3) Automatic loading/unloading system-only job setting to fixture and remove from fixture may be manual system. Others operation such as job	

	<p>transfer to respective tank, job transfer from one tank to another, , maintaining required time in each tank and finally final job transfer to the unloading station must be automatic</p> <p>(4) Composition of the solutions with necessary correction must be displayed on the screen- Display will show the ratio of the solution and existing amount in respective unit. If there is any deficiency of any chemical it will suggest the correction/required amount of chemical. If the solution is not in the proper ratio an alarm will warn</p> <p>(5) Rate of plating and final thickness of the plated layer must be displayed-it will show the initial job's thickness/diameter and plated job thickness/diameter. Display will show the current/running plating rate</p> <p>(6) Induced & forced draft fume exhaust system to be incorporated with the plant and outlet Chimney height should be higher than the top level of the shop roof.</p> <p>(7) ETP system incorporated with the system and internal arrangement must be done in such a way so that it matches with the future ETP plant</p> <p>(8) Preview or simulation system must be shown on the monitor</p> <p>(9) Modern lighting system</p> <p>(10) Operating voltage, current and other relevant information must be displayed on the monitor</p>
Conditions:	
a. List of spares, accessories and consumables (including price) recommended for 5 year period (Mechanical/ Electrical) required for smooth operation of the plant after the expiry of warranty period shall be provided.	
b. Performance test with training shall be carried out in BOF site	
c. It is the responsibility of supplier to fully integrate, erect and commission the plant at our identified site/ room.	
d. Performance and accuracies are to be demonstrated as per ISO Standards on supplied samples by us and on Calibration Standards supplied by the supplier.	
e. Extensive training (minimum 21 working days) shall be provided to BOF personals by the Supplier's Technical team at BOF site after installation and commissioning of the plant. The training should cover complete operation, application, basic & preventive maintenance and trouble shooting.	
f. The following documents (hard copy 2 sets & soft copy in CD/ Flash Drive/ HDD) to be provided;	
g. All the data and results of testing and calibration of the Computed Tomography at supplier's site shall be properly documented and supplied to BOF. Calibration Certificates (traceable to National / International Standard) of all the artifacts/ reference standards used for the same shall be provided.	
h. Operations, Calibration & Application software Manual – This document should explain all the measurement options, calibration, application of the system with sketches and detailed explanation.	
j. System administration & Maintenance manual – This document should explain the detailed system configuration and administration including controller, probe head with the help of sketches. System manual should explain known possible errors and solution for the same. User manual and service manual (for both Mechanical and Electronic Hardware/ Circuits) in English language should also be provided.	
k. Supplier should guarantee the availability of spares, software/ firmware updates and additional add-on modules for at-least 5 years from date of expiry of warranty.	
l. Customer support facility shall be made available for at least 05 (five) years after expiry of the guarantee period.	
m. Service facilities and personnel availability.	
n. Service personnel to attend any fault within 3 days after receipt of the information, whenever called for.	
p. The machine shall have warranty for a minimum period of 12 months or more after commissioning for defect free operation and specified accuracies at our site.	
q. Any defect observed during the warranty period shall be replaced / repaired free of cost with minimum down time. All the software updates during the warranty period shall be supplied, installed and trained to our personnel on real time basis at free of cost	

	r. To continue regular production this plant has to be installed gradually in line basis.		
5.	a. Country of Origin	:	To be mentioned
	b. Country of Manufacturer	:	To be mentioned
	c. Country of Assembly	:	To be mentioned
	d. Port of Shipment	:	To be mentioned