


## Annexure-1

### Scope of Supply for retrofitting of DMU 60 CNC universal milling machine.

The following items are to be supplied for retrofitting the DMU60 universal milling machine.

<b><i>Scope of supply - Items to be supplied for retrofitting</i></b>			
Si No.	Description of Items	Qty	Remarks
1	Siemens 828D package with four-axis simultaneous control(X, Y, Z - Linear axes and C - rotary table axis parallel to Z axis) and Spindle orientation(spindle stop at desired orientation)control along with HMI compatible with Siemens 828D package and Siemens machine control panel(M.C.P.)	1	
2	Combi drive system Siemens make compatible with Siemens 828D - Vendor to specify the model being supplied	1	
3	Single motor module for 5 Amps(To be used along with combi drive for 4 machine axes +1 spindle axes continuous control)	1	
4	Siemens make Sensor Module Cabinet(S.M.C) 20 or better encoder module	9	
5	Siemens make Drive-Cliq Hub Module Cabinet D.M.C20	1	
6	PP 72/48D Module I.O. card	2	
7	Drive Cliq cables		
a.	10m	3	
b.	3m	10	
c.	2m	4	
8	Power cable connector	5	
9	Relay boards	3	
10	Relay board and flat band cables	3	
11	Pendrive containing softcopies of the following documents a.Electrical drawings b. Manuals for P.L.C. c. C.N.C. systems manual d.Programming manuals. e.Parameters List f.Bought out item list with specifications g.CNC sytem backup	1	

  
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The following are the services required for retrofitting the DMU60 universal milling machine.

<u>Si. No</u>	<u>Description of service</u>	<u>Remarks</u>
1	Installation of CNC system, accessories, drives system with PLC & panel wiring, Modification if any and terminating of I/Os. Commissioning of CNC system ,Drives, motors and auxiliary circuits like hydraulic ,lubrication ,and other interlocks	
2	Laying and connecting power and encoder cables if necessary.	
3	Testing and development of PLC system	
4	Commissioning with part cutting and program prove out for 4 axis continuous type job.	
5	Applying necessary compensation after machine calibration is carried out by CMTI.	
6	One year warranty for parts installed and services carried out by vendor and 2 years warranty for CNC control sytem.	

**Note:**

1. The vendor shall carry out the retro-fitting activities using the original motors and scales of the machine.
2. The items listed in the above tables are indicative only, in case of any addition or deletion of items /service if necessary, the vendor can specify the same based on the technical study conducted during earlier CMTI visit.
3. The tender evaluation will be done on the total cost of goods and services and not individual items cost, no partial P.O will be placed. The items are to be listed for breakup of cost purposes.
4. The vendor may once again visit CMTI to evaluate any technical details during the time duration allotted for applying for the tender.
5. Panel Cooler is not to be changed in the machine.Original panel cooler of the machine to be retained.

  
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