

- 9.14. It shall be possible to control the movement of the tool with respect to machine zero through the machine coordinate system.
- 9.15. It shall be possible to set up work coordinate system using commands. It shall also be possible to set up adequate number of work coordinate systems through the MDI and select any of these in the programme.
- 9.16. It shall be possible to set up local coordinate systems with respect to work coordinate systems, which has been set up through MDI.
- 9.17. The colour monitor for distance display of programmes, status parameters position and velocity offset, sub-routine and macros must be available.
- 9.18. It shall be possible to check programme by colour graphic display of the work piece, Shape and tool path for machine.
- 9.19. It should be possible to rotate the programme by coordinate system according to the direction of milling head.
- 9.20. Facility to edit, store, search, delete etc. for sub programmes, subroutines, macros must be available.
- 9.21. It shall be possible to enter sub programmes into memory and calling them in memory command mode 4-loop setting shall be available.
- 9.22. It shall be possible to store programme number and programme name for identifying the Programme. The number of characters in programme name shall be indicated.
- 9.23. Facility for maintaining constant cutting speed.
- 9.24. Buffer memory storage capacity for writing programmes while the older programmes are under execution.
- 9.25. Provision for instant stop of operations in case of power disturbances and interruptions, keeping the programmes safe and possibility to resume the work from the same point onward.
- 9.26. Provision for overriding the axis feed rate along with spindle speed.
- 9.27. Jog operation of axis and spindle on Hi/Lo RPM/Feed.
- 9.28. Programme test through dry run.
- 9.29. Tool indexing in both the directions without any interruption through random position selection with MDI/auto programming.
- 9.30. Tabulated display of tool data, tool offsets, operational parameters, safety parameters and control parameters on main screen or windows must be incorporated in the system.
- 9.31. Single direction positioning: The spindle shall make its final approach to each set of coordinate position from the same direction irrespective of the general direction of movement.
- 9.32. Direct spindle RPM programming.
- 9.33. Automatic cutter override: Feed rate shall be reduced automatically to allow for increased cutter loading when approaching an internal corner.
- 9.34. Provision of different stored stroke checks for safety. Stored stroke limit shall be provided thus enabling creation of forbidden zones where the cutting tool may not travel.
- 9.35. Function to store distance available on each axis to stop the machining if programmed out of range.
- 9.36. Function to define a zone in the machine working area into which machine shall not be allowed to enter e.g. to prevent a collision with a clamp.
- 9.37. Provision of run hour display: To monitor the time in hours/minutes/seconds of automatic operation. Provision of displaying one line message to impart programme shall be made available.
- 9.38. Provision for optional stop, optional block skip and tool retracting and recovering (to restart a programme when a tool has been replaced in the machine spindle).
- 9.39. Provision to return the machine tool to the reference point through programme commands as well as manually.
- 9.40. Provision of pitch error compensation and backlash compensation shall be available.
- 9.41. Operation of air conditioner, oil chiller and swarf conveyor etc. shall be possible independent of CNC and shall be provided with positive safety interlock/feedback.
- 9.42. The CNC control panel shall be air conditioned and shall be capable to function satisfactorily at any supply voltage within the range of $415V \pm 10\%$.

- 9.43. The microprocessor unit shall be suitable for satisfactory operation at any supply voltage within the range of $415 \text{ V} \pm 10\%$.
- 9.44. The bidder's/ Indian agent's infrastructure for repair and maintenance of the offered controls in India in particular for repair of PCBs shall be commented upon in detail in the tender.
- 9.45. 2nd additional machining channel and maximum memory expansion as a package should be operative.
- 9.46. Fast interpretation links should also be available.
- 9.47. CNC should have capacity to interrupt routine with high speed retraction from the contour.
- 9.48. Multi axis interpolations should be available.
- 9.49. Polynomial interpolations should be available in the system.
- 9.50. Synchronized axes pair should be available.
- 9.51. Tangential control of cutter should also be available.
- 9.52. For (3 linear + 2 rotary) 5 axes machining, all supplementary functions and spline interpolation should be provided with the system.

10. SOFTWARE:

- 10.1 The machine software shall cater to all the features included in the machine specifications but need not be limited to the following:
 - i) Shall be capable to display the position, velocity offsets, graphic tool movements etc. on separate screens.
 - ii) Shall be programmable through normal data entry methods so that important instructions and safety aspects may be displayed to the operator prior to undertaking next operation through a distinct window.
 - iii) Shall be able to display dynamic simulation of tool movement for proving out a new programme, to write a sequential programme through the entry of geometrical input data, the two features being provable and vice versa.

Password, if any, provided for accessing the system, should be given to the consignee in writing before handing over of the system to Consignee.

- 10.2 The bidder shall provide ladder diagram / statement list for CNC control of the machine.

11. Programmable Machine Controllers for Maintenance Purpose:

- 11.1. This shall be able to indicate the followings.
 - i) Shall be able to display on CNC monitor screen, detailed diagnostic messages, all dynamic ladder, STL format and real time status data etc. beside safety limit NC and PC parameters. The trouble shooting software shall be adequate, powerful and shall have menu driven approach down to exact location of the problem spot.
 - ii) Able to indicate timely alarms for preventive maintenance schedule as recommended by the bidder and easily adaptable by the machine users through normal data entry method.

INFORMATION TO BE FURNISHED BY BIDDER

The bidder shall furnish the following information:-

- 1 Length, width and depth of the machine worktable.
- 2 Length, width and depth of the transverse beds.
- 3 Length, width and depth of the saddle.
- 4 Length, height and width of the column/gantry.
- 5 Length, depth and width of the ram carriage.
- 6 Minimum and maximum distance from spindle nose to table top.
- 7 Hardness of guideways/slideways.
- 8 Diameter of milling spindles.
- 9 Spindle nose taper.
- 10 Make of tool clamping system.
- 11 Motor power of all other motors.
- 12 Cutting feed rate in X, Y & Z axes.
- 13 Rapid feed rate in X, Y & Z axes.
- 14 Maximum torque of the feed drive motor.
- 15 No. of T-slots on work table with the dimensions of T slots and tolerance provided.
- 16 Surface finish achieved in milling and drilling operations.
- 17 Net weight and gross weight of the machine.
- 18 Overall dimensions of the machine (L x B x H).
- 19 Specification for geometrical parameters and performance.
- 20 Detail of required facilities required during commissioning.
- 20.1 Surface area & maximum height requirement of covered/uncovered areas.
- 20.2 Requirement of compressed air, its pressure & discharge should be indicated, if any.
- 20.3 Requirement of water supply, quality of water & drainage, if any.
- 20.4 Requirement of Material Handling equipments.
- 20.5 Space requirement for storage purpose of the machine before commissioning covered/uncovered.
- 20.6 Maximum size of packages containing the machine.
- 21 Model no.
- 22 Total connected electrical load of machine in KVA with system-wise break up.
- 23 Size of hydraulic oil tank, maximum pressure and flow rate of hydraulic system.
- 24 Cross sectional dimensions of RAM/quill, column/gantry, cross slide and worktable etc.
- 25 Maximum material removal rate in cm^3 / min in cast steel
- 26 Head change time.
- 27 Tool change time.
- 28 Chip time in seconds.
- 29 Indexing accuracy of heads.
- 30 Angular rotation of universal head in degrees i.e. C-axis movement.
- 31 Swivel of universal head in degrees i.e. A-axis movement.
- 32 Maximum weight of tool in the ATC in kgs.
- 33 Maximum tool dia. of tool in ATC (all pockets full) in mm.
- 34 Maximum tool dia. of tool in ATC (adjacent pockets empty) in mm.

SECTION-V

ANNEXURE-A OF SECTION-V

FORMAT FOR SUBMISSION OF TECHNICAL BID

1. We, M/s.-.....offer our machine, model no. as per the description given in Schedule of Requirements. We further state that, except for the following, for which clause wise brief description and justification for deviation has been indicated, our machine fully complies with all the clauses as given in technical specification Section-IV and we also confirm all the schedules given in the Delivery Schedule at Annexure-III of **Section-IV** :

S.No.	Clause/Item	Brief description of Deviation	Justification for deviation

Note 1: In case there is a contradiction in any information provided (some parametric values given in the specification and those given in the brochure or some other document enclosed by the bidder), unless specifically mentioned in the deviation cum confirmation statement under Annexure A of Section V, the values as given in the specification shall be taken as confirmed by the bidder and offer evaluated accordingly.

Note 2: In case bidder offers internationally accepted alternative specifications as per clause 2.1 of section IV and clause (iii) under heading "Important Notes", complete details of alternative specification, apart from filling above deviation statement, may be enclosed.

2. We further certify that we are meeting the reference clause as

(A) We are the regular manufacturer of this type of machine.

OR

We want to participate in this tender as a class-I / class - II vender [as per Make in India policy] with core machine of Foreign Origin, value addition in India will be -----% [more than 20%] and the value addition should not be in the core machine. We have tender specific tie-up with OEM / tender specific authorization from OEM of the machine to participate in this tender and the same is attached herewith.

(*Strike out whichever is not applicable)

(B) We (if the bidder is OEM of the machine) have made the following past supplies of similar machines [as per special condition of tender] during last 10 years

OR

Foreign OEM of the core machine (which the bidder wants to quote as per make in India policy) has made the following past supplies of similar machines [as per special condition of tender] during last 10 years:-

(*Strike out whichever is not applicable)

S. N.	OEM of core machine with address	Name of purchaser with postal address	P.O. No. and date (along with the copy of PO)	Name of contact person with designation	Phone/ fax /e-mail nos. of contact person	Date & place of commissioning of the machine

(C) We are submitting following performance certificate of the machines stated at Sl 2B [as per special condition of tender] from past user as stated in special conditions:-

S.N.	OEM of core machine with address	User Name & address	Date of Supply & commission	Date of issue of performance certificate	Application / Use	Leading parameters of the machine	Performance

3. We are having following facilities available with us or our agent for providing adequate aftersales service in India during warranty period. Complete details of aftersales service, availability of technically competent engineers and warehousing facilities for spares are indicated below:

- Aftersales service centres;
- Availability of technically competent engineers;
- Warehousing facilities for spare.

4. We have quoted for the following optional accessories as indicated under clause 2.3 of section IV

Sr No.	Description of the optional accessory	Quantity (in Nos.)	Rate (in Rs.)	Indigenous	Shelf Life (in Months)

5. We have quoted for following recommended perishable and non-perishable spares required for normal maintenance during warranty period to cover complete range of mechanical, hydraulic and electrical equipments including controls on triple shift working basis:

Perishable Spares:

S No.	Description of the spares	Part number	Quantity (In Nos.)	Rate (In Rs.)	Shelf Life (in Months)

Non-perishable spares:

S No.	Description of the spares	Part number	Quantity (In Nos.)	Rate(In Rs)

6. *We hereby confirm that we are the OEM and undertake to supply spare parts for a period of expected life of machine.

OR

*We hereby confirm that we are not the OEM of the core machine, but are submitting undertaking from OEM for supply of spare parts for a period of expected life of the machine to provide maintenance spares (as and when ordered) after the expiry of the Warranty/CAMC period (life of machine - 15yrs) including the maintenance spares required for the bought out sub- assemblies and parts.

(*Strike out whichever is not applicable)

7. We have quoted consumables and spares required during warranty period as per clause 17.3 of Section IV, in the format given below:

Sr No.	Description of the consumables and spares	Qty	Unit	Rate

8. It is certified that we are having suitable facilities at our works for carrying out various performance tests on the sub- assembly/assembly/machine and these shall be made available to the inspecting authority.

9. **BOUGHT OUT ITEMS:** We hereby furnish a list of all critical items/ sub-assemblies which are bought out by us and proposed to be used, along with the bidder's name, brand model etc as per clause 15 of section-IV.

Sr No.	Description	Item no.1	Item no. 2	Item no. 3
1.	Brief description of item			
2.	Model no.			
3.	Make			
4.	Quantity/machine			
5.	Bidder's name and complete Address			
6.	Whether imported or indigenous			
7.	Country of origin			

10	We shall provide Preventive Maintenance during warranty and Mandatory Comprehensive Annual Maintenance Contract as per clause 17 & 18 of Section-IV. Details of Preventive maintenance services including cleaning of machine to be provided during warranty and CAMC are given in the following format.					
	S.N.	TYPE OF PREVENTIVE SCHEDULE	PERIODICITY	ITEMS TO BE CHECKED	ITEMS OF REPLACEMENT	EXPECTED PLANT DOWN TIME
11	We have submitted the informations to be furnished by the Bidder as per the Annexure-VIII of section-IV.					
12	We further submit the following information about the offered machine as per the technical specification and Important Features of the tender section IV. We understand that any omission of any of the below mentioned information will render our offer incomplete to that extent.					
	S.N.	Information required		As per Clause no.	Value /Write up/ Brochure	
	1	Leading Parameters 1. Major Parameters 2. Other Parameters		Annexure-I of section IV	Write-up & Brochure if available	
	2	Technical Details/Particulars of Motors, Control Gears, Voltage Stabilizer & Isolation Transformer				
	2.1	A.C. Motors and Control Gears AC MOTOR □ Type of enclosure □ Type of duty (Ref. IS: 325) (Latest) □ Rating-Continuous/intermittent Output (KW/BHP) □ AC voltage across phases, number of phases & frequency. □ Speed in RPM Class of insulation □ Normal full load current Starting current □ Maximum current at the time of change over from lower speed to higher speed □ Type of motor-Squirrel cage/slipring (wound rotor) □ Temperature rise of windings and other parts allowed above an ambient temperature of 50°C. □ Frame size of motor □ End use of motor CONOTROL GEARS □ Type of control gear (Direct on line/Star Delta/Auto- transformer etc.) □ Rating of starting gear in KW & Amp. □ Short circuit protection (y/n) No volt trip (y/n) □ Overload trip (y/n) □ Delayed action current sensitive single phasing preventor (y/n) □ Standard specifications to which the motor control gear and its ancillary offered conform to		Annexure-VI of section-IV	Write-up	
	2.2	D.C. Motors and Control Gears		Annexure-VI of section-IV	Write-up	

	<p>DC MOTOR</p> <p>Type of enclosure</p> <p>Type of duty (Ref. IS: 4722) (Latest) Rating-Continuous/intermittent Output (kw/BHP)</p> <p>DC voltage across phases, number of phases & frequency</p> <p>Method of excitation whether shunt, series, compound or separately excited; if separately excited state excitation voltage.</p> <p>Speed in RPM</p> <p>Class of Insulation</p> <p>Normal full load current in Amp. Starting current</p> <p>Temperature rise of windings and other parts allowed above an ambient temperature of 50° C.</p> <p>Frame size of motor</p> <p>End use of motor</p> <p>CONTROL GEARS</p> <p>Type of control gear (Direct on line/ Resistance type/Thyristor type) Rating of starting gear in kw & Amp.</p> <p>Short circuit protection (Y/N)</p> <p>No volt trip(Y/N) Overload trip (Y/N)</p> <p>Standard specifications to which the motor control gear and its ancillary offered conform to</p> <p>Standard specification to which control gear conforms to Voltage Stabilizer & Ultra Isolation Transformer</p>		
2.3	<p>VOLTAGE STABILISER</p> <ul style="list-style-type: none"> ● Type of voltage stabilizer : <ul style="list-style-type: none"> a) DC servo motor type b) AC servo motor type c) Solid state ● Rated capacity in KV Amp. ● Nos. of phases & frequency ● Type of input supply unbalanced ● Input voltage ● Output voltage ● Rate of correction ● Class of insulation & winding (only copper wound is acceptable) ● Type of control circuitry ● Class of duty ● Type of cooling ● Indicating instruments and their ranges ● Safety features 	13.2 of Annexure VI of section-IV	Write-up

	ULTRA ISOLATION TRANSFORMER <ul style="list-style-type: none"> ● Bidder's Name ● Rated capacity ● Ratio of input/output voltage ● Class of insulation ● Arrangement for suppression of power line surges, spikes, transients and noises ● Type for cooling. 	13.3 of Annexure VI of section-IV	Write-up
3.	Process sheet with timings and other details	Annexure-II of section IV	Write-up (tabular sheet)
4.	Details of concomitant accessories	2.2 of section IV	Write-up, brochure, Values
5.	Details of optional accessories	2.3 of section IV	Write- Up, brochure, Values
6.	Safety features <ul style="list-style-type: none"> ● Nos. & locations of emergency switches ● Nos. of hardware limit switches ● Nos. of interlock switches & overloads ● Any other safety feature 	3.2.1 of section IV and 2 of Annexure V of section-IV	Write-up
7.	Noise level measurement <ul style="list-style-type: none"> ● Maximum noise level value ● Noise measurement technique ● National /International Standards to which it conform 	3.2.1.5 of section IV	Write-up
8.	Work table.	3.2.4 of section IV	Write-Up
9.	Productivity	1.3 of section IV	Write- up
10.	Arrangements provided to compensation of wear during service and actual value of hardness and accuracy of guide-ways (in micron/meter)	3.2.2, 3.2.3 of section IV and 6 of Annexure-V of section-IV	Write-up
11.	Details of arrangement of telescopic cover for protection of guide ways from chips and tooling	3.2.2.6 of section IV	Write-up
12.	Travelling Gantry	3.2.3 of section IV	Write-up
13.	Cross Rail / Saddle	3.2.5 of section IV	Write-up
14.	Ram Assembly	3.2.6 of section IV	Write-up
15.	Feeds	3.2.7 of section IV	Write-up
16.	Operator's Control	3.2.8 of section IV	write- up
17.	Lubrication System	8 of Annexure V of section IV	Write-up
18.	Hydraulic system with refrigerant compatible oil cooling system.	3.4 & 10 of Annexure-V of section IV	Write-up
19.	Fixturing / Clamping system	3.5 of section IV	Write-up
20.	Chips / Swarf Removal System	3.6 of section IV	Write-up
21.	Offline part programming software package [portable programming unit) – optional accessory	3.7 of section IV	Write-up & Value
22.	On-line work piece probing system	3.8 of section IV	Write-up
23.	Automatic tool changer	3.9 of section IV	Write-up
24.	Automatic head clamping system	3.10 of section IV	Write-up

25.	Tool Pre-setter	3.11 of section IV	Write-up
26.	Technical Literature	4 of section IV	Write-up / brochure
27.	Spares including maintenance/repair kit for CNC control PLC & AC drives	5 of section IV	As per format
28.	Special features	6 of section IV	Write Up & Values
29.	Testing & Prove-out at bidder's work and consignee's works. List of components to be proved out is at Annexure-F of section-V.	8 of section IV and Annexure-F of section-V	Write-up
30.	Training	9 of section IV	Write-up
31.	Foundation & related drawings. Details of Structure and foundation deflection compensation system	10 of section IV	Write-up
32.	Time schedule	Annexure-III of section IV	To be enclosed as per format
33.	Installation & Commissioning	13 of section IV	Write-up
34.	Geometric and performance standards	1.4 of section IV	Write -up
35.	Machine Light <ul style="list-style-type: none"> ● Nos. of lamps with wattage ● Illumination level in lux ● Operating Voltage 	4 of Annexure-V & 3.2.1.6 of section IV	Write-up
36.	Operating Environment	1.5 of section IV & 14 of Annexure-VI of section-IV	Write - up
37.	Unit cost of each Tool Holder , milling cutter , HSS drill , inserts , any other offered tool	2.2.1 of section IV	Write – up & Values
38.	General:- <ul style="list-style-type: none"> • Details of stress relieving cycle/ ageing process shall be given for all the major machine elements such as bed, column/gantry, cross side, and table etc. • The details of the various elements (bed, column/travelling gantry, cross- rail, table, ram assembly etc.) i.e. material, heat treatment cycle, special design and constructional features shall be clearly indicated in the offer. • The firm shall indicate the type of guide ways, make, accuracy class, no. of blocks and load carrying capacity per runner block. • The firm should also indicate the value of grinding accuracy of guide way in microns/meter. 	3.2.2 of section IV	Write-up
39.	Colour	14 of Section IV	Write-up
40.	Service Facility in India and Technical Support	16 of Section IV	Write - up
41.	Rigidity and Stability	1 of Annexure -V	Write-up
42.	Operational Controls	3 of Annexure V	Write - up
43.	Pneumatic System	9 of Annexure V of section IV	Write – up
44.	Hydraulic/Hydrostatic system <ul style="list-style-type: none"> ● Size of hydraulic/Hydrostatic tank ● Make ● Max. pressure developed Nos. of safety/interlocks provided against insufficient flow of hydraulic/hydrostatic oil 	10 of section V	Write-Up

45.	Full detail of CNC system	Annexure-VII of section IV	Write Up & Brochure
46.	Capacity of AC system for CNC panel <ul style="list-style-type: none"> • Make • No. of AC system • Type of refrigerant used • Heat load calculations Temperature range 		Write Up
47.	Information to be furnished by bidder	Annexure-VIII of section-IV	To be submitted
48.	Mandatory Comprehensive Annual Maintenance Contract [CAMC]	Clause 18 of section-IV and Annexure-IV of section-IV	Bidder's remarks

Signature of the authorized representative of the bidder with company stamp

ANNEXURE-B OF SECTION-V

FORMAT FOR INDEMNITY BOND

This deed of indemnity executed by M/s hereinafter referred to as Indemnifier which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, representative and assignees in favour of Dy.CME/BMF/BGB of Bogie Manufactory Factory, Budge Budge, Kolkata 700137, India, hereinafter referred to as the 'Indemnified' which expression shall unless repugnant to the context or meaning thereof, include its successors and assignees witnesses as to.

Whereas the Indemnifier herein had participated in a global tender for the supply of _____

_____ (machine name) which is opened on _____ (date) on terms and Conditions set out inter alia in the Tender Document.

And whereas, clause of the above mentioned tender document described that the machine shall be designed for a life of -- years with regular maintenance and all the structural members of the machine should be guaranteed for -- years against cracks, breakages etc. during the course of normal operations from the date of commissioning whichever is earlier of the stores supplied by the Indemnifier to the Indemnified.

The indemnifier hereby irrevocably agrees to indemnify that in the event of the said machine not achieving the life guarantee, the indemnifier shall be deemed to undertake necessary repair of the defective machine at site free of cost within a reasonable time specified by the indemnified or reimburse the pro-rata cost of the machine to the extent of life not achieved as per the guarantee, or supply a spare stores for the defective portion only free of cost at site.

Bidder's authorized signatory

With seal Station:

Date:

Witness: 1. _____

(Signature with Name, Designation & Address)

2. _____

(Signature with Name, Designation & Address)

Amalendu
10.04.26
Dy.CME/BMF/BGB

[Signature]
10.04.26
Dy.CME/BMF/BGB

[Signature]
Dy.CME/BMF/BGB

[Signature]
10.04.26
Dy.CME/BMF/BGB

JOINT RECEIPT INSPECTION NOTE

Date.....

Sub: Receipt of consignment for machine.....

Ref: ER Purchase Order No. & Date.....

1.	Name of consignee/Railway	
2.	Machine name	
3.	Quantity	
4.	Name of supplier	
5.	Consignment of the machine received on	

It is certified that the consignment of the machine has been received complete and in good condition as per specification shown in the contract. Tentative plan for installation and commissioning of the machine is as under.

1.	Date of clear site provided	
2.	Contract	Turnkey/Non-turnkey
3.	Status of readiness of foundation:	
3(a)	Already constructed on	
3(b)	Under construction & likely date of its completion	
3(c)	Construction yet to be started from and & likely date of its completion	
4.	Status of availability of electrical power, water and compressed air etc.	Available/Not-available
5.	Number of components to be proved out on the machine	
6.	Likely date for start of erection	
7.	Likely date for switch-on the machine	
8.	Likely date of completion of commissioning of the machine	

Representative of firm
Designation

Representative of consignee
Designation
(Minimum Gazetted level)

JOINT COMMISSIONING NOTE

Date.....

Sub: Commissioning of (name of machine).....

Ref: ER PO No.

1.	Name of consignee/Railway	
2.	Machine name	
3.	Quantity	
4.	Name of supplier	
5.	Machine received on	
6.	All the parameters of the machine are found okay. The proving test on the machine was conducted from to and machine is working satisfactorily.	
7.	Machine has finally been commissioned on..... The machine has been handed over for regular use and kept under one month observation to watch its performance.	
	Following minor deficiencies (if any) found during joint observation trials are to be attended/rectified by the firm during one month observation and before issuing the PTC for the machine: a. b. c.	

Representative of firm
DesignationRepresentative of consignee
Designation
(Minimum Gazetted level)

Amal Singh
10/04/26
SGS/PCME/HQ/ER

Amal Singh
10.04.2026
Amal Singh/HQ/ER

Amal Singh

Amal Singh
10/04/26
Dy. CME/PCME/HQ/ER

PERFORMANCE APPRAISAL FORM
APPRAISAL ON COMPLETION OF WARRANTY PERIOD

Dated:.....

To,

M/s.

1.	PO No & Date.	
2.	Consignee/Railway	
3.	Name of supplier	
4.	Machine Name	
5.	Machine received on	
6.	JRI on	
7.	Commissioning certificate issued on	
8.	Warranty period expired on	
9.	Performance during warranty period:	
9(a)	Total number of breakdowns	
9(b)	Total downtime in number of days	
10(a)	Any warranty complaint pending on date	Yes/No
10(b)	If yes, then the date and nature of defect(s)	

11. In case there is any breakdown of the machine with mandatory PMC during warranty period, following details of breakdown hours for preceding eight quarters must also be furnished.

Quarter	Period FromTo.....	Breakdown hours
1		
to		
8		

Signature-----

Name-----

Designation: DY.CME/Sr.DME/Dy.CEE/Sr.DEE

Office Stamp

1. PCMM, ER, 17 NS Road, Kolkata-700001.
2. CME(Ptg), ER, 17 NS Road, Kolkata-700001
3. FA&CAO, ER, 17 NS Road, Kolkata-700001

Note:

- i.) This appraisal may please be sent immediately on completion of warranty period. If any extension of warranty period required, may please also be mentioned with details.
- ii) Sr. Scale Officer having independent charge is also authorized to sign.

LIST OF COMPONENTS TO BE PROVED OUT ON THE MACHINE**[Relevant Drawing are attached]****For the consignee viz BMF/BGB**

S.N.	Component (axle)	Drg. No. (Rough Turned)	Details of Machining Operations to be carried out
1.	LHB FIAT Bogie Frame	LW03007 or Latest Drawing /Specification/ Amendments.	<p>The representative machining locations on the FIAT Bogie are as under:</p> <ol style="list-style-type: none"> Milling operations of control Arm Brackets at four locations having two controls arm brackets per location i.e. total of 08 control arm brackets per bogie frame. Also finish machining of holes of each of control arm bracket. Milling operations of mounting Brackets for fitment of disk brakes at four locations which involves horizontal and vertical milling operations. Also machining of holes in vertical and horizontal direction. Finish machining of 02 holes of each bracket and surface machining of Anchor link brackets at two locations in bogie frame located diagonally opposite. Finish machining of holes and surface machining of each of cross section bracket on cross tube assembly. Finish machining of four holes of each of Anti Roll Bar Brackets at two locations (LH & RH) with chamfering and Tapping. Machining of Spring Guide tube at bottom at four locations of primary suspensions. <p>NOTE:</p> <ol style="list-style-type: none"> The machining of holes and faces is at 6° (degree) to vertical and horizontal axis, therefore the Z axis should be freely indexable to approach the job at required angles for Machining operations. The above machining locations are for reference only, final requirement to be complied as per relevant drawing.

QUALITY ASSURANCE PLAN**MACHINE DESCRIPTION: 5-AXIS CNC MACHINING CENTRE**

Category	S. No.	Component/ Process	Sample Size	Type Of Check	Quality record	Type of check	Remarks
Bought Out Raw Material		Steels	1 Sample / Size	Chemical & Mechanical	TC & Invoice	Verified	
Bought Out Components		Bearings	100%	Visual	Invoice	Verified	
		Electric Motors	100%	Review of TC	TC & Invoice	Verified	
		Hydraulic Pumps & Elements	100%	Review of TC	TC & Invoice	Verified	
		Rubber Seals, O Rings & Seals	100%	Visual	TC & Invoice	Verified	
		Controllers	100%	Review of TC	TC & Invoice	Verified	
		Ball Screw	100%	Visual	IIR	Verified	
		Weld joints					
Bought out sub-assemblies		Load Bearings	100 %	RT	IR	Verified	
		Others	5 %	DPT	IIR	verified	
		Hardness	100%	Hardness	IIR	Verified	
In process inspection		Heat Treatment	100%	Review of Inv.	IIR	Validation	
		Castings	100%	Visual	IIR		
		Spindles	100%		IIR	Validation	
		surface finish of components	Random	Surface	IIR	Validation	
		Noise level	100 %	Sound	IIR	Validation	
		Temperature rise	100 %	Measurement	IIR	Validation	
		Structures Geometry alignment, Guide-ways	100%	Relevant ISO / DIN / IS / JIS standard	IR	Validation	

INV - Invoice

TC - Test Certificate

V - Verification / Validation

CHP - Customer Hold Point

IIR - Internal Inspection Report

IR - Inspection Report

Signature
10.04.26
SSE/MECH/PCME

Signature
10.04.2026
AMEP/HA/BA

Signature

Signature
10/04/26
DY. CHIEF/MECH.