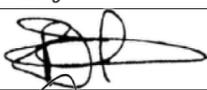




**Specification
TE-IMS-PEMM-NEC-SPC- 001**

Specification for the supply of tools for the 44 Class Locomotives				
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Risk:	Collen Manana			21-02-2024
Local Business:	Locomotive Business			
Location:	North-East Corridor			



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1. Scope of Work

This specification requirement covers all the requirements that will be needed to inform the supplier/vendor/manufacture to carry out what is expected from him/her: The contract will be awarded as a turnkey project and the contractor will be responsible for all the work specified.

This specification states the minimum requirements relating to the work and in no way absolves the contractor from responsibility for sound engineering practice. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering at tender stage and optional prices for addressing such omissions must be provided.

2. Site Inspection

Tenderers must visit the site to familiarize themselves with all the aspects involved relating to the project that must be done. This must be arranged via the Contract Manager. The site inspection certificate will be counter-signed by the Contract Manager on day of the site visit. The tender documents must only be submitted if the site inspection certificate has been signed.

3. Information Required

Tenders shall be in duplicate and will not be considered if full particulars of all relevant equipment and works requested are not submitted at the tender stage, to ensure an objective assessment of the offer can be made. Tenderers shall confirm that the items that they are offering comply at a standard not less than the minimum required requirement asked for in the specifications. Tenderers must comply with these specifications, but alternative offers may, in addition, also be submitted. Such alternative offers must be fully motivated and substantiated.

4. Technical Requirements:

All equipment and installation whether detailed in this specification or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended.



5. Operational Parameters:

5.1 Environment:

The equipment will be required to operating in the climatic conditions of Mpumalanga and Limpopo

6. Guarantee:

The contractor shall guarantee for a period of 12 months minimum (preferably 24 months or more) after successful commissioning for there electronic tools. Tools shall be defects free

7. Specific Requirements:

No	Tool description/image	Specification/Dimension	Comply yes/no
1.	Fuel injector alignment tool for engines 	2.1 Provide a tool which could be used to align the fuel injectors on 44 class engines. 2.2 The extension of the tool should be milled out to profile the injector face. 2.3 The injector face should not easily get worn out. 2.4 The tool should be made from steel or aluminium. 2.5 The tool should be light and easy to handle.	
2.	Compression Test Kit 	3.1 Supply the compression test kit that will be able to diagnose low compression on power assemblies. 3.2 Test kit should have the capability to show reading below 19 bars (270psi). 3.3 The kit to be supplied should contain eight individual compression testers. 3.4 A padded hard storage box to store compression testers should be supplied. 3.5 There set supplied should contain the following: 3.5.1 FDL compression tester 3.5.2 Governor stop block. 3.5.3 Storage box 3.5.4 Calibration certificate	



No	Tool description/image	Specification/Dimension	Comply yes/no
3.	<p>44D Cylinder Lifter</p> 	<p>Supply these lifter which can be used to lift the evolution power assembly at the 22 ½ degree installation position or vertically.</p>	
4.	<p>Inlet and Exhaust roller retainer for gevo engines</p> 	<p>Supply inlet and exhaust roller retainer for gevo engines. The retainer should consist of the following:</p> <ul style="list-style-type: none"> • Retainer body • Matting thread 	



No	Tool description/image	Specification/Dimension	Comply yes/no
5.	<p>½” Drive ratcheting torque wrench</p> 	<p>Supply a ½’ square drive micro adjustable ratcheting torque wrench 47 – 332Nm (30 to 250 FT-LBS). Should have ± 3% Clockwise, Wrench Length should be 610mm (24”) Wrench Weight should be 1.4 kg (3 LBS) Supply equipment Calibration certificate</p>	
6.	<p>Piston Assembly Saddle for Gevo Engines</p> 	<p>Supply piston assembly saddle which used to center the piston in the liner bore. The assembly should consist of the following:</p> <ol style="list-style-type: none"> 1. Wedges 2. Frame 3. Cables 	



No	Tool description/image	Specification/Dimension	Comply yes/no
7.	Exhaust Bellows Adapter 	Exhaust bellows adapter should consist of there following: <ul style="list-style-type: none"> • A ½” square drive on one end • 12mm 12 point on the other end 	
8.	44D Piston Ring Expander 	Supply a 250/26mm piston ring expander. Should have a sturdy yet lightweight handle and precision machined guide for and easy insertion.	



No	Tool description/image	Specification/Dimension	Comply yes/no
9.	44 Piston Ring Compressor 250 MM 	Supply 250 mm ring compressor. Should allow easy assembly of pistons into liners.	
10.	44D Valve Set Feeler Gauge 	Supply valve setting feeler gages for inlet 45mm and exhaust 95mm on gevo engines Should have a 0.45mm and 0.95mm tip to the knurled handle.	



No	Tool description/image	Specification/Dimension	Comply yes/no
11.	44 D Barring Over Arbor 	Supply Barring Arbor for Gevo Engines	
12.	44D Turbo Lifter 	Supply a low-profile turbocharger lifter. The lifter is used to remove and install turbochargers on locomotive engines.	

No	Tool description/image	Specification/Dimension	Comply yes/no
13.	44D Turbo Mounting Bolts Adaptor 	Supply a Turbo Mounting bolt adaptor 20mm 12 points	
14	43/44D Turbo Speed sensor tool 	Supply Turbo Speed Sensor installation Torque Kit. There Kit should consist of there following: <ul style="list-style-type: none"> • Extension with a slot milled into the side to accommodate the sensor wires • 32.5 Joule (24lb/ft) preset torque handle. • 3/8' Square drive ratcheting adapter 	



No	Tool description/image	Specification/Dimension	Comply yes/no
15	1" Gear case plug tool 15/16 with torque wrench 	Supply a gear case plug tool with torque wrench. Apter end should have 15/16" drives and includes a preset torque handle. Supply equipment Calibration certificate	
16	U-tube torque equipment/axle cap torque Kit	There kit should consist of there following: <ol style="list-style-type: none"> 1. 5:1 Verifier 2. 1 7/8" Socket (2 required) 3. 2" Socket (2 required) 4. 2 ¼" Socket (2 required) 5. Extension 10" 6. Extension 16" 7. Universal Joint 8. Storage Box 	



No	Tool description/image	Specification/Dimension	Comply yes/no
			
17	Cam-car bolt torque equipment (removal kit)	This Kit is used to install cam car bolts The kit consists of there following items: <ol style="list-style-type: none"> 1. Torque motor 2. Reaction arm 3. Reaction socket 	



No	Tool description/image	Specification/Dimension	Comply yes/no
		<ol style="list-style-type: none"> 4. Cam car installation socket 5. Cam car removal socket 	
18.	Splined torque bit set (Tamper roof)	Supply adapter set containing there following 12 adapters <ol style="list-style-type: none"> 1. 1/2" adapter 2. 9/16" adapter 3. 5/8" adapter 4. 11/16" adapter 5. 3/4" adapter 6. 13/16" adapter 7. 7/8" adapter 8. 15/16" adapter 	



No	Tool description/image	Specification/Dimension	Comply yes/no
		<p>9. 1" adapter 10. 1-1/16" adapter 11. 1-1/8" adapter 12. 1-1/4" adapter</p> <p>Should be supplied with an aluminium stand</p>	
19.	<p>Connecting rod torque with 54 1 Torque verifier</p>	<p>Supply connecting rod torque kit with 54 1 Torque verifier.</p> <p>The kit should consist of the following parts:</p> <ol style="list-style-type: none"> 1. 25:1 Verifier with anti-wrap up feature 2. Reaction Arm 3. 24 mm sweep socket <p>Supply equipment test certificate</p>	



No	Tool description/image	Specification/Dimension	Comply yes/no
20.	Torque wrench 	Supply a Torque Wrench - 3/4" Ratchet Style Square Drive 100-600 FT-LB. Supply equipment Calibration certificate	
21.	Conn rod cap lifter 	Supply Conn Rod Cap Lifter	



No	Tool description/image	Specification/Dimension	Comply yes/no
22.	Water and Oil Pump Appliance 	Supply Water Pump Appliance	
23	Torque adapter 	Supply 24MM Oil Pump Torque Adapter	

