






**Specification**  
**TE-IMS-PEMM-NEC-SPC- 002**

<b>Description: Specification for Tools for Strategic Project TE Turnaround</b>				
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Local Business:	Locomotive Business			
Location:				

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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. Information Required**

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.

## **3. 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.

## **4. Operational Parameters:**

### **4.1 Environment:**

The Tools will be required to operating in the climatic conditions of South Africa

## **5. Guarantee:**

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

## 6. Specific Requirements:

Item No	Tools Description name	Part Number	Quantity	Specification/dimension
1	Traction Motor Cam Car Inst and Removal Kit.	T58080	5	The Kit is used to install cam car bolts. The kit consists of the following items: 1. Torque motor 2. Reaction arm 3. Reaction socket 4. Cam car installation socket 5. Cam car removal socket
2	Traction Motor Axle Cap Torque Kit	T52210K	3	This kit consists of a 5 to 1 verifier, rated at 1250 lb.ft., with a 3/4" square female input and a 1" square male output. The kit also includes 2 – 1 7/8" sockets, 2 – 2" sockets, 2 – 2 1/4" sockets, 1 – 10" extension, 1 – 16" extension, 1 – universal joint and a storage box.
3	Air Control Kit for Various Pneumatic Kits	T50041	6	The T50041 Air Control Kit features a modular two-piece pressure regulator and filter/lubricator mounted to the T50150 Protective Cage. The pressure gage reads up to 160 PSI and the kit has all 1/2" NPT hardware along with a 10' hose.

4	Crankshaft Deflection Gauge Kit	T81252	3	This gage is used to determine crankshaft deflection during alternator installation on Evolution, HDL and FDL engines. The kit comes complete in a compact storage box for added protection. The kit consists of the following items. 1. Evolution mandrel 2. HDL mandrel 3. FDL mandrel
5	U Tube Reaction Bracket with Socket	T59451	6	The T59451 includes the adjustable height reaction bracket and a 2" six point socket to connect to the 1" drive on the air motor. The reaction bracket shaft is machined with a vertical groove which allows the reaction plate to slide and lock into three different heights to address the various depths of the U Tube Bolts.
6	Pistol Grip Pneumatic Air Motor	T20001	6	These are the below requirements: - Square Drive Size: 1" - 295-1475 Ft-lb torque range (400-2,000 NM) - Switchable forward and reverse operation. - Quiet – less than 79 dB(A), and non impacting for low operator fatigue. - 'Soft Start' trigger control aids socket location and allows gradual and safe reaction take up



7	Air Motor For Barring GE FDL Engines	T22020	8	This motor comes with an appropriate Reaction Plate attached and is used to barr the GE FDL Engine. This is the below tool requirement: 380 to 1,250 Lb/Ft 515 to 1,700 NM Max Air Pressure: 4.2 Bar Free Run Speed: 9 Revs/Min
8	Barring Arbor for GE FDL EFI Engines without a Barring Gear Box	T58440	5	The T58440 EFI Barring Arbor is for newer EFI engines that are not equipped with barring gear boxes. The arbor is installed in the new gear cover and secured.
9	Barring Arbor for GEVO Engines	T85650	3	The T85650 Barring Arbor is needed in the new Evolution Engines that are not equipped with a barring gear box

10	Fuel Line Fuel Pump Torque Kit for GE FDL EFI Engines	T15926	2	<p>The T15926 Fuel line torque kit contains all the tools necessary for EFI fuel pump removal/installation as well as the high-pressure line. The kit consists of the following.</p> <ol style="list-style-type: none"> <li>1. Ratchet Adapter 1/2"</li> <li>2. Fuel Line Wrench</li> <li>3. 1-1/2" Adapter</li> <li>4. Fuel Pump Mounting Bolt Adapter</li> <li>5. 1-5/16" Socket</li> <li>6. 3/4" Deep Socket</li> <li>7. 30-150 lb. Ft. Torque Handle</li> <li>8. 1/2" 12 Point Adapter</li> <li>9. Metal Box</li> </ol>
11	Fuel Line Torque Kit for GE Marine FDL EFI Engines	T15926MS	2	<p>The kit consists of the following.</p> <ol style="list-style-type: none"> <li>1. Torque Handle 30-150 lb.ft</li> <li>2. 1/2" Ratchet Adapter</li> <li>3. 1/2" x 3/4" Deep Well Socket</li> <li>4. 1 1/4" Open end Adapter</li> <li>5. Spanner for Left Hand Locking Nut</li> <li>6. Metal Box</li> <li>7. 1/2" 12 pt. Camshaft Torque Wrench Adapter</li> <li>8. 7/8" Torque Adapter</li> <li>9. 22 MM Socket</li> <li>10. Fuel Pump Mounting Wrench</li> <li>11. Nozzle Knocker</li> <li>12. Nozzle Knocker Tips</li> </ol>



12	Fuel Pump Manual Torque Wrench Kit for GE FDL Engines With Bosch Fuel Systems	T59370	1	<p>This below kit includes everything that is needed to remove/torque the high pressure fuel line as well as the low pressure fuel line. The low pressure adapters feature an offset that allows the machinist to torque the low pressure lines without any interference from the pump and hoses. The kit consist of the following.</p> <ol style="list-style-type: none"> <li>1. High Pressure Fuel Line Torque Kit</li> <li>2. Includes T54930W Torque Handle and T54933A Adapter</li> <li>3. 30-150 lb. Ft. Torque Handle</li> <li>4. Low Pressure Fuel Line Wrench 1 1/4"</li> <li>5. Left Hand Jam Nut Adapter 1"</li> <li>6. Right Hand Jam Nut Adapter 1"</li> </ol>
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13	Box Wrench Torque Kit	T17802	1	<p>This kit was assembled to make general engine torque requirements both safer and easier. The kit consists of the following:</p> <ol style="list-style-type: none"> <li>1. 30-150 lb. Lb. Torque Handle</li> <li>2. Ratchet Head (1/2" sq. drive)</li> <li>3. Box Wrench Adapter 1/2"</li> <li>4. Box Wrench Adapter 9/16"</li> <li>5. Box Wrench Adapter 5/8"</li> <li>6. Box Wrench Adapter 11/16"</li> <li>7. Box Wrench Adapter 3/4"</li> <li>8. Box Wrench Adapter 13/16"</li> <li>9. Box Wrench Adapter 7/8"</li> <li>10. Box Wrench Adapter 15/16"</li> <li>11. Box Wrench Adapter 1"</li> <li>12. Metal Storage Box w/Foam</li> <li>13. Torque Adapter Pin Depressor</li> </ol>
14	Pushrod Height Adjustment Gauge for GE FDL Engines	T55971	2	<p>The gage is used to properly set the push rod height when the cam lobe is in the set position. This aids proper operation of the high pressure fuel pump and the timing of injection. For GE engines equipped with EFI fuel systems. The gauge, nylon bolts and a "zero" setting block are included.</p>

15	Tappet Nut Torque Wrench Kit for GE FDL EFI Engines	T56051	1	This kit should include everything that is needed to torque and loosen the fuel tappet nut. The kit consists of the following: 1. Reaction Handle 2. T300T-I pre-set Torque Handle (200 lb. Ft.) 3. 1.375 Reaction Adapter 4. Torque Adapter
16	Fuel Pump Mounting Adapter	T59570	1	This 1/2" 12-point adapter is used with the Y shank T16491 30-150 lb/ft Torque Wrench to torque the front two mounting bolts on the Robert Bosch Fuel Pump. Its unique configuration escapes all the fuel lines that would normally interfere with the procedure.
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