TRANSNET ENGINEERING

SCOPE OF WORK TO REFURBISH TPT ENGINES

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Revision – 01

SUMMURY OF REVISION

First issue – 07 July 2022 Document No. PD_COMP_NAT_SOW_020
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The following revisions have been made in this version:

Change	Description
2.	Before working on the engine, must have a computer printout for warranty purposes.
15.1	Oil pump to be replaced (without overhauling)
22.1	Cylinder head to be taken to Engineering to be machined to specification.
24.3	Engine must be primed.

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1. SCOPE

This Scope of Work covers the requirements for Rotating Machines Engines TPT Engines processes.

2. VISUAL INSPECTION

Before working on the engine, must have a computer printout for warranty purposes.

Visually inspect of the engine for any missing components, damages, and defects.

ITEM	DESCRIPTION	Standard Repair	Additional Work components out of specification
1	**Strip and clean all engine parts**	Yes	
2	**Strip engine, turbocharger, crankcase, piston & piston rings, crankshaft, cylinders, cylinder head, valves, connecting rods. Etc.**	Yes	
3	**Qualify all reciprocating engine components**	Yes	
	3.1 Magnaflux to be performed		
4	**Measure individual main bearing bores**	Yes	
	4.1Check main bearings line bore dimensions under 3D	Yes	
	4.2Crankcase line bore out send out for repair or replace		Yes
6	**Inspect crankcase for cracks in critical areas**	Yes	
	6.1 Inspect for burrs, nicks and other defects.		
	6.2 Liquid penetrant inspection		
	6.3 Inspect for straightness		
	6.4 Measure lower liner insert area to specification		
	6.5 Inspect and check for wear on the head seat ring area and repair to specification		
	6.6 Measure crankshaft to check if within specification		Yes
7	**Repair all crankcase damages**	Yes	
	7.1 Visually check holes for damages		
	7.2 Re- tap accessory side holes		

	7.3 Check the holes for damages on crankcase top view, repair and re-tap		
	7.4 Damage repair or replace	Yes	Yes
8	**Clean and inspect crankshaft for visible damages**	Yes	
	8.1 Inspect for scoring, cracks, and signs of distress	Yes	
	8.2 Dimensionally inspect on the 3D or similar equipment	Yes	
	8.3 Crack testing to be performed (certificate)	Yes	
	8.4 Damaged or out of specification repair or replace		Yes
	8.5 Balance crankshaft and certificate		Yes
9	**Suction and Delivery Valves all to be changed for new**	Yes	
10	**Replace all bearings with new ones**	Yes	
11	**Cylinders**		
	11.1. Liner bore at right angles at three places, viz. at the top of the sleeve, middle of the liner and at the bottom of the liner.	Yes	
	11.2 Damaged or out of specification to be replaced		Yes
12	**Piston**		
	12.1 Measure the dimension of the piston at the skirt at 90° to the gudgeon pin bore.	Yes	
	12.2 Check the dimensions of the HP cylinder. Replace it with a new one if damaged or worn out beyond limits.	Yes	
	12.3 Damage piston replace		Yes
13	**Connecting Rods**	Yes	
	13.1 Provide new big end bearings and small end bush.	Yes	
	13.2 When changing the bearings, ensure that oil holes are properly located and fully opened.		
	13.3 Damaged of out specification to be replaced		Yes
14	**Piston & Piston Rings**	Yes	
	14.1 Clean the piston and the ring grooves thoroughly, after de-carbonizing it.		
	14.2 Examine the gudgeon pin for damages.		
	14.3 Insert the ring into the respective cylinder in such a way that it is in level with the top surface and then measure the butt clearance using a feeler gauge. If it exceeds the specified limits, provide new rings		
15	**Oil Pump**	Yes	
	15.1 Oil pump to be replaced (without overhauling)		
16	**Qualify oil pressure relief valve or replace**		
17	17.1 Dismantle and swap all rubber seals and gaskets.	Yes	
18	**Should any component require a replacement, only OEM spares parts shall be used.**		
19	**Replace the following components 100% irrespective of their Condition**	Yes	
	19.1 Piston rings		
	19.2 Seals		

	19.3 Suction and discharge valve		
	19.4 Shaft seal assembly/O rings		
	19.5 Gasket packing		
	19.6 Half section bearing		
	19.7 Self-locking nuts		
	19.8 Lubricating oil		
	19.9 Replace oil filter		
20	**Testing of complete engine.**	Yes	
	20.1 Repaired engine unit shall be tested according to OEM test specification and test results must be attached.		
21	**Turbocharger**		
	21.1Turbocharger turbine to be balanced to specification.		Yes
22	**Cylinder head**		
	22.1 Cylinder head to be taken to Engineering to be machined to specification.	Yes	Yes
23	**Documentation requirements.**		
	23.1 Repairer must be in possession of OEM overhaul manual and spare parts catalogue for this engine	Yes	
24	**Packaging and delivery**		
	24.1 Engine should be delivered on wooden pallet, wrapped in plastic, and secured. 24.2 Data pack must be attached to the delivery note, which includes check-sheet indicating all critical measurement signed by QC 24.3 Engine must be primed.	Yes	

DOCUMENT AUTHORITIES

COMPILER	**Edmund Cebekhulu**
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APPROVED BY	**Edgar Mothapo**
DESIGNATION	**Snr Engineer**
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