

TATA MOTORS

SC/ 2013/ 06	Model : LPK 2523TC WITH 37T TML BOGIE SUSPENSION	Group: 00	Jan'13
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All Dealers / TASSs'

Subject: Introduction of LPK 2523TC with 37T TML Bogie suspension

We are pleased to inform you about the introduction of LPK 2523TC with 37T TML Bogie suspension. Vehicle will be suitable for road construction, coal movement in mining, aggregate movement etc application.

Salient features of the model

- ✓ 37 T Rugged TML Bogie suspension
- ✓ Rear anti roll bar
- ✓ Raised rear brake chamber

Representative picture of the vehicle is given below.



Chassis Type Designation:

Model	Chassis Barrel	VC No
LPK 2523TC With 37T TML Bogie SUSPENSION	MAT479118	22072538000R

We are enclosing following details of the vehicle:

- Technical Specifications (Annexure - 1)
- 37T TML Bogie Suspension (Annexure - 2)
- Lubricant Details & Maintenance Schedule (Annexure - 3)
- Warranty (Annexure - 4)

CUSTOMER CARE (COMMERCIAL VEHICLE BUSINESS UNIT)

(As per policy of Tata Motors to continuously improve their products, the company reserves the right to make changes of any nature on vehicles and aggregates without any obligation to incorporate them on previous vehicle)

Annexure - 1

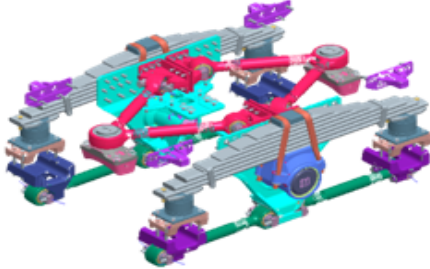
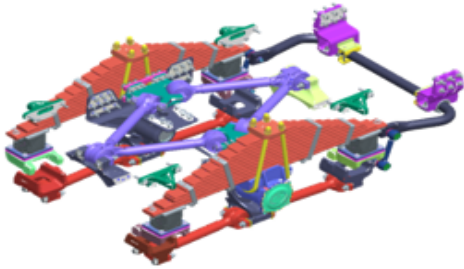
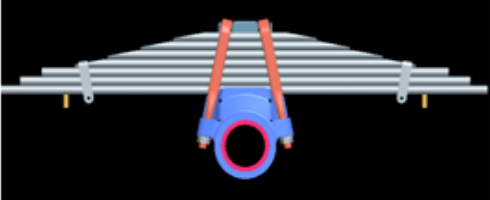
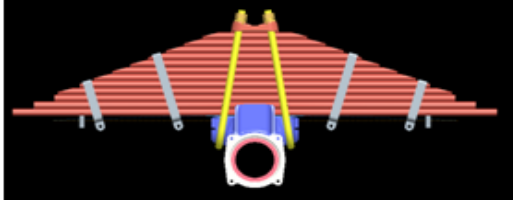
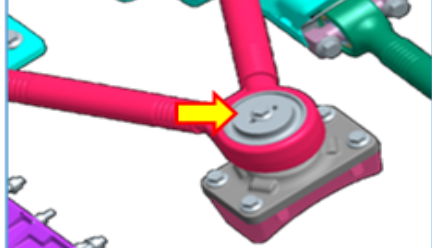
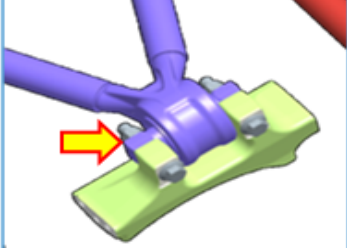
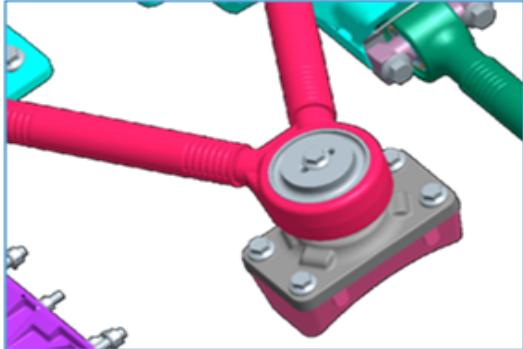
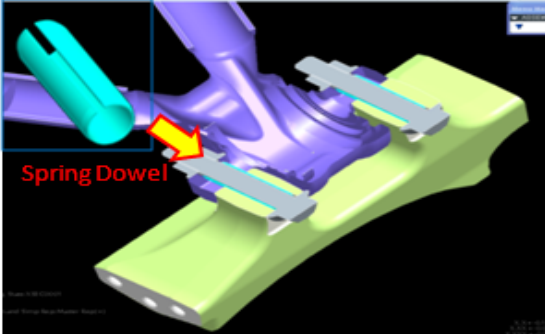
Technical specifications:

Engine	
Engine	Cummins 6 B 5.9 215 HP BSIII
Engine Type	Water cooled direct injection turbo charged intercooled diesel engine
Bore / Stroke (mm)	102 / 120
Engine Capacity (cc)	5883
Cooling capacity (Ltrs)	27
Compression Ratio	18:01
Coolant	40:60 - Glycol: water premixed
Oil capacity (Ltrs)	Max 17.4 Min 15.4
Firing order	1-5-3-6-2-4
Fuel filter	Pre and fine filtration with water separator
Fuel injection pump	BOSCH VP-14 FIP TYPE- ROTARY
Governor	Built in centrifugal
Oil filter	Full flow spin on paper type
MAX Engine output	215 HP@ 2500 rpm
MAX. Torque	800 Nm@ 1500 rpm
No of cylinders	6 Inline
Air filter	Dry type remote mounted,2 stage
Radiator frontal area (cm2)	4220
Turbo Charger	Holset with waste gate
Weight of Engine (Kg)	417 (Dry) & 432 (Wet)
Engine Fan Type	9 blade 24" Viscous Fan with Jet ring
Clutch	
Outside diameter of clutch lining (mm)	380 dia single plate dry friction push type
Transmission	
Model	Tata G1150 DD-9 Speed with PTO
Type	Synchromesh on all forward gears constant mesh on reverse gears
No. Of Gears	9 Forward 1 Reverse
Gear Ratios	1st-9.13, 2nd-6.72, 3rd-4.90, 4th-3.57, 5th-2.55, 6th-1.88, 7th-1.37, 8th-1, C-12.87, Rev-13.4
Rear axle	
Model	RA-109 SRT with inter axle differential
Type	Single reduction, extra heavy duty, hypoid gears ,fully floating axle shaft
Ratio	6.14
Front axle	
Type	Extra heavy duty forged reverse elliot type I beam
Electrical Specification	
System Voltage	24
Alternator Capacity (Amp)	75
Battery	2 X 12V 150 Ah
Cab/ Cowl	
Cabin Type	1516 Type NS Cab
Wheels and Tyres	
No. Of Wheels/Tyres	Front - 2 Drive Front - 4 Drive Rear - 4 Spare - 1
Tyres	11 x 20 -18 PR (Mine Lug)
Wheel Rims	8.0 - 20
Frame	
Type	Ladder type heavy duty frame with riveted/bolted cross members
Width (mm)	888
Brakes	
Brake drum diameter (mm)	410
Lining area (cm2)	Front -2470, Rear Front -2470, Rear Rear- 2470
Service brakes	Dual circuit full air S Cam brake
Parking brake description	Spring actuated parking brake acting on rear wheels
Engine exhaust brake	Electro- pneumatically operator coupled with service brake
Steering	
Type	Hydraulic power steering
Ratio	23.6:1 (ZF), 22.3:1 (Rane)
Suspension	
Type	> Semi elliptical leaf spring at front. > 37T Inverted TML bogie suspension with at rear. > Antiroll bar at front & rear.
Leaf width (mm)	Front - 70 Rear - 90
Spring Span (mm)	Front-1680 Rear-1350
Shock absorber	Hydraulic double acting telescopic type at front.
Fuel tank	
Capacity (Ltrs)	300 (Rect)
Performance	
Max. geared speed in top gear (Kmph)	80
Max. Climbing ability in 1st gear	45.65% (Crawler),31.29%(1st)
Minimum turning circle dia. (mm)	17000
Minimum turning clearance circle dia. (mm)	18500
Main chassis dimension (mm)	
Wheel base	3880
Front overhang	1338
Rear overhang	1487
Overall length	6930
Front track	1940
Rear track	1901
Weights (Kg)	
Max. Permissible FAW	6000
Max. Permissible RAW	19000
Max. Permissible GVW	25000


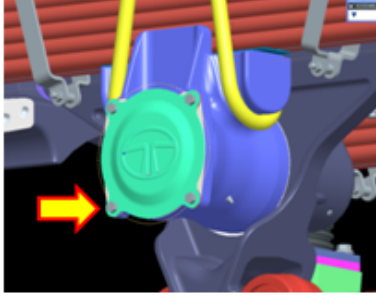
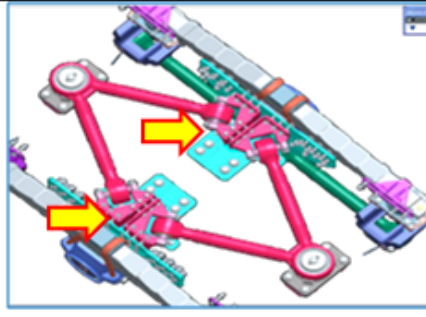
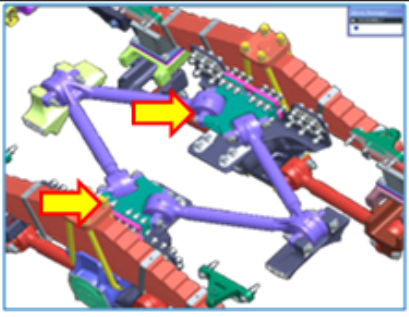
Annexure - 2

37T TML Bogie Suspension:

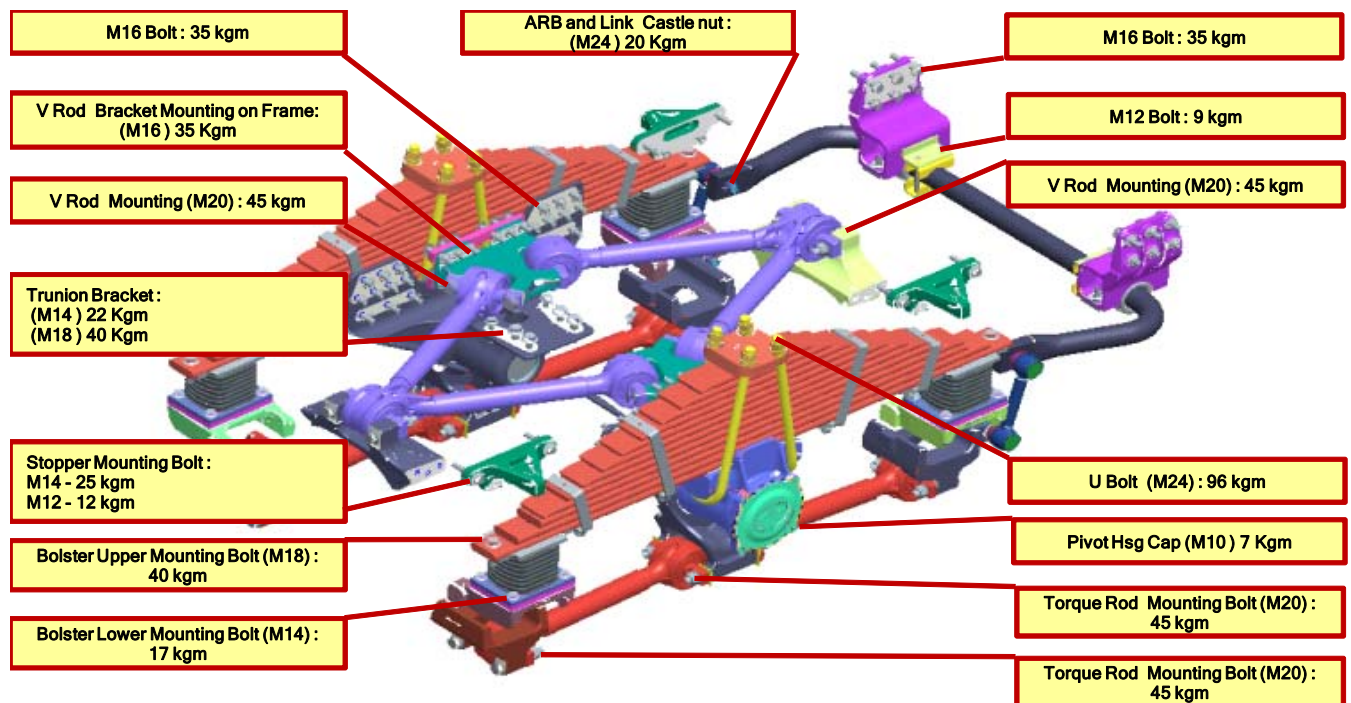
➤ **Hendrickson and TML Bogie Suspension Comparison**

Sr No	26T Hendrickson Bogie suspension	37T TML Bogie suspension
1		
	No anti roll bar provided*	Anti roll bar at rear provided for better handling and axle control.
2		
	Leaf Spring : 7 Leaf x 27mm Thick U Bolt : Facing Downward direction*	Leaf Spring : 12 Leaf x 25mm Thick U Bolt : Facing Upward direction
3		
	V Rod MTG arrangement : Center bush locked with single center bolt into adapter plate.	V Rod MTG arrangement : Center Bush locked with two M20 bolts in horizontal direction to have positive locking and no loosening.
4		
	V Rod Center Bush arrangement: Center Bush locked with single center bolt into adapter plate..	V Rod MTG arrangement : In addition to M20 bolt spring dowel is inserted between V Rod ball pin and Axle bracket. Side loads will be taken by spring dowel and no slippage of bolts will ensure no loosening in the field

NOTE: Spring dowel should not be removed from axle bracket. If V rod is removed for service, spring dowel should always be placed again. Spring dowel should not be damaged by hitting with hammer. It should be inserted with mallet.

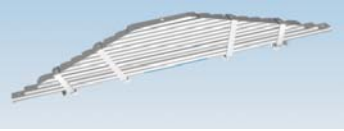
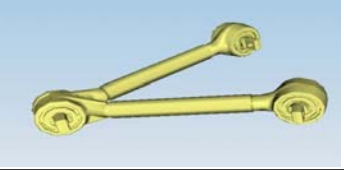
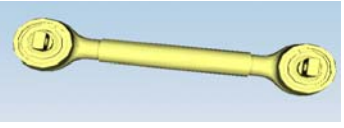
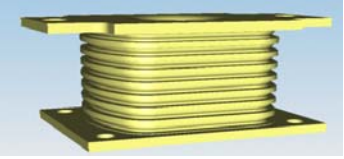
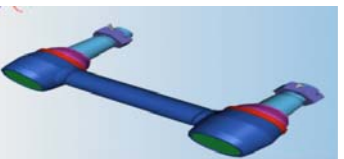
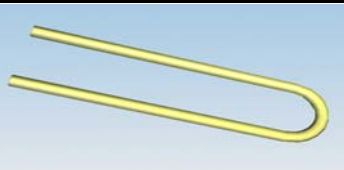
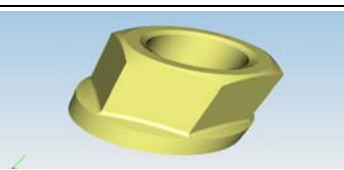
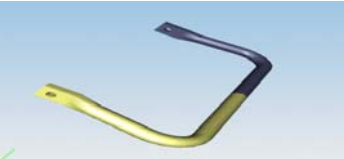
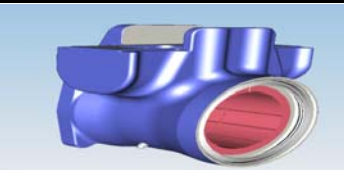
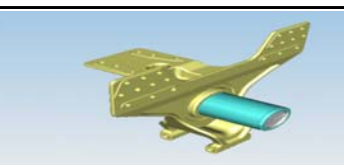
5		
	Pivot housing end cap locked by circlip	Pivot housing end cap locked by M10 bolts
6		
	V Rod MTG arrangement : 4 brackets used for V rod mtg on frame	V Rod MTG arrangement : 2 brackets used for V rod mtg on frame.

➤ **Critical component Torque value**




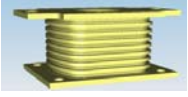
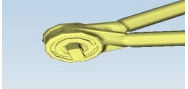

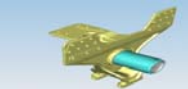
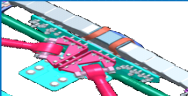




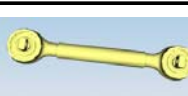






Critical Part List

Sr No	Part No	Part Description	Image
1	2880 3240 0167	Spring Assy TML Suspension	
2	2880 3240 0173	Assy V Rod TML Suspension	
3	2880 3240 0172	Assy Torque Rod TML Suspension	
4	2880 3240 0170	Bolster TML Suspension	
5	2880 3290 0101	ARB Link Assy TML Suspension Rear	
6	2880 3240 4203	U Bolt (M24) TML Suspension	
7	2880 3240 6513	Prevailing Torque Type Hex Flange nut	
8	2880 3290 7902	Rear Anti roll bar TML Suspension	
9	2880 3240 0157	Trunnion Housing TML Suspension	
10	2880 3240 0155	Trunnion Bracket in TML Suspension	

Sr No	Part No	Part Description	Image
11	2880 3240 7703	Rubber seal	
12	2880 3240 8204	Cover Trunnion Housing	
13	2880 3240 4306	External Circlip	
14	2880 3240 9209	Thrust washer (Bend TABS)	
15	2880 3240 9208	Thrust washer (Straight TABS)	
16	2880 3240 3402	Trunnion Bush	
17	2880 3240 0171	Assy TML Bogie Suspension	
18	5810 3510 0135	Assy Beam with Stud (FWD)	
19	5810 3510 0137	Assy Beam with Stud (RWD)	
20	2880 3240 4805	Spring dowel	

➤ **Complaint code details**

Sr No	Complaint Code	Description	Image
1	FA32644	BOGIE SUSPENSION TRUNNION PIVOT BEARING DAMAGED	
2	FA32645	BOGIE SUSPENSION BOLSTER SPRING BROKEN	
3	FA32646	BOGIE SUSPENSION A FRAME CENTRE BUSH WORN OUT / DAMAGED	
4	FA32647	BOGIE SUSPENSION TORQUE ROD / A FRAME BAR PIN BUSH WORN / DAMAGED	
5	FA32648	BOGIE SUSPENSION TRUNNION SUPPORT BRACKET BROKEN	
6	FA32649	BOGIE SUSPENSION TRUNNION PIVOT HOUSING SEAL DAMAGED	
7	FA32650	BOGIE SUSPENSION CORNER BRACKET BROKEN	
8	FA32655	BOGIE SUSPENSION CAP-END CLOSURE & SEAL DEFECTIVE	
9	FA32656	BOGIE SUSPENSION AXLE CLAMP UPPER BROKEN / DAMAGED	
10	FA32657	BOGIE SUSPENSION TRUNNION PIVOT HOUSING BROKEN / DAMAGED	
11	FA32658	BOGIE SUSPENSION LINK A-FRAME BROKEN / DAMAGED	
12	FA32659	BOGIE SUSPENSION LINK TORQUE ROD BROKEN / DAMAGED	
13	FA32660	BOGIE SUSPENSION AXLE STOP BROKEN / DAMAGED	
14	FC32012	RUBBER BUSHES OF FRT ANTI ROLL BAR PERISHED	
15	FC32052	REAR ANTI ROLL BAR BROKEN	
16	FA32661	BOGIE SUSPENSION LINK A-FRAME SPRING DOWEL DAMAGED	

➤ **Service Schedule for TML Bogie suspension**

Sr. no.	Operation	Freq. in Hrs.	Daily	Weekly	500 Hrs	1000 Hrs	1500 Hrs	2000 Hrs	2500 Hrs	3000 Hrs	3500 Hrs	4000 Hrs	4500 Hrs	5000 Hrs
1	U-bolt nut tighten	500			•	•	•	•	•	•	•	•	•	•
2	Bolster mounting nut	500			•	•	•	•	•	•	•	•	•	•
3	Torque Rod and V Rod bar pin bushes check and replace if ne	500			•	•	•	•	•	•	•	•	•	•
4	All mounting Fasteners to be tightened	500			•	•	•	•	•	•	•	•	•	•
5	Pivot bearing & trunnion seal greasing frequency	500			•	•	•	•	•	•	•	•	•	•
6	Rear anti roll bar bushes check and replace if necessary.	500			•	•	•	•	•	•	•	•	•	•
7	Rear anti roll bar alignment check and align if necessary	500			•	•	•	•	•	•	•	•	•	•
8	Dismantle rear springs. Clean and inspect leaves. Apply graphite grease on leaves & reassemble.	1000				•		•		•		•		•

Annexure – 3

Lubricant Details:

Aggregate	Filling Capacity (Ltrs)	Oil Change Frequency Hrs/Kms	Grade	Brand of Lubricants / Coolants			
				CASTROL	BPCL	Shell	IOCL
Engine Oil and Oil Filter Change (6BT BS-III)	Max :15.3 Min : 13.3	500Hrs	API C14 plus SAE 15W40	CASTROL RX TURBO 15W40 C14 PLUS	MAK Tata Motors Cl 4 Plus 15W40	Shell Rimula T4 15W40 C14 Plus	-----
Gear Box (G1150)	Gear Box : 11.5 System Capacity : 13	2000 / 80000	SAE 75W85 7.0 % wt Anglamol 6097	Castrol Oil Syntro S 75W85	MAK SPIROL Synth 75W85		Semi Synthetic Gearbox oil SAE75W85 MTFA
Rear Axle (109 SRT)	RFD : 18 RWD : 14	2000 / 80000	SAE 85W140 with 7% Anglamol	Castrol Extra Long Life Rear Axle Oil 85W140	MAK Tata Motors SPIROL LL 85W140	Shell Spirax T2 A 85W140	Servo Gear Axle TM
Clutch	As required (300ml System Capacity)	2000 / 80000	Hydraulic Clutch Fluid	Castrol Universal Brake Fluid	-----	-----	Servo Brake Fluid HD
Power Steering Fluid	3	2000 / 80000	ATF Dextron II, IID, III or Mercon Colour RED	Castrol TQD	MAK Tata Motors AUTRAN II	Shell Spirax T2 ATF	Servotransdex II
Coolant (Total)	27	3,20,000 kms or 2 years which ever occurs earlier	50% Water + 50% Ethlene Glycol	Castrol Long Life Coolant	MAK Tata Motors Super Kool	-----	Servo Kool TM
Wheel Bearing Grease (gms / hub)	Front Axle: 450 Rear Axle: 650	40000	RR3	Castrol AP Super Grease	MAK Tata Motors RR3 Grease	Shell Gadus T1	Servo gem TM3
General Purpose/Chassis Grease	As Required	As Required	Lithium MP Grease	Castrol AP2 Grease	MAK Tata Motors Univex A Grease	-----	Servo Grease TM

Maintenance & Repair: All maintenance and repair procedures remain same as existing LPK 2523TC BS-III.

Annexure - 4

Warranty:

Vehicle Warranty: 2000 Hrs or 1, 50,000 Km or 18 months from date of sale whichever expires earlier.

Engine Warranty: 3000 Hrs or 2, 00,000 Km or 24 months from date of sale whichever expires earlier.

Gear Warranty: 4000 Hrs or 2, 00,000 Km or 24 months from date of sale whichever expires

Bogie Suspension: Warranty for all structural parts of 37T TML Bogie suspension shall be 18 months or 2000 hours or 150000 km from date of sale which ever expires earlier.

Following rear suspension parts are not covered under warranty: Bar pin bush, 'A' frame centre bush, Rubber bolster spring, Trunnion pivot bearing, Trunnion oil seal, Cap enclosure & seal