



PREMIUM

**Installation , Operation
And Maintenance Manual**

**For
Transit Mixer Drive
Model : TM-51**

Premium Energy Transmission Limited

Head Office : P.B.No 5, Unit – 1

**Chinchwad , Pune , Maharashtra ,
India 411 019.**

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BEST FOR EFFICIENT POWER TRANSMISSION

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1. Introduction :

Premium energy Transmission limited make gearbox model TM 51 is a two stage planetary gearbox with 102/1 ratio is used to drive the concrete mixer drum mounted on the transit Mixer.

2. Technical Specification :

- | | |
|-------------------------------------|--------------------------------|
| 1. Gear box type | : Two stage planetary gearbox. |
| 2. Ratio | : 102/1 |
| 3. Maximum output speed | : 20 rpm |
| 4. Maximum output torque | : 50000 NM |
| 5. Dyn. swivel angle of drum flange | : Max $\pm 6^\circ$ |
| 6. Slope of the gearbox main shaft | : 15° |
| 7. Gear Efficiency | : 96 % |
| 8. Maximum operating temperature | : 85°C |
| 9. Lubrication | : Splash |
| 10. Lubrication oil quantity | : 12 liters. (Approx) |
| 11. Weight (Without oil) | : 265 kg (Approx) |

3. Delivery Conditions :

Transit Mixer drives are supplied with anti-rust coating on output flange, which is resistant to corrosion for at least six months. Also anti-rust coating is applied to the critical/mounting dimensions to avoid the fitment problem. The Drives are not pre-filled with oil. However, they are tested with oil filled upto correct level, approved and then oil is drained before despatch. Unit will be shipped with the flange locked in the zero degree position. The bolt must not be removed until adjusting the drum, to protect the main bearing and flange seal from damage. The exact alignment of the gearbox and drum is required.

4. Installation guidelines :

The Transit Mixer Drive supplied should be installed carefully. The following precautions should be taken.

- 4.1) The antirust coating on Output Shafts should be removed by appropriate thinner before mounting the gear box.
- 4.2) The gear box should be mounted rigidly on a solid distortion free and flat support face. If the mounting is not rigid, it can damage the bearings, oil seals and internal gears.
- 4.3) The engagement/alignment of the internal splines at the input sun pinion with the driving hydraulic motor having external splines must be proper and fitment is to be of sliding nature. The improper alignment will damage the bearings, oil seals and internal components. Care should be taken for sealing of the motor with O-ring which is attached to the unit.
- 4.4) Before starting the gear box, make sure that it is filled with the correct grade of oil upto the correct level. The oil grades are mentioned separately in this manual.
- 4.5) For outdoor installations, protect the gear box with a suitable guard / cover from rainfall / direct sunlight, dust etc.
- 4.6) Finally, during installation, care should be taken to check that the unit is having good access for its inspection and lubrication. Care should also be taken to see that the unit is installed in a properly ventilated place to limit the temperature of the gearbox.

5. Commissioning

The drives supplied are not pre-filled with oil. It is required to fill up the correct grade of oil before commissioning. The drain plug may be loose and it should be tightened first before filling the oil, to prevent leakage. The oil should be filled from the oil-filling plug till it fills upto the oil level plug, indicating oil level.

Before commissioning the drive, check that the drain and level plugs are tightened properly, otherwise the oil may start leaking from these points. Do not start the drive directly on full load during the first commissioning. Initially, let the drive run freely on no load & then gradually increase the load upto the recommended level.

6. Lubrication

Lubrication plays a great role in the performance and life of any power transmission element. Care should be taken to ensure the proper lubrication of Planetary drives.

The gear box is tested with proper grade of oil in the factory. Subsequently, the oil is drained from the gear box before despatch. Hence **the oil must be filled in these gear boxes before commissioning/taking trial at site.**

We recommend ISO VG 150 grade of oil.

7. Maintenance

- 7.1) Inspection periodic visual – weekly
Gearbox is designed for trouble free operation. However precautions to be taken to check oil quantity by dip stick. Check for leakages and tightness of the mounting bolts, clamping bolts and plugs , retighten if necessary.
- 7.2) Oil Change
Oil level must be checked and if it is below the dip stick marking then fill oil from top after removing the dip stick.
The first oil change is recommended after 100 working hours and then every 1000 hours , but at least once in a year.
- 7.3) Oil breather assembly
The oil breather assembly should also be thoroughly cleaned in clean diesel fuel every time the oil is changed.
- 7.4) Inspection – 5000 hours
Check for the running of gearbox. Overhaul gearbox and replace all rubber components and worn-out parts if any.
- 7.5) In case the gear box is being painted, please make sure that the oil seals are protected from the paint film. Periodically, check that for proper tightness. No other maintenance is required for these gear boxes.

8. Ordering Spares

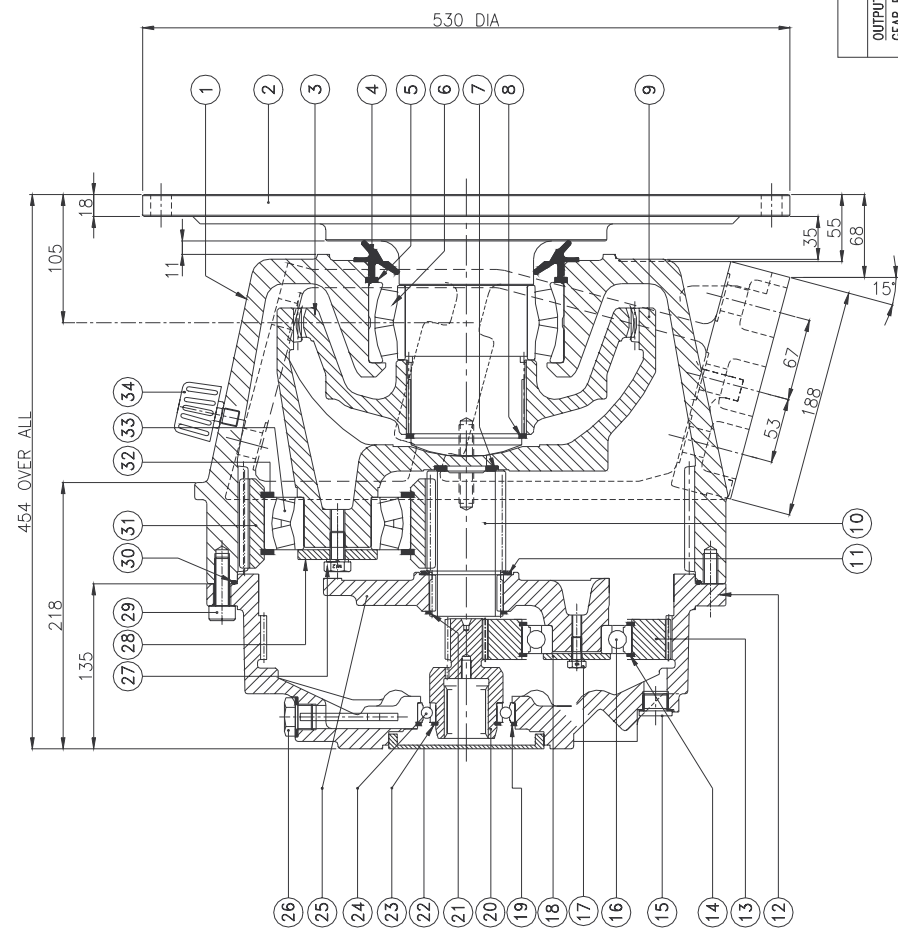
The cross-sectional drawing and the part list of the unit is attached for your ready reference. Your drive will have nameplate, showing its specifications as under:

ORD. NO.	TYPE :
SRL. NO.	RATIO:

While ordering spares user have to mention the Order No. and its Serial No. and the exact name and part number of the spares required so that appropriate spares will be supplied.

* * * * *

DRG.NO. B 51 P 051 N 000 IF IN DOUBT, ASK !



S.NO.	CODE.NO.	DESCRIPTION	QTY.
34	00.6393	AIR BREATHER 1/4" BSP	01
33	00.5852	SPH. ROLLER BEARING	03
32	00.5715	INT. CIRCLIP B 120x4	06
31	51 P 106	2 ND STAGE PLANET GEAR	03
30	00.7036	O'RING	01
29	00.6638	SOC.HD.CAP SCREW M12	24
28	51 P 107	RETAINING PLATE	03
27	00.5040	HEX.HD. SCREW M12	03
26	51 P 117	DIPSTICK	01
25	51 P 111	1 ST PLANET CARRIER	01
24	00.4907	DEEP GROOVE BALL BRG.	01
23	00.4273	EXT. CIRCLIP - A 50x2	01
22	51 P 116	CAP COVER - INPUT	01
21	00.5784	EXT. CIRCLIP - A 60x2	01
20	51 P 114	INPUT PINION SHAFT	01
19	00.4282	INT. CIRCLIP B 80x2.5	01
18	51 P 113	RETAINING PLATE	03
17	00.5023	HEX.HD. SCREW M8	03
16	00.7101	DEEP GROOVE BALL BRG.	03
15	51 P 120	SPL. PLUG	03
14	00.4296	INT. CIRCLIP B 90x3	06
13	51 P 112	1ST STAGE PLANET GEAR	03
12	51 P 115	GEAR HOUSING	01
11	51 P 109	SPACER - 2ND	01
10	51 P 108	2ND STAGE PINION SHAFT	01
09	51 P 105	2ND STAGE PLANET CARRIER	01
08	00.5789	EXT. CIRCLIP - A 85x3	01
07	51 P 110	SPACER - 1ST	01
06	00.6776	SPL. SPH. ROL. BRG.	01
05	00.6287	INT. CIRCLIP B 160x4	01
04	51 P 103	SEAL - OUTPUT FLANGE	01
03	51 P 104	CROWN GEAR	01
02	51 P 102	OUTPUT FLANGE	01
01	51 P 101	MAIN CASE	01

TECHNICAL DATA	
OUTPUT TORQUE	= 50,000 Nm Max.
GEAR RATIO	= 102 / 1
INPUT SPEED	= 2000 Rpm Max.
OIL CAPACITY	= 12 LITERS
LUBRICANT	= ISO VG - 150
WEIGHT (DRY)	= 255 Kg.


DEGREE OF FINISH	
<input type="checkbox"/> Δ	ROUGH MACHINE
<input type="checkbox"/> ΔΔ	SMOOTH MACHINE
<input type="checkbox"/> G	GROUND
<input type="checkbox"/> sf	SPOTFACE
<input type="checkbox"/> √	CLA

SCALE	
1	: 2.5

DRAWN	CHECKED	PASSED	DATE
S E P			01/09/04

- REMOVE BURRS & SHARP CORNERS
- UNLESS SPECIFIED OTHERWISE MACHINED DIMENSIONS ± 0.25
- ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED OTHERWISE

SECTIONAL ARRANGEMENT FOR
TRANSIT MIXER DRIVE - TM 51


 Premium Energy Transmission Limited
 Unit - 1
 Chobard Road - 41809
 INDIA

DRG.NO. B 51 P 051 N 000

ALTERATIONS

AT THE HEART OF EVERY HIGH PERFORMANCE TRANSIT MIXER IS A HARD WORKING GEARBOX



Now made in India, with highly reliable performance, lower cost and 24 X 7 after sales service and spares support. Indeed a heart of gold for your transit mixer!

Why pay more ?



Premium Energy Transmission Limited

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