



TMTL – TAFE Motors and Tractors Limited is a wholly owned subsidiary of TAFE – Tractors and Farm Equipment Limited. TMTL have three division –

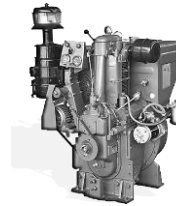
- **TMTL Mandideep, Madhya Pradesh:** this is their tractor division. Here they manufactured tractors sale under the Brand Name- Eicher.



- **TMTL Alwar Rajasthan Unit:** This is their Engine Division. In alwar plant they manufacture Diesel Engines and Gensets in the 5 to 125 kVA range.



Eicher Engines (up to 125 kVA)



TMTL Engines (62.5 kVA and above)

- **TMTL Parwanoo Himachal Pradesh:** this plant is their Transmissions Division. In this plant they manufacture a range of gears, shafts and housings for own consumption and other OEMs.



TMTL MANDIDEEP UNIT

TMTL Mandeep plant assembles average 5500-6000 tractors per month. In these 95 % tractors are of Wet Disc Type and around 5 % are Dry Disc Brake Type Tractors. They required approx. 3000 MT Total Lubricants for plant fill and approx. 7000 MT annually for aftermarket.

The details of different OEM Parts used in Eicher tractor is as below

- **Diesel Engines -**
Supplier - Simpsons Co. Ltd.,
Model: T III A S325 / E1.F2.5,
Model: Four stroke, liquid cooled, naturally aspirated, direct injection, diesel engine
- **Transmission**
Clutch supplier: Luk India
Type: Single, Dry friction plate
No. of friction plate (s) : One Size, OD/ID, (mm): 279.7 / 165.7Φ 2.1.10.2

Gear box Supplier: TMTL Parmanoo H.P
Type: Mechanical, combination of sliding and constant mesh gears

- After Treatment Devices
SCR and DPF for new Term 4 Tractors.

Tractors Capacity & Model

Engine Types: Agro Diesel Engines ranges from 12 to 56.4 HP, Air Cooled type. Following main models tractors manufactures at mandi deep plant-

Model	HP
142 ES-HS	12
142 HS	12
222 ES	22
222 HS	22
321 ES	32
322 HS	24
323 ES	26
421 ES	45
422 ES	38
422 TC	46
422 TCI	56.4

Sump Capacity of oil in Current mfg tractors

Oil type	Sump Capacity
Engine OIL	8 to 10 Litre
WDB oil	Average 45 litres
Gear Oil	Average 35 Liters

Recommended drain interval Chart

Oil type	First Service	After first service
Engine Oil	50 hours	250 hours
Wet Brake Oil (Wet brake tractors)	Recommended - 1000 hours, however in field goes up to 1200	Recommended - 1000 hours, however in field goes upto 1200 hours
Gear Oil (Dry Brake Tractors)	Recommended: 1000 Hours	Recommended: 1000 Hours

PRODUCT SUPPLY SOP

After Market (Services Fill)

TMTL Services fill requirements products are blend and dispatched from Silvassa/Mazgaon Lube plants to the Crest Packing location in 24 KL bulk tankers on TOA basses.

At Crest, the products are refilled into TMTL designed buckets and dispatched to various TMTL dealers on an Ex-Mi basis. The transportation of oil from Silvassa to Crest is in HPCL scope, whereas the transportation from Crest to TMTL Dealer locations is managed by TMTL. The bucket material quality, specifications, Design and their availability at Crest location is also under TMTL Scope. At Crest, Separate filling lines are used for engine oil and WDB oil bucket fillings.

TMTL have their storage warehouse location at mandideep Bhopal where they keep stock and supply from here to dealership requiring small Qty. And High-volume dealership supplies are directly done from crest by TMTL.

All the export supply to other countries is also made from their mandideep storage location.

Following lubricants grade are used by TMTL for their aftermarket dealerships locations -

Brand Code	Grade	Requirement Approx. Annual	Current Supplier
2534	Rakshak Engine Oil (CF4 15W40)	3300 KL	HPCL-100 %
2062	Rakshak Gear Oil (GL4. SAE 90)	100 KL	HPCL-100 %
2400	Rakshak Wet Disc Brake Oil	550 KL	HPCL-100 %
2559	HP Rakshak Engine Oil (CI-4, 15W40)	1800 KL	HPCL-100 %
0226	MP 3 Grease	10 MT	HPCL-100 %
2603	Rakshak Engine Oil (CF 4 20W40)	800 KL	HPCL-100 %
3043	Rakshak Gear Oil EP 140 (GL4, SAE 140)	10 KL	HPCL-100 %

Plant (Initial Fill)

TMTL plant fill lubricant requirement and their procurement are handled by their different department. They require following lubricants grades for their plant filling

Type	Grade	Requirement Approx. annual	Current Supplier
Engine Oil	HP Milcy 40	220 MT	HPCL-30 %, IOCL 70 %
Transmission Oil	HP Supertrain R mono	2300 MT	HPCL-35 %, Apar 65 %
Gear Oil	HP Gear oil 80 E	130 MT	HPCL-0 %, IOCL 100 %
Coolant	Golden Cruise	20 MT	SCCI Ind. Pvt. Ltd.
Miscellaneous	Hydraulic Oils and Grease	10 MT	HPCL-100 %

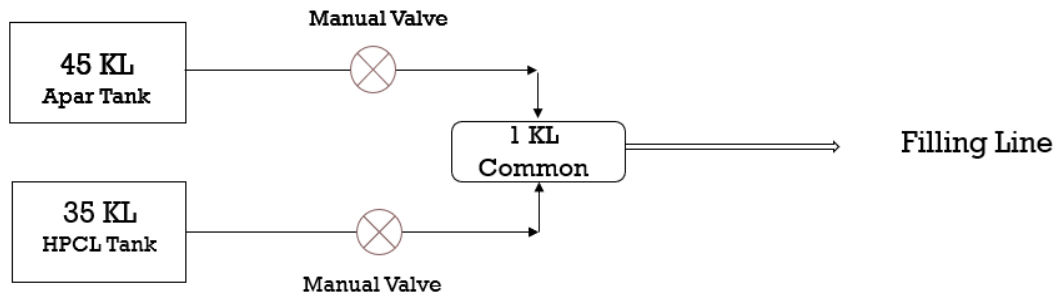
TMTL Procure above lubricants grade in Bulk tankers on Delivered bases to their Mandideep plant. Currently, their main suppliers are HPCL, Apar, and IOCL. They have separate storage bulk tanks for each product . SOP & Product flow line diagram from these are as below

WDB Oil Line

Currently for WDB plant fill oil TMTL have approved two supplier – HPCL & Apar. HPCL is supplying HP Supertran R Mono grade while Apar is supplying their equivalent grade Supetran as WDB for initial fill. TMTL maintained both suppliers and procure from both as on need basis.

The Product generally supply in 24 KL bulk tankers on delivered basis to Mandideep plant. Where it unloads in their storage tanks. They have two designated separate storage tanks of 45 KL & 35KL for WDB oil in which they stored both suppliers' product.

Apar products is in 45 KL tanks whereas HPCL product in 35 KL tanks. The line diagram of filling line is as below –



The customer utilizes only one supplier's products at a time. They cut off the one tank line through manual valve when other tank product is in used.

The choice of which product to use is determined by the availability of the products in both tanks.

Engine OIL

For Engine oil they have two separated 20 -20 KL storage tank and maintained only single supplier in both tanks at a time. Current HP MILCY 40 equivalent spec grade being used as engine oil in initial fill.

Gear OIL

For Gear oil one 35 KL storage tank is there. In which only single supplier product is maintained. Currently HP Gear Oil EP 80E equivalent specs grade is being used in Dry Break Tractors gear boxes.