WAGAD

PROFILE

WAGAD INFRAPROJECTS PVT. LTD.

www.wagadinfra.com

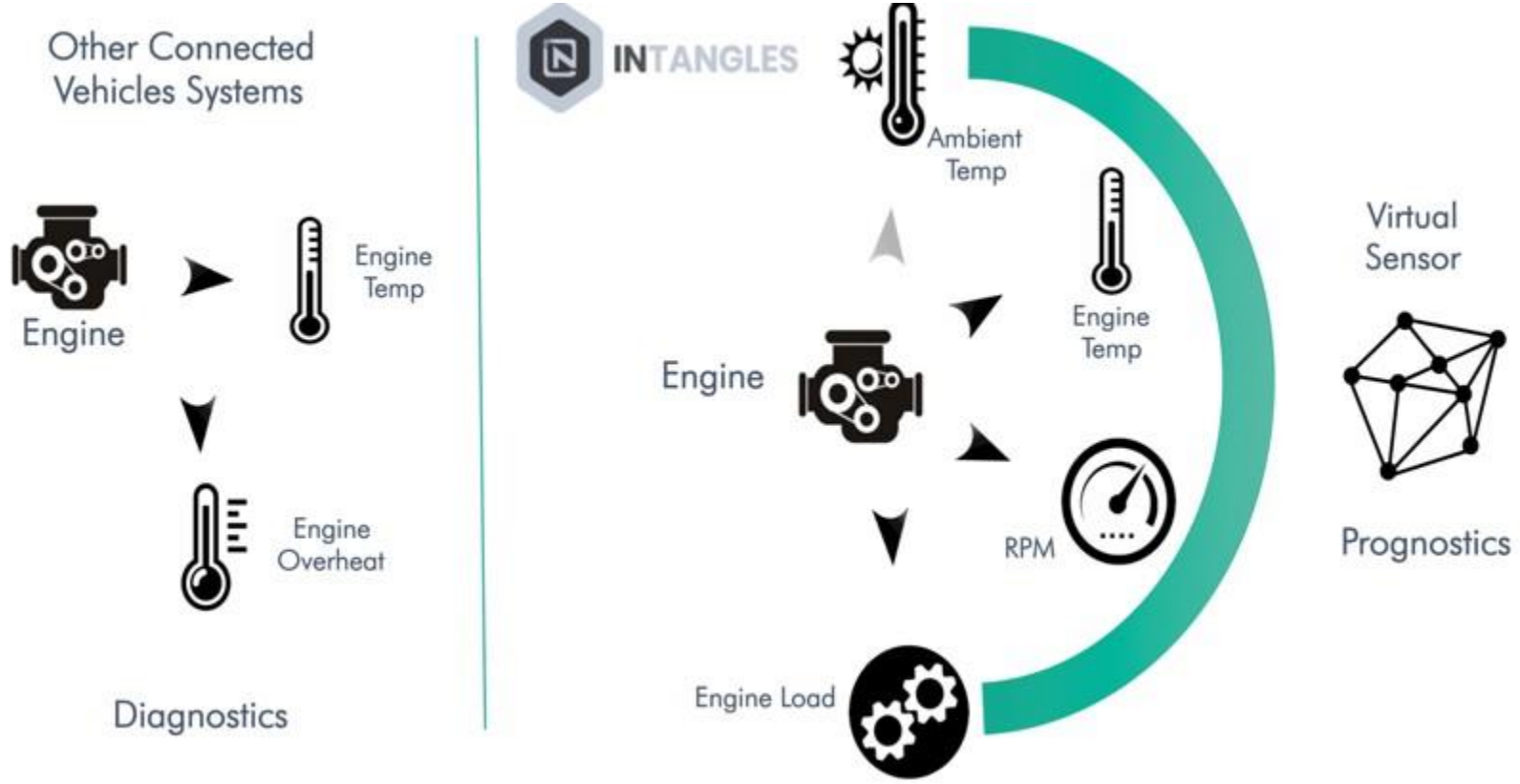
READY MIX CONCRETE PLANTS

The Company find itself more than competent enough to meet the immediate demand of RMC to the Government and Private Sectors. Wagad Infraprojects Pvt. Ltd has installed RMC Plants (Fully automated computerized ready mix concrete batching plant of **SCHWING STETTER & KYB Conmat** make with **60 & 75 CUM** per hours respectively pumping capacity of stationery pump) at the places of **VADODARA, AHMEDABAD, GANDHINAGAR, SURAT (KADODARA & VESU) and ODHAV**.

ADALAJ :- 10 TM, 3 PUMPS, 1 TIPPER, 1 BACKHOE
SANAD:- 13 TM, 3 PUMPS, 1 TIPPER, 1 BACKHOE
VADODARA:- 14 TM, 4 PUMPS, 4 TIPPERS, 1 BACKHOE
KODODARA:- 12 TM, 2 PUMPS, 1 BACKHOE
VESU :- 8 TM, 2 PUMPS, 1 BACKHOE
ODHAV :- 8 TM, 2 PUMPS, 1 BACKHOE

Digital Twin based AI / ML Framework for Advanced Fleet Management

The Digital Twin Example



WAGAD

Features :--

- Diagnostics and Prognostics
  - ✓ Alternator and Battery System
  - ✓ Engine Temperature Check
  - ✓ Intake Manifold (Turbocharger)
  - ✓ Fuel Trim Diagnostics
- Fleet Performance
- Fuel Monitoring
- Adblue Tracking
- Operations Automation
- Track and Trace

Fault Codes

Fault Codes

Active Codes

History

Code	Issue	Set On	Set At	Details
1074	Engine (Exhaust) Brake Output: Electrical Fault	Jul 15th, 8:28 am	186752 KMs	Details
157	Fuel Rail Pressure: Incorrect Data	Jul 5th, 10:04 pm	186432 KMs	Details
637	Engine Timing Sensor: Communication Fault	Jul 5th, 10:04 pm	186432 KMs	Details
636	Engine Position Sensor: Mechanical Fault	Jul 5th, 10:04 pm	186432 KMs	Details

1074

System : Body **Subsytem** : Vehicle Speed Control And Idle Conrol

Description:

Engine (Exhaust) Brake Output: Electrical Fault

Symptoms:

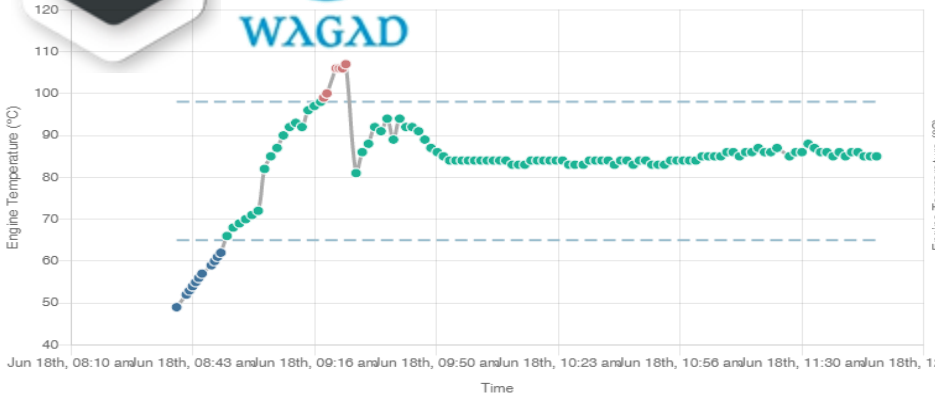
- Reduced efficiency of exhaust braking
- High brake pad wear

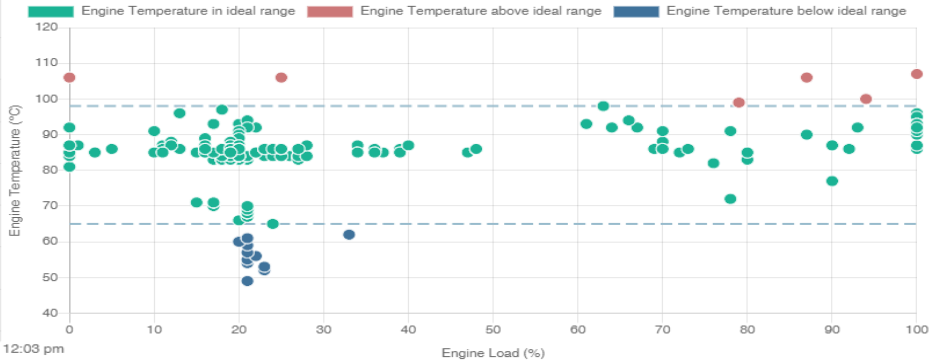
Possible Causes:

- Defective exhaust pressure modulator
- Incorrect signal for exhaust brake valve
- Defective exhaust pressure sensor

EICHER 6025T GJ 05SP 0720 (1,88,050 km) KADODARA PLANT

Engine Temperature Diagnostics





Results	Current	Ideal
Engine operating temperature	107 °C	65 - 98 °C

Alert Message	Date	Prognosis	Details
Engine operating temperature high	Jun 18th, 11:51 am	Major Issue	Details

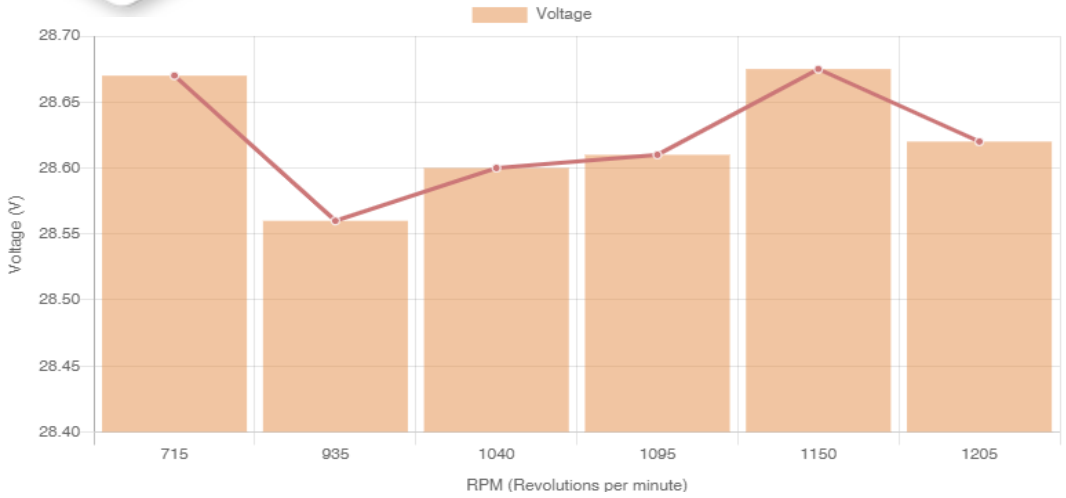
Engine Temperature Check

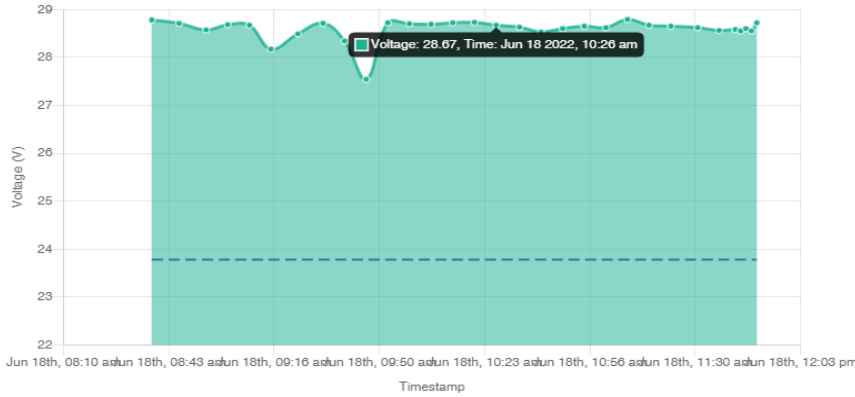
Alert	Set On	Prognosis
Engine operating temperature high	Jun 18th, 11:51 am	Major Issue

Causes	Symptoms
• Water pump failure • Low coolant level • Clogged radiator • Cooling fan failure • Malfunctioning cooling temperature sensor	• Engine knocking • Loss of power • Reduced fuel efficiency • Check engine light illumination

GJ18BT3109 VASTRAL PLANT DATE:- JUNE 18TH 2022

Battery and Alternator Analysis





Results	Current	Ideal
Voltage Readings against RPM	**28.56 - 28.68 V**	**24.90 - 30.56 V**
Last Recorded Voltage Reading	**28.72**	**24.90 - 30.56 V**

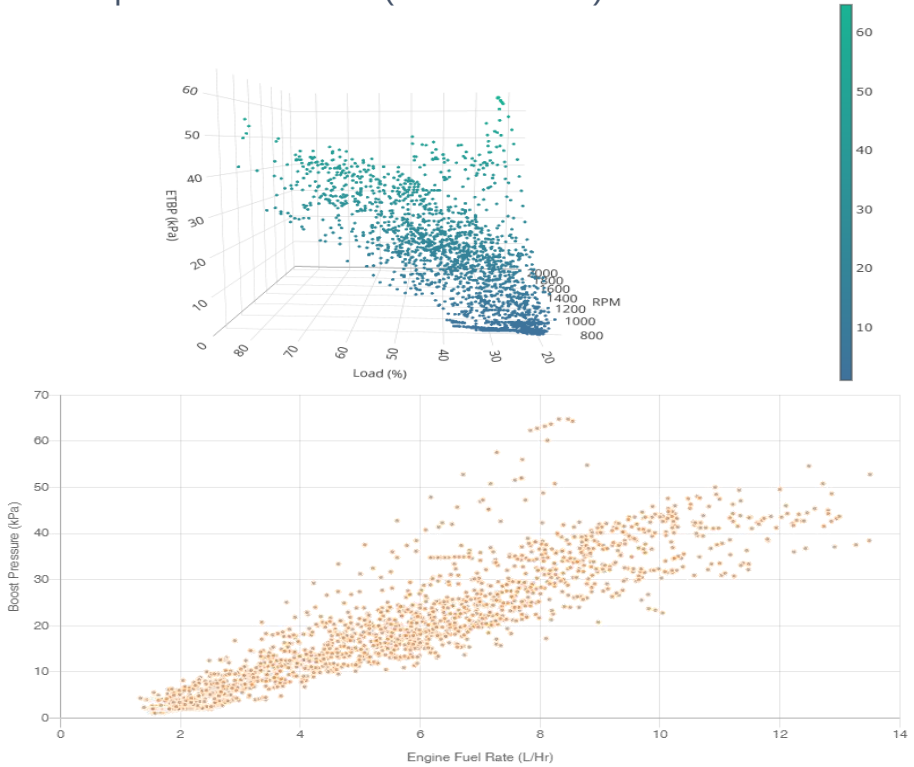
Alert Message	Date	Prognosis	Details
Voltage within range	Jun 18th, 11:51 am	Good	Details

GJ18BT3109 VASTRALPLANT DATE:-JUNE18TH2022

Air Intake Diagnostics

Average Turbocharger

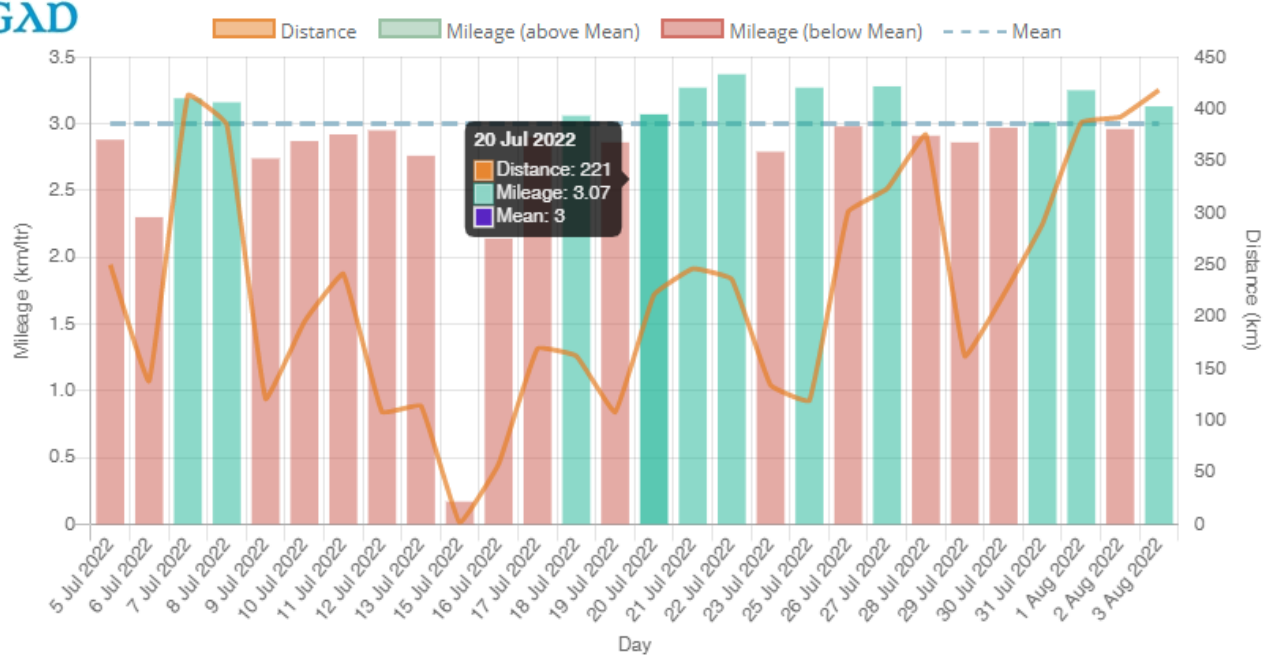
160 kpa **GJ 05SP 0720** (EICHER 6025) – KADODARA PLANT



Good Turbocharger

220kpa **GJ 18BT 4668** (TATA SIGNA 4825) – SANAD PLANT

Daily Mileage

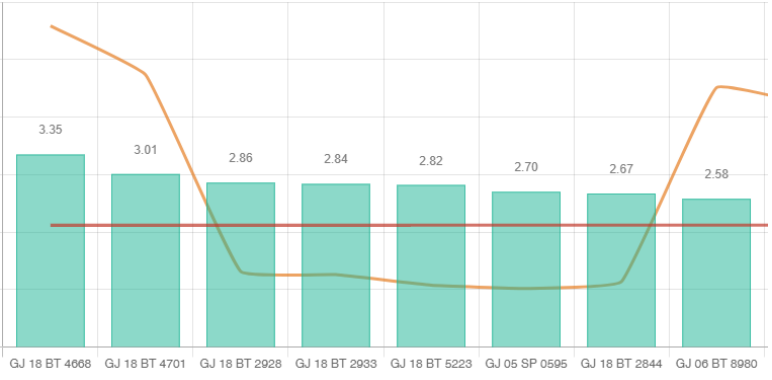


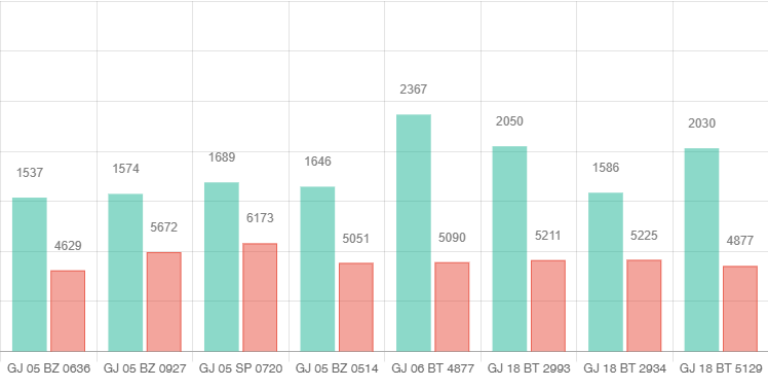
The daily mileage report helps keep an eye on any anomalies in vehicle's fuel consumption against distance travelled

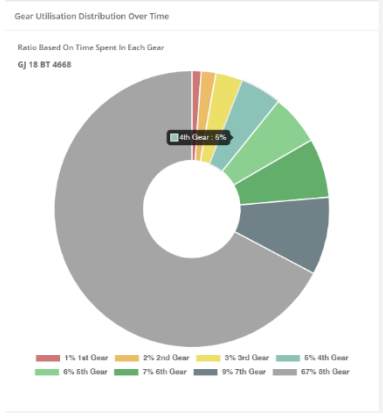
GJ 18BT 4701 (153,199 km) SANAND PLANT (TATA SIGNA 4825 TK)

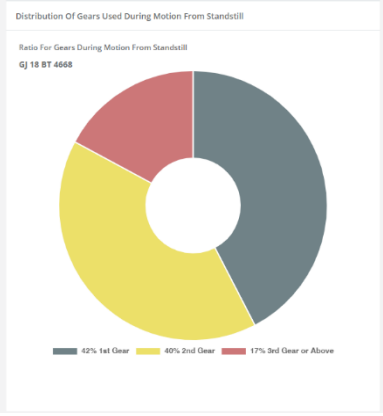
Performance Monitoring

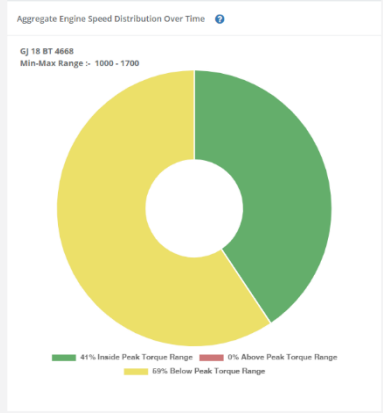
Fleet mileage, total idling time, fuel consumed and while idling and associated costs, over-speeding counts, hard-brake counts, gear utilisation







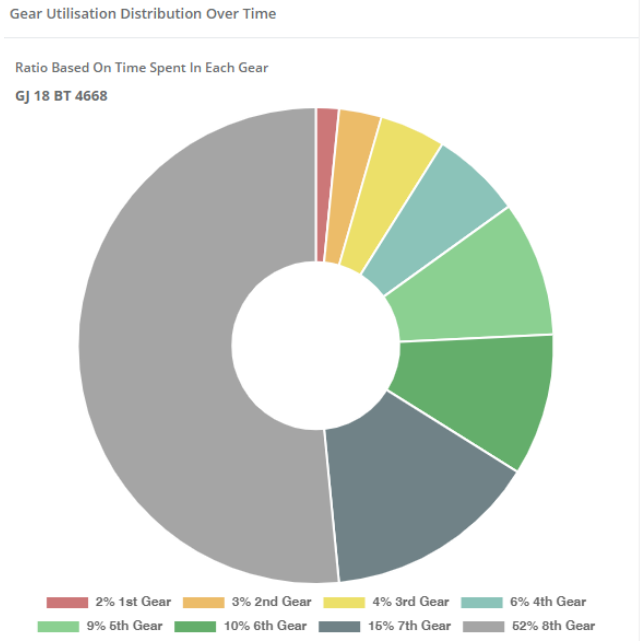


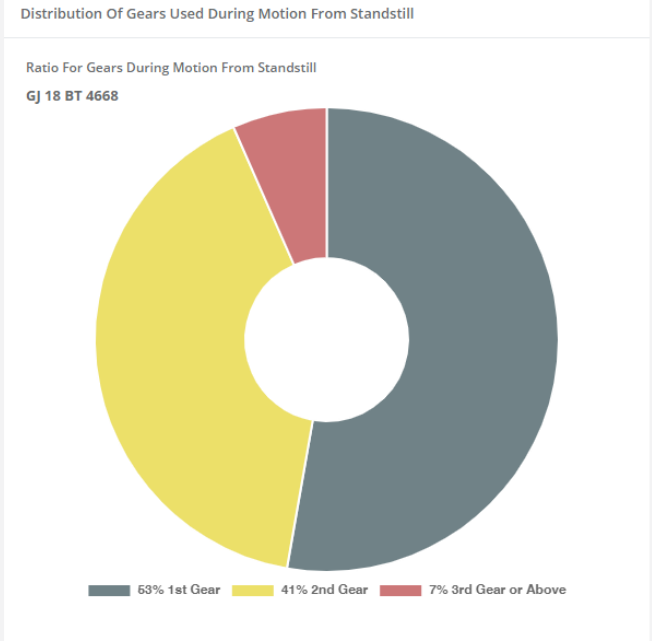


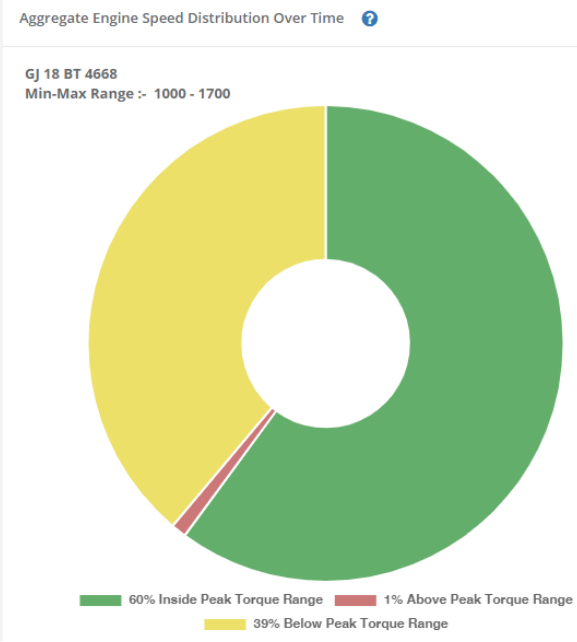
Transmission Utilisation – Correlation with Mileage

Trial done by **Chagan Driver** for 24 hours duration & Tank Topup to Tank Top up

1. Time & Date- 26th July 10:00AM to 27th July 10:50 AM by CHAGAN Driver (Total of **4 trips** of Sand Transported)
   Distance Travelled- **449 kms**, Fuel Consumed-**147.26 ltrs**, **Average from ECU Data- 3.05 kms/ltr (On paper-2.87 km/ltr)**







Trial Done on Tipper (Tata Signa) GJ 18BT 4668 (Sanand Plant)

Transmission Utilisation – Correlation with Mileage

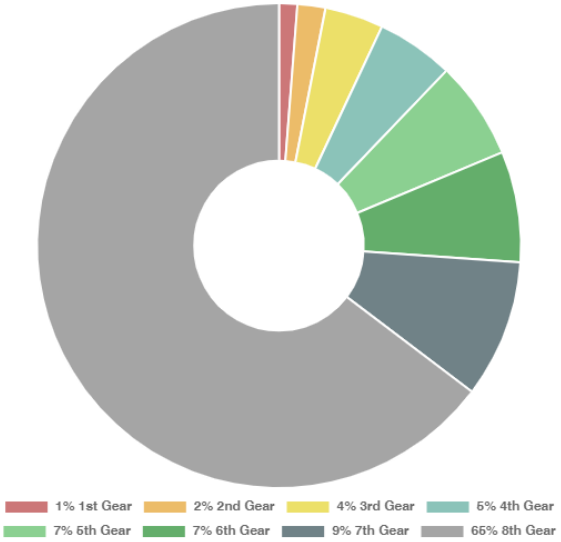
Trial done by **Vikram Singh / Vijay Singh Driver** for 24 hours duration & Tank Topup to Tank Top up

1. Time & Date- 22th July 10:00AM to 23th July 08:20 AM by Vikram Singh/Vijay Singh Driver
   Distance Travelled- **395 kms**, Fuel Consumed – **117.75 ltrs**, **Average from ECU Data- 3.35 kms/ltr (On Paper 3.17 kms/ltr)**

Gear Utilisation Distribution Over Time

Ratio Based On Time Spent In Each Gear

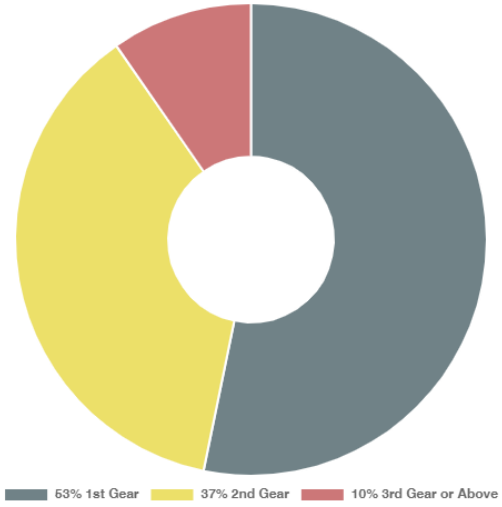
GJ 18 BT 4668



Distribution Of Gears Used During Motion From Standstill

Ratio For Gears During Motion From Standstill

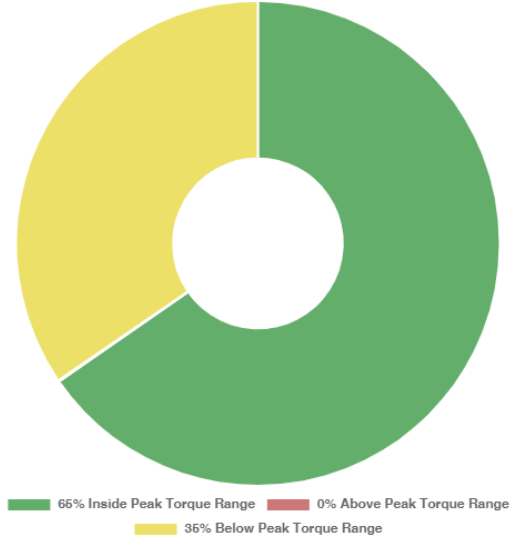
GJ 18 BT 4668



Aggregate Engine Speed Distribution Over Time

GJ 18 BT 4668

Min-Max Range :- 1000 - 1700



Trial Done on Tipper (Tata Signa) GJ 18BT 4668 (Sanand Plant)

Fuel Tracking – Filling, Consumption & **Theft**

A fuel consumption by Engine data Comparison with Manual Diesel Fill-up Data

Fuel Alerts

GJ 18 BT 4679

Fuel Filled

Filling Log (L)		Actual Filling (L)	Time
194.4		189	Jul 5th 2022, 3:32:01 pm
217.52		209	Jul 7th 2022, 3:40:40 pm
227.36		219	Jul 10th 2022, 10:42:05 am
228.11		223	Jul 13th 2022, 12:08:42 pm

Distance 553 km	Fuel Consumed 214.92 L
Mileage 2.57 km/L	Engine Running Hours 18.93 h

Distance 559 km	Fuel Consumed 223.02 L
Mileage 2.51 km/L	Engine Running Hours 20.26 h

Distance 558 km	Fuel Consumed 224.44 L
Mileage 2.49 km/L	Engine Running Hours 18.13 h

We checked data of ECU Fuel Consumption & Manual fuel top-up data and the Diesel Qty is **98% Accurate**.

Data taken of **Baroda Plant Tata Signa 4825 (GJ 18BT 4679)** up to 3 Diesel Topup Data.

Idle Tracking & Minimisation

GJ18BT5229 WAGAD INFRAPROJECTS PVT LTD	47 Mins 37 Sec	1.37 L	Aug 4th 2022, 13:51:15 PM	Aug 4th 2022, 14:38:52 PM
GJ05SP0595 WAGAD INFRAPROJECTS PVT LTD	26 Mins 57 Sec	1.5 L	Aug 4th 2022, 13:51:03 PM	Aug 4th 2022, 14:18:00 PM
GJ18BT8759 WAGAD INFRAPROJECTS PVT LTD	2 Hrs 18 Mins 33 Sec	8.62 L	Aug 4th 2022, 13:47:29 PM	Aug 4th 2022, 16:06:02 PM
GJ18BT3028 WAGAD INFRAPROJECTS PVT LTD	5 Mins 24 Sec	0.21 L	Aug 4th 2022, 13:46:59 PM	Aug 4th 2022, 13:52:23 PM
GJ18BT5129 WAGAD INFRAPROJECTS PVT LTD	2 Hrs 4 Mins 11 Sec	3 L	Aug 4th 2022, 13:40:20 PM	Aug 4th 2022, 15:44:31 PM

Idle Tracking & Minimisation

Transit Mixer Make Wise Diesel Consumption Data

TM MAKE	CAPACITY	Mileage in ltrs/hr	Mileage during Idling Time in ltrs/hour
EICHER 6025	7 m3 / 9 m3	3.83 ltrs/hr	1.94 ltrs/hr
EICHER 6028	9 m3	3.78 ltrs/hr	1.49 ltrs/hr
TATA PRIMA	10 m3	6.72 ltrs/hr	4 ltrs/hr
BHARAT BENZ	10 m3	5 ltrs/hr	1.83 ltrs/hr

CASE STUDY	PRIMA TM (JUNE 2022)			PRIMA TM (JULY 2022)		
Fleet Size	15	nos.		15	nos.	
Daily Average Km/Vehicle	200	km		150	km	
	Engine on Time	**Fuel Consumed**	**Average**	**Study Period**	**Fuel Consumed**	**Average**
	hrs	***ltrs***	***ltr/hr***	***km***	***Litres***	***km/lit***
Before	94	637	6.7			
After	128	836	6.5			
Improvement in Mileage			0.2			
Monthly Savings			33 ltrs			
Monthly Km Run		1048				
Monthly Fuel Saved						
Carbon Dioxide Emissions Reduced						

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Driving Behaviour Instances	(JUNE 2022)	(JULY 2022)
Over speeding	27	15
Hardbraking	267	327
Harsh Acceleration	12	3
Free Running	24	6

The above incidents impacts majorly to Milage & Maintenance.

WAGAD

Fuel Saving Last Month (July 2022)

- Idling losses Reduction: 09 %
- Driving Behaviour Improvements: 15%

Just a small Calculation :-

If we save 1 hr Idling per Day per vehicle

It will be like

(1X15X4)+(1x31X2)+(1X9X1.5)+(1X16X1.5) = 160 ltrs Daily

160 ltrs X 30 days a month = 4800 ltrs/ per month

And 4800 ltrs costs Rs. 4 Lakhs 56 Thousand Only (Approx)

A Rupee Save is a Rupee Earning

WHAT IMPACTS DRIVER SCORES ?

VEHICLE HEALTH

- DIAGNOSTICS
- PROGNOSTICS

DRIVING BEHAVIOR

- GEAR UTILISATION
- DRIVING EXCEPTIONS

FUEL MGMT

- FUEL REFILL
- FUEL ECONOMY

BRAKING SYSTEM

- ABS
- RETARDER

ON SCHEDULE

- LATE DEPARTURE
- TRAFFIC

INPUTS FOR BUILDING DRIVER TRAINING PROGRAM

ORDERING DRIVERS TO IMPROVE DRIVING BEHAVIOUR FROM ALERTS DATA

VEHICLE HEALTH

ACTIVE FAULT CODE (DTC) Monitoring helps in improving Safety and reducing Repair Costs

REAL TIME PREDICTIVE System – Subsystem Monitoring to prevent Breakdown

DRIVING BEHAVIOR

FREERUNNING Educating drivers helps in Accident Reduction up to 15%

HARD BRAKING Educating drivers helps in Accident Reduction up to 20%

FUEL MGMT

PICKUP LOSS Torque Limitation Mode due to Low AdBlue Level

PRESSURE RELEASE VALVE Open due to Low Fuel Level

BRAKING SYSTEM

ABS MONITORING Accident Reduction due to Rollover & Tire Locking

RETARDER MONITORING High Temperature on Electro-mechanical and Hydraulic Retarders

ON SCHEDULE

MONITOR SCHEDULE MISMATCH Alighting, Boarding and Rest Stops

PREDICT TRIP DELAYS Due to Weather, Road and Traffic Conditions

Thank you for giving us your precious time.

WAGAD

WAGAD INFRAPROJECTS PVT. LTD.

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