



TOTAL FLUID MANAGEMENT(TFM)

Comprised of Lube & Coolant Management Services



Kripa Enterprises



- Premium solution provider in the fields of Lubricants, VCI Packaging and industrial consumables.
- Comprised of well qualified team having expertise in providing best solution to customer needs.
- Recognized solution provider in Industrial markets of Northern India since 2014.

“TFM Partners of VAS Tribology Solutions”



VAS Tribology Solutions



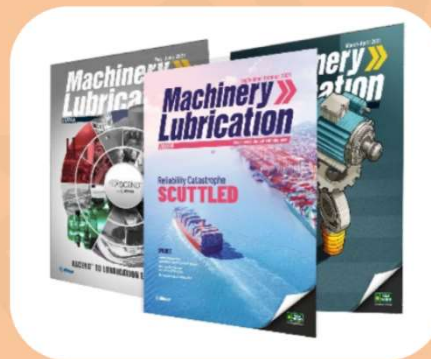
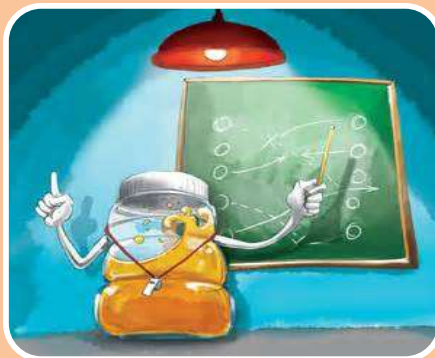
- India's only Vendor Neutral and Comprehensive Lubrication Services Company.
- Partner of Noria corporation, USA providing lubrication related services all over the world.
- We offer services for the following countries:

*India, Pakistan, Bangladesh, Sri-Lanka, Nepal,
Middle East*





VAS Tribology Verticals



Total Fluid Management (TFM)

Complete End to End Solutions-
Oil & Coolant

Training Program

Public Training
In house Training

Publication

Region's only magazine on:
Lubrication
Lubricants
Reliability

Lubrication Program Development

Roadmap to
Lubrication
Excellence



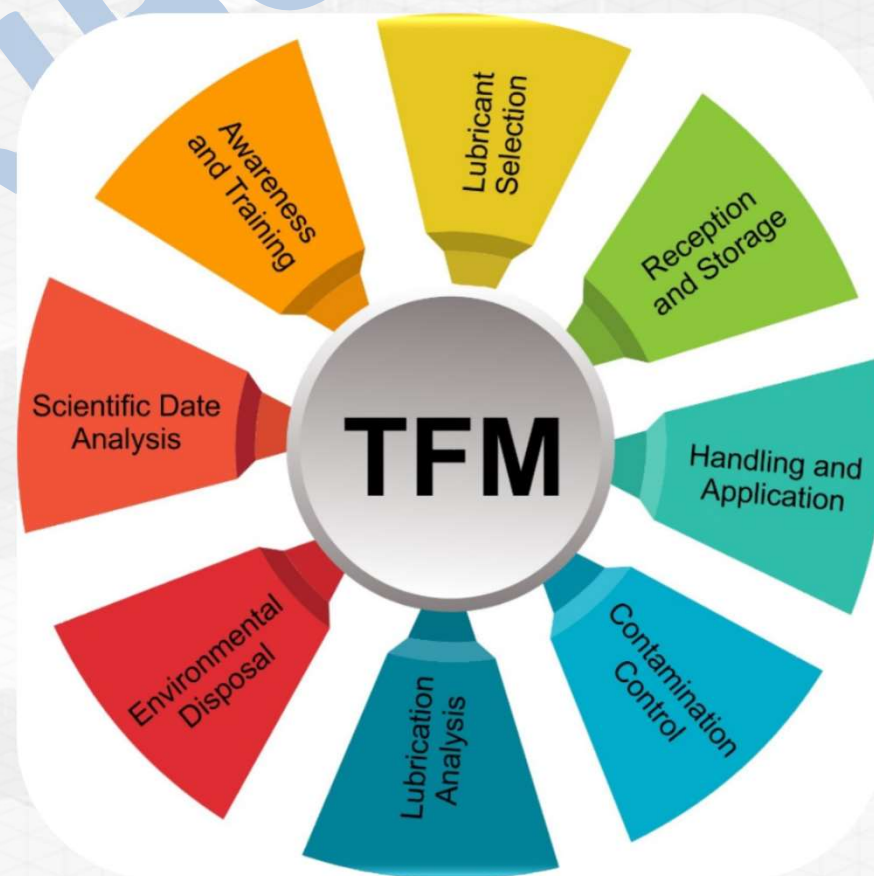
Total Fluid Management (TFM) : Stages



TFM Program is laser-focused and sustainable improvement to the plant. To perform the lubrication job , we have structured & divided this program into **eight stages**.

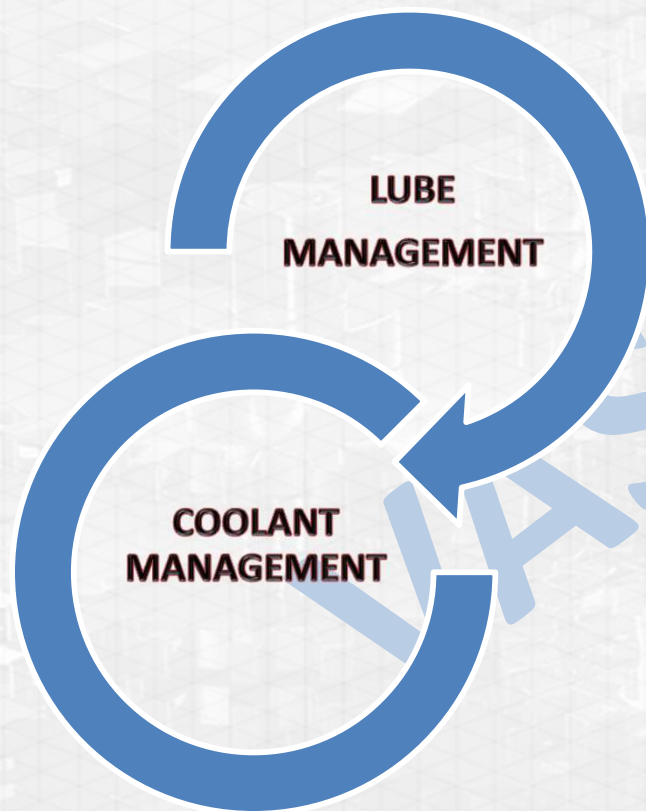
Oil & Coolant Program Stages:

1. Lubricant Selection
2. Reception & Storage
3. Handling & Application
4. Contamination Control
5. Lubricant Analysis
6. Environment & Health
7. Data Analysis
8. Lubrication Awareness and Training





TFM: SCOPE OF WORK



- TFM**
- Facility Audit
 - LIS/CIS- Colour Tag
 - Reception & Storage
 - Handling & Application
 - Contamination Control
 - Stock Monitoring
 - Topping Up Oils
 - Emulsion Preparation & Topping Up Coolants
 - Condition Monitoring
 - Oil Reclamation and Regeneration
 - Leakage Identification & Reporting
 - Tank Cleaning Activity
 - 5S Activity
 - Data Recording & Analysis
 - Daily/Monthly Reporting
 - Lubrication Awareness And Training



Facility Audit



Our Approach:

➤ Prepare a master list of your equipment that consists of equipment name, criticality , operation , lubrication points etc.

Si.No.	machine	Area	criticality	lubricant_type	subtype	element_to_lubricate	tank_capacity	lubricant_used	Level check Freq.
1	9200281-TAPPING MACHINE HIGHWAY	Aluminium Phase Old	Critical	Oil	Hydraulic oil	Hydraulic tank	120	SERVO SYSTEM-32	10 days
2	9200281-TAPPING MACHINE HIGHWAY	Aluminium Phase Old	Critical	Oil	Lube oil	Lube tank	3	SERVO WAY-68	2 days
3	9200288-ROUGH BORING MACHINE- HONDA	Aluminium Phase Old	Critical	Oil	Hydraulic oil	Hydraulic tank-1	120	SERVO SYSTEM-32	15 days
4	9200288-ROUGH BORING MACHINE- HONDA	Aluminium Phase Old	Critical	Oil	Hydraulic oil	Hydraulic tank-2	120	SERVO SYSTEM-32	15 days
5	9200288-ROUGH BORING MACHINE- HONDA	Aluminium Phase Old	Critical	Oil	Lube oil	Lube tank-1	3	SERVO WAY-68	1 days
6	9200288-ROUGH BORING MACHINE- HONDA	Aluminium Phase Old	Critical	Oil	Lube oil	Lube tank-2	3	SERVO WAY-68	1 days
7	9200285-STUD FITTING MACHINE	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Hydraulic tank	120	SERVO SYSTEM-32	7 days
8	9200285-STUD FITTING MACHINE	Aluminium Phase Old	Normal	Oil	Lube oil	Lube tank	3	SERVO WAY-68	2 days
9	9200287-IWATA FINE BORING MACHINE	Aluminium Phase Old	Critical	Oil	Hydraulic oil	Hydraulic tank	120	SERVO SYSTEM-32	15 days
10	9200287-IWATA FINE BORING MACHINE	Aluminium Phase Old	Critical	Oil	Lube oil	Lube tank	3	SERVO WAY-68	15 days
11	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Hydraulic tank	140	SERVO SYSTEM-32	10 days
12	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Lube oil	Lube tank	3	SERVO WAY-68	2 days
13	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-1(O)	10	SERVO SYSTEM-46	15 days
14	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-2(O)	10	SERVO SYSTEM-46	15 days
15	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Harmonic drive	2.5	SERVO SYSTEM-46	1 days
16	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-1(N)	10	VG-100	15 days
17	9200290-MODULE MACHINE - 5	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-2(N)	10	VG-100	1 days
18	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Hydraulic tank	140	SERVO SYSTEM-32	1 days
19	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Normal	Oil	Lube oil	Lube tank	3	SERVO WAY-68	7 days
20	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-1(O)	10	SERVO SYSTEM-46	2 days
21	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-2(O)	10	SERVO SYSTEM-46	15 days
22	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Harmonic drive	2.5	SERVO SYSTEM-46	15 days
23	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Normal	Oil	Hydraulic oil	Head-1(N)	10	VG-100	10 days
24	9200291-MODULE MACHINE - 4	Aluminium Phase Old	Critical	Oil	Hydraulic oil	Head-2(N)	10	VG-100	2 days
25	9200292-SAKURAI ROTARY MILLING MACHINE	Aluminium Phase Old	Critical	Oil	Hydraulic oil	Hydraulic tank	150	SERVO SYSTEM-32	15 days
26	9200292-SAKURAI ROTARY MILLING MACHINE	Aluminium Phase Old	Critical	Oil	Lube oil	Lube tank	3	SERVO WAY-68	15 days
27	9200292-SAKURAI ROTARY MILLING MACHINE	Aluminium Phase Old	Critical	Oil	Lube oil	Table	100	SERVO WAY-68	1 days
28	9200292-SAKURAI ROTARY MILLING MACHINE	Aluminium Phase Old	Critical	Oil	Lube oil	Gear Motor	4	SERVO WAY-68	1 days



LIS/CIS Tag Implementation

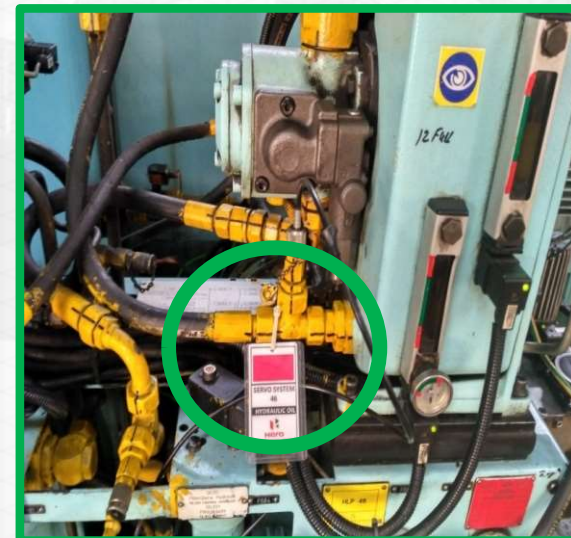


Usual Practices:

- ☐ No identification system.
- ☐ Chance of Cross-Contamination.

Our Approach:

- Proper Identification System (LIS/CIS) followed.
- Implemented of LIS/CIS tags – every lubrication points & equipment.
- Avoided Cross-Contamination.





Storage & Handling

Usual Practices:

- ☐ Used open contaminated galvanized Jars.
- ☐ Same container for multiple grade.
- ☐ No tagging to avoid cross-contamination.

Our Approach:

- Dedicated S & R container used for topping up.
- Proper Tagging done.
- Separate Bulk Storage Tank installed.



Oil Dispensing System



Oil Dispensing System with Transfer Pump



Contamination Control & Removal - Oil



Usual Practices:

- ❑ Lack of focus on contamination control in lubricants.
- ❑ Unscheduled filtration activity.

Our Approach:

- Focus on contaminant exclusion at every stage, from reception to during usage.
- Filtration of oils and usage of filtered oil only after testing.



Dirt Contamination Removal Machine



Water Contamination Removal Machine



Implemented Oil Storage SS Tank



Contamination Control & Removal - Coolant



Specialized filtration cum cleaning machine for coolant tank cleaning which reduces wastages of coolant.



Reputed Car Manufacturer



Reputed Commercial Vehicle Manufacturer



Emulsion Preparation & Topping Up

Specialized coolant pre-mixture and filling equipment is used to fill correct ratio of coolant & water into system.



Concentration Check



Emulsion Preparation
using pre-mixture



Emulsion Topping Up into
System



Condition Monitoring - Oil



Usual Practices:

- ❑ There is no proper set up of onsite testing.
- ❑ Lack of Oil Analysis(OA) report interpretation skill

Our Approach:

- Quicker availability of Oil Analysis reports & its interpretation.
- Condition based oil change.
- Performing following tests:
 - Viscosity
 - Water Content
 - Dirt Content
 - Particle Count



Digital Viscometer & Water Test Kit



Oil Patch Test Kit



Onsite Lab Set Up



Particle Counter



Condition Monitoring - Coolant



Onsite Testing Conducted

Onsite Coolant Monitoring :

- Concentration & pH
- Bacteria/Fungal
- Total Hardness
- Chlorides
- Dirt content



Concentration Checking



Refractometer



pH Meter



Bactaslyde Kit



Hardness Test Kit



Tank Cleaning Activity



Specialized cleaning equipment is used to clean the confine area of tank.



Jet Washer



Tank Cleaning Activity



Coolant Sump Cleaner



5S Activity:

5S is maintained at Each Shift Every Day





Data Recording, Analysing and Reporting

Through VAS PRO 4.0 Software

Usual Practices:

- ❑ Practically no emphasis on lubrication data collection, recording , analysis and reporting.

Our Approach:

- Use of proprietary lubrication software for equipment specific data capturing, analysis and reporting.

The following daily/weekly/monthly reports are generated and sent to all process owner:

1. Daily Lubrication Activity Report	2. Monthly Lubrication Activity Report
3. High/Low Oil Consumption Machine Report	4. Leakage Report
5. Oil Balancing Report	6. Hydraulic Tank Temperature Report
7. Oil Testing Report	8. Filtration activity Report
9. Greasing Activity Report	10. Waste Oil disposal Report



Data Recording

Lubricant Identification



Data feeding

(LIS)



Lube Task



QR code scanning

which lubricants used here if required





Data Analysing



Oil Condition Monitoring

Lube Point: Hydraulic Tank

Grade Name: VG - 68

Date of testing: 26-06-2019

Testing Facility	Recomnd	Actual
Viscosity@40°C	61.2 - 74.8	66.5
Moisture Content	500 ppm	100 ppm
Cleaness Level	18/13/9	18/16/13
TAN	0.2mg KOH/g	0.1mg KOH/g
TBN	—	—

- Previously, the data collection, recording, segregation and reporting was done manually which could result in an error.
- To collect data, manage the schedule and see the various types of trend analysis at your fingertip.
- The software can deliver various information such as –
 - Consumption trend
 - Abnormality alert
 - Leakage Alert/Stock out situation messages

VAS PRO 4.0

Monthly Grade Wise - Oil Consumption

Report Form

Plant: Bosch_B102 Grade: Hydraulic Oil Month Start: September Year Start: 2021 Month End: May Year End: 2022

Submit

Report Output

REPORT PDF PREVIEW REPORT PDF DOWNLOAD REPORT EXCEL DOWNLOAD

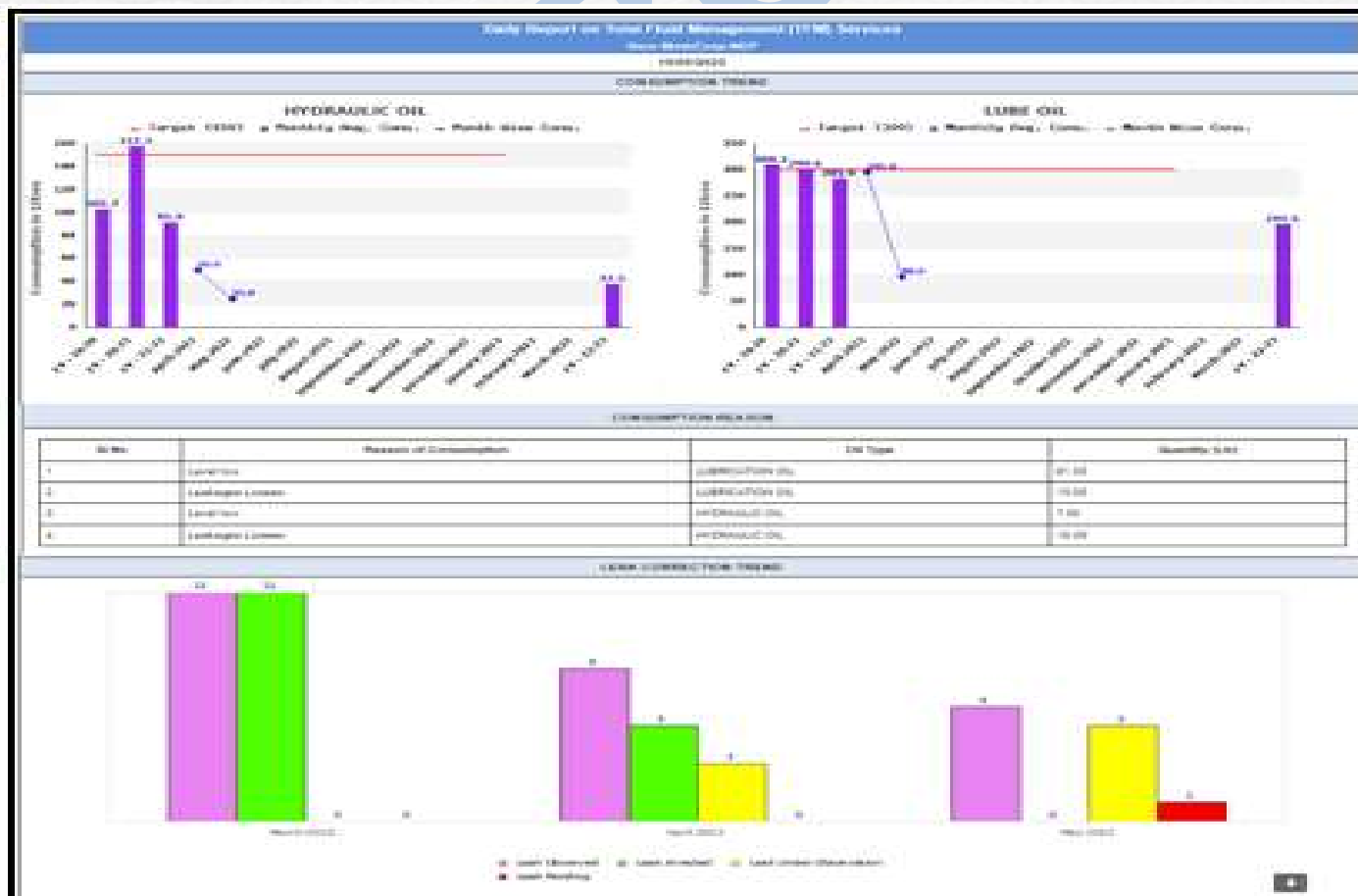
Oil Name	September-2021	October-2021	November-2021	December-2021	January-2022	February-2022	March-2022	April-2022	May-2022
H 57	175.5	74	135	104	14	45	40	81	5
HLP-32	143.3	240.5	227.8	368.4	222.9	409.5	269.5	176	32
HLP-46	206.5	148	179	345.5	236	221.5	300.5	109	0
Hydro 68	883.8	1722.3	2188.1	1662.4	1394	1786	1134.5	1275	221
Total	1409.1	2184.8	2729.9	2560.3	1866.9	2463	1744.5	1721	258



Data Reporting



The customer having the login ID and password can access the dashboard and see the Equipment wise/ area wise /plant wise consumption trend and TFM reports.



TRENDS ANALYSIS

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Lubrication Awareness and Training



Benefits:

- ✓ Effective Lubrication
- ✓ Better Awareness
- ✓ Increased Reliability

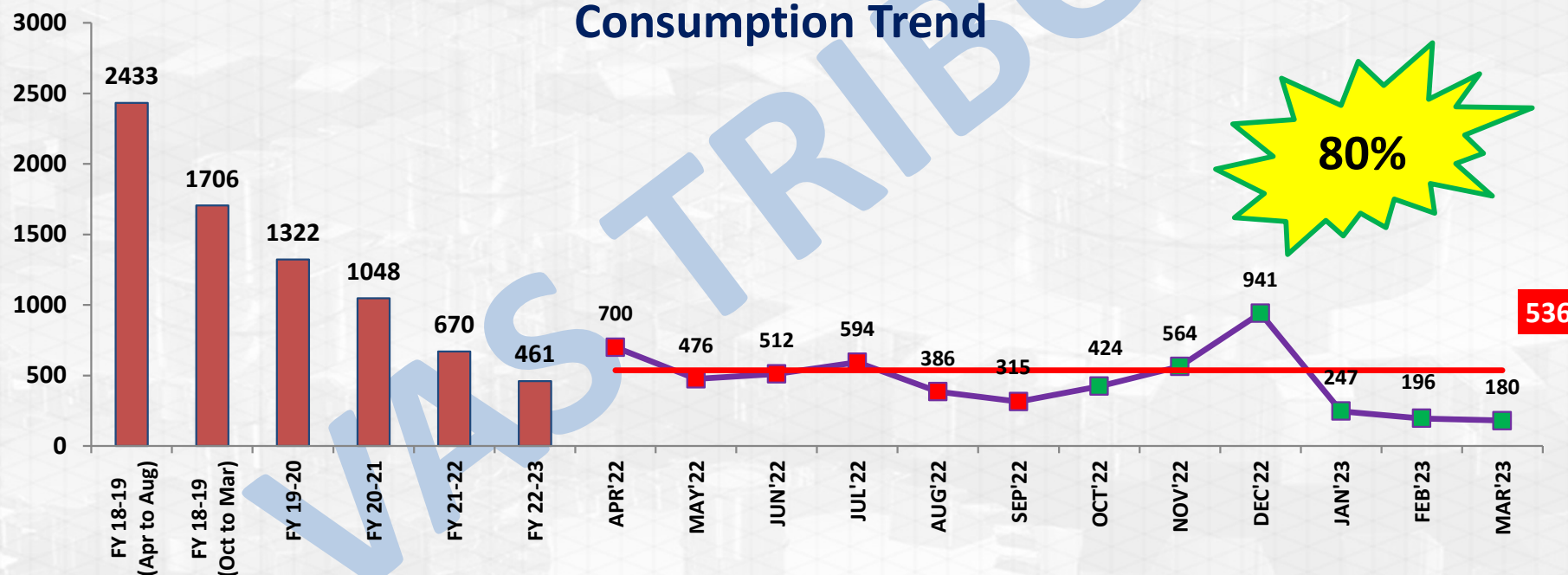


TFM BENEFITS AT A GLANCE



Hydraulic Consumption Trend : Leading 2 Wheeler Manufacturer

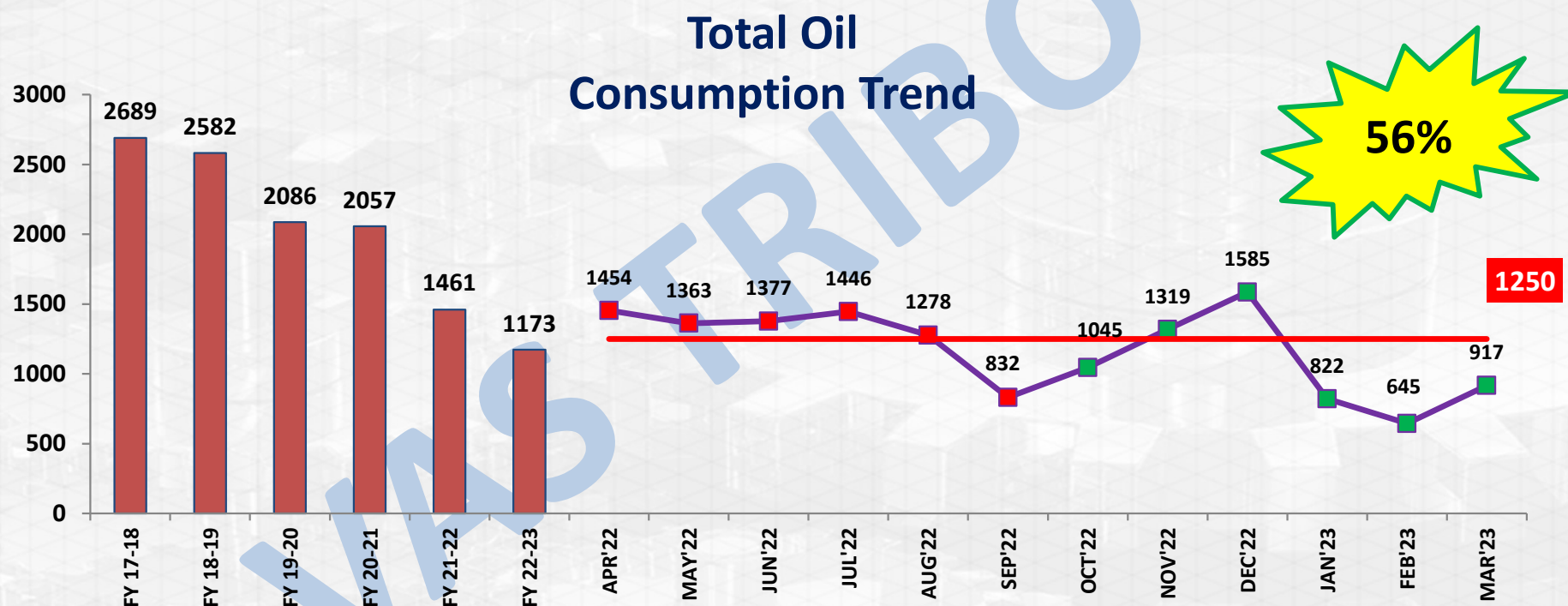
Total Hydraulic Oil Consumption Trend



- Started in Oct-2018 and hydraulic oil consumption has decreased by 80% in 5 years.
- In FY 22-23, hydraulic consumption has reduced by 27% as compared to previous year FY21-22.



Oil Consumption Trend : Leading 2 Wheeler Manufacturer



- From FY 18-19 total oil consumption has **decreased by 56%** in 5 years.
- In FY 22-23, total oil consumption has **reduced by 18%** as compared to previous year FY21-22.



Coolant Consumption Trend: Leading Commercial Vehicles Manufacturer

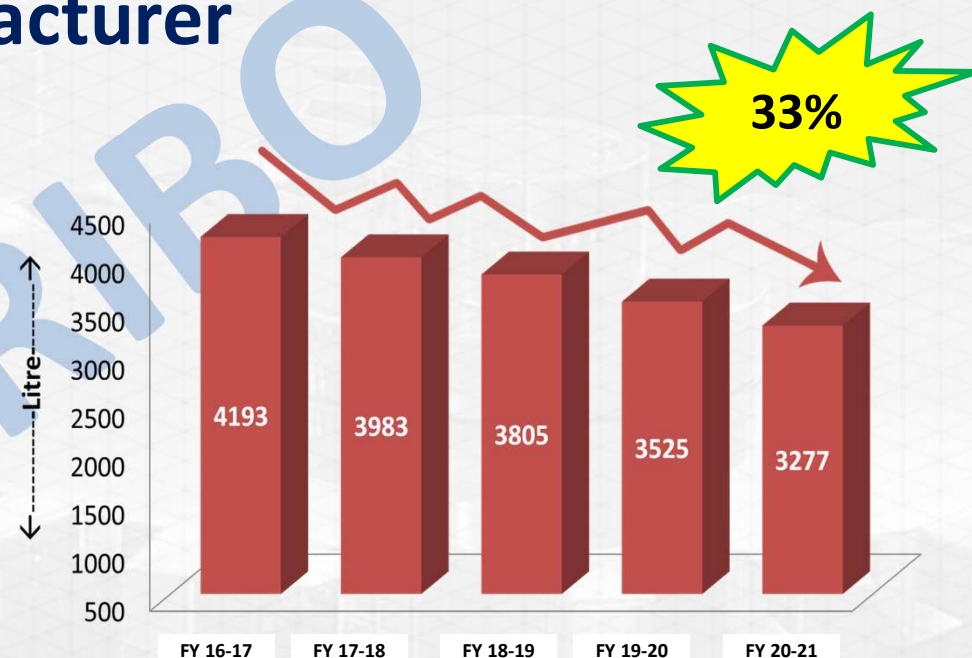


The company was facing problem with their cutting oil in connection with –

- Bad odor
- Corrosion/Rusting on product
- Frequent replacement of cutting oil

Action Plan:

- Proper mixing of water & soluble cutting oil
- Maintain concentration & Ph
- Installed a Coolant Recycling System
- Routinely cleaning of sump & tramp oil
- Onsite testing of coolant – Hardness, chloride, bacterial test etc.



Monthly Average Coolant Consumption Trend

With our expertise and experiences, we are able to combat all the issues as well as **reduce their coolant consumption oil by 33%.**

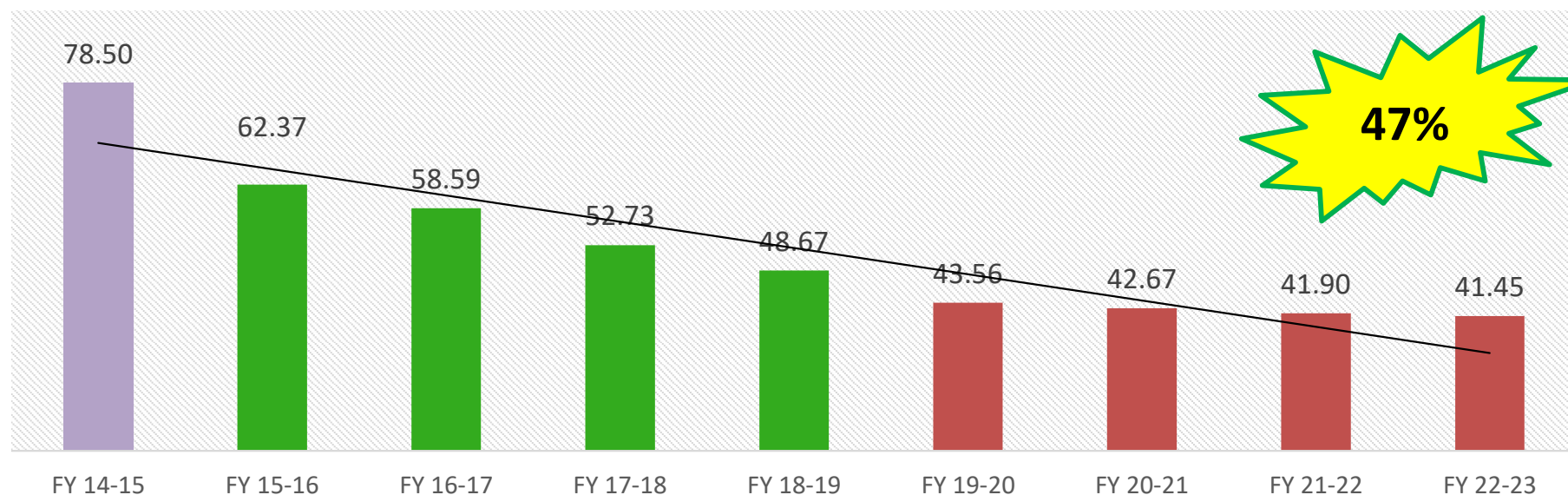


Oil Consumption Trend: Leading wire rope manufacturer



Gear & Hyd Oil Consumption Trend

FY 14-15 FY 15-16 FY 16-17 FY 17-18 FY 18-19 FY 19-20 FY 20-21 FY 21-22 FY 22-23

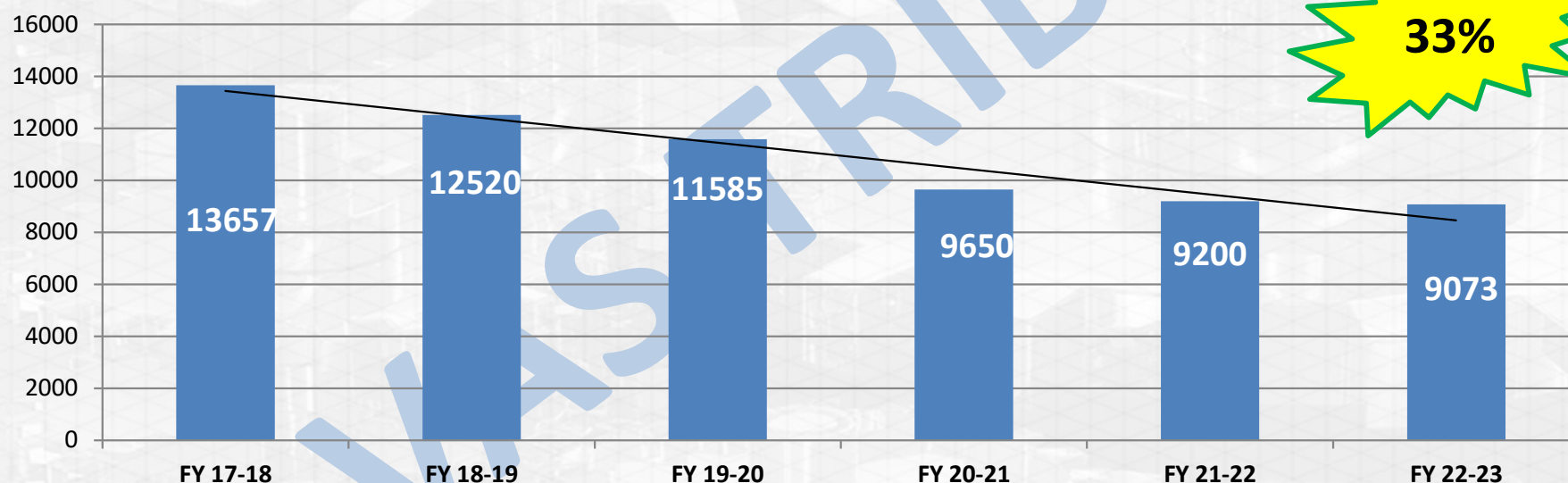


We have implemented our services in April-2015 and oil consumption has **decreased by 47 % from the base year FY 14-15.**



Coolant Consumption Trend: Leading car manufacturer

MONTHLY AVG.
CUTTING OIL CONSUMPTION



After Implementation of TFM services Coolant Consumption has reduced by approx 33%.



Other Key Benefits



Increased Productivity



Reduced Tool Costs



Improved Surface Finish



Reduced Waste Costs



Health & Safety Benefits



Happier Operators



Never Run Out Of Oil & Coolant Again



Centralised Condition Monitoring



CONTINUE.....



Other Key
Benefits

Training and Awareness program

Data Capturing ,Analysis & Interpretation

Systematic and scientific approach

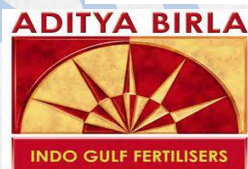
Extended - Oil Life and Equipment Reliability

Protection of Environment /Recycling of
Resources

24*7 availability of technical services team



VAS Tribology Solutions Customers





Thank You!