



PRECISE TECHNOLOGY

A Trusted Name in Customized Measuring Equipment's and Instruments

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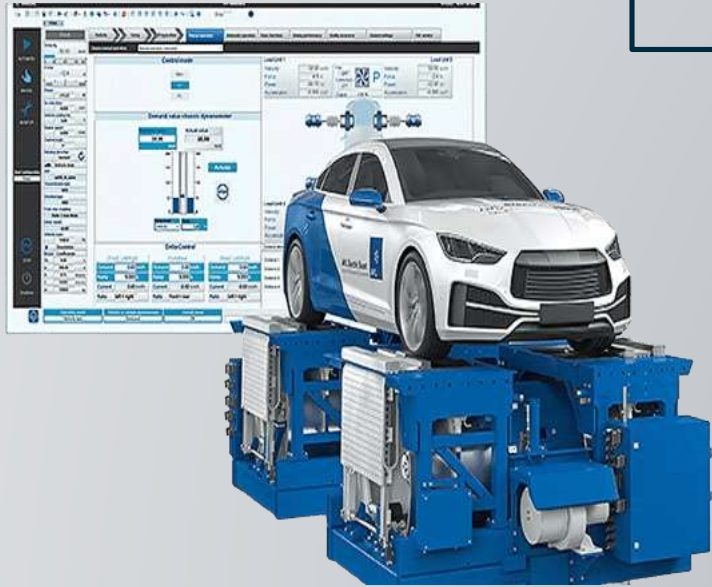




PRECISE TECHNOLOGY

INTRODUCTION :

We would like to introduce our company PRECISE TECHNOLOGY, was incorporated in the year 2013 with the aim of providing complete engineering services and testing-measurements solutions at low cost.



CORE VALUES :

1. Honor Commitments
2. Consistently maintain
3. High Quality
4. Advancement in Technology
5. Strive for long-term relationship with Customers
6. On Time Delivery

ABOUT US



- We are based in Pune, We have representatives in Bangalore & Chennai to Southern region of India. We support engineering hub of India and support our customers in the the northern automotive.
- Industry from Pune itself at the moment, and very soon planning to establish our office in Delhi.
- We continue to develop creative and innovative technologies to offer low cost, result oriented high standards professional solutions in the field of engineering and constantly cares for client's satisfaction.
- We have well equipped technical design centre and test lab ensuring the high quality of products.
- We also provide a various automotive components, parts for bench mark studies and testing solution to the OEM.





MISSION & VISION



MISSION

Our mission is strive to growth in new & Existing markets and provide low cost , customized high quality solutions for testing & Measurements domain with best services and unfailing commitments



VISION

To bring the new revolution in the field of research and development for the automotive sector in INDIA.

OUR SERVICES



Durability Testing



On Road - Endurance Testing



Powertrain Calibration



MAN POWER SUPPLY



EV Prototype Testing & Validation



Testing Instruments & sensor Import Export

OTHER IMPORTANT FACILITIES

- Tie-Up with EV charging companies.
- Parking space for approximate 100 nos. vehicles.
- EV vehicle charging feasibility (Static only) – Two 30 kw fast DC charger. (Available in Chennai, Delhi & Bengaluru facility).
- EV Vehicle maintenance facility.
- Towing vehicle (In emergency) during testing by towing cranes.
- Authorized firm for TC Plates i.e., red no. plates.

OUR MAJOR OEM CLIENTS



Applus⁺
IDIADA



JCB



CNH
INDUSTRIAL

Jeep[®]



KALYANI

ARAI[®]
Progress through Research

ICAT
Innovation • Service • Excellence



Mahindra



BAJAJ

OTHER CLIENTS



1. MAHINDRA & MAHINDRA
2. NEW HOLLAND FIAT
3. FORCE MOTORS
4. VE COMMERCIAL VEHICLES
5. AMW MOTORS
6. HONEYWELL TURBO INDIA
7. JAYEM AUTO
8. SWARAJ TRACTORS
9. KENERSYS
10. LM WIND POWER
11. SERUM INDIA INSTITUTES
12. IRB INFRA
13. VOLTAS
14. HALLMARK ELECTRONICS
15. GEAR SPECT
16. PCA AUTOMOBILES
17. HMT

TESTING & MEASUREMENT SERVICES



1. Brake Test

7. Shaft Torque & RPM Measurements

2. Steering Effort Measurement

8. CAN/ECU Data Measurement

3. Temperature mapping.

9. EV powertrain Efficiency Measurement

4. Exhaust System Temperature and Strain Measurement

10. EVDM Measurements

5. Highway Durability

11. Vehicle Handling Test

6. Vehicle Handling

12. High Speed test

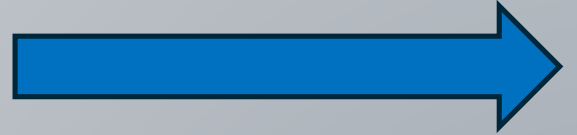


OUR PAST PROJECTS

OUR DURABILITY FLEET ON ROAD VALIDATION RUN PROJECT					
SR NO.	TEST NAME	TEST KM	TEST YEAR	LOCATION	CLIENT NAME
1	DURABILITY RUN	1,50,000	2019-2020	PAN INDIA	ICAT
2	DURABILITY SEEDING TRIAL	2,00,000	2019-2020	FARIDABAD, CHENNAI	PIAGGIO
3	DURABILITY FLEET RUN	2,80,000	2019-2020	CHENNAI	IDIADA
4	OBD-II: POWERTRAIN ASIAN & INDIA	1,77,000	2023-2024	CHENNAI LADAKH JAISALMER	PSA Group
5	CC24 DURABILITY FLEET RUN	2,85,000	2022-2024	PAN INDIA	PSA Group
6	QAU ECC 21 DURABILITY	1,50,000	2022-2023	DELHI BENGALURU CHENNAI	PSA Group



RECENT FLEET TESTS OF AN EV



EC3 PROTO VEHICLE Testing & Validation BEFORE LAUNCH TEST



AVERAGE RUNNING COST/KM , Fast charging , Charge 0-100%



Battery Capacity	29.2 kWh
Driving Range	320 km/full charge
Motor Type	Permanent Magnet Synchronous Motor
Max Power	56.22bhp
Max Torque	143nm

CITROEN EC3 Battery pack capacity : 29.2kwh
Average Electricity cost(Fast charging CCS2 Mode): 18 RS Per KWh
Total cost in single full Battery Charge (0-100%) : $18 \times 29.2 = 526$
Total Average Range in single full Battery charge (100-0%) : 300Km
Average Running cost per Km : $526/320 = 1.7$ Rs per km

PERFORMED TEST : 1,50,000Km

1. Durability test
2. MTAC Load Condition Test
3. Ground Clearence Test

WE USE TATA & TELLUS POWER EV FAST CHARGER IN DELHI & BANGALORE LOCATION

CHARGER



SPECIFICATION



NOTE : Till date we use only 30kw capacity dc fast charger for charge our all 4 vehicle, we not go to For 60kw fast DC charging Because 60kw fast charger only available in Highway routes.

TELLUS POWER (YAHHVI)

SPECIFICATION

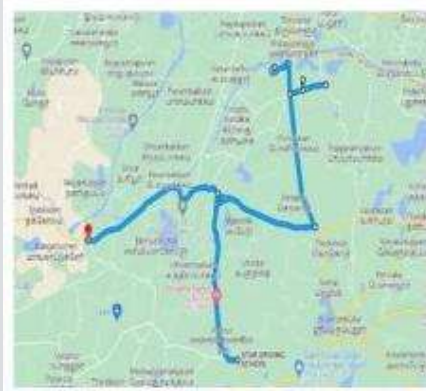


EcC21_MDL_INDIA_qau test_DPVF (functional)



Road profile and road book based on qualitycustomers survey
 Delhi & Bangalore city driving test to meet the Indian road conditions influent on QIU performance

RAF Circuit



QIU Circuit- Delhi



QAU ROAD PROFILE- DELHI & BANGALORE

Total Mileage	Highway /Expressway	Road	City	Hill	Rural road
					(Included in 100%)
10k	20%	5%	65%	5%	5%





SOME TESTS PHOTOS IN REAL ROAD CONDITIONS EC3 21

Ground Clearance Battery Impact Test & Measurements



No. of BUMPS IN DELHI ROUTE	GROUND CLEARANCE IN INCHES Battery cage to ground /overall
1	3.5 inches
2	3.5 inches
3	4 inches
4	3 inches
5	3.5 inches
6	3.5 inches
7	3.5 inches










SlNo	Date	Route	Test Speed (mph)	Condition				Drive cycle										Charging cycle					Cumulative Km/Day	Total Cumulative e-10 days	Target Km/Day	Total Target Cumulative e-10 days										
				Normal/24	loading	AC ON/OFF	start/stop	End use	start time	End time	Start SOC(%)	End SOC(%)	consumed kWh	consumed wh/kWh	ODO Distance covered	GPS Distance covered	Total Duration (mins)	start soc	End soc	start time	End time	Total Duration (mins)						consumed kWh								
6	11/Nov/22	Dahh/Day	80	Normal	D	On							1087	1724					698.021	20%	87%	1:10 PM	6:38 PM	2:22:00												Not run due to rain power not available
7	11/Nov/22	Dahh/Day	80	Normal	End	On	80%	30%	7:42 AM	1:01 PM	1714	1887						8:20:00	30%	92%	1:17 PM	3:32 PM	1:15:00		318	2040									Daily running	
8	11/Nov/22	Dahh/Day	80	Normal	End	On	80%	20%	8:50 PM	10:05 PM	1887	1942						9:15:00	20%	80%	10:05 PM	11:45 PM	1:25:00		318	2040									Daily running	
9	11/Nov/22	Dahh/Day	80	Normal	End	On	80%	32%	9:20 AM	11:15 AM	2642	2220						9:50:00	32%	90%	11:15 AM	1:28 PM	1:20:00	287	317	2119									Daily running	
11	11/Nov/22	Dahh/Day	80	Normal	End	On	82%	22%	3:30 PM	11:00 PM	2218	1375						1:30:00							317	2119									Daily running	
13	11/Nov/22	Dahh/Day	80	Normal	End	On					2379	2413						4:01:31							314	2413										
15	11/Nov/22	Dahh/Day	80	Normal	End	On					2613	1813						4:01:31	105%	92%	1:05 PM	4:38 PM	1:05:00	242	314	2413										
18	11/Nov/22	Dahh/Day	80	Normal	End	On	84%	22%	6:30 AM	12:00 PM	2613	2381						5:50:00	22%	82%	12:10 PM	1:38 PM	1:28:00	33	313	2138										
21	11/Nov/22	Dahh/Day	80	Normal	End	On	88%	20%	2:50 PM	8:58 PM	2381	2738						6:00:00	30%	92%	8:58 PM	10:06 PM	1:16:00	21.8	313	2138										
26	11/Nov/22	Dahh/Day	80	Normal	End	On	81%	32%	6:00 AM	11:00 AM	2738	2887						1:00:00	32%	83%	12:01 PM	1:17 PM	1:16:00	18.68	313	2138										
27	11/Nov/22	Dahh/Day	80	Normal	End	On	83%	41%	1:25 PM	7:21 PM	2887	3238						2:00:00	38%	92%	6:18 PM	9:23 PM	1:05:00	17.11	313	2138										
28	11/Nov/22	Dahh/Day	80	Normal	End	On	83%	30%	6:00 AM	11:40 AM	3038	1189						4:45:00	30%	88%	11:05 AM	12:05 PM	1:00:00	18	313	2138										
29	11/Nov/22	Dahh/Day	80	Normal	End	On	84%	32%	1:00 PM	8:40 PM	1189	1189						4:40:00	32%	92%	8:40 PM	10:00 PM	1:15:00	18.88	313	2138										
30	11/Nov/22	Dahh/Day	80	Normal	End	On	88%	32%	9:00 AM	1:40 PM	1489	1489						4:40:00	32%	92%	1:40 PM	2:05 PM	1:15:00	18.37	313	2138										
31	11/Nov/22	Dahh/Day	80	Normal	End	On	85%	30%	1:20 PM	8:00 PM	1489	1642						1:00:00	38%	82%	10:50 AM	11:00 PM	1:00:00	17.41	313	2138										
33	18/Nov/22	Dahh/Day	80	Normal	End	On	82%	32%	7:10 AM	12:05 PM	3642	3800						5:00:00	32%	82%	12:00 PM	1:00 PM	1:00:00	23	313	2138										
35	11/Nov/22	Dahh/Day	80	Normal	End	On	80%	32%	2:00 PM	08:50 PM	3800	3942						5:50:00	32%	92%	08:50 PM	09:00 PM	1:00:00	17.97	313	2138										
34	18/Nov/22	Dahh/Day	80	Normal	End	On	83%	30%	8:40 AM	11:00 AM	3942	4117						1:00:00	30%	82%	11:05 AM	12:00 PM	1:15:00	13.82	313	4380										
35	11/Nov/22	Dahh/Day	80	Normal	End	On	82%	32%	1:00 PM	8:00 PM	4117	4269						1:18:00	32%	92%	8:00 PM	9:00 PM	1:15:00	21.00	313	4380										
36																																				
2nd Phase Testing											5000km																									
1	21/Dec/22	Dahh/Day	80	Normal	ATAC	On	83%	20%	1:15 pm	8:40 pm	4316	4380						9:13:00	20%	92%	8:40 pm	10:10 pm	1:05:00	18	433	4316										
2	12/Dec/22	Dahh/Day	80	Normal	ATAC	On	80%	32%	9:30 AM	2:30 PM	4380	4611						1:00:00	32%	88%	2:30 PM	9:30 PM	1:10:00	13	433	4316										Daily running. Beacuse of To much fog & less visibility trip not
3	11/Dec/22	Dahh/Day	80	Normal	ATAC	On	84%	42%	1:00 PM	10:10 PM	4611	4761						1:25:00	42%	92%	10:50 PM	11:01 PM	1:03:00	18	433	4316										Daily running. Beacuse of To much fog & less visibility trip not
4	13/Dec/22	Dahh/Day	80	Normal	ATAC	On	80%	32%	8:00 AM	1:00 PM	4761	4880						1:00:00	32%	88%	1:00 PM	08:30 PM	1:15:00	18	433	4316										Daily running

DAILY ROLLING & CHARGING DATA LOGBOOK



PARTS WEAR ENTRY DATA SHEET						Front	Set - 1	Rear	Set - 1			
							Test					
Make(Front)	CEAT	Make(Rear)	CEAT	Tyre Size	195/65 R15	Tyre press. (UL)	33	Tyre press. (L)	33	Tyre Press. (OL)	NA	
Tyre Serial No.	Front LH		Front RH		Rear LH		Rear RH		Spare		Tyre type	Radial Tubeless
TWI at 0km	Front LH	1.6	Front RH	1.6	Rear LH	1.6	Rear RH	1.6	Spare	1.6		
Weight Details		Unladen		Front LH		Front RH		Rear LH		Rear RH		
		Laden		Front LH		Front RH		Rear LH		Rear RH		
		Overload		Front LH		Front RH		Rear LH		Rear RH		
Test km	1051 km			5125	10,039							
Date	18/03/23			12/04/23	21/05/23							
Load Condition												
Actual Odo	1051			5002	10,039							
Position 1		6.28		6.17 mm	6.16 mm							
		6.87		6.70 mm	6.32 mm							
		7.07		6.85 mm	6.36 mm							
		6.29		5.40 mm	6.36 mm							
Position 2		6.23		6.12 mm	5.90 mm							
		6.92		6.76 mm	6.85 mm							
		7.01		6.87 mm	7.02 mm							







Concerns Report Summary																		
Incident Rank	3 - Safety issue, needs urgent action A - Requires immediate improvement. The customer will complain B - Observed and needs improvement. Some customers will complain C - Observed. No customer will complain D - Dislike. Customer dissatisfaction issue																	
S.No	Project	Date	VIN	Variant	Project pha	ODO	Static/Dyna	Route	Road ty	Road condi	Wear et cor	System	Part	Severity	Technical Information	Image / Audio / Video	Classification	PLM Issue
1	ec21	2022/2/08	VRS 3.17	L2	VRS BL	2270KM	Static	Delhi	Parking	Normal	All	Chassis	chassis	B			Known	
2	ec21	06/12/2022	VRS 3.17	L2	VRS BL	2270km	Static	Delhi	Delhi	Normal	All	Infotainment system	Infotainment System	A			Known	
3	ec21	03/12/2022	VRS 3.17	L2	VRS BL	2087km	Dynamic	Delhi	Delhi	Normal	All	Electrical	PCV	C				
4	ec21	03/12/2022	VRS 3.17	L2	VRS BL	2080km	Dynamic	Delhi	Delhi	Normal	All	Electrical	PCV	B				
5	ec21	14/12/2022	VRS 3.17	L2	VRS BL	4034km	Static	Delhi	Delhi	Normal	All	Electrical	PCV	A				

CONCERN SHEET



Section/Operation	Specification	0-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000	9001-10000	10001-11000	11001-12000	13001-13000	13001-14000	14001-15000	15001-16000	16001-17000	17001-18000	18001-19000	19001-20000	20001-21000	21001-22000	22001-23000	23001-24000	24001-25000	25001-26000	26001-27000	27001-28000	28001-29000	29001-30000
LOADING 2020	E-EMPTY S-STANDARD M-MTAC P-PTAC	E	E	E	E	M	S	E	E	E	E	E	S	S	E	E	E	E	E	M	S	E	E	E	E	S	S	E	E	E	E

Type of loading	Driver	Passenger	Pocket empty, Glove box	Row 2						Contrat QAU				
				Dummy						Bag with back	Water pack	Bag cabin	Bag	
	Left		Central		Right		Dimensionnement See in bottom of the table							
	Mass in Kg	68	1	35	68	35	68	35	68	3	9	8	14	
E2 : Empty QAU	X										X			
L3 : 1/2 Load TT	X	X	X											
LQ : Load QAU	X	X	X	X					X	X	X	X	X	
MTAC	X	X	X	X	X				X	X	X	X	X	

	Sac à dos 	Pack d'eau (6x1.5l) 	Valise cabine rigide 	Valise rigide 
Dimension		24x25x16	55x40x20	Dimensions cumulées 158cm
Volume	24-29l	9l	30-35l	90-100l
Poids en charge	3kg	9kg	8kg	14kg

Note :
Empty – Kerb+1
Standard – Load QAU

MTAC LOAD PATTERN SHEET



QAU/RAF - Daily Check sheet										Driver name	
Date		Test Course			Route			Driver Id		Payload	
Shift		Start ODO			End Odo			Km Covered		Travel time (hrs.)	
Vehicle - VIN No		Start Time			End time			Travel time (hrs.)		Break duration	
		SOC %			Charging location			Tire Pressure			
		Charging Time ODO			Amb. Temperature			FLH _____ PSI		FRH _____ PSI	
		APE - Cluster value			Weather Dry/Wet/COLD			RLH _____ PSI		RRH _____ PSI	
		Actual PE KWPH			Battery Voltage			END SOC Level in %			
Coolant Level				Brake Oil Level				StartSOC Level%		END SOC Level in %	
											
Status		Status:					Status:		Status:		
S.No	D/S	Engine room/Bonet Inspection points					OK/NOK	Remarks			
1	Static	Open/Close of Bonnet and stay rod									
2	Static	Bonnet inner lining									
3	Static	Fouling of harness and hoses									
4	Static	PCN or controller Box Mountings									
5	Static	Leakage through Motor or Battery, coolant line hose									
6	Static	Electrical connections									
7	Static	12v Lead Battery terminal connections									
8	Static	Motor Starting time (secs) and Abnormal noise smooth or Jump start									
9	Static	Abnormal noise motor /Transmission									
10	Static	Accelerator pedal signal response									
S.No	D/S	Underbody Inspection points					OK/NOK	Remarks			
1	Static	Shock Absorbers leakage									
2	Static	Suspension mounting bolt & bushes									
3	Static	Underbody hit/scratch marks									
4	Static	Tyre condition									
5	Static	Charging port condition									
6	Static	Brake lines leakage or damage									
7	Static	scratch/hit marks/ in battery cage									
8	Static	Battery HEV wire or sensor wires any burn spots or cut									
9	Static	Hand brake cable fitment									
10	Static	MOTOR/Transmission oil seepage or leakage									
11	Static	RTB check for scratches,crack/abnormalities									

S.No	D/S	Generic check points	OK/NOK	Remarks
1	Static	MIL/Hazard Lamp /Error messages - symbols in cluster		
2	Static	Interior Lamp/Trunk lamp/Reading Lamp/Glove box lamp		
3	Static	Head Lamp, Tail lamp, Combi Lamp, Indicator lamp, DRL,Licenseplate lamp		
4	Static	Coolant leakage check in degassing tank		
5	Static	Horn (Working)		
6	Both	Audio system, Mobile Connectivity, FM, USB, USB charging		
7	Dynamic	Hand brake effectiveness		
8	Static	Seat reclining, Seat rail adjustment, Head rest, Hand rest,		
9	Both	Head lamp visibility, Head lamp discoloration, Water entry (if any)		
10	Static	Tail gate opening & closure effort/noise		
11	Static	Wheel nut torque marking		
12	Dynamic	Vehicle pulling		
13	Static	Door lock, unlock with remote key & manual key		
14	Static	Door Open, Closure effort/Noise		
		RHF: RHR: LHF: LHR:		
15	Both	Window Open, Closure		

DAILY CHECK LIST



QAU VEHICLE CHARGING DATA IN BANGALORE LOCATION

S.N O	VEHICLE	CHARGER COMPANY	CHARGER	RUNNING KM	CHARGING CYCLES (2 TIMES/DAY)	TOTAL
1	EL,1-4433	TATA	CCS-2	5.7K	46	46
2	EL,1-4435	TATA	CCS-2	1.7K	15	20
		YAHHVI	CCS-2	1K	5	
3	EL,2-5980	TATA	CCS-2	429 Km	4	58
		YAHHVI	CCS-2	8K	54	
4	EL,2-5979	TATA	CCS-2	8K	56	68
		YAHHVI	CCS-2	2K	12	
5	MDL-2923	YAHHVI	CCS-2	1K	6	6



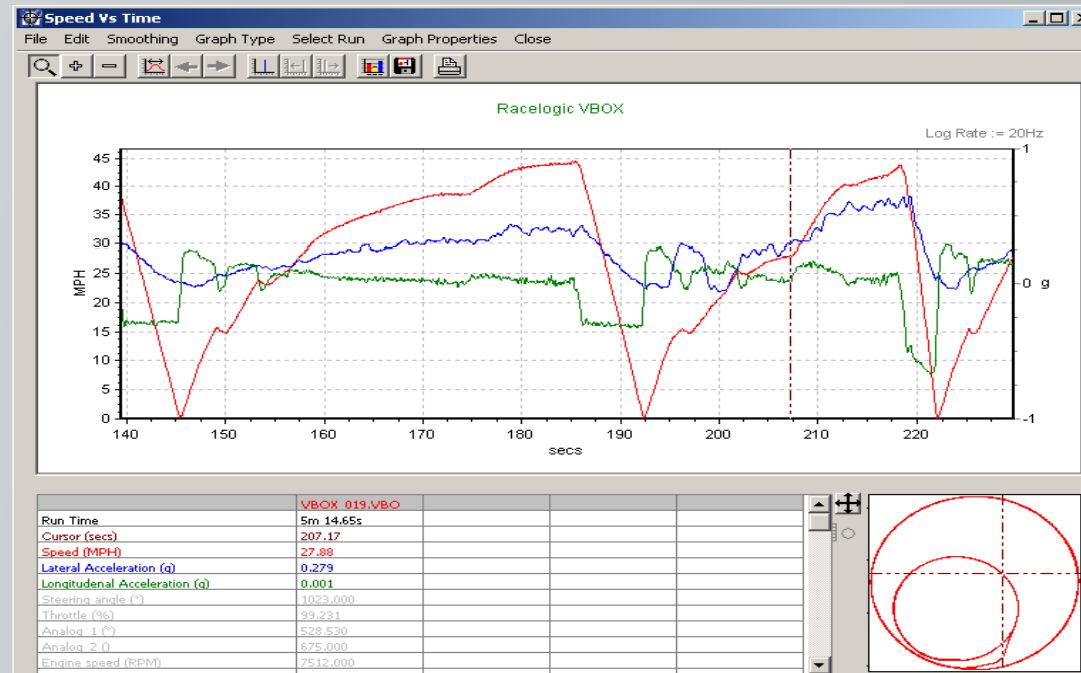
1. Brake Test- We conduct the trial as per Indian Standard - we measure the Vehicle Speed, MFDD, Stopping Distance, Brake Pedal force with Different conditions Brake test conducted for AMW Motors Limited



Instrumentation Setup



DATA ANALYSIS





2. Steering Effort Measurement- We conduct the trial as per Indian Standard - we measure the Vehicle Speed steering angle steering Torque in dynamic condition.



Instrumentation Setup



3. CAN/ECU data Measurements.- We record various parameters from CAN USING their DBC File in Dynamic conditions o measure critical parameters for skoda laura cars AMW Trucks Ltd.



Instrumentation Setup





EV PROTOTYPE MODELS

□ Electric vehicle development
Using the teardown benchmarking
process.

> Part by part research of competent
product for digging out a more
sustainable product.

> Battery management system.

> EV mileage analysis.



EV COAST DOWN TEST FACILITIES



OTHER ICE FLEET PROJECTS



1. OBD POWERTRAIN TESTING & VALIDATION

CAR MODEL- PROTO VEHICLE C3 AIRCROSS

TEST PERFORM

- 1,77,000 kms Rolling Test & Validation.
- Powertrain calibration.
- ECR Test in Ladakh.
- Hot Test in Rajasthan.





DATA ANALYSIS



Post Drive Data Analysis of a vehicle



ECR - ALTITUDE & COLD ROLLING & OBD POWERTRAIN TESTING & VALIADTION ROUTE PSA

> Trial Base Location : GURUGRAM TO LEH

ECR - ALTITUDE TRIALS :

> Temperature

Max /Min : (14 Celcius /-16)

> ALTITUDE : 3,524 m / (11,562 ft)

> Planned Vehicles : 2 (TURBO) INDIAN & ASIAN

> Target Km : 4000 Kms or 5000 km
(On road to LehLadakh ~1000Kms)
(In Test Location ~3000Kms)

> Daily Target km : 250 x 16(Days) = 4000 km

> Planned route (On road) : Gurugram PT Workshop – Shimla – Keylong - Ladakh
(Test Loc) : Ladakh - ?





Durability testing

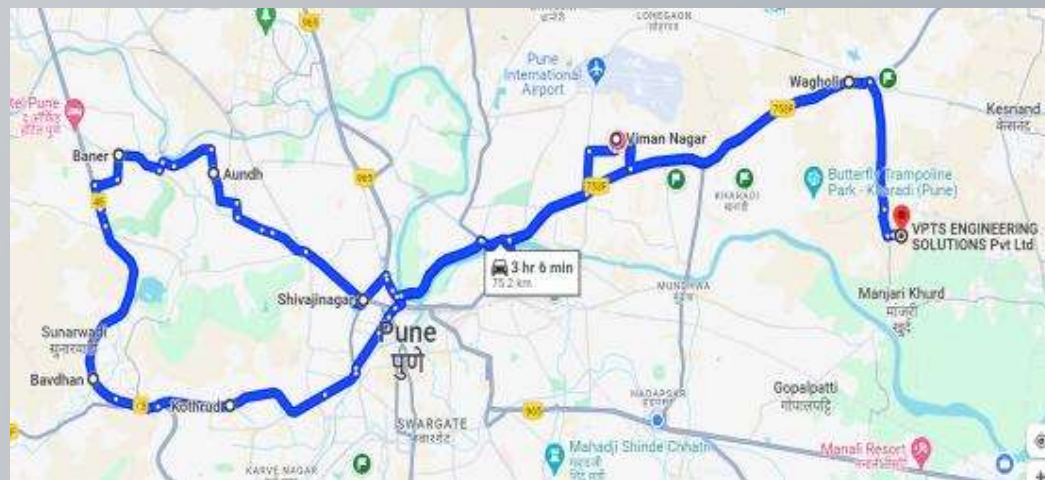
- ❑ Fleet durability testing of vehicle is a real life simultaneous assessment of robustness, wear & tear of target components, emission system deterioration, and a representation of real life mileage accumulation.
- ❑ A vehicle is tested for target kilometers on public roads (City, Highway, State Highways, Rural Roads, Rough Roads, Mountains) as well as on proving grounds as per daily test plan.
- ❑ Daily technical management of test as per below:
 - Vehicle Inspection after completion of shift (underbody, functional, concern verification etc.)
 - Incident reporting (breakdown, accident)
 - Periodic measurements & service schedule (measurements such as tyre wear, brake pad wear, clutch plates wear, door - opening efforts etc.)
 - Data download & upload (ECU data, GPS data, any other instrument)
 - Periodic Tests such as emission test, engine oil, transmission oil etc.



- ❑ Vehicles are also tested in different regions & routes are defined mutually along with customers.

Rajasthan - High Temperature & Dust
Chennai/Goa - Coastal Climate
Manali/Leh - High Altitude & Cold Climate
Pan India - Mix of all regions/conditions

Daily routes in/around Pune





Workshop Images

Chennai Loc



Pune Loc.



Hosur Loc.





WORKSHOP & OFFICE PHOTOS



PT- Office Details



Sr. No.	Space	Remarks
1	Project manager Cabin	3 people
2	Boss Cabin	5 people
3	Egr room	12 people
4	conference hall	10 people
5	client hall	4 people
6	pantry	4 cap
7	inventory	2 Lokers
8	generator	1 - 40 KW
9	washing	2 cars cap
10	toilet	
11	buffer space	
12	parking	10 cars
13	two poster lift	4 Ton cap

PDT-DRIVERS TRAINING



AS per as Client Requirement/Test Requirement, we trained the driver for this project we also brief the vehicle safety instruction to Drivers & we brief the incident Reporting process also DO OR DOES'NT Points for vehicle breakdown time.

PUNE WORKSHOP





THANKS