AIS-007 (Revision - 3)

AUTOMOTIVE INDUSTRY STANDARD

Information on Technical Specifications to be Submitted by the Vehicle Manufacturer

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ON BEHALF OF
AUTOMOTIVE INDUSTRY STANDARDS COMMITTEE

UNDER
CENTRAL MOTOR VEHICLE RULES – TECHNICAL STANDING COMMITTEE

SET-UP BY
MINISTRY OF SHIPPING, ROAD TRANSPORT & HIGHWAYS
(DEPARTMENT OF ROAD TRANSPORT & HIGHWAYS)

GOVERNMENT OF INDIA

March 2007

Status chart of the Standard to be used by the purchaser for updating the record

Sr. No.	Corr-igenda.	Amend-ment	Revision	Date	Remark	Misc.

General remarks:

AMENDMENT NO. 1
TO
AIS – 007 (Rev. 3)

Information on Technical Specifications to be Submitted by the Vehicle Manufacturer

1.0 Page No. 47/148, Table 3:

Add new clause B 43.0 as follows :

B 43.0	**Front Under run Protective devices as per AIS : 068**	
B 43.1	Drawing of the vehicle parts relevant to the front under run protection, i.e, drawing of the vehicle and/or chassis with position and mounting and/or fitting of the front under run protective device. If the under run protection is by no special device, the drawing should clearly show as how the required dimensions are met.	
B 43.2	In the case of special device, full description and/or drawing of the front under run protection (including mountings and fittings).	

2.0 Page No. 57/148, Table 4:

Substitute existing Table 4 by following tables 4, 4A, 4B and 4C:

Table 4 of AIS - 007 (Revision 3)
Part C - Technical Specification for Engines fitted on vehicles with GVW less than 3500 kg

C1.0	**Description of Engine:**
C1.1	Type (Compression Ignition / Positive Ignition)
C1.2	Make and Country of origin (if imported)
C1.3	Name and address of the engine manufacturing plant
C1.4	Working principle: (Four / two stroke), (DI / IDI) (NA/TC/TCIC/ Any other)
C1.5	Model name and identification
C1.6	Type of fuel used
C1.7	No.& Layout of cylinders & firing order
C1.8	Swept volume cc
C1.9	Bore (mm)
C1.10	Stroke (mm)
C1.11	Compression ratio (specify tolerance)
C1.12	**Engine performance (declared by the manufacturer):**
C1.12.1	Max. Net power of engine on bench (kW @ rpm) (Specify standard and tolerance)
C1.12.2	Maximum net torque on bench (Nm @ rpm) **Note : In case of diesel engines the max. Power and max. Torque shall be specified as per conditions given in Chapter 6 of Part IV of Doc. MoSRTH / CMVR / TAP-115 / 116 Issue No.3**

C1.13	Location of engine (Front / Rear)
C2.0	**Combustion System:**
C2.1	Type of combustion chamber (Hemispherical/ squish/others)
C2.2	Drawing(s) of combustion chamber and piston crown (Enclose the drawing & Mention the drawing no. & Part no.)
C2.3	**Minimum cross section area of ports**
C2.3.1	Inlet (cm^2)
C2.3.2	Outlet (cm^2)
C3.0	**Ignition System (Spark Ignition engines only):**
C3.1	Make
C3.2	Type
C3.3	Nominal Voltage
C3.4	Operating Principle
C3.5	CDI
C3.6	Table of Combination for EMI test
C3.7	Ignition advance curve (specify tolerance) & enclose the curve
C3.8	Ignition timing (specify tolerance)
C3.9	Contact point gap and dwell angle (specify tolerance)
C3.10	Type and make of distributor
C3.11	Sparking plugs
C3.11.1	Make and Country of origin
C3.11.2	Type and designation
C3.11.3	Spark-gap setting
C3.11.4	Nominal resistance (kilo ohm) (if resistive type)
C3.12	**Ignition coil**
C3.12.1	Make
C3.12.2	Type
C3.12.3	Identification

C3.13	**Ignition condenser**
C3.13.1	Make
C3.13.2	Type
C3.13.3	Identification
C3.14	**EMI suppressor cap / Device / Electronic unit**
C3.14.1	Make
C3.14.2	Type (Resistive/Capacitive)
C3.14.3	Identification
C3.14.4	Nominal resistance (kilo ohm)
C3.14.5	Terminology and Drawing of interference Suppression equipment
C3.15	**H.T.Cable**
C3.15.1	Make and Place / Country of origin (if imported)
C3.15.2	Type (Resistive/Non-resistive)
C3.15.3	Length mm (if resistive type)
C3.15.4	Outside dia. mm (if resistive type)
C3.15.5	Nominal resistance kilo ohm, (if resistive type)
C3.16	Systems incorporating electronic oscillator with an operating frequency greater than 9 kHz
C4.0	Cooling system :
C4.1	Liquid cooling system
C4.1.1	Nature of liquid and capacity
C4.1.2	Circulating pump yes/no
C4.1.3	Characteristics of Circulating pump or make(s) & type(s)
C4.1.3.1	Drive ratio
C4.1.4	Thermostat type and setting
C4.1.5	Radiator drawing(s)
C4.1.5.1	Make(s) and Place / Country of origin (if imported)
C4.1.5.2	Type(s)
C4.1.5.3	Relief valve pressure setting
C4.1.6	Fan characteristics (Fan power, kW) Enclose the fan power curve corresponding to full load (v/s engine speed) of viscous fan.
C4.1.6.1	Make(s) and Country of origin (if imported)
C4.1.6.1.1	No. of blades
C4.1.6.1.2	Material of blades (metal / plastic)
C4.1.6.2	Type(s) [Fixed / Viscous / Electrical driven]

Manufacturer :	**Document No :**	**Test Agency :**	Cert No :
Signature		**Signature**	Seal
		Name	
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C4.1.6.3	Fan drive system
C4.1.6.4	Drive ratio
C4.1.6.5	Fan cowl
C4.1.6.6	Fan diameter (mm)
C4.1.6.7	Max. Speed of fan (in rev/min)
C4.1.7	Radiator core open area (cm^2)
C4.2	**Air Cooling system**
C4.2.1	Blower characteristics
C4.2.1.1	Make
C4.2.1.2	Type(s)
C4.2.1.3	Drive ratio(s)
C4.2.2	Air ducting (std production)
C5.0	**Temperature permitted by manufacturer in ^{0}C for liquid cooling (Location of measurement be specified)**
C5.1	Max. temp. at engine outlet
C6.0	**Temperature permitted by manufacturer in ^{0}C for Air cooling (Location of measurement be specified)**
C6.1.1	Reference point
C6.1.2	Max. temperature at reference point
C6.2	Max. Temperature of the intercooled-air (Location of measurement be specified)
C6.3	Max. Exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds), Specify the distance from the outlet flange.
C7.0	**Fuel temperature ^{0}C:** (for diesel engines at the injection pump inlet)
C7.1	Minimum
C7.2	Maximum
C8.0	**Lubricant Temperature ^{0}C (Location of measurement be specified)**
C8.1	Minimum
C8.2	Maximum
C9.0	**Intake system :** (Attach drawing, mention Drawing No. & Part No.)
C9.1	Supercharger / Turbocharger - yes/no
C9.1.1	Description of system
C9.1.2	Make(s) and Country of origin (if imported)
C9.1.3	Type(s)

Manufacturer :	**Document No :**	**Test Agency :**	Cert No :
Signature		**Signature**	Seal
		Name	
Name	**Sheet No**	**Designation**	
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C9.1.4	Description of system (e.g. Charge pressure @ max. power and torque speed, wastegate, if applicable)	
C9.2	Intake manifold (Enclose drawing with drawing No. & Part No.)	
C9.2.1	Description	
C9.2.2	Identification No / Part No.	
C9.2.3	Schematic dimensional drawing	
C9.3	Air filter	
C9.3.1	Make	
C9.3.2	Type	
C9.3.3	Identification No / Part No.	
C9.3.4	Schematic dimensional drawing	
C9.4	Intake silencer	
C9.4.1	Make	
C9.4.2	Type / Description	
C9.4.3	Identification No / Part No.	
C9.4.4	Schematic dimensional drawing of inlet pipe and their accessories (dash pot, heating devices, additional air intake etc.)	
C9.5	Inter cooler	
C9.5.1	Make	
C9.5.2	Identification mark / Part No.	
C9.5.3	Air pressure drop across the inter-cooler	
C10.0	Fuel feed: (By carburetor)	
C10.1	Number	
C10.2	Make	
C10.3	Type	
C10.4	Adjustments (specify tolerance)	
C10.4.1	Jets	Enclose the Curve of fuel delivery Plotted against air flow And settings required to keep to the curve
C10.4.2	Venturies	
C10.4.3	Float-chamber level	
C10.4.4	Mass of float	
C10.4.5	Float needle	
C10.5	Dimensions of mixture duct	
C10.6	Choke: Type (Manual/automatic) and closure setting	
C10.7	Feed pump	
C10.7.1	Pressure (specify tolerance) or characteristic diagrams	
C10.7.2	Type of fuel feed pump	
C11.0	Fuel feed: {By fuel injection}	
C11.1	Injection system description	
C11.2	Working principle: intake manifold/ direct injection / indirect injection / swirl chamber/others	

C11.3	Fuel Pump
C11.3.1	Make(s) and Country of origin (if imported)
C11.3.2	Type(s)
C11.3.3.	Pressure / characteristic diagram
C11.4	Delivery mm^3/ per stroke at max net power speed in case of Diesel Engine & specify delivery in kg/h at max net power speed in case of gas engines (specify tolerance) and enclose characteristic diagram (specify tolerance). If boost control is supplied, state the characteristics fuel delivery and boost pressure versus engine speed.
C11.5	Calibration Method (on engine/pump bench)
C11.6	Static Injection timing
C11.7	Injection advance curve (Diagram be enclosed)
C11.8	Injection advance (specify the tolerance)
C11.9	Injector (s)
C11.9.1	Type (s) (mention holder, nozzle and assembly no(s))
C11.9.2	Make (s) and Country of origin
C11.9.3	Opening pressure (specify tolerance) or characteristic diagram
C11.9.4	Injection piping
C11.9.4.1	Length mm
C11.9.4.2	Internal diameter mm
C 12.0	**Device for recycling crank-case gases**
C12.1	Description & drawings
C13.0	Governor
C13.1	Make(s) and Country of origin
C13.2	Type(s)
C13.3	Speed at which Cut off starts under load (rev/min)
C13.4	Max. speed without load (rev/min)
C13.5	Idle Speed (rev/min)
C14.0	**Cold start device (starting aid)**
C14.1	Make
C14.2	Type(s)
C14.3	System description
C15.0	**Starting System :**
C15.1	Make
C15.2	Type(s)
C15.3	System description
C16.0	**Valve timing / Port timing or equivalent data**
C16.1	Max. lift of valves
C16.1.1	Inlet mm
C16.1.2	Exhaust mm
C16.2	Angle of valves / port (w.r.t. top dead center)

C16.3	Inlet
C16.3.1	Opening
C16.3.2	Closing
C16.4	Exhaust
C16.4.1	Opening
C16.4.2	Closing
C16.5	Transfer
C16.5.1	Opening
C16.5.2	Closing
C16.6	Reference or setting ranges
C16.7	Valve gap (Hot or Cold as applicable)
C16.7.1	Inlet
C16.7.2	Exhaust
C16.8	Distribution by ports
C16.8.1	Volume of crank-case cavity with piston at TDC
C16.8.2	Reed valve fitted (Yes / No)
C16.8.3	Description of inlet ports, scavenging and exhaust ports with corresponding timing.
C17.0	**Lubrication system**
C17.1	Description of system
C17.2	Lubrication oil capacity lit
C17.3	Position of lubricant reservoir
C17.4	Lubricating oil grade
C17.5	Feed system (pump, injection in to intake mixing with fuel etc.,)
C17.6	Lubricating pump
C17.6.1	Make
C17.6.2	Type
C17.7	Mixture with fuel: yes/no, and if yes % (for 2 stroke engines)
C17.8	Oil cooler : yes/no, and if yes Enclose dimensional drawings, make(s) & type(s)
C18.0	**Electrical equipment**
C18.1	Generator/alternator characteristics (specify tolerance) or
C18.1.1	Make
C18.1.2	Type
C19.0	**Other engine driven auxiliaries**
C19.1	Enumeration & brief description, if necessary
C20.0	**Idling System:**
C20.1	Idling speed (rpm) (specify the tolerance)
C20.2	Description of settings and relevant requirements
C20.3	Carbon monoxide and HC content by volume in the exhaust gas with the engine idling, per cent (for SI engines only) (manufacturer's standard)

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C 21.0	**Requirements for engine test**
C21.1	Maximum permitted depression of air intake at characteristic place in kPa (Specify location of measurement))
C21.2	Exhaust back pressure at maximum net power and location of measurement (kPa)
C21.3	Effective volume of exhaust-system (specify the tolerance & range) in liters (from exhaust manifold / TC outlet to tail pipe end), Enclose the exhaust system dimensional drawing and indicate the volume of each parts clearly.
C21.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
C21.5	Maximum rated speed (Specify the tolerance)
C21.6	Minimum rated speed (Specify the tolerance)
C21.7	Max. Net Torque on bench ……. Nm at ……..rpm (specify tolerance)
C21.8	Max. net Power on bench, ……. Nm at ……..rpm (specify tolerance)
C21.9	**Engine Performance** **Declared speed and powers of the engine submitted for type approval)** (Speeds to be agreed with the testing agency)
C21.9.1	Engine Speeds (For ESC & ELR cycles)
C21.9.2	Low Speed (n_{lo}) (rpm)
C21.9.3	High Speed (n_{hi}) (rpm)
C21.9.4	Speed A (rpm)
C21.9.5	Speed B (rpm)
C21.9.6	Speed C (rpm)
C21.9.7	Engine Power Table

Measurement point*	Engine speed rpm	Net Power kW**
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		

* See Chapter 3 of Part IV of Doc.MoSRTH/CMVR/TAP115/116 Issue No.3

** Net power according to Chapter 6 of Part IV of Doc. MoSRTH/CMVR/TAP115/116 Issue No.3.

Note: In case, if data regarding the Moment of Inertia, is required by the test agency for carrying out the Full Throttle performance test for both the CI / SI engines, the same shall be provided by the manufacturer.

Manufacturer :	**Document No :**	**Test Agency :**	Cert No :
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C22.0	**Exhaust system**
C22.1	Silencer
C22.1.1	Type
C22.1.2	Make
C22.1.3	Number
C22.1.4	Silencer identification No. (if proprietary) / Part No. (if not proprietary)
C22.2	Internal diameter of exhaust pipe (mm)
C22.3	Description with general arrangement of exhaust system along with its routing indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location, indicated in a Schematic dimensional drawing.
C22.4	Minimum distance between exhaust pipe(s) and the fuel line
C23.0	**Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)**
C23.1	Catalyser make, number and Country of origin
C23.2	Identification Mark / Part No.
C23.3	Type of catalytic action (One/two/three way)
C23.4	Total charge of precious metal (g/vehicle)
C23.5	Relative concentration (%)
C23.5.1	Platinum
C23.5.2	Rhodium
C23.5.3	Palladium
C23.6	Substrate (Monolythic metal/ Ceramic/ honeycomb)
C23.6.1	Cell density (cells per sq. inch / cm)
C23.7	Type of casing for catalyser
C23.8	Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)
C23.9	Lamda Sensor
C23.9.1	Make
C23.9.2	Type / Part No.
C23.9.3	Identification No. / Part No.

C23.9.4	Location
C 23.10	Regeneration systems/method of exhaust after-treatment systems, description:
C 23.10.1	The number of Type I operating cycles, or equivalent engine test bench cycles, between two cycles where regenerative phases occur under the conditions equivalent to Type I test (Distance "D" in figure 1 in Annex 13, Chapter 15 of TAP Document) :
C 23.10.2	Description of method employed to determine the number of cycles between two cycles where regenerative phases occur:
C23.10.3	Parameters to determine the level of loading required before regeneration occurs (i.e. temperature, pressure etc.):
C23.10.4	Description of method used to load system in the test procedure described in paragraph 3.1., (Refer Annex 13 Chapter 15 of TAP Document) :
C 23.11	Oxygen sensor: type
C 23.11.1	Location of oxygen sensor:
C23.11.2	Control range of oxygen sensor:
C 23.11.3	Regeneration system/method - Description and drawing:
C23.12	**Electronic Control Unit (ECU)**
C23.12.1	Make and Country of origin
C23.12.2	Identification mark
C23.12.3	Calibration Identification No.
C23.12.4	Adjustment possibilities (Yes / No)
C23.13	**Secondary Air Injection**
C23.13.1	Make
C23.13.2	Identification mark
C23.14	**Exhaust Gas Recirculating System**
C23.14.1	Brief description of the system
C23.14.2	Type (Cooled / Non-cooled/Progressive/ On-Off/ Any Other)
C23.14.3	EGR Valve
C23.14.3.1	Make
C23.14.3.2	Type
C23.14.3.3	Identification No / Part No.
C23.14.4	EGR Electronic Control Unit
C23.14.4.1	Make
C23.14.4.2	Identification No. / Part No.

C24.0	Additional information for evaporative emission
C24.1	Evaporative emission control system
C24.2	Type
C24.3	Make
C24.4	Complete detailed description of devices and their state of tune
C24.5	Drawing of the evaporative control system
C24.6	Drawing of the fuel tank with indication of capacity and material
C24.7	Canister
C24.7.1	Working capacity
C24.7.2	Make
C24.7.3	Identification No. / Part No.
C24.7.4	Schematic diagram
C24.7.5	Canister bed volume (l)
C 25.0	**On Board Diagnosis (OBD) only for vehicles with GVW up to 3500 kg)**
C 25.1	Written description and/or drawing of the MI.
C 25.2	List and purpose of all components monitored by the OBD system.
C 25.3	Written description (general working principles).
C 25.4	Positive-ignition engines.
C 25.4.1	components monitored by the OBD system (such as catalyst monitoring, misfire detection, oxygen sensor monitoring etc.,)
C 25.5	Compression-ignition engines
C 25.5.1	Components monitored by the OBD system (such as catalyst monitoring, particulate trap monitoring, electronic fuel system monitoring etc.,)
C 25.6	Criteria for MI activation (fixed number of driving cycles or statistical method)
C 25.7	List of all OBD output codes and formats used (with explanation of each).

C 25.8 The following additional information shall be provided by the vehicle manufacturer for the purposes of enabling the manufacture of OBD-compatible replacement or service parts and diagnostic tools and test equipment, unless such information is covered by intellectual property rights or constitutes specific know-how of the manufacturer or the OEM supplier(s).

C 25.8.1 A description of the type and number of the pre-conditioning cycles used for the original type approval of the vehicle.

C 25.8.2 A description of the type of the OBD demonstration cycle used for the original type-approval of the vehicle for the component monitored by the OBD system.

C 25.8.3 A comprehensive document describing all sensed components with the strategy for fault detection and MI activation (fixed number of driving cycles or statistical method), including a list of relevant secondary sensed parameters for each component monitored by the OBD system. A list of all OBD output codes and format used (with an explanation of each) associated with individual emission related power-train components and individual non-emission related components, where monitoring of the component is used to determine MI activation. In particular, a comprehensive explanation for the data given in service $05 Test ID $21 to FF and the data given in service $06 must be provided. In the case of vehicle types that use a communication link in accordance with ISO 15765-4 “Road vehicles, diagnostics on controller area network (CAN) – part 4: requirements for emissions-related systems”, a comprehensive explanation for the data given in service $06 Test ID $00 to FF, for each OBD monitor ID supported, must be provided.

This information may be defined in the form of a table, as follows:

Component	Fault code	Monitoring strategy	Fault detection criteria	MI activation criteria	Secondary parameters	Pre-conditioning	Demon-stration test
Catalyst	P0420	Oxygen sensor 1 and 2 signals	Difference between sensor 1 and sensor 2 signals	3rd cycle	Engine speed, engine load, A/F mode, catalyst temperature	Two type l cycles	Type l’

C 26.0	Particulate trap (Yes / No)
C 26.1	Dimensions and shape of the particulate trap (capacity):
C 26.2	Type of particulate trap and design:
C 26.3	Location of the particulate trap (reference distances in the exhaust system):
C 26.4	Regeneration system/method - Description and Drawing:
C 26.4.1	The number of Type I operating cycles, or equivalent engine test bench cycle, between two cycles where regeneration phases occur under the conditions equivalent to Type I test (Distance 'D' in figure 1 in Annex 13, Chapter 15 of TAP Document) :
C 26.4.2	Description of method employed to determine the number of cycles between two cycles where regenerative phases occur:
C 26.4.3	Parameters to determine the level of loading required before regeneration occurs (i.e. temperature, pressure, etc.):
C 26.4.4	Description of method used to load system in the test procedure described in paragraph 3.1., Annex 13, Chapter 15 of TAP Document :

Table 4A of AIS -007 (Revision 3)

Essential Characteristics of the Engine family – For Engines fitted on vehicles with GVW greater than 3500 kg specifically for BS-IV compliance

C 1.0	Common parameters	
C 1.1	Combustion Cycle	
C 1.2	Cooling Medium	
C 1.3	Number of cylinders	
C 1.4	Individual cylinder displacement	
C 1.5	Method of air aspiration	
C 1.6	Combustion chamber type /design	
C 1.7	Valve and Porting – Configuration, size and number	
C 1.8	Fuel System	
C 1.9	Ignition System (gas engines)	
C 1.10	Miscellaneous features	
C 1.10.1	Charge Cooling System	
C 1.10.2	Exhaust gas Recirculation	
C 1.10.3	Water Injection Emulsion	
C 1.10.4	Air Injection	
C 1.11	Exhaust After treatment – Proof of identical (or lowest for the parent engine) ratio: system capacity/fuel delivery per stroke, pursuant to diagram number	
C 2.0	Engine family listing	
C 2.1	Name of diesel engine family	
C 2.1.1	Specifications of engines within the family	

					Parent engine
Engine type					
Number of cylinders					
Rated speed (rpm)					
Fuel delivery per stroke(mm3)					
Rated net Power(kW)					
Maximum torque speed(rpm)					
Fuel delivery per stroke (mm3)					
Max torque (Nm)					
Low idle speed(rpm)					
Cylinder displacement (in % of parent engine)					

C 2.2	Name of gas engine family	
C 2.2.1	Specifications of engine within the family	

					Parent engine
Engine type					
Number of cylinders					
Rated speed (rpm)					

	Fuel delivery per stroke(mm3)					
	Rated net Power(kW)					
	Maximum torque speed(rpm)					
	Fuel delivery per stroke (mm3)					
	Max torque (Nm)					
	Low idle speed(rpm)					
	Cylinder displacement (in % of parent engine)					
	Spark timing					
	EGR flow					
	Air pump (yes/ no)					
	Air pump actual flow					

Table 4B of AIS -007 (Revision 3)
Technical Specification for Parent Engine fitted on vehicles with GVW greater than 3500 kg for BS-IV compliance.

C1.0	**Description of Engine:**
C1.1	Type (Compression Ignition / Positive Ignition)
C1.2	Make and Country of origin (if imported)
C1.3	Name and address of the engine manufacturing plant
C1.4	Working principle: (Four / two stroke), (DI / IDI) (NA/TC/TCIC/ Any other)
C1.5	Model name and identification
C1.6	Type of fuel used
C1.7	No.& Layout of cylinders & firing order
C1.8	Swept volume cc
C1.9	Bore (mm)
C1.10	Stroke (mm)
C1.11	Compression ratio (specify tolerance)
C1.12	**Engine performance (declared by the manufacturer):**
C1.12.1	Max. Net power of engine on bench (kW @ rpm) (Specify standard and tolerance)
C1.12.2	Maximum net torque on bench (Nm @ rpm) **Note : In case of diesel engines the max. Power and max. Torque shall be specified as per conditions given in Chapter 6 of Part IV of Doc. MoSRTH / CMVR / TAP-115 / 116 Issue No.3**
C1.13	Location of engine (Front / Rear)
C2.0	**Combustion System:**
C2.1	Type of combustion chamber (Hemispherical/ squish/others)
C2.2	Drawing(s) of combustion chamber and piston crown (Enclose the drawing & Mention the drawing no. & Part no.)
C2.3	**Minimum cross section area of ports**
C2.3.1	Inlet (cm^2)
C2.3.2	Outlet (cm^2)
C3.0	**Ignition System (Spark Ignition engines only):**
C3.1	Make
C3.2	Type
C3.3	Nominal Voltage
C3.4	Operating Principle
C3.5	CDI
C3.6	Table of Combination for EMI test
C3.7	Ignition advance curve (specify tolerance) & enclose the curve
C3.8	Ignition timing (specify tolerance)
C3.9	Contact point gap and dwell angle (specify tolerance)
C3.10	Type and make of distributor
C3.11	Sparking plugs
C3.11.1	Make and Country of origin
C3.11.2	Type and designation
C3.11.3	Spark-gap setting
C3.11.4	Nominal resistance (kilo ohm) (if resistive type)

C3.12	**Ignition coil**
C3.12.1	Make
C3.12.2	Type
C3.12.3	Identification
C3.13	**Ignition condenser**
C3.13.1	Make
C3.13.2	Type
C3.13.3	Identification
C3.14	**EMI suppressor cap / Device / Electronic unit**
C3.14.1	Make
C3.14.2	Type (Resistive/Capacitive)
C3.14.3	Identification
C3.14.4	Nominal resistance (kilo ohm)
C3.14.5	Terminology and Drawing of interference Suppression equipment
C3.15	**H.T.Cable**
C3.15.1	Make and Place / Country of origin (if imported)
C3.15.2	Type (Resistive/Non-resistive)
C3.15.3	Length mm (if resistive type)
C3.15.4	Outside dia. mm (if resistive type)
C3.15.5	Nominal resistance kilo ohm, (if resistive type)
C3.16	Systems incorporating electronic oscillator with an operating frequency greater than 9 kHz
C4.0	Cooling system :
C4.1	Liquid cooling system
C4.1.1	Nature of liquid and capacity
C4.1.2	Circulating pump yes/no
C4.1.3	Characteristics of Circulating pump or make(s) & type(s)
C4.1.3.1	Drive ratio
C4.1.4	Thermostat type and setting
C4.1.5	Radiator drawing(s)
C4.1.5.1	Make(s) and Place / Country of origin (if imported)
C4.1.5.2	Type(s)
C4.1.5.3	Relief valve pressure setting
C4.1.6	Fan characteristics (Fan power, kW) Enclose the fan power curve corresponding to full load (v/s engine speed) of viscous fan.
C4.1.6.1	Make(s) and Country of origin (if imported)
C4.1.6.1.1	No. of blades
C4.1.6.1.2	Material of blades (metal / plastic)
C4.1.6.2	Type(s) [Fixed / Viscous / Electrical driven]

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C4.1.6.3	Fan drive system
C4.1.6.4	Drive ratio
C4.1.6.5	Fan cowl
C4.1.6.6	Fan diameter (mm)
C4.1.6.7	Max. Speed of fan (in rev/min)
C4.1.7	Radiator core open area (cm^2)
C4.2	**Air Cooling system**
C4.2.1	Blower characteristics
C4.2.1.1	Make
C4.2.1.2	Type(s)
C4.2.1.3	Drive ratio(s)
C4.2.2	Air ducting (std production)
C5.0	**Temperature permitted by manufacturer in ^{0}C for liquid cooling (Location of measurement be specified)**
C5.1	Max. temp. at engine outlet
C6.0	**Temperature permitted by manufacturer in ^{0}C for Air cooling (Location of measurement be specified)**
C6.1.1	Reference point
C6.1.2	Max. temperature at reference point
C6.2	Max. Temperature of the intercooled-air (Location of measurement be specified)
C6.3	Max. Exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds), Specify the distance from the outlet flange.
C7.0	**Fuel temperature ^{0}C:** (for diesel engines at the injection pump inlet)
C7.1	Minimum
C7.2	Maximum
C8.0	**Lubricant Temperature ^{0}C (Location of measurement be specified)**
C8.1	Minimum
C8.2	Maximum
C9.0	**Intake system :** (Attach drawing, mention Drawing No. & Part No.)
C9.1	Supercharger / Turbocharger - yes/no
C9.1.1	Description of system
C9.1.2	Make(s) and Country of origin (if imported)
C9.1.3	Type(s)

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C9.1.4	Description of system (e.g. Charge pressure @ max. power and torque speed, wastegate, if applicable)	
C9.2	Intake manifold (Enclose drawing with drawing No. & Part No.)	
C9.2.1	Description	
C9.2.2	Identification No / Part No.	
C9.2.3	Schematic dimensional drawing	
C9.3	Air filter	
C9.3.1	Make	
C9.3.2	Type	
C9.3.3	Identification No / Part No.	
C9.3.4	Schematic dimensional drawing	
C9.4	Intake silencer	
C9.4.1	Make	
C9.4.2	Type / Description	
C9.4.3	Identification No / Part No.	
C9.4.4	Schematic dimensional drawing of inlet pipe and their accessories (dash pot, heating devices, additional air intake etc.)	
C9.5	Inter cooler	
C9.5.1	Make	
C9.5.2	Identification mark / Part No.	
C9.5.3	Air pressure drop across the inter-cooler	
C10.0	Fuel feed: (By carburetor)	
C10.1	Number	
C10.2	Make	
C10.3	Type	
C10.4	Adjustments (specify tolerance)	
C10.4.1	Jets	Enclose the Curve of fuel delivery Plotted against air flow And settings required to keep to the curve
C10.4.2	Venturies	
C10.4.3	Float-chamber level	
C10.4.4	Mass of float	
C10.4.5	Float needle	
C10.5	Dimensions of mixture duct	
C10.6	Choke: Type (Manual/automatic) and closure setting	
C10.7	Feed pump	
C10.7.1	Pressure (specify tolerance) or characteristic diagrams	
C10.7.2	Type of fuel feed pump	
C11.0	Fuel feed: {By fuel injection}	
C11.1	Injection system description	
C11.2	Working principle: intake manifold/ direct injection / indirect injection / swirl chamber/others	

C11.3	Fuel Pump
C11.3.1	Make(s) and Country of origin (if imported)
C11.3.2	Type(s)
C11.3.3.	Pressure / characteristic diagram
C11.4	Delivery mm^3/ per stroke at max net power speed in case of Diesel Engine & specify delivery in kg/h at max net power speed in case of gas engines (specify tolerance) and enclose characteristic diagram (specify tolerance). If boost control is supplied, state the characteristics fuel delivery and boost pressure versus engine speed.
C11.5	Calibration Method (on engine/pump bench)
C11.6	Static Injection timing
C11.7	Injection advance curve (Diagram be enclosed)
C11.8	Injection advance (specify the tolerance)
C11.9	Injector (s)
C11.9.1	Type (s) (mention holder, nozzle and assembly no(s))
C11.9.2	Make (s) and Country of origin
C11.9.3	Opening pressure (specify tolerance) or characteristic diagram
C11.9.4	Injection piping
C11.9.4.1	Length mm
C11.9.4.2	Internal diameter mm
C 12.0	**Device for recycling crank-case gases**
C12.1	Description & drawings
C13.0	Governor
C13.1	Make(s) and Country of origin
C13.2	Type(s)
C13.3	Speed at which Cut off starts under load (rev/min)
C13.4	Max. speed without load (rev/min)
C13.5	Idle Speed (rev/min)
C14.0	**Cold start device (starting aid)**
C14.1	Make
C14.2	Type(s)
C14.3	System description
C15.0	**Starting System :**
C15.1	Make
C15.2	Type(s)
C15.3	System description
C16.0	**Valve timing / Port timing or equivalent data**
C16.1	Max. lift of valves
C16.1.1	Inlet mm
C16.1.2	Exhaust mm
C16.2	Angle of valves / port (w.r.t. top dead center)

C16.3	Inlet
C16.3.1	Opening
C16.3.2	Closing
C16.4	Exhaust
C16.4.1	Opening
C16.4.2	Closing
C16.5	Transfer
C16.5.1	Opening
C16.5.2	Closing
C16.6	Reference or setting ranges
C16.7	Valve gap (Hot or Cold as applicable)
C16.7.1	Inlet
C16.7.2	Exhaust
C16.8	Distribution by ports
C16.8.1	Volume of crank-case cavity with piston at TDC
C16.8.2	Reed valve fitted (Yes / No)
C16.8.3	Description of inlet ports, scavenging and exhaust ports with corresponding timing.
C17.0	**Lubrication system**
C17.1	Description of system
C17.2	Lubrication oil capacity lit
C17.3	Position of lubricant reservoir
C17.4	Lubricating oil grade
C17.5	Feed system (pump, injection in to intake mixing with fuel etc.,)
C17.6	Lubricating pump
C17.6.1	Make
C17.6.2	Type
C17.7	Mixture with fuel: yes/no, and if yes % (for 2 stroke engines)
C17.8	Oil cooler : yes/no, and if yes Enclose dimensional drawings, make(s) & type(s)
C18.0	**Electrical equipment**
C18.1	Generator/alternator characteristics (specify tolerance) or
C18.1.1	Make
C18.1.2	Type
C19.0	**Other engine driven auxiliaries**
C19.1	Enumeration & brief description, if necessary
C20.0	**Idling System:**
C20.1	Idling speed (rpm) (specify the tolerance)
C20.2	Description of settings and relevant requirements
C20.3	Carbon monoxide and HC content by volume in the exhaust gas with the engine idling, per cent (for SI engines only) (manufacturer's standard)

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C 21.0	**Requirements for engine test**
C21.1	Maximum permitted depression of air intake at characteristic place in kPa (Specify location of measurement))
C21.2	Exhaust back pressure at maximum net power and location of measurement (kPa)
C21.3	Effective volume of exhaust-system (specify the tolerance & range) in liters (from exhaust manifold / TC outlet to tail pipe end), Enclose the exhaust system dimensional drawing and indicate the volume of each parts clearly.
C21.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
C21.5	Maximum rated speed (Specify the tolerance)
C21.6	Minimum rated speed (Specify the tolerance)
C21.7	Max. Net Torque on bench ……. Nm at ……..rpm (specify tolerance)
C21.8	Max. net Power on bench, ……. Nm at ……..rpm (specify tolerance)
C21.9	**Engine Performance Declared speed and powers of the engine submitted for type approval)** (Speeds to be agreed with the testing agency)
C21.9.1	Engine Speeds (For ESC & ELR cycles)
C21.9.2	Low Speed (n_{lo}) (rpm)
C21.9.3	High Speed (n_{hi}) (rpm)
C21.9.4	Speed A (rpm)
C21.9.5	Speed B (rpm)
C21.9.6	Speed C (rpm)
C21.9.7	Engine Power Table

Measurement point*	Engine speed rpm	Net Power kW**
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		

* See Chapter 3 of Part IV of Doc.MoSRTH/CMVR/TAP115/116 Issue No.3

** Net power according to Chapter 6 of Part IV of Doc. MoSRTH/CMVR/TAP115/116 Issue No.3.

Note: In case, if data regarding the Moment of Inertia, is required by the test agency for carrying out the Full Throttle performance test for both the CI / SI engines, the same shall be provided by the manufacturer.

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C22.0	**Exhaust system**
C22.1	Silencer
C22.1.1	Type
C22.1.2	Make
C22.1.3	Number
C22.1.4	Silencer identification No. (if proprietary) / Part No. (if not proprietary)
C22.2	Internal diameter of exhaust pipe (mm)
C22.3	Description with general arrangement of exhaust system along with its routing indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location, indicated in a Schematic dimensional drawing.
C22.4	Minimum distance between exhaust pipe(s) and the fuel line
C23.0	**Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)**
C23.1	Catalyser make, number and Country of origin
C23.2	Identification Mark / Part No.
C23.3	Type of catalytic action (One/two/three way)
C23.4	Total charge of precious metal (g/vehicle)
C23.5	Relative concentration (%)
C23.5.1	Platinum
C23.5.2	Rhodium
C23.5.3	Palladium
C23.6	Substrate (Monolythic metal/ Ceramic/ honeycomb)
C23.6.1	Cell density (cells per sq. inch / cm)
C23.7	Type of casing for catalyser
C23.8	Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)
C23.9	Lamda Sensor
C23.9.1	Make
C23.9.2	Type / Part No.
C23.9.3	Identification No. / Part No.

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C23.9.4	Location
C23.10	**Electronic Control Unit (ECU)**
C23.10.1	Make and Country of origin
C23.10.2	Identification mark
C23.10.3	Calibration Identification No.
C23.10.4	Adjustment possibilities (Yes / No)
C23.11	**Secondary Air Injection**
C23.11.1	Make
C23.11.2	Identification mark
C23.12	**Exhaust Gas Recirculating System**
C23.12.1	Brief description of the system
C23.12.2	Type (Cooled / Non-cooled/Progressive/ On-Off/ Any Other)
C23.12.3	EGR Valve
C23.12.3.1	Make
C23.12.3.2	Type
C23.12.3.3	Identification No / Part No.
C23.12.4	EGR Electronic Control Unit
C23.12.4.1	Make
C23.12.4.2	Identification No. / Part No.
C24.0	Additional information for evaporative emission
C24.1	Evaporative emission control system
C24.2	Type
C24.3	Make
C24.4	Complete detailed description of devices and their state of tune
C24.5	Drawing of the evaporative control system
C24.6	Drawing of the fuel tank with indication of capacity and material

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C24.7	Canister
C24.7.1	Working capacity
C24.7.2	Make
C24.7.3	Identification No. / Part No.
C24.7.4	Schematic diagram
C24.7.5	Canister bed volume (l)

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Technical Specification for Individual engine of the engine family, fitted on vehicles with GVW greater than 3500 kg specifically for BS-IV compliance.

C1.0	**Description of Engine:**
C1.1	Type (Compression Ignition / Positive Ignition)
C1.2	Make and Country of origin (if imported)
C1.3	Name and address of the engine manufacturing plant
C1.4	Working principle: (Four / two stroke), (DI / IDI) (NA/TC/TCIC/ Any other)
C1.5	Model name and identification
C1.6	Type of fuel used
C1.7	No.& Layout of cylinders & firing order
C1.8	Swept volume cc
C1.9	Bore (mm)
C1.10	Stroke (mm)
C1.11	Compression ratio (specify tolerance)
C1.12	**Engine performance (declared by the manufacturer):**
C1.12.1	Max. Net power of engine on bench (kW @ rpm) (Specify standard and tolerance)
C1.12.2	Maximum net torque on bench (Nm @ rpm) **Note : In case of diesel engines the max. Power and max. Torque shall be specified as per conditions given in Chapter 6 of Part IV of Doc. MoSRTH / CMVR / TAP-115 / 116 Issue No.3**
C1.13	Location of engine (Front / Rear)
C2.0	**Combustion System:**
C2.1	Type of combustion chamber (Hemispherical/ squish/others)
C2.2	Drawing(s) of combustion chamber and piston crown (Enclose the drawing & Mention the drawing no. & Part no.)
C2.3	**Minimum cross section area of ports**
C2.3.1	Inlet (cm^2)
C2.3.2	Outlet (cm^2)

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C3.0	**Ignition System (Spark Ignition engines only):**
C3.1	Make
C3.2	Type
C3.3	Nominal Voltage
C3.4	Operating Principle
C3.5	CDI
C3.6	Table of Combination for EMI test
C3.7	Ignition advance curve (specify tolerance) & enclose the curve
C3.8	Ignition timing (specify tolerance)
C3.9	Contact point gap and dwell angle (specify tolerance)
C3.10	Type and make of distributor
C3.11	Sparking plugs
C3.11.1	Make and Country of origin
C3.11.2	Type and designation
C3.11.3	Spark-gap setting
C3.11.4	Nominal resistance (kilo ohm) (if resistive type)
C3.12	**Ignition coil**
C3.12.1	Make
C3.12.2	Type
C3.12.3	Identification
C3.13	**Ignition condenser**
C3.13.1	Make
C3.13.2	Type
C3.13.3	Identification
C3.14	**EMI suppressor cap / Device / Electronic unit**
C3.14.1	Make
C3.14.2	Type (Resistive/Capacitive)
C3.14.3	Identification
C3.14.4	Nominal resistance (kilo ohm)
C3.14.5	Terminology and Drawing of interference Suppression equipment
C3.15	**H.T.Cable**
C3.15.1	Make and Place / Country of origin (if imported)
C3.15.2	Type (Resistive/Non-resistive)
C3.15.3	Length mm (if resistive type)
C3.15.4	Outside dia. mm (if resistive type)
C3.15.5	Nominal resistance kilo ohm, (if resistive type)

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C3.16	Systems incorporating electronic oscillator with an operating frequency greater than 9 kHz
C4.0	Cooling system :
C4.1	Liquid cooling system
C4.1.1	Nature of liquid and capacity
C4.1.2	Circulating pump yes/no
C4.1.3	Characteristics of Circulating pump or make(s) & type(s)
C4.1.3.1	Drive ratio
C4.1.4	Thermostat type and setting
C4.1.5	Radiator drawing(s)
C4.1.5.1	Make(s) and Place / Country of origin (if imported)
C4.1.5.2	Type(s)
C4.1.5.3	Relief valve pressure setting
C4.1.6	Fan characteristics (Fan power, kW) Enclose the fan power curve corresponding to full load (v/s engine speed) of viscous fan.
C4.1.6.1	Make(s) and Country of origin (if imported)
C4.1.6.1.1	No. of blades
C4.1.6.1.2	Material of blades (metal / plastic)
C4.1.6.2	Type(s) [Fixed / Viscous / Electrical driven]
C4.1.6.3	Fan drive system
C4.1.6.4	Drive ratio
C4.1.6.5	Fan cowl
C4.1.6.6	Fan diameter (mm)
C4.1.6.7	Max. Speed of fan (in rev/min)
C4.1.7	Radiator core open area (cm^2)
C4.2	Air Cooling system
C4.2.1	Blower characteristics
C4.2.1.1	Make
C4.2.1.2	Type(s)
C4.2.1.3	Drive ratio(s)
C4.2.2	Air ducting (std production)
C5.0	Temperature permitted by manufacturer in 0C for liquid cooling (Loc measurement be specified)
C5.1	Max. temp. at engine outlet

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C6.0	**Temperature permitted by manufacturer in ^{0}C for Air cooling (Location of measurement be specified)**
C6.1.1	Reference point
C6.1.2	Max. temperature at reference point
C6.2	Max. Temperature of the intercooled-air (Location of measurement be specified)
C6.3	Max. Exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds), Specify the distance from the outlet flange.
C7.0	**Fuel temperature ^{0}C:** (for diesel engines at the injection pump inlet)
C7.1	Minimum
C7.2	Maximum
C8.0	**Lubricant Temperature ^{0}C (Location of measurement be specified)**
C8.1	Minimum
C8.2	Maximum
C9.0	**Intake system :** (Attach drawing, mention Drawing No. & Part No.)
C9.1	Supercharger / Turbocharger - yes/no
C9.1.1	Description of system
C9.1.2	Make(s) and Country of origin (if imported)
C9.1.3	Type(s)
C9.1.4	Description of system (e.g. Charge pressure @ max. power and torque speed, wastegate, if applicable)
C9.2	Intake manifold (Enclose drawing with drawing No. & Part No.)
C9.2.1	Description
C9.2.2	Identification No / Part No.
C9.2.3	Schematic dimensional drawing

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C9.3	Air filter	
C9.3.1	Make	
C9.3.2	Type	
C9.3.3	Identification No / Part No.	
C9.3.4	Schematic dimensional drawing	
C9.4	Intake silencer	
C9.4.1	Make	
C9.4.2	Type / Description	
C9.4.3	Identification No / Part No.	
C9.4.4	Schematic dimensional drawing of inlet pipe and their accessories (dash pot, heating devices, additional air intake etc.)	
C9.5	Inter cooler	
C9.5.1	Make	
C9.5.2	Identification mark / Part No.	
C9.5.3	Air pressure drop across the inter-cooler	
C10.0	Fuel feed: (By carburetor)	
C10.1	Number	
C10.2	Make	
C10.3	Type	
C10.4	Adjustments (specify tolerance)	
C10.4.1	Jets	Enclose the Curve of fuel delivery Plotted against air flow And settings required to keep to the curve
C10.4.2	Venturies	
C10.4.3	Float-chamber level	
C10.4.4	Mass of float	
C10.4.5	Float needle	
C10.5	Dimensions of mixture duct	
C10.6	Choke: Type (Manual/automatic) and closure setting	
C10.7	Feed pump	
C10.7.1	Pressure (specify tolerance) or characteristic diagrams	
C10.7.2	Type of fuel feed pump	
C11.0	Fuel feed: {By fuel injection}	
C11.1	Injection system description	
C11.2	Working principle: intake manifold/ direct injection / indirect injection / swirl chamber/others	

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C11.3	Fuel Pump
C11.3.1	Make(s) and Country of origin (if imported)
C11.3.2	Type(s)
C11.3.3.	Pressure / characteristic diagram
C11.4	Delivery mm^3/ per stroke at max net power speed in case of Diesel Engine & specify delivery in kg/h at max net power speed in case of gas engines (specify tolerance) and enclose characteristic diagram (specify tolerance). If boost control is supplied, state the characteristics fuel delivery and boost pressure versus engine speed.
C11.5	Calibration Method (on engine/pump bench)
C11.6	Static Injection timing
C11.7	Injection advance curve (Diagram be enclosed)
C11.8	Injection advance (specify the tolerance)
C11.9	Injector (s)
C11.9.1	Type (s) (mention holder, nozzle and assembly no(s))
C11.9.2	Make (s) and Country of origin
C11.9.3	Opening pressure (specify tolerance) or characteristic diagram
C11.9.4	Injection piping
C11.9.4.1	Length mm
C11.9.4.2	Internal diameter mm
C 12.0	**Device for recycling crank-case gases**
C12.1	Description & drawings
C13.0	Governor
C13.1	Make(s) and Country of origin
C13.2	Type(s)
C13.3	Speed at which Cut off starts under load (rev/min)
C13.4	Max. speed without load (rev/min)
C13.5	Idle Speed (rev/min)
C14.0	**Cold start device (starting aid)**
C14.1	Make
C14.2	Type(s)
C14.3	System description
C15.0	**Starting System :**
C15.1	Make
C15.2	Type(s)
C15.3	System description
C16.0	**Valve timing / Port timing or equivalent data**
C16.1	Max. lift of valves
C16.1.1	Inlet mm
C16.1.2	Exhaust mm
C16.2	Angle of valves / port (w.r.t. top dead center)

C16.3	Inlet
C16.3.1	Opening
C16.3.2	Closing
C16.4	Exhaust
C16.4.1	Opening
C16.4.2	Closing
C16.5	Transfer
C16.5.1	Opening
C16.5.2	Closing
C16.6	Reference or setting ranges
C16.7	Valve gap (Hot or Cold as applicable)
C16.7.1	Inlet
C16.7.2	Exhaust
C16.8	Distribution by ports
C16.8.1	Volume of crank-case cavity with piston at TDC
C16.8.2	Reed valve fitted (Yes / No)
C16.8.3	Description of inlet ports, scavenging and exhaust ports with corresponding timing.
C17.0	**Lubrication system**
C17.1	Description of system
C17.2	Lubrication oil capacity lit
C17.3	Position of lubricant reservoir
C17.4	Lubricating oil grade
C17.5	Feed system (pump, injection in to intake mixing with fuel etc.,)
C17.6	Lubricating pump
C17.6.1	Make
C17.6.2	Type
C17.7	Mixture with fuel: yes/no, and if yes % (for 2 stroke engines)
C17.8	Oil cooler : yes/no, and if yes Enclose dimensional drawings, make(s) & type(s)
C18.0	**Electrical equipment**
C18.1	Generator/alternator characteristics (specify tolerance) or
C18.1.1	Make
C18.1.2	Type
C19.0	**Other engine driven auxiliaries**
C19.1	Enumeration & brief description, if necessary
C20.0	**Idling System:**
C20.1	Idling speed (rpm) (specify the tolerance)
C20.2	Description of settings and relevant requirements
C20.3	Carbon monoxide and HC content by volume in the exhaust gas with the engine idling, per cent (for SI engines only) (manufacturer's standard)

Table 4C of AIS -007 (Revision 3)

C 21.0	**Requirements for engine test**
C21.1	Maximum permitted depression of air intake at characteristic place in kPa (Specify location of measurement))
C21.2	Exhaust back pressure at maximum net power and location of measurement (kPa)
C21.3	Effective volume of exhaust-system (specify the tolerance & range) in liters (from exhaust manifold / TC outlet to tail pipe end), Enclose the exhaust system dimensional drawing and indicate the volume of each parts clearly.
C21.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
C21.5	Maximum rated speed (Specify the tolerance)
C21.6	Minimum rated speed (Specify the tolerance)
C21.7	Max. Net Torque on bench ……. Nm at ……..rpm (specify tolerance)
C21.8	Max. net Power on bench, ……. Nm at ……..rpm (specify tolerance)
C21.9	**Engine Performance** **Declared speed and powers of the engine submitted for type approval)** (Speeds to be agreed with the testing agency)
C21.9.1	Engine Speeds (For ESC & ELR cycles)
C21.9.2	Low Speed (n_{lo}) (rpm)
C21.9.3	High Speed (n_{hi}) (rpm)
C21.9.4	Speed A (rpm)
C21.9.5	Speed B (rpm)
C21.9.6	Speed C (rpm)
C21.9.7	Engine Power Table

Measurement point*	Engine speed rpm	Net Power kW**
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		

* See Chapter 3 of Part IV of Doc.MoSRTH/CMVR/TAP115/116 Issue No.3

** Net power according to Chapter 6 of Part IV of Doc. MoSRTH/CMVR/TAP115/116 Issue No.3.

Note: In case, if data regarding the Moment of Inertia, is required by the test agency for carrying out the Full Throttle performance test for both the CI / SI engines, the same shall be provided by the manufacturer.

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Table 4C of AIS -007 (Revision 3)

C22.0	**Exhaust system**
C22.1	Silencer
C22.1.1	Type
C22.1.2	Make
C22.1.3	Number
C22.1.4	Silencer identification No. (if proprietary) / Part No. (if not proprietary)
C22.2	Internal diameter of exhaust pipe (mm)
C22.3	Description with general arrangement of exhaust system along with its routing indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location, indicated in a Schematic dimensional drawing.
C22.4	Minimum distance between exhaust pipe(s) and the fuel line
C23.0	**Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)**
C23.1	Catalyser make, number and Country of origin
C23.2	Identification Mark / Part No.
C23.3	Type of catalytic action (One/two/three way)
C23.4	Total charge of precious metal (g/vehicle)
C23.5	Relative concentration (%)
C23.5.1	Platinum
C23.5.2	Rhodium
C23.5.3	Palladium
C23.6	Substrate (Monolythic metal/ Ceramic/ honeycomb)
C23.6.1	Cell density (cells per sq. inch / cm)
C23.7	Type of casing for catalyser
C23.8	Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)
C23.9	Lamda Sensor
C23.9.1	Make
C23.9.2	Type / Part No.
C23.9.3	Identification No. / Part No.
C23.9.4	Location

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C23.10	**Electronic Control Unit (ECU)**
C23.10.1	Make and Country of origin
C23.10.2	Identification mark
C23.10.3	Calibration Identification No.
C23.10.4	Adjustment possibilities (Yes / No)
C23.11	**Secondary Air Injection**
C23.11.1	Make
C23.11.2	Identification mark
C23.12	**Exhaust Gas Recirculating System**
C23.12.1	Brief description of the system
C23.12.2	Type (Cooled / Non-cooled/Progressive/ On-Off/ Any Other)
C23.12.3	EGR Valve
C23.12.3.1	Make
C23.12.3.2	Type
C23.12.3.3	Identification No / Part No.
C23.12.4	EGR Electronic Control Unit
C23.12.4.1	Make
C23.12.4.2	Identification No. / Part No.
C24.0	Additional information for evaporative emission
C24.1	Evaporative emission control system
C24.2	Type
C24.3	Make
C24.4	Complete detailed description of devices and their state of tune
C24.5	Drawing of the evaporative control system
C24.6	Drawing of the fuel tank with indication of capacity and material
C24.7	Canister
C24.7.1	Working capacity
C24.7.2	Make
C24.7.3	Identification No. / Part No.
C24.7.4	Schematic diagram
C24.7.5	Canister bed volume (l)

3.0 Page No. 69/148, Table 6

Insert following text as cl E 21.0 and renumber existing clause E 21.0 as clause E 22.0

E 21.0	**Reflective tape (AIS 090)**	
E 21.1	Type approval number / Test report number	
E 21.2	Detailed scheme of marking on side and rear of vehicle	
E 22.0	**Any other features(As declared by the vehicle manufacturer)**	

4.0 Page No. 72/148, Table 8:

Substitute following Table 8 (Part A) and Table 8 (Part B) for existing table 8:

Part A to Table 8 of AIS:007 (Revision 3) (AIS 037 – Component Compliance Table)									
Sr No	**Rule No.**	**Component Name**	**Name of Manufacturing party with Plant name**	**Component description/ Identification**	**Test Report / certificate Nos.**	**Issued By test agency**	**Specific License Number, (if applicable) & Expiry Date**	**Possible date of submission if test report is not available**	**Due date for next CoP**
1	95	***Tyres***							
2	100	***Safety Glass***							
		a) Windscreen							
		b) Side							
		c) Rear							
3	119	***Horns***							
4	124/2	Hydraulic Brake Hose							
5	Sr.No.3 of Annexure IX	CNG regulator							
6	Sr.No.3 of Annexure VIII	LPG vaporiser/regulator							

Part B to Table 8 of AIS:007 (Revision 3)

Rule No.	Subject	Name of the Manufacturer	Test Report Nos. / If test report is not available then the reference document No.
101	Windscreen Wiping System a) Wiping System b) Washing System c) Wiper Blade (For 3 & 4 Wheelers)		
104	***Reflex Reflector*** a) Front, White b) Rear, Red c) Side, Amber		
123	Pillion Hand Holds (For all vehicles)		
124/ 1	Automotive Bulbs Bulbs for Headlamp (main / dipped) Bulbs for Front position lamp Bulbs for Front parking lamp Bulbs for Rear position lamp Bulbs for rear parking lamp Bulbs for Stop lamp Bulbs for Reversing lamp Bulbs for Front Direction indicator lamp Bulbs for Rear direction indicator lamp Bulbs for Side repeater lamp Bulbs for Hazard warning lamp Bulbs for High mount stop lamp Bulbs for Top light lamp Bulbs for Number plate lamp		

	Bulbs for Front fog lamp Bulbs for Rear fog lamp Bulbs for Side marker lamps (For all vehicles as applicable)		

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ON BEHALF OF

AUTOMOTIVE INDUSTRY STANDARDS COMMITTEE

UNDER

CENTRAL MOTOR VEHICLE RULES – TECHNICAL STANDING COMMITTEE

SET-UP BY

MINISTRY OF SHIPPING, ROAD TRANSPORT & HIGHWAYS

(DEPARTMENT OF ROAD TRANSPORT & HIGHWAYS)

GOVERNMENT OF INDIA

June 2009

Information on Technical Specifications to be submitted by the Vehicle Manufacturer

1.0 INTRODUCTION :

This document consolidates the information to be provided by the motor vehicle manufacturer, construction equipment vehicle manufacturer and agricultural tractor manufacturer while applying for a certificate of Compliance to CMVR. Subsequent to the decisions of the CMVR – Technical Standing Committee, this standard was revised to take care of the new regulations and requirements in CMVR and to simplify the existing procedure. The panel constituting the testing agencies and the manufacturers discussed and decided upon the technical details that are required to be provided by the vehicle manufacturers at the time of applying for the type approval. These AIS - 007 (Revision-3) documents were finalized in the month of September 2006, taking into consideration the new standards that were decided to be implemented under CMVR, by CMVR-Technical Standing Committee during it's 16th, 17th, 18th and 19th meetings.

The Automotive Industry Standards Committee responsible for preparation of this standard is given in Annexure: I

2.0 APPLICATION FOR TYPE APPROVAL :

2.1 Application for Type Approval of Automotive Vehicles :

While applying for the Type Approval, the application shall be accompanied by the following documents, as applicable to the provisions for which such compliance is sought:

a) List of provisions for which compliance is sought to be established.

b) The Technical Specifications as per formats given in Table 1 to 13 as applicable.

c) Details of location of Chassis number and code for month and year of manufacture as per Rule 122 of CMVR, in Table –11.

d) Copies of certificates or test reports of compliance to various provisions, which may have already been obtained from authorized Testing Agencies. This may be attached along with the Table–8. (Refer Table-8)

d) Information indicated in Table 10, regarding the Criteria for Extension of Approval (CEA) for selecting the model/(s) to be tested, in case variant/(s) are to be approved.

e) Copies of previous certificates or test reports for other models, if any, which can be used for establishing compliance of the model to be type approved, with a note explaining the details. (Refer Table - 9)

f) The details of CNG components for CNG OE vehicles as per Table -20.

g) The details of LPG components for LPG OE vehicles as per Table -21.

h) Publications available (Owner's Manual and service manual)

2.2 Application for Type Approval of Construction Equipment Vehicles:

While applying for the Type Approval, the application shall be accompanied by the following documents, as applicable to the provisions for which such compliance is sought :

a) List of provisions for which compliance is sought to be established.

b) The Technical Specifications as per formats given in Table 14 & 15.

c) Details of location of Chassis number and code for month and year of manufacture as per Rule 122 of CMVR, in Table –11.

d) Copies of certificates or test reports of compliance to various provisions, which may have already been obtained from authorized Testing Agencies. This may be attached along with the Table-8. (Refer Table – 18).

e) Copies of previous certificates or test reports for other models, if any, which can be used for establishing compliance of the model to be type approved, with a note explaining the details. (Refer Table - 19).

f) Publications available (Owner's Manual and service manual)

Note: In case these publications are not available at the time of submitting the prototype vehicle, they shall be submitted by the manufacturer as and when they are ready but not later than beginning of commercial production. In case these publications are not available at the time of prototype testing, the relevant information required by the test agency, shall be provided by the manufacturer**.**

2.3 Application for Type Approval of Agricultural Tractors :

While applying for the Type Approval, the application shall be accompanied by the following documents, as applicable to the provisions for which such compliance is sought :

a) List of provisions for which compliance is sought to be established.

b) The Technical Specifications as per formats given in Table-16 & 17.

c) Details of location of Chassis number and code for month and year of manufacture as per Rule 122 of CMVR, in Table-11.

d) Copies of certificates or test reports of compliance to various provisions, which may have already been obtained from authorized Testing Agencies. This may be attached along with the Table-18. (Refer Table -18)

e) Copies of previous certificates or test reports for other models, if any, which can be used for establishing compliance of the model to be type approved, with a note explaining the details. (Refer Table- 9).

f) Publications available (Owner's Manual and service manual)

Note: In case these publications are not available at the time of submitting the prototype vehicle, they shall be submitted by the manufacturer as and when they are ready but not later than beginning of commercial production. In case these publications are not available at the time of prototype testing, the relevant information required by the test agency, shall be provided by the manufacturer**.**

3.0 BRIEF TECHNICAL SPECIFICATION :

3.1 **Motor Vehicles :** The format for brief technical specifications to be submitted by the manufacturer is given in Table-7, which is essentially an enclosure to the certificate of CMVR compliance. The details of all the variant to be covered in one certificate shall be included in one document. In case more information is to be provided separate tables and annexures could be included.

3.2 **Construction Equipment Vehicles :** The format for brief technical specifications to be submitted by the construction equipment vehicle manufacturer is given in Table -14, which is essentially an enclosure to the certificate of CMVR compliance. The details of all the variant to be covered in one certificate shall be included in one document. In case more information is to be provided separate tables and annexures could be included.

3.3 **Agricultural Tractors :** The format for brief technical specifications to be submitted by the manufacturer is given in Table-16, which is essentially an enclosure to the certificate of CMVR compliance. The details of all the variant to be covered in one certificate shall be included in one document. In case more information is to be provided separate tables and annexures could be included.

4.0 Detailed Technical Specifications :

4.1 **Motor vehicles :** The format for detailed technical specifications for two and three wheelers are given in Table-1. The formats for detailed specifications for four wheelers and above are given in Tables-2 to 6. In case the application is being made for establishing conformity against specific provision, the details specified in the standard/document for that provision shall be submitted. This may be in the format specified in the applicable standard or a combination of Tables- 2 and Tables - 3 to 6, as appropriate by which the information needed is complete.

4.2 **Construction Equipment Vehicles :** The format for detailed technical specifications for construction equipment vehicles are given in Table-15. In case the application is being made for establishing conformity against specific provision, like engine testing / type approval, the details specified as per this format shall be submitted to the testing agencies.

4.3 **Agricultural Tractors :** The format for detailed technical specifications for agricultural tractors are given in Table - 17. In case the application is being made for establishing conformity against specific provision, like engine testing / type approval, the details specified as per this format shall be submitted to the testing agencies. The details of the test reports of the safety critical components shall be submitted in Table-18 format to the testing agencies.

5.0 GENERAL INFORMATION :

5.1 The above said technical information is to be submitted in sheets of A4 size or should be foldable in A4 size. The letter and figures shall be legible and in a minimum font size not less than 10.

5.2 Each of these documents should have a unique identification number, indicated on each sheet. Appropriate numbering scheme shall be used by the manufacturer to indicate the revision status also.

5.3 Information, for which the space provided in the format is not sufficient, may be submitted in a separate document. Such a document should have a unique identification number, indicating the modification status, and this number should be referred in the Technical Specifications appropriately**.**

5.4 The technical specification shall be submitted in the number of copies as desired by the testing agency. One set of the technical specifications shall be the original with the original signatures of the authorized person of the company and the other sets may be the photostat copies of the original.

5.5 If the item in any clause is not applicable, for any particular model, the manufacturer should indicate "Not Applicable" or "NA" against the main heading and sub-clauses need not be answered in such cases. The serial numbers indicated against each entry shall not be changed.

5.6 The technical specifications of CNG and LPG kits shall be provided to the testing agencies as per the format specified in the relevant AIS-024 and AIS-025 standards respectively.

6.0 OTHER INFORMATION :

6.1 The details of information to be submitted by the automotive vehicle manufacturer regarding test reports/certificates, already obtained, for establishing compliance of the model, sought to be type approved, are given in Table-8. For construction equipment vehicles and agricultural tractors, the same information are given in Table-18.

6.2 The details of information to be submitted by the automotive vehicle manufacturer regarding test reports / certificates for other models which can be used as proof of compliance of the model which is sought to be type approved, are listed in Table-9. For construction equipment vehicles and agricultural tractors, the same information is given in Table - 19.

6.3 Information regarding the Worst Case Criteria for selecting the model/(s) to be tested, in case variant/(s) are to be approved, is given in Table-10. This would apply to the category of vehicles for which the worst case criteria is available as per the respective standards.

6.4 The format for declaring the location of chassis number and code for the year and month of manufacture is given in Table-11. This would apply to motor vehicles, construction equipment vehicles and agricultural tractors.

6.5 The changes in the technical specifications for the already certified models or new variants with slight engineering changes, shall be intimated in the format given in Table - 12 and Table-12 A.

6.6 The additional technical information to be submitted for the Battery Operated Vehicles is given in Table-13. This shall be given in addition to the other specifications wherever applicable.

7.0 TRANSITORY PROVISIONS :

7.1 For all items, for which the compliance are to be established to the notified standard, the requirement of "Identification Number" has been called for. This may be filled up to the extent possible.

7.2 This revised format takes into account all the requisite technical parameters for the respective standards that were finalized by AISC and decided to be implemented by CMVR-Technical Standing Committee for October 2007.

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Table 1 of AIS - 007 (Revision 3)

TECHNICAL SPECIFICATION – 2 & 3 WHEELERS

1.0	**Details of Vehicle manufacturer***
1.1	Manufacturer's name & address
1.2	Telephone No
1.3	FAX. No.
1.4	E mail address
1.5	Contact person
1.6	Name of model and variants
1.7	Plant/(s)of manufacture
1.7.1	Name and address of vehicle manufacturing plant
1.7.2	Name and address of engine manufacturing plant In case of imported vehicles, above details shall be supplied for importer also.
1.8	Importer's Name and address
1.8.1	Telephone No
1.8.2	Fax. No.
1.8.3	E mail address
1.8.4	Contact person
2.0	**Vehicle type**
2.1	Type of vehicle (2 Wheeler/3 Wheeler/ Passenger/Goods/others)
2.2	Category of vehicle (As per AIS -053)
3.0	**Vehicle Performance**
3.1	Max. recommended gradeability (stand start)
3.2	Max. design speed (km/h)
4.0	**Weights**
4.1	Vehicle kerb weight (kg)
4.1.1	Front axle
4.1.2	Rear axle
4.1.3	Total
4.2	Maximum Gross Vehicle Weight (kg)
4.3	Maximum permissible axle weights (kg)
4.3.1	Front axle
4.3.2	Rear axle
4.3	Reference mass
4.4	Gross combination weight (for vehicles with trailer/semi-trailer)
4.4.1	Front axle tractor (kg)
4.4.2	Rear axle tractor (kg)
4.4.3	Trailer axle (kg)

4.5	Maximum permissible axle weights (for vehicles with trailer/semi-trailer) (kg)
4.5.1	Front axle, tractor
4.5.2	Rear axle, tractor
5.0	**Riding/ Seating capacity**
5.1	Maximum (Including driver)
5.2	Crew (Including driver) (for 3 wheelers)
5.3	Sketch of seating locations (for 3 wheelers)
6.0	**Vehicle Dimensions**
6.1	Length (mm)
6.1.1	Total length recommended with trailer / semi-trailer (mm)
6.2	Width, mm
6.3	Height, (Unladen) (mm)
6.4	Wheel base (mm)
6.5	Wheel track (mm)
6.5.1	Front
6.5.2	Rear
6.6	Body overhang (mm)
6.6.1	Front end
6.6.2	Rear end
6.7	Frame overhang, mm (in case of vehicles without complete body)
6.7.1	Front end
6.7.2	Rear end
7.0	**Engine**
7.1	Type
7.2	Manufacturer's name and Country of origin, if imported
7.3	Working principle (Four / two stroke)
7.4	Model name (if any)
7.5	No. of cylinders
7.6	Swept volume (cc)
7.7	Bore (mm)
7.8	Stroke (mm)
7.9	No.& Layout of cylinders & firing order
7.10	Compression ratio (specify tolerance)
7.11	Engine performance (declared by the manufacturer,)
7.11.1	Max. net power of engine on bench (kW) (specify standard and tolerance)

7.11.2	Engine RPM at max. power (Specify tolerance)
7.11.3	Max. net torque of engine and rpm at which it occurs on bench, nm and rpm(specify standard)
7.12	In case of diesel engines, the max. power and max. torque shall also be specified as per conditions given in Doc. MOST/CMVR/TAP115/116.
7.13	Type of combustion chamber (Hemispherical/ squish/others)
7.14	Schematic diagram of combustion chamber and piston crown showing dimensions
7.15	Minimum cross sec area of ports
7.15.1	Inlet (mm^2)
7.15.2	Outlet (mm^2)
7.15.3	Transfer & Booster (mm^2)
7.16	Type of fuel used
8.0	**Cooling system (liquid)**
8.1	Nature of liquid and capacity
8.2	Circulating pump yes/no
8.3	Characteristics of Circulating pump or make(s) & type(s)
8.4	Drive ratio
8.5	Thermostat type and setting
8.6	Radiator drawing(s) or
8.6.1	Make(s)
8.6.2	Type(s)
8.6.3	Relief valve pressure setting
8.7	Radiator Core open area
8.8	Fan characteristics or
8.8.1	Make(s)
8.8.2	Type(s)
8.8.3	Fan drive system
8.8.4	Drive ratio
8.8.5	Fan cowl
8.8.6	Diameter of radiator fan and number of blades
8.8.7	Max. rpm of fan
8.8.8	Fan characteristics / Fan power (kW)
9.0	**Cooling system (Air)**
9.1	Blower characteristics or

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9.1.1	Make(s)
9.1.2	Type(s)
9.1.3	Drive ratio(s)
9.1.4	Air ducting (std production)
10.0	**Temperature regulating system (yes/no)**
10.1	Brief description
11.0	**Temperature permitted by manufacturer (^{0}C)**
11.1	Liquid cooling
11.1.1	Max. temp. at eng. Outlet
11.2	Air cooling
11.2.1	Reference point
11.2.2	Max. temperature at reference point
11.3	Maximum exhaust temperature
11.3.1	Max. outlet temperature of the intercooler
11.3.2	Max. exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds)
12.0	Fuel temperature (^{0}C)
12.1	Minimum
12.2	Maximum
13.0	Lubricant Temperature (^{0}C)
13.1	Minimum
13.2	Maximum
14.0	Intake system
14.1	Schematic diagram of the intake system with dimensions
14.2	Supercharger / Turbocharger (yes/no)
14.2.1	Description of system
14.2.2	Make(s)
14.2.3	Type(s)
14.3	Intake manifold
14.3.1	Description with drawing.
14.4	Air filter
14.4.1	Make
14.4.2	Type
14.4.3	Identification No. (if proprietary) / Part No. (if non-proprietary)
14.5	Intake silencer
14.5.1	Make
14.5.2	Type

14.5.3	Description & diagrams of inlet pipe & their accessories (dash pot, heating device, additional air intake etc.)	
15.0	**Fuel feed: (By carburetor)**	
15.1	Number	
15.2	Make (Identification mark)	
15.3	Type	
15.4	Adjustments (specify tolerance)	
15.4.1	Jets	Or Curve of fuel delivery plotted against level, mm air flow and settings ,g required to keep to the curve
15.4.2	Venturies	
15.4.3	Float-chamber	
15.4.4	Mass of float	
15.4.5	Float needle	
15.5	Dimensions of mixture duct	
15.6	Choke: Type(Manual/automatic) and closure setting	
15.7	Feed pump	
15.7.1	Pressure (specify tolerance) or characteristic diagrams	
15.7.2	Type of fuel feed pump	
15.7.3	Name of manufacturer	
16.0	**Fuel feed: (By fuel injection)**	
16.1	Injection system description	
16.2	Working principle: intake manifold/ direct injection/ injection prechamber / swirl chamber / others	
16.3	Fuel Pump	
16.3.1	Make(s)	
16.3.2	Type(s)	
16.4	Delivery mm / per stroke at pump rpm (specify tolerance) or characteristic diagram(specify tolerance)	
16.5	Calibration procedure on engine / pump bench	
16.6	Injection timing deg BTDC	
16.7	Injection curve	
16.8	Injection advance (specify the tolerance) deg	
16.9	Injectors	
16.9.1	Type	
16.9.2	Make	
16.9.3	Opening pressure (specify tolerance) or characteristic diagram	

17.0	**Device for recycling crank-case gases**
17.1	Description & diagrams
18.0	**Governor**
18.1	Make(s)
18.2	Type(s)
18.3	Cut off rpm under load
18.4	Max. speed w/out load
18.5	Idle Speed
19.0	**Cold start device (starting aid)**
19.1	Make(s)
19.2	Type(s)
19.3	System description
20.0	**Starting System**
20.1	Make(s)
20.2	Type(s)
20.3	System description
21.0	**Valve timing / Port timing or equivalent data**
21.1	Max. lift of valves
21.1.1	Inlet (mm)
21.1.2	Exhaust (mm)
21.2	Angle of valves/ port (w.r.t. top dead center)- Inlet
21.2.1	Opening
21.2.2	Closing
21.3	Angle of valves/ port (w.r.t. top dead center)- Exhaust
21.3.1	Opening
21.3.2	Closing
21.4	Angle of valves/ port (w.r.t. top dead center)- Transfer
21.4.1	Opening
21.4.2	Closing
21.5	Reference or setting ranges
21.6	Valve gap
21.6.1	Inlet
21.6.2	Exhaust
21.7	Distribution by ports
21.7.1	Volume of crank-case cavity with piston at TDC
21.7.2	Description of reed valve if any with drawing

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		Name	
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21.7.3	Description (with schematic dimensional diagram of inlet ports, scavenging and exhaust ports with corresponding timing. (The diagram should include one representing the inner surface of the cylinder)
22.0	**Ignition System**
22.1	Make
22.2	Type
22.3	Nominal Voltage and operating principle
22.4	Ignition advance curve (specify tolerance)
22.5	Ignition timing (specify tolerance)
22.6	Contact point gap and dwell angle (specify tolerance)
22.7	Type and make of distributor
23.0	**Electrical equipment**
23.1	Generator/alternator characteristics or nominal power (specify tolerance) or
23.1.1	Make
23.1.2	Type
24.0	**Additional information on test conditions**
24.1	Sparking plugs
24.1.1	Make
24.1.2	Type and designation
24.1.3	Spark-gap setting
24.1.4	Nominal resistance (kilo ohm) (if resistive type)
24.2	Ignition coil
24.2.1	Make
24.2.2	Type
24.2.3	Identification/ Part No.
24.3	Ignition condenser
24.3.1	Make
24.3.2	Type
24.3.3	Identification/ Part No.
24.4	EMI suppressor cap
24.4.1	Make
24.4.2	Type (Resistive/Non-resistive)
24.4.3	Identification
24.4.4	Nominal resistance (kilo ohm)

24.5	H.T. Cable
24.5.1	Make
24.5.2	Type (Resistive/Non-resistive)
24.5.3	Length mm (if resistive type)
24.5.4	Outside dia. mm (if resistive type)
24.5.5	Nominal resistance (kilo ohm) (if resistive type)
24.6	Systems incorporating electronic oscillator with an operating frequency greater than 9kHz
24.7	Diagram of the ignition system indicating the EMI suppression devices.
24.8	Distributor cap
24.8.1	Make
24.8.2	Type (resistive / Capacitive)
24.8.3	Identification Mark if any
24.8.4	Nominal resistance (kilo ohms)
24.9	Electronic Unit for suppression
24.9.1	Description
24.9.2	Type
24.9.3	Make
25.0	**Exhaust system**
25.1	Silencer, Number, Type and make
25.2	Identification No. (if proprietary) / Part No. (if non-proprietary)
25.3	Internal diameter of exhaust pipe
25.4	Description (with a general arrangement along with routing drawing of exhaust system indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location)
25.5	Minimum distance between exhaust pipe and fuel line
26.0	Lubrication system
26.1	Description of system
26.2	Lubrication oil capacity litre
26.3	Lubricating oil, grade
26.4	Position of lubricant reservoir
26.5	Feed system (pump, injection in to intake mixing with fuel etc.)
26.6	Lubricating pump
26.6.1	Make
26.6.2	Type
26.7	Mixture with fuel : yes/no, and if yes %

26.8	Oil cooler : yes/no, and if yes Schematic diagram/ makes & types
27.0	Other engine driven auxiliaries
27.1	Enumeration & brief description, if necessary
28.0	Idling System
28.1	Idling speed (rpm) (specify the tolerance)
28.2	Description of settings and relevant requirements
28.3	Carbon monoxide content by volume in the exhaust gas with the engine idling, percent (manufacturer's standard)
29.0	**Additional requirements for diesel engines**
29.1	Maximum permitted depression of air intake at characteristic place (Specify location of measurement)
29.2	Exhaust back pressure at maximum net power and location of measurement (kPa)
29.3	Effective volume of exhaust (specify the tolerance & range)
29.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
29.5	Injection piping
29.5.1	Length (mm)
29.5.2	Internal diameter (mm)
29.6	Maximum rated speed (Specify the tolerance)
29.7	Minimum rated speed (Specify the tolerance)
29.8	Power absorbed by fan kW (specify the tolerance)
29.9	Max. Net torque on bench Nm at rpm
29.10	Declared speed and powers of the engine/ vehicle (strike out what does not apply) submitted for type approval)(Speeds to be agreed with the testing agency)

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S.N.	Engine speed Point	Measurement * rpm
1	3000	Max. Net Power
2	2800	
3	2400	
4	2200	Max. Net Torque
5	1800	
6	1350	Min. Rated speed
	See Chapter 3 of Part IV of Doc.MOST/CMVR/TAP115/116. Net power according to Chapter 6 of Part IV of Doc.MOST/CMVR/TAP115/116.	
30.0	**Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)**	
30.1	Catalyser make and Country of origin, if imported	
30.2	Identification Mark	
30.3	Type of catalytic action (One/two/three way)	
30.4	Total charge of precious metal (g/vehicle)	
30.5	Relative concentration (%)	
30.5.1	Platinum	
30.5.2	Palladium	
30.5.3	Rhodium	
30.6	Substrate (Monolithic metal/ Ceramic/ honeycomb)	
30.7	Cell density (cells per sq. inch)	
30.8	Type of casing for Catalyser	
30.9	Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)	
30.10	Electronic Control Unit (ECU)	
30.10.1	Make and Country of origin, if imported	
30.10.2	Identification mark	
30.11	Secondary air Injection	
30.11.1	Make	
30.11.2	Identification mark	
30.12	Exhaust gas Recirculating System	
30.12.1	Make and Country of origin, if imported	
30.12.2	Type	
30.12.3	Identification mark	

31.0	**Transmission**			
31.1	Type (Manual/Automatic/semi-automatic)			
31.2	Clutch type (wet / dry / multiplate / hydraulic)			
31.3	Gear box Type			
31.4	Gear shifting control system			
31.5	Gear shifting pattern			
31.6	Primary transmission			
31.6.1	Type			
31.6.2	Reduction ratio			
31.7	Final transmission			
31.7.1	Type			
31.7.2	Reduction ratio			
31.8	Any other			
31.8.1	Type			
31.8.2	Reduction ratio			
31.9	Gear ratio			
	Gear box ratio		Gear ratio	Overall ratio
		1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		Reverse		
31.10	Wheel drive (Front / Rear)			
32.0	**Front axle**			
32.1	Type			
32.2	Rake (castor) angle			
32.3	King pin inclination.			
33.0	**Rear axle**			
33.1	Type			
33.2	Rake (castor) angle			
34.0	**Tyres**			
34.1	No. and arrangement of wheels			
34.1.1	Front wheel			
34.1.2	Rear wheel			
34.1.3	Spare wheel, if provided			
34.1.4	Other wheel			
34.2	Tyre type (Radial/cross ply) (with Tube / Tube less), size designation including ply rating, Speed rating or max speed, Load rating or Load index. Use symbols as per AIS-044/IS 15627/IS 15633 /IS 15636 as may be applicable.			

34.2.1	Front wheel
34.2.2	Rear wheel
34.2.3	Spare wheel, if provided
34.2.4	Other wheel
34.3	Dynamic Rolling radius (mm) (as per AIS -050)
34.4	Inflation pressure-Unladen (kg/cm²)
34.4.1	Front
34.4.2	Rear
34.4.4	Other wheel
34.5	Inflation pressure-Laden (kg/cm²)
34.5.1	Front
34.5.2	Rear
34.5.3	Other wheel
34.6	Make of tyre & Country of origin, if imported.
35.0	**Steering system**
35.1	Type (handle bar/steering wheel)
35.2	Wheel lock angle (deg.)
35.2.1	Left
35.2.2	Right
35.3	Min turning radius (mm) (as per IS:12222)
35.4	Additional information if steering wheel type
35.4.1	Steering wheel Position (center/offset) Outside diameter (mm)
35.4.2	Maximum No. of rotation of steering wheel from lock to lock
35.4.3	Type of steering column
35.4.4	Steering Gear Type Make and Country of origin, if imported
35.4.5	Steering gear ratio
35.4.6	Coordinates of point defining test turning circle. (Applicable in case of vehicles without complete body which does not cover this point)
35.4.7	Minimum clearance circle diameter
35.5	King pin inclination
36.0	**Braking system**
36.1	Type (Mechanical / Hydraulic)
36.1.1	Front (Disc / Drum, Twin Leading / Leading -Trailing)

36.1.2	Rear (Disc / Drum, Twin Leading / Leading -Trailing)
36.1.3	Trailer / Semi-trailer (Disc / Drum, Twin Leading / Leading -Trailing)
36.1.4	Schematic layout of the braking system indicating method of split of brake system, location of valves, reservoirs, ABS components etc. (For 3 Wheelers)
36.2	Make
36.2.1	Front
36.2.2	Rear
36.2.3	Trailer / Semi-trailer
36.3	Control System (operated by hand/foot, single control / independent control)
36.3.1	Front
36.3.2	Rear
36.3.3	Combined
36.3.4	Trailer / Semi-trailer
36.4	Free play of Control (mm)
36.4.1	Front
36.4.2	Rear
36.4.3	Combined
36.5	Lining/Pad
36.5.1	Nominal Dimensions (mm) (Length x Width x thickness)
36.5.2	Whether asbestos / asbestos free
36.5.3	Front
36.5.4	Rear
36.5.5	Trailer / Semi-trailer
36.6	Area per wheel (cm^2)
36.6.1	Front
36.6.2	Rear
36.6.3	Trailer / Semi-trailer
36.6.4	Total braking area ($cm^{2)}$
36.7	Make and material designation
36.7.1	Front
36.7.2	Rear
36.7.3	Trailer / Semi-trailer
36.8	Brake Drum or Disc Effective diameter (mm)
36.8.1	Front
36.8.2	Rear
36.8.3	Trailer / Semi-trailer
36.9	Material (if the braking surface is non ferrous)

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36.11.2	Rear
36.11.3	Trailer / Semi-trailer
36.12	Parking Brake
36.12.1	Braking Wheel
36.9.1	Front
36.9.2	Rear
36.10	Nominal Size of master cylinder mm
36.10.1	Operating stroke of the master cylinder (mm)
36.11	Nominal Size of wheel cylinder (mm)
36.11.1	Front
36.12.2	Type
36.12.3	Control (operated by hand/foot)
36.13	Locking device
36.14	Control cable (in case of 2 wheelers below 50cc)
36.14.1	Type
36.14.2	Nominal diameter
36.14.3	Make
36.14.4	Identification
37.0	**Hydraulic brake hose**
37.1	Make and Country of origin, if imported
37.2	Identification
37.3	Length(s) of hoses
37.4	Nominal bore diameter
37.5	End fitting type
37.6	Type of hose (Rubber/metallic/braided)
38.0	**Brake fluid**
38.1	Make and Country of origin, if imported
38.2	Trade Name
38.3	Specification/ grade as per Indian standard IS : 8654 –1996.
39.0	**Battery**
39.1	Type & number
39.2	Voltage and Capacity (Ah)
40.0	**Head lamp**
40.1	Main Beam
40.1.1	Make and Country of origin, if imported
40.1.2	Type of lens (Glass / Plastic)
40.1.3	Identification mark
40.1.4	Number and Colour of lens
40.2	**Dipped beam**
40.2.1	Make
40.2.2	Identification mark
40.2.3	Number and Colour of lens

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41.0	**Front Position Lamp**
41.1	Make
41.2	Identification mark
41.3	Number and Colour of lens
42.0	**Number Plate lamp**
42.1	Make
42.2	Identification mark
42.3	Number and Colour of lens
43.0	**Rear Position Lamp (Tail Lamp)**
43.1	Make
43.2	Identification mark
43.3	Number and Colour of lens
44.0	**Front Parking lamp**
44.1	Make
44.2	Identification mark
44.3	Number and Colour of lens
44.1.1	Rear Parking Lamp
44.2.2	Make
44.2.3	Identification mark
44.2.4	Number and Colour of lens
45.0	Stop lamp
45.1	Make
45.2	Identification mark
45.3	Number and Colour of lens
46.0	**Reversing lamp**
46.1	Make
46.2	Identification mark
46.3	Number and Colour of lens
47.0	**Front Direction Indicator Lamp**
47.1.1	Make
47.1.2	Identification mark
47.1.3	Number and Colour of lens
47.2	Rear Direction Indicator Lamp
47.2.1	Make
47.2.2	Identification mark
47.2.3	Number and Colour of lens
47.3	Side Direction Indicator Lamp
47.3.1	Make
47.3.2	Identification mark
47.3.3	Number and Colour of lens
47.4	Type of flasher
48.0	**Hazard Warning Lamp**
48.1	Front
48.1.1	Make
48.1.2	Identification mark

48.1.3	Number and Colour of lens
48.2	Rear
48.2.1	Make
48.2.2	Identification mark
48.2.3	Number and Colour of lens
48.3	Side
48.3.1	Make
48.3.2	Identification mark
48.3.3	Number and Colour of lens
49.0	**Retro- Reflector**
49.1	Front
49.1.1	Make
49.1.2	Type
49.1.3	Identification Mark
49.1.4	Number and color of Lens
49.1.5	Area
49.1.6	Shape
49.2	Rear
49.2.1	Make
49.2.2	Type
49.2.3	Identification Mark
49.2.4	Number and color of Lens
49.2.5	Area
49.2.6	Shape
49.3	Side
49.3.1	Make
49.3.2	Type
49.3.3	Identification Mark
49.3.4	Number and color of Lens
49.3.5	Area
49.3.6	Shape
49.4	Other Lamps
49.4.1	Name
49.4.2	Make, and Identification
49.4.3	Number and colour
50.0	**Auto lamps (bulbs)**
50.1	Head lamp (Main and Dip)
50.1.1	Make and Country of origin, if imported
50.1.2	Designation as per AIS – 034
50.2	Parking Lamp Front
50.2.1	Make and Country of origin, if imported
50.2.2	Designation as per AIS – 034
50.3	Parking Lamp Rear
50.3.1	Make and Country of origin, if imported

50.3.2	Designation as per AIS – 034
50.4	Direction indicator lamp front
50.4.1	Make and Country of origin, if imported
50.4.2	Designation as per AIS – 034
50.5	Direction indicator lamp rear
50.5.1	Make and Country of origin, if imported
50.5.2	Designation as per AIS – 034
50.6	Direction indicator lamp side
50.6.1	Make and Country of origin, if imported
50.6.2	Designation as per AIS – 034
50.7	Rear position lamp (Tail lamp)
50.7.1	Make and Country of origin, if imported
50.7.2	Designation as per AIS – 034
50.8	Stop lamp
50.8.1	Make and Country of origin, if imported
50.8.2	Designation as per AIS – 034
50.9	Number plate lamp
50.9.1	Make and Country of origin, if imported
50.9.2	Designation as per AIS – 034
50.10	Reversing lamp
50.10.1	Make and Country of origin, if imported
50.10.2	Designation as per AIS – 034
50.11	Front Position Lamp
50.11.1	Make and Country of origin, if imported
50.11.2	Designation as per AIS – 034
51.0	**Horn**
51.1	Type (As per IS : 1884 – 1993)
51.2	Make and Country of origin, if imported
51.3	Identification No. / Part No.
51.4	Number
51.5	Operating voltage
51.6	Whether single tone or dual tone
51.7	Max vehicle speed for continuous operation (for ac horns)
51.8	Sketch showing mounting of horn and shape and material of bodywork in front of vehicle which might affect level of sound emitted by horn and have masking effect.
52.0	**Rear View mirror**
52.1	Left
52.1.1	Type
52.1.2	Class of Mirror
52.1.3	Dimension & radius of curvature
52.1.4	Make
52.1.5	Manufacturers' Identification

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52.2	Right
52.2.1	Type
52.2.2	Class of Mirror
52.2.3	Dimension & radius of curvature
52.2.4	Make
52.2.5	Manufacturers' Identification
52.3	Inside
52.3.1	Type
52.3.2	Class of Mirror
52.3.3	Dimension & radius of curvature
52.3.4	Make
52.3.5	Manufacturers' Identification
52.4	Sketch showing, classes of mirrors used, mounting dimensions, max. and min. dimensions of body work and general view of front, rear and passenger compartment of vehicle showing applicable mirrors.
53.0	**Safety glass**
53.1	Front wind shield (laminated)
53.1.1	Make and Country of origin, if imported
53.1.2	Identification
53.1.3	Type (flat/curved, clear/tinted)
53.1.4	Thickness (mm)
53.1.5	No. of pieces
53.1.6	Radius of curvature (If curved)
53.2	Side Window
53.2.1	Make and Country of origin, if imported
53.2.2	Identification
53.2.3	Type (flat / curved, clear / tinted, toughened / laminated)
53.2.4	Thickness (mm)
53.2.5	Radius of curvature (If curved)
53.3	Rear Window
53.3.1	Make and identification
53.3.2	Type(flat/curved, clear/tinted, toughened/laminated)
53.3.3	Thickness (mm)
53.3.4	Radius of curvature (If curved)
54.0	**Wind Screen Wiper**
54.1	Make
54.3	No. of wipers

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54.4	Wiper motor
54.4.1	Name of manufacturer
54.4.2	Type and identification
54.4.3	Rated voltage
54.4.4	No. of sweep frequencies (cycles/min)
54.4.5	Highest sweep frequency (cycles/min)
54.4.6	Lowest sweep frequency (cycles/min)
54.4.7	Difference between the highest and the least one of the lower sweep frequencies (cycles/min)
54.5	Wiper arm
54.5.1	Length
54.5.2	Manufacturer and Identification
54.6	Wiper blade
54.6.1	Length
54.6.2	Manufacturer and Identification
54.6.3	Rubber material (Generic)
54.6.4	Type of fixing (as per IS:7827)
54.7	Drawing indicating the seat back angle, seat travel, H point, rake angle, steering wheel position F dimension
55.0	**Speedometer**
55.1	Model and type
55.2	Make and Identification
55.3	Range
55.4	Major marking
55.5	Minor marking
55.6	Speedometer ratio
55.7	Ratio of speedo drive
55.7.1	Speedometer drive (Front wheel / rear wheel / Gear box)
55.8	Odometer
55.8.1	Make
55.8.2	Type and Identification
56.0	Diagram of vehicle indicating location, reference axis, mark of apparent surface, contour of vehicle parts limiting geometric visibility of all lights and light signaling devices, location of extreme outer edges and longitudinal median plane of vehicle including following dimensions in mm

	- Along width of vehicle-horizontal distance between inner illuminating surfaces, distance between inner illuminating surfaces and outer most part of vehicle and distance between nearest point of illuminating surfaces of indicators and dipped-beam head lamp. - Along length of vehicle (where applicable)- distance between the transverse plane corresponding to the longitudinal rearmost extremity to center of reference of rear indicators - Heights of highest and lowest point of illuminating surfaces.
57.0	**Control** (Specify method of operation such as hand operated–Left/Right, Foot operated–Left/Right. Ref. IS:14413 or corresponding Indian standard)
57.1	Clutch
57.2	Gear shifting
57.3	Head lamp, Tail lamp, Parking lamp, Number plate lamp
57.4	High beam/low beam
57.5	Horn
57.6	Turn signal
57.7	Ignition cut off
57.8	Fuel shut off valve
57.9	Throttle Control
57.10	Front Wheel Brake
57.11	Rear Wheel Brake
57.12	Combined brake system
57.13	Wind shield wiper
57.14	Parking brake
57.15	Hazard warning signal
57.16	Engine stop
57.17	Others
58.0	**Displays (whether they are symbols or letter) and tell tales. Ref IS : 14413 or corresponding Indian standard)**
58.1	Ignition cut off
58.2	Manual choke
58.3	Electric starter

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58.4	Head lamp upper/lower beam control
58.5	Horn
58.6	Turn signal
58.7	Speedometer
58.8	Neutral indicator
58.9	Upper beam indicator
58.10	Fuel shut off valve
58.11	Engine coolant Temperature
58.12	Battery Charging
58.13	Engine oil
58.14	Front fog light
58.15	Rear fog light
58.16	Odometer
58.17	Others such as Oil level indication, Fuel injection, ECU malfunction etc.
59.0	**Provisions for equipment for rider/pillion rider**
59.1	Foot rest
59.1.1	Rider
59.1.2	Pillion rider
59.2	Hand hold for pillion rider
59.2.1	Sketch indicating mounting on the vehicle
59.2.2	Material
59.2.3	Relevant dimensions of load bearing parts
59.2.4	Thread size of mounting fasteners
59.3	Saree guard
60.0	**Fuel tank**
60.1	Make
60.2	Material specification (Metallic / Plastic)
60.3	Nominal thickness, mm
60.4	Capacity , l
60.5	Identification mark (if applicable)
60.6	If the fuel tank material is plastic, is it fully exposed or not (Yes / No)
61.0	**Coupling devices for trailers**
61.1	Make and Country of origin, if imported
61.2	Identification mark
62.0	**Other constructional features:**
62.1	Suspension:

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62.1.1	Front		
62.1.1.1	Type (Swing arm/telescopic/torsion bar)		
62.1.1.2	Type of spring (Leaf / Coil)		
62.1.1.3	Type of shock absorber (hydraulic/gas/friction type)		
62.1.2	Rear		
62.1.2.1	Type (Swing arm/telescopic/torsion bar)		
62.1.2.2	Type of spring (Leaf / Coil)		
62.1.2.3	Type of shock absorber (hydraulic/gas/friction type)		
62.1.3	If leaf spring for front:		
62.1.3.1	Stack height		
62.1.3.2	Width at the center point / stack point		
62.1.3.3	Thickness at the center point / stack point		
62.1.3.4	Flat length		
62.1.3.5	Free camber		
62.1.3.6	No. of leaves	Left	Right
62.1.3.7	No. of leaves		
62.1.3.8	No. of spacers		
62.1.4	If leaf spring for rear:		
62.1.4.1	Stack height		
62.1.4.2	Width at the center point / stack point		
62.1.4.3	Thickness at the center point / stack point		
62.1.4.4	Flat length		
62.1.4.5	Free camber		
62.1.4.6	No. of leaves	Left	Right
62.1.4.7	No. of leaves		
62.1.4.8	No. of spacers		
62.2	Chassis frame :		
62.2.1	Type (Monocoque / tubular /combination)		
63.0	**Wheel rim :**		
63.1	Make		
63.2	Identification No. / Part No.		
63.3	Type (Alloy / sheet metal / spoke)		
63.4	Rim size designation		
63.5	Front		
63.6	Rear		
63.7	Others		
63.8	Material (Steel / Aluminum alloy etc.)		

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64.0	**Anti–theft devices as per AIS - 074**
64.1	Make
64.2	Type of protective device(Type 1/ Type 2 / Type 3 / Type 4 as per Clause 3.3 of AIS - 074)
64.3	No. of combination used in the protective device
64.4	Description of the device or sketch showing location, relevant dimensions of protective device, material and physical properties of the catch of the device which engages with the steering device.
64.5	Diagram of transmission system (in case of type 4 system device only)
64.6	Explanation of the arrangement provided in design to satisfy requirements of Clauses 4.4 and 4.9 of AIS – 074 Note : If type approval is taken independently for AIS-074, copy of document submitted at that time only need to be attached.
65.0	**Statutory Inscription – Vehicle Identification Number as per AIS -065**
65.1	Schematic diagram or photographs showing the location of the chassis number.
65.2	World Manufacturer's Identifier (WMI) code and its location in Vehicle Identification Number (VIN)
65.3	Location of Vehicle Descriptor Section (VDS) in Vehicle Identification Number (VIN)
65.4	Location of Vehicle Indicator Section (VIS) in Vehicle Identification Number (VIN)
65.5	Height of characters in VIN (mm)
66.0	**Hand holds for 3 wheelers (AIS-046)**
66.1	No. of hand holds

66.2	Type of hand hold (Grab handle/Strap/Hand Rail)
66.3	Make
66.4	Identification No. / Part No.
67.0	**Any other feature which the manufacturer desires to declare :**

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TECHNICAL SPECIFICATION – FOUR WHEELERS AND ABOVE
PART A - GENERAL

A1.0	**Details of Vehicle manufacturer :**
A1.1	Name & address of the manufacturer
A1.2	Telephone No
A1.3	Fax No.
A1.4	E-mail address
A1.5	Contact person
A1.6	Name of model and variants (Features differentiating the model and its variants to be given in a separate table)
A1.7	Plant/(s) of manufacture
A1.7.1	Name and address of vehicle manufacturing plant
A1.7.2	Name and address of engine manufacturing plant In case of imported vehicles, above details shall be supplied for importer also.
A1.8	Importer's Name and address
A1.8.1	Telephone No.
A1.8.2	Fax. No.
A1.8.3	E mail address
A1.8.4	Contact person
A2.0	**Vehicle type:**
A2.1	Type of vehicle (Rigid / articulated / Tractor- Trailer combination / others)
A2.1.1	Usage (goods / passenger / others)
A2.1.2	Control (Forward / semi-forward / normal / others)
A2.1.3	Drive (4x2 or 4x4 or 6x2 or 6x4 or others)
A2.1.4	Cab type (Fully built cab (Tiltable / Non-Tiltable) / sleeper cab / Front end structure / Cowl with wind shield / Cowl without wind shield)
A2.1.5	Load body (fitted / not fitted)
A2.2	Category of vehicle as per AIS –053
A3.0	**Vehicle Performance:**
A3.1	Max. recommended gradeability (Stand-start) – in degrees
A3.2	Max. design speed (km/h)

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TECHNICAL SPECIFICATION – FOUR WHEELERS AND ABOVE
PART B - VEHICLE OVERALL

B1.0	**Vehicle Dimensions :**
B1.1	Length mm
B1.1.1	Total length (mm) (for articulated/combination vehicles)
B1.2	Width mm
B1.3	Height (Unladen) (mm)
B1.4	Wheel base (mm)
B1.4.1	Axle spacing in case of multi axle vehicles.
B1.5	Wheel track (mm)
B1.5.1	Front
B1.5.2	Rear
B1.5.3	Other axles (for articulated/combination vehicles)
B1.6	Body overhang (mm)
B1.6.1	Front end
B1.6.2	Rear end
B1.7	Frame overhang mm (in case of vehicles without complete body)
B1.7.1	Front end
B1.7.2	Rear end
B1.8	Inner dimensions of room or platform (For goods carriage vehicles only)
B1.8.1	Length
B1.8.2	Width
B1.8.3	Height
B1.9	Lateral projection
B2.0	**Weights :**
B2.1	Vehicle kerb weight kg
B2.1.1	Front axle 1
B2.1.2	Front axle 2
B2.1.3	Rear axle
B2.1.4	Trailer axle (applicable for articulated/combination vehicles)
B2.1.5	Total
B2.2	Gross vehicle weight kg (for rigid vehicles)
B2.2.1	Maximum permissible axle weights (kg)
B2.2.1	Front axle
B2.2.2	Rear axle
B2.2.3	Other axle
B2.3	Gross combination weight kg (applicable for articulated / Tractor Trailer combination vehicles)
B2.3.1	Front axle
B2.3.2	Rear axle
B2.3.3	Trailer axle / other axles

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B2.4	Reference mass (for vehicles with GVW less than or equal to 3.5 ton) (kg.)
B2.5	Seating capacity
B2.5.1	Maximum (Including driver) for completely built vehicles
B3.0	**Tyres :**
B3.1	Make and country of origin, (if imported)
B3.2	No. and arrangement of wheels
B3.2.1	Front
B3.2.2	Rear
B3.2.3	Spare wheel
B3.2.4	Others (for articulated/combination vehicles)
B3.3	Tyre type (Radial/cross ply) (with Tube / Tube less), size designation including ply rating, Speed rating, Load rating or Load index. Use symbols as per AIS -044/IS:15627/IS:15633 / IS : 15636 as may be applicable.
B3.3.1	Front wheel
B3.3.2	Rear wheel
B3.3.3	Spare wheel
B3.3.4	Other (for articulated/combination vehicles)
B3.4	Dynamic rolling radius, mm, as per AIS-044
B3.5	Inflation pressure – Unladen (kg/cm^2 / kPa)
B3.5.1	Front
B3.5.2	Rear
B3.5.3	Other
B3.6	Inflation pressure – Laden (kg/cm^2 / kPa)
B3.6.1	Front
B3.6.2	Rear
B3.6.3	Other
B4.0	**Transmission :**
B4.1	Type (Manual/Automatic/semi-automatic) (Note: If automatic give all pertinent data)
B4.2	Clutch Type (wet/Dry/Single plate/ Multiplate / Hydraulic)
B4.3	Gear box
B4.3.1	Type
B4.3.2	Model name (if any)

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B4.3.3	Gear shifting control system (Sketch showing gear shifting arrangement)			
B4.3.4	No. of gears			
B4.4	Stall ratio of torque converter			
B4.5.	Sub transmission			
B4.5.1	Type			
B4.5.2	Control system			
B4.5.3	Gear ratio			
		High		
		Low		
B4.6	Final Drive	Front / Rear / Both		
B4.6.1	Type			
B4.6.2	Reduction ratio			
B4.6.3	Differential type			
B4.6.4	Final Drive ratio			
B4.7	Gear ratio		Gear box ratio	Overall ratio
		1st		
		2nd		
		3rd		
		4th		
		5th		
		6th		
		Over drive		
		Reverse		
B4.8	Hydraulic transmission			
B4.8.1	Type			
B5.0	**Number of axles :**			
		Steered	Non-steered	
	Driven			
	Non-driven			
B6.0	**Front axle :**			
B6.1	Type			
B6.2	Toe-in / Toe out (mm)			
B6.3	Camber angle			
B6.4	Caster angle			
B6.5	King pin angle			
B7.0	**Rear axle :**			
B7.1	Type (Single / Tandem / Tridem / Multi)			
B7.2	Toe-in/ Toe out mm, if applicable			
B7.3	Camber angle, if applicable			
B7.4	Caster angle, if applicable			
B7.5	King pin angle, if applicable			

B8.0	**Steering system :**		
B8.1	Type (Manual / Power assisted – Hydraulic / Power assisted – Electric / Other)		
B8.2	Steering wheel		
B8.2.1	Identification Mark / Part No.		
B8.2.2	Position (center/offset)		
B8.2.3	Outside dia. (mm)		
B8.2.4	Number of spokes		
B8.2.5	Steering column		
B8.2.5.1	Make		
B8.2.5.2	Type / Model		
B8.2.5.3	Detailed drawing with material specifications		
B8.2.6	Intermediate shaft		
B8.2.6.1	Make		
B8.2.6.2	Type / Model		
B8.2.6.3	Detailed drawing with material specifications		
B8.3	Maximum No. of rotation of steering wheel from lock to lock		
B8.4	**Details of single / multiple combinations to be given in the form of an Annexure with reference to IS:11939 –1996**		
B8.5	**Detailed drawing of the mounting arrangement of Steering control assembly showing vertical / tilt / actual angle.**		
B8.6	Offset of the steering column with respect to the seat		
B8.7	Steering Gear		
B8.7.1	Type of steering gear (Re-circulating ball / Worm & Roller / Rack & Pinion / Others)		
B8.7.2	Make		
B8.7.3	Steering gear ratio		
B8.8	Wheel lock angle (deg.)	Inner	Outer
B8.8.1	Left		
B8.8.2	Right		
B8.9	Power Assistance		
B8.9.1	Type of assistance		

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B8.9.2	Make
B8.9.3	Model
B8.9.4	Identification No./ Part No.
B8.9.5	Oil Specification
B8.9.6	Oil capacity (l)
B8.9.7	Pressure setting (kg/cm^2 / bar / kPa)
B8.10	Min turning circle diameter (mm) (as per IS:12222)
B8.11	Min. turning circle clearance diameter (mm)
B8.12	Coordinates of point defining test turning circle. (Applicable in case of vehicles without complete body which does not cover this point)
B9.0	**Clearance (Requirement as per AIS-053, if applicable):**
B9.1	Minimum road clearance
B9.2	Road clearance from floor (for buses)
B9.3	Approach angle
B9.4	Departure angle
B9.5	Ramp-over angle
B10.0	**Max. stable inclination (For buses as per AIS -031) :**
B10.1	Left
B10.2	Right
B11.0	**Suspension :**
B11.1	Type and description (Leaf / Coil / Air / Semi-pneumatic / Torsion bar)
B11.1.1	Front
B11.1.2	Rear
B11.2	Make
B11.2.1	Front
B11.2.2	Rear
B11.3	Type of spring
B11.4	If leaf spring
B11.4.1	Main spring
B11.4.1.1	Stack height, at center
B11.4.1.2	Width at the center point / stack point
B11.4.1.3	Flat length
B11.4.1.4	Free camber
B11.4.1.5	No. of leaves Left Right No. of leaves No. of spacers
B11.4.2	Auxiliary Spring
B11.4.2.1	Stack height at, at center
B11.4.2.2	Width at the center point / stack point

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B11.4.2.3	Flat length		
B11.4.2.4	Free camber		
B11.4.2.5	No. of leaves	Left	Right
	No. of leaves		
	No. of spacers		

B12.0 Suspension- Shock absorber :

B12.1	Type and Number
B12.1.1	Front
B12.1.2	Rear

B13.0 Suspension- Stabilizer :

B13.1	Front
B13.2	Rear

B14.0 Chassis frame :

B14.1	Type

B15.0 Displays and tell tales :

(Indicate the type and if the tell tales provided and whether they are symbols or letter. (Ref. SS12.1 or corresponding Indian Standard))

B15.1	Head lamp – upper / lower control
B15.2	Ignition cut-off
B15.3	Turn signal
B15.4	Fuel Gauge
B15.5	Engine coolant temperature
B15.6	Engine low oil pressure
B15.7	High beam indicator
B15.8	Electrical charge indicator (Battery charge)
B15.9	Brake failure
B15.10	Front fog light
B15.11	Rear fog light
B15.12	Horn
B15.13	Others (such as ABS failure, Airbag, HVAC, Seat belt, Content gauge, LPG / CNG changeover switch etc.,)

B16.0 Hood latch :

B16.1	Make
B16.2	Type
B16.3	Identification No. / Part No.

B17.0	**Wheel guard** (Refer figure 1 of SS34 / IS:13943 for passenger cars**)**
64.1	Dimension C
64.2	Dimension p
64.3	Dimension q

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B18.0 **External Projections**

B18.1 Ornaments

B18.2 Projection for head light

B18.3 Radiator grills (Applicable of on external surface)

B18.3.1 Gap between individual elements

B18.3.2 Radius of curvature of individual element

B18.4 Body Panel (In case of radius of curvature of folds in body panels are less than 2.5mm the scaled drawing of folds contour and H value as per Annex A of SS29 / IS 13942 is required to be submitted)

B18.5 Radius of curvature of lateral Rain/Air deflector

B19.0 **Speedometer :**

B19.1 Model and type

B19.2 Make, and Identification No. / Part No.

B19.3 Range

B19.4 Major marking

B19.5 Minor marking

B19.6 Speedometer ratio

B19.7 Ratio of Speedo drive

B20.0 **Odometer :**

B20.1 Make

B20.2 Type and Identification No. / Part No.

B21.0 **Safety belt anchorages – specifications**

B21.1 Design of the type of belts and retractors authorized for fit to the anchorages with which vehicle is equipped :

Anchorage Position				Anchorage on (*)	
				Vehicle Structure	**Seat Structure**
Front	Right-hand seat	Lower anchorage	Outboard		
		Upper anchorage	Inboard		
	Middle seat	Lower anchorage	Right		
		Lower anchorage	Left		
	Left-hand seat	Lower anchorage	Outboard		
		Upper anchorage	Inboard		
Rear					

B21.2 Section views of all the seat belt anchorages.

B21.3 Reference point on body used for vehicle and seat co-ordinate measurement, X,Y,Z co-ordinates of all the seat belt anchorage points.

B21.4 Weight of seats

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B21.5	C.G. of seats (Sketch, showing the C.G. location form reference point or from seat anchorage point).
B22.0	Seats, their anchorages and head restraints
B22.1	Seats, their anchorages and head restraints – specifications for M1 category.
B22.1.1	Description of seats
B22.1.1.1	Make
B22.1.1.2	Number of seats fitted or capable of being fitted with head restraints, adjustable or not adjustable.
B22.1.1.3	Description of the adjustment, displacement and locking systems of the seat or of its parts and a description of occupant protection system against displacement of luggage.
B22.1.2	Description of seat anchorage
B22.1.2.1	Longitudinal position of the seats during the tests.
B22.1.2.2	Drawings, diagrams and plans of the seats, their anchorages on the vehicle, the adjustment and displacement system of the seats and their parts, and their locking devices and of additional occupant protection system against displacement of luggage.
322.1.2.3	In the case of seats fitted with head restraints, the head restraint shall be shown on all drawings, diagrams and photographs.
B22.1.3	Seat Drawings showing 'H point co-ordinates with respect to reference point on body shell
B22.1.4	All designed positions i.e. Slider, Height Adjuster, Manikin settings, Torso Angle etc.
B22.1.5	Seat Identification No. / Part No.
B22.2	**Seats, their anchorages and head restrains (for passenger vehicles of categories other than M1 and goods vehicles of category N).**
B22.2.1	Make

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B22.2.2	Brief description of the seat type, its attachment fittings and its adjustment, displacement and locking systems including the minimum distance between fitting points.
B22.2.3	Position and arrangement of seats including seat layout.
B22.2.4	Seats if any which incorporate a safety belt anchorage.
B22.2.5	Seat Identification No./ Part No.
B23.0	**Rear Underrun Protective device**
B23.1	Height of lower edge of the device from the ground (mm).
B23.2	Width of the device (mm).
B23.3	Drawing of the rear under-run protective device with dimensions.
B23.4	Installation drawing showing rear extremity of vehicle, chassis rear overhang, chassis cross section details etc.
B23.5	Material (Metal / Fibre / etc.)
B24.0	**Lateral Protection (Side Guards)**
B24.1	Height of the lower edge of the Side Guard.
B24.2	Drawing of the lateral protection device with dimensions.
B24.3	Installation drawing of the lateral protective device with dimensions.
B24.4	Material (Metal / Fiber / etc.)
B25.0	**Controls** - Specify method of operation, hand operated – left / right, foot operated – left / right Ref. SS12.1 or corresponding Indian Standard).
B25.1	Ignition
B25.2	Horn
B25.3	Lamps (Head lamp, Tail lamp, Parking lamp and Number plate lamp)
B25.4	Turn signal
B25.5	Transmission shift lever
B25.6	Wind shield wiper
B25.7	High beam/low beam
B25.8	Parking brake

B25.9	Master switch for electrical
B25.10	Hazard warning signal
B25.11	Service Brake
B25.12	Accelerator Pedal (Floor hinged/hanging type)
B25.13	Others
B26.0	**Safety glass**
B26.1	Front wind shield (laminated)
B26.1.1	Make and Country of origin (if imported)
B26.1.2	Identification No. / Part No.
B26.1.3	Type (flat/curved, clear/tinted)
B26.1.4	Thickness (mm)
B26.1.5	No. of pieces
B26.1.6	Radius of curvature (if curved)
B26.2	Side Windows (Left & Right)
B26.2.1	Make and Country of origin (if imported)
B26.2.2	Identification No. / Part No.
B26.2.3	Type(flat/curved, clear/tinted, toughened/laminated)
B26.2.4	Thickness mm
B26.2.5	Radius of curvature (if curved)
B26.3	Rear Window
B26.3.1	Make and Country of origin (if imported)
B26.3.2	Identification No. / Part No.
B26.3.3	Type(flat/curved, clear/tinted, toughened/laminated)
B26.3.4	Thickness mm
B26.3.5	Radius of curvature (if curved)
B27.0	**Rear view mirror :**
B27.1	Left
B27.1.1	Make and Country of origin (if imported)
B27.1.2	Type
B27.1.3	Class of mirror
B27.1.4	Manufacturer's Identification No. for mirror
B27.1.5	Trade name or mark and location
B27.1.6	Sketch showing dimensions of mirror and radius of curvature of reflecting surface
B27.1.7	Sketch showing mounting details and dimensions of mirror
B27.1.8	Dimension & radius of curvature
B27.2	Right
B27.2.1	Make and Country of origin, (if imported)
B27.2.2	Type

B27.2.3	Class of mirror
B27.2.4	Identification No. / Part No.
B27.2.5	Trade name or mark and location
B27.2.6	Sketch showing dimensions of mirror and radius of curvature of reflecting surface.
B27.2.7	Sketch showing mounting details and dimensions of mirror.
B27.2.8	Dimension & radius of curvature
B27.3	Inside
B27.3.1	Make and Country of origin (if imported)
B27.3.2	Type
B27.3.3	Class of mirror
B27.3.4	Identification No. / Part No.
B27.3.5	Trade name or mark and location
B27.3.6	Sketch showing dimensions of mirror and radius of curvature of reflecting surface
B27.3.7	General view from the front, rear and the passenger compartment, showing where rear view mirrors are fitted as applicable.
B27.3.8	Dimension & radius of curvature
B27.4	Sketch showing mounting details and dimensions of mirrors.
B28.0	**Information on safety belt / restraint system :**
B28.1	Safety belt
B28.1.1	Make of seat belt
B28.1.2	Type and configuration
B28.1.3	Identification No. / Part No.
B28.2	Restraint system
B28.2.1	Make and Country of origin (if imported)
B28.2.2	Type and configuration
B28.2.3	Identification No. / Part No.
B28.2.4	Drawings of the relevant parts of the vehicle structure and any seat anchorage reinforcements.
B28.2.5	Drawings of the seat, showing its structure, adjustment system and fixing components, with an indication of the materials used.
B28.2.6	Drawing or photograph of the restraint system as installed.
B28.2.7	Drawing showing the installation of belts on the vehicle.

B28.3 **Safety belts and / or other restraint systems :**

B28.3.1 Number and position of safety belts and restraint systems and seats on which they can be used :

Row of Seat	Location*	Type of seat belt	Variant (if applicable)	Belt adjustment device for height (indicate yes/no/ optional)
First row of seats	L			
	C			
	R			
Second row of seats	L			
	C			
	R			

The table may be extended as necessary for vehicles with more than two rows of seats there are more than three seats across the width of the vehicle.

* (L = left-hand side, R= right-hand side, C= centre)

B28.4 Emergency exit

B28.4.1 Position

B28.4.2 Size

B29.0 Fuel tank :

B29.1 Make

B29.2 Material (Metallic / Plastic etc.)

B29.3 Nominal thickness mm

B29.4 Capacity, Litre

B29.5 Detailed drawing of the fuel tank assembly with material specifications

B29.6 Detailed drawing indicating the position / location of the fuel tank in the vehicle.

B29.7 Identification No. / Part No.

B30.0 Wheel rim :

B30.1 Size

B30.1.1 Front

B30.1.2 Rear

B30.1.3 Others

B30.2 Make and Country of origin (If imported)

B30.3 Identification No. / Part No.

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B31.0	**Door, Door locks and hinges :**
B31.1	Doors
B31.1.1	No. of doors
B31.1.2	Position and type of door
B31.1.3	Detailed drawing of the door including location of the door strengthening bars, cross section of the bars, material specification of the bar and door sheet metal, number of reinforcements and details of welding / bolting etc., (for side door impact test)
B31.2	Door lock / latch
B31.2.1	Front
B31.2.1.1	Make and Country of origin, (If imported)
B31.2.1.2	Identification No. / Part No.
B31.2.2	Rear
B31.2.2.1	Make and Country of origin, (If imported)
B31.2.2.2	Identification No. / Part No.
B31.3	Door hinge
B31.3.1	Front
B31.3.1.1	Make and Country of origin, (If imported)
B31.3.1.2	Identification No. / Part No.
B31.3.2	Rear
B31.3.2.1	Make and Country of origin (If imported)
B31.3.2.2	Identification No. / Part No.
B32.0	**Wheel nut, Wheel cap and Hub cap :**
B32.1	Wheel Nut
B32.1.1	Make
B32.1.2	Size
B32.1.3	No. per wheel
B32.1.4	Tightening torque
B32.1.5	Detailed dimensional drawing along with material specifications
B32.2	Wheel cap
B32.2.1	Make
B32.2.2	Size
B32.2.3	Material (Plastic/Metal)
B32.2.4	Method of fitment (Press/bolted/others)
B32.3.	Hub cap
B32.3.1	Make
B32.3.2	Size
B32.3.3	Method of fitment (Press/bolted/others)

B33.0	**Towing devices :**
B33.1	Type
B33.2	Make
B33.3	Capacity
B34.0	**Coupling devices (for trailers) :**
B34.1	Make
B34.2	Identification mark
B34.3	Type of coupling device for mechanical
B34.4	Type of coupling device for electrical
B34.5	Type of coupling device for brake
B34.6	Dia. of king pin (mm)
B35.0	**Spray Suppression System**
B35.1	Make
B35.2	Type (Water seperator / Pulveriser)
B35.3	Identification No. / Part No.
B35.4	Size
B35.5	Detailed engineering drawing as specified in AIS - 013 or photographs showing the mounting details with dimensions.
B36.0	**Interior Fittings (for M1 category) :**
B36.1	Instrument Panel (Dash Board)
B36.2	Make
B36.3	Identification No. / Part No.
B36.4	Material
B36.5	Drawing showing the mounting details, over all size and all control switches with dimensions
B36.6	Additional details for interior fitting tests to be given as per Appendix–1 (if test is already conducted, this information need not be submitted).
B37.0	**Bumper (for M1 category vehicle) :**
B37.1	Make
B37.2	Identification No. / Part No.
B37.3	Installation drawing showing location of Bumper in the front and rear, fitment of the Bumper, dimensions of Bumper, mounting points, details of mounting fasteners and additional fitments on it.
B37.4	Material of Bumper with details (metallic / non-metallic)
B37.5	Test method to be adopted by the test agency (Pendulum impact test, Component level vibration test, or Vehicle level four poster test)
B 38.0	**Flammability requirements of interior materials as per IS : 15061, as applicable.**

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B 38.1	Seat Upholstery
B 38.1.1	Make
B 38.1.2	Material and Composition
B 38.1.3	Identification No. / Part No.
B 38.2	Roof lining
B 38.2.1	Make
B 38.2.2	Material and Composition
B 38.2.3	Identification No. / Part No.
B 38.3	Floor lining
B 38.3.1	Make
B 38.3.2	Material and Composition
B 38.3.3	Identification No. / Part No.
B 38.4	Side wall lining
B 38.4.1	Make.
B 38.4.2	Material and Composition
B 38.4.3	Identification No. / Part No.
B 38.5	Rear wall lining
B 38.5.1	Make
B 38.5.2	Material and Composition
B 38.5.3	Identification No. / Part No.
B 38.6	Interior lining of luggage racks
B 38.6.1	Make
B 38.6.2	Material and Composition
B 38.6.3	Identification No. / Part No.
B 38.7	Heating and ventilation pipe
B 38.7.1	Make
B 38.7.2	Material and Composition
B 38.7.3	Identification No. / Part No.
B 38.8	Curtain / Blinds / Hanging material
B 38.8.1	Make
B 38.8.2	Material and Composition
B 38.8.3	Identification No. / Part No.
B 38.9	Material for Luminaries
B 38.9.1	Make
B 38.9.2	Material and Composition
B 38.9.3	Identification No. / Part No.
B 38.10	Separation wall
B 38.10.1	Make
B 38.10.2	Material and Composition
B 38.10.3	Identification No. / Part No.

B39.0	**Hand holds (as per AIS - 046)**
B39.1	No. of hand holds
B39.2	Details and dimension of hand hold indicating length, clearance between the hand hold and body and cross sectional area. of every hand hold (if required , details may be provided as a separate Annexure)
B39.2.1	Make
B39.2.2	Identification No. / Part No.
B39.2.3	Type (Grab handle / Strap / Hand Rail)
B39.2.4	Material
B39.2.5	Size
B39.3	Installation drawing of hand hold, showing location of mounting for every seating position, passengers details of mounting fasteners and additional fitments on it.
B 40.0	**Arrangement of front controls (For M1 category as per AIS - 035)**
B 40.1	Distance between the contour points of the orthogonal projections on to plane "P" of the accelerator pedal and service brake pedal bearing surfaces, "E" in mm.
B 40.2	Distance between the projection of the service brake pedal on to the reference plane "P", to the right, "H" in mm.
B 40.3	Distance between the projection of the service brake pedal on to the0 reference plane "P", to the left, "J" in mm.
B 40.4	Drawing showing the parts and arrangement of the foot controls along with dimensions "E", "H" and "J"
B41.0	**Statutory Plates – Vehicle Identification Number (As per AIS - 065)**
B41.1	Drawings and/or photographs of the locations of the statutory plates and inscriptions and of the vehicle identification number
B41.2	Drawings and / or photographs of the official part of the plates and inscriptions (completed example with dimensions)
B41.3	Drawings and / or photographs of the Body Builder's Plates and its location on the vehicle
B41.4	World Manufacturer's Identifier (WMI) code and its location in Vehicle Identification Number (VIN)
B41.5	Location of Vehicle Descriptor Section (VDS) in Vehicle Identification Number (VIN)
B41.6	Location of Vehicle Indicator Section (VIS) in Vehicle Identification Number (VIN)
B41.7	Height of characters in VIN (mm)

B42.0	**Window retention and release for Buses as per IS :13944**
B42.1	Window safety glass
B42.1.1	Type of glass (Laminated / Toughened)
B42.1.2	Thickness & Radius of Curvature,
B42.1.3	Name of the Manufacturer
B42.1.4	Identification used on the side window glazing.
B42.2	Drawing (including Drawing no. & Revision no.) including Plan view, Elevation, LH, RH view of Vehicle showing the dimensions of all windows, seating layout and location of emergency exit.
B42.3	Detailed drawing showing the Location of emergency exit with separate detailed drawing.
B42.4	Number of passenger compartment doors provided in addition to driver's door.
B42.5	Emergency exit identification
B42.6	Dimensions of the instructions describing each motion necessary to unlatch and open the exit are provided from the release mechanism.

Appendix –1

Technical information for Interior Fittings as per IS : 15223 : 2002

1. Basic Model :
(Convertible / Non- convertible,
With / without opening roof)

2. List of Model Variants :

3. Instrument Panel Variants with photographs :
(With / without Airbag, Music system, AC)

4. Material used for instrument Panel :

5. Drawings :

5.1 Instrument Panel mounting (With hardware details)
5.2 Seating Layout :
5.3 'H' point co-ordinates for each seating position
5.4 Cross sectional drawings for each projection more than 3.2
(Cl. No. 5.1.1, 5.1.5, 5.1.6, 5.2.2, 5.2.3, 5.3.1)
5.5 Cross sectional Drawing of Gear shift lever (Cl. No. 5.2.3)
5.6 Drawing of Grab handle with cross section (Cl. No. 5.3.4.1)
5.7 Drawing of Sunvisor with details of metal wire used (Cl. No. 5.3.4.1 and Cl. No. 5.4.3.2)
5.8 Drawing of lamp assembly mounted at roof (Cl. No. 5.3.4.1)

6.0 Name of manufacturer of the Interior fittings components :

Sr. No.	Component	Manufacturer
01	Instrument Panel	
02	Sun visor	
03	Roof light	
04	Grab Handle	
05	Gear lever	
06	Hand brake lever	
07	Seats	
08	Seat belts	
09	Music System (if provided)	
10	Cigarette lighter (if provided)	

7.0 Seat test report as per AIS 016 / ECE R1

Manufacturer : Signature	Document No :	Test Agency : Signature Name	Cert No : Seal
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C1.0	**Description of Engine:**
C1.1	Type (Compression Ignition / Positive Ignition)
C1.2	Make and Country of origin (if imported)
C1.3	Name and address of the engine manufacturing plant
C1.4	Working principle: (Four / two stroke), (DI / IDI) (NA/TC/TCIC/ Any other)
C1.5	Model name and identification
C1.6	Type of fuel used
C1.7	No.& Layout of cylinders & firing order
C1.8	Swept volume cc
C1.9	Bore (mm)
C1.10	Stroke (mm)
C1.11	Compression ratio (specify tolerance)
C1.12	**Engine performance (declared by the manufacturer):**
C1.12.1	Max. Net power of engine on bench (kW @ rpm) (Specify standard and tolerance)
C1.12.2	Maximum net torque on bench (Nm @ rpm) **Note : In case of diesel engines the max. Power and max. Torque shall be specified as per conditions given in Chapter 6 of Part IV of Doc. MoSRTH / CMVR / TAP-115 / 116 Issue No.3**
C1.13	Location of engine (Front / Rear)
C2.0	**Combustion System:**
C2.1	Type of combustion chamber (Hemispherical/ squish/others)
C2.2	Drawing(s) of combustion chamber and piston crown (Enclose the drawing & Mention the drawing no. & Part no.)
C2.3	**Minimum cross section area of ports**
C2.3.1	Inlet (cm^2)
C2.3.2	Outlet (cm^2)
C3.0	**Ignition System (Spark Ignition engines only):**
C3.1	Make
C3.2	Type
C3.3	Nominal Voltage
C3.4	Operating Principle
C3.5	CDI
C3.6	Table of Combination for EMI test
C3.7	Ignition advance curve (specify tolerance) & enclose the curve
C3.8	Ignition timing (specify tolerance)
C3.9	Contact point gap and dwell angle (specify tolerance)
C3.10	Type and make of distributor
C3.11	Sparking plugs
C3.11.1	Make and Country of origin
C3.11.2	Type and designation
C3.11.3	Spark-gap setting
C3.11.4	Nominal resistance (kilo ohm) (if resistive type)

C3.12	**Ignition coil**
C3.12.1	Make
C3.12.2	Type
C3.12.3	Identification
C3.13	**Ignition condenser**
C3.13.1	Make
C3.13.2	Type
C3.13.3	Identification
C3.14	**EMI suppressor cap / Device / Electronic unit**
C3.14.1	Make
C3.14.2	Type (Resistive/Capacitive)
C3.14.3	Identification
C3.14.4	Nominal resistance (kilo ohm)
C3.14.5	Terminology and Drawing of interference Suppression equipment
C3.15	**H.T.Cable**
C3.15.1	Make and Place / Country of origin (if imported)
C3.15.2	Type (Resistive/Non-resistive)
C3.15.3	Length mm (if resistive type)
C3.15.4	Outside dia. mm (if resistive type)
C3.15.5	Nominal resistance kilo ohm, (if resistive type)
C3.16	Systems incorporating electronic oscillator with an operating frequency greater than 9 kHz
C4.0	Cooling system :
C4.1	Liquid cooling system
C4.1.1	Nature of liquid and capacity
C4.1.2	Circulating pump yes/no
C4.1.3	Characteristics of Circulating pump or make(s) & type(s)
C4.1.3.1	Drive ratio
C4.1.4	Thermostat type and setting
C4.1.5	Radiator drawing(s)
C4.1.5.1	Make(s) and Place / Country of origin (if imported)
C4.1.5.2	Type(s)
C4.1.5.3	Relief valve pressure setting
C4.1.6	Fan characteristics (Fan power, kW) Enclose the fan power curve corresponding to full load (v/s engine speed) of viscous fan.
C4.1.6.1	Make(s) and Country of origin (if imported)
C4.1.6.1.1	No. of blades
C4.1.6.1.2	Material of blades (metal / plastic)
C4.1.6.2	Type(s) [Fixed / Viscous / Electrical driven]

C4.1.6.3	Fan drive system
C4.1.6.4	Drive ratio
C4.1.6.5	Fan cowl
C4.1.6.6	Fan diameter (mm)
C4.1.6.7	Max. Speed of fan (in rev/min)
C4.1.7	Radiator core open area (cm^2)
C4.2	**Air Cooling system**
C4.2.1	Blower characteristics
C4.2.1.1	Make
C4.2.1.2	Type(s)
C4.2.1.3	Drive ratio(s)
C4.2.2	Air ducting (std production)
C5.0	**Temperature permitted by manufacturer in ^{0}C for liquid cooling (Location of measurement be specified)**
C5.1	Max. temp. at engine outlet
C6.0	**Temperature permitted by manufacturer in ^{0}C for Air cooling (Location of measurement be specified)**
C6.2.1	Reference point
C6.2.2	Max. temperature at reference point
C6.3	Max. Temperature of the intercooled-air (Location of measurement be specified)
C6.4	Max. Exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds), Specify the distance from the outlet flange.
C7.0	**Fuel temperature ^{0}C:** (for diesel engines at the injection pump inlet)
C7.1	Minimum
C7.2	Maximum
C8.0	**Lubricant Temperature ^{0}C (Location of measurement be specified)**
C8.1	Minimum
C8.2	Maximum
C9.0	**Intake system :** (Attach drawing, mention Drawing No. & Part No.)
C9.1	Supercharger / Turbocharger - yes/no
C9.1.1	Description of system
C9.1.2	Make(s) and Country of origin (if imported)
C9.1.3	Type(s)

C9.1.4	Description of system (e.g. Charge pressure @ max. power and torque speed, wastegate, if applicable)	
C9.2	Intake manifold (Enclose drawing with drawing No. & Part No.)	
C9.2.1	Description	
C9.2.2	Identification No / Part No.	
C9.2.3	Schematic dimensional drawing	
C9.3	Air filter	
C9.3.1	Make	
C9.3.2	Type	
C9.3.3	Identification No / Part No.	
C9.3.3	Schematic dimensional drawing	
C9.4	Intake silencer	
C9.4.1	Make	
C9.4.2	Type / Description	
C9.4.3	Identification No / Part No.	
C9.4.4	Schematic dimensional drawing of inlet pipe and their accessories (dash pot, heating devices, additional air intake etc.)	
C9.5	Inter cooler	
C9.5.1	Make	
C9.5.2	Identification mark / Part No.	
C9.5.3	Air pressure drop across the inter-cooler	
C10.0	Fuel feed: (By carburetor)	
C10.1	Number	
C10.2	Make	
C10.3	Type	
C10.4	Adjustments (specify tolerance)	
C10.4.1	Jets	Enclose the Curve of fuel delivery Plotted against air flow And settings required to keep to the curve
C10.4.2	Venturies	
C10.4.3	Float-chamber level	
C10.4.4	Mass of float	
C10.4.5	Float needle	
C10.5	Dimensions of mixture duct	
C10.6	Choke: Type (Manual/automatic) and closure setting	
C10.7	Feed pump	
C10.7.1	Pressure (specify tolerance) or characteristic diagrams	
C10.7.2	Type of fuel feed pump	
C11.0	Fuel feed: {By fuel injection}	
C11.1	Injection system description	
C11.2	Working principle: intake manifold/ direct injection / indirect injection / swirl chamber/others	

C11.3	Fuel Pump
C11.3.1	Make(s) and Country of origin (if imported)
C11.3.2	Type(s)
C11.3.3.	Pressure / characteristic diagram
C11.4	Delivery mm^3/ per stroke at max net power speed in case of Diesel Engine & specify delivery in kg/h at max net power speed in case of gas engines (specify tolerance) and enclose characteristic diagram (specify tolerance). If boost control is supplied, state the characteristics fuel delivery and boost pressure versus engine speed.
C11.5	Calibration Method (on engine/pump bench)
C11.6	Static Injection timing
C11.7	Injection advance curve (Diagram be enclosed)
C11.8	Injection advance (specify the tolerance)
C11.9	Injector (s)
C11.9.1	Type (s) (mention holder, nozzle and assembly no(s))
C11.9.2	Make (s) and Country of origin
C11.9.3	Opening pressure (specify tolerance) or characteristic diagram
C11.9.4	Injection piping
C11.9.4.1	Length mm
C11.9.4.2	Internal diameter mm
C 12.0	**Device for recycling crank-case gases**
C12.1	Description & drawings
C13.0	Governor
C13.1	Make(s) and Country of origin
C13.2	Type(s)
C13.3	Speed at which Cut off starts under load (rev/min)
C13.4	Max. speed without load (rev/min)
C13.5	Idle Speed (rev/min)
C14.0	**Cold start device (starting aid)**
C14.1	Make
C14.2	Type(s)
C14.3	System description
C15.0	**Starting System :**
C15.1	Make
C15.2	Type(s)
C15.3	System description
C16.0	**Valve timing / Port timing or equivalent data**
C16.1	Max. lift of valves
C16.1.1	Inlet mm
C16.1.2	Exhaust mm
C16.2	Angle of valves / port (w.r.t. top dead center)

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C16.3	Inlet
C16.3.1	Opening
C16.3.2	Closing
C16.4	Exhaust
C16.4.1	Opening
C16.4.2	Closing
C16.5	Transfer
C16.5.1	Opening
C16.5.2	Closing
C16.6	Reference or setting ranges
C16.7	Valve gap (Hot or Cold as applicable)
C16.7.1	Inlet
C16.7.2	Exhaust
C16.8	Distribution by ports
C16.8.1	Volume of crank-case cavity with piston at TDC
C16.8.2	Reed valve fitted (Yes / No)
C16.8.3	Description of inlet ports, scavenging and exhaust ports with corresponding timing.
C17.0	**Lubrication system**
C17.1	Description of system
C17.2	Lubrication oil capacity lit
C17.3	Position of lubricant reservoir
C17.4	Lubricating oil grade
C17.5	Feed system (pump, injection in to intake mixing with fuel etc.,)
C17.6	Lubricating pump
C17.6.1	Make
C17.6.2	Type
C17.7	Mixture with fuel: yes/no, and if yes % (for 2 stroke engines)
C17.8	Oil cooler : yes/no, and if yes Enclose dimensional drawings, make(s) & type(s)
C18.0	**Electrical equipment**
C18.1	Generator/alternator characteristics (specify tolerance) or
C18.1.1	Make
C18.1.2	Type
C19.0	**Other engine driven auxiliaries**
C19.1	Enumeration & brief description, if necessary
C20.0	**Idling System:**
C20.1	Idling speed (rpm) (specify the tolerance)
C20.2	Description of settings and relevant requirements
C20.3	Carbon monoxide and HC content by volume in the exhaust gas with the engine idling, per cent (for SI engines only) (manufacturer's standard)

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C 21.0	**Requirements for engine test**
C21.1	Maximum permitted depression of air intake at characteristic place in kPa (Specify location of measurement))
C21.2	Exhaust back pressure at maximum net power and location of measurement (kPa)
C21.3	Effective volume of exhaust-system (specify the tolerance & range) in liters (from exhaust manifold / TC outlet to tail pipe end), Enclose the exhaust system dimensional drawing and indicate the volume of each parts clearly.
C21.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
C21.5	Maximum rated speed (Specify the tolerance)
C21.6	Minimum rated speed (Specify the tolerance)
C21.7	Max. Net Torque on bench ……. Nm at ……..rpm (specify tolerance)
C21.8	Max. net Power on bench, ……. Nm at ……..rpm (specify tolerance)
C21.10	**Engine Performance** **Declared speed and powers of the engine submitted for type approval)** (Speeds to be agreed with the testing agency)
C21.10.1	Engine Speeds (For ESC & ELR cycles)
C21.10.2	Low Speed (n_{lo}) (rpm)
C21.10.3	High Speed (n_{hi}) (rpm)
C21.10.4	Speed A (rpm)
C21.10.5	Speed B (rpm)
C21.10.6	Speed C (rpm)
C21.10.7	Engine Power Table

Measurement point*	Engine speed rpm	Net Power kW**
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		

* See Chapter 3 of Part IV of Doc.MoSRTH/CMVR/TAP115/116 Issue No.3

** Net power according to Chapter 6 of Part IV of Doc. MoSRTH/CMVR/TAP115/116 Issue No.3.

Note: In case, if data regarding the Moment of Inertia, is required by the test agency for carrying out the Full Throttle performance test for both the CI / SI engines, the same shall be provided by the manufacturer.

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C22.0	**Exhaust system**
C22.1	Silencer
C22.1.1	Type
C22.1.2	Make
C22.1.3	Number
C22.1.4	Silencer identification No. (if proprietary) / Part No. (if not proprietary)
C22.2	Internal diameter of exhaust pipe (mm)
C22.3	Description with general arrangement of exhaust system along with its routing indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location, indicated in a Schematic dimensional drawing.
C22.4	Minimum distance between exhaust pipe(s) and the fuel line
C23.0	**Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)**
C23.1	Catalyser make, number and Country of origin
C23.2	Identification Mark / Part No.
C23.3	Type of catalytic action (One/two/three way)
C23.4	Total charge of precious metal (g/vehicle)
C23.5	Relative concentration (%)
C23.5.1	Platinum
C23.5.2	Rhodium
C23.5.3	Palladium
C23.6	Substrate (Monolythic metal/ Ceramic/ honeycomb)
C23.6.1	Cell density (cells per sq. inch / cm)
C23.7	Type of casing for catalyser
C23.8	Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)
C23.9	Lamda Sensor
C23.9.1	Make
C23.9.2	Type / Part No.
C23.9.3	Identification No. / Part No.

C23.9.4	Location
C23.12	**Electronic Control Unit (ECU)**
C23.12.1	Make and Country of origin
C23.12.2	Identification mark
C23.12.3	Calibration Identification No.
C23.12.4	Adjustment possibilities (Yes / No)
C23.13	**Secondary Air Injection**
C23.13.1	Make
C23.13.2	Identification mark
C23.14	**Exhaust Gas Recirculating System**
C23.14.1	Brief description of the system
C23.14.2	Type (Cooled / Non-cooled/Progressive/ On-Off/ Any Other)
C23.14.3	EGR Valve
C23.14.3.1	Make
C23.14.3.2	Type
C23.14.3.3	Identification No / Part No.
C23.14.4	EGR Electronic Control Unit
C23.14.4.1	Make
C23.14.4.2	Identification No. / Part No.
C24.0	Additional information for evaporative emission
C24.1	Evaporative emission control system
C24.2	Type
C24.3	Make
C24.4	Complete detailed description of devices and their state of tune
C24.5	Drawing of the evaporative control system
C24.6	Drawing of the fuel tank with indication of capacity and material
C24.7	Canister

C24.7.1	Working capacity
C24.7.2	Make
C24.7.3	Identification No. / Part No.
C24.7.4	Schematic diagram
C24.7.5	Canister bed volume (l)

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TECHNICAL SPECIFICATION – FOUR WHEELERS AND ABOVE
PART D – BRAKES

D1.0	**Service brakes :**
D1.1	Make
D1.2	Type (Mechanical/hydraulic/air/air assisted/vacuum assisted/others)
D1.3	Control system & braking wheel
D1.4	Schematic layout indicating method of split of brake system, location of valves, reservoirs, ABS components etc. (Attach drawing and indicate the drawing number)
D1.5	Anti-Lock braking system Provided (Yes/No/Optional)
D1.5.1	If yes, details of ABS
D1.5.2	Make
D1.5.3	Category of ABS
D1.5.4	Nos. of directly controlled wheel(s)
D1.5.5	Brief description of failure warning tell–tale
D1.5.6	Wheel Speed Sensors
D1.5.6.1	No. of sensors
D1.5.6.2	Make of sensors
D1.5.6.3	Type of sensors
D1.5.7	Modulator
D1.5.7.1	Nos. of Modulators
D1.5.7.2	Make of Modulators
D1.5.7.3	Identification No. / Part No. of Modulator
D1.5.7.4	Brief description and features
D1.5.8	Controller
D1.5.8.1	Nos. of Controller
D1.5.8.2	Make of Controller and Country of origin (If imported)
D1.5.8.3	Identification No. / Part No. of Controller
D1.5.8.4	Brief description and features
D1.5.9	Height of Center of Gravity (mm)
D1.5.9.1	Unladen condition
D1.5.9.2	Laden condition
D 1.5.10	Slack adjuster
D 1.5.10.1	Front (Automatic / Manual)
D 1.5.10.1.1	Make of slack adjuster

D 1.5.10.1.2	Model and Type
D 1.5.10.2	Rear (Automatic / Manual)
D 1.5.10.2.1	Make of slack adjuster
D 1.5.10.2.2	Model and Type
D2.0	**Brake lining or pad**
D2.1	Nominal Dimensions, (mm) (Length x Width x thickness)
D2.1.1	Front wheel
D2.1.2	Rear wheel
D2.1.3	Others
D2.2	Effective area per axle (cm^2)
D2.2.1	Front axle
D2.2.2	Rear axle
D2.2.3	Others
D2.3	Make
D2.3.1	Front wheel / axle
D2.3.2	Rear wheel / axle
D2.3.3	Others
D2.3.4	Whether asbestos or asbestos-free
D3.0	**Brake drum or disc**
D3.1	Front axle (Disc / Drum)
D3.1.1	Effective Diameter (mm)
D3.2	Rear axle (Disc / drum)
D3.2.1	Effective Diameter (mm)
D3.3	Other axle (Disc / Drum)
D3.3.1	Effective diameter (mm)
D4.0	**Master cylinder or brake valve**
D4.1	Make
D4.2	Inner diameter of the master cylinder (mm)
D4.3	**Operating stroke (mm)**
D5.0	**Wheel cylinder / Wheel Chamber**
D5.1	Diameter (mm)
D5.1.1	Front
D5.1.2	Rear
D5.1.3	Others
D5.2	Type (single acting/double acting)
D5.2.1	Front
D5.2.2	Rear
D5.2.3	Others
D5.2.4	Make of wheel cylinder / slave cylinder

D6.0 **Booster :**
D6.1 Make
D6.2 Type
D6.3 Boost ratio
D6.4 **Size of the booster (mm) (diameter)**

D7.0 **Vacuum or air assistance**
D7.1 Pressure (kg/cm^2)
D7.1.1 Nominal (P_2 as per IS:11852)
D7.1.2 Cut in
D7.1.3 Cut out
D7.2 Type of vacuum pump or air compressor
D7.3 Type of pressure regulator
D7.4 No. of tanks
D7.5 Tank Capacity (l)

	Description	Capacity
D7.5.1	Tank 1	
D7.5.2	Tank 2	
D7.5.3	Tank 3	
D7.5.4	Tank 4	

D7.6	Brake Chamber	**Front**	**Rear**	**Parking**
D7.6.1	Make and type			
D7.6.2	Size mm			
D7.6.3	Inner diameter mm			
D7.6.4	Stroke mm			

D8.0 **Brake hose (if Hydraulic)**
D8.1 Make, Country of origin (If imported) and Identification No.
D8.2 Free Length of hoses
D8.3 Thickness of lining (mm)
D8.4 Nominal bore dia. (mm)

D9.0 **Failure Warning device for braking**
D9.1 Type (Visual display/ audible/others)
D9.2 Operation pressure (kg/cm^2 / bar / kPa)
D9.3 Type of safety device

D10.0 **Parking brake**
D10.1 Make
D10.2 Type (mechanical/spring brake)
D10.3 Acting on Transmission/wheel
D10.4 Control System & Braking wheel

Manufacturer :	Document No :	Test Agency :	Cert No :
Signature		Signature Name	Seal
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D10.5 Lining/pad
D10.6 Name of producer
D10.7 Dimension (mm)
D10.8 Area (cm^2)
D10.9 Material
D10.10 Diameter of brake drum/disc (mm)

D11.0 Secondary brake

D11.1 Type
D11.2 Description

D12.0 Additional retarding devices

D12.1 Type
D12.2 Description
D12.3 Deceleration at 30 km/h, m/s^2

D13.0 Brake fluid

D13.1 Make
D13.2 Trade name
D13.3 Specification/ grade as per Indian standard

D14.0 Load distribution :

	Laden kg.	Unladen kg.	Unladen F/R Ratio
Front axle			
Rear axle			
Other axles			
Total			

D15.0 Proportioning valve

D15.1 Make
D15.2 Characteristics
D15.3 Identification

D16.0 Apportioning valve

D16.1 Make
D16.2 Characteristics
D16.3 Identification

D17.0 Load sensing valve

D17.1 Make
D17.2 Characteristics
D17.3 Identification
D18.0 G valve
D18.1 Make
D18.2 Characteristics
D18.3 Identification
D19.0 Other valves
D19.1 Function
D19.2 Make
D19.3 Characteristics
D19.4 Identification

Manufacturer :	Document No :	Test Agency :	Cert No :
Signature		Signature	Seal
		Name	
Name	Sheet No	Designation	
Designation	Date	Date of Issue	Page No of

TECHNICAL SPECIFICATION – FOUR WHEELERS AND ABOVE
PART E - ELECTRICAL

E1.0	**Battery**
E1.1	Type & number
E1.2	Voltage & Capacity (Ah)
E2.0	**Wind Screen Wiper**
E2.1	Type (Manual/power)
E2.2	No. of wipers
E2.3	Wiper motor
E2.3.1	Make
E2.3.2	Type
E2.3.3	Identification mark
E2.3.4	Rated voltage
E2.3.5	Number of sweep Frequencies
E2.3.6	Highest sweep frequency (Cycles/min)
E2.3.7	Lowest sweep frequency (Cycles/min)
E2.4	Wiper arm
E2.4.1	Length
E2.4.2	Make
E2.5	Wiper blade
E2.5.1	Length
E2.5.2	Make
E2.5.3	Identification
E2.6	H point
E2.7	Washer tank
E2.7.1	Type
E2.7.2	Make
E2.7.3	Identification No. / Part No.
E2.7.4	Capacity l
E2.7.5	Material
E2.7.6	Washer tank motor
E2.7.6.1	Make
E2.7.6.2	Model
E2.8	Defroster
E2.8.1	Type
E2.8.2	Make
E2.9	Drawing indicating the seat back angle, seat travel, H point, Rake angle, F point, steering wheel position, Driver's vision points, Angle obstruction of the 'A' pillar and the related dimensions as per related standards.

E3.0	**Horn**
E3.1	Make and Country of origin (if imported)
E3.2	Type (As per IS :1884 – 1993)
E3.3	Operating voltage
E3.4	Identification No. / Part No.
E3.5	Number
E3.6	Sketch showing mounting of horn
E3.7	The shape and material of the body work at the front of the horn, which might affect the level of the sound, emitted by the horn and have a masking effect
E3.8	Maximum vehicle speed for continuous operation (km/h)
E4.0	**Lighting Installation requirements**
E4.1	Schematic diagram showing the vehicle with the height of the head lamp from the ground to its lower edge and to the center of the head lamp.
E4.2	Head lamp leveling system (manual / automatic)
E4.2.1	Stop position (if manual)
E4.2.2	Initial inclination
E4.2.3	Drawing showing initial inclination angle on the head lamp
E4.2.4	Drawing showing type and controls of dipped beam leveling device with table showing positions of switch for various vehicle loading condition
E4.3	Tell-Tale for leveling switch
E4.3.1	Description and sketch showing the detail positions of Tell-Tale and seating layout (for M category vehicles)
E5.0	**Head lamp**
E5.1	Main beam
E5.1.1	Make and Country of origin (if imported)
E5.1.2	Type of lens (Glass / Plastic)
E5.1.3	Identification No. / Part No.
E5.1.4	Number and Colour of Lens
E5.2	Dipped beam
E5.2.1	Make and Country of origin (if imported)
E5.2.2	Type of lens (Glass / Plastic)
E5.2.3	Identification No. / Part No.
E5.2.4	Number and Colour of Lens
E6.0	**Front Fog Lamp**
E6.1	Make and Country of origin (if imported)
E6.2	Type of lens (Glass / Plastic)
E6.3	Identification No. / Part No.
E6.4	Number and Colour of Lens

E7.0	**Rear Fog Lamp**
E7.1	Make and Country of origin (if imported)
E7.2	Type of lens (Glass / Plastic)
E7.3	Identification No. / Part No.
E7.4	Number and Colour of Lens
E8.0	**Side Marker lamps**
E8.1	Make
E8.2	Identification No. / Part No.
E8.3	Number and colour of Lens
E9.0	**Registration Plate lamp**
E9.1	Make
E9.2	Identification No. / Part No.
E9.3	Number and colour of Lens
E10.0	**Position lamp / Parking Lamp - Front**
E10.1	Front Position Lamp
E10.1.1	Make
E10.1.2	Identification No. / Part No.
E10.1.3	Number and colour of Lens
E10.2	Front Parking Lamp
E10.2.1	Make
E10.2.2	Identification No. / Part No.
E10.2.3	Number and colour of Lens
E11.0	**Position lamp / Parking Lamp - Rear**
E11.1	Rear Position Lamp
E11.1.1	Make
E11.1.2	Identification No. / Part No.
E11.1.3	Number and colour of Lens
E11.2	Rear Parking Lamp
E11.2.1	Make
E11.2.2	Identification No. / Part No.
E11.2.3	Number and colour of Lens
E12.0	**Stop lamp (S1 / S2)**
E12.1	Make
E12.2	Identification No. / Part No.
E12.3	Number and colour of Lens
E13.0	**Stop lamp (S3) for M1 category**
E13.1	Make
E10.2	Identification No. / Part No.
E10.3	Number and colour of lens

E14.0	Reversing lamp
E14.1	Make
E14.2	Identification No. / Part No.
E14.3	Number and colour of Lens
E15.0	Direction indicator Lamp
E15.1	Front
E15.1.1	Make
E15.1.2	Identification No. / Part No.
E15.1.3	Number and colour of Lens
E15.2	Rear
E15.2.1	Make
E15.2.2	Identification No. / Part No.
E15.2.3	Number and colour of Lens
E15.3	Side
E15.3.1	Make
E15.3.2	Identification No. / Part No.
E15.3.3	Number and colour of Lens
E15.4	Type of flasher
E16.0	**Hazard warning signal**
E16.1	Front
E16.1.1	Make
E16.1.2	Identification No. / Part No.
E16.1.3	Number and colour of Lens
E16.2	Rear
E16.2.1	Make
E16.2.2	Identification No. / Part No.
E16.2.3	Number and colour of Lens
E16.3	Side
E16.3.1	**Make**
E16.3.2	Identification No. / Part No.
E16.3.3	Number and colour of Lens
E17.0	**Reflector**
E17.1	Front
E17.1.1	Make and Country of origin (if imported)
E17.1.2	Type
E17.1.3	Identification No. / Part No.
E17.1.4	Number and colour of Lens
E17.1.9	Area
E17.1.9	Shape
E17.2	Rear
E17.2.1	Make and Country of origin (if imported)
E17.2.2	Type
E17.2.3	Identification No. / Part No.

E17.2.4	Number and colour of Lens
E17.2.9	Area
E17.2.10	Shape
E17.3	Side
E17.3.1	Make and Country of origin (if imported)
E17.3.2	Type
E17.3.3	Identification No. / Part No.
E17.3.4	Number and colour of Lens
E17.3.9	Area
E17.3.10	Shape
E18.0	**End – outline marker lamp (Top light)**
E18.1	Front
E18.1.1	Make and Country of origin (if imported)
E18.1.2	Type of lens (Glass / Plastic)
E18.1.3	Identification No. / Part No.
E18.1.4	Number and colour of Lens
E18.2	Rear
E18.2.1	Make and Country of origin (if imported)
E18.2.2	Type of lens (Glass / Plastic)
E18.2.3	Identification No. / Part No.
E18.2.4	Number and colour of Lens
E 5.0 to E 18.0 - Installation details.	Diagram of vehicle indicating location, reference axis, mark of apparent surface, contour of vehicle parts limiting geometric visibility of all lights and light signaling devices, location of extreme outer edges and longitudinal median plane of vehicle including following dimensions in mm. Along width of vehicle-horizontal distance between inner illuminating surfaces, distance between inner illuminating surfaces and outer most part of vehicle and distance between nearest point of illuminating surfaces of indicators and dipped-beam head lamp. Along length of vehicle (where applicable)- distance between the transverse plane corresponding to the longitudinal rearmost extremity to center of reference of rear indicators. Heights of highest and lowest point of illuminating surfaces.
E19.0	**Automotive bulbs**
E19.1	Head lamp bulb (main and dip)
E19.1.1	Make and Country of origin (if imported)
E19.1.2	Designation as per AIS –034
E19.2	Parking Lamp bulb – Front

Manufacturer : Signature	Document No :	Test Agency : Signature Name	Cert No : Seal
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E19.2.1	Make and Country of origin (if imported)
E19.2.2	Designation as per AIS – 034
E19.3	Parking Lamp bulb – Rear
E19.3.1	Make and Country of origin (if imported)
E19.3.2	Designation as per AIS – 034
E19.4	Direction indicator lamp bulb - front
E19.4.1	Make and Country of origin (if imported)
E19.4.2	Designation as per AIS – 034
E19.5	Direction indicator lamp bulb - rear
E19.5.1	Make and Country of origin (if imported)
E19.5.2	Designation as per AIS – 034
E19.6	Direction indicator lamp bulb - side
E19.6.1	Make and Country of origin (if imported)
E19.6.2	Designation as per AIS – 034
E 19.7	Front Position Lamp bulb
E 19.7.1	Make and Country of origin (if imported)
E 19.7.2	Designation as per AIS - 034
E19.8	Rear Position Lamp (tail lamp)Bulb
E19.8.1	Make and Country of origin (if imported)
E19.8.2	Designation as per AIS – 034
E19.9	Stop lamp bulb
E19.9.1	Make and Country of origin (if imported)
E19.9.2	Designation as per AIS – 034
E19.10	Number plate lamp bulb
E19.10.1	Make and Country of origin (if imported)
E19.10.2	Designation as per AIS – 034
E19.11	End out Marker bulb
E19.11.1	Make and Country of origin (if imported)
E19.11.2	Designation as per AIS – 034
E19.12	Reversing lamp bulb
E19.12.1	Make and Country of origin (if imported)
E19.12.2	Designation as per AIS – 034
E19.13	Stop Lamp Bulb (S3)
19.13.1	Make and Country of origin (if imported)
19.13.2	Designation as per AIS – 034
E19.14	Front Fog Lamp Bulb
E19.14.1	Make and Country of origin (if imported)
E19.14.2	Designation as per AIS – 034
E19.15	Rear Fog Lamp Bulb
E19.15.1	Make and Country of origin (if imported)
E19.15.2	Designation as per AIS – 034
E19.16	Side Marker Lamp Bulb
E19.16.1	Make and Country of origin (if imported)
E19.16.2	Designation as per AIS – 034

E20.0	**Warning Triangle**
E20.1	Make
E20.2	Make and Country of origin (if imported)
E20.2	Identification No. / Part No.
E21.0	**Any other features (As declared by the vehicle manufacturer)**

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BRIEF TECHNICAL SPECIFICATIONS FOR MOTOR VEHICLES

A. Manufacturer's name and address	
Importer's name and address (in case of CBU)	
Country of origin, if imported	
Vehicle data	
Basic model	
Type / Description	
Category of the vehicle (as per AIS -053)	
Variant(s)	
Type / Description	
Category of variant(s) (as per AIS -053)	
Engine	
Make and Country of origin, if imported	
Model	
Type	
Bore x stroke (mm)	
No. of cylinders	
Displacement	
Compression ratio	
Max. Engine output (kW @ rpm)	
Max. Torque (Nm @ rpm)	
Air cleaner type	
Clutch	
Type	
Gear *box*	
Make & model	
Type	
No. of gears	
Gear ratio 1st 2nd 3rd 4th 5th 6th Reverse	
Drive Axle (Front / Rear / All)	
Front axle ratio	
Rear axle ratio	
Steering	
Type / Description	
Steering wheel diameter mm	
Ratio	
Frame	
Long member size (mm)	
Number of cross members	

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Suspension	
Type / Description	
Spring	
Anti-roll bar	
Shock absorbers	
Brake	
Service brake (Brief description)	
Auto Slack Adjuster Fitted (Yes / No / Optional)	
ABS Fitted (Yes / No / Optional)	
Front (Disc / Drum)	
Rear (Disc / Drum)	
Total braking area (cm^2)	
Parking brake	
Secondary brake	
Wheels and tyres	
Wheel rim size	
Tyre size designation including ply rating	
Speed index	
Load index / Load rating	
Tyre Type (Radial / Cross / Tube / Tubeless)	
Laden Tyre pressure (front & rear) (kg/cm^2)	
Electrical system	
System voltage (V)	
Battery rating (Ah)	
Wiper motor	
Wiping system (Brief description)	
Fuel tank	
Material	
Capacity (l)	
Dimensions	
Wheel base (mm)	
Overall width (mm)	
Overall length (mm)	
Overall height (mm)	
Front track (mm)	
Rear track (mm)	
Min. ground clearance (mm)	
Cargo box dimensions (mm)	
Load body platform area	

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Weights	
Maximum GVW kg (for rigid vehicles)	
Maximum GCW kg (for articulated / combination vehicles)	
Maximum FAW (kg)	
Maximum RAW (kg)	
Kerb weight with 90% fuel (with spare wheel , tools, etc.) (kg)	
Maximum gradeability in 1st gear	
Seating	
Seating capacity	
Sketch showing seating layout with dimensions	

Rule No.	Subject	Name of the Manufacturer	Test Report Nos. / If test report is not available then the reference document No.
95	Tyres (Compliance to AIS -044)		
100	Safety Glass a) Windscreen b) Side c) Rear (Three & Four Wheeler)		
101	Windscreen Wiping System a) Wiping System b) Washing System c) Wiper Blade (For 3 & 4 Wheelers)		
104	Reflex Reflector a) Front, White b) Rear, Red c) Side, Amber		
119	Horns Horn Installation (For all vehicles)		
123	Pillion Hand Holds (For all vehicles)		

124/ 1	Automotive Bulbs Bulbs for Headlamp (main / dipped) Bulbs for Front position lamp Bulbs for Front parking lamp Bulbs for Rear position lamp Bulbs for rear parking lamp Bulbs for Stop lamp Bulbs for Reversing lamp Bulbs for Front Direction indicator lamp Bulbs for Rear direction indicator lamp Bulbs for Side repeater lamp Bulbs for Hazard warning lamp Bulbs for High mount stop lamp Bulbs for Top light lamp Bulbs for Number plate lamp Bulbs for Front fog lamp Bulbs for Rear fog lamp Bulbs for Side marker lamps (For all vehicles as applicable)		
124/2	Hydraulic Brake Hose (For all vehicles – as applicable)		
124/3	Hydraulic Brake Fluid (For all vehicles – as applicable)		
124/5	Steering Impact a) Head Form Test b) Body Block Test c) Crash Test (For M1 category having GVW not more than 1500 kg)		
124/6	Side Door Impact Test (For passenger cars)		
124/7	i) Fuel Tank (metallic) or ii) Fuel Tank (plastic) (For Four Wheelers)		
124/8	Wheel Rims (For Four wheelers)		
124/9	Control Cables (For two wheelers below 50 CC)		
124/10	Pneumatic Coupling (For N category of vehicles)		
124/12	Bus Window Retention (Only for Buses)		
124/14	Wheel Nuts Discs, Hub Caps (Only for Four Wheelers)		
124/15	Accelerator Control Systems (Only for Four Wheelers)		

124/16	Door Locks & Hinges (Only for Four Wheelers)		
124/17	Hood Latch (For passenger cars)		
124/20	i) Lighting Signalling & Indicating Systems (For 4 Wheelers) Head Light : Fog Light : Rear Licence Plate Light : Rear Position Light : Tail Light : Stop Light : Directional Indicator Light : Front : Rear : Side : Parking Light : Reversing Light : High Mounted Stop Light : ii) Lighting and Signalling Installation Requirements (for 4 wheelers)		
124/21	Electromagnetic Radiation (EMI) (for all combinations of spark plug, ignition coil, HT cable, Ignition System, ECU and suppress cap) (For all vehicles)		
124/22	Towing Devices (For 4 wheelers)		
124/24	Lighting and Signaling installation requirements for two / three wheelers		
124/25	Fuel Tank for two/three wheelers (metallic or plastic)		
124/32	Lighting and light signaling devices for 2 wheelers, 3 wheelers and their trailers and semi trailers. Head Light : Rear Licence Plate Light : Rear Position Light Tail Light : Stop Light : Directional Indicator Light: Front : Rear : Side : Parking Light : Reversing Light :		
124/33	Spray suppression devices for N2, N3, T2 and T3 category of vehicles		
124/34	Drivers field of vision for M1 category of vehicles.		
124/35	Survival space for protection of occupants in a cab.		
124/36	Strength of superstructure of passenger vehicles.		
124/37	Flammability requirements for M3 category vehicles with more than 22 passengers.		

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124/38	Interior fittings for M1 category		
124/39	Windscreen wiping system requirements for 3 wheelers		
124/1A	Vehicle Rear Under run Protection And Lateral Protection (For four wheelers)		
125/1A	Safety Belt and Safety Belt Anchorages (For four wheelers)		
125/(2)	Rear View Mirror and Rear View Mirror Installation Requirements (For all vehicles)		
125/1C	Seat Size, Anchorages and Head Restraints (For four wheelers)		
138	Warning Triangles		

NOTE :

1) Please enclose test report copies wherever required if the same is not submitted them to the testing agency, you are submitting this application.
2) Fill all the columns. If any clause is not applicable, mention "NA" in corresponding column. Do not keep it blank.
3) In case samples are submitted to the testing agency for testing, provide reference docket no.

Manufacturer :	Document No :	Test Agency :	Cert No :
Signature		Signature	Seal
		Name	
Name	Sheet No	Designation	
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LIST OF TEST REPORT / CERTIFICATES OF OTHER MODELS

Rule No.	Subject	Model	No. of test report / certificate *	Issued by	Justification for applicability as per CEA for the model under consideration

* Xerox copies of the certificates to be submitted in case if it is from another testing agency or whenever necessary.

Table 10 of AIS -007 (Revision 3)

INFORMATION NEEDED FOR APPLYING CRITERIA FOR EXTENSION OF APPROVAL

Rule No:	Subject:	Notified Standard	CEA as per doc. no.

Value for each variant

Variants → / CEA Parameters ↓	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)									
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)									
(14)									

Additional information required in the case of application for extension based on an already tested model:

1. Test report No:
2. Specification No.
3. Detailed justification and logic for applicability of CEA.
4. Copies of Test report and specification should be enclosed in case they are not already available with the Test Agency.
5. Column (1) should indicate the parameters for the tested model.

Note:
Where practically not possible to provide the information in the above form, it may be given in separate sheets / tables with designated sheet nos.

Manufacturer :	Document No :	Test Agency :	Cert No :
Signature		Signature Name	Seal
Name	Sheet No	Designation	
Designation	Date	Date of Issue	Page No of

Table 11 of AIS -007 (Revision 3)

DETAILS OF LOCATION OF CHASSIS NUMBER AND CODE FOR MONTH AND YEAR OF MANUFACTURE AS PER RULE 122 OF CMVR

Name of the Vehicle Manufacturer & Address :	
Name of the basic model :	
Name of Variants, if any :	
Place of Embossing or etching the Chassis Number (Vehicle Identification Number). Supporting details by drawing or pictures may be provided if necessary.	

Code for month and year of production:

Code for month of production:		**Code for year of production:**	
Month	Code	Year	Code
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

Position of the code for month of production in the Chassis number :	
Position of the code for year of production in the Chassis number :	
Height of the Chassis number (Vehicle Identification Number) :	

Example of Engine No. :-

Example of Chassis No. (Vehicle Identification Number) with Month & Year of Manufacture :-

Table 12 of AIS -007 (Revision 3)

DETAILS OF CHANGE IN TECHNICAL SPECIFICATION

Manufacturers name and address :			
Name of the model and variants :			
	CMVR Certificate No.	Date	Specification No.
3.1			
3.2			
Valid Extension			
4.1	Dated		
4.2	Specifications Revision		
Nature of Change:			
Changes in the Specifications			

Sr. No.	Specifications No. and Clause No.	Description	Parameter (Earlier)	Parameter (New Extension)
6.1				
6.2				
6.3				
6.4				

Note : The number of rows shown are illustrative. The actual number of rows will depend on the number of changes.

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TECHNICAL SPECIFICATIONS - BATTERY OPERATED VEHICLES

1.0	**General description of vehicle**
1.1	Vehicle Model
1.2	Vehicle Type
1.3	Drawing and /or photographs of the vehicle
2.0	**Description of The Traction Battery**
2.1	Trade Name and Mark of the Battery
2.2	Kind of Electro – Chemical Couple
2.3	Nominal Voltage (V)
2.4	Battery Maximum Thirty Minutes Power (Constant Power Discharge) (kW)
2.5	Battery Performance in 2 h Discharge (Constant Power or Constant Current)
2.5.1	Battery Energy (kWh)
2.5.2	Battery Capacity , Ah in 2 h
2.6	End of Discharge Voltage Value (V)
2.7	Provision of ventilation for battery Yes / No
2.7.1	Brief description of the ventilation system adopted in the vehicle. (Refer AIS-38/2001-02 Clause 3.1.1). Provide drawing if necessary.
2.7.2	Brief description of the ventilation system adopted in the battery compartment. (Refer AIS-38/2001-02 Clause 3.1.2). Provide drawing if necessary.
2.8	On-board Indication of battery state of charge
2.8.1	Details of indication when state of charge of the battery reaches a level when the manufacturer recommends re-charging.
2.8.1.1	Indication format.
2.8.1.2	Relationship of state of charge indicator and the indication.
2.8.1.3	Make
2.8.1.4	Model
2.8.2	Indication of state of charge of battery reaches a level at which driving vehicle further may cause damage to batteries
2.8.2.1	Indication format.
2.8.2.2	Relationship of state of charge indicator and the indication.
2.9	Battery Mass (kg)
2.10	Brief description of maintenance procedure, if any
3.0	**Description of The Drive Train**
3.1	General
3.1.1	Make
3.1.2	Type

3.1.3	Use : Mono motor / multi motors (number)
3.1.4	Transmission Arrangement parallel / transaxial / others to precise
3.1.5	Test Voltage (V)
3.1.6	Motor Nominal Speed (Min $^{-1}$)
3.1.7	Motor Maximum Speed, Min $^{-1}$ or by default reducer outlet shaft / gear box speed (specify gear engaged)
3.1.8	Maximum Power Speed (Min $^{-1}$) and (km/h)
3.1.9	Maximum Power (kW)
3.1.10	Maximum Thirty Minutes Power (kW)
3.1.11	Maximum Thirty Minutes speed km/h (Reference in AIS - 39/2001-02 and AIS - 40/2001-02)
3.1.12	Flexible Range (where P>90% of Max. Power)
3.1.13	Speed at the beginning of the range (Min $^{-1}$)
3.1.14	Speed at the end of the range (Min $^{-1}$)
3.2	Traction Motor
3.2.1	Make
3.2.2	Working Principle
3.2.2.1	Direct current / alternating current / number of phases
3.2.2.2	Separate excitation / series / compound
3.2.2.3	Synchron / asynchron
3.2.2.4	Coiled rotor / with permanent magnets / with housing
3.2.2.5	Number of Poles of the Motor
3.2.3	Motor power curve (kW) with motor RPM (min^{-1}) / vehicle speed in (km/h)
3.3	Power Controller
3.3.1	Make
3.3.2	Type
3.3.3	Control Principle : vectorial / open loop / closed / other (to be specified)
3.3.4	Maximum effective current supplied to the Motor (A)
3.3.5	Voltage range use (V to V)
3.4	Cooling System motor : liquid / air controller : liquid / air
3.4.1	Liquid cooling equipment characteristics
3.4.1.1	Nature of the liquid , circulating pumps, yes / no
3.4.1.2	Characteristics or make(s) and type(s) of the pump
3.4.1.3	Thermostat : setting
3.4.1.4	Radiator : drawing(s) or make(s) and type(s)

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3.4.1.5	Relief valve : pressure setting
3.4.1.6	Fan : Characteristics or make(s) and type(s)
3.4.1.7	Fan : duct
3.4.2	Air-cooling equipment characteristics
3.4.2.4	Blower : Characteristics or make(s) and type(s)
3.4.2.2	Standard air ducting
3.4.2.3	Temperature regulating system yes / no
3.4.2.4	Brief description
3.4.2.5	Air filter : make(s) type(s)
3.4.3	Maximum temperatures recommended by the manufacturer:
3.4.3.1	Motor Outlet : ^{o}C
3.4.3.2	Controller inlet : ^{o}C
3.4.3.3	At motor reference point(s) ^{o}C
3.4.3.4	At controller reference point(s) ^{o}C
3.5	Insulating Category :
3.5.1	International Protection (IP)-Code :
3.6	Lubrication System Principle Bearings : friction / ball Lubricant : grease / oil Seal : yes / no Circulation : with / without
4.0	**Charger** :
4.1	Charger : on board / external
4.1.1	Trademark , model, rating
4.2	Description of the normal profile of charging system
4.3	Specifications of mains
4.3.1	mains : single phase/ three phase :
4.3.2	Nominal Voltage (V) & frequency (Hz) with tolerances:
4.4	Reset period recommended between the end of the discharge and the start of the charge
4.5	Recommended duration of a complete charge
4.6	In case of on-board charger
4.6.1	Continuous rating of charger socket (A) :
4.6.2	Time rating (h) of charger socket, if any :
4.6.3	Whether soft-start facility Yes / No :
4.6.4	Maximum initial in-rush current (A)

5.0	**Electrical details of vehicle for functional safety**
5.1	Schematic diagram showing the electrical layout giving all major electrical items along with their physical location in the vehicle. It shall include batteries, power-train components, protection fuses, circuit breakers etc. (Reference in AIS 38/2001-02 Clause 3.1.3)
5.2	Specifications of circuit breakers/ fuses used for protection of batteries / power-train (Reference in AIS - 38/2001-02 Clause 3.1.3)
5.2.1	IS / IEC specifications
5.2.2	Rating (A)
5.2.3	Opening time (ms)
5.3	Working voltage V (Reference in AIS - 38/2001-02 Clause 3.2)
5.4	Schematic highlighting physical location of live parts having working voltage greater than 60 V DC or 25 V AC (Reference in AIS - 38/2001-02 Clause 3.2.1.2)
5.5	Electric cables / connectors / wiring harness (Reference in AIS - 38/2001-02 Clause 3.2.2.2)
5.5.1	IEC protection class
5.5.2	Insulation material used
5.5.3	Conduits provided Yes / No
5.6	List of exposed conductive parts of on-board equipment. (Reference in AIS 38/2001-02 Clause 3.2.2.3)
5.6.1	Any potential equalization resistance used to electrically connect these parts Yes/ No
5.6.2	If yes, give details
5.7	List of failures due to which the vehicle will come to standstill (Reference in AIS - 38/2001-02 Clause 3.3.6)
5.8	List of conditions under which the performance of vehicle is limited and how. (Reference in AIS - 38/2001-02 Clause 3.3.13)
5.9	Declaration regarding Design guidelines followed with respect to various requirements.
6.0	Electrical energy consumption of Vehicle in W-h/km, as per Clause 5.5.1 of AIS - 039

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BRIEF TECHNICAL SPECIFICATIONS FOR CONSTRUCTION EQUIPMENT VEHICLE

Details of the manufacturer	
Name and address	
Telephone No.	
Fax No. / E-mail ID	
Vehicle data	
Basic model	
Type (Brief description)	
Variant(s)	
Type (Brief description)	
Implements / Attachments (Brief description)	
Engine No.	
Chassis No.	
Engine	
Make	
Model and identification	
Type	
Bore x stroke (mm)	
No. of cylinders	
Displacement	
Compression ratio	
Max. Engine output (kW@rpm)	
Max. Torque (Nm@rpm)	
Air cleaner	
Oil filter	
Fuel filter	
Capacity of cooling system	
Oil sump capacity (l)	
Weight of engine (kg) (complete)	
Radiator frontal area (core area)	
Catalytic converter details, if fitted	
Clutch	
Type	
Outside diameter	
Gear box	
Make	
Model & identification	
Type	
No. of gears	

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Gear ratio 1st 2nd 3rd 4th 5th 6th Reverse	
Front axle ratio	
Rear axle ratio	
Steering	
Type	
Steering wheel diameter (mm)	
Ratio	
No. of rotation of the wheel (Lock to lock)	
Steered axle	
Frame	
Long member size (mm)	
Number of cross members	
Suspension	
Type (Brief description)	
Spring	
Anti-roll bar	
Shock absorbers	
Brake	
Service brake (Brief description)	
Front	
Rear	
Total braking area (cm^2)	
Secondary brake (Brief description)	
Parking brake (Brief description)	
Wheels and tyres	
Wheel rim size	
Tyre size and ply rating	
Dynamic rolling radius of tyre	
Tyre pressure (front & rear) (kg/cm^2)	
Electrical system	
System voltage (V)	
Battery rating	
Alternator type	
Max. output	
Wiping system (Brief description)	
Wiper motor	

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Fuel tank	
Material	
Capacity (l)	
Dimensions in travel mode	
Wheel base (mm)	
Overall width (mm)	
Overall length (mm)	
Overall height (mm)	
Front track (mm)	
Rear track (mm)	
Min. ground clearance (mm)	
Min. turning circle diameter (m)	
Max. clearance circle diameter (m)	
Weights	
Unladen FAW, kg (FAW1, FAW2 etc.)	
Unladen RAW, kg (RAW1, RAW2 etc.)	
Unladen weight, kg (weight in travel mode with 90% fuel, accessories and tools)	
Maximum gradeability (laden)	
Maximum speed (kmph)	
Seating capacity and layout	

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DETAILED TECHNICAL SPECIFICATIONS FOR CONSTRUCTION EQUIPMENT VEHICLES

1 Details of Manufacturer

1.1 Manufacturer's name and address
1.2 Telephone No.
1.3 Fax No.
1.4 E-mail ID
1.5 Contact person

2.0 Vehicle Data

2.1 Basic model
2.2 Variant(s)
2.3 Type
2.4 Engine No.
2.5 Chassis No.
2.6 Publications available (Owner's manual, service manual, spare parts list)

3.0 Performance

3.1 Max. speed (kmph)
3.2 Stopping distance (m) (From initial speed kmph)
3.3 Parking brake performance
3.4 Climbing performance (start & stop)
3.5 Min. turning circle diameter (m)

4.0 Weights

4.1 Vehicle kerb weight (kg)
4.1.1 Front axle (FAW1, FAW2 etc.)
4.1.2 Rear axle (RAW1, RAW2 etc.)
4.1.3 Total

5.0 Dimensions

5.1 Overall length (m)
5.2 Overall width (m)
5.3 Overall height (m)
5.4 Wheel base (m)
5.5 Tread (m)
5.5.1 Front wheel
5.5.2 Rear wheel
5.6 Min. road clearance (m)
5.7 Road clearance from floor (m)
5.8 Body overhang (m)
5.8.1 Front end
5.8.2 Rear end
5.9 Gravity height (m)
5.10 Max. stable inclination angle
5.10.1 Left
5.10.2 Right
5.11 Riding capacity

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Note :

(i) The essential characteristics of the Parent engine and the Engines falling in the same family are as given in the enclosed Annexure - 1. Clause 6.0 to Clause 27.0 are related to the characteristics of the parent engine.

(ii) Clause A 6.0 to A 27.0 are related to the characteristics of every engine that falls within the same family. This may be filled separately for each engine.

6.0	**Engine (Parent)**
6.1	Type (NA/TC/TCIC, DI/IDI)
6.2	Manufacturer's name & Address of the Manufacturing Plant.
6.3	Working principle (four / two stroke)
6.4	Model name and identification
6.5	Type of fuel used
6.6	No.& Layout of cylinders & firing order
6.7	Swept volume (cc)
6.8	Bore (mm)
6.9	Stroke (mm)
6.10	Compression ratio (specify tolerance)
6.11	**Engine performance (declared by the manufacturer)**
6.11.1	Max. Gross power of engine on bench kW (Specify standard and tolerance)
6.11.2	Maximum Gross torque on bench Nm @ rpm
6.11.3	Engine RPM at max. Power (specify tolerance)
Note:	In case of diesel engines the max. power and max. torque shall be specified as per conditions given in Chapter 6 of Part IV of Doc. MoSRTH / CMVR / TAP-115 / 116 Issue No 3.
6.12	Location of engine (Front / Rear)
7.0	**Combustion**
7.1	Type of combustion chamber (Hemispherical / squish/others)
7.2	Drawings of combustion chamber and piston crown (mention drawing no)
7.3	Minimum cross section area of ports
7.3.1	Inlet (mm^2)
7.3.2	Outlet (mm^2)
8.0	**Liquid cooling system**
8.1	Nature of liquid and capacity
8.2	Circulating pump yes/no
8.3	Characteristics of Circulating pump or make(s) & type(s)
8.3.1	Drive ratio
8.4	Thermostat type and setting
9.2	Air ducting(std production)

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9.0	**Air Cooling system**
9.1	Blower characteristics
9.1.1	Make(s)
9.1.2	Type(s)
9.1.3	Drive ratio(s)
10.0	**Temperature regulating system (yes/no)**
10.1	Brief description
11.0	**Temperature permitted by manufacturer (^{0}C)**
11.1	Liquid cooling :-
11.1.1	Max. temp. at engine Outlet
11.2	Air cooling:-
11.2.1	Reference point
11.2.2	Max. temperature at reference point
11.3	Max. outlet temperature of the intercooled-air (Location of measurement be specified)
11.4	Max. exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds)
12.0	**Fuel temperature(^{0}C) :**
12.1	Minimum
12.2	Maximum
13.0	**Lubricant Temperature (^{0}C)** (Location of measurement be specified)
13.1	Minimum
13.2	Maximum
14.0	**Intake system**
14.1	Supercharger / Turbocharger – yes/no
14.1.1	Description of system
14.1.2	Make(s)
14.1.3	Type(s) & Part No.
14.2	Intake manifold
14.2.1	Description & Drawings
14.3	Air filter
14.3.1	Make
14.3.2	Type & Part No.
14.3.3	Dimensional drawing, with drawing number and part number
14.4	Intake silencer
14.4.1	Make
14.4.2	Type
14.5	Description & dimensional drawing of inlet pipe & their accessories (dash pot, heating device, additional air intake etc.)

14.6	Inter cooler
14.6.1	Make
14.6.2	Identification mark / & Part No.
15.0	**Fuel feed**
15.1	Injection system description
15.2	Working principle: intake manifold/ direct injection/ indirect injection/swirl chamber/others
15.3	Fuel Pump
15.3.1	Make(s) & Place / Country of origin (if imported)
15.3.2	Type(s) & Part No.
15.4	Delivery mm^3/per stroke at Rated speed and at Max Torque speed (specify tolerance) or characteristic diagram (specify tolerance)
15.5	Calibration procedure on engine/pump bench
15.6	Injection timing deg BTDC (specify tolerance)
15.7	Injection advance curve (attach the same)
15.8	Injection advance (specify the tolerance)
15.9	Injectors
15.9.1	Type, (mention holder, nozzle and assembly no(s))
15.9.2	Make & country of origin
15.9.3	Opening pressure (specify tolerance) or characteristic diagram
15.9.4	Injection piping
15.9.5	Length (mm)
15.9.6	Internal diameter (mm)
16.0	**Device for recycling crank-case gases**
16.1	Description & diagrams
17.0	**Governor**
17.1	Make(s) & country of origin
17.2	Type(s)
17.3	Cut off point under load (rpm)
17.4	Max. Speed without load (rpm)
17.5	Idle Speed (rpm)
18.0	**Cold start device (starting aid)**
18.1	Make(s)
18.2	Type(s)
18.3	System description

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19.0	**Starting System**
19.1	Make(s)
19.2	Type(s)
19.3	System description
20.0	**Valve timing / Port timing or equivalent data**
20.1	Max. lift of valves
20.1.1	Inlet (mm)
20.1.2	Exhaust (mm)
20.2	Angle of valves / port (w.r.t. top dead center)
20.3	Inlet
20.3.1	Opening
20.3.2	Closing
20.4	Exhaust
20.4.1	Opening
20.4.2	Closing
20.5	Transfer
20.5.1	Opening
20.5.2	Closing
20.6	Reference or setting ranges
20.7	Valve gap (Hot & Cold)
20.7.1	Inlet
20.7.2	Exhaust
20.8	Distribution by ports
20.8.1	Volume of crank-case cavity with piston at TDC
20.8.2	Description of reed valve if any with drawing
20.8.3	Description (with drawing) of inlet ports, scavenging and exhaust ports with corresponding timing. (The drawing should include one representing the inner surface of the cylinder)
21.0	**Lubrication system**
21.1	Description of system
21.2	Lubrication oil capacity lit
21.3	Position of lubricant reservoir
21.4	Lubricating oil grade
21.5	Feed system (pump, injection in to intake mixing with fuel etc.)
21.6	Lubricating pump
21.6.1	Make
21.6.2	Type

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21.7	Mixture with fuel : yes/no, and if yes %
21.8	Oil cooler : yes/no, and if yes Drawings/ makes & types
22.0	**Electrical equipment**
22.1	Generator/alternator characteristics (specify tolerance) or
22.1.1	Make
22.1.2	Type
23.0	**Other engine driven auxiliaries**:
23.1	Enumeration & brief description, if necessary
24.0	**Idling System**
24.1	Idling speed (rpm) (specify the tolerance)
24.2	Description of settings and relevant requirements
25.0	**Additional requirements**
25.1	Maximum permitted depression of air intake at characteristic place (Specify location of measurement) (kPa)
25.2	Exhaust back pressure at maximum Gross power and location of measurement (kPa)
25.3	Effective volume of exhaust -System (specify the tolerance & range) in liters (from exhaust manifold / TC outlet to tail pipe end), Enclose the exhaust system drawing and indicate the volume of each parts clearly.
25.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
25.6	Maximum rated speed (Specify the tolerance)
25.7	Minimum rated speed (Specify the tolerance)
25.8	Power absorbed by fan kW (specify the tolerance)
25.9	Max. Gross torque on bench, Nm@ rpm
25.10	Declared speed and powers of the engine submitted for type approval (Speeds to be agreed with the testing agency)

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Measurement point*	Engine speed rpm	Gross Power kW**

* See Chapter 3 of Part IV of Doc.MoSRTHST/CMVR/TAP115/116 Issue No 3.

** Gross power according to Chapter 6 of Part IV of Doc.MoSRTHST/CMVR/TAP115/116 Issue No 3.

26.0 Exhaust system :

26.1 Silencer, Number, Type and make

26.2 Identification mark (If proprietary) / Part No.

26.3 Internal dia. of exhaust pipe

26.4 Description (with a general arrangement , dimensional drawing of exhaust system along with its routing indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location)

26.5 Minimum distance between exhaust pipe(s) and the fuel line

27.0 Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)

27.1 Catalyser make, Number

27.2 Identification Mark / Part No

27.3 Type of catalytic action (One/two/three way)

27.4 Total charge of precious metal (g/vehicle)

27.5 Relative concentration (%)

27.5.1 Platinum

27.5.2 Rhodium

27.5.3 Palladium

27.6 Substrate (Monolythic metal/ Ceramic/ honeycomb)

27.7 Cell density (cells per sq. inch)

27.8 Type of casing for catalyser

27.9 Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)

27.10	**Electronic Control Unit (ECU)**
27.10.1	Make
27.10.2	Identification mark
27.10.3	Calibration Identification No.
27.11	**Secondary Air Injection**
27.11.1	Make
27.11.2	Identification mark
27.12	**Exhaust Gas Recirculating System**
27.12.1	Make
27.12.2	Type
27.12.3	Identification mark

Note : The following Clause A 6.0 to A 27.0 are to be filled separately for each of the engines that fall within the same family :

A6.0	**Engine (Type within the Family)**
A6.1	Type (NA/TC/TCIC, DI/IDI)
A6.2	Manufacturer's name & Manufacturing Plant address.
A6.3	Working principle (four / two stroke)
A6.4	Model name and identification
A6.5	Type of fuel used
A6.6	No.& Layout of cylinders & firing order
A6.7	Swept volume (cc)
A6.8	Bore(mm)
A6.9	Stroke (mm)
A6.10	Compression ratio (specify tolerance)
A6.11	**Engine performance (declared by the manufacturer,)**
A6.11.1	Max. Gross power of engine on bench (kW) (Specify standard and tolerance)
A6.11.2	Maximum Gross torque on bench (Nm @ rpm)
A6.11.3	Engine RPM at max. Power (specify tolerance)
Note:	**In case of diesel engines the max. power and max. torque shall be specified as per conditions given in Chapter 6 of Part IV of Doc. MoSRTH / CMVR / TAP-115 / 116 Issue No 3.**
A6.12	**Location of engine (Front / Rear)**

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A7.0	**Combustion :**
A7.1	Type of combustion chamber (Hemispherical / squish/others)
A7.2	Drawings of combustion chamber and piston crown (mention drawing no)
A7.3	Minimum cross section area of ports
A7.3.1	Inlet mm^2
A7.3.2	Outlet mm^2
A8.0	**Liquid cooling system**
A8.1	Nature of liquid and capacity
A8.2	Circulating pump yes/no
A8.3	Characteristics of Circulating pump or make(s) & type(s)
A8.3.1	Drive ratio
A8.4	Thermostat type and setting
A9.0	Air Cooling system
A9.1	Blower characteristics
A9.1.1	Make(s)
A9.1.2	Type(s)
A9.1.3	Drive ratio(s)
A9.2	Air ducting(std production)
A10.0	**Temperature regulating system (yes/no)**
A11.0	**Temperature permitted by manufacturer (^0C)**
A11.1	Liquid cooling:-
A11.1.1	Max. temp. at engine Outlet
A11.2	Air cooling:-
A11.2.1	Reference point
A11.2.2	Max. temperature at reference point
A11.3	Max. outlet temperature of the intercooled - air (Location of measurement to be specified)
A11.4	Maximum exhaust temperature (^0C)
A11.4.1	Max. exhaust temperature (in case of diesel engines, at the point in the exhaust pipe(s) adjacent in outlet flange(s) of exhaust manifolds)
A12.0	**Fuel temperature (^0C)**
A12.1	Minimum
A12.2	Maximum

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A13.0	**Lubricant Temperature (^{0}C) (Location of measurement to be specified)**
A13.1	Minimum
A13.2	Maximum
A14.0	**Intake system**
A13.1	Supercharger / Turbocharger - yes/no
A14.1.1	Description of system
A14.1.2	Make(s)
A14.1.3	Type(s) & Part No.
A14.2	**Intake manifold**
A1$.2.1	Description & Drawings
A14.3	**Air filter**
A14.3.1	Make
A14.3.2	Type & Part No.
A14.3.3	Dimensional drawing, with drawing number and part number
A14.4	**Intake silencer**
A14.4.1	Make
A14.4.2	Type
A14.5	Description & diagrams of inlet pipe & their accessories (dash pot, heating device, additional air intake etc.)
A14.6	**Inter cooler**
A14.6.1	Make
A14.6.2	Identification mark / & Part No.
A15.0	**Fuel feed**
A15.1	Injection system description
A15.2	Working principle: intake manifold/ direct injection / indirect injection / swirl chamber/others
A15.3	**Fuel Pump**
A15.3.1	Make(s) & country of origin (if imported)
A15.3.2	Type(s) & Part No.
A15.4	Delivery mm^3/per stroke at Rated speed and at Max Torque speed (specify tolerance) or characteristic diagram (specify tolerance)
A15.5	Calibration procedure on engine/pump bench
A15.6	Injection timing deg BTDC (specify tolerance)
A15.7	Injection advance curve (attach the same)
A15.8	Injection advance (specify the tolerance)

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A15.9	**Injectors**
A15.9.1	Type, (mention Holder, Nozzle & assembly no(s))
A15.9.2	Make & country of origin
A15.9.3	Opening pressure (specify tolerance) or characteristic diagram
A15.9.4	Injection piping
A15.9.5	Length mm
A15.9.6	Internal diameter (mm)
A16.0	**Device for recycling crank-case gases**
A16.1	Description & diagrams
A17.0	**Governor**
A17.1	Make(s) & country of origin
A17.2	Type(s)
A17.3	Cut off point under load (rpm)
A17.4	Max. Speed without load (rpm)
A17.5	Idle Speed (rpm)
A18.0	**Cold start device (starting aid)**
A18.1	Make(s)
A18.2	Type(s)
A18.3	System description
A19.0	**Starting System**
A19.1	Make(s)
A19.2	Type(s)
A19.3	System description
A20.0	**Valve timing / Port timing or equivalent data**
A20.1	Max. lift of valves
A20.1.1	Inlet (mm)
A20.1.2	Exhaust (mm)
A20.2	Angle of valves / port (w.r.t. top dead center)
A20.3	Inlet
A20.3.1	Opening
A20.3.2	Closing
A20.4	Exhaust
A20.4.1	Opening
A20.4.2	Closing
A20.5	Transfer
A20.5.1	Opening
A20.5.2	Closing
A20.6	Reference or setting ranges
A20.7	Valve gap (Hot & Cold)

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A20.7.1	Inlet
A20.7.2	Exhaust
A20.8	Distribution by ports
A20.8.1	Volume of crank-case cavity with piston at TDC
A20.8.2	Description of reed valve if any with drawing
A20.8.3	Description (with drawing) of inlet ports, scavenging and exhaust ports with corresponding timing. (The drawing should include one representing the inner surface of the cylinder)
A21.0	**Lubrication system**
A21.1	Description of system
A21.2	Lubrication oil capacity lit
A21.3	Position of lubricant reservoir
A21.4	Lubricating oil grade
A21.5	Feed system(pump, injection in to intake mixing with fuel etc.,)
A21.6	Lubricating pump
A21.6.1	Make
A21.6.2	Type
A21.7	Mixture with fuel : yes/no, and if yes %
A21.8	Oil cooler : yes/no, and if yes Drawings/ makes & types
A22.0	**Electrical equipment**
A22.1	Generator/alternator characteristics (specify tolerance) or
A22.1.1	Make
A22.1.2	Type
A23.0	**Other engine driven auxiliaries**
A23.1	Enumeration & brief description, if necessary
A24.0	**Idling System**
A24.1	Idling speed (rpm) (specify the tolerance)
A24.2	Description of settings and relevant requirements
A25.0	**Additional requirements**
A25.1	Maximum permitted depression of air intake at characteristic place, in kPa (Specify the location of measurement)

A25.2	Exhaust back pressure at maximum Gross power and location of measurement (kPa)
A25.3	Effective volume of exhaust-System (specify the tolerance & range) in liters (from exhaust manifold / TC outlet to tail pipe end), Enclose the exhaust system drawing and indicate the volume of each parts clearly.
A25.4	Moment of inertia of combined flywheel & transmission at condition when no gear is engaged
A25.5	Maximum rated speed (Specify the tolerance)
A25.6	Minimum rated speed (Specify the tolerance)
A25.7	Power absorbed by fan (kW) (specify the tolerance)
A25.8	Max. Gross torque on bench (Nm@ rpm)

A25.9 Declared speed and powers of the engine submitted for type approval (Speeds to be agreed with the testing agency)

Measurement point*	Engine speed rpm	Gross Power kW**

* See Chapter 3 of Part IV of Doc.MoSRTHST/CMVR/TAP115/116 Issue No 3.

** Gross power according to Chapter 6 of Part IV of Doc.MoSRTHST/CMVR/TAP115/116 Issue No 3.

A26.0 Exhaust system

A26.1 Silencer, Number, Type and make

A26.2 Identification mark (If proprietary) / Part No.

A26.3 Internal dia. of exhaust pipe

A26.4 Description (with a general arrangement dimensional drawing of exhaust system along with its routing indicating the lengths of exhaust pipe, tail pipe and exhaust outlet location)

A26.5 Minimum distance between exhaust pipe(s) and the fuel line

A27.0 Additional emission control devices, such as catalytic converter etc. (if any & if not covered by another heading)

A27.1 Catalyser make, Number

A27.2 Identification Mark / Part No.

A27.3 Type of catalytic action (One/two/three way)

A27.4 Total charge of precious metal (g/vehicle)

A27.5 Relative concentration (%)

A27.5.1 Platinum

A27.5.2 Rhodium

A27.5.3 Palladium

A27.6 Substrate (Monolythic metal/ Ceramic/ honeycomb)

A27.7 Cell density (cells per sq. inch)

A27.8 Type of casing for catalyser

A27.9 Diagram indicating the arrangement and position of catalytic converter w.r.t. exhaust manifold)

A27.10	**Electronic Control Unit (ECU)**
A27.10.1	Make
A27.10.2	Identification mark
A27.10.3	Calibration Identification No.
A27.11	**Secondary Air Injection**
A27.11.1	Make
A27.11.2	Identification mark
A27.12	**Exhaust Gas Recirculating System**
A27.12.1	Make
A27.12.2	Type
A27.12.3	Identification mark
28.0	**Fuel tank**
28.1	Name of producer
28.2	Material
28.3	Capacity
28.4	Position
29.0	**Transmission system**
29.1	Mechanism from engine to transmission
29.2	Reduction ratio from engine to transmission
29.3	Clutch
29.3.1	Name of producer
29.3.2	Type
29.3.3	Control system
29.4	Facing
29.4.1	Name of producer
29.4.2	Dimension (mm)

29.4.3	Area (cm^2)
29.4.4	Number of operating faces
29.4.5	Material
29.5	Transmission clutch fluid capacity
29.6	Booster type
29.6.1	Name of producer
29.6.2	Type
30.0	**Control system**
30.1	Gear ratio
30.1.1	1st
30.1.2	2nd
30.1.3	3rd
30.1.4	4th
30.1.5	5th
30.1.6	6th
30.1.7	Reverse 1st
30.2	Sub transmission
30.2.1	Type
30.3	Gear ratio
30.3.1	High
30.3.2	Low
30.4	Propeller shaft
30.5	Length inside & outside diameter, mm
30.5.1	1st
30.5.2	2nd
30.5.3	3rd
30.5.4	4th
30.6	Universal joint
30.6.1	Type
30.6.2	Number
30.7	Crown wheel
30.7.1	Type
30.7.2	Reduction ratio
30.8	Differential
30.8.1	Type
30.9	Running system
30.9.1	Front axle
30.9.1.1	Type
30.9.1.2	Toe-in (mm)
30.9.1.3	Camber angle
30.9.1.4	Caster angle
30.9.1.5	King pin angle
30.9.1.6	Trial (mm)
30.9.2	Rear axle
30.9.2.1	Type
30.9.2.2	Toe-in (mm)

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30.9.2.3	Camber angle
30.9.2.4	Caster angle
30.9.2.5	King pin angle
30.9.2.6	Trial (mm)
31.0	**Steering system**
31.1	Type
31.2	Steering wheel Position
31.3	Outside diameter mm
31.4	Maximum number of rotations of steering wheel from lock to lock
31.5	Type of axis & joint
31.6	Steering gear type
31.7	Steering gear ratio
31.8	Steering angle
31.8.1	Inside
31.8.2	Outside
31.9	Booster
31.9.1	Name of producer
31.9.2	Type
31.9.3	Kind of oil
31.9.4	Oil capacity (l)
31.10	Locking device
31.10.1	Name of producer
31.10.2	Type
31.10.3	Mounting position
32.0	**Tyres**
32.1	No. and arrangement of wheels
32.1.1	Front
32.1.2	Rear
32.1.3	Others
32.2	Tyre type (Radial/cross ply), size & ply rating
32.2.1	Front wheel
32.2.2	Rear wheel
32.2.3	Other
32.3	Rolling radius (mm)
32.3.1	Static
32.3.2	Dynamic (if data is available)
32.4	Inflation pressure – Unladen (kg/cm^2 / kPa)
32.4.1	Front
32.4.2	Rear
32.4.3	Other
32.5	Inflation pressure – Laden (kg/cm^2 / kPa)
32.5.1	Front
32.5.2	Rear

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32.5.3	Other
32.6	Makes:
32.7	Tread Wear Indicator, Provided (Yes/No)
32.8	Month & Year code of manufacture, Provided (Yes/No)
32.9	Maximum loading capacity, Provided (Yes/No)
33.0	**Wheel rim**
33.1	Size
33.1.1	Front
33.1.2	Rear
33.1.3	Others
33.2	Name of manufacturer
33.3	Identification mark
33.4	Pitch circle dia. of mounting bolts (mm)
33.5	Number of mounting bolts
33.6	Material (Steel/ Aluminum alloy etc.)
34.0	**Braking system**
34.1	Service brake (Description)
34.1.1	Name of producer
34.1.2	Type
34.2	Secondary brake (Description)
34.2.1	Name of producer
34.2.2	Type
34.3	Control system & braking wheel
34.4	Dimensions of lining or pad, (L x W x t)
34.4.1	Front wheels (mm)
34.4.2	Rear wheels (mm)
34.5	Area of lining or pad (cm^2)
34.5.1	Front wheels (cm^2)
34.5.2	Rear wheels (cm^2)
34.6	Brake drum or disc effective diameter (mm)
34.6.1	Front wheel
34.6.2	Rear wheel
34.7	Lining or pad
34.7.1	Name of producer
34.7.2	Material (Asbestos / Asbestos free)
34.8	Master cylinder or brake valve
34.8.1	Name of producer
34.8.2	Type
34.9	Inner diameter of master cylinder (mm)

34.10	Type of supply tank
34.11	Inner diameter of wheel cylinder or brake piston cap
34.11.1	Front wheel
34.11.2	Rear wheel
34.12	Booster
34.12.1	Name of producer
34.12.2	Type
34.12.3	Magnification
34.13	Air compressor & others
34.14	Vacuum or air
34.15	Air pressure (kg/cm^2)
34.16	Type of vacuum pump or air compressor
34.17	Type of pressure regulator
34.18	Tank
34.18.1	Position
34.18.2	Capacity (l)
34.19	Brake pipe
34.19.1	Name of producer
34.19.2	Material
34.19.3	Rust proof treatment
34.20	**Brake hose (Hydraulic)**
34.20.1	Make and country of origin (if imported)
34.20.2	Identification mark / Part Number
34.30.3	Length of hose (mm)
34.20.4	Nominal bore diameter (mm)
34.20.5	End fitting type
34.20.6	Material
34.21	**Brake fluid**
34.21.1	Name of manufacturer
34.21.2	Trade name
34.21.3	Specification / grade as per Indian standard
34.22	Braking force (stepping force kg)
34.23	Type of braking force control system
34.24	Warning device for braking
34.24.1	Type
34.25	Operation pressure ($kg./cm^2$)
34.26	Type of safety device
34.27	Parking brake
34.27.1	Name of producer
34.27.2	Type
34.27.3	Braking wheel

34.28	Lining
34.28.1	Name of producer
34.28.2	Dimension of lining or pad (L x W x t)
34.28.2.1	Front wheel (mm)
34.28.2.2	Rear wheel (mm)
34.28.3	Area of lining pad
34.28.3.1	Front
34.28.3.2	Rear
34.28.4	Material
34.29	Diameter of brake drum, mm
34.30	Braking force (Operation force kg.)
34.31	Auxiliary brake
34.31.1	Type
34.31.2	Performance
34.32	Emergency brake
34.32.1	Type
34.32.2	Performance
34.33	Separate brake
34.33.1	Type
34.33.2	Performance
35.0	**Suspension system**
35.1	Front axle
35.1.1	Type of suspension
35.1.2	Type of spring
35.1.3	Dimension of main spring (mm)
35.1.3.1	Stack
35.1.3.2	Flat length
35.1.3.3	Free camber
35.1.3.4	Dimension of auxiliary spring
35.2	Rear axle
35.2.1	Type of suspension
35.2.2	Type of spring
35.2.3	Dimension of main spring
35.2.3.1	Stack
35.2.3.2	Flat length
35.2.3.3	Free camber
35.2.3.4	Dimension of auxiliary spring
35.3	Type of shock absorber
35.3.1	Front wheel
35.3.2	Rear wheel
35.4	Type of stabilizer
35.4.1	Front wheel
35.4.2	Rear wheel

36.0	**Chassis frame**
36.1	Type
36.2	Cross sectional view
36.3	Dimension, mm
36.4	Type of side protection device
37.0	**Windscreen wiping system**
37.1	Wind screen wiper
37.1.1	Type (manual/power)
37.1.2	No. of wipers
37.2	Wiper motor
37.2.1	Name of manufacturer
37.2.2	Type and identification
37.2.3	Rated voltage
37.2.4	Number of sweep Frequencies
37.2.5	Highest sweep frequency (cycles/min)
37.2.6	Lowest sweep frequency (cycles/min)
37.3	Wiper arm
37.3.1	Length
37.3.2	Manufacturer and Identification
37.4	Wiper blade
37.4.1	Length
37.4.2	Manufacturer and Identification
37.4.3	Rubber material
37.5	Type of fixing (as per IS:7827)
37.6	H point
37.7	Windscreen washing system
37.8	Type
37.9	Make
37.10	Defroster
37.11	Type
37.12	Make
37.13	Drawing indicating the seat back angle, seat travel, H point, Rake angle ,F point, steering wheel position and the related dimensions (Ref : Figure 1 and Figure 2 of AIS -011)
38.0	**Equipment for safety**
38.1	Seat belt anchorages
38.1.1	Name of producer
38.1.2	Type
38.1.3	Number
38.2	Seat belt
38.2.1	Name of producer
38.2.2	Type
38.2.3	Number

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38.3.1	Head restraint
38.3.2	Name of producer
38.3.3	Type
38.3.4	Number
38.4	Type of room safety device
38.5	Type of air conditioner
38.6	Position of emergency exit
38.7	Type of device preventing vehicle starting with door opened
39.0	**Safety Glass**
39.1	Front wind shield
39.1.1	Name of producer
39.1.2	Type
39.1.3	Thickness, mm
39.1.4	Radius of curvature if curved
39.2	Glasses other than front wind shield
39.2.1	Name of producer
39.2.2	Type
39.2.3	Thickness
39.2.4	Radius of curvature if curved
40.0	**Rear view mirror**
40.1	Left
40.1.1	Name of producer
40.1.2	Type
40.1.3	Dimension & radius of curvature (mm)
40.2	Right
40.2.1	Name of producer
40.2.2	Type
40.2.3	Dimension & radius of curvature (mm)
40.3	Inside
40.3.1	Name of producer
40.3.2	Type
40.3.3	Dimension & radius of curvature (mm)
41.0	**Horn**
41.1	Name of producer
41.2	Type
41.3	**Operating voltage**
41.4	Identification No. / Part No.
43.5	Number
42.0	**Controls** (Specify method of operation)
42.1	Ignition
42.2	Horn
42.3	Lamps (Head lamp, Tail lamp, Parking lamp and Number plate lamp)
42.4	Turn signal

42.5	Transmission shift lever
42.6	Wind shield wiper
42.7	High beam/low beam
42.8	Parking brake
42.9	Master switch for electrical
42.10	Hazard warning signal
42.11	Service Brake
42.12	Accelerator Pedal (Floor hinged/hanging type)
42.13	Others
43.0	**Displays and tell tales** (Indicate the type of tell tales provided and whether they are symbols or letters)
43.1	Head lamp – upper / lower control
43.2	Ignition cut-off
43.3	Turn signal
43.4	Fuel Gauge
43.5	Engine coolant temperature
43.6	Low oil pressure
43.7	High beam indicator
43.8	Electrical charge indicator
43.9	Brake failure
43.10	Battery Charging
43.11	Engine oil
43.14	Horn
43.15	Speedometer
43.16	Odometer
44.0	**Auto lamps (bulbs)**
44.1	Head lamp bulb (main and dip)
44.1.1	Make and Country of origin (if imported)
44.1.2	Designation as per AIS – 034
44.2	Parking Lamp bulb – Front
44.2.1	Make and Country of origin (if imported)
44.2.2	Designation as per AIS – 034
44.3	Parking Lamp bulb – Rear
44.3.1	Make and Country of origin (if imported)
44.3.2	Designation as per AIS – 034
44.4	Direction indicator lamp bulb - front
44.4.1	Make and Country of origin (if imported)
44.4.2	Designation as per AIS – 034
44.5	Direction indicator lamp bulb - rear
44.5.1	Make and Country of origin (if imported)
44.5.2	Designation as per AIS – 034
44.6	Direction indicator lamp bulb - side
44.6.1	Make and Country of origin (if imported)

44.6.2	Designation as per AIS – 034
44.7	Front Position Lamp bulb
44.7.1	Make and Country of origin (if imported)
44.7.2	Designation as per AIS – 034
44.8	**Rear Position Lamp (tail lamp)Bulb**
44.8.1	Make and Country of origin (if imported)
44.8.2	Designation as per AIS – 034
44.9	Stop lamp bulb
44.9.1	Make and Country of origin (if imported)
44.9.2	Designation as per AIS – 034
44.10	Number plate lamp bulb
44.10.1	Make and Country of origin (if imported)
44.10.2	Designation as per AIS – 034
44.11	**End out Marker bulb**
44.11.1	Make and Country of origin (if imported)
44.11.2	Designation as per AIS – 034
44.12	Reversing lamp bulb
44.12.1	Make and Country of origin (if imported)
44.12.2	Designation as per AIS – 034
44.13	**Stop Lamp Bulb (S3)**
44.13.1	Make and Country of origin (if imported)
44.13.2	Designation as per AIS – 034
44.14	**Front Fog Lamp Bulb**
44.14.1	Make and Country of origin (if imported)
44.14.2	Designation as per AIS – 034
44.15	Rear Fog Lamp Bulb
44.15.1	Make and Country of origin (if imported)
44.15.2	Designation as per AIS – 034
44.16	Side Marker Lamp Bulb
44.16.1	Make and Country of origin (if imported)
44.16.2	Designation as per AIS – 034
45.0	**Lighting equipment**
45.1	**Head lamp**
45.1.1	Main beam
45.1.1.1	Make and Country of origin (if imported)
45.1.1.2	Type of lens (Glass / Plastic)
45.1.1.3	Identification No. / Part No.
45.1.1.4	Number and Colour of Lens
45.1.2	Dipped beam
45.1.2.1	Make and Country of origin (if imported)
45.1.2.2	Type of lens (Glass / Plastic)
45.1.2.3	Identification No. / Part No.
45.1.2.4	Number and Colour of Lens

45.2	Front Fog Lamp
45.2.1	Make and Country of origin (if imported)
45.2.2	Type of lens (Glass / Plastic)
45.2.3	Identification No. / Part No.
45.2.4	Number and Colour of Lens
45.3	Rear Fog Lamp
45.3.1	Make and Country of origin (if imported)
45.3.2	Type of lens (Glass / Plastic)
45.3.3	Identification No. / Part No.
45.3.4	Number and Colour of Lens
45.4	**Side Marker lamps**
45.4.1	Make and Country of origin (if imported)
45.4.2	Type of lens (Glass / Plastic)
45.4.3	Identification No. / Part No.
45.4.4	Number and colour of Lens
45.5	**Registration Plate lamp**
45.5.1	Make and Country of origin (if imported)
45.5.2	Type of lens (Glass / Plastic)
45.5.3	Identification No. / Part No.
45.5.4	Number and colour of Lens
45.6	**Position lamp / Parking Lamp - Front**
45.6.1	Front Position Lamp
45.6.1.1	Make and Country of origin (if imported)
45.6.1.2	Type of lens (Glass / Plastic)
45.6.1.3	Identification No. / Part No.
45.6.1.4	Number and colour of Lens
45.6.2	**Front Parking Lamp**
45.6.2.1	Make and Country of origin (if imported)
45.6.2.2	Type of lens (Glass / Plastic)
45.6.2.3	Identification No. / Part No.
45.6.2.4	Number and colour of Lens
45.7	**Position lamp / Parking Lamp - Rear**
45.7.1	Rear Position Lamp
45.7.1.1	Make and Country of origin (if imported)
45.7.1.2	Type of lens (Glass / Plastic)
45.7.1.3	Identification No. / Part No.
45.7.1.4	Number and colour of Lens
45.7.2	**Rear Parking Lamp**
45.7.2.1	Make and Country of origin (if imported)
45.7.2.2	Type of lens (Glass / Plastic)
45.7.2.3	Identification No. / Part No.
45.7.2.4	Number and colour of Lens

45.8	**Stop lamp (S1 / S2)**
45.8.1	Make and Country of origin (if imported)
45.8.2	Type of lens (Glass / Plastic)
45.8.3	Identification No. / Part No.
45.8.4	Number and colour of Lens
45.9	**Stop lamp (S3) for M1 category**
45.9.1	Make and Country of origin (if imported)
45.9.2	Type of lens (Glass / Plastic)
45.9.3	Identification No. / Part No.
45.9.4	Number and colour of lens
45.10	**Reversing lamp**
45.10.1	Make and Country of origin (if imported)
45.10.2	Type of lens (Glass / Plastic)
45.10.3	Identification No. / Part No.
45.10.4	Number and colour of Lens
45.11	**Direction indicator Lamp**
45.11.1	Front
45.11.1.1	**Make and Country of origin (if imported)**
45.11.1.2	Type of lens (Glass / Plastic)
45.11.1.3	Identification No. / Part No.
45.11.1.4	Number and colour of Lens
45.11.2	Rear
45.11.2.1	Make and Country of origin (if imported)
45.11.2.2	Type of lens (Glass / Plastic)
45.11.2.3	Identification No. / Part No.
45.11.2.4	Number and colour of Lens
45.11.3	Side
45.11.3.1	Make and Country of origin (if imported)
45.11.3.2	Type of lens (Glass / Plastic)
45.11.3.3	Identification No. / Part No.
45.11.3.4	Number and colour of Lens
45.11.4	Type of flasher
45.12	**Hazard warning signal**
45.12.1	Front
45.12.1.2	Make and Country of origin (if imported)
45.12.1.3	Type of lens (Glass / Plastic)
45.12.1.4	Identification No. / Part No.
45.12.1.5	Number and Colour of lens
45.12.2	Rear
45.12.2.1	Make and Country of origin (if imported)
45.12.2.2	Type of lens (Glass / Plastic)

45.12.2.3	Identification No. / Part No.
45.12.2.4	Number and Colour of lens
45.12.3	Side
45.12.3.1	Make and Country of origin (if imported)
45.12.3.2	Type of lens (Glass / Plastic)
45.12.3.3	Identification No. / Part No.
45.12.3.4	Number and Colour of lens
46.0	**Reflector**
46.1	Front
46.1.1	Name of producer
46.1.2	Type & identification
46.1.3	Number and colour
46.1.4	Performance
46.2	Rear
46.2.1	Name of producer
46.2.2	Type & identification
46.2.3	Number and colour
46.2.4	Performance
46.3	Side
46.3.1	Name of producer
46.3.2	Type & identification
46.3.3	Number and colour
46.3.4	Performance
46.4	Yellow flasher
46.4.1	Name of producer
46.4.2	Type & identification
46.4.3	Number and colour
46.4.4	Performance
46.5	Warning device horn
46.5.1	Name of producer
46.5.2	Type & identification
46.5.3	Number
46.5.4	Performance
46.6	Visibility ensuring device
47.0	**Meters**
47.1	Speedometer
47.1.1	Name of producer
47.1.2	Model
47.1.3	Type
47.1.4	Performance & error
47.2	Odometer
47.2.1	Name of producer
47.2.2	Model
47.2.3	Type

47.2.4	Performance & error
47.3	Tachograph
47.3.1	Name of producer
47.3.2	Model
47.3.3	Type
47.3.4	Performance & error
47.4	Pressure gauge
47.4.1	Name of producer
47.4.2	Model
47.4.3	Type
47.4.4	Performance
47.5	Engine speed indicator
47.5.1	Name of producer
47.5.2	Model
47.5.3	Type
47.5.4	Performance
47.6	Fire extinguisher
47.6.1	Name of producer
47.6.2	Model
47.6.3	Type
47.6.4	Performance
47.7	Pressure container
47.7.1	Name of producer
47.7.2	Capacity of producer
47.7.3	Max. Pressure for use (kg/cm^2)
47.7.4	Material
47.8	List of spare tools normally given with the vehicle
48.0	Additional information, if any

Annexure I

ESSENTIAL CHARACTERISTICS OF THE ENGINE FAMILY

1.0 Common Parameters [1]

1.1. Combustion cycle: .
1.2. Cooling medium: .
1.3. Method of air aspiration: .
1.4. Combustion chamber type/design: .
1.5. Valve and porting - configuration, size and number:
1.6. Fuel system: .
1.7. Engine management systems:
Proof of identity pursuant to drawing number(s):
- charge cooling system: .
- exhaust gas recirculation [2]: .
- water injection/emulsion [2]: .
- air injection [2]: .

1.8. Exhaust after-treatment system [2]: .
Proof of identical (or lowest for the parent engine) ratio: system capacity/fuel delivery per stroke, pursuant to diagram number(s):

2.0 Engine Family Listing

2.1. Name of engine family: .

2.2. Specification of engines within this family:

					Parent engine
Engine Type					
No of cylinders					
Rated speed (rpm)					
Rated Gross power (kW)					
Maximum torque speed (rpm)					
Fuel delivery per stroke at Rated Speed (mm3)					
Fuel delivery per stroke at Max Torque Speed (mm3)					
Maximum torque (Nm)					
Low idle speed (rpm)					
Cylinder displacement (in % of parent engine)					100

[1] To be completed in conjunction with the specifications given in Annexure II

[2] If not applicable mark n.a.

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BRIEF TECHNICAL SPECIFICATIONS FOR AGRICULTURAL / OTHER TRACTORS

(To be submitted by the Applicant/ Manufacturer to testing Agency in quadruplicate)

1.0	**General description about manufacturer/applicant**	
1.1	**Details of tractor Manufacturer:**	
1.1.1	Name & Address of Manufacturer	
1.1.2	Telephone Number (s)	
1.1.3	Fax Number (s)	
1.1.4	E mail Address	
1.1.5	Website	
1.2	**Details of Applicant, if other than manufacturer**	
1.2.1	Address of applicant	
1.2.2	Telephone Number (s)	
1.2.3	Fax Number (s)	
1.2.4	E mail Address	
1.2.5	Website	
2.0	**Brief technical specification of tractor**	
2.1	**Agricultural Tractor / Other Tractor**	
2.1.1	Make	
2.1.2	Model	
2.1.3	Type	
2.1.4	Variant(s) if any (please give brief description of variants separately.	
2.1.5	Chassis No.	
2.1.6	Serial Number	
2.1.7	Year of manufacture(attach coding system letter also)	
2.1.8	Max. PTO power, kW @ rpm (declared value)	
2.1.9	Rated PTO power, kW @ rpm (declared value)	
2.1.10	Whether tested in India earlier , If yes, specify Name of Test Agency & its test report No. with month and year of issue	**Yes / No**
3.0	**Prime Mover for the Tractor**	
3.0.1	Make	
3.0.2	Model	
3.0.3	Type	
3.0.4	Serial Number	
3.0.5	Bore / stroke, mm (apa)	
3.0.6	Capacity (cc)	
3.0.7	No. of cylinders	
3.0.8	Rated engine speed (rpm)	

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3.0.9	Max engine out put (kW @ rpm) (declared value)
3.0.10	Rated engine out put (kW @ rpm) (declared value)
3.0.11	Arrangement of valves
3.1	**Air Cleaner**
3.1.1	Nos.
3.1.2	Location
3.1.3	Type
3.2	**Cooling System**
3.2.1	Type
3.2.2	Radiator cap pressure marking (kPa) (kgf/cm^2)
3.3	**Fuel System**
3.3.1	Type
3.4	**Fuel filter(s)**
3.4.1	Make
3.4.2	Type
3.4.3	Number(s)
3.4.4	Additional filter(s), if any
3.5	**Fuel feed pump**
3.5.1	Make
3.5.2	Type
3.5.3	Model / Group Combination No.
3.6	**Fuel Injection Pump**
3.6.1	- Make
3.6.2	- Model / Group Combination No.
3.6.3	- Type
3.6.4	- Serial number
3.7	**Governor**
3.7.1	- Make
3.7.2	- Model/group combination No.
3.7.3	- Type
4.0	**Fuel tank**
4.1	Material
4.2	Location
4.3	Capacity l
5.0	Lubrication System :
5.1	Type
5.2	No. & type of oil filter (s)
6. 0	Clutch
6. 1	Type
6. 2	No. of plate (s)

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6.2.1	- Main
6.2.2	- PTO
7.0	**Gear box**
7.1	Make
7.2	Model & identification no., if any
7.3	Type
7.4	No. of arrangements
7.5	**No. of speeds**
7.5.1	- Forward
7.5.2	- Reverse
7.6	**Range of speeds (kmph)**
7.6.1	- Forward
7.6.2	- Reverse
8.0	**Steering**
8.1	Make
8.2	Type
8.3	Steering wheel dia. (mm)
8.4	Location of steering wheel
8.5	Steered axle
8.6	Minimum turning diameter (m)
9.0	**Wheel equipment & tyres**
9.1	**Front :**
9.1.1	Tyre size & ply rating
9.1.2	Track width range mm
9.1.3	Recommended tyre pressure for road work, kPa (kgf/cm^2)
9.1.4	Optional tyre size & ply rating
9.2	**Rear :**
9.2.1	Tyre size & ply rating
9.2.2	Track width range (mm)
9.2.3	Recommended tyre pressure for road work, kPa (kgf/cm^2)
9.2.4	Optional tyre size & ply rating
10.0	Brakes
10.1	Service brake
10.1.1	Type, Mechanical/Hydraulic /Any other(describe briefly)
10.1.2	Location
10.1.3	Method of operation
10.2	Hand / Parking brake
10.2.1	Type and brief description

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10.2.2	Location	
10.2.3	Method of operation	
11.0	**Electrical system of tractor**	
11.1	System voltage,(V)	
11.2	Terminal earthed	
12.0	**Battery**	
12.1	Type	
12.2	- Number(s)	
12.3	- Capacity and rating	-------- Ah at 20 hours discharge rate
13.0	**Generator (Alternator/Dynamo)**	
13.1	Type	
13.2	Max. output (W)	
14.0	**Starter**	
14.1	Type	
14.2	Max power input (kW)	
15.0	**Lights & Reflectors**	
15.1	Head Lights	
15.1.1	- Make	
15.1.2	- Numbers	
15.1.3	- Wattage of bulbs (W)	
15.1.4	- Location	
15.1.5	- Colour	
15.2	**Parking Light(s)**	
15.2.1	**Front :**	
15.2.1.1	- Make	
15.2.1.2	- Number(s)	
15.2.1.3	- Wattage of bulbs (W)	
15.2.1.4	- Location	
15.2.1.5	- Colour	
15.2.2	**Rear**	
15.2.2.1	- Make	
15.2.2.2	- Number(s)	
15.2.2.3	- Wattage of bulbs (W)	
15.2.2.4	- Location	
15.2.2.5	- Colour	
15.3	**Turn indicator light(s)**	
15.3.1	Front	
15.3.1.1	- Make	
15.3.1.2	- Number(s)	
15.3.1.3	- Wattage of bulbs (W)	
15.3.1.4	- Location	
15.3.1.5	- Colour	

15.3.2	Rear			
15.3.2.1	- Make			
15.3.2.2	- Number(s)			
15.3.2.3	- Wattage of bulbs (W)			
15.3.2.4	- Location			
15.3.2.5	- Colour			
15.4	**Brake / stop light**			
15.4.1	- Make			
15.4.2	- Number(s)			
15.4.3	- Wattage of bulbs (W)			
15.4.4	- Location			
15.4.5	- Colour			
15.5	**Plough / work light**			
15.5.1	- Make			
15.5.2	- Number(s)			
15.5.3	- Wattage of bulbs (W)			
15.5.4	- Location			
15.5.5	- Colour			
15.6	**Reflector(s)**			
15.6.1	Front :			
15.6.1.1	- Shape			
15.6.1.2	- No.(s)			
15.6.1.3	- Location			
15.6.1.4	- Colour			
15.6.2	Rear :			
15.6.2.1	- Shape			
15.6.2.2	- No.(s)			
15.6.2.3	- Location			
15.6.2.4	- Colour			
16.0	**Mass (kg)**	**Front**	**Rear**	Total
16.1	Unballasted			
16.2	Max permissible Ballsted			
17.0	**Max speed, (kmph)**	**……at rated engine speed of ……rpm**		
18.0	**Max gradeability in degrees**			
19.0	**Seat (s)**			
19.1	Operator's seat			
19.1.1	- Make			
19.1.2	- Type			
19.1.3	- Location			

19.2	**Additional seat (s), if any**
19.2.1	- Number
19.2.2	- Type
19.2.3	- Location
20.0	**Wheel base(mm)**
21.0	**Overall Dimension in travel mode (mm)**
21.1	- Min. ground clearance
21.2	- Overall length
21.3	- Overall width
21.4	- Overall height

I, ……,……..of ……hereby declare that information given above in page no. 1 to 7 is as per design / drawings of the prototype/commercial model of tractor submitted for inspection / test and is correct to the best of my knowledge and belief.

Applicant / Manufacturer :
Signature of Authorised Signatory :
Name :
Designation :
Place:
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1.0	**General**
1.1	Name of Manufacturer / Importer
1.1.1	Address
1.1.2	Name of the contact Person
1.1.3	Telephone Numbers
1.1.4	Fax No.
1.1.5	Email
1.2	List of Imported components (% By Value) (Attach list separately indicating Name and Part Number)
1.3	Recommended duration and Schedule of Running-In by manufacturer
2.0	**Tractor**
2.1	Type
2.1.1	Make
2.1.2	Model No.
2.1.3	Serial No.
2.1.4.	Country of Origin
2.1.5	Year of Manufacture
2.1.6	Declared Max. PTO (For Agriculture tractor) or Rotary shaft (For power tiller) power (kW):
2.1.7	Declared Rated PTO For Agriculture tractor) or Rotary shaft (For power tiller) power (kW) :
2.1.8	CFMTTI test report no.
2.2	Tyre
2.2.1	Tyre size
2.2.2	Tyre makes
2.2.3	Dynamic rolling circumference
2.2.4	Type
2.2.5	Ply Rating
2.2.6	Tyre Pressure
2.2.6.1	Front
2.2.6.2	Rear
2.2.7	Wheel drive
2.2.7.1	Front
2.2.7.2	Rear
2.2.8	Vehicle performance (declared by manufacturer)
2.2.9	Vehicle max. speed
2.2.10	Acceleration Max.
3.0	**Description of engine**
3.1	Make
3.1.1	Type
3.1.2	Model and Identification
3.1.3	Working principle (Four / Two stroke)

3.1.4	Bore
3.1.5	Stroke
3.1.6	Number and layout of cylinders and firing order
3.1.7	Cylinder capacity
3.1.8	Compression ratio(Specify the tolerance)
3.1.9	Drawings of combustion chamber and piston crown
3.1.10	Arrangement of valves
3.1.11	Minimum cross-sectional area of ports Inlet ($mm^{2)}$ Outlet (mm^2)
3.1.12	Valve clearance in cold/Hot condition (mm) Inlet Valve Exhaust Valve
3.2	Cooling System
3.2.1	liquid / air cooling
3.2.2	Characteristics of liquid-cooling system
3.2.3	Nature of liquid Circulating pump : Yes / No.
3.2.4	Drive ratio
3.2.5	Thermostat setting
3.2.6	Radiator : drawing(s) or make(s) and type(s)
3.2.7	Relief valve : pressure setting
3.2.8	Fan : Characteristics or make(s) and type(s)
3.2.9	Fan drive system
3.2.10	Fan cowl
3.2.11	Characteristics of air-cooling system
3.2.12	Blower : characteristics or make(s) and type(s)
3.2.13	Drive ratio(s)
3.2.14	Air ducting (standard production)
3.2.15	Temperature regulating system : yes/no (Brief description)
3.2.16	Temperature permitted by the manufacturer
3.2.17	Liquid cooling : Reference point
3.2.18	Air cooling : Reference point
3.2.19	Max. temperature at reference point
3.2.20	Max. outlet temperature of the inlet intercooler
3.2.21	Max. exhaust temperature at the point in the exhaust pipe(s) adjacent in outlet flange(s) of the exhaust manifolds

3.2.22	Fuel temperature	
3.2.23	Lubricant temperature	
3.2.24	Supercharger : yes/no (Description of the system)	
3.2.25	Intake system	
3.2.26	Intake manifold : Description	
3.2.27	Air filter (Make / Type/Part No.)	
3.2.28	Intake silencer (Make / Type)	
3.2.29	Device for recycling crank-case gases Description and diagrams	
3.3	Air intake and fuel feed	
3.3.1	Description and diagrams of inlet pipes and their accessories (dash pot, heating device, additional air intake etc.)	
3.3.2	Maximum permitted depression of air intake at characteristic place (Specify location of measurement) kPa (Specify the tolerance) (Specify range if applicable)	
3.3.3	Fuel feed	
3.3.4	No. Type ,Make and Model of fuel filter	
3.3.5	Feed pump Pressure or characteristic diagram (Specify the tolerance)	
3.3.6	Injection System	
3.3.7	System description	
3.3.8	Working principle : intake manifold/direct injection/ Injection pre-chamber / swirl chamber	
3.3.9	Pump	
3.3.10	Make(s) Country of Origin	
3.3.11	Type(s)	
3.3.12	Model and Identification No.	
3.3.13	Delivery :	mm^3/stroke at a pump of
3.3.14	Injection or characteristic diagram	
3.3.15	(Specify the tolerance)	
3.3.16	Calibration procedure : On engine / On pump bench If boost control is supplied, state the characteristic fuel delivery and boost pressure versus engine speed	
3.3.17	Injection timing	
3.3.18	Injection advance curve	
3.3.19	Injection advance (Specify the tolerance)	
3.3.20	Injectors	

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3.3.21	Make Country of Origin
3.3.22	Type
3.3.23	Model and Identification (Holder & Nozzle Number)
3.3.24	Opening Pressure or characteristic diagram (Specify the tolerance)
3.3.25	Injection Piping
3.3.26	Length
3.3.27	Internal diameter
3.3.28	Governor
3.3.29	Make(s) Country of Origin
3.3.30	Type(s)
3.3.31	Cut off point under load
3.3.32	Max. speed without load
3.3.33	Range of Speed (rpm)
3.3.34	Rated speed
3.3.35	Idle speed
3.3.36	Engine Crankshaft speed (rpm)
3.3.37	Max. No Load (High Idling)
3.3.38	Low Idling
3.3.39	Max. Torque
3.3.40	Rated Speed (rpm)
3.3.41	Engine Specification
3.3.42	For PTO Work
3.3.43	For Drawbar Work
3.3.44	Cold start device
3.3.45	Make(s)
3.3.46	Type(s)
3.3.47	System description
3.3.48	Starting aid
3.3.49	Make
3.3.50	Type
3.3.51	System description
3.3.52	Valve timing or equivalent data
3.3.53	Maximum lift of valves, angles of opening and closing or timing details alternative distribution systems in relation to top dead center (Specify the tolerance and range) Reference and / or setting ranges
3.4	Exhaust System
3.4.1	Make ,Type of silencer, Position of silencer
3.4.2	Details of spark Arresting Device, if fitted
3.4.3	Description of exhaust equipment if the test is made with the equipment provided by the engine or vehicle manufacturer

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3.4.4	Specify the back pressure at maximum net power and the location of measurement (kPa) (Specify the tolerance and range)
3.4.6	Indicate the effective volume of the exhaust (Specify the tolerance and range)
3.4.7	Additional anti-pollution devices (if any and if not covered by another heading) Description and diagrams
3.5	Lubrication system
3.5.1	Description of systems
3.5.2	Position of lubricant reservoir
3.5.3	Feed system (pump, injection into intake, mixing with fuel etc.)
3.5.4	Lubricating pump
3.5.5	Make
3.5.6.	Type
3.5.7	Capacity of pump at rated (Engine/pump) (rpm)
3.5.8	Pressure release seating Kpa (kgf/cm2)
3.5.9	Oil sump capacity (l)
3.5.10	Total Lub. Oil capacity (l) Lub. Oil Grade
3.5.11	Oil changing period (hr)
3.5.12	Mixture with fuel
3.5.13	Percentage
3.5.14	Oil cooler (Yes / No)
3.5.15	Drawing(s) or make(s) and type(s)
3.6	Electrical equipment
3.7	(Generator / Alternator characteristics or make(s) and type(s))
3.8	Other engine driven auxiliaries (Enumeration and brief description if necessary)
3.9	Transmission
3.9.1	State movement of inertia of combined flywheel and transmission of condition when no gear is engaged (Specify the range if applicable)
3.10	Engine performance (declared by the manufacturer)
3.10.1	Idling speed (Specify the tolerance)
3.10.2	Maximum rated speed (Specify the tolerance)
3.10.3	Minimum rated speed (Specify the tolerance)
3.10.4	Max. gross torque of engine on bench (Specify the tolerance)

3.10.5	Max. gross power of engine on bench
3.10.6	Indicate power absorbed by fan (Specify the tolerance)
3.11	Test on bench Declared powers at the points of measurement referred to in Chapter 3 shall be stated in Table 1. Declared speeds and powers of the engine / vehicle (strike out what does not apply) submitted for approval

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Table 1

(speeds to be agreed with the test agency)

Measurement Points	Engine Speed (n) (rpm)	Power (P) (kW)	Vehicle Speed and gear position
4.0	**Transmission**		
4.1	Clutch		
4.1.1	Make		
4.1.2	Type		
4.1.3	Clutch Plate		
4.1.4	Diameter (mm)		
4.1.5	Thickness (mm)		
4.1.6	Method of Operation		
4.1.7	Type of Material of Friction Plate		
4.2	Gear Box		
4.2.1	Manual or automatic(if it is automatic give all the pertinent data)		
4.2.2	Number of Gears		
4.2.3	Transmission ratio First Gear Second Gear Third Gear Fourth Gear		
4.2.4	Over Drive Gear shifting Pattern		
4.2.5	Final drive ratio		

Nominal Speeds

Movement	Gear	Number of Engine Revs. for one Rev. of driving wheel		Nominal speed for rated Rpm with------rear tyres inflated to ----kg/cm^2	
		LOW	HIGH	LOW	HIGH
Forward	1				
Forward	2				
Forward	3				
Forward	4				
Reverse	1				

5.0 **Brake hose**

5.1 Type (Hydraulic)

5.2 Make and Identification no.

5.3 Free Length of hoses

5.4 **Working pressure**

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5.5	Max. design pressure
5.6	Thickness of lining (mm)
5.7	Nominal bore dia. (mm)
5.8	End fitting Type
6.0	**Brake fluid**
6.1	Name of manufacture
6.2	Trade name
6.3	Specification/ grade as per Indian standard
7.0	**Fuel tank**
7.1	Name of producer
7.2	Material (Metallic / Plastic etc.)
7.3	Nominal thickness (mm)
7.4	Capacity Liters
7.5	Position
7.6	Identification mark and location
7.7	Location of vent
7.8	Seating arrangement of cap on neck
7.9	Other opening, if any
8.0	**Wheel rim**
8.1	Size
8.2	Front
8.3	Rear
8.4	Others
8.5	Name of manufacturer
8.6	Identification mark
8.7	Pitch circle dia. of mounting bolts (mm)
8.8	Number of mounting bolts
8.9	Material (Steel/ Aluminum alloy etc.)
9.0	**Wheel nut, Wheel cap and Hub cap**
9.1	Wheel Nut
9.1.1	Name of manufacturer
9.1.2	Size
9.1.3	No. per wheel
9.1.4	Tightening torque
9.2	Wheel cap / wheel disc
9.2.1	Name of manufacturer
9.2.2	Size
9.2.3	Material (Plastic/Metal)
9.2.4	Method of fitment (Press/bolted/others)
9.3	Hub cap
9.3.1	Name of manufacturer
9.3.2	Size
9.3.3	Method of fitment (Press/bolted/others)

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10.0	**Towing devices**
10.1	Type
10.2	Name of manufacturer
10.3	Capacity
11.0	**Coupling devices (for trailers)**
11.1	Type of coupling device for mechanical
11.2	Type of coupling device for electrical
11.3	Type of coupling device for brake
11.4	Dia. of king pin mm
12.0	**Starting system**
12.1.	Make (Starter Switch)
12.2	Type Key Operated
12.3	Aid for Cold Starting
12.4	Any Other device provided for easy starting
13.0	**Electrical system**
13.1	Battery
13.2	Make
13.3	No, Type & Voltage
13.4	Capacity & Rating Location
14.0	**Starter**
14.1	Make
14.2	Model
14.3	Type
14.4	Capacity & Rating
14.5	Serial No.
15.0	Generator
15.1	Make
15.2	Model
15.3	Type
15.4	Output Rating
15.5	Serial No.
16.0	Voltage regulator
16.1	Make
16.2	Type
16.3	Capacity & Setting
17.0	Main switch details
18.0	Details of other Electrical Accessories
19.0	Instrument Panel Details
	Details Of Light

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20.0	**Horn**
20.1	Make and Country of origin (if imported)
20.2	Type (As per IS:1884 – 1993)
20.3	Operating voltage
20.4	Identification No. / Part No.
20.5	Number
20.6	Sketch showing mounting of horn
20.7	The shape and material of the body work at the front of the horn, which might affect the level of the sound, emitted by the horn and have a masking effect
21.0	**Lighting Installation requirements (Information to be provided in tabular form in the enclosed Appendix 1.)**
22.0	**Electrical system :**
22.1	Ground polarity
22.2	Additional Lamps other than mandatory
22.3	Type
22.4	Purpose
22.5	Bulb wattage
22.6	Wind screen washing system
22.7	Type
22.8	Make
22.9	Defroster
22.10	Type
22.11	Make
22.12	Instruments- Pressure gauge
22.13	Type
22.14	Make
22.15	Instruments- Engine speed indicator
22.16	Type
22.17	Make
22.18	Instruments- Any other (Specify details)
22.19	Type
22.20	Make

23.0	**Information about additional accessories / systems fitted on model / variants**
24.0	**List of tools normally provided with vehicle**
25.0	**Power take-off shaft**
25.1	Location
25.2	Height above Ground Level (mm)
25.3	No. of Splines
25.4	Direction of Rotation (Viewed from Driving End)
25.5	Size (mm)
25.6	Name of Standard to which it conforms
25.7	Rated Speed (rpm)
25.8	Proportional Erpm at Std. 540 PTO rpm
25.9	PTO Speed at Rated Engine Speed (rpm)
25.10	Details of Other PTO Shaft, if a
26.0	**Belt pulley**
27.0	**Power lift**
27.1	Make
27.2	Type of Pump
27.3	Oil Capacity
27.4	Pump Capacity at Rated Erpm and
27.5	Minimum Pressure, (Ipm)
27.6	Rated Speed of Pump corresponding To Rated Erpm (rpm)
27.7	Relief Valve Opening Pressure, kPa (kgf/cm2)
27.8	Pressure Sustained by Open Relief Valve.
27.9	Hydraulic Power at 90% of Min. Relief Valve
27.10	Setting (Crack-Off setting) (kW)
27.11	Lifting Capacity, kN (kgf) (Max. Force exerted through full range & Corrected to those values corresponding to Hydraulic Power)
27.12	At Hitch Points
27.13	On Standard Frame

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27.14	Means of Position and Response Control
27.15	Means of Draft Control
28.0	**Drawbar (s)**
28.1	Swinging Drawbar :
28.2	Linkage Drawbar :
29.0	**Hitch**
29.1	Front :
29.2	Type & Location
29.3	Height above Ground level (mm)
29.4	Type of adjustment
29.5	Width (mm)
29.6	Diameter of pinhole (mm)
29.7	Rear
29.8	Type
29.9	Location
29.10	Height above Ground level (mm)
29.11	Type of adjustment
30.0	**Steering**
30.1	Make
30.2	Type
30.3	Location
30.4	Method of Operation
30.5	Diameter of Steering Wheel (mm)
30.6	Steering Housing Oil Capacity (I)
31.0	**Brakes**
31.1	Service Brake
31.1.1	Make & Type
31.1.2	Identification No.
31.1.3	Location
31.1.4	Thickness of Brake Lining (mm)
31.1.5	Area of Liner (sq. cm)
31.1.6	Material of Lining (Asbestos/Non-asbestos)
31.1.7	Method of Operation
31.2	Parking brake
31.2.1	Make
31.2.2	Type
31.2.3	Size
31.2.4	Method of Operation

32.0	**Wheel Equipment**
32.1.1	Steering Wheels
32.1.2	Make
32.1.3	No., Size and Ply Rating
32.1.4	Arrangement
32.1.5	Type of Tyres
32.1.6	Max. Permissible Load of each Tyre (kgf)
32.1.7	Recommended inflation pressure. kPa (kgflcm2)
32.1.8	For Field (Including Wet land)Kpa(Kgf/cm2)
32.1.9	For Road
32.1.10	Track Width (mm)
32.1.11	Method of Changing Track Width
32.2	Driving Wheels
32.2.1	Make
32.2.2	No., Size and Ply Rating
32.2.3	Type of Tyres
32.2.4	Max. Permissible Load of each tyre (kg)
32.2.5	Pressure
32.2.6	Recommended inf. Pressure (kPa) ($kgflcm^2$)
32.2.7	different conditions
32.2.8	For Field
32.2.9	Track Width (mm)
32.2.10	Method of changing Track Width
32.3	Wheel Base (mm)
32.3.1	Method of changing Wheelbase, if any Range of adjustment (mm)
33.0	**Minimum ground clearance (mm)**
33.1	Method of changing Ground Clearance, if any
34.0	**Seat**
34.1	Make
34.2	Type
34.3	Type of Suspension /Type of Damping
34.4	Range of Adjustment

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35.0 Mass and ballast (kg) :

35.1 Mass

	Front	Rear	Total
Mass of the unballasted tractor ,but fuel coolant & lubricants full and without operator			
Mass of the fully ballasted tractor to be used for drawbar test but fuel, coolant & lub. Full and without operator			

35.2 Ballast

	For bar test	For field Test	For Road tests	For Puddling test
Front - C.I. Ballast				
- Water Ballast				
Rear - C.I.Ballast				
Rear - C.I.Ballast				
- Water Ballast				
Additional Ballast				

36.0	**Performance characteristics**
36.1	PTO performance
36.1.1	PTO Horse Power (kW) (Ps)
36.1.2	Maximum Power
36.1.3	Rated Power
36.1.4	Specific Fuel Consumption corresponding to Power stated above, g/kw-h (g/Ps-h)
36.1.5	At Max. Power
36.1.6	At Rated Power
36.1.7	Equivalent Crank shaft Torque at Max. Power, Nm (kgm)
36.1.8	Max. Equivalent .Crank shaft Torque (Nm) (kgm)
36.2	Belt pulley performance
36.3	Drawbar performance
36.3.1	Max. Power, kw (Ps)
36.3.2	Max. Pull corr. to 15% Wheel Slip, kN (kgf)
36.3.3	SFC at Max. Power, g/dbkwhr (g/dbhph)
37.0	**Tolerances**
37.1	Max. Permissible Engine oil Temperature (^{o}C)
37.2	Max.Permissible Coolant Temperature (^{o}C)
37.3	Max. Permissible Transmission Oil Temperature (^{o}C)
37.4	Max. Permissible Belt Pulley Oil Temperature (^{o}C)
37.5	Min. Permissible Oil Pressure (kPa) (kgf/cm^2)
37.6	Permissible oil consumption at full load, g/ptokwh (g/ptohph)
37.7	Max. Permissible loss of Compression after 250/500 hrs of operation (kPa) (kgf/ cm^2)
38.0	**Initial setting and discard limits of the following measurements**
38.1	Cylinder Bore (mm)
38.2	Cylinder bore taper & ovallity (mm)
	Piston Dia. (mm) (At skirt)
38.3	Piston Ring End Gap (mm)
	I) Compression Ring
	II) Oil Ring

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38.4	Piston Ring Groove Clearance (mm) I) Compression Ring II) Oil Ring
38.5	Radial Clearance of Main Bearings (mm)
38.6	Crankshaft End Float (mm)
38.7	Radial and Axial Clearance of Big End Bearing (mm) -Axial -Radial
38.8	Clearance between Valve Guide & Stem (mm) Inlet Exhaust
38.9	Spring Index of Valve Springs, (kgf/mm).
38.10	Backlash of Timing Gears (mm)
38.11	Transmission Gears
38.12	Crown Wheel and Pinion
38.13	Final Drive Gear
38.14	Overall thickness of Clutch Plate (mm)
38.15	Thickness of Brake Linings (mm)
38.16	Clearance between Kingpin and Bush (mm)
38.17	Clearance between Pivot Pin (Centre Pin) of Front Axle and Bush (mm)
35.0	**Recommended Throttle setting for Field**
36.0	**Safety Features, if any**

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LIST OF COMPONENT TEST REPORTS / CERTIFICATES FOR AGRICULTURAL TRACTORS / CONSTRUCTION EQUIPMENT VEHICLES

Rule No.	Subject	Test Report Nos.	If certificate is not available likely date of submission of test report
100	Safety Glass d) Windscreen e) Side f) Rear (For Construction Equipment Vehicles)		
104B(2)	Reflex Reflector d) Rear, Red		
119	Horns **Horn Installation**		
124(A)1	Automotive Lamps Bulbs used for: a) Head light main & dip. b) Parking light c) Direction indicator lamp d) Tail lamp e) Reversing lamp f) Stop lamp g) Rear registration mark indicating lamp h) Top light		
124A(2)	Lighting Signalling & Indicating Systems: Head Light: Fog Light: Rear Licence Plate Light: Rear Position Light: Tail Light: Stop Light: Directional Indicator Light: Front : Rear : Side : Parking Light: Reversing Light: High Mounted Stop Light: Rear Warning Triangle (Slow moving emblem)		

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Rule No.	Subject	Test Report Nos.	If certificate is not available likely date of submission of test report
	e)		
	i)		
124A(3)	**Hydraulic Brake Hose**		
124A(4)	**Hydraulic Brake Fluid**		
124A(5)	**Tow Hook**		
124A(6)	**Fuel Tank**		
124A(7)	**Wheel Nuts & Hub Caps**		

NOTE :

4) Please enclose test report copies wherever required.

5) In case samples are submitted to the testing agency for testing, please provide reference docket no.

Manufacturer :	Document No :	Test Agency :	Cert No :
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List of Test Report / Certificates of other models for Agricultural Tractors / Construction Equipment Vehicles

Rule No.	Subject	Model	No. of test report/ certificate *	Issued by	Justification for applicability for the model under consideration

* Xerox copies of the certificates to be submitted in case if it is from another testing agency or whenever necessary.

Manufacturer :	Document No :	Test Agency :	Cert No :
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TECHNICAL SPECIFICATION OF CNG RELATED PARTS TO BE SUBMITTED BY VEHICLE MANUFACTURER
(To be used for approval of OE CNG vehicles in lieu of Annex I of AIS -024)

1.0 Name of Vehicle Manufacturer
2.0 CNG Cylinder (DOE approved/endorsed)
2.1 Name of manufacturer
2.2 **Identification No.**
2.3 Working pressure (kg/cm^2)
2.4 Max. test pressure (kg/cm^2)
2.5 Cylinder capacity (water equivalent)
2.6 Approval reference from DOE
3.0 Cylinder Valve(s)(DOE approved/endorsed)
3.1 Name of manufacturer
3.2 Model name/Identification No.
3.3 Type
3.4 Working pressure (kg/cm^2)
3.5 Max. test pressure (kg/cm^2)
3.6 Approval reference from DOE
4.0 CNG Solenoid Valve
4.1 Name of manufacturer
4.2 Model Name/Identification No
4.3 Type
4.4 Working pressure (kg/cm^2)
4.5 Max test pressure (kg/cm^2)
5.0 Petrol Solenoid Valve
5.1 Name of manufacturer
5.2 Model Name/Identification No.
5.3 Type
5.4 Working pressure (kg/cm^2)
5.5 Max test pressure (kg/cm^2)
6.0 Refilling valve
6.1 Name of manufacturer
6.2 Model Name/Identification No.
6.3 Type
6.4 Working pressure (kg/cm^2)
6.5 Max test pressure (kg/cm^2)
7.0 Pressure Regulator
7.1 Name of manufacturer
7.2 Model name/Identification No.
7.3 Type
7.4 Inlet pressure (kg/cm^2)

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7.5 Outlet pressure (kg/cm^2)
7.6 No. of stages
8.0 CNG Filter
8.1 Name of manufacturer
8.2 Model name/Identification No.
8.3 Type
8.4 Inlet pressure (kg/cm^2)
8.5 Outlet pressure (kg/cm^2)
9.0 High Pressure Tubing
9.1 Name of manufacturer
9.2 Model name/Identification No.
9.3 Type
9.4 Working pressure (kg/cm^2)
9.5 Max. test pressure (kg/cm^2)
9.6 Outer diameter/Inner Diameter
9.7 Protection quality (material used)
10.0 Low Pressure Tubing
10.1 Name of manufacturer
10.2 Model name/Identification No.
10.3 Type
10.4 Working pressure (kg/cm^2)
10.5 Max test pressure (kg/cm^2)
10.6 Outer diameter/Inner Diameter
10.7 Protection quality (material used)
11.0 Gas-Air Mixer
11.1 Name of manufacturer
11.2 Model name/Identification No
11.3 Type & drawing
11.4 Venturi Size
12.0 Selector Switch
12.1 Name of manufacturer
12.2 Model name/Identification No
12.3 Type
13.0 Wiring Harness (for CNG system) (Ref. Clause A11 of Table 2 of AIS 007)
13.1 Name of manufacturer
14.0 Interfacing Unit (for closed loop engines)
14.1 Name of manufacturer
14.2 Model name/Identification No.
14.3 Type
15.0 Ignition Timing Advancer
15.1 Name of manufacturer
15.2 Type
15.3 Timing on CNG mode
15.4 Timing on baseline fuel.

16.0 Brief Description of System Including Dimensional Layout for Cylinder and other CNG components installation, ventilation details etc.

17.0 Refilling valve interlocking switch

17.1 Name of manufacturer

17.2 Identification No.

17.3 Type

18.0 Current limiting Device (Fuse)

18.1 Name of manufacturer

18.2 Identification No.

18.3 Voltage/current rating

18.4 Type

19.0 Pressure Indicator

19.1 Name of manufacturer

19.2 Identification No.

19.3 Type

20.0 Service shut off valve

20.1 Name of manufacturer

20.2 Identification No.

20.3 Type

21.0 Compartment/Sub-compartment/Gas tight housing

21.1 Name of manufacturer

21.2 Identification No.

21.3 Type

22.0 Conduit

22.1 Name of manufacturer

22.2 Identification No.

22.3 Inner & outer diameter

22.4 Type

23.0 Details of Seat/Upholstery/roof and side lining

23.1 Name of manufacturer

23.2 Model name/Identification No.

23.3 Type

24.0 Details of non-moisture retaining hard rubber/equivalent material padding/lining provided for inner side of the cylinder mounting band(s)

24.1 Name of manufacturer

24.2 Identification No.

24.3 Type

25.0 Any other information

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TECHNICAL SPECIFICATION OF LPG RELATED PARTS TO BE SUBMITTED BY VEHICLE MANUFACTRERS
(To be used for approval of LPG OE vehicles in lieu of Annex I of AIS -025)

1.0 **Name of Vehicle Manufacturer**
2.0 **LPG Cylinder (DOE approved/endorsed)**
2.1 Name of manufacturer
2.2 **Identification No.**
2.3 Type
2.4 Max. test pressure (kg/cm^2)
2.5 Working pressure (kg/cm^2)
2.6 Cylinder capacity (water equivalent)
2.7 Approval reference from DOE
3.0 Cylinder Valve/Multi-Function Valve assembly (DOE approved/endorsed)
3.1 Multi-Function Valve shall have following
- Automatic fill limiter
- Service valve
- Excess flow check valve
- Pressure relief device
- Fusible plug
- Content gauge
- Inlet connected to the fill connector

having non-return valve
3.2 Name of manufacturer
3.3 Model name/Identification No.
3.4 Vapor/Liquid withdrawal
3.4.1 Type
3.4.2 Max. test pressure (kg/cm^2)
3.4.3 Working pressure (kg/cm^2)
3.4.4 Approval reference from DOE
4.0 LPG Solenoid Valve
4.1 Name of manufacturer
4.2 Model Name/Identification No.
4.3 Type
4.4 Working pressure (kg/cm^2)
4.5 Max test pressure (kg/cm^2)
5.0 Petrol Solenoid Valve (if fitted)
5.1 Name of manufacturer
5.2 Model Name/Identification No.
5.3 Type

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5.4 Working pressure (kg/cm^2)
5.5 Max test pressure (kg/cm^2)
6.0 Refilling valve
6.1 Name of the manufacturer
6.2 Model name/Identification No.
6.3 Type
6.4 Working pressure (kg/cm^2)
6.5 Max test pressure (kg/cm^2)
7.0 Pressure Regulator/Vaporizer
7.1 Name of manufacturer
7.2 Model name/Identification No.
7.3 Type
7.4 Inlet pressure (kg/cm^2)
7.5 Outlet pressure (kg/cm^2)
7.6 No. of stages
8.0 LPG Filter
8.1 Name of manufacturer
8.2 Model name/Identification
8.3 Type
8.4 Inlet pressure (kg/cm^2)
8.5 Outlet pressure (kg/cm^2)
9.0 High Pressure Tubing
9.1 Name of manufacturer
9.2 Model name/Identification No.
9.3 Type
9.4 Working pressure (kg/cm^2)
9.5 Max. test pressure (kg/cm^2)
9.6 Outer diameter/Inner Diameter
9.7 Protection quality (material used)
10.0 Low Pressure Tubing
10.1 Name of manufacturer
10.2 Model name/Identification No.
10.3 Type
10.4 Working pressure (kg/cm^2)
10.5 Max test pressure (kg/cm^2)
10.6 Outer diameter/Inner Diameter
10.7 Protection diameter
11.0 Gas-Air Mixer
11.1 Name of manufacturer
11.2 Type and Drawing
11.3 Venturi Size
12.0 Selector Switch
12.1 Name of manufacturer

12.2 Model name/Identification No.
12.3 Type
13.0 Wiring Harness (for LPG System)
13.1 Name of manufacturer
14.0 Interfacing Unit (for closed loop engines)
14.1 Name of manufacturer
14.2 Model name/Identification No.
14.3 Type
15.0 Timing advancer
15.1 Name of manufacturer
15.2 Model name / Identification No.
15.3 Type
16.0 Brief Description of System Including Dimensional Layout for Cylinder and other kit component installations, ventilation details etc.
17.0 Current limiting Device (Fuse)
17.1 Name of manufacturer
17.2 Identification No.
17.3 Voltage/current rating
17.4 Type
18.0 Compartment/Sub-compartment/Gas tight housing
18.1 Name of manufacturer
18.2 Identification No.
18.3 Type
19.0 Conduit
19.1 Name of manufacturer
19.2 Identification No.
19.3 Inner & outer diameter
19.4 Type
20.0 Details of Seat/Upholstery/roof and side lining
20.1 Name of manufacturer
20.2 Identification No.
20.3 Type
21.0 Details of non-moisture retaining hard rubber/equivalent material padding/ lining provided for inner side of the cylinder mounting band(s)
21.1 Name of manufacturer
21.2 Identification No.
21.3 Type

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22.0 Battery cut off switch (if applicable) Provided Y/N

22.1 Name of the manufacturer

22.2 Identification No.

22.3 Type

23.0 Any other information (not covered)

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ANNEXURE : I

(See Introduction)

COMMITTEE COMPOSITION *

Automotive Industry Standards Committee

Chairman	
Shri Shrikant R. Marathe	Director The Automotive Research Association of India, Pune
Members	**Representing**
Representative from	Ministry of Shipping, Road Transport & Highways (Dept. of Road Transport & Highways), New Delhi
Shri Sushil Kumar	Ministry of Heavy Industries & Public Enterprises (Department of Heavy Industry), New Delhi
Shri J. K. Arya	Office of the Development Commissioner, Small Scale Industries, Ministry of Small Scale Industries, New Delhi
Shri S. M. Bhatia Shri Rakesh Kumar (Alternate)	Bureau of Indian Standards, New Delhi
Prof. A. V. Sardesai Shri D. P. Saste (Alternate)	Central Institute of Road Transport, Pune
Dr. M. O. Garg	Indian Institute of Petroleum, Dehra Dun
Dr. C. L. Dhamejani	Vehicles Research & Development Establishment, Ahmednagar
Representatives from	Society of Indian Automobile Manufacturers
Shri T.C. Gopalan Shri Ramakant Garg (Alternate)	Tractor Manufacturers Association, New Delhi
Shri K.N.D. Nambudiripad	Automotive Components Manufacturers Association of India, New Delhi
Shri Arvind Gupta	Automotive Components Manufacturers Association of India, New Delhi

Member Secretary
Mrs. Rashmi Urdhwareshe
Deputy Director
The Automotive Research Association of India, Pune

* At the time of approval of this Automotive Industry Standard (AIS)