



ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

Operations (PLG) Department, RTC House, Vijayawada.

No:P9/359(11)/2022-OPD(P)

Dt: 24.11.2022.

To
All Executive Directors – Zones &
All DPTOs
APSRTC.

Sub:- HIRING: Hire bus Tender notification MSTC VI B (September 2022)–
Procurement of hire buses under Applicant Rate Quote System through
MSTC e-commerce portal –Communication of Chassis specifications -
Reg.

Ref : -Lr No TL8/843(6-a)/2022-MED Dtd. 18.11.2022

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Hire bus body specifications and colour scheme are already uploaded along with tender schedule in [www.apsrtc.ap.gov.in /hire buses](http://www.apsrtc.ap.gov.in/hirebuses), at the time of tender notification.

Vide letter at reference cited OSD (C&L) communicated the technical specifications for 11M Chassis & 12 M Chassis for induction of MSTC VI B tender notification hire buses. Copy of the same is enclosed herewith and also placed in [www.apsrtc.ap.gov.in /hire buses](http://www.apsrtc.ap.gov.in/hirebuses).

It is therefore advised to communicate the same to the successful bidders of MSTC VIA and VI B tenders to download the Bus body, Chassis specifications etc. from [www.apsrtc.ap.gov.in /hire buses](http://www.apsrtc.ap.gov.in/hirebuses), under proper acknowledgment.


Executive Director (Operations)

Copy to ED (E) and OSD C&L for information.



ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

Office of the VC & MD,
RTC House, Vijayawada.

Dt: 18.11.2022.

No. TL8/843(6-a)/2022-MED

To

The Executive Director (O),
A.P.S. R.T.C.,
RTC House, Vijayawada.

Sub: Hiring – Hire bus Tender notification MSTC VI B (September 2022) –
Procurement of hire buses under applicant rate quote system through MSTC e-
commerce portal - Furnishing of chassis specifications for supply of Bus
Chassis conforming to BS-VI emission norms – Reg.

Ref: 1) Your office U.O. Note No. P9/359(11)/2022-OPD(P), dt.07.11.2022.

With reference to the subject, vide the reference 1st cited, it was requested to
arrange to furnish the Chassis specifications of BS-VI variant various makes of City
Ordinary/Metro Express/Pallelevelugu/Ultra Pallelevelugu/Express/Ultra Deluxe/Super
Luxury 36 seater/Super Luxury 40 seater/Indra AC/Non-AC Sleeper and AC sleeper
buses.

Accordingly, the approval of competent authority was obtained for the technical
specifications for 11M chassis & 12M chassis for supply of Bus chassis conforming to BS-
VI emission norms.

Hence, a copy of the approved technical specifications for 11M chassis & 12M
chassis for Hire buses induction through MSTC VI B Tender is enclosed herewith for
information.

Encl: As above.

Copy to: ED(E) for information.
Copy to: CTM(O) for information.


Officer on Special Duty(C&L)

CTM(O)
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AYM(P)
PI file
to upload
specifications
of make
to come
in hand
FDR &
DPOs
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**ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION
MECHANICAL ENGINEERING DEPARTMENT**

**Technical Specifications for supply of Bus Chassis confirming to BS-VI emission norms
(Hire buses induction through MSTC VI B Tender)**

S no	Specification	11M Chassis		12M Chassis	
	Type of Body	Pallevelugu, Ultra Pallevelugu, Cit Ordinary * Metro Express * Express	Ultra Deluxe, Super Luxury - 36 Seats	Non-AC Sleeper Super Luxury - 40 Seats	AC Sleeper Indra AC Seater
* As per the Rights of Persons with Disabilities Act (RPD) 2016 guidelines, all urban transport buses shall have 400 mm floor height only. 400mm floor height buses are fully built buses with monocoque chassis. Hence decision has to be taken in this regard.					
1	Dimensions of Chassis (Single Deck in mm)				
	Wheel Base	5639 to 5850 mm (222" to 230")	5950 to 6200 mm (234" to 244")		
	Height of Chassis	Not exceeding 1100 ± 50 mm in unladen condition			
	Front Overhang	1845 to 2265 mm (40% max)	2205 to 2305 mm (40% max)		
	Rear Overhang	60% of wheel base maximum			
2	Chassis	<ul style="list-style-type: none"> a) The all-steel ladder type Chassis frame shall confirm to latest revision of APMV and CMVR Regulations prevailing at the time of supply of chassis in all respects. b) Chassis shall be of full forward control only to facilitate provision of front door within front over hang. c) Chassis shall comprise of chassis frame, Engine, Air Compressor, Self-start, Alternator, Radiator, Transmission (Including Clutch, Gear Box and Propeller Shafts), Front axle assembly, Rear axle assembly, Weveller Suspension or Air suspension, Power Steering Assembly, Six Wheels with tyre Assemblies & Spare wheel tyre assembly, Full air brake system with DDU or Air drier & Purge tank or Air processing unit. d) Shall produce type approval certificate issued by GOI approved agencies. e) 8 Ton and above Hydraulic jack with self-locking provision/Mechanical screw jack with minimum total height of 480mm in open condition and 295mm max. in closed condition. Minimum/Maximum height as per OEM design shall serve the purpose i.e., shall lift the vehicle for removal of tyre with any type of approved tyre sizes in open/closed condition. f) Head lamp (LED/Halogen) in 7" dia round/ rectangular type with suitable relay and E4 LED round type tail lamps of 3" dia min. g) Electrical Horns, aesthetically designed Instrument panel. h) Tool Kit as per CMVR i.e., with suitable size wheel box spanner of min. 450mm length & tommy bar of 1Mtr length with EN8/EN19 steel. i) Air intake system (air filter) shall be above the Engine level/under driver seat to intake fresh air into the engine. j) The air tanks should be provided in between fuel tank and rear wheels or in such a way not to cause any obstruction for maintenance of suspension system. k) Chassis bend if any in horizontal plane shall not be more than 8 mm and there shall not be any difference in diagonal measurements in between axles and in vertical plane. l) DEF tank capacity 24 Ltr minimum (suitable capacity). 			

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10/11/22

		<p>m) Engine Bonnet of 5mm thick in FRP and it should be hinge type with lifting provision towards dash board with proper heat shield like FR Grade glass wool/Nitrile rubber, driver cabin flooring & front-end structure and without cowl & center grill. For 234"/236"/244" WB may be supplied without engine bonnet, driver cabin flooring & front-end structure</p> <p>n) Chassis shall be supplied with minimum 20 lts of HS Diesel</p>	
	o) Driver Seat confirming to CMVR requirements	Adjustable type HDPE Knitted Driver Seat Assembly of ARAI approved makes with ELR safety belt (In loose also)	Adjustable reclining cushion seat assembly/knitted of ARAI approved makes with ELR safety belt (in loose also)
	p) HSD Tank capacity	Min 230 Ltrs	Min 350 Ltrs
3	Engine & FIP with suitable mountings on the chassis frame		
	i) Engine Output	177 HP & above, Torque: min 590 Nm.	186 HP & above, Torque: min 700 Nm.
		<p>ii) The Engine shall be 4/6 - cylinder, vertical, in line, water-cooled with Turbo Charger and Inter Cooler confirming to BS-VI emission norms with EGR/SCR or both Technologies.</p> <p>iii) The fuel injection system should be CRDI.</p> <p>iv) FIP make shall be Bosch/Denso/Delphi/Cummins</p> <p>v) Air compressor maximum duty cycle shall be 30% and should be gear driven for all models.</p> <p>vi) Air compressor minimum capacity shall be min. 230cc water cooled.</p>	
4	Cooling System	The System shall include Aluminum Radiator with transparent/Translucent De-aeration Tank, Water pump and Viscous Fan of adequate capacity with thermostat of failsafe type to control the coolant temperature in between 85°C to 95°C. The water pump supplied shall be of self-lubricating system type only. The position of the fuse box/electric panel shall not be beside the radiator cap/Coolant top up point.	
5	Pollution & Exhaust Gas (OBD-II NORMS)	The Engine shall meet Bharat Stage-VI emission norms applicable at the time of delivery of chassis. The Tenderers shall give a certificate based on their Engine Dynamo Meter Test, the exhaust gas analysis of CO, HC, NOX and PM (Particulate matter) in gms/KWh. A Photo Copy of the test certificate issued under CMVR rules by the Competent Authority shall be submitted.	
6	Transmission & clutch	<p>i) Single plate dry type, Air assisted Hydraulic actuated.</p> <p>ii) WABCO make of clutch booster (With fork & pin type and push on clutch operating lever) or any other make approved by APSRTC.</p> <p>iii) PP shaft of Spicer India (self-lubricated/manual greasing) make.</p>	
7	Gear Box	Shall have synchromesh gear box with 6 forward gears and one reverse gear.	
8	Front Axle	<p>a) The Front Axle shall be of I-beam type, made of alloy steel forging with a minimum load carrying capacity of 6,000 Kgs., with Reverse Eliot design.</p> <p>b) Approved makes of AAL/TVSAI/OE make.</p>	

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9	Rear Axle	i) Fully floating type with Hypoid Gears, with a min. carrying capacity 9700 kgs ii) Approved makes of AIL(Dhana)/Meritor(AAL)/OE make.		
	iii) Crown Wheel Pinion ratio	5.28 to 5.29	4.77 to 5.29	
10	Tyres	a) Tyres - 6 nos + 1 Spare tyre shall be provided in a cage type carrier/OE design carrier. b) Tyres must be less than six months old as on the date of delivery of chassis. c) Wheel disc make - Wheels India.		
	d) Tyre size	10x20 - 16PR radial tyres with wheel disc size 7.5"x20" or 295/80R 22.5 - 16PR - tubeless tyres with wheel disc size 8.25"x 22.5"	295/80R 22.5 - 16PR - tubeless tyres with wheel disc size 8.25" x 22.5" - 165mm offset.	
11	Steering	i) The steering position shall be on the right-hand side of the bus. The steering system shall be power assisted gear driven pump and sufficiently rugged in design to withstand peak road shocks without risk of component failure or inadvertent alteration of steering geometry. ii) Approved makes: ZF or Rane iii) Steering ball joints shall be of grease type only.		
12	Suspension System	a) Type of suspension		
		front & rear weveller suspension	front weveller & rear air suspension	front & rear air suspension
		b) Shock absorbers shall be Double acting Telescopic Type c) Air suspension shall be of Wheels India/OE make only d) Anti-roll bar shall be provided for front air suspension system chassis		
13	Brakes	i) Brake system either with disc brake or drum brake or combination of both will be accepted. ii) Dual line Full Air Brake system shall be provided on all four wheels with Auto Slack Adjusters of approved make MEI/Haldex/WABCO/Knorr Bremse iii) Air shall be drawn by compressor from after filter and before turbo charger. iv) The Quick release valve/relay valve at front and relay valve at rear. v) Graduated type hand control valve shall be provided for Hand Brake system with actuators operating on rear wheels. The control valve shall be provided on the right-hand side of the driver/on the Dash Board only and must be easily accessible to the driver. vi) Auxiliary air tank shall be provided for utilizing air for air suspension & Auxiliaries. vii) Brake system must be of fully WABCO or fully Knorr Bremse. viii) ABS has to be provided for chassis of all models with 4S/3M or 4S/...		
	ix) Hydro Dynamic Retarder/ Electro Magnetic Retarder (EMR)	Not required	Not Required	Required

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14/11/22

14	Gradeability	16% to 27%.	
15	Electrical System	<p>a) The system shall be of 24 Volt DC. Battery-isolator switch (main cable cut off switch) shall be provided near driver seat on the RH side strictly, remote cut-off switch will not be allowed.</p> <p>b) Electric wires shall be clamped in a neat form and must not be left haphazardly. The electric units and the electrical system fitted shall not be prone to short circuit problems.</p> <p>c) ECU should be placed in such a location easily accessible to the technicians and away from the dash board to avoid damages in case of accidents.</p> <p>d) Battery cable of reputed make with suitable length shall be provided.</p> <p>e) Batteries must be less than six months old as on the date of delivery of chassis.</p>	
	f) Battery Capacity	Batteries shall be of min. 2x12 Volts, 21 plates & 150AH.	Battery shall be of min. 2x12 Volts, 25 plates & 180AH.
16	Alternator & Self Starter	i) Dynamically balanced Alternator with built in regulator shall be provided with minimum of <u>80</u> Amps output for non-EMR models.	Dynamically balanced Alternator with built in regulator shall be provided with minimum of 85 amps output for EMR models.
		<p>ii) The Starter Motor shall be with 4 step relay pre-engaged type, flange mounted with minimum rating of 4.0 KW.</p> <p>iii) Both these units shall be so located as to prevent ingress of oil or rainwater into them.</p> <p>iv) Self-Starter & Alternator preferably Lucas-TVS, Bosch.</p>	
17	Instrument panel	The Instrument panel should be properly covered at bottom side to avoid ingress of dust and water.	
18	Noise Level	Shall meet the MOEF notified limit of 82 db tested as per IS:3028 of 1998 for noise reduction system for the noise made by components of the chassis particularly engine, exhaust system etc.	

Note:

1. The OEM shall submit detailed specifications of Chassis, aggregates and sub-assemblies with make and model of unit. If any new component is being used than the regular brands it must be informed in advance and get the approval.
2. No part of chassis shall cause hindrance for body fabrication.
3. All the material shall be type approval/ARAI approved.
4. **4-cylinder engine chassis cost is less than 6-cylinder engine chassis.**


Chief Mechanical Engineer (C&B)


 Approved (C&B)