

AATMANIRBHARATA Product Visualisation



Industrial Design

An activity and process of Improving Aesthetic appeal of any **Product, Operator's Ease, Productivity, Efficiency & Safety,**
With due focus on **Engineering, Technology and Manufacturability.**

An application of **Human Factor Issues** for bettering customer acceptance & experience
with an objective to meet the **Global Standards in Design.**



Defence & Aerospace

Medium Bullet-Proof Vehicle

MBPV Mk-II

- BEML 4X4 chassis with 4 wheel drive.
- Bullet & Blast proof

Technical Specifications

- Engine : TAD853VE 6 Cylinder, BSIII water-cooled Engine
- Horsepower : 230 kW @ 2200rpm
- Gradeability : 25°



Armoured Recovery & Repair Vehicle

ARJUN ARR

- State-of-the-Art, Modern and Versatile ARR
- Recovery, Repair and Replenishing functions pertaining to Arjun MBT



Technical Specifications

- Main Winch : 50 ton single pull
- Horsepower : 1400 hp at 2400 rpm
- Crane : 20 ton @ 3m reach

Command Post Vehicle

MSCPV

- High mobility, ballistic and blast resistant vehicle
- Equipped with on-board electronics for standby command

Technical Specifications

- Engine : 6-Cylinder inline, 620 Nm torque, BS-IV emission
- Horsepower : 127 Kw@ 2400 rpm



Aircraft Towing Tractor

BA-10 (4X4)

- To push or pull:
 - Civil and Military Aircrafts (upto 75tons)
 - Boeing 737-100 to 900 series Aircrafts
 - Airbus A319, A320 & A321 Aircrafts

Technical Specifications

- Engine : H6ETIC3RU23/3,
4 cycle watercooled,direct
injection,turbocharged
- Horsepower : 133HP @ 2300 rpm
- Draw Pull : 7000kg



Crawler Dozer

BD-50 HST

- Arm Chair Steering control
- Hydrostatic transmission
- Integral ROPS - FOPS cabin

Technical Specifications

- Operating Mass : 10,000 Kg
- Engine power : 117 HP @ 2200 rpm



Crawler Dozer

BD65-1

- BEML - B6D125-1 Engine
- Power Shift Transmission
- Wet Multiple Disc Steering Clutches and Brakes

Technical Specifications

- Operating Mass : 17,100 kg (Standard)
- Engine Power : 165 HP @ 2000 rpm



High Mobility Vehicle 8X8

'AI' Powered MHDS

- Operations in all-terrain & climatic conditions
- Mobile health Diagnostic Station

Technical Specifications

- Engine : T3B-928-70, 8-Cylinder, V-type, Air-Cooled, 4-Stroke, Diesel direct injection, Turbocharger
- Horsepower : 300 kW @ 1800rpm
- Gradeability : 25°



High Mobility Vehicle 8X8

Armoured Driver Cabin

- Operations in all-terrain & climatic conditions
- Bullet & Blast proof

Technical Specifications

- Engine : T3D-928-70, 8-Cylinder, V-type, Air-Cooled, 4-Stroke, Diesel direct injection, Turbocharger
- Horsepower : 325 kW @ 1800rpm
- Gradeability : 25°



High Mobility Vehicle 8X8

Flat '2-Door' Driver Cabin

- Operations in all-terrain & climatic conditions

Technical Specifications

- Engine : T3B-928-70, 8-Cylinder, V-type, Air-Cooled , 4-Stroke, Diesel direct injection, Turbocharger
- Horsepower : 300 kW @ 1800rpm
- Gradeability : 25°



High Mobility Vehicle 8X8

Flat '4-Door' Driver Cabin

- Operations in all-terrain & climatic conditions

Technical Specifications

- Engine : T3B-928-70, 8-Cylinder, V-type, Air-Cooled , 4-Stroke, Diesel direct injection, Turbocharger
- Horsepower : 325 kW @ 1800rpm
- Gradeability : 25°



High Mobility Vehicle 8X8

Armoured Driver Cabin - MGS

- Operations in all-terrain & climatic conditions
- Bullet & Blast proof

Technical Specifications

- Engine : T3B-928-70, 8-Cylinder, V-type, Air-Cooled, 4-Stroke, Diesel direct injection, Turbocharger
- Horsepower : 300 kW @ 1800rpm
- Gradeability : 25°





**Mining
&
Construction**

Rear Dump Truck – Product Portfolio

	BH 205E-AC	BH 150E-AC	BH 100	BH 60M	BH 35-2
Engine Power (HP)	2300 @ 1900 rpm	1875 @ 1900 rpm	1082 @ 2100 rpm	700 @ 2000 rpm	400 @ 2100 rpm
Gross Vehicle Weight (kg)	3,42,500	2,40,000	1,65,500	98,000	59,560
Max Payload (kg)	1,86,000	1,36,000	91,500	54,500	31,752
Body Capacity (m³)	111	82	61	36.4	22.5
Dimensions (lxbxh) mm	13,636 x 8,260 x 6,672	12,155 x 7,707 x 6,526	10,629 x 6,315 x 5,250	9,180 x 5,420 x 4,740	7,747 x 4,300 x 3,995

* Engine Power mentioned is Gross Power

Rear Dump Truck

BH 205E

- Electric Drive
- Superior Operating Comfort
- Low maintainability & repairability
- High power to weight ratio

Technical Specifications

- Max Payload : 1,86,000 kg
- Body Capacity : 111m³
- Engine Power : 2300 HP @1900 rpm



Hydraulic Excavator – Product Portfolio

	BE 1800E	BE 1000-1	BE 700	BE 300LC	BE 220G
Engine Power (HP)	2 x 402 @ 1500 rpm	542 @ 1700 rpm	415 @ 1800 rpm	197 @ 1550 rpm	148 @ 2000 rpm
Operating Mass (kg)	1,75,000	98,000	70,000	30,800	22,800
Draw bar Pull (kg)	1,05,000	62,000	56,500	21,500	16,145
Bucket Capacity (m³)	10.2	6.1	4.5	1.57	1.0
Dimensions (l x b x h)mm	13,235 x 6,197 x 6,750	10,715 x 4,610 x 5,770	9,540 x 3,910 x 5,050	10,810 x 3,190 x 3,060	10,000 x 2,990 x 3,200

Hydraulic Excavator

BE1800D

- Closed Loop Swing System
- Powerful, Economical Engine
- Effort-free Operation

Technical Specifications

- Operating Mass : 1,75,000 kg
- Engine Power : 2 x 475 HP @ 2000 rpm
- Bucket Capacity : 7.5m³ - 10.2m³ (Loading Shovel)



Crawler Dozer – Product Portfolio

	BD 355	BD 155	BD 85	BD 80	BD 50
Engine Power (HP)	416 @ 2000 rpm	324 @ 2000 rpm	230 @ 2000 rpm	180 @ 1850 rpm	90 @ 1750 rpm
Operating Mass (kg)	49,540	39,025	24,340	21,550	12,170
Draw bar Pull (kg)	81,000	59,000	40,000	17,250	8,280
Blade Capacity (m³)	13.0 (SU Blade)	7.9 (Straight)	4.5 (Straight)	3.57 (Angle)	2.0 (Angle)
Dimensions (l x b x h)mm	7,163 x 4,315 x 3,937	6,555 x 4,130 x 3,745	5,915 x 3,460 x 3,395	5,890 x 4,260 x 3,060	4,700 x 3,350 x 2,870

Crawler Dozer

BD355

- Environmental friendly BEML BS6D170-1
- Pilot operated Hydraulic System
- Wet Multiple Disc Steering Clutches and Brakes

Technical Specifications

- Operating Mass : 46,660 kg (with SU Blade and ROPS Cabin)
- Engine Power : 416 HP @ 2000 rpm



Wheel Dozer – Product Portfolio

	BD 30W-1	BD 14W
Engine Power (HP)	300 @ 2100 rpm	126 @ 2000 rpm
Operating Mass (kg)	30,000	14,500
Draw bar Pull (kg)	31,000	10,200
Blade Length (mm)	4500	3655
Dimensions (l x b x h)mm	8,700 x 4,500 x 4,090	7,120 x 3,655 x 3,330

Wheel Dozer

BD14W

- Turbo Charged Sturdy Engine
- Articulated Power Steering
- Limited Slip Differential

Technical Specifications

- Operating Mass : 14,500 kg
- Flywheel Power : 94 kW (126 HP) @ 2000 rpm
- Blade Capacity : 2.4m³



Motor Grader – Product Portfolio

	BG 825	BG 605I	BG 605A	BG 405A
Engine Power (HP)	300 @ 2100 rpm	160 @ 2300 rpm (BS-IV - Engine)	173 @ 1800 rpm	133 @ 2300 rpm (BS-IV - Engine)
Blade Length (mm)	4,876	3,660	3,660	3,000
Operating Weight (kg)	28,890	14,700 (ROPS)	15,800 (ROPS)	11,500
Steering Angle (Lock to Lock)	50°	40°	40°	40°
Dimensions (lxwxh) mm	11,470 x 3,050 x 3,550	9,230 x 2,375 x 3,420	8,980 x 2,524 x 3,679	7,160 x 2,000 x 3,200

Motor Grader

BG 825

- Ease of operating
- Increased productivity
- Ease of operator comfort

Technical Specifications

- Blade Length : 4,928 mm
- Operating Wt. : 25,750 kg
- Engine Power : 280 HP @2100 rpm



Water Sprinkler – Product Portfolio

	BWS 70	WS 28-2
Engine Power (HP)	950 @ 2100 rpm	400 @ 2100 rpm
Gross Vehicle Weight (kg)	1,34,000	53,700
Water Tank Capacity (Liters)	70,000	28,000
Water Pump (m³/hr)	180 @2900rpm 85m head	110 @2900rpm 55m head
Dimensions (lxbxh) mm	10,303 x 5,720 x 6,560	7,995 x 4,344 x 4,770

Water Sprinkler

WS 28-2

- Ease of Serviceability
- Superior Operating Comfort
- Exceptional Manoeuvrability
- Improved safety

Technical Specifications

- Water tank Capacity : 28,000 Liters
- Engine Power : 400 HP @2100 rpm



Wheel Loader – Product Portfolio

	BL 40	BL 30-1	BL 200-1
Engine Power (HP)	300 @ 2100 rpm	225 @ 2300 rpm	133 @ 2300 rpm
Operating Mass (kg)	28,000	18,000	10,500
Operating Height (mm)	6,095	5,492	4,775
Bucket Capacity (m ³)	4.7	3.1	1.7
Dimensions (l x b x h)mm	9,470 x 3,510 x 4,090	8,000 x 3,086 x 3,458	6,975 x 2,438 x 3,325

Wheel Loader

BL30-1

- Turbo Charged BS III compliant CRS Engine
- Orbitrol all Hydraulic Power Steering
- Integrated ROPS and FOPS Cabin

Technical Specifications

- Operating Mass : 18,000 kg
- Engine Power : 225HP @ 2300 rpm
- Bucket Capacity : 3.1m³



Backhoe Loader – Product Portfolio

	BL 120H	BL 9H (4x4)	BL 9H (4x2)
Engine Power (HP)	100 @ 2200 rpm	96 @ 2200 rpm	76 @ 2200 rpm
Operating Mass (kg)	8,800	7,700	7,600
Operating Height (mm)	5,984	5,880	5,880
Backhoe Capacity (m ³)	0.3	0.24	0.24
Dimensions (l x b x h)mm	6,197 x 2,752 x 4,036	6,270 x 3,032 x 3,890	6,270 x 3,032 x 3,890

Backhoe Loader

BL9H

- Powerful & Economical Engine
- More Operator Comfort
- More Reliability

Technical Specifications

- Operating Mass : 7,600 kg
- Engine Power : 76HP/ 96HP @ 2200 rpm



Pipe Layer – Product Portfolio

	BP 100	BP 70	BP 41
Engine Power (HP)	416 @ 2000 rpm	324 @ 2000 rpm	180 @ 1850 rpm
Operating Mass (kg)	62,000	46,000	29,870
Lift Capacity (kg)	1,00,000	70,000	41,000
Rope break Strength (kg)	48,000	27,400	21,400
Dimensions (l x b x h)mm	5,917 x 4,931 x 9,953	5,660 x 3,760 x 3,640	4,890 x 3,425 x 2,935

Pipe Layer

BP100

- BS6D170-1 BEML Turbo charged engine
- Power Shift Transmission
- Bolt-on type segmented sprockets

Technical Specifications

- Operating Mass : 62,000 kg
- Engine Power : 416 HP @ 2000 rpm
- Lift Capacity : 1,00,000 kg



Tyre Handler

BL14TH

- Turbo charged sturdy engine
- Electronic Transmission
- Limited Slip Differential

Technical Specifications

- Operating Mass : 21,500 kg
- Engine Power : 126 HP @ 2000 rpm
- Lift Capacity : 3,500 kg





Rail & Metro

Urban Transport

UTO / Driverless

- 6 Car trainsets
- Unattended Train Operation (UTO)
- 25kV AC Overhead Current collection

Technical Specifications

- Rail Gauge : 1435mm
- Speed : 80kmph
- Capacity : 2280 passengers for 6 Car trainsets



Urban Transport

ATO / ATP with CBTC

- 6 Car trainsets
- ATO/ ATP train operations
- 750V DC Third Rail Current collection

Technical Specifications

- Rail Gauge : 1435mm
- Speed : 85kmph
- Capacity : 2068 passengers for 6 Car trainsets



Urban Transport

ATO / ATP

- 6 Car trainsets
- ATO/ ATP train operations
- 750V DC Third Rail Current collection

Technical Specifications

- Rail Gauge : 1435mm
- Speed : 80kmph
- Capacity : 2004 passengers for 6 Car trainsets



Urban Transport

ATO / ATP

- 6 Car / 8 Car trainsets
- ATO/ ATP train operations
- 25kV AC Overhead Current Collection

Technical Specifications

- Rail Gauge : 1676mm
- Speed : 80kmph
- Capacity : 2290 passengers for 6 Car trainsets
3074 passengers for 8 Car trainsets



Urban Transport

UTO / Driverless

- 6 Car trainset
- Unattended Train Operation (UTO)
- 25kV AC Overhead Current collection

Technical Specifications

- Rail Gauge : 1435mm
- Speed : 80kmph
- Capacity : 2280 passengers for 6 Car trainsets



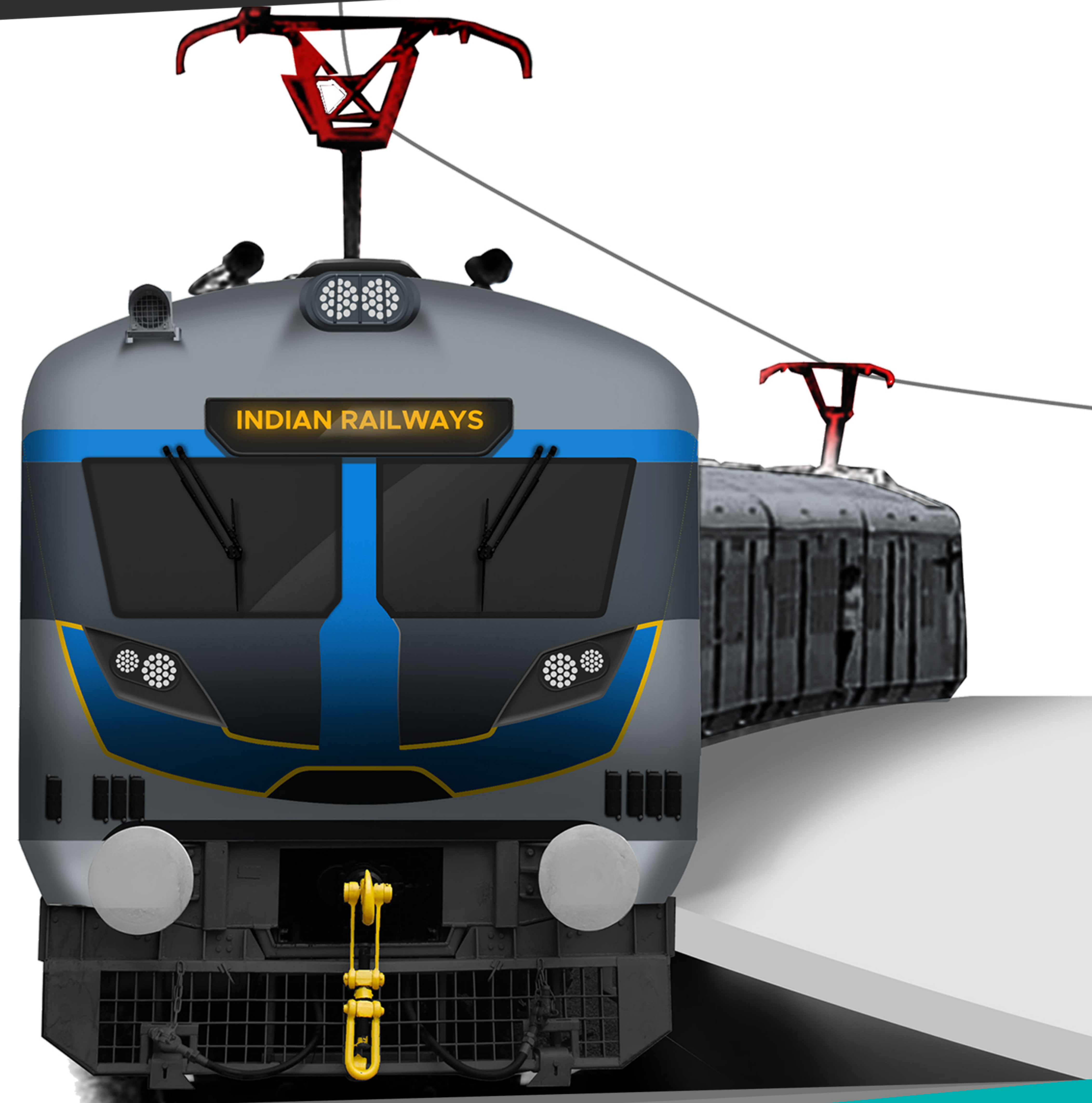
Sub-Urban Transport

Mainline EMU

- 8 Car / 12 Car Rake
- 535V for traction motors
- 260V AC for auxiliary circuits

Technical Specifications

- Rail Gauge : 1676mm
- Speed : 110kmph
- Capacity : 1376 Standing passengers
680 Seated passengers



Maintenance Vehicle

8 Wheeler OHE Inspection Car

- Diesel Hydraulic Tower Car(DHTC)
- Diesel Electric Tower Car (DETC)
- Meant for periodic inspection
- Patrolling and maintenance of overhead equipment on eletricfied broad gauge routes

Technical Specifications

- Rail Gauge : 1676mm
- Speed : 110kmph
- Capacity : 126 tonnes hauling





Innovation Centre: Industrial Design

Inaugurated by

Shri. Rajnath Singh

Hon'ble Defence Minister

of India

on

10th August, 2020



BEML LIMITED

Schedule 'A' Company under Ministry of Defence, GoI
Defence & Aerospace | Mining & Construction | Rail & Metro

Bangalore Complex, New Thippasandra,
Bengaluru - 560075.

www.bemlindia.in