

# 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 ARRV

- State-of-the-Art, Modern and Versatile ARRV
- 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

	<b>BH 205E-AC</b>	<b>BH 150E-AC</b>	<b>BH 100</b>	<b>BH 60M</b>	<b>BH 35-2</b>
<b>Engine Power (HP)</b>	2300 @ 1900 rpm	1875 @ 1900 rpm	1082 @ 2100 rpm	700 @ 2000 rpm	400 @ 2100 rpm
<b>Gross Vehicle Weight (kg)</b>	3,42,500	2,40,000	1,65,500	98,000	59,560
<b>Max Payload (kg)</b>	1,86,000	1,36,000	91,500	54,500	31,752
<b>Body Capacity (m<sup>3</sup>)</b>	111	82	61	36.4	22.5
<b>Dimensions (lxbxh) mm</b>	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 : 111m<sup>3</sup>
- Engine Power : 2300 HP @1900 rpm



# Hydraulic Excavator - Product Portfolio

	<b>BE 1800E</b>	<b>BE 1000-1</b>	<b>BE 700</b>	<b>BE 300LC</b>	<b>BE 220G</b>
<b>Engine Power (HP)</b>	2 x 402 @ 1500 rpm	542 @ 1700 rpm	415 @ 1800 rpm	197 @ 1550 rpm	148 @ 2000 rpm
<b>Operating Mass (kg)</b>	1,75,000	98,000	70,000	30,800	22,800
<b>Draw bar Pull (kg)</b>	1,05,000	62,000	56,500	21,500	16,145
<b>Bucket Capacity (m<sup>3</sup>)</b>	10.2	6.1	4.5	1.57	1.0
<b>Dimensions (l x b x h)mm</b>	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 : 7.5m<sup>3</sup> - 10.2m<sup>3</sup> (Loading Shovel)



## Crawler Dozer - Product Portfolio

	<b>BD 355</b>	<b>BD 155</b>	<b>BD 85</b>	<b>BD 80</b>	<b>BD 50</b>
<b>Engine Power (HP)</b>	416 @ 2000 rpm	324 @ 2000 rpm	230 @ 2000 rpm	180 @ 1850 rpm	90 @ 1750 rpm
<b>Operating Mass (kg)</b>	49,540	39,025	24,340	21,550	12,170
<b>Draw bar Pull (kg)</b>	81,000	59,000	40,000	17,250	8,280
<b>Blade Capacity (m<sup>3</sup>)</b>	13.0 (SU Blade)	7.9 (Straight)	4.5 (Straight)	3.57 (Angle)	2.0 (Angle)
<b>Dimensions (l x b x h)mm</b>	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

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

# 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 : 2.4m<sup>3</sup>



## Motor Grader - Product Portfolio

	<b>BG 825</b>	<b>BG 605I</b>	<b>BG 605A</b>	<b>BG 405A</b>
<b>Engine Power (HP)</b>	300 @ 2100 rpm	160 @ 2300 rpm (BS-IV - Engine)	173 @ 1800 rpm	133 @ 2300 rpm (BS-IV - Engine)
<b>Blade Length (mm)</b>	4,876	3,660	3,660	3,000
<b>Operating Weight (kg)</b>	28,890	14,700 (ROPS)	15,800 (ROPS)	11,500
<b>Steering Angle (Lock to Lock)</b>	50°	40°	40°	40°
<b>Dimensions (lxwxh) mm</b>	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

	<b>BWS 70</b>	<b>WS 28-2</b>
<b>Engine Power (HP)</b>	950 @ 2100 rpm	400 @ 2100 rpm
<b>Gross Vehicle Weight (kg)</b>	1,34,000	53,700
<b>Water Tank Capacity (Liters)</b>	70,000	28,000
<b>Water Pump (m<sup>3</sup>/hr)</b>	180 @2900rpm 85m head	110 @2900rpm 55m head
<b>Dimensions (lxbxh) mm</b>	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

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

# 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 : 3.1m<sup>3</sup>



## Backhoe Loader - Product Portfolio

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

# 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

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



# 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



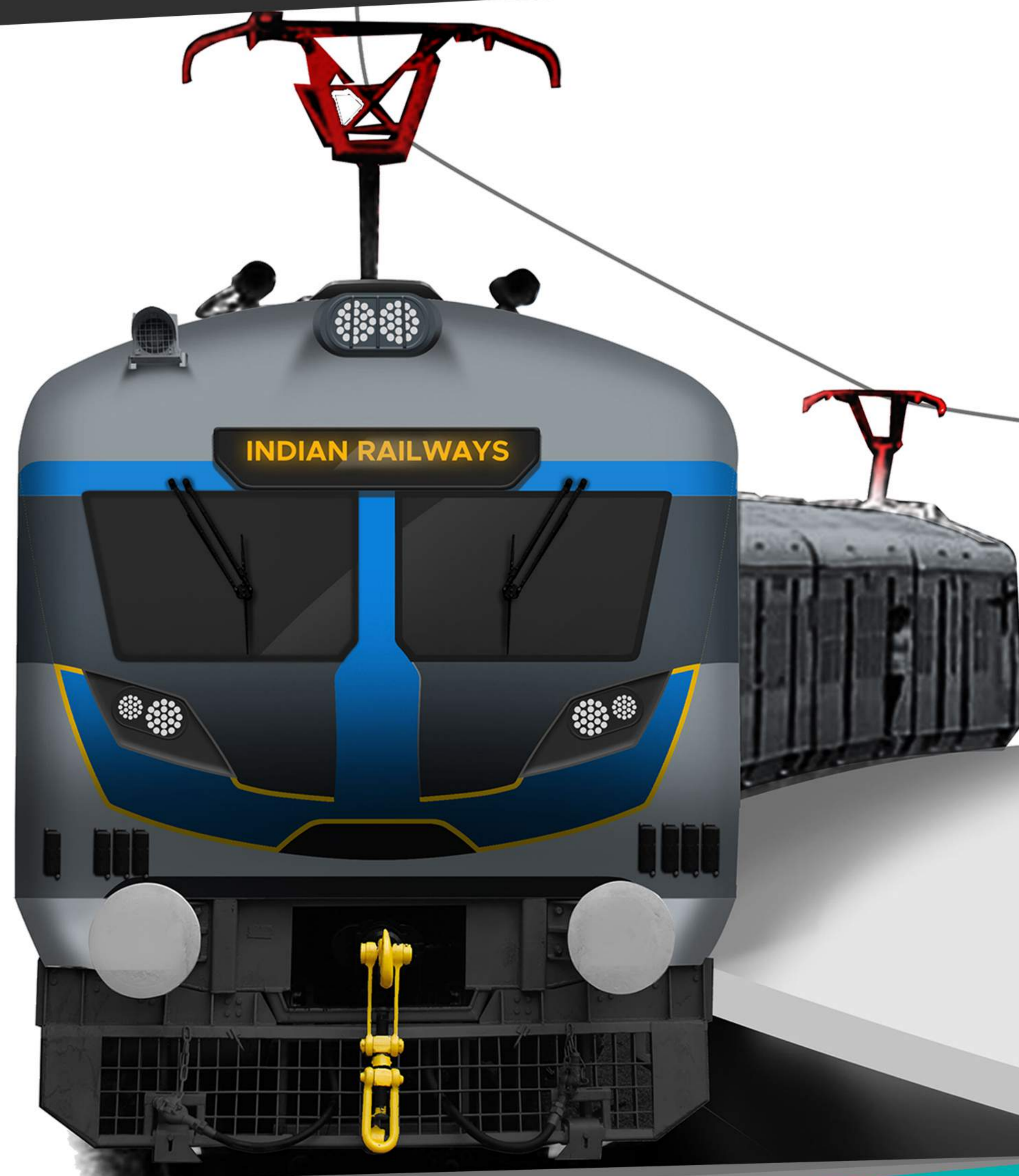


# Sub-Urban Transport Mainline EMU

- 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 electricified broad gauge routes

### Technical Specifications

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



# Innovation Center: Industrial Design



idc

Innovation on track



## Innovation Centre: Industrial Design

Inaugurated by

**Shri. Rajnath Singh**

Hon'ble Defence Minister

of India

on

**10th August, 2020**



## **BEML LIMITED**

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