



YEARS OF TRUSTED GLOBAL EXCELLENCE
1966-2021

ARAI[®]
Progress through Research

PROTOTYPE MANUFACTURING DEPARTMENT



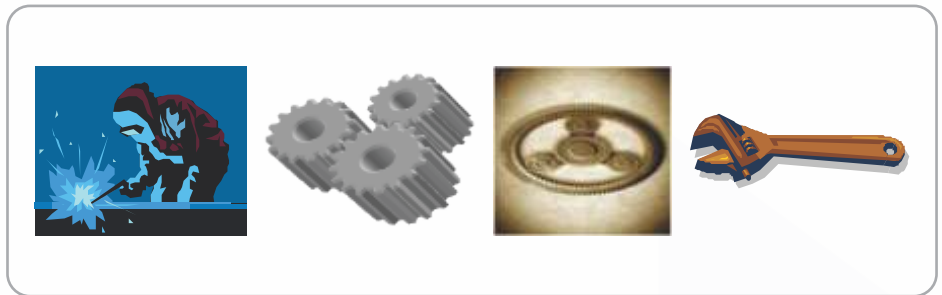
THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA

VISION

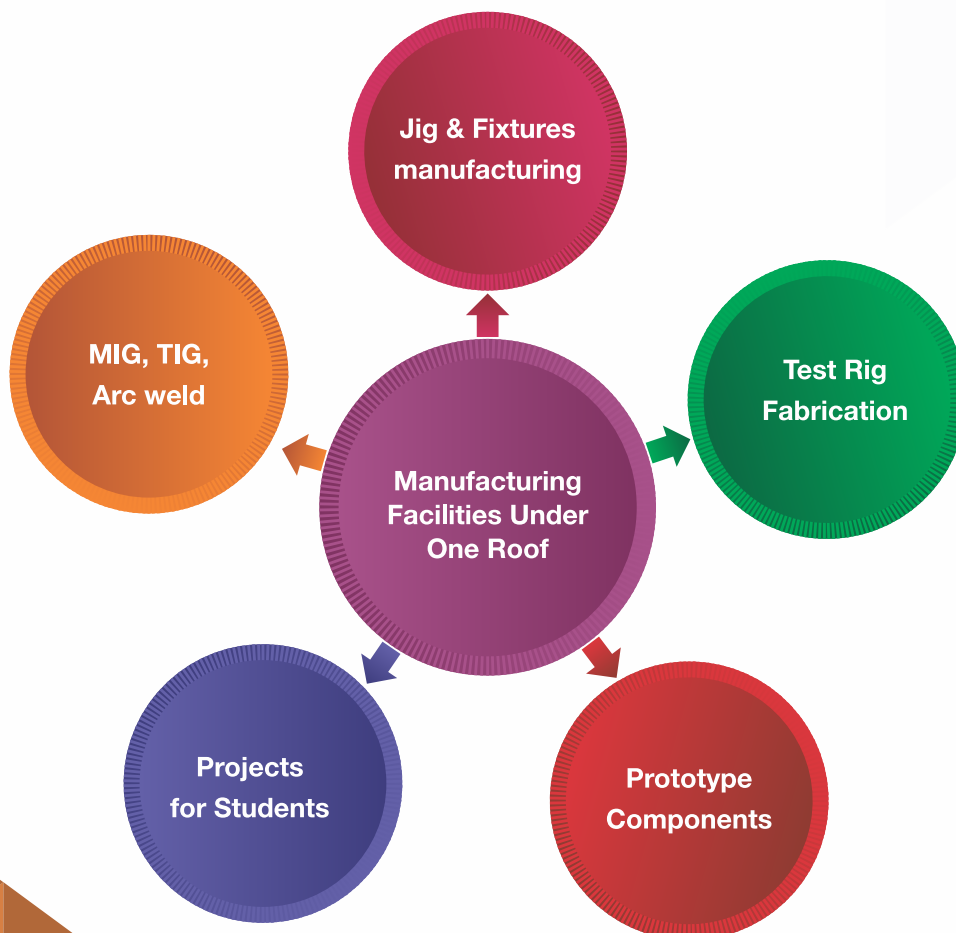
Prototype Manufacturing Department (PMD) renders services to testing and R & D Organizations, and is equipped with various type of machines suitable for manufacturing & modification of Engine components/ engineering Components/ light & heavy Jig & fixtures/ Student Projects /Fabrication /Welding & Carpentry work , special assignments such as Critical Piston Bowl Machining , Valves, Flow Box, Modification of Cylinder heads, Stiff Back, Child restraints dummy & other Test rig Development .

FACILITIES

- Vertical Machining Centre
- CNC Turning Centre
- Milling & Lathe Machines
- Radial Drilling Machine
- Surface & Cylindrical Grinding
- Horizontal Swing Type Band Saw
- MIG , TIG Welding , Arc Welding
- Plasma Cutting , Gas Cutting



CAPABILITIES



FACILITIES



Vertical Machining Center

Working range: 1050 x 610 x 610 mm
Max load on table: 1200 kg
4TH axis positional accuracy: $\pm 15^\circ$ deg.
Positioning accuracy: ± 0.005 mm
Repeatability: ± 0.003 mm



CNC Turning Center

Working range: 1200 x 200 mm
Spindle speed range: 40-4000 rpm
Max turning diameter: 365 mm
Positioning accuracy: ± 0.01 mm
Repeatability: ± 0.005 mm



Milling Machine BFW

Working range: 1030 X 350 X 470 mm
Speed range: 35-1800 rpm
Positioning accuracy: ± 0.10 mm
Repeatability: ± 0.05 mm



Lathe Enterprises 1550

Centre distance: 1500 mm
Height of center: 190 mm
Positioning accuracy: ± 0.1 mm
Repeatability: ± 0.05 mm



Radial Drilling

Working surface: 600x500x450 mm
Working surf from base: 1490x910 mm
Max /min drilling radius: 1500/530 mm
Spindle speed: 40 -1700 Rev./ min
Positioning accuracy: ± 0.05 mm
Repeatability: ± 0.03 mm



Cylindrical Grinding

Distance between center: 800 mm
Height of center: 130 mm
Max. diameter ground: 125 mm
Max. table travels: 810 mm
Accuracy: ± 0.01 mm



FACILITIES



Horizontal Swing type Band Saw

Max. diameter cutting: 250 mm
Max. sq. tube cutting: 230 x 230 mm
Blade size: 3760 X 27 X 0.9 mm
Cutting Speed: 22 – 88 m/min
Accuracy: 0.5 mm



Plasma Cutting Machine

Type of cooling: Ambient air & Gas stream
Operating pressure: 4.1-6.5 bar
Current & Voltage range: 30A – 100A / 400V
Max thickness cutting: 25.4 mm (mild steel)
Application: Ferrous & non ferrous cutting



Vertica Turret Milling Machine

Working range - 1270 x 254 mm
Max load on table – 300 Kg
Position accuracy - ± 0.01 mm
DRO least count - 0.005 mm



MIG Welding

Type of cooling: Forced air
Shielding gas: CO₂ / Argon
Wire diameter: 0.8 - 1.2
Supply voltage: 415 V
Current range: 60-400 A
Application: Ferrous / non ferrous material



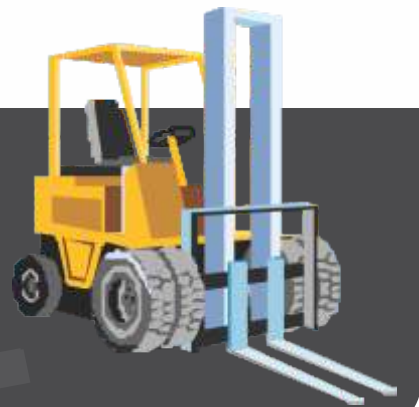
TIG Welding

Shielding gas: Argon / Helium
Current range: 5-315 A
Welding electrode Dia.: 0.5 - 4.8 mm
Filler wire Diameter: 1-6 mm
Supply voltage: 415 V
Application: Ferrous / non ferrous material



Portable Tapping Machine

Tapping capacity - M6 – M30
Working radius– 1350 mm
Current & voltage – single phase 220 v



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The Automotive Research Association of India
(Affiliated to Ministry of Heavy Industries, Govt. of India)

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