

Tool List

Required Tool Standards and Financial Planning:

Students enrolled in the Automotive Program are required to obtain and maintain the tools identified on the official program tool list. These tools are essential for safe participation in laboratory activities and for meeting the performance standards expected in a professional automotive environment.

Students are advised **not** to purchase tools prior to the start of the term. Tool requirements, quality standards, and purchasing guidance are reviewed during the first week of instruction. The program hosts a tool fair featuring professional vendors who offer educational discounts and student-oriented starter packages. This ensures students make informed purchasing decisions aligned with industry standards.

Automotive service is a skilled trade that requires a significant personal investment in professional-grade tools. While purchases are typically phased in overtime, students should anticipate investing several thousand dollars during their progression through the program. Entering the program without adequate financial preparation may limit a student's ability to complete lab assignments efficiently and meet performance expectations.

Ownership, organization, and proper care of required tools are part of professional development. Responsibility for acquiring and maintaining required tools rests with the student and is considered an essential component of career preparation in the automotive field.

Required Tool List:

Wrenches:

All wrenches must be manufactured from high grade tool steels like chromium-vanadium alloys or S2 alloys, should have a high-quality polished chrome finish. Standard length with 12 point closed box.

- Open & closed combination box wrenches – SAE: 1/4" – 1- 1/4" 12-point
- Open & closed combination box wrenches – Metric: 7mm – 24mm 12 point
- Flare nut wrenches – SAE 1/4" – 7/8"
- Flare nut wrenches – Metric 8mm – 21mm

Screwdrivers:

All screw drivers must be manufactured from high-grade tool steel like chromium-vanadium alloy or S2 alloys with heat treated tips. Shaft should include shank drive for wrench assist and an ergonomic handle.

- Screwdriver – Phillips: #1 - #3
- Screwdriver – Phillips: Stubby #2
- Screwdriver – Flat: 1/4", 5/16", 3/8"
- Screwdriver – Flat: Stubby 5/16"
- Screwdriver – Flat: Pocket 1/4"
- Screwdriver – Torx: TP8, TP10, TP15, TP20, TP25
- Screwdriver – 1/4" socket driver

Pliers:

All pliers must be constructed of high-grade tool steel with high carbon content. Plier handles need to have insulative vinyl coating for comfort and protection.

- Slip joint – 6 ½" (2 position)
- Slip joint – 9 ½" (multi-position)
- Slip joint – 16" (multi-position)
- High leverage wire cutters – 10"
- Needle nose – 8" (straight)
- Needle nose – 8" 45°
- Needle nose – 8" 90°
- Locking pliers – 10" (curved jaw)
- Locking pliers – 10" (straight jaw)
- Locking pliers – 6" (longnose)
- Electrical crimping/stripping pliers – 6" heavy weight design (12-20 gauge)
- Electrical crimping/cutting pliers – 10" heavy weight design
- Battery pliers – compound jaw

Snap Ring Pliers:

Snap-ring pliers should be constructed of high carbon steel or a chrome-vanadium alloy with machined and heat-treated tips. All snap-ring pliers must have convertible jaws.

- Snap-ring pliers – 6" x .038" (straight)
- Snap-ring pliers – 6" x .038" 45°
- Snap-ring pliers – 6" x .038" 90°
- Snap-ring pliers – 6" x .047" (straight)
- Snap ring-pliers – 6" x .047" 45°
- Snap ring-pliers – 6" x .047" 90°
- Snap ring-pliers – 9" x .070" (straight)
- Snap ring-pliers – 9" x .070" 45°
- Snap ring-pliers – 9" x .070" 90°

Picks:

Picks & gasket scrapers must have ergonomic handles and constructed out of

high-grade alloyed steel. Gasket scrapers should be high carbon steel with a shank to pommel design.

- Pick – 6" straight
- Pick – 6" Hook
- Pick – 6" dual angle
- Pick – 6" 90°
- Large hose pick – 10" 90°
- Gasket scraper – 1/2"
- Gasket scraper – 3/4"
- Gasket scraper – 1"

Sockets:

All nonimpact sockets must be constructed of high-grade tool steels like chromium-vanadium alloys or S2 alloys, should have a high-quality polished chrome finish. Impact sockets must be constructed of chromium-molybdenum steel.

1/4" Drive Chrome Sockets:

- Shallow – SAE 6-point: 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2"
- Shallow – Metric 6-point: 5mm, 5.5mm, 6mm, 7mm, 8mm, 10mm, 12mm, 13mm, 14mm, 15mm
- Deep – SAE 6-point: 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 7/16", 1/2"
- Deep – Metric 6-point: 5mm, 5.5mm, 6mm, 7mm, 8mm, 10mm, 12mm, 13mm, 14mm, 15mm

3/8" Drive Chrome Sockets:

- Shallow – SAE 6-point: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"

- Deep – SAE 6-point: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Shallow – SAE 12-point: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Deep – SAE 12-point: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Shallow – Metric 6-point: 8mm, 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm
- Deep – Metric 6-point: 8mm, 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm
- Shallow – Metric 12-point: 8mm, 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm
- Deep – Metric 12-point: 8mm, 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm

1/2" Drive Chrome Sockets:

- Shallow – SAE 6-point: 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Deep – SAE 6-point: 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Shallow – SAE 12-point: 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Deep – SAE 12-point: 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 7/8", 1", 1-1/8", 1-1/4"
- Shallow – Metric 6-point: 10mm, 12mm, 13mm, 14mm, 15mm, 16mm,

17mm, 18mm, 19mm, 21mm, 22mm, 24mm

- Deep – Metric 6-point: 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm
- Shallow – Metric 12-point: 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm
- Deep – Metric 12-point: 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm

1/2" Impact Sockets:

1. Shallow – Metric 6-point: 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm
2. Deep – Metric 6-point: 10mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm, 18mm, 19mm, 21mm, 22mm, 24mm

Ratchets:

The main body should be constructed from chrome vanadium tool steel; the gear set should be constructed from hardened alloy steels and should have a 72+ tooth count.

- 1/4" Ratchet – 6" handle
- 3/8" Ratchet – 9" handle
- 1/2" Ratchet – 12" handle

Breaker Bars:

Breaker bars need to be constructed of chrome-vanadium tool steel and have a pivoting head.

- 3/8" Breaker bar – 12"
- 1/2" Breaker bar – 18" +

Extensions:

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Chrome extension needs to be constructed of chrome-vanadium tool steel with a polished chrome finish. Impact sockets must be constructed of chromium-molybdenum steel.

1/4" Chrome Extensions:

- Extension – 1"
- Extension – 2"
- Extension – 6"
- Extension – 12"

3/8" Chrome Extensions:

- Extension – 3"
- Extension – 6"
- Extension – 12"
- Extension – 24"
- Locking extension – 3"
- Locking extension – 6"
- Locking extension – 12"
- Locking extension – 24"

1/2" Chrome Extensions:

- Extension – 3"
- Extension – 6"
- Extension – 12"
- Extension – 24"

1/2" Impact Extensions:

- Extension – 3"
- Extension – 6"
- Extension – 12"

Spark Plug Sockets:

Spark plug sockets should be constructed of high-grade chrome-vanadium with polished chrome finish. Spark plug sockets must have a rubber liner to protect and hold spark plugs in the socket. All spark plug sockets should be 3/8" drive.

- Spark plug socket – SAE: 9/16"
- Spark plug socket – SAE: 5/8"
- Spark plug socket – SAE: 13/16"
- Spark plug socket – Metric: 14mm

Universal & Ball Sockets:

Chrome universal sockets need to be constructed of chrome-vanadium tool steel with a polished chrome finish. Impact ball sockets must be constructed of chromium-molybdenum steel.

- 1/4" Chrome universal
- 3/8" Chrome universal
- 1/2" Impact ball socket

Punches & Chisels:

Punches and chisels need to be constructed from high carbon steel or chrome-molybdenum steel and heat treated.

- Chisel – flat tip: 5/16"
- Chisel – flat tip: 3/8"
- Chisel – flat tip: 7/16"
- Chisel – flat tip: 3/4"
- Drift/punch – 3/16"
- Drift/punch – 3/8"
- Drift/punch – 5/16"
- Center – 1/4"
- Brass drift – 3/4"
- Roll pin – 1/8"
- Roll pin – 3/16"
- Roll pin – 1/4"
- Bevel Gauge

Hammers:

Hammers must be constructed of 1045 – 1060 grade high-carbon steel. Recommend steel handle shaft imbedded in an ergonomic plastic or fiberglass handle. Hammers are divided into sledge, dead-blow, ball peen, and brass.

Ball Peen:

- Ball peen – 4 oz.
- Ball peen – 12 oz.

- Ball peen – 32 oz.

Dead Blow:

- Dead blow – 16 oz.
- Dead blow – 32 oz.

Sledge:

- Sledge – 48 oz. (12-16" handle)

Brass:

- Brass – 16-24 oz.

Pry Bars:

Pry bars need to be constructed from chrome-molybdenum. The shank must extend through the handle to a steel pommel. Screw drivers are not acceptable pry bars.

- Pry bar – curved foot: 1/4" x 4"
- Pry bar – curved foot: 3/8" x 12"
- Pry bar – curved foot: 1/2" x 24"
- Pry bar – curved foot: 3/4 – 7/8" x 36-48"
- Lady foot/lineup bar – 6"
- Lady foot/lineup bar – 12"
- Lady foot/lineup bar – 24"

Files:

Files must be made of high carbon steel with a minimum of 1.0% carbon and a hardness of 60-65 HRC. Files must have handles or a handle that can be transferred between files within your kit.

- Bastard – 9-12"
- Mill – 9-12"
- Round – 9-12"
- Three square – 6-9"

Hex Keys (Allen Wrenches):

Hex Key/Allen wrenches come in a variety of sizes and shapes, but traditional L-Hex keys work best for most applications. Hex keys should be constructed of high-quality tool steel alloys like chrome-nickel.

- Hex Key – SAE: 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8"
- Hex Key – Metric: 1.5mm, 2mm, 2.5mm, 3mm, 4mm, 5mm, 6mm, 8mm, 10mm, 12mm

Pitch Gauges:

Pitch gauges are used to determine fastener thread pitches/sizes.

- SAE pitch gauge
- Metric pitch gauge

Electrical Analysis Tools:

Modern technicians depend on quality electrical tools for proper data. For this reason, we recommend the following tools by brand:

- DVOM – Fluke 87 or 88 - must be "automotive" model, convertible 48" leads
- Insulated crocodile clips (2)
- Steel back probe tips (2)
- Wire piercing leads (2)
- Low current induction clamp
- High impedance circuit tester
- Low impedance circuit tester

Lighting:

Strongly recommended that lighting be rechargeable, and of durable construction. Magnetic bases are extremely helpful. Led lighting elements are superior to incandescent bulbs.

- Pocket flashlight
- Work light with magnetic base and an adjustable head

Personal Tire Equipment Tools:

- Tire gauge (15 – 120 psi)
- Tread depth – SAE / Metric
- Tire inflator
- Valve core removal driver

Miscellaneous Tools:

- Knife – Utility
- Panel/upholstery removal tool
- Vacuum gauge: 0 – 30 inHg
- Pocket T-gauge ruler: 6”
- Tape measure: 16 – 24’
- Dial or digital caliper: 6”
- Feeler gauge set - SAE: 0.0015”, 0.002”, 0.003”, 0.004”, 0.005”, 0.006”, 0.008”, 0.009”, 0.010”, 0.012”, 0.014”, 0.016”, 0.018”, 0.020”, 0.022”, 0.024”, 0.028”, 0.030”
- Feeler gauge set – Metric: 0.04mm, 0.05mm, 0.06mm, 0.08mm, 0.10mm, 0.15mm, 0.20mm, 0.25mm, 0.30mm, 0.35mm, 0.40mm, 0.45mm, 0.50mm, 0.55mm, 0.60mm, 0.65mm, 0.75mm, 0.80mm, 0.85mm, 0.90mm, 0.95mm, 1.00mm
- Battery terminal brush – inside and outside
- Ethylene glycol tester – large disc design
- Mechanics stethoscope with removeable wand
- Brake spring compression tool – 15/16”
- Brake spoon
- Brake spring pliers
- Spring hose clamp removal tool: 11/16” – 2-1/2”
- Telescoping magnet

- Inspection mirror – small round telescoping
- Blow gun – rubber transmission pressurizing tip is recommended
- Infrared thermal gun
- Thermometer – pen design with a range of 32 - 140°
- Spark plug gap tool – wire design range: .024” - .060”

Personal Safety Equipment:

- Safety glasses – Must be ANSIZ87.1 compliant
- Work shoe/boot – must cover toes and made of leather, recommended oil resistant soles

Tool Storage & Organization:

All students are required to have either a tool-cart with multiple drawers or roll-chest. All drawers must have locking mechanisms to secure contents. Note: It is recommended students have quality tool-cart as some employers do not allow large roll-chest or excessively tall tool-chests. All tool storage systems must have casters that lock.

- Tool-chest or tool-cart:
 - Carts must have locking lids and drawers. Recommend a minimum of about 20,000 sq/in of locking storage. Typically, these systems have between 6 – 10 drawers.
 - Tool chests often have multi-row drawers and should have a minimum of 20,000 + sq/in of locking storage. Some storage systems include a two-piece roll cab and road-box that rests on the roll cab.

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- Wrench organizers
- Socket organizers (consider clearances within your tool storage system before purchasing)
- Plier organizers

Professional Tool Standards

Students enrolled in the Automotive Program are expected to use professional-grade tools. Tool quality directly impacts workmanship, safety, accuracy, and efficiency. Inferior or poorly fitting tools lead to damaged fasteners and components, compromised repairs, reduced productivity, and unnecessary frustration. Professional-level craftsmanship requires professional-level equipment.

Students are expected to invest in tools that meet recognized industry standards. The program recognizes the following established manufacturers as producing professional-grade tools suitable for instructional and industry use: Snap-on, Mac Tools, Matco Tools, Cornwell Tools, Carlisle, Icon, S&K, Milwaukee Tool, and GearWrench.

Recommended Productivity Tools / 2nd Year Tools

In addition to the required tool list, students are strongly encouraged to acquire supplemental tools that improve efficiency, accuracy, and overall workflow. While it is not mandatory for initial enrollment, these tools significantly enhance productivity in a professional shop environment and allow technicians to perform tasks more effectively and with greater precision.

As students progress in skill and responsibility, investing in tools that streamline diagnostics, reduce physical strain, and improve organization will contribute to higher-quality workmanship and increased confidence. Professional technicians continually expand their tool inventory to meet the demands of modern vehicle systems.

Students should view these tools as strategic career investments that support long-term professional development.

Battery Powered Tools:

Battery-powered tools significantly improve efficiency and mobility in the shop environment. However, factors such as battery platform compatibility, charging time, long-term replacement cost, and overall system investment should be carefully evaluated before selecting a tool line.

- Ratchet – battery powered: 1/4" drive
- Ratchet – battery powered: 3/8" drive
- Impact gun – battery powered: 1/4" drive
- Impact gun – battery powered: 3/8" drive
- Impact gun – battery powered: 1/2" drive

- Drill – battery powered: 1/4" chuck
- Drill – battery powered: right angle 1/4" chuck

Pneumatic Tools:

Pneumatic tools are powered by compressed air and depend on adequate airflow and system capacity for proper performance. When supported by sufficient air supply, they are exceptionally durable and effective for prolonged operation in professional environments.

- Pneumatic impact: 3/8" drive
- Pneumatic hammer and chisels
- Pneumatic impact: 1/2" drive
- Pneumatic cut off tool
- Pneumatic die grinder

Other Recommended Tools:

- Torque/angle wrench – digital: 1/4" drive, range: 15 – 260 in-lbs.
- Torque/angle wrench – digital: 3/8" drive, range: 5-100 Ft-lbs.
- Torque/angle wrench – digital: 1/2" drive, range: 15 – 250 Ft-lbs.
- Torque wrench – Split Beam (tire work) 40 – 250 Ft-lbs.
- Torque wrench – clicker design 50-250 Ft-lbs.

- Bit driver kit
- Ratchet wrenches – SAE & Metric
- Stubby wrenches – SAE & Metric
- Adjustable wrenches – 6", 12", 18"
- Crow foot wrenches – SAE & Metric
- Hex drive sockets – SAE & Metric
- Torx sockets – SAE & Metric
- Tap & die set – SAE & Metric
- Long Needle Nose – Straight
- Long needle nose pliers - 45°
- Long needle nose pliers - 90°
- Thread chaser kit – SAE & Metric
- Thread file – SAE and Metric
- Current clamp – high amperage
- Long retractable DVOM leads
- Power-Probe circuit tester
- Relay testers
- Disconnect tools – AC, emissions & fuel