

Hack Saw

Hammers:

- 16 oz. Ball Peen

- Brass

- Dead Blow Plastic Mallet

- Plastic Tip

Hammers (con't)

- Rubber Mallet

- Inspection Mirror

- Magnetic Pickup Tool

Pliers:

- Combination 6"

- Hose Clamp

- Locking Jaw

- Needle Nose 6"

- Side Cutting

- Slip Joint (Water Pump)

Pry Bars:

- Rolling Head

- Straight

Punches:

- Center

- Brass Drift

- Pin 1/8", 3/16", 1/4", 5/16"

- Taper 3/8", 1/2", 5/8"

Safety Glasses (meeting OSHA requirements)

Scraper:

- Carbon 1"

- Gasket 1"

Screwdriver - Blade Type:

- Stubby 6", 9", 12"

- Offset

Screwdriver - Phillips:

- Stubby #1, #2

- 6" #1, #2

- 12" #3

- Offset #2

Screwdriver - Impact Driver Set

Screw Starter:

- Phillips

- Standard

Socket Set - 1/4" Drive:

- 1/4" - 1/2" Standard Depth

- 1/4" - 1/2" Deep

- 1/4" - 5 mm Deep

- 1/4" - 5 mm Shallow

- 1/4" - 5.5 mm Deep

1/4" – 5.5 mm Shallow
6mm - 12mm Standard Depth
6mm - 12mm Deep
Flex/Universal Type
3", 6" Extensions
Ratchet

Socket Set - 3/8" Drive:

5/16" - 3/4" Standard Depth (6 point)
3/8" - 3/4" Deep (6 point)
10mm - 19mm Standard Depth
10mm - 19mm Deep
3", 5", 10" Extensions
Flexhead Ratchet
Ratchet
Spark Plug Sockets 5/8", 13/16"
Speed Handle
Universal Joint
Flexible Socket Set 3/8" - 3/4"
Flexible Socket Set 10mm - 19mm

Socket Set - 1/2" Drive:

7/16" - 1 1/8" Standard Depth
7/16" - 1 1/8" Deep
10mm - 24mm Standard Depth
10mm - 24mm Deep
3", 6", 12" Extensions
Flex Handle (Breaker Bar)
Ratchet

Spark Plug Feeler Gauge (Gap Tool)

Tape Measure – Standard and Metric

Test Light (12V high impedance type)

Tire Pressure Gauge

Torque Wrench:

3/8" Drive (10 - 250 lb. in.)

3/8" Drive (5 - 75 lb. ft.)

1/2" Drive (50 - 250 lb. ft.)

Torxâ Set (screwdrivers and/or sockets):

T-8 to T-60

Wire Brush

GENERAL LAB/SHOP EQUIPMENT

The tools and equipment on this list are used in general lab/shop work but are not generally considered to be individually owned hand tools. A well equipped, certified program should have all of these general tools and equipment readily available and in sufficient quantity to provide quality instruction.

Air Chisel Set (various bits)
Air Compressor and Hoses
Air Pressure Regulator
Air Ratchet (3/8" drive)
Automotive Stethoscope (electronic recommended)
Axle Stands (Jack Stands)
Axle Support Stands (Screw Jacks)
Battery Charger
Battery Jump Pack
Battery/Starter/Charging System Tester
Battery Tester, conductance type (recommended)
Bearing Packer (hand operated)
Belt Tension Gauge
Bench or Pedestal Grinder
Compression Tester
Computer Scan Tool (hand held) or Personal Computer (PC) with interface capability for on-board diagnostics (OBD II compliant)
Coolant/Combustion Gas Detector (recommended)
Coolant Tester
Cooling System Pressure Tester and Adapters
Creeper
Cylinder Leakage Tester
Dial Indicator with Flex Arm and Clamp Base
Digital Multimeter with various lead sets
Drain Pans
Drill - 3/8" variable speed, reversible
Drill - 1/2" variable speed, reversible
Electric Heat Gun
Engine Coolant Recovery Equipment or Recycler or Coolant Disposal Contract Service
Extension Cords
Face Shields
Fender Covers
Floor Jack (1½ "t" on minimum)
Fuel Transfer Unit with 30 gallon Storage
Graphing Multimeter (GMM)/Digital Storage Oscilloscope [DSO]
Hand Held Vacuum Pump
Hoist(s)
Hood Prop
Hydraulic Press with adapters
Impact Socket Sets - 3/8" Drive (standard and metric)
Impact Sockets - 1/2" Drive (7/16" - 1 1/8")

Impact Sockets - 1/2" Drive (12mm – 24mm)
Impact Sockets – 1/2" Drive Deep (30 mm, 32 mm, 34mm, 36mm)
Impact Wrench - 1/2" Drive
Impact Wrench - 3/8" Drive
Jack Stands
Jumper Cables
Master Puller Set
Micrometer (Depth)
Micrometers - 0-1", 1-2", 2-3", 3-4", 4-5" (Outside Type)
Oil Can - Pump Type
Oil Filter Wrench
Oxy-Acetylene Torch Set
Parts Cleaning Tank and Gloves (non-solvent based cleanser suggested)
Remote Starter Switch
Scan Tool OBDII or Personal Computer with Equivalent Interface Capability (CAN Capability Recommended)
Screw Extractor Set
Seat Covers
Snap Ring Pliers Set - external
Snap Ring Pliers Set - internal
Soldering Gun
Soldering Iron (Pencil Tip)
Spark Plug Boot Puller
Tap and Die Set - Standard
Tap and Die Set – Metric
Temperature Sensing Device
Thread Repair Insert Kit
Tire Inflator Chuck
Trouble/Work Lights (fluorescent preferred)
Tube Quick Disconnect Tool Set
Tubing Bender
Tubing Cutter/Flaring Set (Double-lap and ISO)
Twist Drill Set - 1/64" - 1/2"
Ultra Violet Leak Detection Device (Black Light)
Valve Core Removing Tool
Vernier Calipers: 0 - 6"
0 - 125mm
Used Waste Oil Receptacle with extension neck and funnel
Wheel Chocks
Workbenches with vises

SPECIALTY TOOLS AND EQUIPMENT

This section covers the tools and equipment a lab/shop should have for training in any given specialty area. This equipment is specialized and it must be available in the lab/shop or to the program. No specific type or brand names are identified because they will vary in each local situation.

SUSPENSION & STEERING

Ball Joint Press and other Special Tools
Brake Pedal Depressor
Coil Spring Compressor Tool
Constant Velocity Joint (CV) Service Tools:
Boot Installation Tool
Boot Clamp Pliers or Crimping Ring
Hand Grease Gun
Inner Tie Rod End Tool
Pitman Arm Puller
Power Steering Pump Pulley Special Tool Set (appropriate for units being taught)
Shock Absorber Tools
Strut Spring Compressor Tool
Steering Column Special Tool Set (appropriate for teaching units being utilized)
Tie Rod Puller
Tire Repair Equipment (Internal Patch and Plug)
Tire Mounting Machine (rim clamp type)
Wheel Alignment Equipment-4 wheel (including alignment tools)
Wheel Balancer - Electronic Type (with Road Force measurement capability)
Wheel Weight Pliers

BRAKES

Bearing Seal and Race Driver Set
Brake Bleeder, Pressure or Vacuum
Brake Disc Micrometer
Brake Drum Micrometer and Calibration Equipment
Brake Lathe (Bench with disc and drum service attachments)
Brake Lathe (on car)
Brake Shoe Adjusting Gauge
Brake Spring Remover/Installer
Brake Spring Pliers
Brake Spoon
Piston Retraction Set

HEATING AND AIR CONDITIONING

A/C Compressor Clutch Service Tools
A/C Service Port Adapter Set
Dye Injection Equipment
Hygrometer

Leak Detector (SAE Standard)
Manifold Gauge Set or equivalent (R-12 and HFC-134a)
Refrigerant Charging Station or equivalent (R-12 and HFC-134a)
Refrigerant Identification Equipment
Refrigerant Recovery/Recycling Machine (R-12 and HFC-134a)
Thermometer
Wet Bulb (Relative Humidity Measurement)

ENGINE PERFORMANCE

Engine Analyzer (with ignition display capability)
Four or Five Gas Exhaust Analyzer (5 Gas recommended)
Fuel Contaminant Test Equipment
Fuel Injection Pressure Gauge Sets with Adapters
Infrared Thermometer (Non-contact Type)
Injector Pulse Tester
Leak Detector (Smoke or Nitrogen)
Logic Probe (suggested)
Oxygen Sensor Socket
Pinch-off Pliers
Sending Unit Socket(s)
Spark Plug Thread Tap
Spark Tester
Timing Advance Light
Vacuum/Pressure Gauge

AUTOMATIC TRANSMISSION/TRANSAXLE

Differential Set Up Tools (appropriate for Units being taught)
Hydraulic Pressure Gauge Set
Front Wheel Drive Engine Support Fixture
Transaxle Removal and Installation Equipment
Transmission Jack(s)
Transmission/Transaxle Flushing Equipment (recommended)
Transmission/Transaxle Holding Fixtures
Transmission/Transaxle Special Tool Sets (appropriate for units being utilized)

ELECTRICAL/ELECTRONIC SYSTEMS

Battery Hydrometer
Connector Pick Tool Set
Door Panel Trim Tool(s)
Headlight Aimer or Screen
Pop Rivet Tool (1/4")
Wire and Terminal Repair Kit

MANUAL DRIVE TRAIN AND AXLES

Clutch Alignment Set
Clutch Pilot Bearing/Bushing Puller/Installer
Differential Set Up Tools (Appropriate for Units Being Taught)
Front Wheel Drive Engine Support Fixture
Transaxle Removal and Installation Equipment
Special Tools for Transmissions/Transaxles (appropriate for units being taught)
Transmission/Transaxle Holding Fixtures
Transmission Jack(s)
Universal Joint Tools

ENGINE REPAIR

Ball (Small Hole) Gauges
Cam Bearing Driver Set (suggested)
Coolant Carbon Monoxide Detector
Cylinder Deglazer
Dial Bore Indicator
Engine Stands/Benches
Inside Micrometer Set:
0 - 6"
0 - 125mm
Oil Leak Detection Equipment
Oil Pressure Gauge
Outside Micrometer Set:
0 - 6"
0 - 125mm
Portable Crane - 1/2 Ton
Ring Compressor
Ring Expander
Ring Groove Cleaner
Straight Edge
Telescopic Gauge Set
Torque Angle Gauge
Transaxle Removal and Installation Equipment
V-Blocks
Valve Spring Compressor
Valve Spring Tester

SPECIAL SAFETY ITEMS

(All equipment must meet or exceed federal, state, and local regulations.)

Bloodborn Pathogen Kit

*Ear Protection - for students, instructors, and visitors

Eye Wash Basin

Eye Wash Station, portable (saline)

Fire Blankets and Case

Fire Extinguishers - by type as required

First Aid Kit

Flammable Material Storage Locker - meeting fire and building codes

Hazardous Spill Response Kit

OSHA "Right to Know" Compliance Kit

Protective Gloves and Clothing - for handling paint and related chemicals

Respiratory Protection Equipment – as required by OSHA

Safety Cans - for solvents, rags, etc.

*Safety Glasses, Clear and Tinted Face Shields, and Goggles - for students, instructors, and visitors

*Safety Shoes - as required

Safety Shower - as required

Vacuum System - for air sanders (recommended)

Welding Blankets

Welding Shields

Welding Respirator

* = Personal Student Items

ADDITIONAL FACILITY REQUIREMENTS

The facilities should meet all applicable safety standards and an emergency plan should be in place and posted in all classrooms and lab/shops areas.

A regular facilities maintenance program should be used to assure facilities are suitable when required for instruction.

The classroom(s), lab/shop, and support area(s) should be kept clean and orderly.

An area separate from the shop should be available and convenient for the instructor(s) use as an office.

A classroom convenient to, but separate from, the lab/shop area must be available for instruction and other nonlab/shop activities.

Storage areas for tools, parts, supplies, and automobiles should be sufficient to support the activities outlined in the program goals and performance objectives. Security should be provided to prevent pilferage and vandalism.

Restrooms, clean-up areas, and lockers should be provided for both male and female students and should be convenient to the instructional area.

An adequate exhaust fume removal system should be in place and operational. When appropriate, heating and cooling systems should be used to provide sufficient comfort for learning.

A first aid kit should be in place and comply with local regulations.