

HAND TOOLS

(Contained in individual sets or the tool crib
in sufficient quantities to permit efficient instruction)

Air Blow Gun (meeting OSHA requirements)

Allen (Wrench or Socket) Set - Standard (.050" - 3/8")

Allen (Wrench or Socket) Set - Metric (2mm - 8mm, 10mm, 12mm)

Battery Post Cleaner

Battery Terminal Pliers

Battery Terminal Puller

Chisels:

 Cape 5/16"

 Cold 3/8", 3/4"

Chisel Holder

Claw Type Pickup Tool

Combination Wrenches:

 Standard (1/4" – 1 1/4") (optional)

 Metric (7mm - 24mm)

Crowfoot Wrench Set - Metric

Crowfoot Wrench Set – Standard (optional)

Ear Protection

Feeler Gauge (Blade Type):

 .002" - .040"

 .006mm - .070mm

Files:

 Coarse 6" and 12"

 Fine 6" and 12"

 Half Round 12"

 Round 6" and 12"

Flare Nut (tubing) Wrenches:

 3/8" - 3/4"

 10mm - 17mm

Flashlight

Fuse Puller

Fused Jumper Wire Set (with various adapters)

Hack Saw

Hammers:

 16 oz. Ball Peen

 Brass

 Dead Blow Plastic Mallet

 Plastic Tip

 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:

- Plastic
- 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

Socket Set - 1/4" Drive:

- 1/4" - 1/2" Standard Depth (optional)
- 1/4" - 1/2" Deep (optional)
- 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)(optional)
- 3/8" - 3/4" Deep (6 point)(optional)
- 10mm - 19mm Standard Depth
- 10mm - 19mm Deep
- 3", 5", 10" Extensions
- Flexhead Ratchet
- Ratchet
- Spark Plug Sockets 5/8", 13/16", 9/16"

Spark Plug Sockets 14mm

Speed Handle

Universal Joint

Flexible Socket Set 3/8" - 3/4" (optional)

Flexible Socket Set 10mm - 19mm

Socket Set - 1/2" Drive:

7/16" - 1 1/8" Standard Depth (optional)

7/16" - 1 1/8" Deep (optional)

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 and self-powered)

Tire Pressure Gauge

Tire Tread Depth Gauge

Torque Wrench:

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

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

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

Torx® 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, accredited 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/Starter/Charging System Tester
Bearing Packer (hand operated)
Belt Tension Gauge
Bench or Pedestal Grinder
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 (DMM) with various lead sets (sufficient quantities to meet instruction goals)
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 Ton Minimum)
Hand Held Vacuum Pump
Hoist(s)
Hood Prop
Hydraulic Press with adapters
Impact Socket Sets - 3/8" Drive (Standard - optional)
Impact Socket Set - 3/8" Drive(8mm-19mm)
Impact Sockets - 1/2" Drive (7/16" - 1 1/8")(optional)
Impact Sockets - 1/2" Drive (12mm – 24mm)
Impact Sockets – 1/2" Drive Deep (30 mm, 32 mm, 36mm)

Impact Wrench - 1/2" Drive
Impact Wrench - 3/8" Drive
Jumper Cables
Master Puller Set
Micrometer (Depth)
Micrometers - (Outside Type) 0-1", 1-2", 2-3", 3-4", 4-5"
Oil Can - Pump Type
Oil Filter Wrench and Sockets
Oxy-Acetylene Torch Set
Parts Cleaning Tank and Gloves (non-solvent based cleanser suggested)
Remote Starter Switch
Scan Tool OBDII w/CAN capability or Personal Computer (PC) with equivalent interface (appropriate capability to support tasks taught)
Screw Extractor Set
Seat Covers
Serpentine Belt Tensioner Tools
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 (optional)
Tap and Die Set – Metric
Temperature Sensing Device
Thread Repair Insert Kit
Tire Inflator Chuck
Trouble/Work Lights (Non-incandescent)
Tube Quick Disconnect Tool Set
Tubing Bender
Tubing Cutter/Flaring Set (Double-lap and ISO)
Twist Drill Set Ultra Violet Leak Detection Device (Black Light)
Used Oil Receptacle with extension neck and funnel
Valve Core Removing Tool
Calipers
 0 - 6"
 0 - 125mm
Wheel Chocks
Workbenches with vises

SPECIALTY TOOLS AND EQUIPMENT WITHIN EACH ACCREDITATION CATEGORY

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.

For all tasks which are taught in the program, the training should be as thorough as possible with the tools and equipment necessary for those tasks. In other words, if a program does not teach a particular task, the tool from the tool list associated with that task is not required.

MAINTENANCE & LIGHT REPAIR

SUSPENSION & STEERING

- Brake Pedal Depressor
- Hand Grease Gun
- Shock Absorber Tools
- Spring Compressor Tool
- Tire Mounting Machine (rim clamp type)
- Tire Pressure Monitoring System Tool (TPMS) as appropriate
- Tire Patching Tools and Supplies
- Wheel Balancer - Electronic Type
- 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 Fluid Test Strips or Kit
- 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
- Wheel Stud Service Kit

ENGINE PERFORMANCE

Compression Tester
Cylinder Power Balance Tester (scan tool/manual method)
Infrared Thermometer (or appropriate substitute)
Vacuum/Pressure Gauge

ELECTRICAL/ELECTRONIC SYSTEMS

Connector Pick Tool Set
Door Panel Trim Tool(s)
Headlight Aimer or Screen
Heat Gun (or equivalent for heat shrinking operations)
Wire and Terminal Repair Kit

MANUAL DRIVE TRAIN AND AXLES

Axle Nut Socket Set (or equivalent)
Spindle Rethreader Die Set
Universal Joint Tools

ENGINE REPAIR

Antifreeze/Coolant Tester

SPECIALTY TOOLS AND EQUIPMENT
AUTOMOBILE SERVICE TECHNOLOGY

SUSPENSION & STEERING

Ball Joint Press and other Special Tools
Brake Pedal Depressor
Bushing Driver Set
Coil Spring Compressor Tool
Chassis Ear (recommended)
Frame Angle Gauge or Portable Digital Protractor (appropriate for tasks being taught)
Hand Grease Gun
Inner Tie Rod End Tool
Pitman Arm Puller
Power Steering Pump Pulley Special Tool Set (appropriate for tasks being taught)
Shock Absorber Tools
Steering Angle Gauge or Portable Digital Protractor (appropriate for tasks being taught)
Steering Column Special Tool Set (appropriate for teaching tasks being utilized)
Strut Spring Compressor Tool
Tie Rod Puller
Tire Mounting Machine Tire Patching Tools and Supplies
Tire Pressure Monitoring System (TPMS) Tool (appropriate for tasks being taught)
Wheel Alignment Equipment-4 wheel (including alignment tools)
Wheel Balancer - Electronic Type
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 Fluid Test Strips or Kit
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
Master Cylinder Bleeder Kit
Caliper Piston Retraction Set
Wheel Stud Service Kit

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

A/C Compressor Clutch Service Tools
A/C Service Port Adapter Set
Dye Injection Kit
Hygrometer
A/C Leak Detector (to meet current industry standard)
A/C Manifold Gauge Set or equivalent (to meet current industry standard)
A/C Refrigerant Recovery/Recycling/Recharging Station (to meet current industry standard)
Thermometer(s) (digital)
A/C Sealant Detector Kit

ENGINE PERFORMANCE

Cylinder Power Balance Tester (Scan Tool/Manual Method)
Evaporative Emissions Control System (EVAP)
Fuel Injection Pressure Gauge Sets with Adapters
Infrared Thermometer (or appropriate substitute)
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
Vacuum/Pressure Gauge

AUTOMATIC TRANSMISSION/TRANSAXLE

Transmission Jack(s)
Transmission/Transaxle Flushing Equipment (recommended)
Transmission/Transaxle Holding Fixtures
Transmission/Transaxle Removal and Installation Equipment
Transmission/Transaxle Special Tool Sets (appropriate for units being utilized)

ELECTRICAL/ELECTRONIC SYSTEMS

Connector Pick Tool Set
Molding and Trim Trim Tool(s)
Headlight Aimer or Screen
Heat Gun (or equivalent for heat shrinking operations)
Terminal Tension (Pin Drag) Test Kit/Terminal Probe Kit (or equivalent)
Wire and Terminal Repair Kit

MANUAL DRIVE TRAIN AND AXLES

Axle Nut Socket Set (or equivalent)

Clutch Alignment Set
Clutch Pilot Bearing/Bushing Puller/Installer
Constant Velocity Joint (CV) Service Tools:
 Boot Installation Tool
 Boot Clamp Pliers or Crimping Ring
Engine Support Fixture
Rotating Torque Wrench (beam-type or equivalent)
Universal Joint Tools
Spindle Rethreader Die Set

ENGINE REPAIR

Antifreeze/Coolant Tester
Oil Pressure Gauge
Straight Edge
Torque Angle Gauge

SPECIALTY TOOLS AND EQUIPMENT

MASTER AUTOMOBILE SERVICE TECHNOLOGY

SUSPENSION & STEERING

- Ball Joint Press and other Special Tools
- Brake Pedal Depressor
- Bushing Driver Set
- Coil Spring Compressor Tool
- Chassis Ear (recommended)
- Frame Angle Gauge or Portable Digital Protractor (appropriate for tasks being taught)
- Hand Grease Gun
- Inner Tie Rod End Tool
- Pitman Arm Puller
- Power Steering Pump Pulley Special Tool Set (appropriate for units being taught)
- Power Steering Pressure Gauges (recommended)
- Shock Absorber Tools
- Strut Spring Compressor Tool
- Steering Angle Gauge or Portable Digital Protractor (appropriate for tasks being taught)
- Steering Column Special Tool Set (appropriate for teaching units being utilized)
- Tie Rod Puller
- Tire Mounting Machine**
- Tire Patching Tools and Supplies
- Tire Pressure Monitoring System (TPMS) Tool (appropriate for tasks being taught)
- Wheel Alignment Equipment-4 wheel (including alignment tools)
- Wheel Balancer - Electronic Type
- 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 Fluid Test Strips or Kit
- 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
- Master Cylinder Bleeder Kit
- Caliper Piston Retraction Set**
- Wheel Stud Service Kit

HEATING AND AIR CONDITIONING

A/C Compressor Clutch Service Tools

A/C Service Port Adapter Set

Dye Injection Kit

Hygrometer

A/C Leak Detector (to meet current industry standards)

A/C Manifold Gauge Set or equivalent (to meet current industry standards)

A/C Refrigerant Identification Equipment

Refrigerant Recovery/Recycling/Recharging Station (to meet current industry standards)

Thermometer(s) (digital)

Sealant Detector Kit

ENGINE PERFORMANCE

Cylinder Power Balance Tester

Evaporative Emissions Control System (EVAP)

Four or Five Gas Exhaust Analyzer (Five Gas recommended)

Fuel Injection Pressure Gauge Sets with Adapters

* Graphing Multimeter (GMM) and/or Digital Storage Oscilloscope (DSO)

Infrared Thermometer (or appropriate substitute)

Injector Pulse Tester

Leak Detector (Smoke or Nitrogen)

Logic Probe (appropriate for tasks being taught)

Oxygen Sensor Socket

Pinch-off Pliers

Sending Unit Socket(s)

Spark Plug Thread Tap

Spark Tester

Vacuum/Pressure Gauge

* Also necessary to accomplish tasks in other MAST categories (Brakes and Electrical/Electronic Systems)

AUTOMATIC TRANSMISSION/TRANSAXLE

Differential Set-up Tools

Hydraulic Pressure Gauge Set

Transmission Jack(s)

Transmission/Transaxle Flushing Equipment (recommended)

Transmission/Transaxle Removal and Installation Equipment

Transmission/Transaxle Holding Fixtures

Transmission/Transaxle Special Tool Sets (appropriate for units being utilized)

ELECTRICAL/ELECTRONIC SYSTEMS

- Connector Pick Tool Set
- Molding and Trim Removal Tool(s)
- Headlight Aimer or Screen
- Heat Gun (or equivalent for heat shrinking operations)
- Terminal Tension (Pin Drag) Test Kit/Terminal Probe Kit (or equivalent)
- Wire and Terminal Repair Kit

MANUAL DRIVE TRAIN AND AXLES

- Axle Nut Socket Set (or equivalent)
- Clutch Alignment Set
- Clutch Pilot Bearing/Bushing Puller/Installer
- Constant Velocity Joint (CV) Service Tools:
 - Boot Installation Tool
 - Boot Clamp Pliers or Crimping Ring
- Engine Support Fixture
- Rotating Torque Wrench (beam-type or equivalent)
- Special Tools for Transmissions/Transaxles (appropriate for units being taught)
- Spindle Rethreader Die Set
- Universal Joint Tools

ENGINE REPAIR

- Antifreeze/Coolant Tester
- Ball (Small Hole) Gauges
- Cam Bearing Driver Set (suggested)
- Camshaft Holding Tool (appropriate for units being taught)
- Cylinder Deglazer
- Dial Bore Indicator
 - Engine Stands/Benches
- Inside Micrometer Set:
 - 0 - 6"
 - 0 - 125mm
- Micrometer (Depth)
 - 0 - 6"
 - 0 - ??mm
- Oil Pressure Gauge
- Outside Micrometer Set:
 - 0 - 6"
 - 0 - 125mm
- Portable Crane - 1/2 Ton
- Ring Compressor
- Ring Expander
- Ring Groove Cleaner
- Precision Straight Edge
- Telescopic Gauge Set
- Torque Angle Gauge

V-Blocks
Valve Spring Compressor
Valve Spring Tester

NOTES