2012 NATEF Automobile Accreditation

Tools & Equipment List
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TOOLS AND EQUIPMENT

Local employer needs and the availability of funds are key factors for determining each program’s structure and operation. The NATEF Standards recognize that not all programs have the same needs, nor do all programs teach 100% of the NATEF tasks. Therefore, the basic philosophy for the tools and equipment requirement is as follows: 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.

The NATEF tool lists are organized into three basic categories: Hand Tools, General Lab/Shop Equipment, and Tools and Equipment by Level. The Specialty Tools and Equipment section is further separated into the three NATEF Automobile Accreditation categories. When referring to the tools and equipment list, please note the following:

A. The organization of the tool list is not intended to dictate how a program organizes its tool crib or student tool sets (i.e., which tools should be in a student set, if utilized, and which should be in the tool crib or shop area).

B. Quantities for each tool or piece of equipment are determined by the program needs; however, sufficient quantities to provide quality instruction should be on hand.

C. For Tools and Equipment by Level, the program need only have those tools for the level being accredited.

D. Programs may meet the equipment requirements by borrowing special equipment or providing for off-site instruction (e.g., in a dealership or independent repair shop). Use of borrowed or off-site equipment must be appropriately documented.

E. No specific brand names for tools and equipment are specified or required.

F. Although the NATEF Standards recommend that programs encourage students to begin to build their own tool sets, this is not a requirement. However, many employers require an entry-level automobile technician to provide his/her own basic hand tool set.
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")
  Metric (7mm - 24mm)
Crowfoot Wrench Set - Metric
Crowfoot Wrench Set – Standard
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:
  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
  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 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 instructional 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 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, 36mm)
Impact Wrench - 1/2" Drive
Impact Wrench - 3/8" Drive
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 w/CAN capability) or Personal Computer (PC) with equivalent interface capability
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
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)
Used Oil Receptacle with extension neck and funnel
Valve Core Removing Tool
Vernier 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.

MAINTENANCE & LIGHT REPAIR

SUSPENSION & STEERING
- Brake Pedal Depressor
- Hand Grease Gun
- Shock Absorber Tools
- Tire Mounting Machine (rim clamp type)
- 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 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

ENGINE PERFORMANCE
- Compression Tester
- Cylinder Power Balance Tester
- 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)
Universal Joint Tools

ENGINE REPAIR
Antifreeze/Coolant Tester
SUSPENSION & STEERING
Ball Joint Press and other Special Tools
Brake Pedal Depressor
Bushing Driver Set
Coil Spring Compressor Tool
Chassis Ear (recommended)
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 Mounting Machine (rim clamp type)
Tire Patching Tools and Supplies
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 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 Injector
   Hygrometer
   Leak Detector (SAE Standard)
   Manifold Gauge Set or equivalent (HFC-134a)
   Refrigerant Charging Station (HFC-134a) or equivalent
   Refrigerant Identification Equipment
   Refrigerant Recovery/Recycling Machine (HFC-134a)
   Thermometer

ENGINE PERFORMANCE
   Cylinder Power Balance Tester
   Fuel Injection Pressure Gauge Sets with Adapters
   Infrared Thermometer (or appropriate substitute)
   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
   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
   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)
   Clutch Alignment Set
   Clutch Pilot Bearing/Bushing Puller/Installer
   Constant Velocity Joint (CV) Service Tools:
      Boot Installation Tool
      Boot Clamp Pliers or Crimping Ring
   Front Wheel Drive Engine Support Fixture
   Rotating Torque Wrench (beam-type or equivalent)
   Universal Joint Tools

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)
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 Column Special Tool Set (appropriate for teaching units being utilized)
Tie Rod Puller
Tire Mounting Machine (rim clamp type)
Tire Patching Tools and Supplies
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 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 Injector
Hygrometer
Leak Detector (SAE Standard)
Manifold Gauge Set or equivalent (HFC-134a)
Refrigerant Charging Station (HFC-134a) or equivalent
Refrigerant Identification Equipment
Refrigerant Recovery/Recycling Machine (HFC-134a)
Thermometer

ENGINE PERFORMANCE
Cylinder Power Balance Tester
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 (suggested)
Oxygen Sensor Socket
Pinch-off Pliers
Sending Unit Socket(s)
Spark Plug Thread Tap
Spark Tester
Timing Advance Light
Vacuum/Pressure Gauge

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

AUTOMATIC TRANSMISSION/TRANSAXLE
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
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)
Clutch Alignment Set
Clutch Pilot Bearing/Bushing Puller/Installer
Constant Velocity Joint (CV) Service Tools:
  Boot Installation Tool
  Boot Clamp Pliers or Crimping Ring
Front Wheel Drive Engine Support Fixture
Rotating Torque Wrench (beam-type or equivalent)
Special Tools for Transmissions/Transaxles (appropriate for units being taught)
Universal Joint Tools

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