

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 (unless of course it is required for a task that is taught in another area).

The NATEF tool lists are organized into three basic categories: ***Hand Tools, General Lab/Shop Equipment, and Specialty Tools and Equipment.*** The specialty tools section is further separated into the eight NATEF task 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 Specialty Tools and Equipment, the program need only have those tools for the areas 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 their students to begin to build their own individual tools sets prior to entry into the industry, there is no requirement to do so. NOTE: Industry surveys indicate that most (90%) employers require that a candidate for employment provide his/her own basic hand tool set in order to be hired as an entry-level truck technician.

HAND TOOLS

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

Hex Key Wrench Set - Standard (.050" - 3/8") (7/16" - 1/2" optional)		Pliers: Adjustable Joint Locking Pliers	
Hex Key Wrench Set - Metric (2mm - 12mm)		Needle Nose	
Stud-to-Post or Charging/Test Adapter		Side Cutters	
Chisels - Cold 5/8", 3/4"		Slip-joint	
Combination Wrenches:		Punches:	
Standard (3/8" - 1") (up to 1 and 1/4" optional)		Pin 3/16" - 3/8"	
Metric (6mm - 19mm) (up to 24mm optional)		Starter 3/16" - 3/8"	
Digital Multimeter - minimum 10 meg. ohms impedance		Aligning Punch Set	
Electrical Pliers - Crimper/Stripper		Brass punch	
Files and Handles:		Center punch	
12" Fine		Safety Glasses (Side Panels) - (per OSHA requirements)	
12" Coarse		Scraper - 1" wide or larger	
12" Half Round		Screwdriver - Blade Type:	
Flare Nut Wrench Set - Standard (3/8" - 3/4")		1"	
Metric (7mm - 19mm)		6"	
Flashlight/Inspection Light		9"	
Goggles - (per OSHA requirements)		12"	
Hack Saw		Offset	
Hammers:			
Ball Peen - 16 oz. and 24 oz.			
Soft Face			
Hearing Protection - (per OSHA requirements)			
Inspection Mirror			
Magnetic Pickup Tool			
Mechanic's Steel Ruler - Machinist Rule			

Hand Tools (cont.)

Screwdriver - Phillips:		Socket Set - 1/2" Drive:	
1" #2		1/2" – 1 1/8" Shallow, Impact or Chrome	
6" #1, #2		7/16" – 1 1/8" Deep, Impact or Chrome	
12" #3		13mm - 32mm Shallow, Impact or Chrome	
3/16" - 1/2" U.S. Deep		13mm - 32mm Deep, Impact or Chrome	
4mm -13mm Metric Standard Depth		Breaker Bar	
4mm -13mm Metric Deep		Extensions - Short, Medium, and Long	
Extensions - Short, Medium, and Long		Ratchet Handle	
Ratchet Handle		Universal Joint	
Universal Joint		Tape Measure (25')	
Socket Set - 3/8" Drive:		Tire Tread Depth Gauge	
3/8" - 3/4" U.S. Standard Depth (12 point), Impact or Chrome		Tire Pressure Gauge - Truck	
3/8" - 3/4" U.S. Deep (6 point), Impact or Chrome		Tool Box	
10mm - 19mm Metric Standard Depth (6 point), Impact or Chrome		Wire Brush	
10mm - 19mm Metric Deep (6 point), Impact or Chrome			
Extensions - Short, Medium, and Long			
Ratchet Handle			
Universal Joint			

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.

Adjustable Wrenches - (up to 18")		Drill Bits - 1/16" - 1/2"	
Air Blow Gun - Rubber Tip (per OSHA requirements)		Extractor Set (broken bolt)	
Air Ratchet Wrench - 3/8" Drive with Impact Socket Set		Face Shield	
Standard and Metric		Feeler Gauge - Blade Type:	
Back Support Belt		.005" - .050"	
Belt Tension Gauge/Belt Wear Gauge		.005mm - .070mm	
Bushing Driver Set		Brass Feeler Gauge	
C-Clamps		Filter Wrenches - Small and Large	
Cleaning Tank		Fin Comb	
Combination Wrench Set:		Floor Jack - (10 Ton)	
3/8" - 1 1/2" and 6mm - 32mm		Funnels	
3/8" - 3/4" Offset (optional)		Gear Oil Dispenser	
7mm - 15mm Offset (optional)		Grease Gun	
Coolant Conditioner Test Kit (Test Strips)		Grinder - Bench	
Cooling System Pressure Tester		Hammers:	
Creepers		48 oz. Ball Peen	
Diagnostic Information Platform - PC with appropriate software and/or internet-access drive for reading electronic service information		24 oz. Brass	
		12 lb. Hand Sledge	
Electronic Service Tool - PC or Data Scan Tool with appropriate software		Hand Held Infrared Thermometer	
Dial or Digital Caliper - Standard and Metric		Hand Impact Driver Set	
Dial Indicator Set - Magnetic Base		Heat Gun	
Drain Pans		Hydraulic Press - (minimum 20 ton)	
Drill - 3/8" variable speed, reversible		1/2" variable speed, reversible	

General Lab/Shop (cont.)

Impact Wrenches:		Socket Set - 3/4" Drive	
1/2" Drive with Impact Sockets		Socket Set:Hex Key Drivers: Standard 3/16" - 3/4"	
3/4" Drive with Impact Sockets		Metric 4mm - 19mm	
1" Drive with Impact Sockets		Axle Nut Sockets	
Impact Universal Joints - 3/8", 1/2"		Crows Feet: Standard and Metric	
Jacks - Bottle Style, Air Jack, Frame Jack, etc.		Inverted Torx Socket Set: E-15 – E-55	
Lifting Chains		Torx® Drivers: T-15 – T-55	
Lifting Eyes		Soldering Gun	
Master Tire Gauge - for tire gauge calibration checks		Tap and Die Set - Standard and Metric	
Micrometer Set - Standard (0" - 6")		Thread Chaser Set	
Metric (0mm - 150mm)		Tire Cage	
Micrometer - Inside (0" - 6")		Tire Chuck – Truck	
Depth Micrometer (0" - 6")		Torque Angle Gauge	
Oxy - Gas Torch Set		Torque Multiplier with Adapters (optional)	
Pipe Wrenches (up to 18" or 24")		Torque Wrenches:	
Pliers - Snap Ring - internal		3/8" Drive (0 - 150 lb. in.)	
external		(0 - 100 lb. ft.)	
wheel weight		1/2" Drive (0 - 250 lb. ft.)	
Portable Crane		3/4" Drive (up to 600 lb. ft.)	
Pressure Gauge - (0 - 300 psi), (0 - 150 psi)		Tubing Cutter/Flaring Set	
Pry Bar Set		Valve Core Replacement Tool (Tire)	
Pullers - Two-Jaw Set		Wheel Chocks	
Three Jaw Set		Wheel Dolly	
Refractometer - (Antifreeze Tester or Test Strips)		Wheel Socket Set	
Safety (Jack) Stands - (minimum 6 ton)			
Seal Puller			

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. No specific type or brand names are identified because they will vary in each local situation.

Note: All shops are assumed to have an air compressor, air hoses, adequate electrical capability, fender covers, seat covers, and workbenches with vises.

DIESEL ENGINES

SUSPENSION & STEERING

Ball/Small Hole Gauges		Air Hammer with Chisels	
Cooling System Vacuum Fill Equipment		Alignment Equipment: Minimum to perform tasks (including tandem alignment)	
Dial Bore Gauge or Telescoping Gauges		Ball Joint Separator	
Diesel Exhaust Fluid (DEF) Refractometer		Pitman Arm Puller	
Engine Stands		Power Steering Analyzer	
Fan Hub Wrenches		Tape Measure (50')	
Injector Removal Tool(s)		BRAKES	
Liner Installer (universal)			
Liner Puller (universal)		Bearing Packer (optional)	
Manometer - (Water) or Magnehelic Gauge (optional)		Bearing Race Installer	
Precision Straight Edge		Brake Bleeder	
Protrusion Gauge (Cylinder Liner Height)		Brake Fluid Tester or Test Strips	
Ring Compressor		Brake Lining Thickness Gauge	
Ring Expander(s)		Brake Rotor (Disc) Micrometer	
Rod Bolt Protectors		Brake Spring Tool	
Soft Jaw Vise or Adapters		Disc Caliper Tool for Compressing Caliper Pistons	
Valve Spring Compressor		Drum Brake Gauge	
		Method for removing asbestos contamination (Parts Cleaner) meeting EPA Standards	
Vibration Damper Puller		Seal Installers	
		Slack Adjuster Installation Index Tool (Templates)	

ELECTRICAL/ELECTRONIC SYSTEMS

PREVENTIVE MAINTENANCE

Battery Charger (200 AMP Minimum)		Fifth Wheel Test Pin	
Battery Terminal Adapters		Stop Watch	
Die Type Terminal Crimper (optional)		Tire Square	
Capacitance Battery Tester		Trailer Cord Tester	
GMM Labscope or DMM with scope capability			
Inductive (Clamp-on) Ammeter		HEATING, VENTILATION, AND AIR CONDITIONING	
Jumper Cable Set (Heavy-Duty)		A/C Compressor Clutch Removal & Installation Tools	
Load Tester - Starting, Charging, and Battery (1,000 AMP Minimum)		A/C Refrigerant Identifier	
		Gloves	
Low AMP Automatic Charger or equivalent device to maintain shop batteries.		Halogen Leak Detector (for HFCs)*	
		Heater Hose Clamp-Off Tool	
Test Lead Kit		Manifold Gauge Set*	
Terminal Repair Kits		Measuring Cup	
		Micron Meter (Electronic Vacuum Gauge) – (optional)	
DRIVE TRAIN		Orifice Tube Remover	
3/4" Drive Pinion Nut Sockets		Portable Vacuum Pump (maybe included with Recovery/Recycling/Recharging Station Equipment)	
Aligning Studs - 3/8", 1/2", & 5/8"		Recovery/Recharging and/or Recycling Station*	
Axle Shaft Removal Tool		Spring Lock Coupler Removers	
Blind Hole/Pilot Bearing Puller		Thermometer	
Clutch Adjusting Tools (Pull Type)		Valve Core (Shrader Type) Replacement Tool	
Clutch Disc Aligning Tool			
Clutch Jack and/or Transmission Jack Attachments		* Meeting EPA Regulations and SAE "J" Standards	
Protractor (Angle Gauge)			
Transmission Jack			
U-Joint Puller			
Yoke Puller			

HYDRAULICS

Fittings and adapters for specific applications	
Hose Crimper Tool and Pump (either air over hydraulic or hand pump)-(optional)	
1000 PSI Liquid Filled or Electronic Gauge and Hose Assembly	
5000 PSI Liquid Filled or Electronic Gauge and Hose Assembly	
Pressure/Flow Meter	
Stop Watch	
Thermometer (up to 250 degrees) Standard or Infrared	