

# Arizona Department of Education

## Career and Technical Education

### Recommended Equipment List

**Program:** Diesel Engine Repair  
**CIP#:** 47.0600.40

NOTE: The following items and descriptions are the recommended equipment guidelines for each **CTE Diesel Engine Repair** program. Please note that this list of recommended items does not necessarily need to be supported financially by Federal Perkins or State Priority funding sources. In many cases, local school district funds are used to purchase items on a regular basis (i.e. furniture, consumables, etc.) Further, please understand that this is not an exhaustive list. Local program and business needs may necessitate the purchase of additional equipment and software resources, as may the rapidly-changing nature of the industry-specific technologies used in the program.

Please contact ADE-CTE Program Specialist Jason Wojcik (Jason.Wojcik@azed.gov), if you have questions regarding the appropriateness of any item you are considering for addition to your **CTE Diesel Engine Repair** program.

#### Recommended Equipment and Software

Item	Items
Battery Stud-to-Post or Charging/Test Adapter	Starter (3/16" - 3/8")
Chisels:	Taper
Cold 5/8", 3/4"	Scraper - 1" Wide or Larger
Chisel Holder	Screwdriver - Blade Type:
Combination Wrenches:	1", 6", 9", and 12"
Standard (3/8" - 1") (up to 1 1/4" optional)	Offset
Metric (6mm - 19mm) (up to 24mm optional)	Screwdriver - Phillips:
Digital Multimeter (DMM) - Minimum 10 Meg Ohm Impedance	1" #2
Eye Protection - Safety Glasses (side panels) and Goggles (per OSHA	6" #1, #2
Files and handles:	12" #3
Coarse 12"	Socket Set - 1/4" Drive:
Fine 12"	3/16" - 1/2" Standard Depth
Half Round 12"	3/16" - 1/2" Deep
Flare Nut Wrench Set:	4mm - 13mm Standard Depth
3/8" - 3/4"	4mm - 13mm Deep
7mm - 19mm	Extensions - Short, Medium, and Long
Flashlight/Inspection Light	Ratchet Handle
Hack Saw	Universal Joint
Hammers:	Socket Set - 3/8" Drive:
16 oz. Ball Peen	3/8" - 3/4" Standard Depth (12 point) (Impact or Chrome)
24 oz. Ball Peen	3/8" - 3/4" Deep (6-point) (Impact or Chrome)
Soft Face	10mm - 19mm Standard Depth (6-point) (Impact or Chrome)
Hearing Protection (per OSHA Requirements)	10mm - 19mm Deep (6-point) (Impact or Chrome)
Hex Key Wrench Sets:	Socket Set - 1/2" Drive:
Standard (.050" - 3/8") (7/16" - 1/2" optional)	1/2" - 1 1/8" Standard Depth (Impact or Chrome)
Metric (2mm - 12mm)	1/2" - 1 1/8" Deep (Impact or Chrome)
Inspection Mirror	13mm - 32mm Standard Depth (Impact or Chrome)
Machinists/Mechanics Steel Rule	13mm - 32mm Deep (Impact or Chrome)
Magnetic Pickup Tool	Breaker Bar
Pliers:	Extensions - Short, Medium, and Long
Adjustable	Ratchet Handle
Electrical - Crimper/Stripper	Universal Joint
Locking	Tape Measure - 25'
Needle Nose	Tire Pressure Gauge (Truck)
Side Cutters	Tire Tread Depth Gauge
Slip Joint	Tool Box
Punches:	Wire Brush
Aligning	
Center	
Brass	
Pin (3/16" - 3/8")	
<b>GENERAL LAB/SHOP EQUIPMENT</b>	
Adjustable Wrenches (up to 18")	Impact Universal Joints - 3/8", 1/2"
Air Blow Gun – Rubber Tip (per OSHA requirements)	Jacks - Bottle-style, Air Jack, Frame Jack, etc.
A/C Condenser/Radiator Fin Comb Set	

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Item	Items
Back Support Belt	Lifting Chains (MST and TMST Programs)
Belt Tension Gauge	Lifting Eyes (MST and TMST Programs)
Belt Wear Gauge	Micrometers:
Bushing Driver Set	Outside - Standard (0" - 6")
C-Clamps	Outside - Metric (0 mm - 150 mm)
Cleaning Tank (per OSHA and Local Requirements)	Inside - Standard (0" - 6")
Clutch Adjusting Tools	Depth - Standard (0" - 6")
Combination Wrench Sets:	Pipe Wrenches (Up to 18" or 24")
Standard 3/8" - 1 1/2"	
Metric 6 mm - 32 mm	Pliers:
Standard Offset 3/8" - 3/4"	Snap Ring - Internal
Metric Offset 7 mm - 15 mm	Snap Ring - External
Coolant Conditioner Test Kit (Test Strips)	Portable Crane/Engine Hoist - 2 Ton Minimum (TMST Programs)
Cooling System Pressure Tester and Adapters	Pressure Gauge Set (MST and TMST Programs):
Creepers	0-300 psi
Diagnostic Information Platform - PC with appropriate software and/or	Brass Feeler Gauge
Dial Indicator Set - Magnetic Base	Puller Sets (MST and TMST Programs):
Digital or Dial Caliper - Standard and Metric	Two-Jaw
Drain Pans	Three-Jaw
Drills:	Refractometer (Antifreeze/Battery)
3/8" variable speed, reversible	Safety (Jack) Stands - Minimum 6 Ton
1/2" variable speed, reversible	Seal Puller
Drill Bit Set: 1/16" - 1/2"	Socket Sets:
Electronic Service Tool - PC or Data Scan Tool with Appropriate Software	3/4" Drive Set
Extractor Set (Broken Bolt)	Axle Nut Sockets
Face Shields	Crow's Feet (Standard and Metric)
Feeler gauges - Blade Type:	Hex Key Drivers (Standard 3/16" - 3/4" and Metric 4mm - 19mm)
0.005" - 0.050"	Torx @ Drive T15 - T55
0.005 mm - 0.070 mm	Torx @ Drive E4 - E18
Filter Wrenches - Small, Medium, and Large	Wheel Fastener Socket Set
Funnels	Soldering Gun
Gear Oil Dispenser	Stop Watch
Grease Gun	Tap and Die Sets (Standard and Metric)
Grinder (Bench or Pedestal)	Thermometer - Hand-held Infrared
Hammers:	Thread Chaser Set
48 oz. Ball Peen	Tire Cage (TMST Programs)
24 oz. Brass	Tire Gauge - Master (For Tire Gauge Calibration Checks)
12 lb. Hand Sledge	Tire Inflator Chuck - Truck
Heat Gun	Tire Pressure Gauge - Truck
Hydraulic Press - 20 Ton Minimum (TST and MTST Programs)	Torch Set: Oxy-Acetylene
Impact Driver Set (Manual/Hand)	Torque Angle Gauge (MST and TMST Programs)
Impact Wrenches:	Torque Multiplier with Adapters (MST and TMST Programs) (Optional)
1/2" Drive (Air or Electric) with Impact Sockets	Torque Wrenches:
3/4" Drive (Air or Electric) with Impact Sockets	1/4" Drive (0 - 150 lb. in.)
1" Drive with Impact Sockets (TST and MTST Programs)	3/8" Drive (0 - 100 lb. ft.)

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Item	Items
	1/2" Drive (0 - 250 lb. ft.)
	3/4" Drive (up to 600 lb. ft.)
	Tubing Cutter/Flaring Set
	Valve Core Replacement Tool - Tire
	Wheel Chocks
	Wheel Dolly (MST and TMST Programs)
	Wheel Weight Tool
	0-150 psi
<b>DIESEL ENGINES</b>	<b>SUSPENSION &amp; STEERING</b>
Diesel Exhaust Fluid (DEF) Refractometer	Fifth Wheel Test Pin
Fuel System/Air Induction System Dust Cover Cap Set	Tape Measure (50')
Soft Jaw Vise or Adapters	Tire Square
<b>BRAKES</b>	<b>HEATING, VENTILATION, AND AIR CONDITIONING</b>
Bearing Packer (optional)	Gloves
Brake Bleeder	Thermometer
Brake Fluid Tester or Test Strips	
Brake Lining Thickness Gauge	
Brake Rotor (Disc) Micrometer	<b>ELECTRICAL/ELECTRONIC SYSTEMS</b>
Drum Brake Gauge	Battery Charger (AGM/Gel Compatible)
Method for removing asbestos contamination (Parts Cleaner) meeting EPA	Battery Terminal Adapters
Slack Adjuster Installation Index Tool (Templates)	Clipping multimeter (DMM), Oscilloscope, or Digital Multimeter (DMM) with auto capability
Trailer Electrical Cord Tester	Inductive (Clamp-on) Ammeter
	Low Amperage Automatic Charger or equivalent device to maintain shop batteries
	Starting, Charging, and Battery System Tester
	Terminal Repair Kits
	Test Lead Kit