



TRANSPORTATION EQUIPMENT SUPPLY CO.

## Compression Tester Sets

Presently over 12000 of these testers are in service around the world and represent an outstanding product.

Through their use, customers can determine very quickly faulty cylinders. They have virtually eliminated earlier blow-by test procedures. Complete instructions are included.

### Individual Testers

**T13683** Compression Tester - GE

**T50213** Compression Tester - EMD

**T50023** Compression Tester - ALCO



1	T50121 Gauge
2	T50330 Tee
3	T50341 Nipple
4	T50142 Release Valve
5	T50131 Check Valve
6	T50192 Filter
7	T50171 Socket
8	T50181 Plug
9	T50160 EMD Adapter - complete w/plug
10	T50420 GE Adapter - complete w/plug
11	T50010 ALCO Adapter - complete w/plug
12	T50960 Governor Stop Block
13	T22710 Storage Box

**T22303** (set of 8 - T13683 Testers with box and T50960 Governor Stop Block) for all GE Engines

**T50980** (set of 8 - T50213 Testers with box) for all EMD Engines

**T51440** (Set of 8 - T50023 Testers with box) for ALCO 251 Engines



Application View

### T50960 Governor Stop Block

The governor Stop Block is used on GE Engines with governors not equipped with shut down buttons. The stop block is placed over the tail rod of the governor and snapped in place, thus preventing the engine from firing.

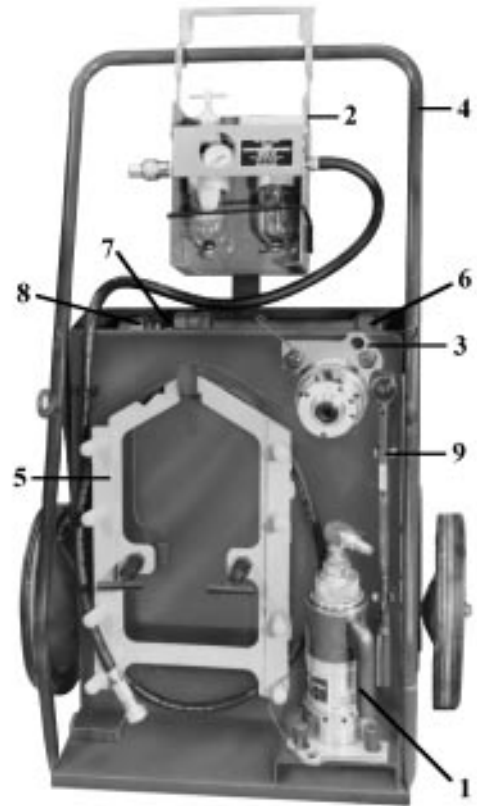


## T24100

### Pneumatic Torque Kit with cart for Cylinder Hold Down Bolt Torquing

This kit enables all shops to precisely control cylinder bolt torquing. It is the most complete kit offered. 38 PSI air pressure is set on the air control kit while the air motor is running unloaded. This should translate to 1350 lb.ft. cylinder bolt torque when the motor stalls during torquing. The 25:1 Verifier is used to audit the results and minor air pressure corrections may be needed.

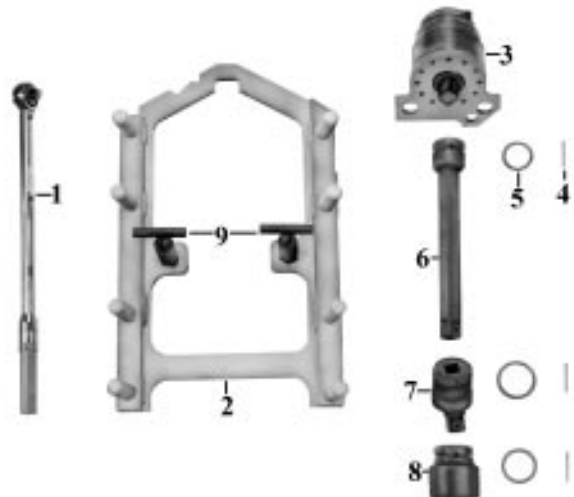
1	T16050 2500 lb.ft. Air Drive Torque Motor
2	T50041 Air Control Kit complete with cage
3	T23600 25:1 Torque Verifier w/anti wrap up feature
4	T23980 Cart
5	T15971 Reaction Fixture
6	T15980 Extension
7	T15990 Universal Joint
8	T16000 Socket
9	T22520 30-250 lb.ft. 1/2" drive ratcheting torque wrench



**T24000** - Same kit as above except it excludes the T23600 25:1 verifier and the T22520 Torque Wrench. This Kit is intended for those shops which already have torque verifiers.

**T15681** includes:

1	T16050 2500lb.ft. air drive torque motor
2	T50041 Air Control Kit complete with cage
5	T15971 Reaction Fixture
6	T15980 Extension
7	T15990 Universal Joint
8	T16000 Socket
	T16500 5:1 Torque Verifier (not shown)



## T23610

### Manual Cylinder Hold Down Bolt Torque Kit

The T23610 torque kit provides a moderately priced, most accurate alternative to the T15681 Pneumatic torque controlled wrench for GE Cylinder Hold Down Bolts. The torque multiplier features a 1/2" square female input and a 1" square output. 56 lb.ft. input torque will result in 1400 lb.ft. required output torque.

The torque multiplier is also equipped with an input ratcheting mechanism that eliminates drive line wrap-up, assuring maximum utilization of input motion and effort. The torque verifier is certified to be torque accurate to +/- 3%. Repair and return service is available.

1	T22520 - 1/2" drive ratcheting torque wrench (30-25- lb.ft.)
2	T15971 - Reaction fixture w/T50830 HD Clamps
3	T23600 - 25:1 Torque Multiplier
4	T13020 - Locking Pin (3 req.)
5	T13030 - O-ring (3 req.)
6	T15980 - Extension
7	T15990 - Universal Socket
8	T16000 - Socket
9	T50830 - Heavy Duty Clamps

### T50071 Heavy Duty Kit for Removing GE Cylinder Hold Down Bolts

Rated at 3200 lb.ft. Used mainly for stripping engines at overhaul.

1	T16051 Torque Motor 1 1/2" sq. drive
2	T15971 Reaction Fixture
3	T50081 Extension - 1 1/2" sq. drive
4	T50090 Universal Joint 1 1/2" sq. drive
5	T50101 Socket 2" single hex, 1 1/2" sq. drive
6	T50041 Air Control Kit



### Cylinder Hold Down Bolt Impact Wrench Sets

The following kits provide the most rapid removal of cylinder hold-down bolts on GE engines (4 bolts per cylinder). **Their use is strictly for removal only.** The first kit provides an air control kit with a filter regulator and oiler assembly which greatly enhances the useful life of the wrench. Maximum shop air pressure should be used to remove the bolts.

#### T16843



1	T16811 No.5 Spline Drive Impact Wrench
2	T16830 Extension
3	T16820 Socket
4	T50041 Air Control Kit

#### T16842



1	T16811 No.5 Spline Drive Impact Wrench
2	T16830 Extension
3	T16820 Socket
4	T16040 Hose
5	T21950 Oiler

## T55670

### GE Cylinder Hold Down Bolt Torque Centering Device

This device is shown on the T15971 reaction fixture. Some machinists prefer to remove the extension, universal and socket from the air motor when performing power assembly bolt removal and installation. This device holds the input of the extension in place so as to aid the installation of the air motor into the extension.



## T10300 Cylinder Liner Bore Gauge

This tool is used to measure the inside diameter of the cylinder liner. The gage set comes with sufficient mandrels to measure from 6" to 12 1/8" diameter. The long shank allows for readings to be taken along the whole length of the GE liner.

This tool should be used with T10310 Gage and micrometer standard to establish the exact 9.000" reference diameter. The liner bore gauge measures bores with an accuracy of .0001".



## T18702 Cylinder Jacket Lifter

This tool is used in backshops where handling the cylinder jacket requires a quick method of hookup and release. The two short pins allow upright jacket pickup through the rocker shaft holes and the two long pins allow for inverted cylinder jacket pickup through the cylinder mounting holes.

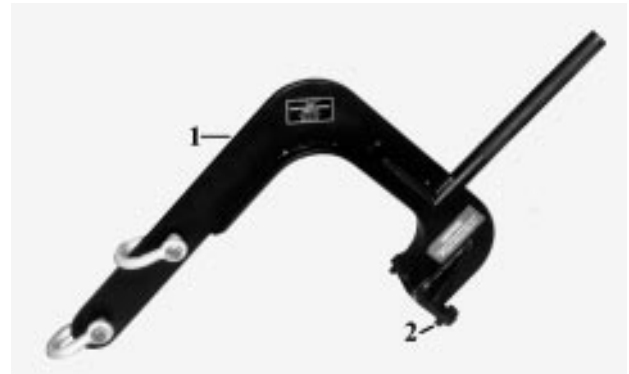
1	T18691	Lifting Pins (Long) 2 Required
2	T18681	Lifting Pins (Short) 2 Required
3	T22311	Shackle - 2 Required
4	T22321	Clevis
5	T22331	Quick Release Pins - 2 Required
6	T22651	Cable Assembly w/spring loaded safety hooks - 2 Required



### T19923 GE Front Mount Cylinder Lifter

This lifter mounts on the air inlet boss of the cylinder with four 5/8"-11 high tensile captive cap screws. The T19923 provides for the 22 1/2° engine installation position as well as the vertical lift. 4 - T13800 5/8"-11 mounting bolts are required.

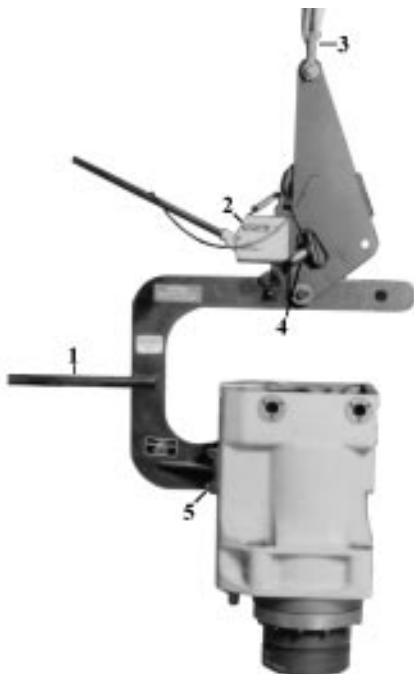
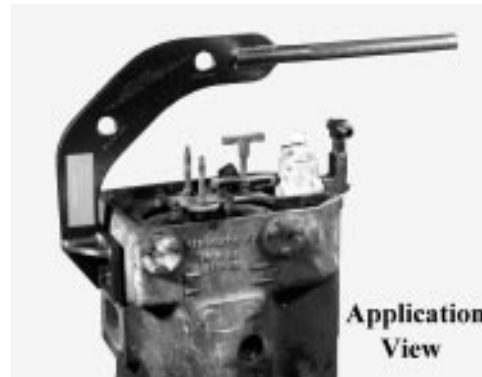
1	T19923 GE Front Mount Cylinder Lifter
2	T13800 Bolts (4 required)



### T16065 GE Power Assembly Lifter

This lifter is mounted on the rear of the cylinder by two 1/2"-13 Grade 8 bolts at the water outlet boss. Vertical and 22 1/2° pick up points are provided.

1	T16065 Power Assembly Lifter
2	T13791 Bolts (2 Required)



### T19922 GE Front Mount Cylinder Lifter

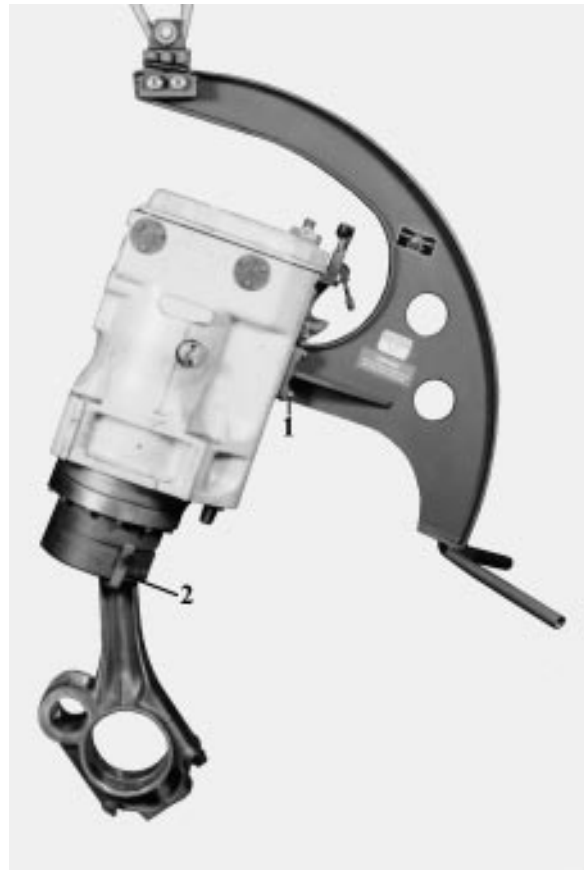
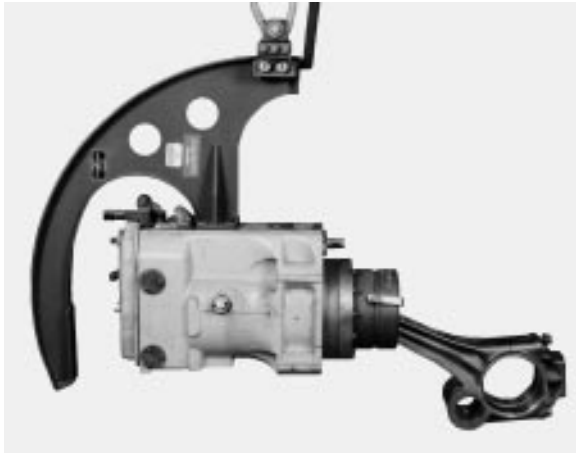
This lifter allows for the 22 1/2° (engine) and 0° (vertical) cylinder pick up by repositioning the "A" Frame Assembly. This feature allows the machinist to pull a cylinder or power assembly from the engine (22 1/2°) and reposition it to 0° without re-rigging lift points. This facilitates placing the used cylinder in a vertical mount shipping container. Cylinders or power assemblies can also be lifted from the shipping container and tilted 22 1/2° to accommodate engine mounting. A hydraulic jack is used to reposition the "A" Frame.

**Caution:** When removing or installing cylinders on the engine, the forward pin must be installed to assure the maximum safety factor of the design. The jack is used to reposition the "A" Frame only, and the forward pin is used to carry the loads imposed by jockeying the cylinder or power assembly on or off the engine.

1	T19922 Power Assembly Lifter Complete
2	T54410 Pump and Ram
3	T19921S Shackle
4	T54420 Anchor Pin
5	T13800 Bolt (4 required)

### **T54551 GE Power Assembly Lifter**

This lifter was developed to solve the problem of rigging a GE Power Assembly from the shipping position - (laying on the exhaust port side) to the 22 1/2° engine installation position. A 112 1/2° trolley is incorporated, allowing an operator easy repositioning of the power assembly. (See Photos)



### **T54762 Rotating Lifter for GE Welded Head and Liner Assemblies**

This lifter quickly clamps the body of the cylinder liner and locks in place. It is designed to allow rotation and positioning of this heavy assembly, easing handling in the rebuild and teardown areas.

## T17380 5000 PSI Hydraulic Leak Test Fixture

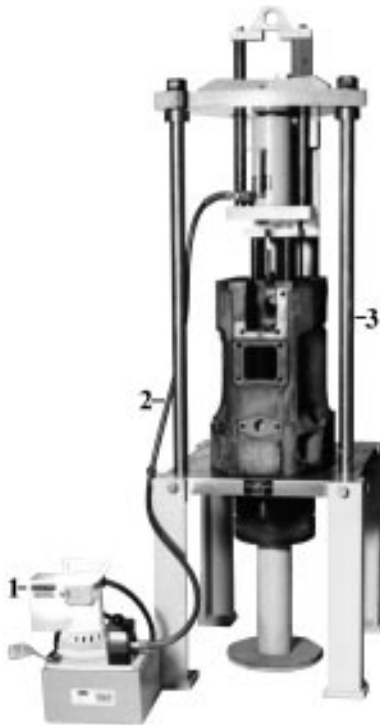
This fixture is supplied with all the hardware, hydraulic pump and necessary accessories to completely test rebuilt cylinders at 5000 PSI. Follow the GE instructions for exact details of the test. Please specify T17380 for a 115 Volt Test Fixture, or T17480 for a 230 Volt Fixture.

1	T14320 Motor Driven Pump
	T14330 Motor Driven Pump
2	T10200 Hose
3	T17590 Valve and Plug Adapter
4	T17580 Gauge and Dummy Injector Assembly
5	T50230 Hold Down Bolt and Washer (4 required)
	T17660 "O" Ring for Piston (6 required)
	T19350 45° Test Valves (2 supplied)
	T19360 15° Test Valves (2 supplied)
	T21730 "O" Ring for test valves (12 supplied)
6	T17490 Stand
7	T17500 Test Fixture
8	T17700 Gauge only 0-10,000 PSI
9	T50240 Set of Blanking Plates - 1 water inlet and 1 water outlet



## T16711 Hydraulic Cylinder Liner Remover

This tool is used to hydraulically remove cylinder liners from cylinder jackets. The top portion of the fixture swivels out of the way easing the loading and removal of the cylinder assembly. A T16711 designates a 115 Volt Cylinder Liner Remover, while a T16712 is 230 Volts.



1	T14320	Motor Driven Pump (115 Volt)
	T14330	Motor Driven Pump (230 Volt)
2	T10200	Hose
3	T16710	Puller Complete with Ram



## T18300 115V

## T18400 230V Magnetic Base Drill Set

The magnetic base drill is used to re-drill and tap the engine main frame when cylinder hold down bolts strip. A plate with hardened liners fits into the cylinder assembly hole in the main frame. Two special hold down bolts are then inserted through the matching hardened bushings adjacent to the stripped hole, and tightened. The magnetic base drill fits on the plate over the hole to be drilled and is secured by the electromagnet. The drill can be precisely centered by the use of the swivel base on the drill stand, without removing power from the magnetic base. In this manner, the drill can be guided into the precision bushing.

**Warning:** secure power line to power outlet so the circuit cannot be interrupted. If power to the magnetic base is interrupted, the drill could fail and cause personal injury.



The drill stand is equipped with a two speed motor (250/500 RPM). It is suggested that the 250 RPM be used for drilling. A special tool is furnished to countersink the hole to the correct diameter. A tap and tap holder can be used with the drill motor to start the threads in the hole.

**Caution:** DO NOT engage drill feed. Final tap by manual means when nearing the bottom of hole.

The magnetic base drill set accomplishes the precise job of drilling and tapping the holes for application of the hardened insert.

**Note:** A complete set of instructions is furnished with each magnetic base drill set.

1	T18290 115 Volt Drill Stand
1	T18460 230 Volt Drill Stand
2	T18360 Guide Plate with hardened fasteners
3	T18420 1 1/4" Cylinder Bolt Bushings (2 required)
4	T18430 1 35/64" Bushing
5	T18370 2 1/16" Bushing
6	T18340 Tap Holder
7	T18330 1 5/8"-12 Special Tap
8	T18380 2 1/8"-16 Special Tap
9	T18350 Counterbore Extension
10	T18310 1 11/16" Special Counterbore with Pilot
11	T18320 1 35/64" Drill
12	T18390 2 1/16" Drill
13	T18440 Guide Plate Hold Down Bolts (2 required)
14	T18450 2 1/8-16 Repair Plug (6 supplied)
15	T50390 1 5/8"-12 Insert (6 supplied)
16	N405P19 Lockwashers (6 Supplied)
17	T13221 Insert Wrench - Shown on Next Page



### T13221 Cylinder Hold Down Bolt Insert Wrench



These various models of cylinder bolt insert wrenches are available for GE Engines. The T13220 has been superseded by two new models: The T13221 and the T13222. The T13221 is equipped with a 3/4" female drive and a brass pilot. This wrench is intended for torquing and removal of inserts. The T13222 wrench is equipped with a 1/2" square female drive and is intended to be used with an impact wrench to strip engines.

1	T13221 Insert Wrench
2	T50390 Cylinder Hold Down Bolt Insert
3	T13222 Insert Wrench

### T16730 GE Cylinder Head Aligner

This tool is useful for aligning cylinder heads in the jacket during the cylinder assembly process. It enters the compression relief plug hole and engages the mating hole in the head. The pipe thread end is screwed into the head and the follower screwed toward the head to perfectly line up the passage way. The follower should be backed off before the liner is pressed into the jacket, otherwise damage to the tool could result.



### T13670 Power Assembly Guide Pins

These pins aid positioning power assemblies onto the main frame by guiding the cylinder locating boss into the main frame.

### T19280 Cylinder Assembly/Disassembly Service Fixture

This fixture is used to aid assembly and disassembly of engine cylinders. Lifter pads are bolted to the inlet and exhaust ports of the cylinder to create rotation points for the cylinder. The pads establish a center of gravity for the cylinder and turning the cylinder requires a minimum of effort. A toggle clamp is provided to lock the cylinder in various service positions. A "C" frame lifter is also provided to facilitate loading and unloading the cylinder from the fixture.

1	T19280 Cylinder Service Fixture
2	T23071 Exhaust Lifter Pad
3	T23061 Intake Lifter Pad
4	T19321 Cylinder Lifter





**T20241**      **Cylinder Head Lifter**

This tool is used to lift cylinder heads during cylinder assembly. It is used with a hoist to lower the head into the cylinder jacket.



**T54890**      **Horizontal Cylinder / Power Assembly Lifter**

This lifter was designed to raise GE cylinders and power assemblies horizontally. Cylinders are lifted by moving the slider toward the mounting pad stop. To lift power assemblies move slider toward handle.