DANGER

Using an engine indoors CAN KILL YOU IN MINUTES.

Engine exhaust contains carbon monoxide. This is a poison you cannot see or smell.

NEVER use inside a home or garage, EVEN IF doors and windows are open.

Only use OUTSIDE and far away from windows, doors, and vents.

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.
SAVÉ THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product’s serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.

WARNING! Read all instructions. Failure to follow all instructions listed below may result in fire, serious injury and/or DEATH. The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

SAFETY PRECAUTIONS

1. Gasoline fuel and fumes are flammable, and potentially explosive. Use proper fuel storage and handling procedures. Do not store fuel or other flammable materials nearby.

2. This Test Station is not designed for long term storage of an engine. When testing is complete, remove engine from Test Station.

3. Have multiple ABC class fire extinguishers nearby.

4. Assembly and use only on a flat, level, well-ventilated surface.
5. Wear ANSI-approved safety goggles and heavy-duty work gloves during assembly and operation.

6. **CARBON MONOXIDE HAZARD!** Running an engine in doors CAN KILL YOU IN MINUTES.

Engine exhaust contains carbon monoxide. This is a poison you cannot see or smell.

NEVER use inside a home or garage, EVEN IF doors and windows are open.

Only use OUTSIDE and far away from windows, doors, and vents.

7. Never exceed the **1,000 pound** weight capacity of this equipment.

8. Beware of dynamic loading! Dropping or bouncing an engine may briefly create excess load causing Engine Test Station failure.

9. Use only on a clean, dry, flat, level surface.

10. Always make sure the engine is centered and secured to mounting points before moving.

11. Keep children away from the Engine Test Station, especially while it is operating.

12. Do not leave the Engine Test Station unattended when the engine is running. Turn off the Test Station and remove Ignition Key (38) before leaving the work area.

13. Follow engine testing procedures and precautions as specified by the engine manufacturer’s repair manual.

14. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to a heart pacemaker could cause pacemaker interference or pacemaker failure. Caution is necessary when near the engine’s magneto or recoil starter.

15. Use only accessories that are recommended by Harbor Freight Tools for your model. Accessories that may be suitable for one piece of equipment may become hazardous when used on another piece of equipment.

16. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Gasoline-powered engines may ignite the dust or fumes.

17. Stay alert, watch what you are doing and use common sense when operating this piece of equipment. Do not use this piece of equipment while tired or under the influence of drugs, alcohol or medication.

18. Do not overreach. Keep proper footing and balance at all times. This enables better control of the equipment in unexpected situations.
19. Dress properly. Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

20. Parts, especially exhaust system components, get very hot during use. Stay clear of hot parts.

21. Do not cover the engine or Engine Test Station during operation.

22. Keep the Engine Test Station and surrounding area clean at all times.

23. Use the Engine Test Station, accessories, etc., in accordance with these instructions and in the manner intended for the particular type of equipment, taking into account the working conditions and the work to be performed. Use of the Test Station for operations different from those intended could result in a hazardous situation.

24. Do not operate the Engine Test Station with known leaks in the engine’s fuel system.

25. This product contains or, when used, produces a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, et seq.)

26. When spills of fuel or oil occur, they must be cleaned up immediately. Dispose of fluids and cleaning materials as per any local, state, or federal codes and regulations. Store oil rags in a bottom-ventilated, covered, metal container.

27. Keep hands and feet away from moving parts. Do not reach over or across the engine while it is running.

28. Before use, check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the Engine Test Station’s operation. If damaged, have the equipment serviced before using. Many accidents are caused by poorly maintained equipment.

29. Use the correct equipment for the application. Do not modify the Engine Test Station and do not use the equipment for a purpose for which it is not intended.

30. Keep all safety guards in place and in proper working order.

31. Do not alter or adjust any part of the Engine Test Station that is sealed by the manufacturer or distributor. Only a qualified service technician may adjust sealed parts.

32. Maintain labels and nameplates on the equipment. These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

33. Have the Engine Test Station serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the equipment is maintained. Do not attempt any service or maintenance procedures not explained in this manual or any procedures that you are uncertain about your ability to perform safely or correctly.

34. Store the Engine Test Station out of the reach of children.
35. Follow scheduled equipment maintenance.

36. Refueling Precautions:
   a. Do not smoke, or allow sparks, flames, or other sources of ignition around the equipment, especially when refuelling.
   b. Do not refill the Fuel Tank (35) while the engine is running or hot.
   c. Do not fill Fuel Tank (35) to the top. Leave a little room for the fuel to expand as needed.
   d. Refuel in a well-ventilated area only.

SAVE THESE INSTRUCTIONS.

ASSEMBLY INSTRUCTIONS

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

WARNING TO PREVENT SERIOUS INJURY:
Remove any load from the Engine Test Station before assembling or making any adjustments to the equipment.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

To Attach the Two Swivel Casters:

1. Secure the two Front Casters (1) to the Right Runner (12) and Left Runner (13) using two Hex Head Bolts (2), two Washers (3), and two Nuts (4) for each Front Caster. (See Assy. Diagram.)

To Attach the Two Fixed Casters:

1. Secure the two Fixed Casters (30) to the Rear Engine Beam (21) using two Hex Head Bolts (21) using two Hex Head Bolts (2), two Washers (3), and two Nuts (4) for each Fixed Caster. (See Assy. Diagram.)

2. From underneath the Right Runner (12) and Left Runner (13), place the Battery Support Board (37) aligning one mounting hole at each end of the Battery Support Board with the mounting hole at each end of the Right and Left Runners. (See Assy. Diagram.)

PRODUCT SPECIFICATIONS

<table>
<thead>
<tr>
<th>Product Applications</th>
<th>Designed for testing, break-in, leak detection, demonstration, assembly, and detailing. Adjusts to fit most engines.</th>
</tr>
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<td>Maximum Weight Capacity</td>
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<tr>
<td>Gauges Included</td>
<td>Tachometer, Temperature Gauge, Oil Pressure Gauge</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
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</tr>
<tr>
<td>Engine Mounting Holes</td>
<td>Front: 7/16&quot; Inside Diameter Rear: 3/4&quot; Inside Diameter</td>
</tr>
<tr>
<td>Accessories</td>
<td>Ignition Keys (Qty. 2)</td>
</tr>
</tbody>
</table>

UNPACKING

When unpacking, check to make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.
3. Place the Rear Engine Beam (21) against the Right Runner (12) and Left Runner (13), aligning the mounting hole in each Fixed Caster (30) with the mounting holes in the Battery Support Board (37) and Right and Left Runners. (See Assy. Diagram.)

4. Secure the Fixed Casters (30) and Rear Engine Beam (21) to the Battery Support Board (37) and Right and Left Runners (12, 13) using one Hex Head Bolt (6), one Washer (3), and one Nut (4) for each Right and Left Runner. (See Assy. Diagram.)

To Attach the Battery Support Board:

1. From underneath the Right Runner (12), Left Runner (13), and Battery Support Board (37) place the Battery Support Bar (16). Secure the Battery Support Bar to the Battery Support Board, Right and Left Runners using one Hex Head Bolt (6), one Washer (3), and one Nut (4) for each Right and Left Runner. (See Assy. Diagram.)

To Secure the Rear Engine Beam and Front Cross Beam to the Right Runner and Left Runner:

1. Insert one Washer (5) onto each Long Bolt (31). Insert one Long Bolt through the mounting hole at the end of the Rear Engine Beam (21), completely through the Right Runner (12), and through the mounting hole at the end of the Front Cross Beam (10). Secure the Long Bolt using one Washer (5) and one Nut (32). Repeat this procedure to secure the remaining Long Bolt to the other end of the Rear Engine Beam (21), Left Runner (13), and Front Cross Beam (10). (See Assy. Diagram.)

To Attach the Front Mount Supports:

1. Insert the two Front Mount Supports (24) onto the two upright columns of the 4” Sleeve (14). Align the mounting hole in each Front Mount Support with the mounting hole in each column of the 4” Sleeve. Secure the Front Mount Supports to the columns of the 4” Sleeve using one Hex Head Bolt (7), one Washer (3), and one Nylon Lock Nut (8) for each Front Mount Support. (See Assy. Diagram.)

To Attach the Rear Engine Bow Supports:

1. The two Rear Engine Bows (9) have four mounting holes at their ends. Insert the Rear Engine Bows (with their four mounting holes downward) onto the two Sleeves with Pedestals (25). Secure the Rear Engine Bow Supports to the Sleeves with Pedestals using one Hex Head Bolt (7), one Washer (3), and one Nylon Lock Nut (8) for each Rear Engine Bow Support. (See Assy. Diagram.)

To Attach the Fuel Tank Bow Supports:

1. Insert the two Fuel Tank Bow Supports (28) onto the two upright columns of the Rear Engine Beam (21), aligning the mounting hole in each Fuel Tank Bow Support with the mounting hole in each column of the Rear Engine Beam. (See Assy. Diagram.)

2. Align the mounting hole in each end of the two Support Straps (29) with

SKU 98334 For technical questions, please call 1-800-444-3353. Page 6
the mounting hole at the ends of the Right Runner (12), Left Runner (13), and Fuel Tank Bow Supports (28). Secure the two Support Straps to the Right and Left Runners and Fuel Tank Bow Supports using two Hex Head Bolts (11), two Washers (3), and two Nylon Lock Nuts (8). (See Assy. Diagram.)

To Attach the Rear Engine Bow:

1. Insert each end of the Rear Engine Bow (23) onto the two Rear Engine Bow Supports (9). (See Assy. Diagram.)

2. Align a mounting hole in the two Engine Straps (17) with a mounting hole in the Rear Engine Bow (23) and with the mounting hole at the top of the two Rear Engine Bow Supports (9).

3. Secure the Rear Engine Bows (23) and two Engine Straps (17) to the two Rear Engine Bow Supports (9) using two Hex Head Bolts (11), two Washers (3), and two Nylon Lock Nuts (8). (See Assy. Diagram.)

To Attach the Meter Panel Support:

1. Insert the Meter Panel Support Bow (22) onto the two Fuel Tank Bow Supports (28), aligning the mounting holes of the Meter Panel Support with the mounting hole at the top of each Fuel Tank Bow Support. Secure the Meter Panel Support Bow to the two Fuel Tank Bow Supports using one Hex Head Bolt (11), one Washer (3), and one Nylon Lock Nut (8). (See Assy. Diagram.)

2. Attach the Meter Panel (33) to the Meter Panel Support Bow (22) using six Bolts (34). (See Assy. Diagram.)

To Attach the Fuel Tank:

1. Place the Fuel Tank Strap (27) on the Fuel Tank (35), making sure to position a strap on each side of the Tank Cap (36). Also, make sure the Tank Cap is in an upward position. (See Assy. Diagram.)

2. Insert a Washer (3) onto each of the two Hex Bolts (26). Attach the Fuel Tank Strap (27), with its Fuel Tank (35), to the Meter Panel Support Bow (22) using the two Hex Bolts, two Washers (3), and two Nuts (4). (See Assy. Diagram.)

3. The assembly is complete.
1. **IMPORTANT:** The Mobile Engine Test Station is designed for use with *most* engines. Due to the fact that there are a large variety of engine makes and models, the following operation instructions are intended only as general operating procedures. Always follow engine testing procedures and precautions as specified by the engine manufacturer’s repair manual.

2. Attach a Hose Adapter (not included) to an inlet and outlet Radiator Hose on the engine. Then attach a Garden Hose (not included) to the two Hose Adapters. (See Figure B.)

3. Remove the engine’s Thermostat.

4. The engine’s Water Pump must remain stationary (not spinning).

5. The water must run in the correct direction. Otherwise, hot spots may occur inside the engine and cause damage.

6. Begin with a small amount of water. Observe the Temperature Gauge on the Test Station. If necessary, regulate the temperature to 160°, 170°, or 180° Fahrenheit. (See Figure A.)

7. Immediately turn off the water after turning off the engine. This will eliminate the risk of cracking the hot engine block or engine heads with cold water entering the engine. Then, allow the engine to completely cool on its own.
8. The Ballest Resister on the engine cuts Battery voltage down to approximately 7 volts for longer point life. If you need 12 volts either remove the Ballast Resister or bypass the Resister. (See Figure C.)

9. It is recommended that you install an in-line, universal type Fuel Pump available at most automotive part retail stores. (See Figure C.)

10. Use Hose Clamps (not included) to clamp the in-line, universal type Fuel Pump, Coils, and Ballast Resister to the Rear Engine Bow Supports (9), under the Meter Panel Support Bow (22), with weather stripping (not included) between the engine parts and Rear Engine Bow Supports. (See Figure C.)

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**FIGURE C - WIRING SYSTEM**

- TACHOMETER
- TEMPERATURE GAUGE
- OIL PRESSURE GAUGE
- STARTER BUTTON
- VACUUM
- IGNITION SWITCH
- BLK
- GRN
- RED
- TO ENGINE FUEL SYSTEM
- BALLAST RESISTER
- TO DISTRIBUTOR
- GM STARTER & SOLENOID
- COIL
- BATTERY
- EXAMPLE: FORD & CHRYSLER
- FUEL PUMP
- FUEL FILTER
11. Engines can be mounted as shown in the illustration below. Engines can also be mounted sideways or backwards on the Test Station. (See Figure D.)

12. An example of factory motor mount pockets of most engines. (See Figure E.)

13. An example of factory bell housing units of most engines. (See Figure F.)

14. Once the engine is connected to the Test Station, use the included Ignition Key to start the engine. Allow sufficient time for the engine to warm. Then observe the readings on the Test Station’s gauges to record the data required.

---

**INSPICATION, MAINTENANCE, AND CLEANING**

**WARNING** TO PREVENT SERIOUS INJURY: Remove any load from the Engine Test Station before performing any inspection, maintenance, or cleaning procedures.
WARNING

TO PREVENT SERIOUS INJURY FROM EQUIPMENT FAILURE: Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Maintenance Procedures

Many maintenance procedures, including those not detailed in this manual, will need to be performed by a qualified technician for safety. If you have any doubts about your ability to safely service the Engine Test Station have a qualified technician service the equipment instead.

Note: Warranty is void if proper inspection, maintenance and cleaning procedures are not followed.

Note: This inspection, maintenance, and cleaning information is intended solely as a general guide. If performance decreases, or if the Engine Test Station operates unusually, have a qualified service technician check the equipment immediately.

1. BEFORE EACH USE: Check to make sure the engine you intend to mount does not exceed 1,000 pounds in weight.

2. BEFORE EACH USE: Inspect all Gauges and connections for proper operation.

3. BEFORE EACH USE: Check to make sure Fuel Tank (35) is full. Also, make sure to use the engine manufacturer’s recommendation for proper fuel octane rating.

4. BEFORE EACH USE: Check to make sure DC battery used is fully charged.

5. AFTER EACH USE: Remove engine and DC battery from Test Station. Then drain Fuel Tank (35) into an appropriate gasoline container.

6. WHEN CLEANING: Clean with a damp cloth and mild detergent. Do not use solvents. Then dry.

7. WHEN STORING: Remove Ignition Key from Test Station and store in a safe location. Drain Fuel Tank (35) of all gasoline into an appropriate container. Store the Test Station in a clean, dry, safe location out of reach of children and other unauthorized persons.
PLeASE rEAd tHE FOllOWING cArEFuLLy

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

PARTS LIST

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<th>Part #</th>
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LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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Record Product’s Serial Number Here:_____________________________________

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.