

Diesel Engine Cylinder Compression Test Kit

User Manual

Read Carefully Before Use
Keep for Future Reference



OMT
Orion Motor Tech

UM-MFK-0011-V2

Disclaimer

Read this disclaimer completely and carefully before proceeding with the rest of the manual content.

1. Product Modifications

Any modifications or alterations to Orion Motor Tech (OMT) products void any warranties and may result in damage or injury. OMT shall not be liable for any damages resulting from such modifications or alterations.

2. Compliance with Laws

Customers shall be liable for ensuring that the use of OMT products complies with all applicable laws and regulations in their respective jurisdictions. OMT shall not be responsible for any violations of laws or regulations resulting from the use of OMT products.

3. Correct Use

Always use OMT products only as directed in the accompanying manuals. Failure to follow instructions may result in injury or damage.

Always ensure the assembly, installation, operation, maintenance, or repair of OMT products is carried out by a competent person.

Regular maintenance should be performed throughout the lifecycle of OMT products. You are responsible for ensuring the products operate as intended.

Always wear appropriate protective gear.

4. Third-Party Products

OMT shall not be liable for any damages or losses resulting from the use of third-party products in conjunction with OMT products. Customers shall refer to the third-party's guidelines and/or warranties (if any) for any third-party products used.

5. Limitation of Liability

OMT shall not be liable for any direct, indirect, punitive, incidental, special, or consequential damages to property or life, whatsoever arising out of or connected with the use or misuse of OMT products. In no event shall OMT's liability exceed the value of the products sold.

6. Warranty

Refer to the sales page for warranty information.

This disclaimer states the entire obligation of OMT with respect to OMT products. If any part of this disclaimer is determined to be void, invalid, unenforceable, or illegal, including but not limited to the warranty disclaimers, liability disclaimers, and liability limitations set forth above, the invalid or unenforceable provision will be deemed superseded by a valid and enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us and we'll address your issues ASAP!



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Safety Information

Danger

- The instructions provided herein are only for general information. **ALWAYS** perform all repairs in full compliance with your machinery's service manual. After any repair, test your engine and machinery in your workshop and at low speed before returning to normal use. Failure to do so may result in serious property damage and severe personal injury.
- **DO NOT** allow use by children, by persons whose mental or physical condition precludes safe use, or by persons unfamiliar with this product and its compatible vehicle systems.
- **DO NOT** use while under the influence of alcohol, drugs, or any medication that negatively affects your judgment or reflexes. Keep children and bystanders away during use.
- Keep your work site clean and well-lit. Cluttered and dark work areas invite accidents.
- For best results, keep the kit clean and dry. Remove any fluid, oil, or grease before and after work.
- **ALWAYS** use personal protective equipment (PPE) suitable to your task. **ALWAYS** wear ANSI and OSHA-approved eye, breathing, and hand protection while using this product. Normal use of this product typically produces microscopic particles known to the state of California to cause cancer, birth defects, or other reproductive harm. Nonslip footwear is also highly recommended. Other equipment such as ear, head, and body protection may also be necessary depending on your work, work environment, and other equipment.
- Dress properly. **DO NOT** wear loose clothing or jewelry and keep hair, clothing, gloves, hoses, and tools away from any moving parts during use.
- **ALWAYS** know and understand the specific safety warnings and instructions for your machinery before using this kit. Use the correct fluids, pressures, adapters, etc. for your machinery. Make sure the machinery is fully supported and parked before beginning any work. Take care to **NEVER** touch any heated surface with exposed skin.
- Dress properly for automotive servicing. **DO NOT** wear loose clothing or jewelry and keep hair, clothing, gloves, hoses, and tools away from any moving parts during use.
- **ALWAYS** know and understand the specific safety warnings and instructions for your vehicle before using this kit. Use the correct fluids, pressures, adapters, etc. for your vehicle. Make sure the vehicle is fully supported and parked before beginning any work. Take care to **NEVER** touch any heated surface with exposed skin.
- Prior to servicing your machinery, turn off its engine and refer to its manufacturer's service and repair manual for instructions on how to safely secure the machinery in place with chocks, jacks, stands, etc.
- In case of an accident or injury, have a first aid kit and a communication device (e.g., a phone) readily available. Know the location of emergency medical facilities.
- Maintain this product. Check for misalignment, binding, wear, or other damage before use. If any damage is detected, repair or replace the problematic components before further use. In a large shop, mark such tools "**DO NOT USE**" until they have been repaired. **ONLY** replace components with identical parts.
- Machinery repair is an inherently dangerous activity. This manual and the separate machinery service manual cannot cover all possible situations that may arise. **ALWAYS** exercise discretion and good judgment. Seek training if needed.

Specifications

Pressure Range	0-1000 psi	0-70 Bar
Hose Length	16.3 in.	41.5 cm
Air Release Type	Push Button	
Dimensions	15.0 × 11.2 × 3.0 in.	38 × 28.5 × 7.7 cm
Weight	7.72 lb.	3.5 kg

Parts List



No.	Item	Length	
A	Pressure Gauge	—	—
B	M10 × 1 Glow Plug Adapter	5.4 in.	136 mm
C	M10 × 1 Glow Plug Adapter	4.7 in.	120 mm
D	M10 × 1.25 Glow Plug Adapter	3.7 in.	95 mm
E	M22 × 1.5 Glow Plug Adapter	4.6 in.	118 mm
F	Push-On Connector	0.43 in.	11 mm
G	Push-On Connector	1.02 in.	26 mm
H	M10 × 1 Glow Plug Adapter	4.5 in.	115 mm
I	M8 × 1 Glow Plug Adapter	4.1 in.	103 mm
J	M10 × 1 Glow Plug Adapter	3.4 in.	86 mm
K	M10 × 1.25 Glow Plug Adapter	2.6 in.	66 mm
L	M12 × 1.25 Glow Plug Adapter	2.0 in.	50 mm
M	M18 × 1.5 Screw Adapter	6.3 in.	160 mm
N	M24 × 1.5 Injector Adapter	3.5 in.	88 mm
O	M22 × 1.5 Injector Adapter	3.0 in.	75 mm
P	M24 × 2 Injector Adapter	2.6 in.	65 mm
Q	M20 × 1.5 Injector Adapter	3.0 in.	75 mm
R	H-Fitting	4.49 in.	114 mm

Operation

Warning

- Park your machinery in a level place safely and engage the parking brake. If necessary, chock the wheels/tracks.
- Use correct tools and personal protective equipment (PPE) before performing any operation. Be extremely careful with possible pinching points, moving parts, or parts that may suddenly spring out.
- Performing a pressure test requires the work of two individuals; one person to operate the machinery's ignition switch and the other person to read the gauge.
- For an abundance of safety, we recommend you take training before using these tools. Serious injury could happen due to a lack of training.
- If the dial pointer is not at zero, use a flathead screwdriver to turn the zero-adjustment knob counterclockwise until the pointer returns to zero.



1. Remove all glow plugs and number them according to the cylinder from which they were removed.
2. Attach the correct adapter to the compression gauge hose, using the H-fitting to keep the adapter in place if needed.

To perform a precise test:

Screw the adapter into the glow plug or injector hole.

Make sure it's securely screwed in.

To perform a quick test:

- a. Attach the M18 push-on connector to the screw adapter or the M24 push-on connector to the M24 injector adapter.
- b. Insert the adapter into the glow plug or injector hole.



3. Disable the fuel injection pump by disconnecting the fuel shutoff solenoid according to the instructions in your vehicle's manual.
4. Crank the engine for at least six compression strokes or until the pressure reading on the gauge stops rising.

Note:

- The gauge needle should travel up the scale on each compression stroke until it reaches a peak value.
- If the gauge needle does not travel up the scale or if it remains at the same value for several strokes and then starts to climb, a valve may be sticking. Clean any sticky valves as needed.
- If the compression reading is considerably higher than the vehicle manufacturer's specification and the piston and cylinder have not been modified, access the cylinder head to check it for carbon build-up. Remove any such build-up and rerun the test.

5. Push the release valve on the side of the gauge's connection to relieve the pressure and unscrew the compression tester.



Warning

Keep the gauge at arm's length and face it away from yourself to avoid injury from the high-pressure release.

6. Repeat the step1-4 for the other cylinders.
7. After correcting any problems, clean, recap, and reinstall the glow plugs or injectors in the same order in which they were removed or install new glow plugs or injectors.
8. Reconnect the fuel shutoff solenoid according to the instructions in your vehicle's manual.

Maintenance

- Disassemble all parts before storing them in a cool, dry, and clean place after use.
- The exterior of the product can be cleaned with a soft damp cloth. **DO NOT** use abrasive cleaners or caustic chemicals.
- **NEVER** scrape the hose or drop the pressure gauge on hard or rough surfaces.
- Check all parts of the product periodically for any wear or damage. Repair or replace any problematic parts before further use.
- Store this product in a cool, dry place away from direct sunlight and inaccessible to children.



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