

U.S. EPA-NVFEL Small SI Engine Setup

1. The engine must have the following thermocouples installed:
 - Head temperature
 - Air inlet temperature
 - Oil sump temperature
 - Exhaust temperature

The thermocouples should be K type with mini connectors (See Fig. 1).

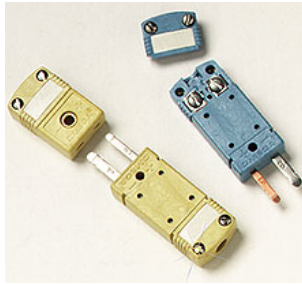


Fig. 1

2. The engine must be supplied with any necessary external cooling, if applicable.
3. The manufacturer must supply all oil needed for testing in a labeled container separate from the engine (i.e., may be one shipment consisting of two containers). The manufacturer must also supply the relevant MSDS Sheets. If shipping oil is problematic, please contact Bruce Sdunek at sdunek.bruce@epa.gov for assistance.
4. The engine must be supplied with a manually adjustable throttle and governor control, if applicable.
5. The engine must be supplied with the operator's manual.
6. The engine must be supplied with an 8 foot ignition wiring extension to allow for an ignition cut-off switch. The manufacturer need not supply the connector.
7. The engine must be equipped with an hour meter with 1/10 hour resolution. The hour meter must be installed on the engine and reflect the number of operating hours accumulated on that engine.
8. The engine must be equipped with a muffler, air cleaner, all emissions components consistent with the certification applications, and any other components needed to run the test.

9. The manufacturer must supply a properly positioned fuel tank, or the appropriate fuel head pressure information if the engine is sold without a fuel tank.

10. Dyno Hookup—Horizontal Engines

The manufacturer is to supply the adapter needed for testing the engine. When the Engine arrives at NVFEL the adapter should be installed on the engine and ready for testing. EPA will use a Love-Joy LF16 coupler part number 38826. For horizontal engines please refer to Fig. 2 for adapter dimensions. The Manufacturer is responsible for selecting the appropriate material for the adapter. We recommend using 1040 cold rolled steel for adapters.

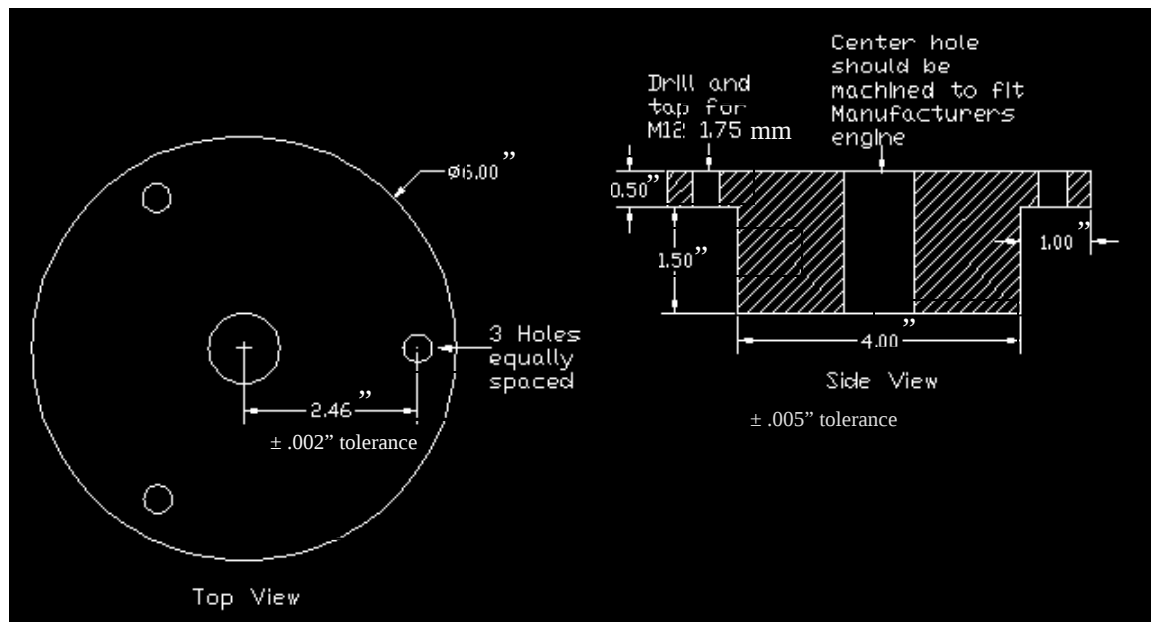


Fig. 2