

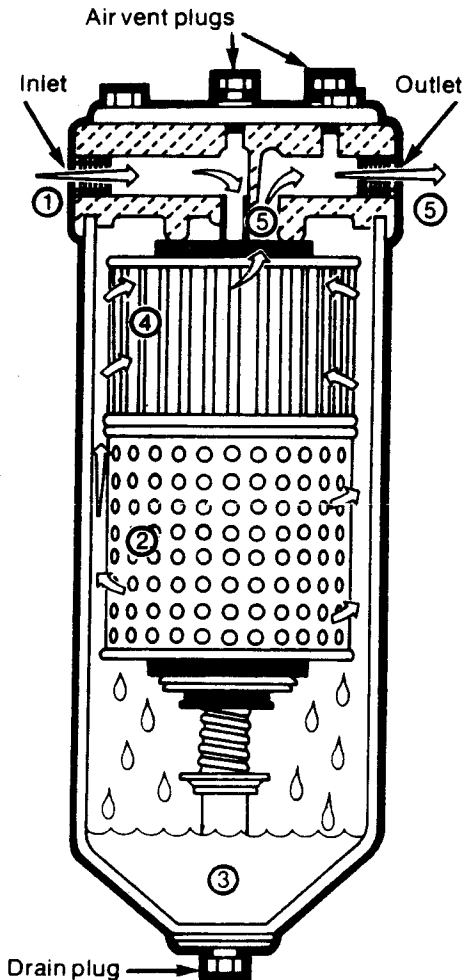


Fram Division  
Providence, RI 02916

# Installation Instructions for Fram FCS1136M Fuel Filter & Water Separator

For fuel systems with flow requirements up to 30 gph

Assures 100% water removal together with micronic filtration of the solid contaminants from diesel and other fuels.



## General Instructions

This single body head mounted fuel filter and water separator contains a dual media cartridge that assures 100% water removal from diesel and other fuels together with removal of gums, varnishes, dirt, abrasives and other solid contaminants. The lower section of cartridge (contained within a metal shell) uses a special chemically treated paper to provide maximum dirt removal efficiency down to 1 micron in size. It also provides a coalescing action on water in fuel, forming large water droplets for removal by a settling out action or by rejection from upper separator section of cartridge. The upper (water separator) section of cartridge uses a special chemically treated pleated paper which will freely pass fuel oil, but provides 100% water removal. This section of cartridge will also trap any dirt which might pass through the lower section of cartridge providing dual filtration of the fuel.

This two stage filter is designed to be installed on diesel and other engines with up to 30 GPH flow requirements.

## Here's How It Works:

1. Fuel enters filter inlet and passes down through centertube to inside of lower or coalescer section of cartridge (fuel flows inside-out through this section).
2. Fuel contacts coalescer-filter media. Dirt, rust and solids are filtered out and water in fuel is coalesced forming large droplets for separation.
3. Water droplets settle out to sump of filter and fuel continues up to outside of separator section of cartridge.
4. Fuel enters outside of media and is filtered second time and any water drops are rejected by this media.
5. Clean fuel then passes up through centertube of cartridge to head of filter and out filter outlet.

**Important:** For applications, *other than marine*, a drain cock Fram No. 106498 may be used in place of drain plug.

## Servicing Instructions

This filter should be serviced in the same manner as any fuel filter in order to remove accumulated dirt. As water will accumulate in sump of the filter, a drain plug is provided at bottom of filter for this purpose. All that is required is to periodically loosen the drain plug, thus draining off all entrapped water. The frequency of this drain period will depend entirely upon the amount of water and on the season of the year. Winter operation will require more frequent draining periods. An examination of drained liquid will indicate the rate of water accumulation and dictate the frequency of draining periods.

## Installation Instructions

This filter should be installed wherever possible between transfer pump and injector pump or injector rail on diesel engines and between fuel pump and carburetor on gasoline engines. The existing secondary fuel filter should be removed. On engines where it is impossible to install filter on pressure side of pump, this filter can be installed between tank and pump. The inlet and outlet connections in head are tapped  $\frac{1}{4}$ "-18 pipe thread. Filter mounting bracket and cap-screws are supplied. The mounting bracket to which the filter bracket is attached will vary with each installation and must be made up on the job to suit the particular mounting condition encountered. All new hoses or tubing should be of equivalent size and quality as the original fuel hoses or tubing. Allow at least three inches clearance below filter for removal of filter body when cartridge needs changing. This filter cannot be used where pressures are greater than 75 PSI.

The following general installation instructions for replacing the original secondary fuel filter apply to most engines. If specific instructions are required for your particular installation, write Fram Corporation, Automotive Division, Providence, Rhode Island 02916.

**Important:** Filter must not come in contact with hull or structural members at any time due to engine motion.

**A.** Disconnect inlet and outlet hoses and remove fittings from existing secondary filter. Remove filter and supporting bracket from engine.

**B.** Install inlet and outlet fittings (removed in step "A") in Fram filter. Use reducers if necessary.

**C.** Install bracket (supplied) on Fram filter and attach this assembly to engine. It may be necessary to make a new bracket to accomplish mounting filter on engine.

**Note:** On engines where mounting space is limited, it may be necessary to mount filter on a panel or support. Allow at least 3 inches below filter for changing cartridge.

**D.** Connect original inlet hose to fitting in inlet of Fram filter and original outlet hose to fitting in outlet of Fram filter.

**Note:** On those installations where existing hoses are not of sufficient length, purchase new hoses of equivalent diameter and quality as original.

**E.** Open fuel shut-off valve. Start engine and vent air from filter by loosening vents in filter head. When air is expelled and fuel appears, tighten vents. Check all connections for leaks.

