

# M34DK-3 Fuel Units



The definition of quality and service

**Webster**<sup>®</sup>

Fuel Pumps & Valves

# M34DK-3 Fuel Units

## Features

To meet the needs of today's fuel-efficient, downsized and space efficient burners, Webster's popular M34DK-3 incorporates improved access to both the bleed valve and bypass plug. Locating the bleed port plug assembly on the side of the fuel unit provides the service technician with one visible and accessible location to either bleed the fuel unit or change the bypass plug without removing the burner.

In addition to improved access the M34DK-3 cleaner blade has been thickened to provide a more robust cleaning action. For maximum protection, an additional line filter should be used in accordance with recommended standard practice. Many of the BUNA-N elastomers have been replaced with VITON to provide extended life at critical locations within the fuel unit.

The M34DK-3 retains all the industry accepted, state-of-the-art features of the M34DJ-3 fuel unit. These include faster fuel cut-off, improved priming on single pipe installations, and reduced inlet line flow on two-pipe systems which results in lower line noise.

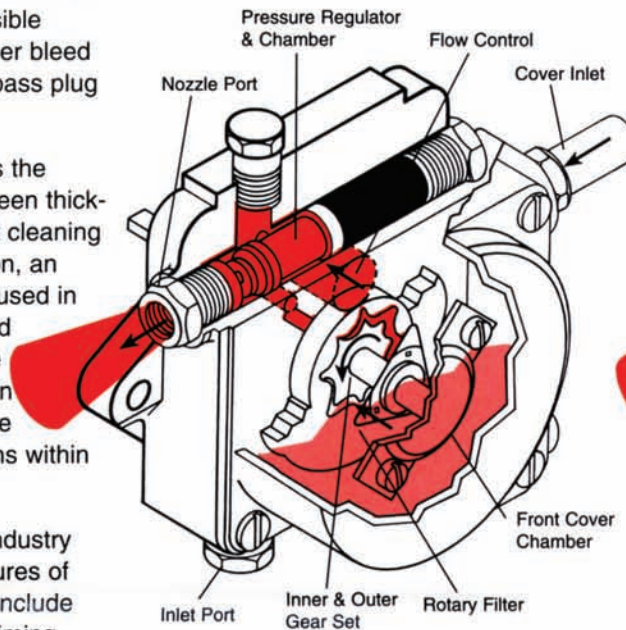
The M34DK-3 is capable of maintaining a three gallon per hour fire size at up to 150 PSI throughout its design life. The M34DK-3 is factory preset to 100 PSI and is adjustable to 150 PSI.

## General Operation and Fuel Unit Oil Flow

The compact M34DK-3 Fuel Unit is engineered for efficient pumping of fuel oil. The cut-away view illustrates the oil flow through an M34DK-3 operating in a one pipe system, with a suction line and no return to the storage tank.

A one pipe system is frequently used when the storage tank is located above the fuel unit, or when automatic venting is not necessary. Vacuum at the pump inlet should not exceed 10" Hg. For this type of installation to be reliable, the total system must be completely airtight. During installation or servicing of the fuel unit, air may be manually bled from the system through the side-located bleed valve.

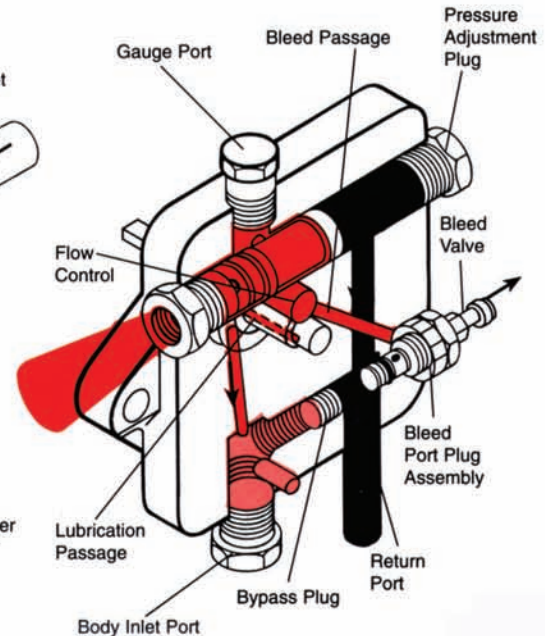
- Fuel oil subject to vacuum
- Fuel oil at atomization pressure
- Fuel oil at return pressure



### One Pipe System

Fuel oil enters the fuel unit through the inlet port and is drawn into the front cover chamber. A vacuum, created by an inner and outer rotating gear set, pulls oil through the rotary filter and into the gears. As oil moves around the gears, it is compressed, creating a higher pressure. Oil leaving the gear set branches into three paths. One path leads to the pressure regulating chamber. A second path directs oil through the flow control and back to the front cover chamber. The final path leads to the bleed valve. Oil flowing into the pressure regulating chamber branches into two paths. Up to three gallons per hour can flow out the nozzle port, and the remaining oil by-passes the pressure regulator, returning to the front cover chamber.

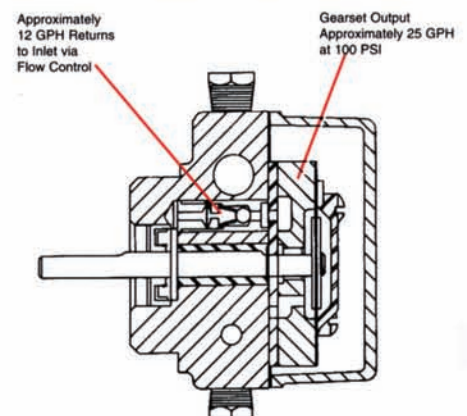
The M34DK-3 will provide up to 10" Hg of inlet vacuum. The two pipe system (shown below), with both a suction and return line is self-venting. This allows any air in the system to escape and be returned to the storage tank through the return line.



### Two Pipe System

The by-pass plug, inserted through the bleed valve port, blocks the surplus oil return to the front chamber. This oil is directed to the return port and back to the storage tank.

### Oil Path Through Flow Control



# Specifications

## Firing Capacity:

Recommended 3 GPH fire size for pressures from 100 to 150 PSI with #1, #2 fuel oil or Kerosene.

## Gear Capacity:

25 GPH @ 100-150 PSI with #1, #2 fuel oil or Kerosene.

## Pressure:

Factory set at 100 PSI.  
Adjustable to 150 PSI.

## Inlet Requirements:

10" Hg maximum vacuum (approx.  
10' vertical lift - exact distance will vary with tubing diameter and length).  
3 psig maximum inlet pressure.

## Speed:

3450 RPM.

## Rotation: (As viewed from shaft end):

Clockwise (D Style).

## Porting:

- 1/8" NPTF, side located nozzle port.
- 1/8" NPTF, top located gauge port.
- 1/4" NPTF, bottom and cover located inlet ports and bottom located return port.
- Bypass plug accessible through the side located bleed port plug assembly.
- 3/8" flow through bleed valve.

## Nozzle Location

(As viewed from shaft end):  
Clockwise (D Style) – Right side.

## Shaft:

5/16" dia., 1.65" extension from mounting face, with keyless "D" drive.

## Filter:

Self-cleaning rotary type.

## Elastomers:

Buna-N shaft seal.  
All other seals are VITON.

## Mounting:

2 bolt flange - see interface dimensions.

## Weight:

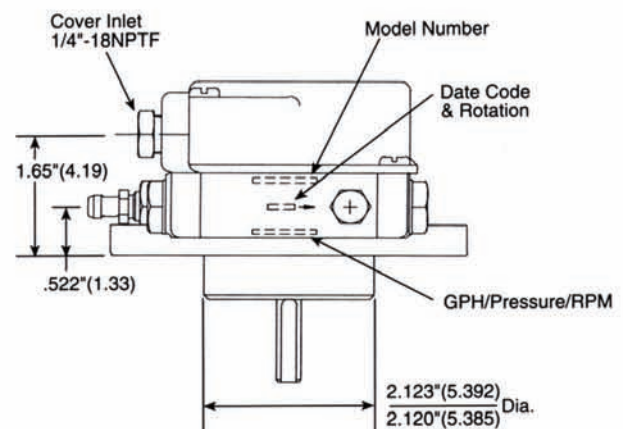
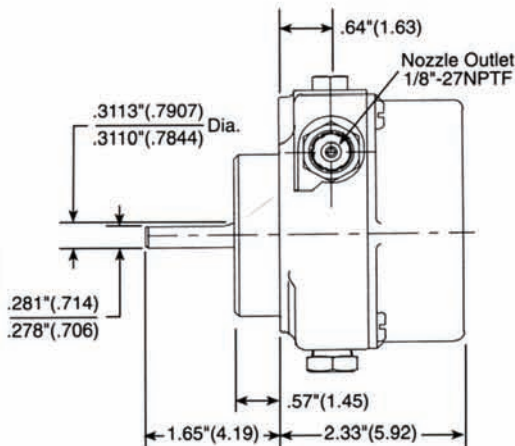
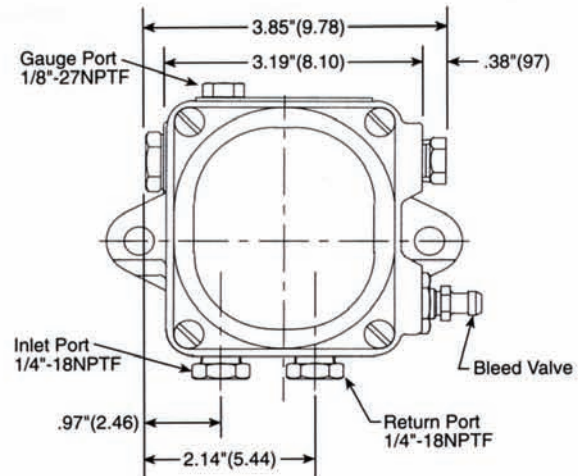
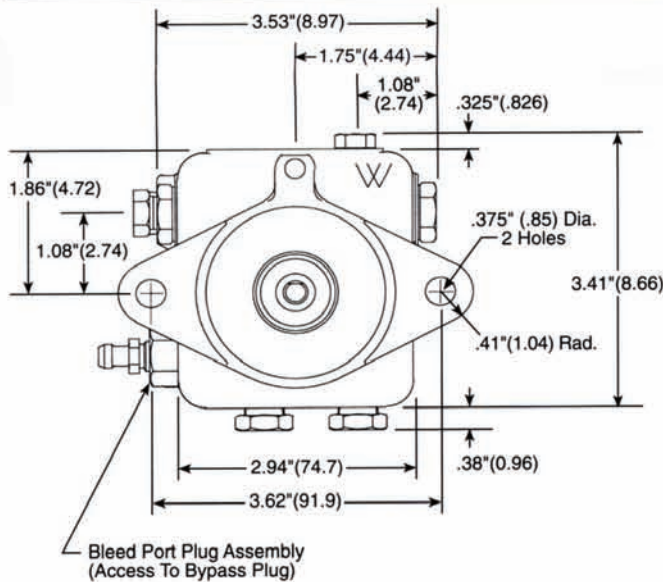
4 lbs., 2 oz., shipped oil-filled.

## UL and C-UL Listed

**NOTE:** To assure compliance with National Fire Protection Association Bulletin 31, "Installation of Oil Burning Equipment", fuel unit inlet pressure should not exceed 3 psig.

# Dimensions

Dimensions in inches, ( ) = cm



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## Our Pledge To You:

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When you buy Webster products, you buy total service. Webster is the unique, single-source supplier of an extensive line of heating products. We manufacture fuel units, supply and transfer pumps, valves and oil heat accessories.

Webster is committed to reliable servicing of its products. As always,

our field service people provide professional schooling and make materials and demonstration units available for training.

We are ready to work with you to help solve your specific heating problems. If you have any technical questions, call toll-free: (800)766-1233.

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