



DUAL-GARD

OIL FILTRATION SYSTEM



• Performance • Convenience • Versatility

“We took the performance built into our standard big truck By-Pass filters, and put it into a much more convenient and versatile package.”

Dave Anderson,
AMSOIL Director of Mechanical
Research and Development



Proof From the Test Labs

Wear tests have shown particles of contamination in the sub-20-micron range are most harmful to rings and bearings. Most trucks are sold with a full-flow filter as their only oil cleansing unit. A study by the Milwaukee School of Engineering determined the fil-

tering efficiency of four top-selling full-flow filters compared with a BE-90 AMSOIL Spin-On By-Pass Filter. The graph shows the By-Pass functioning at 97.6% efficiency in removing particles as small as 3 microns, a feat no full-flow filter can match.

Why By-Pass Filtration?

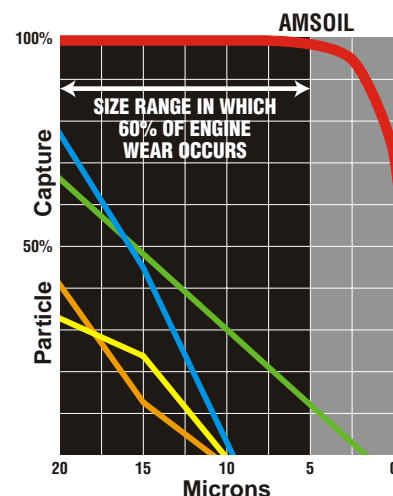
Answer: Because even the finest full-flow oil filtration simply can't do the job completely. Full-flow filters are installed in-line in an oil circulation system, so they **must** allow constant oil flow to the engine. Therefore the filtration media has to be relatively coarse and open to provide a rapid oil flow.

But this “free-flow” also compromises the filter’s ability to

remove the smaller abrasive particles: typical full-flow filters only remove particles down to 25-40 microns. The problem is that smaller-sized particles, from 5 to 20 microns, are responsible for up to 60% of engine wear. This means a conventional full-flow filter leaves countless wear-causing particles in the oil, grinding away at your engine and shortening its life.

Filtration Efficiency

SAE Test Method J 806



Superior particle capture for superior wear inhibition

- █ AMSOIL BE-90 By-Pass
- █ Fram PH8A
- █ AC PF-2
- █ Purolator PER-1
- █ Ford FL-1

Conducted under the direction of Tom Wanke,
Director, Fluid Power Institute, Milwaukee
School of Engineering.

AMSOIL DUAL-GARD

Versatility, Convenience, Superb Engine Protection and Safety

Versatility:

Accommodates any two AMSOIL Spin-On By-Pass Filter Elements. Their unique internal flow director and follower spring system provide a non-channeling filter media.

Convenience:

Elements spin on and off for fast, neat filter changes.

Protection:

The stacked disc type by-pass filter has been shown to reduce piston ring and rod/main bearing wear 75% to 91% (Society of Automotive Engineers paper 881826).

By-Pass Safety:

A metering orifice inside the mount controls oil flow so that it never draws more than 10% of the oil pump's capacity. At an engine speed of 45 mph, the AMSOIL DUAL-GARD By-Pass Filter cleans all of the oil in the system every 5-10 minutes (depending on engine RPM, sump size, and oil pump ratio).

The DUAL-GARD Mounting Kit:

The BMK-12 contains a mount, mounting hardware, a restriction fitting, and two 3/4"-16 to 1/4" J.I.C. fittings. Complete installation instructions are included along with an additional parts list of plumbing hose and fittings available separately from AMSOIL. Spin-on filter elements, available in three sizes, should be purchased separately in pairs based on sump size or available room in the engine compartment. The following is merely a guide, since the larger the element used, the less frequently it will need to be changed.

For a crankcase sump of 15 to 18 quarts use 2 BE-90 filter elements.

For a crankcase sump of 15 to 30 quarts use 2 BE-100 filter elements.

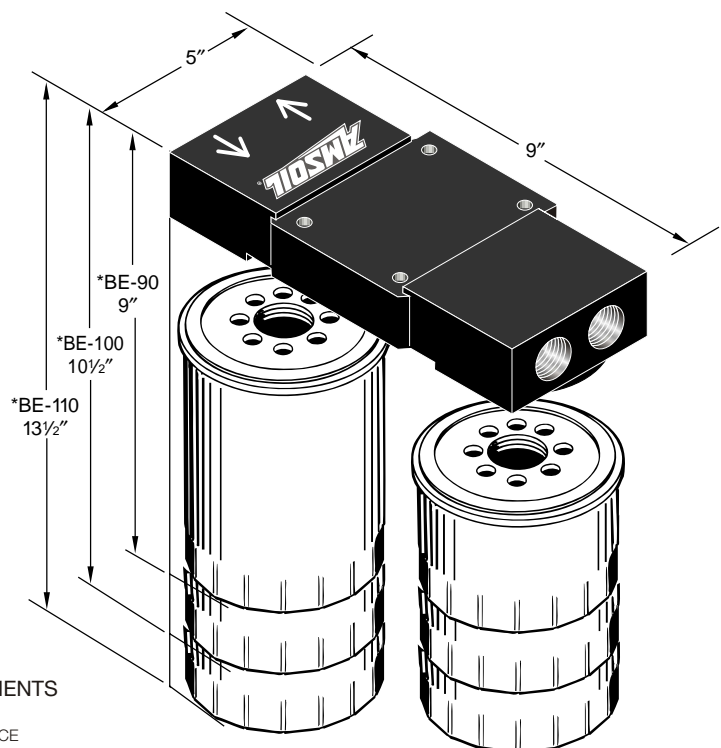
For a crankcase sump of 15 to 42 quarts use 2 BE-110 filter elements.



Your AMSOIL By-Pass Filters will last twice as long as your regular engine filter, so change them only half as often.

Other Applications

- STATIONARY ENGINES
- LARGE COMPRESSORS
- ELECTRIC GENERATORS
- CONSTRUCTION PIGGY-BACKS
- FILTER-PUMP CARTS
- MARINE, FORESTRY, MINING
- AGRICULTURE & IRRIGATION



MINIMUM AREA NEEDED FOR DUAL MOUNT AND SPIN-ON OIL FILTER ELEMENTS

* MOUNT AND ELEMENT HEIGHTS PLUS 1-INCH REMOVAL CLEARANCE

AMSOIL SPIN-ON BY-PASS FILTERS

The Benefits:

1. Reduce Wear:

AMSOIL Spin-On By-Pass Oil Filters remove particles down to **less than 1 micron** in size. Keeping your oil analytically clean like this means reduced maintenance and increased engine life.

2. Improve Performance:

Clean oil lubricates and cools better by reducing friction more efficiently. Piston rings also seal better, which reduces dilution of the oil by fuel, reduces oil consumption, and increases compression. All of these benefits improve fuel economy and equipment reliability — saving you time and money.

3. Remove water:

Water, from airborne moisture or combustion by-products, can strip additives from oil, cause rust on engine components, and react with other chemicals to form corrosives. Removing water from your oil eliminates the risk of oil degradation, rust and corrosion, and the wear associated with them.

4. Extend Oil Drain Intervals:

By cleaning oil continuously and completely, AMSOIL By-Pass Filters help increase engine life. But they also increase the life of the lubricant itself. Because additives in clean oil are not wasted breaking up dirt and sludge, or controlling combustion by-products, they last substantially longer. Also, the additional filter and hoses enlarge the oil volume of the system. When topped off with additional oil, the system contains more additives and more cooling capacity. Ultra-fine filtration means lubricants do their job better, longer, and need fewer changes.*

5. Reduce Wastes:

AMSOIL By-Pass Filters save you time and money, but they also save on the environment. More efficient combustion decreases exhaust emissions and reduces fuel consumption. Fewer oil changes mean less waste oil and fewer waste materials to be disposed of by a fleet/plant manager.

*Change oil on the basis of lab analysis, not by mileage.

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AMSOIL products and Dealership information are available from your local AMSOIL Dealer.

