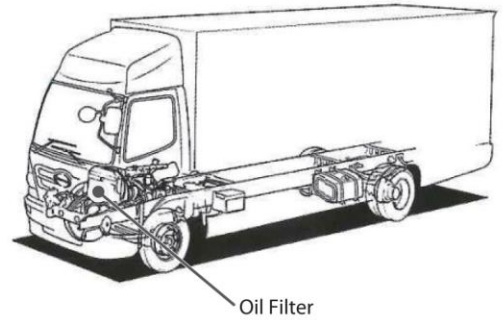


OIL FILTER



Function

The oil filter removes carbon and other impurities from the engine oil to maintain performance and protect the engine from damage due to abrasion in its moving parts.

Possible engine damage due to oil impurities

Causes	Effects	Engine condition
<ul style="list-style-type: none">• Dust• Oxidation products (e.g. rust)• Metal flakes	<ul style="list-style-type: none">• Abnormal abrasion of the engine's moving parts• Oil deterioration• Oil loss	<ul style="list-style-type: none">• Drop in engine output (horsepower)• Increased fuel consumption• Increased oil consumption• Shortened engine life

Differences between genuine and aftermarket parts

1) Performance

The filter paper of genuine parts has multiple layers of differing roughness and fiber density. This combination of special fibers creates fine passages that ensure maximum impurity removal. By comparison, the performance of aftermarket parts with only one layer of rough fiber may be insufficient to ensure maximum performance. (See Image. 1)

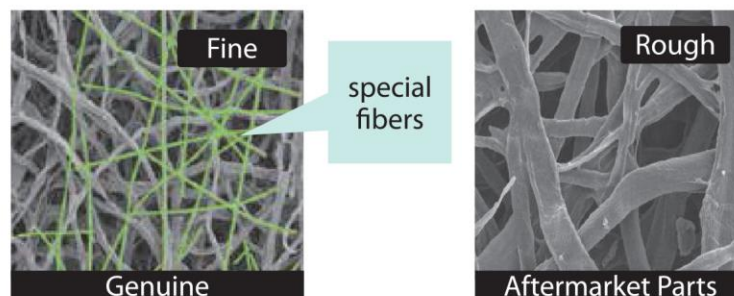


Image. 1 Magnification of filter medium

2) Quality

The filter paper in genuine parts is bonded to the end plate using proprietary adhesive and assembly technology, ensuring a leak-proof connection. This means engine oil does not leak from the adhesion point. By comparison, because the paper in some aftermarket parts may be imperfectly bonded, they may fail to catch some impurities. (See Image. 2)

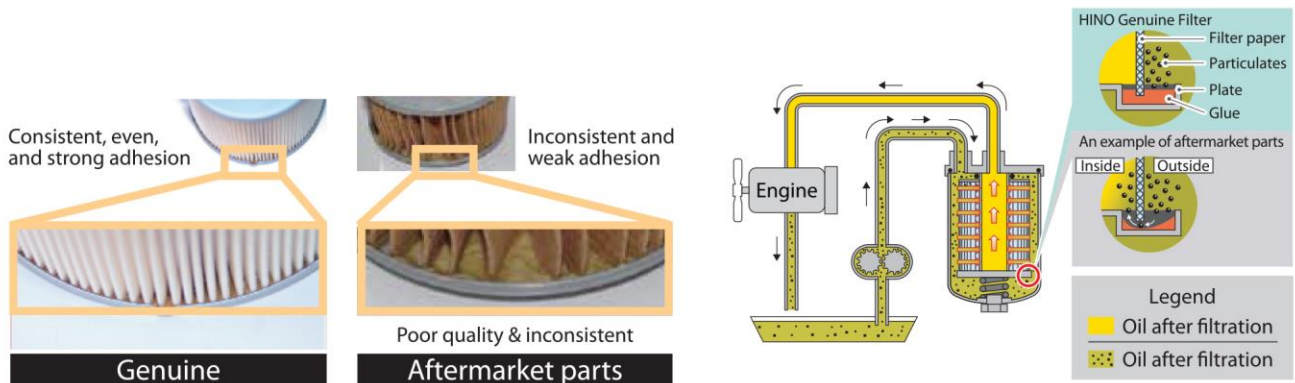


Image. 2 Magnification of adhesion point

3) Life time

Genuine bypass filters have three layers made of special paper that gives them high filtering performance while remaining difficult to clog. (See Fig. 3)

The filtering area is also designed to ensure optimized filtration distance. (See Fig. 4)

Some aftermarket parts may have a reduced life since they have only one filter layer and a smaller filtering area.

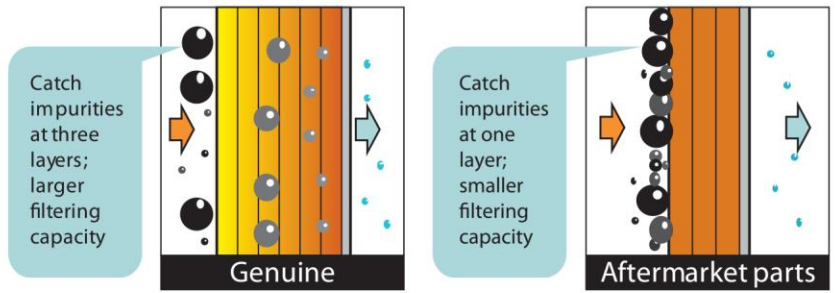


Fig. 3 Model of bypass filter paper

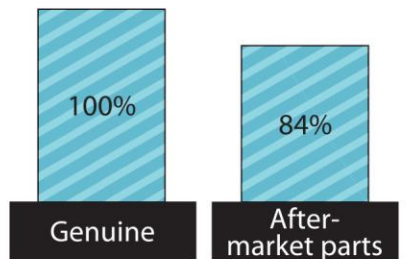


Fig. 4 Filter area comparison

*The above descriptions of aftermarket parts are simply examples, and do not necessarily describe all such parts.

The importance of replacement

If the filter is not replaced periodically, the filter paper will become clogged with impurities. (See Image. 3) In the worst-case scenario, the relief valve may open, allowing contaminated oil to flow directly into the engine, resulting in significant damage. (See Fig. 5)



Image.3 Filter Photos

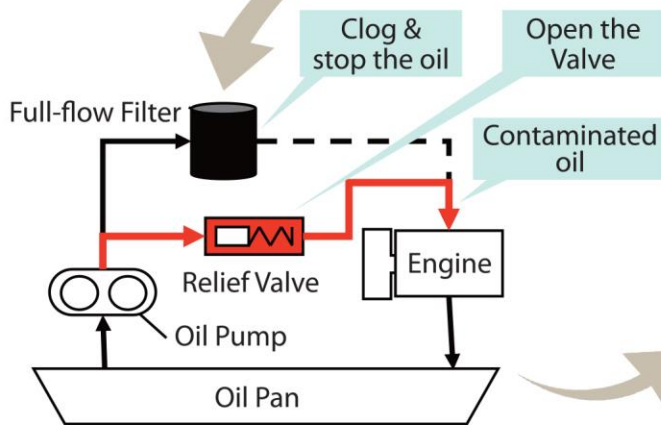


Fig.5 Engine oil flow

