



## Oil Filter Valves

Depending on the requirement of the filter for an engine, it may contain one or a combination of valves. Here we explain the different valves, their purpose and operation.

Relief Valve

Anti-Drain Back Valve



### What is an anti-drain back valve?

A relief valve is located between the element and the inlet holes on the baseplate.

### How it operates

- An ADV (made of Silicon or NBR) provides a seal between the element and the inlet holes on the baseplate.
- When the engine is stopped: ADV is closed. Oil cannot drain from filter.
- When the engine is running: Oil pressure opens the ADV and oil passes through the filter.

### Purpose

- Keeps the filter full of oil when the engine is switched off.
- Ensures a quick flow of oil to engine on start up.
- Prevents oil draining out from the filter's inlet holes.
- Stops oil from draining out of the filter and oil galleries when the engine is shut down.

### Notes

- Ryco ADV's feature a 'cupped central section which acts like a hinge and requires the outer circumference to stretch to reach the open position.
- An o-ring incorporated in this edge regulates the valves to return to closed position.
- Not all filters require an anti-drain back valve due to the design of the engine.

### What is a relief valve?

A relief valve is located within a filter between the dirty and clean oil.

### How it operates

It allows oil to bypass the filter if it is blocked or if the oil is particularly thick, which happens when an engine is cold.

### Purpose

- If the filter clogs, it opens up to allow unfiltered oil to bypass the filter and ensure continued engine lubrication.
- Normally the valve remains in the closed position because the oil flows through the filter media and the oil is effectively filtered and cleaned.
- Some relief valves are built into the engine block, therefore some filters don't contain a relief valve. Alternately some filters may contain an up-front relief valve.

### Note

- Competitors may use small relief valves which may not allow the correct flow of oil to the engine when the valve is activated.



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### Anti-Syphon Valve

#### What is an anti-syphon valve?

An ASV is located in the outlet side of a filter.

#### How it operates

- Activates as a result of oil pressure change.
- Prevents oil from draining out from the filter outlet.
- Is required for applications where the oil filter is mounted in a horizontal or inverted position.

#### Purpose

- Prevents oil from returning to the engine when switched off.
- Is located within the filter on the outlet side (downstream).

### Relief Valve

#### What is a by-pass valve?

This is not a filter valve and is located on the engine block. Also referred to as a pressure regulation valve.

#### How it operates

- The valve will open allowing oil to flow into the engine.

#### Purpose

- Should the filter become blocked, the valve allows oil to bypass the filter if the filter is blocked or the oil is exceptionally thick (high in viscosity) when cold.
- Sometimes referred to as a safety valve.

