

OCV – Features

- 1:30 air to oil pressure ratio
- Unique design complements compressed air atomised burners
- High turn down
- Accurate air/oil ratio control
- Ideal for pre-heated air applications
- Capacities up to 1000 l/h
- Simple adjustment

The OCV air/oil ratio controller balances flow-related differential pressure signals from air and oil lines to directly control oil flow in fixed proportion to the air flow. The regulator’s unique internal seal-diaphragm arrangement balances forces on the valve for enhanced precision in air/fuel ratio control across a wide range of turndown.

The pressure signal from the combustion air supply may be a static pressure signal downstream of the air flow control valve in the case of an application where the system back pressure is constant, or a differential signal from a venturi meter or orifice plate where varying back pressure effects must be compensated.

The oil differential pressure signal is derived across a needle valve or other adjustable resistance used to set the desired high fire oil flow rate.

Design and Operation Considerations

The OCV is designed to provide accurate air/oil flow ratio control over a wide variety of operating conditions. It’s unique design allows compensation for oil line back pressure conditions such as those found with pressure air-assisted atomisers as well as variable resistances affecting combustion air flow such as those found in pre-heated air systems or from furnace pressure fluctuations.

The oil differential pressure produced across the needle valve will have a value of 30 times the applied air differential pressure.

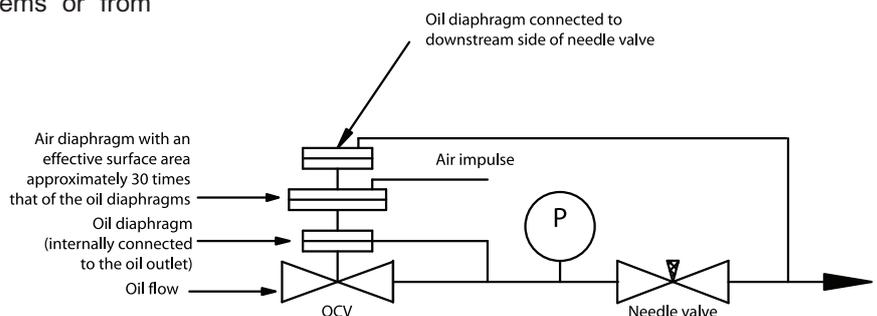
To maintain close control of oil/air flow ratio over 10:1 turndown, design the system for a minimum needle valve oil pressure drop of 1.5 bar at maximum oil flow. The high fire air pressure differential required to produce this oil pressure differential is 50 mbar (1/30 * 1.5 bar), thus setting the parameters for the design of the air metering device.

The typical inlet oil pressure required for the OCV is 7 bar, but this may be varied depending on the specific application conditions of required outlet pressure and flow rate. The inlet oil pressure must be stable within +/- 0.5 bar for good ratio control. Consult FNAC if the application conditions are significantly different from the guideline conditions of the capacity table overleaf. Maximum permitted Oil temperature is 120 C

Spares

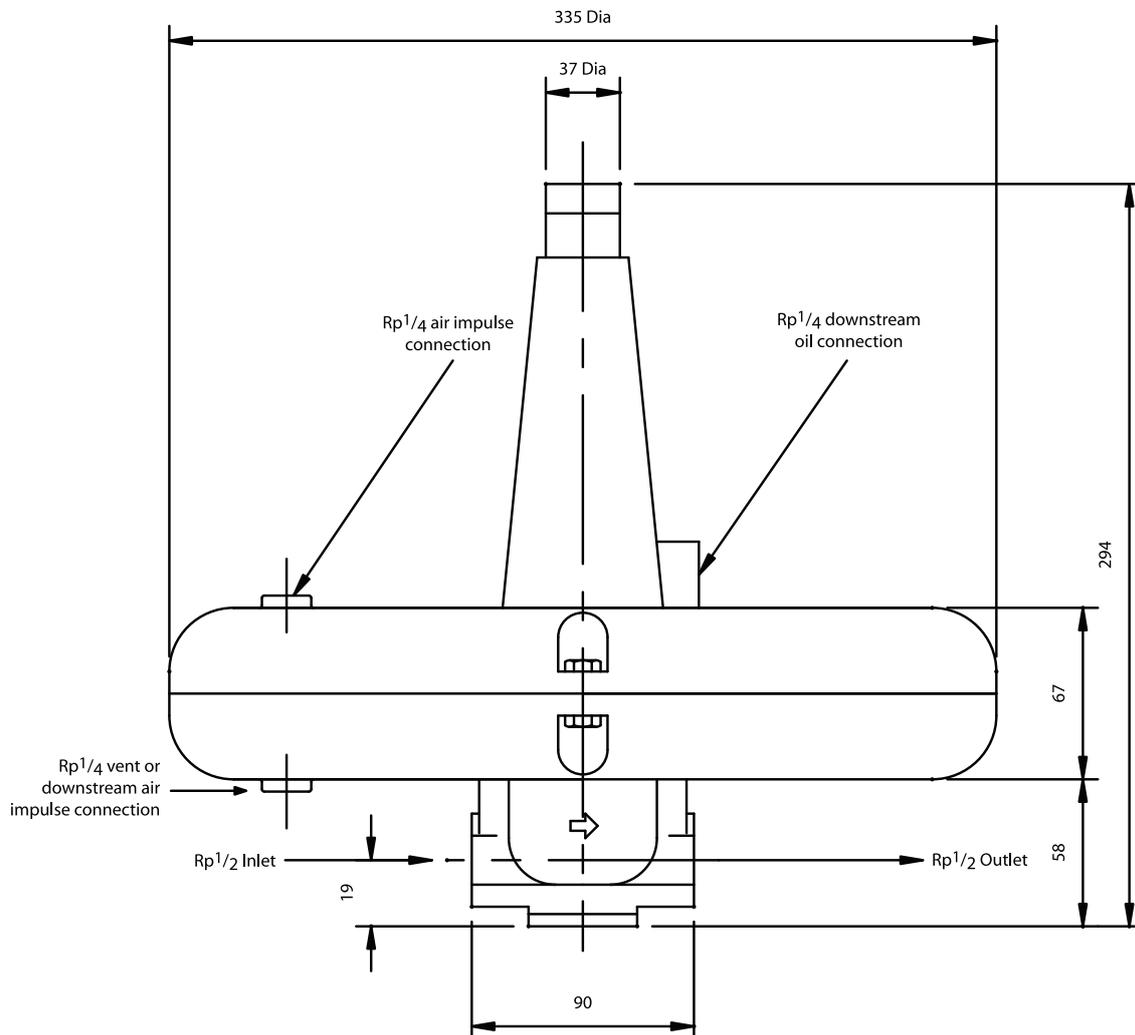
Spares for this product are readily available from FNAC.

Typical pipework arrangement when using an FNAC OCV unit.



Dimensions and Capacities

Dimensional data for OCV



Capacities and Specifications

Model No.	Part No.	Minimum flow (l/h) - based on flow rates at 6bar	Design flow (l/h) - based on a pressure differential of approximately 0.5bar and gas oil (Class D)	Weight (kg)
OCV 250	2.30.001	10	70 - 250	6.6
OCV 500	2.30.002	35	250 - 500	6.6
OCV 1000	2.30.003	70	500 - 1000	6.6

Notes:

1. The above table is intended as a guide only – there are no hard and fast rules governing valve selection. For example, the OCV 500 could be used at 650l/h provided that a satisfactory allowance is made for the pressure loss across the valve.
2. The maximum recommended inlet oil pressure is 10bar.
3. Where high levels of turn-down are required, it is preferable not to oversize the valve.
4. In general, a high flow pressure loss in the range of 0.1 to 0.5bar for a fully open valve is considered normal.

WARNING: The data outlined is for information only and does not form part of any contract. Our policy is one of continuous improvement and we therefore reserve the right to modify specifications or dimensions without prior warning. Situations dangerous to personnel and property can develop from incorrect installation and operation of combustion equipment. Fives North American Combustion UK, Ltd urges compliance with International, National and Local Safety Standards and that installation is carried out by properly qualified personnel.

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