Solenoid Operated Gas Admission Valve

SOGAV 105

Features

- Fast response
- Very low leakage when closed
- Excellent load response of the engine
- Suitable for new engines as well as for retrofit solutions
- Easy installation
- Precise gas dosage for each cylinder
- Cylinder individual adjustment of gas quantity
- Bolt-on compatible to market standard

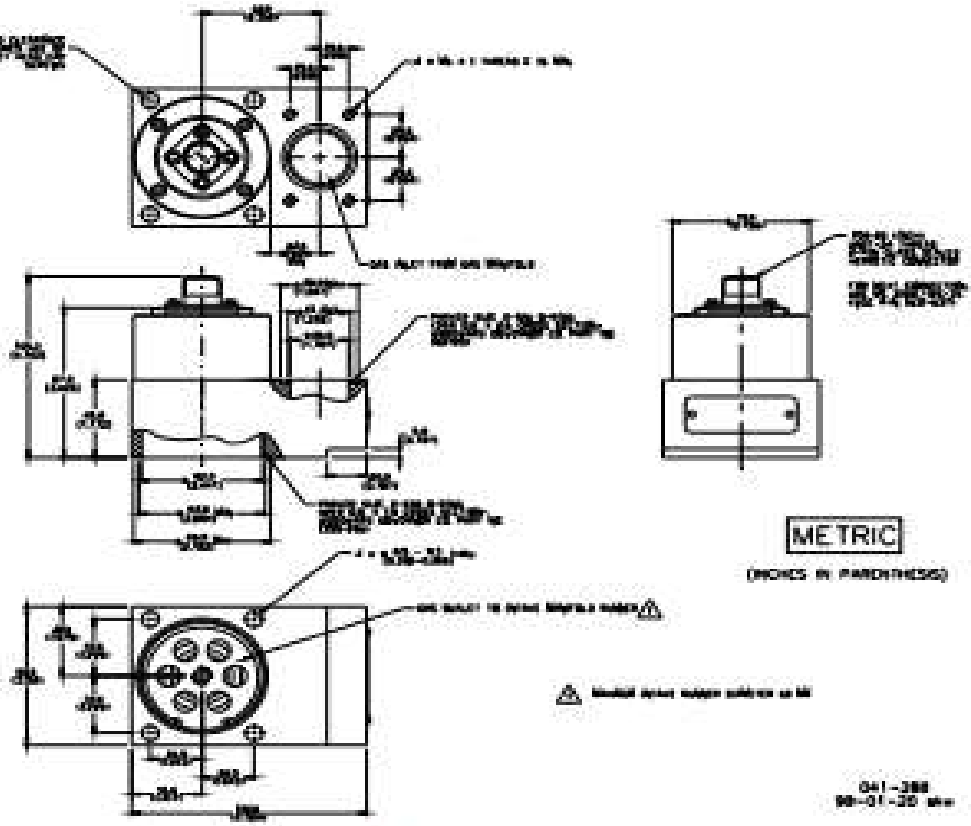
The SOGAV™ (Solenoid Operated Gas Admission Valve) is an electrically actuated, high response gas admission valve for in-manifold (port) fuel admission. The SOGAV valve is designed for use on four-cycle, turbocharged, natural gas or dual-fuel engines. One SOGAV valve is required for each cylinder.

The SOGAV valve is the electro-mechanical portion of an overall Woodward fuel admission system consisting of: In-Pulse™ electronic fuel injection control, Main speed/air-fuel ratio/engine sequencing control (must regulate air manifold and gas manifold pressures as well as fuel admission) Other necessary valves, actuators, regulators, sensors, cables, and safety devices Governing is done by valve opening duration and/or gas pressure modulation.

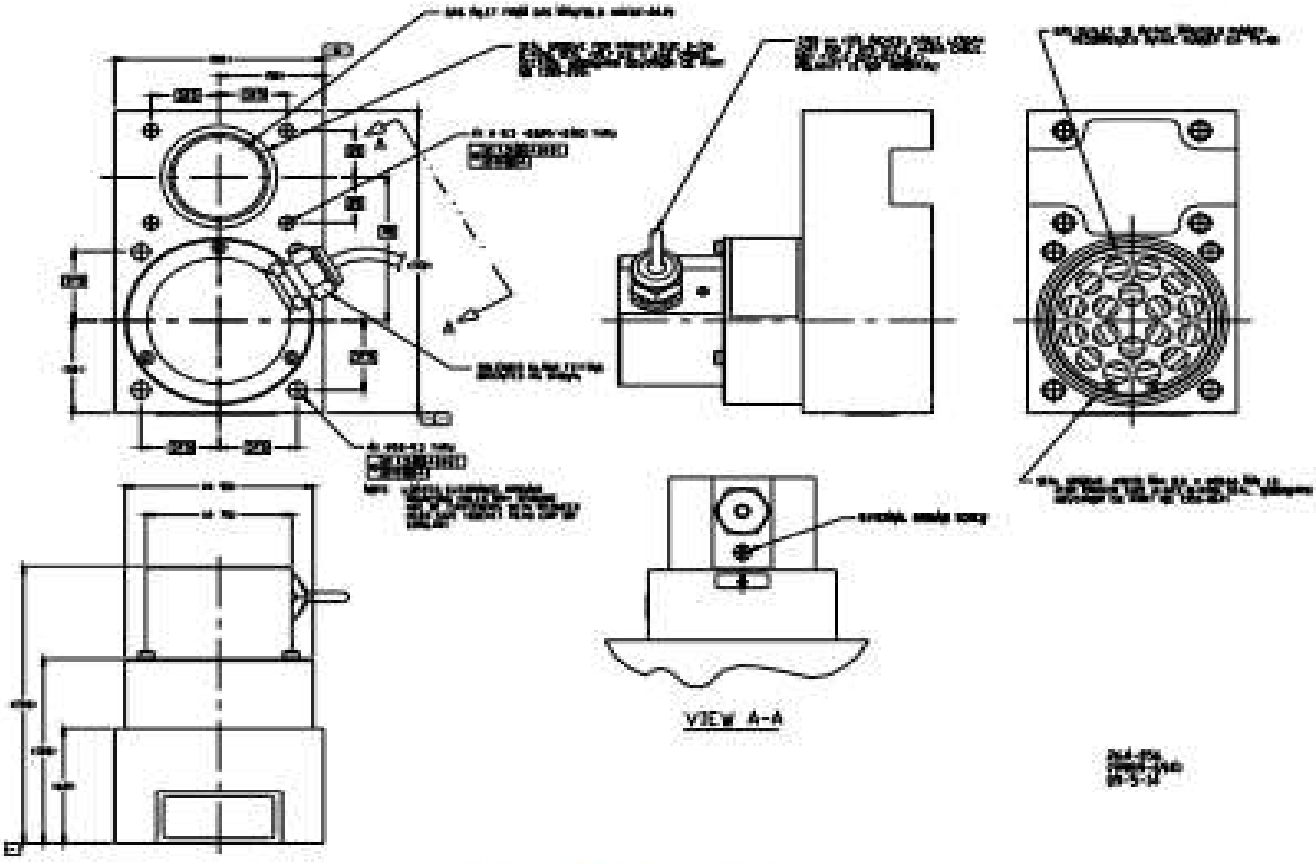
The SOGAV 105 valve is generally suitable for engines in the 25 – 40 cm bore range. A thorough sizing analysis must be performed for any new application, since fuel properties and engine use can affect valve choice.

Technical Data

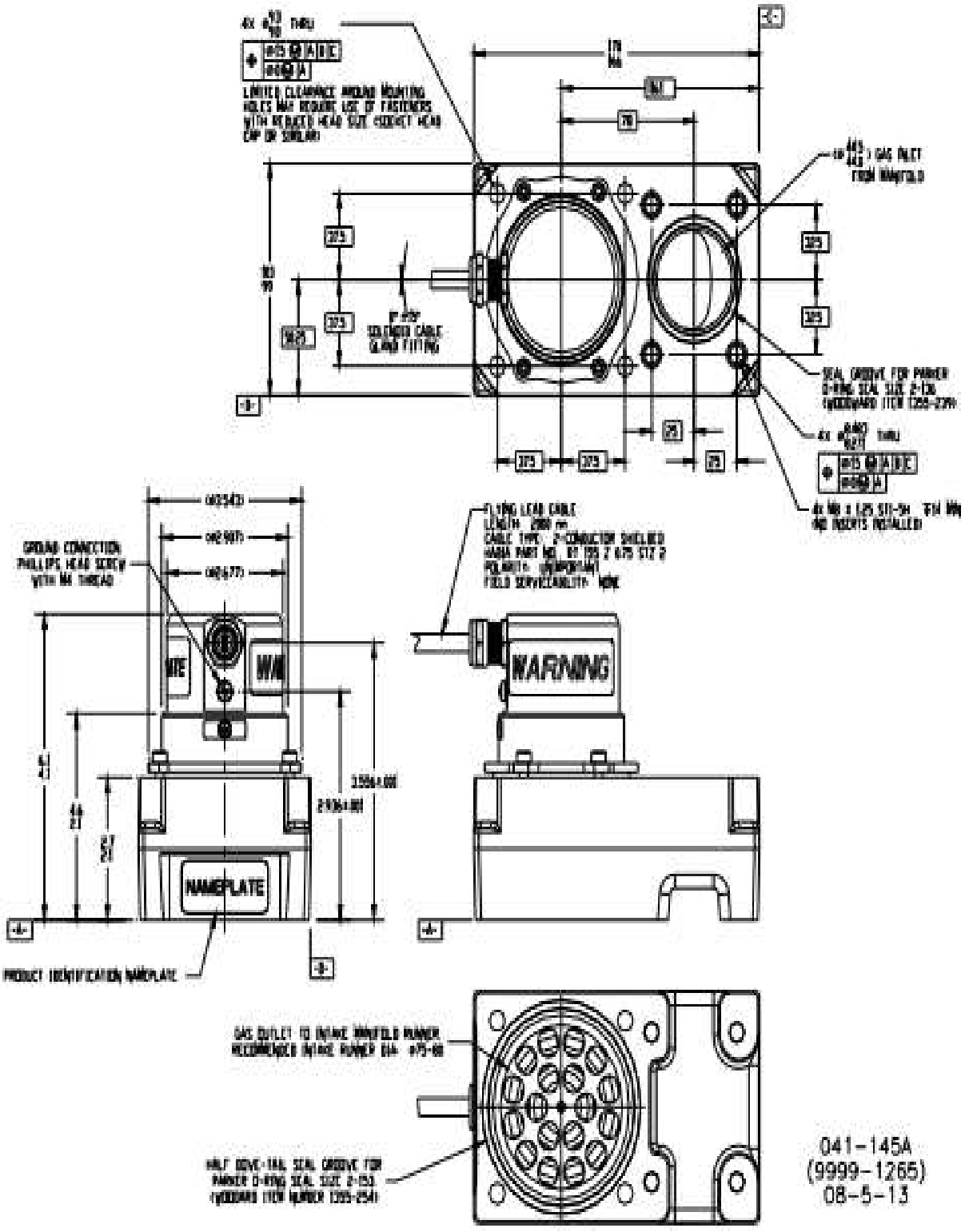
Gas Inlet Hole Diameter	44 mm (SOGAV 105)
Operating Temperature	–20 to +105 °C (–4 to +221 °F)
Curve	F (20 g – Figure 514.2-2)
Resonance Search	5–2000 Hz
Dwell Endurance	30 minutes at each major resonance in each axis
Sweep Endurance	3 hours minus the dwell time in each axis
Time to full open after signal on	0.0028 s max (SOGAV 105/unbalanced bottom and top load)
Time to full closed after signal off	0.0028 s max (SOGAV 105/unbalanced bottom and top load)
Maximum Leakage When Closed	Less than 0.25% of the rated steady state flow rate
Filtration Required for Long Life Expected Maximum Gas	5 µm absolute max particle size
Supply Pressure (P1)	450 kPa (4.5 bar abs; 65 psi abs) (SOGAV 105/unbalanced) 650 kPa (6.5 bar abs; 94 psi abs) (SOGAV 105/balanced)
Manifold Pressure (P2)	400 kPa (4 bar abs, 58 psi abs) (all SOGAV 105s)
Maximum Pressure Difference	150 kPa (1.5 bar; 22 psi) (SOGAV 105/unbalanced) 250 kPa (2.5 bar; 36 psi) (SOGAV 105/balanced)
Maximum Backfire Pressure Spike	50 kPa (0.5 bar; 7 psi) above the current gas manifold pressure
Supply Temperature	80 °C (176 °F)



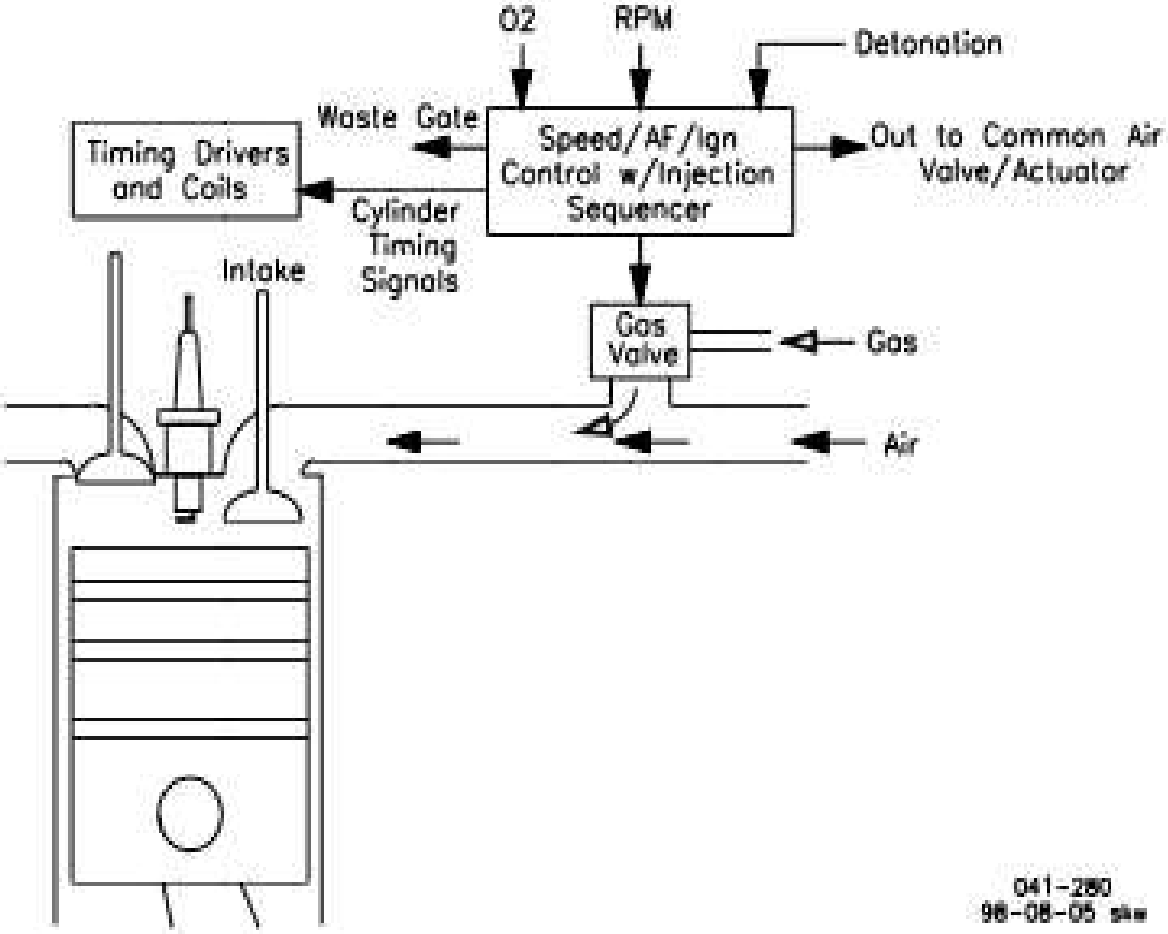
SOGAV 43 Outline Drawing



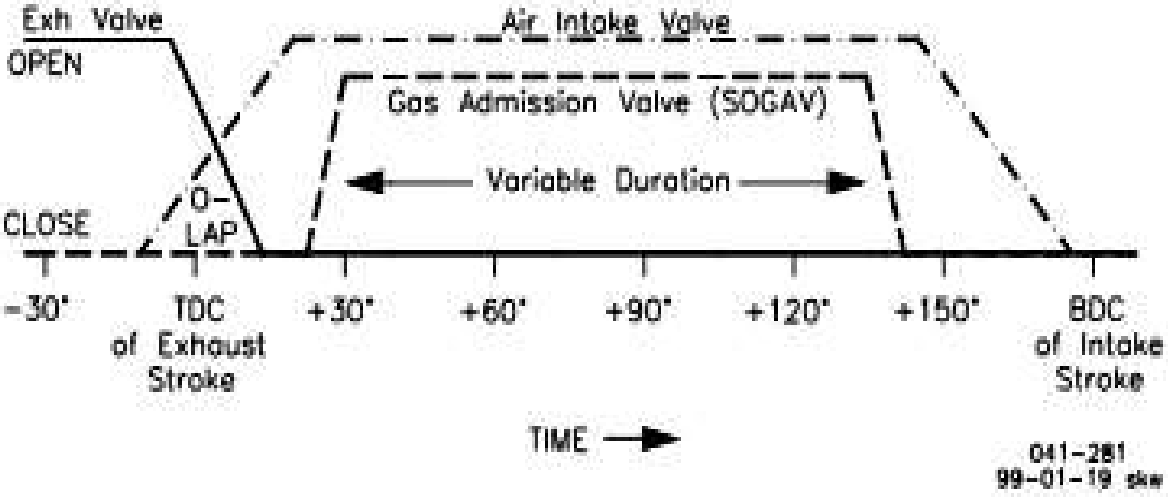
SOGAV 105 Outline Drawing
(Do not use for construction)



Balanced SOGAV 105 Outline Drawing
(Do not use for construction)



In-manifold Electric Gas Admission



Timing: In-manifold Gas Admission