



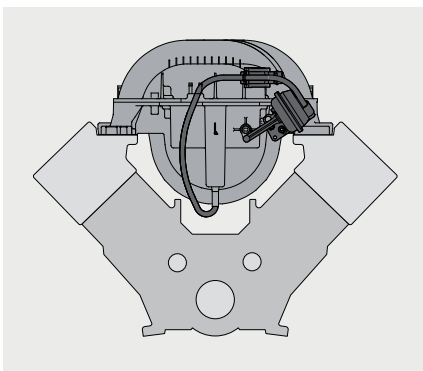
Variable intake manifolds

Cutting-edge technology from Pierburg for the aftermarket

Motorservice brings cutting-edge Pierburg technology to the aftermarket with the die-cast aluminium-magnesium alloy variable intake manifolds.

With the aid of pneumatically-operated or electrically-operated flaps, variable intake manifolds enable the length of the intake line to be adjusted to the requirements of the engine (see reverse for technical background information).

Some intake manifolds additionally also feature tumble flaps.



Variable intake manifold on a V engine

Vehicles: Chrysler, Mercedes-Benz, Steyr, Audi, VW			Product: Variable intake manifold	
Pierburg No.	Manufacturer	Vehicle application	Ref. No. *	Fig.
7.00145.03.0	Chrysler	Crossfire	A 112 140 11 01, A 112 140 15 01, A 112 140 21 01	
	Mercedes-Benz	C, CLK, E, G, ML, S, SL, SLK, Viano, Vito		
	Steyr	G 320	1285100608, 1285100677	
7.00246.33.0	Mercedes-Benz	C, CLC, CLK, CLS, E, ML, R, S, SL, SLK, Sprinter, Viano	A 272 140 21 01, A 272 140 22 01, A 272 140 24 01	
7.00345.16.0	Audi	A5/S5, A6, A8	079 133 185 AD, 079 133 185 BM	
7.00.410.26.0	Mercedes-Benz	CL, CLK, CLS, E, G, GL, ML, R, S, SL	A 273 140 07 01	
7.00773.13.0	Audi	Q7	079 133 185 AC; 079 133 185 BN	
	VW	Touareg		
7.01116.08.0	Audi	A6/S6, A8/S8	07L 133 185 C, 07L 133 185 M	
7.22671.06.0	Mercedes-Benz	C, CL, CLK, CLS, E, G, ML, R, S, SL, SLK,	A 113 140 03 01, A 113 140 07 01, A 113 140 08 01	
	Steyr	G 500		
7.22709.10.0	Audi	A6, A8	077 133 185 AM, 077 133 185 BA, 077 133 185 BK, 077 133 185 BN, 077 133 185 BP, 077 133 185 BQ, 077 133 185 BR	
	VW	Touareg		

All content including pictures and diagrams is subject to change. For assignment and replacement, refer to the current catalogues or systems based on TecAlliance.

* Names, descriptions and numbers of engines, vehicles, products, manufacturers etc. are mentioned solely for the purpose of comparison. The parts contained in the information are spare parts in guaranteed quality for the engines and vehicles listed.



Mode of operation for variable length intake manifolds

During charge exchange, vibrations may occur in the inlet ports which impact upon the performance of the engine. If the piston moves downwards after opening the intake valves, a vacuum wave is generated which travels along the inlet port.

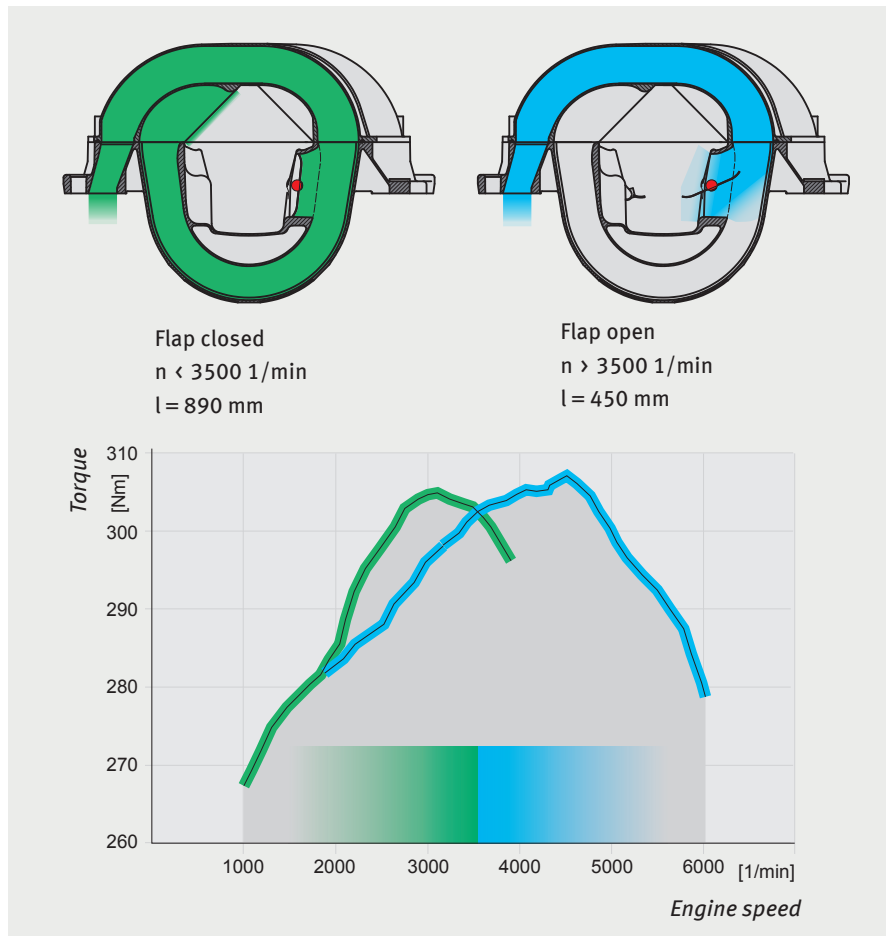
The vacuum wave is reflected at the other end of the inlet port and then travels back to the cylinder as an excess pressure wave. If this excess pressure wave reaches the intake valve at exactly the same time that the suction effect of the piston is reduced, a higher filling level is created in the cylinder which improves the performance (“internal supercharging”).

In a longer inlet port, the pressure wave requires more time for this than in a short intake manifold. Therefore, long inlet ports facilitate high engine torque in the lower engine speed range.

For higher engine speeds, less time is available to fill the cylinder. For this reason, a short inlet port enables higher performance at high engine speeds.

The performance of the Pierburg variable length intake manifolds, or “variable intake manifolds” for short, is optimised for two engine speed ranges:

In the lower engine speed range, the air flows through the long inlet port. After a specific engine speed is attained, the flap opens and allows access to the short inlet port.



Example: Variable intake manifold in Mercedes-Benz V6 3.2l engine



A view into the interior of a variable intake manifold



Tumble flap (highlighted in red) for stratified charge operation