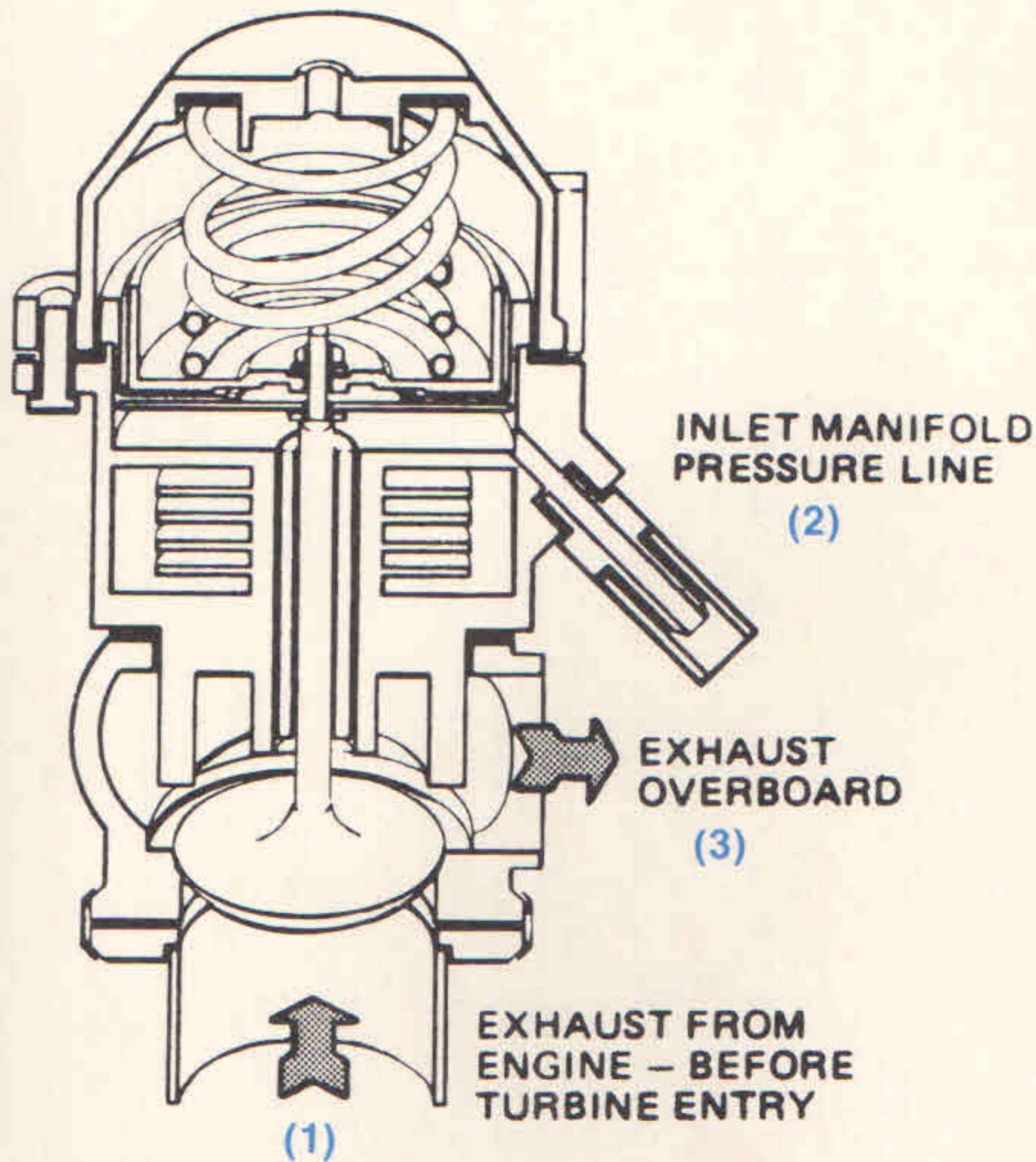


Wastegate Turbocharger Controls

GENUINE AEROSPACE DESIGN AT AN ACCEPTABLE PRICE



How the Wastegate works: This type of controller is an inlet manifold pressure activated exhaust turbine by-pass valve; which is connected to the turbo-charged engine at three locations.

- (1) The exhaust manifold between the engine's exhaust valves and the turbine inlet flange.
- (2) The turbo-charger compressor discharge (inlet manifold) via a pressure line.
- (3) The vehicle's exhaust system by the Wastegate discharge port pipe.



The Wastegate constantly monitors boost pressure levels through the pressure line. When manifold pressure reaches the pre-set maximum (governed by Wastegate spring tension), The Wastegate's valve opens and allows some of the engine's exhaust gas to by-pass the turbine. This holds the turbine-charger output at a level which maintains a constant inlet manifold pressure. The exhaust gas flowing through the Wastegate normally re-enters the exhaust system after the turbine discharge port. As inlet manifold pressure drops below the pre-set maximum, the Wastegate valve closes, permitting all of the exhaust to flow through the turbine inlet again.

The turbo system Wastegate is the first aerospace quality turbo-charger control available at a sensible price.

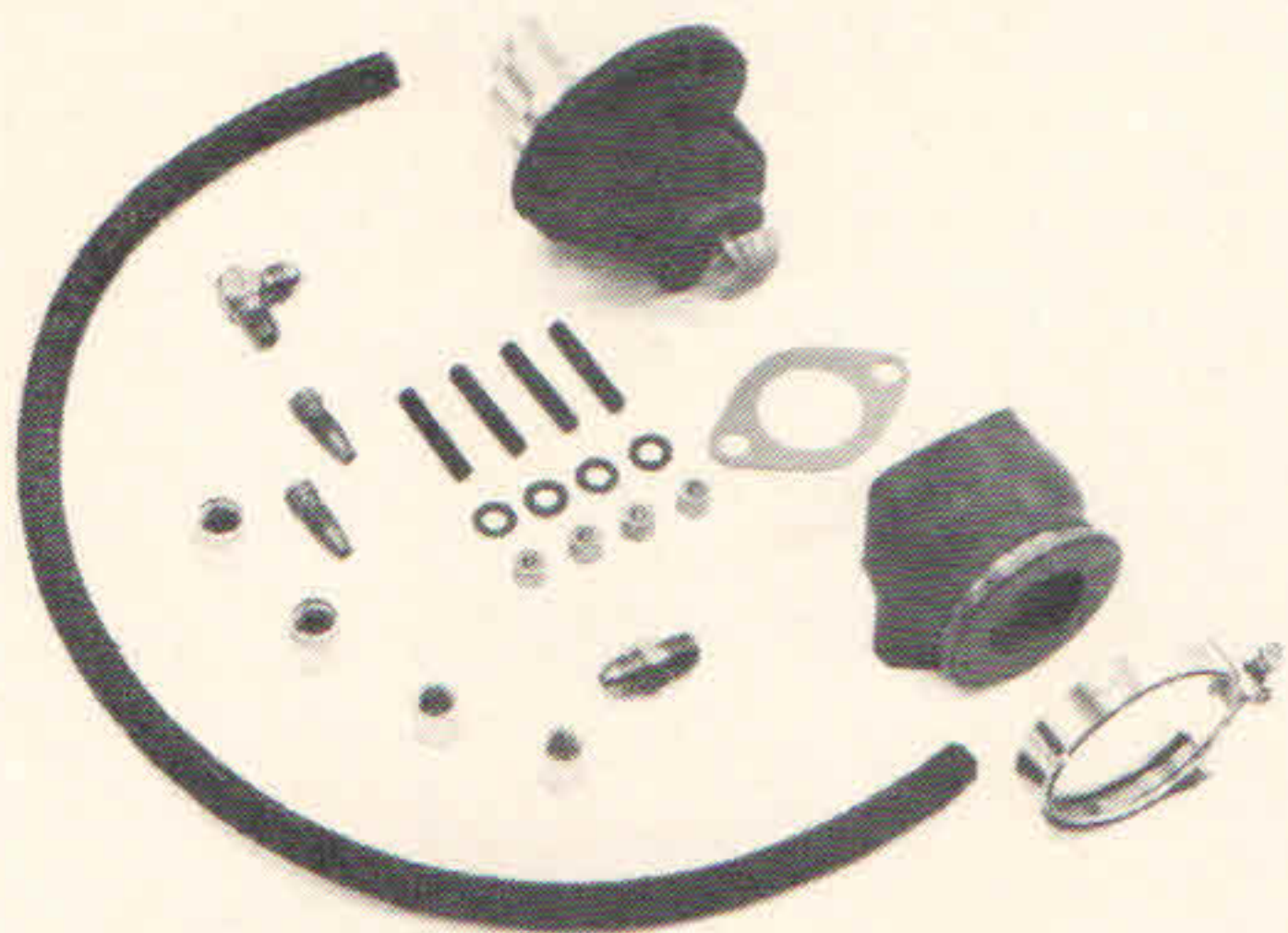
There are significant advantages resulting from Wastegate turbo-charger

control, over other methods, such as:

- Increased torque/horsepower
- Improved turbine response
- Improved fuel economy
- Higher (reliable) boost pressure
- More desirable tuning parameters
- Reduced exhaust temperatures

The Wastegate is the best method for controlling boost because it regulates the turbo-charger's rotational speed by controlling the volume of exhaust turbine inlet gases. This allows the turbo-charger to produce only the required boost level, without limiting air/fuel flow through the turbo-charger compressor inlet, or turbine discharge. This provides for much improved mass flow for a given manifold pressure. This means more power, and improved turbine response, as compared to a system restricted conversion.

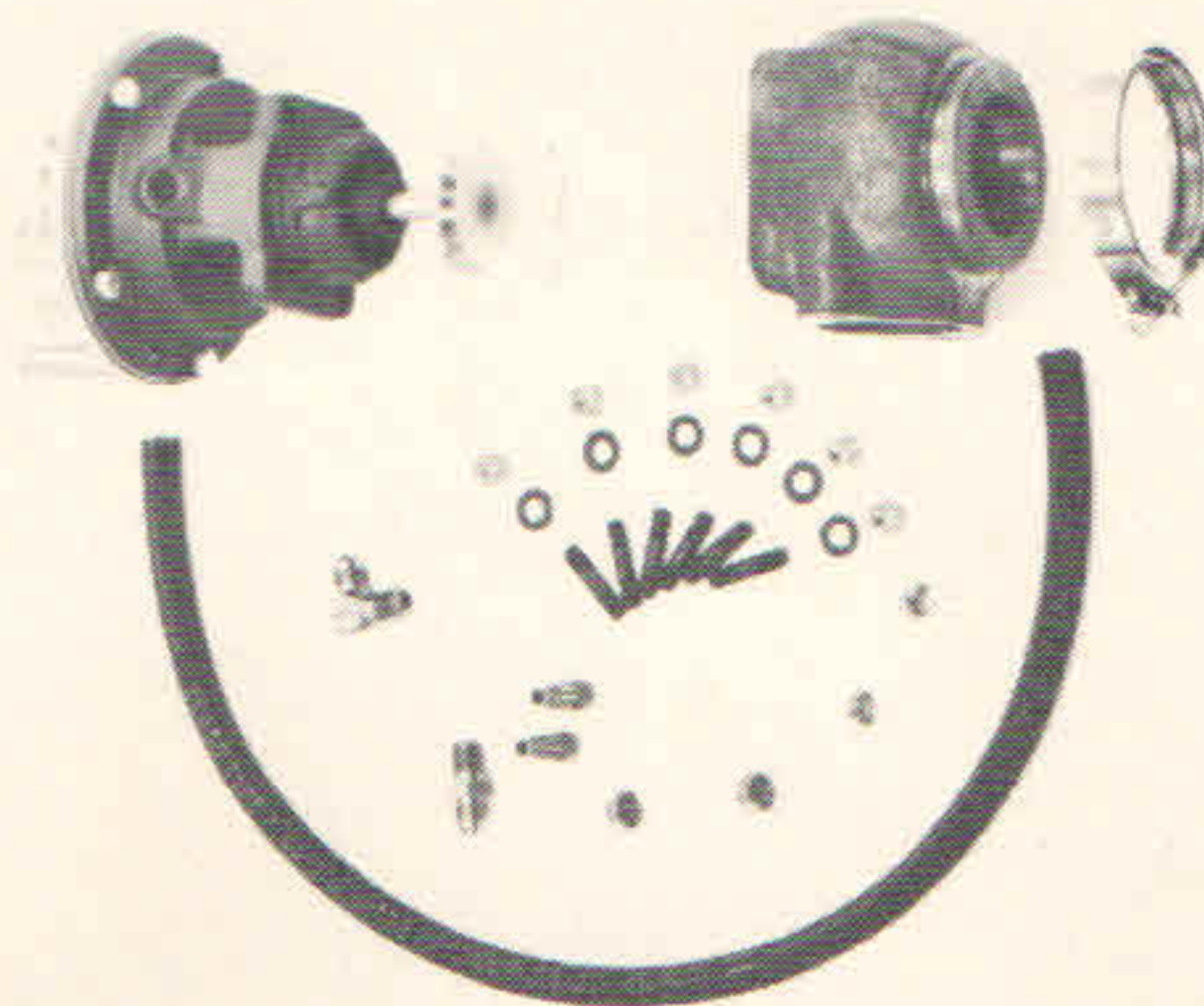
A wide range of baseline Wastegate control springs are available.



5-9610-5 5-9610-9 5-9610-13

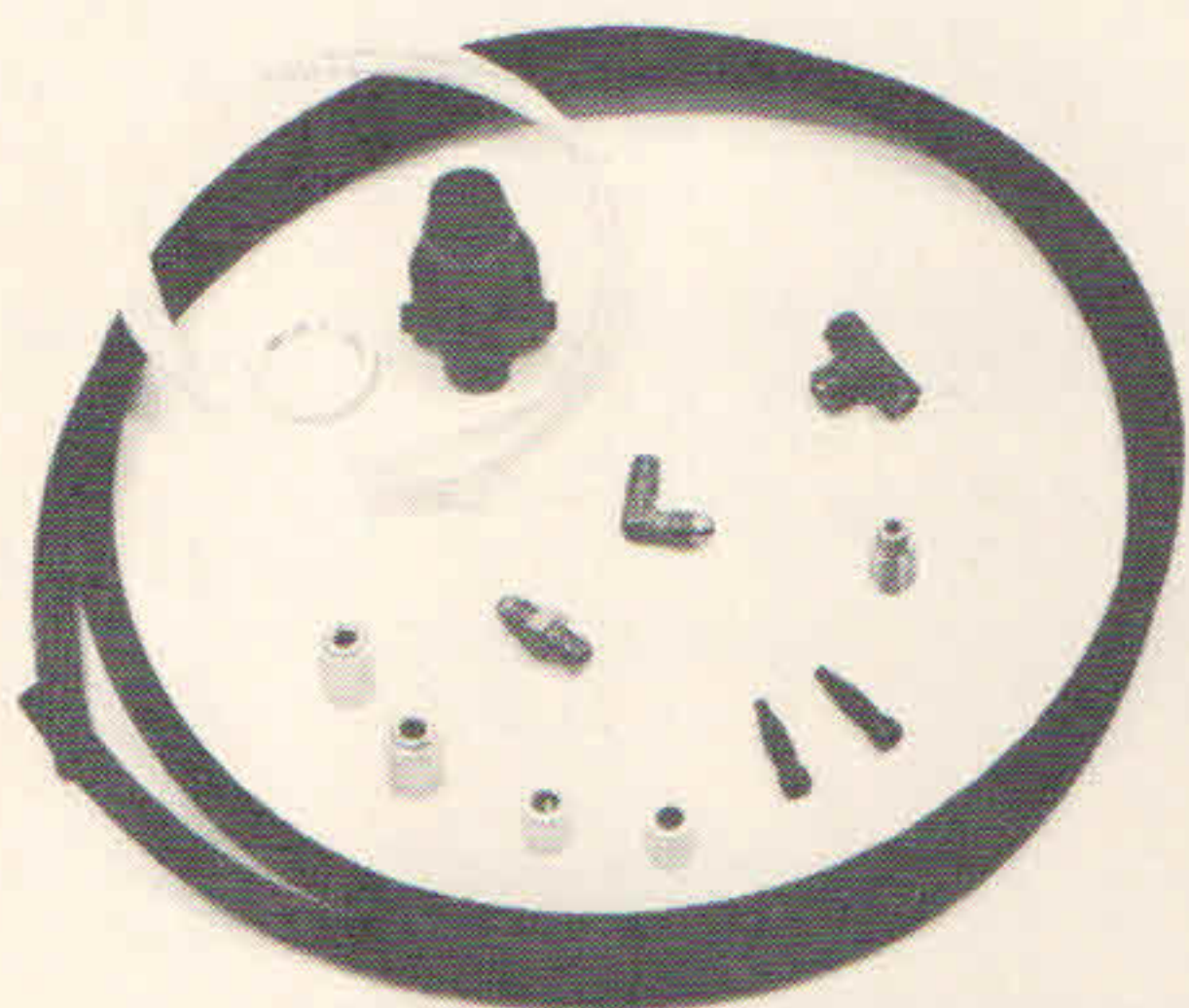
"Dash Number" suffix represents P.S.I. activation pressure.

Wastegate assy. 3.2 cm diameter valve, overall body diameter less than 10 cm. Overall length less than 15 cm. Ideal for small displacement engines producing up to 260 B.H.P.



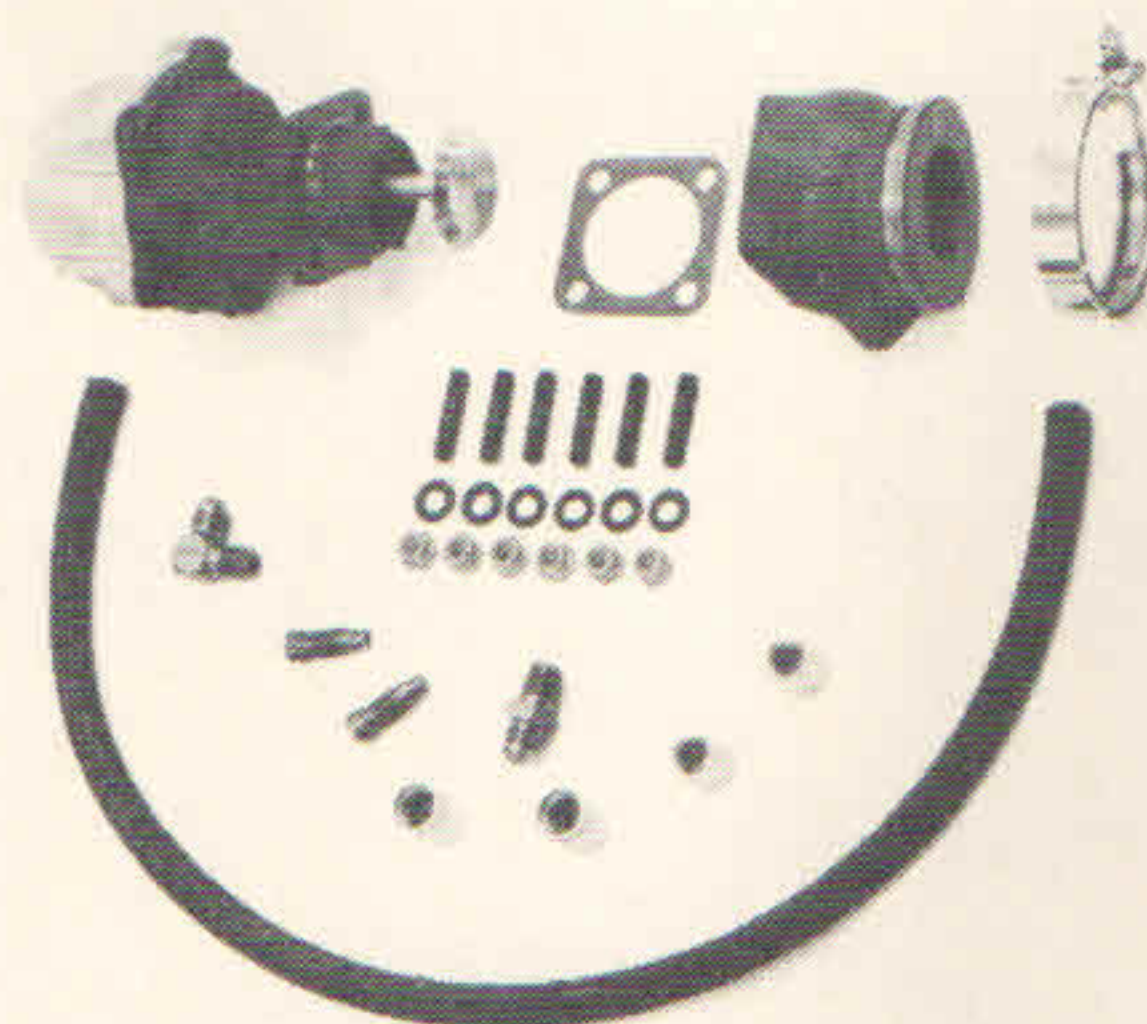
5-9630

Wastegate assy. 5.2 cm diameter valve. Overall body diameter less than 15 cm. Overall length less than 25 cm. Ideal for large displacement engines producing up to 675 B.H.P.



5-9580

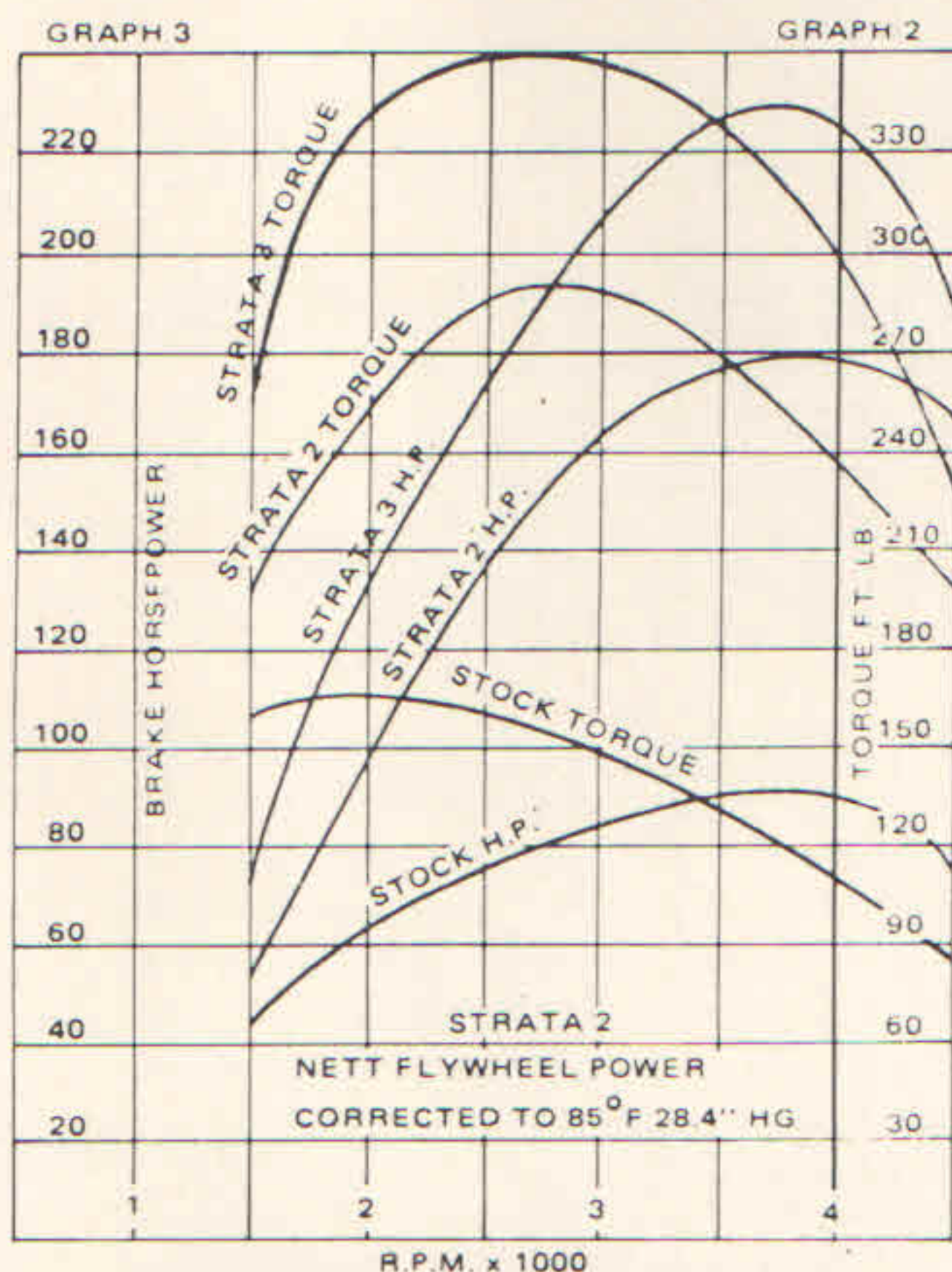
Wastegate override kit allows adjustment from the driver's seat of inlet manifold pressure via regulated pneumatic control of the Wastegate.



5-9620-6 5-9620-9 5-9620-12 5-9620-15

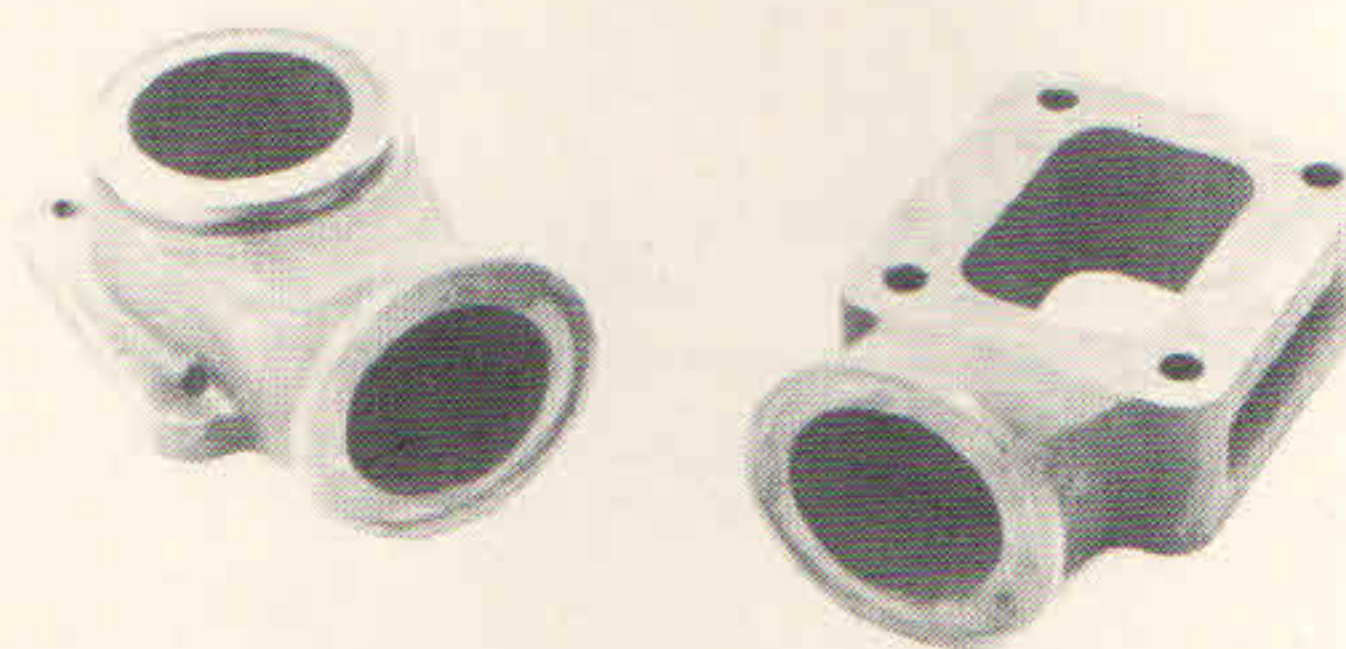
"Dash Number" suffix represents P.S.I. activation pressure.

Wastegate assy. 4.2 cm diameter valve. Overall body diameter less than 11.5 cm. Overall length less than 9 cm. Ideal for medium displacement engines, producing up to 450 B.H.P.



CONTROLLED AND RESTRICTION CONTROLLED SYSTEMS

With both systems operating at the same manifold pressures, it can be seen that the Strata III conversion easily out performs the Strata II. The major single difference is the Wastegate control of the Strata III conversion versus the system restriction of the Strata II.



Wastegate mounting adaptors, designed to facilitate installation beneath the turbine housing inlet flange.

Wastegate mount shortside 5-200926

Wastegate mount (L/S) splitpulse 5-200920

Wastegate mount 'V' band clamp entry 5-200929



Normalair-Garrett
Manufacturing Pty. Ltd.
P.O. Box 131, Niddrie,
Victoria 3042, Telex: 31517

Normalair-Garrett Wastegates

Identical design and material specification to current Indy/I.M.S.A. Group: 5 usage equipment, and consequently suitable for any and all types of competition usage.

Features:

- 1) Stainless Steel Spring — on the cold side of the diaphragm.
- 2) Fluro — Silicone, molded, rolling edge diaphragm.
- 3) 21-4N Stainless Steel poppet valve, moving with direction of gas flow.
- 4) 440C, Tuftrided stainless steel valve guide.
- 5) Available in three poppet valve sizes for a wide range of gas control flows.
- 6) Differential pressure ratio control available.
- 7) On board vehicle adjustment provision, optional.
- 8) Non corrosive materials throughout.
- 9) Aerospace specifications materials capable of withstanding any anticipated thermal loadings.
- 10) A realistic price — for an aerospace quality product.



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