HUEGLI TECH AG (LTD)
The Engine & Genset Control Company

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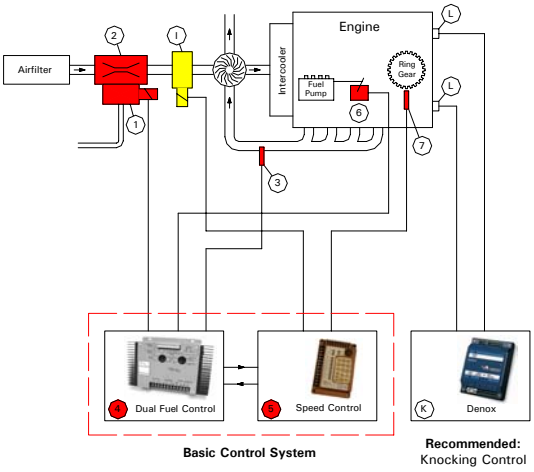
HT Dual Fuel Conversion

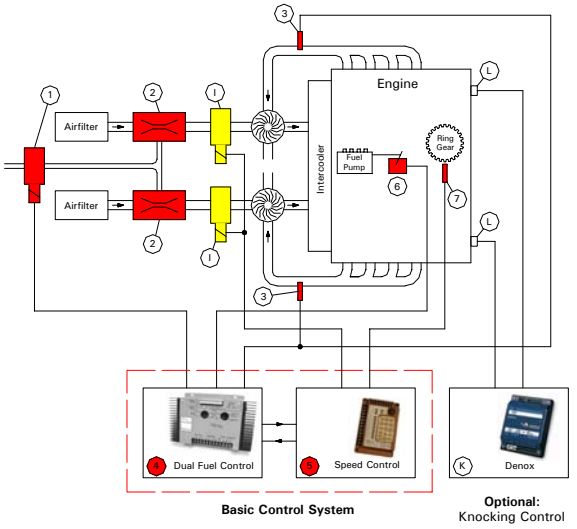
Installation Instructions

(1)

Layout for inline engines



Layout for V-engines with 2 turbo charger



Basic System

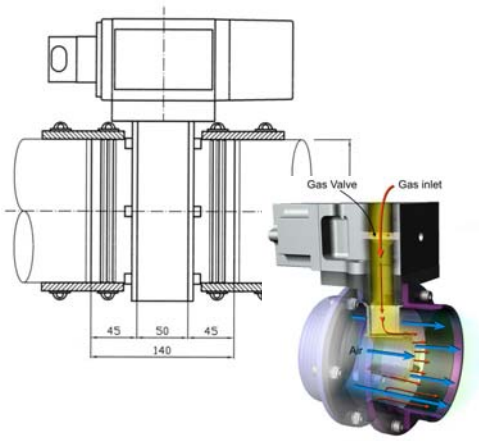
Optional on request

Recommended

1. General Recommendation

Whilst both actuators, and the Air/Gas mixer(s) plus sensors are all engine mounted, it is recommended to install the DFM 100 Dual Fuel control and the SDG 735 engine governor in the engine control switchboard.

2. Gas metering actuator and Air/Gas mixer, Position 1 and 2



2.1 On **inline engines** with **one** turbocharger, or on natural aspirated engines, **one** Air/Gas mixer is required. It must be inserted between air filter and turbocharger. The diameter of the flanges can be adapted to outside diameter of the existing tube. An easy method is to connect it with two pieces of good quality, solid rubber hoses, which are then fastened with steel brackets. This should provide a vibration free installation.

The gas metering actuator is then mounted directly on the Air/Gas mixer by means of 4 hexagon screws M8 and lock washers. Tighten the screws to 4-5 NM.

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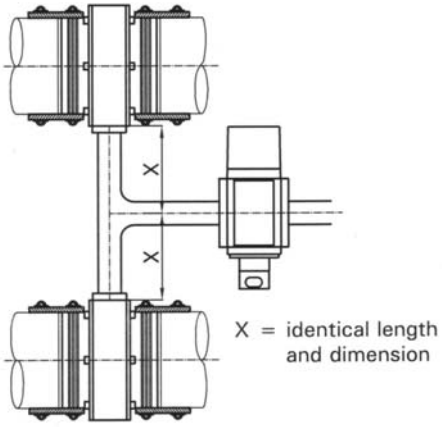
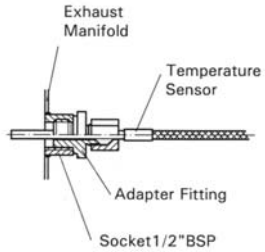


2.2 On **"V" engines**, with **2** turbochargers, two Air/Gas mixers (2) must be installed between each air filter and each turbocharger. The gas metering actuator (1) has to feed both sides equally. A symmetric pipe or flexible hose system must therefore be fabricated to connect the three components. It is important that the route from the gas actuator (2) to each Air/Gas mixer has identical length.

3. Temperature Sensor (3)



The sensor must be installed in the exhaust manifold. The stainless steel adapter has a ½" BSP thread. The sensor is then pushed completely into the adaptor and clamped by the hexagon nut. Tighten to 2-3 NM. The cable is connected to the DFM100 terminals 25(-) and 24(+)

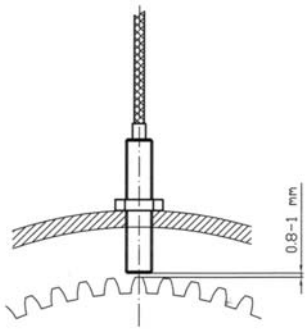
4. Fuel Metering Actuator (6)

The correct actuator type is determined by the existing fuel injection system on the engine to be converted.

4.1 The various possible actuators are described in attached appendixes, as follows:

Cummins Engines with PT fuel system like NT, VT, KTA series	: Appendix 1
Caterpillar engines with CAT block type pumps, 3306, 3406, 3412	: Appendix 2
Engines with BOSCH/MICO, Denso Block pumps	: Appendix 3

5. Speed Sensor (Magnetic Pickup) (7)



This is a threaded inductive sensor, which should be fitted in the flywheel housing, pointing perpendicularly on to the ring gear teeth. Different threads are available. The most common ones are //5/8" - 18UNF//, M16X1.5,// ¾" – 16UNF threads.
The gap between tip of the tooth and tip of the pickup should be within 0.8mm to 1.0mm.
The sensor is **manually** screwed in, until the tip of the tooth is felt, then turn it ¾ turn backwards, and tighten the lock nut to 6-7NM.
The cables to the control unit SDG 735 should be twisted over the entire length, or shielded cable should be used. Avoid sharp corners and hot metal parts.