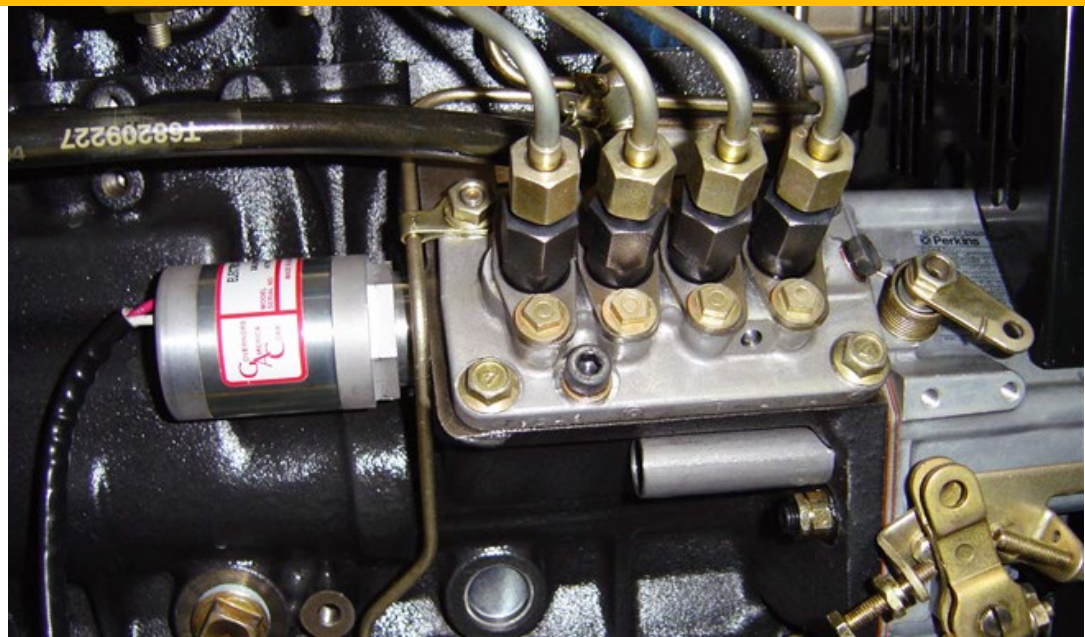




GAC PERKINS ENGINE SOLUTIONS



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PERKINS 4016 ENGINE

GEN-SET

When a 500+ bed hospital in London called for an upgrade to its standby generator, a Perkins 4016TAG V16 engine, the GAC ACB2001 actuator and ESD5330 electronic speed controller was selected for the governing system. Powerful enough to control the engine under no-load and full-load conditions, the parallel tests demonstrated the system's ability to reliably synchronize and parallel the gen-set to the grid.

The ESD5330 speed controller accurately controls engine speed and provides a fast precise response to transient load changes. With a powerful actuator drive circuit, the ESD5330 is specifically designed to work with the ACB2001 actuator which delivers 12 Ft-Lbs. [16.3 N·m] of torque over 35° of shaft rotation.

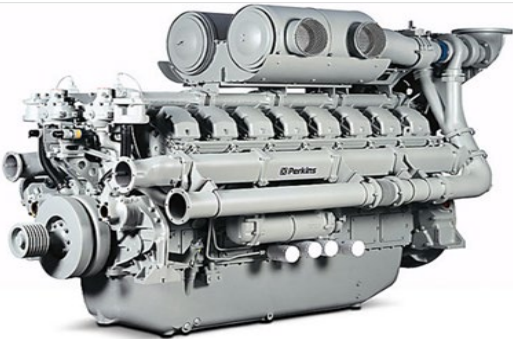
ACB2001



ESD5330



Perkins 4016TAG, 61L, V16 Engine



1 week after fitting the GAC system, the local authority authorized a paralleling test of the genset to ensure the system ran reliably under no-load and full-load conditions. Test trials proved 100% successful, successfully providing 1.1 MW of electrical power to the grid on a twice weekly basis with no reported failures.

NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADB335	335 Series Heavy-Duty Universal Actuator
Speed Controller	ESD5330	Speed Controller for Heavy Duty Actuators

PERKINS N844 4-CYL

MARINE POWER GENERATION

The Puma Ocean Racing Team installed a Perkins N844 4-cylinder engine to adjust the keel on one of their sailboats. GACs ALR160-S04 actuator and SDG725 Smart Digital Governor supports the application which required a fast, compact, flexible variable speed system that can be controlled from above or below deck. The ALR160 actuator replaced the shut off solenoid in the PF pump housing, acting directly on the fuel control rack.



ALR160-S04



NOTE: All components are sold separately.

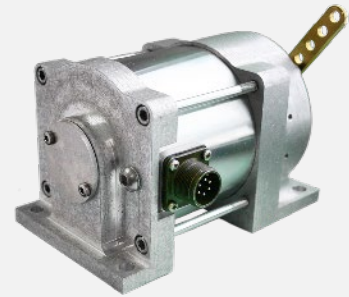
COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ALR160-S04	Linear Pull-type Actuator
Speed Controller	SDG725	Smart Digital Governor

PERKINS 4012 Engine

INDUSTRIAL GENERATOR

A Perkins 4012 Heinzmann Pandora governor needed replacement. The customer wanted a lower cost, simpler alternative. Using a GAC ESD5330 with the ADB335-24 on Perkins 4012 the DC supply for the interface comes from the common battery source for the engine control and the accessory controls. The engine was back to running 100% load.

ADB335-24



NOTE: All components are sold separately.

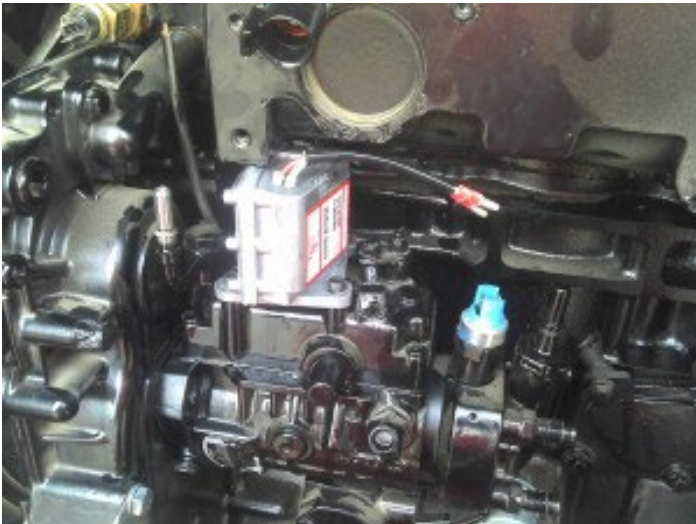
COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADB335	335 Series Heavy-Duty Universal Actuator
Speed Controller	ESD5330	Speed Controller for Heavy Duty Actuators

PERKINS 1104 ENGINE

INDUSTRIAL GENERATOR

The 103 Series Integral Actuator is designed to mount directly onto Delphi DPG/DP210G fuel injection pumps. No external linkage or brackets are required to install this actuator. Also, when de-energized the 103 Series electric actuator provides the function of shutoff solenoid by internally moving the fuel metering valve to the no fuel position.

Installing the 103 Series actuator does not defeat the engine's mechanical governor operation. During the installation process, the mechanical governor is set to a higher speed than the electric governor's operating speed. In this configuration the mechanical governor acts as a speed limiter.



ADD103B



The ADD103B actuator mounts directly on the governor cover of the Delphi pump, which is made with an access port and mounting bosses specifically for this actuator. The ADD103B engages the governor linkage hook, for direct control of fuel metering, providing fast response and precise speed

NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADD103B	Delphi Pump Mounted Actuator

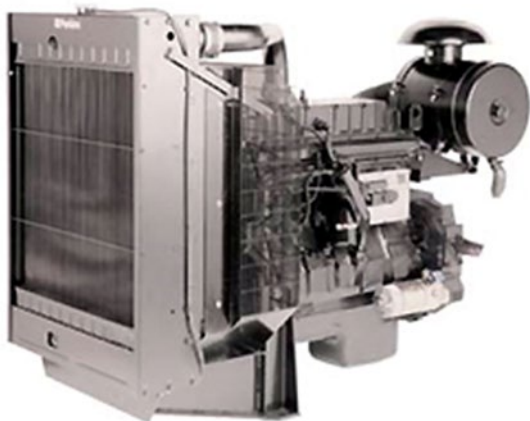
PERKINS 1300 SERIES

ENGINE SYNCHRONIZATION

The EAM115 is an interface module that provides conditioned electrical signals for Perkins1300 Series engine/genset applications (Edi 6e gen set). A typical application is where a GAC load sharing/synchronization system connects to a Perkins engine control system.

The DC supply for the interface comes from the common battery source for the engine control and the accessory controls. The input to the module (Terminal D) is typically 5.0 V DC, which represents the load sharing, and synchronization signals. The output of the EAM115 to the Perkins control is a 2.5 V DC signal based on the Perkins 5.0 V DC reference signal.

EAM115



NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	EAM115	Perkins 1306-E87 Electronic Accessory Module

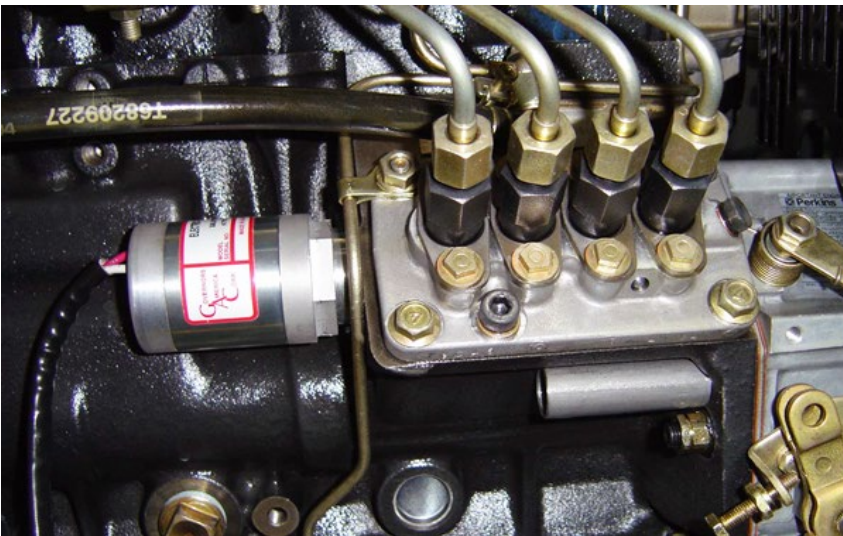
PERKINS 404 AND 403 SERIES ENGINES

POWER GENERATION

The ALR190 Series Integral Actuator mounts directly onto various injection pumps on small engines. No external linkage or brackets required for installation. When de-energized the ALR190 Series actuator provides the function of a fuel shutoff solenoid using internal spring loading the fuel-rack to the no fuel position.

Installing the ALR190 Series actuator does not defeat the engine's mechanical governor operation. During the installation process, the mechanical governor is set 200-300 RPM higher than the electric Speed Controller operating speed and acts as over-speed protection within the engine manufacturers specifications.

ALR190-P04



A GAC ALR actuator easily replaces the Electronic Fuel Stop Solenoid in the Perkins engines with Stanadyne CAV 6 cylinder in-line Rotary Pump. Viable solution for 403D-07, 403D-15, and 403D-15T.

NOTE: All components are sold separately

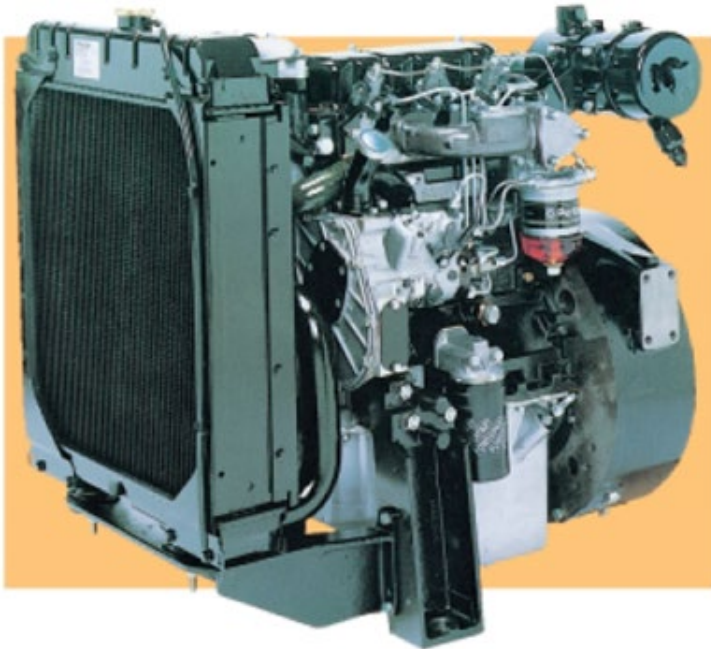
COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ALR190 Series	Integral Actuator
Speed Controller	ECC328, ESD2402, ESD5520E , ESD5120, ESD5500-II, ESD5570E, ESD2244-12/24	Isochronous, Variable Speed, Droop Speed Control Light Force Speed controllers

PERKINS 3.1524 ENGINE with STANADYNE PUMP

INDUSTRIAL PUMP CONTROL

The ADC100's compact design mounts directly onto all Stanadyne "D" series rotary pumps of the 3.1524 (T) Perkins 3 cylinder 2.5 liter diesel, providing fast response and precise engine speed control for either isochronous, droop or variable speed operation.

Paired with the EEG7000 controller the combination allows for simple, repeatable control.



ADC100



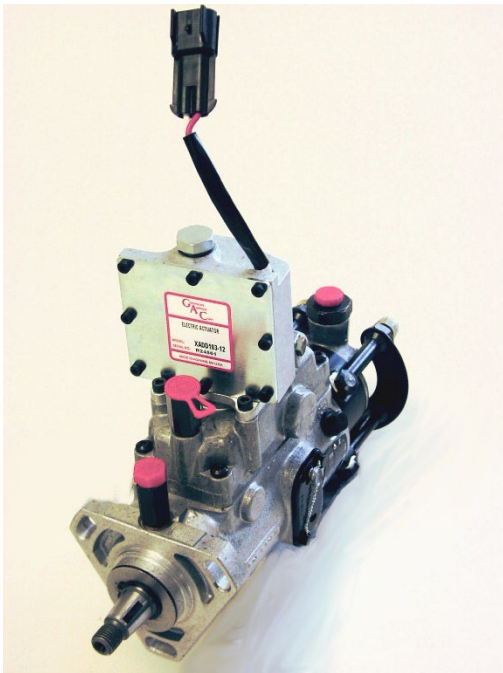
COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADC100	100 Series Stanadyne Pump Mounted Actuator
Speed Controllers:	EEG7000 , ESD2244, ESD5120, ESD5522E, or ESD5570	Digital or Analog speed controllers

PERKINS VISTA A with DELPHI DPA

ENGINE CONTROL

The 3230F570T Perkins Vista A 30 KVA uses a Delphi DPA Fuel Pump can benefit from the speed control.

The 103 Series Integral Actuator is designed to mount directly to the Delphi DPA/DPD (fixed speed-versions). No external linkage or brackets are required to install this actuator. By internally moving the fuel metering valve to the no fuel position, when de-energized, the 103 Series electric actuator provides the function of fuel shutoff solenoid



ADD103B



Installing the 103 Series actuator does not defeat the engine's mechanical governor operation. During the installation process, the mechanical governor is set to a higher speed than the electric governor's operating speed. In this configuration the mechanical governor acts as a speed limiter.

NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADD103B	

PERKINS 4.236 ENGINE with STANADYNE or CAV PUMP

PUMP REPLACEMENT

This Perkins 4.236 (T) used with Stanadyne or CAV Diesel, rotary pumps obtains precision control from GACs ACD100 pump mounted actuator or the 120 Series Universal actuator.



ACD100



ADD120S



COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADC100 or ADD120S	100 Series Stanadyne Pump Mounted Actuator
Speed Controllers	ESD2244 , ESD5120 , ESD5522E , ESD5570	Digital or Analog speed controllers
Other	MSP6728C KT190	Magnetic Speed Pickup Mounting Kit

PERKINS 1004 ENGINE with STANADYNE ROTARY PUMP

ENGINE PUMP REPLACEMENT

Mounted directly on the pump of the Perkins 1004-4 (TW) the ADC100 is a perfect way to improve speed control.



ADC100



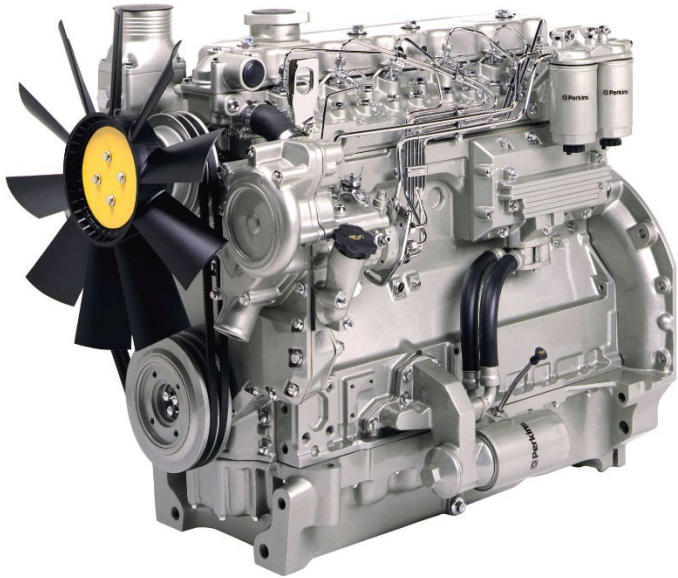
NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADC100	100 Series Pump Mounted Actuator
Speed Controller	ESD2244 , ESD5120 , ESD5522E , ESD5570	Digital or Analog speed controllers
Magnetic Speed Pickup	MSP6728C, EC1350, or MSP6723C	M16x1.5 thread

PERKINS 1006-6 ENGINE AND STANADYNE PUMP

ENGINE SYNCHRONIZATION

Mounted directly to the on Stanadyne 6-cylinder in-line pump, the ADC100 is a perfect way to improve speed control.



ADC100



NOTE: All components are sold separately.

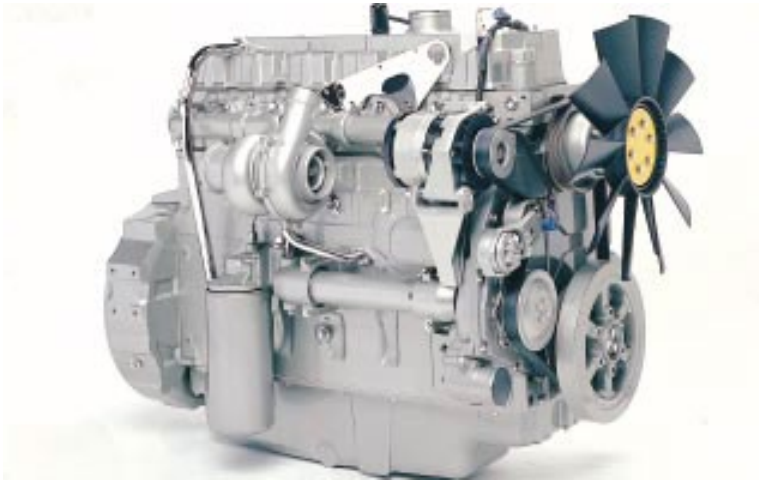
COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADC100	100 Series Pump Mounted Actuator
Speed Controllers	ESD2244 , ESD5120 , ESD5522E , ESD5570	Digital or Analog speed controllers
Other	MSP6728C, or MSP6723C KT190	Magnetic Speed Pickup M16x1.5 thread Mounting Kit

PERKINS 1306, 2006, or 3008 ENGINES with BOSCH "P" PUMPS

GEN SET

Whether you have a 1306 (TAG) Diesel, a 2006, or a 3008 (TA) the ACE275HD mates with the Bosch "P" Inline pump mounting directly to the fuel injection pump in place of a mechanical governor to achieve an integrated proportional servo fuel package.

GAC ACE275HD actuators heavy duty bearings provide strength and durability for this application.



ACE275HD-24



NOTE: All components are sold separately.

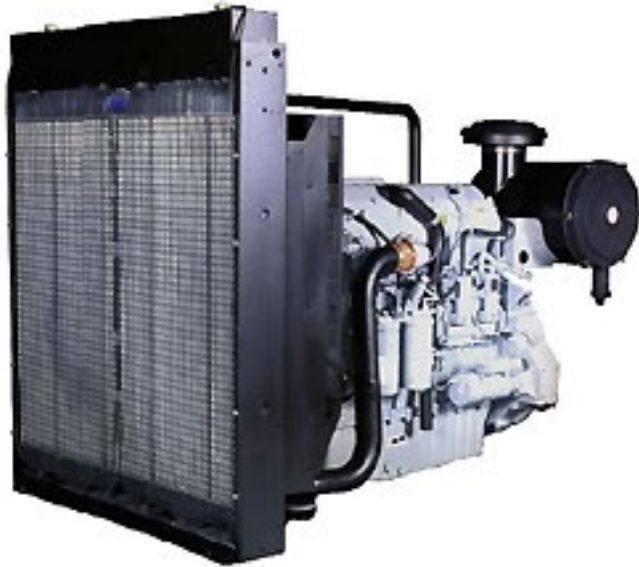
COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ACE275HD-24	Pump Mounted Electric Actuator
Other	KT275	Mounting Kit

PERKINS 2800 SERIES ENGINE

ENGINE SYNCHRONIZATION

The EAM113 interface module is designed to be used between the PERKINS 2800 series engine control and an external control such as a variable speed input or a load sharing and synchronizing system. The output of the EAM113 is a current sinking PWM signal that controls the PERKINS engine control.

The EAM113 has two inputs, a 4-20 mA input as well as a 5.0V DC input. The 4-20 mA input serves to provide a wide range of PWM for maximum changes at the PERKINS control. The 5.0 V DC input is a limited range PWM output around 50% duty cycle for trimming of the speed for such usages as GAC load sharing and synchronizing.



EAM113



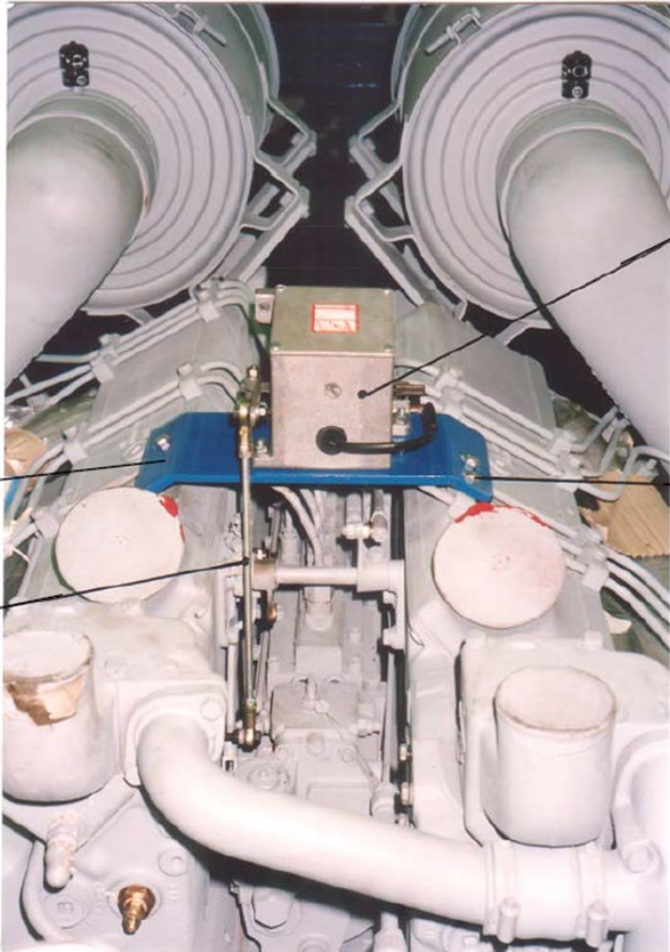
A single potentiometer adjustment allows the range of the input signal's effect on the PERKINS control to be limited from maximum to minimum PWM duty cycle. The PWM frequency is fixed at 500 Hz. Supply voltage for the interface is the same 24 V DC battery that supplies the PERKINS system

COMPONENT	PART NUMBER	DESCRIPTION
Controller	EAM113	Interface Module for Caterpillar and Perkins

PERKINS 3012 SERIES

MARINE POWER GENERATION

Perkins 3012 Engine with CAV Maximec fuel pump (to stop lever) adds an engine fuel control positioning device. The 225 combines fast operation, multi voltage usage, wider rotation angles, and proven reliability.



ADD225S



NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ADD225S-24	Electric Universal Actuator with 2.2 lbf·ft torque [3.0 N·m] and 25° rotation
Magnetic Speed Sensor	MSP6728C	

PERKINS 4000 SERIES METHANE POWER GENERATION

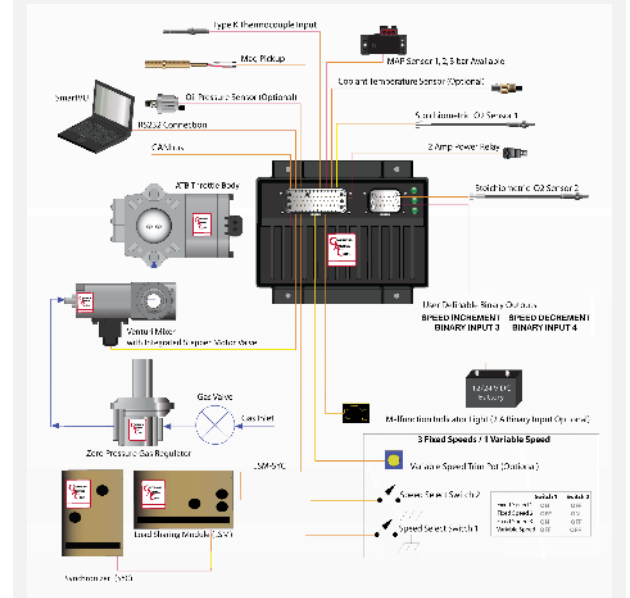
GASEOUS POWER GENERATION

From their UK headquarters in South Wales, Mayphil and their regional facilities appointed Perkins 4000 Series Centre of Excellence for engines capable of operating on a wide range of methane based gases: landfill gas, digester gas biogas and coal bed mine gas.

- Perkins 22.9L (1398 in3) 4006 in-line 6 cyl
- Perkins 30.6L (1865 in3) 4008 in-line 8 cyl
- Perkins 61.1L (3729 in3) 4016 V-16 cyl

The GAC FIMS solution supported the Air/Fuel mixer with zero pressure regulator and mixture adjustment with an throttle body actuator , Ignition system with individual cylinder ignition coils, spark plugs and electronic engine governor

FIMS



MAYPHIL / PERKINS 4000 SERIES GAS ENGINES



4006 SERIES



4008 SERIES



4016 SERIES

Integrated Air/Fuel Ratio and Speed Controller AFR210	Throttle Body Actuator ATB552T2N-24	Ignition Control Module ICM200-6/8	Venturi mixer / fuel control assembly MXMB44-STM
Exhaust gas temperature sensor STE101	Oxygen Sensor GAC SOX103	Zero pressure gas regulator RPR102	Camshaft sensor GAC SCI101
Ignition Coils CL600	Spark Plug Wires SPW100	Camshaft trigger wheel GR104	

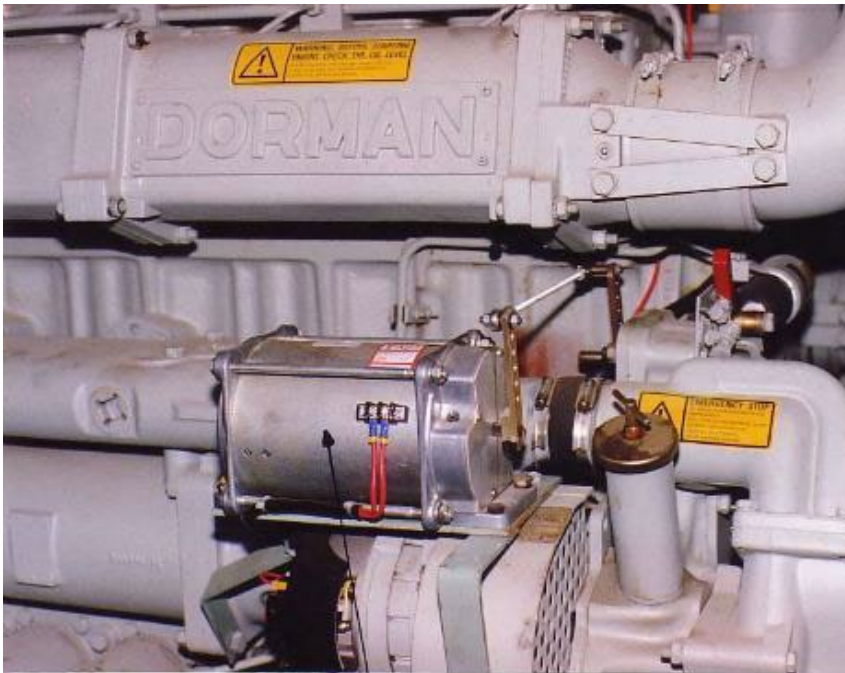
PERKINS 4006 TAG2

INDUSTRIAL GEN-SET

When Perkins Engine Company acquired Dorman Diesels they incorporated the SE engines into the Perkins system as the 4000 Series. PERKINS 4006 TAG2 ENGINE (DORMAN 6 SETCA 2).

The ACB2001 paired with the ESD5330 supports fuel system control levers requiring torques in the 16.3 N·m range and 35 degrees of rotation.

Internal springs provide fail safe operation by forcing the actuator to the fuel shut off position when the actuator is de-energized.



ACB2001



ESD5330



NOTE: All components are sold separately.

COMPONENT	PART NUMBER	DESCRIPTION
Actuator	ACB2001	Universal Heavy Duty Rotary Actuator
Speed Controllers	ESD5330	(Standard) or ESD5340 (Full Fuel at Start-up)



SOLUTIONS THAT OUTLIVE THE LIFE OF THE ENGINE

GAC OFFERS PROVEN RESULTS

GAC's advanced gaseous-fueled engine management system with exhaust emissions control technologies meet the tough standards sanctioned in the United States and the rest of the world. The total system approach results in a cost-effective solution that offers the greatest potential for improvements in both engine efficiency and exhaust emissions while providing many features.

Governors America Corp. (GAC) is a leading provider of innovative engine control products worldwide. As a veteran-owned and operated family business, our dedication and focus on our customers' needs has shaped GAC into a vertically integrated company with complete design, development and manufacturing capabilities.

Our mission is to provide trusted solutions for the innovative equipment that powers and builds our world. GAC's market-focused efforts provide precise electromechanical and electronic engine devices and speed control systems globally.