





- The previous 1 2 3 ... 20 Next - Visit the help section or contact us at eBayNatural Gas RegulatorsPage 2eBayNatural Gas RegulatorsPage 1. Field of invention The current invention generally refers to fuel regulators for engines in cogeneration units; and, in particular, natural gas regulators for ko generation units powered by an internal combustion engine.2. The description of the country's related artelectric power generation lags behind demand. There are many reasons why this is the case, but the main one is the failure of traditional energy producers to replace used units and capitalise on new plants. This was partly due to increased air quality regulations. In addition, new challenges are facing the safety of electricity generation. The events of 11 September 2001 showed this nation its vulnerability to terrorist attacks. Key operations such as police, medicine and civil defence, which relied on electricity grids to operate, realised that their needs were vulnerable to disruption and saw self-contained individuals as well as micro grids as a possible solution. These alternatives are fraught with their own problems. The main reason is a drastic increase in demand. Thus, while energy demand has increased, generation opportunities have not. One of the reasons for the increase in demand is the increased use of computers and other technologies for industrial and business purposes, as well as for personal use. As computer usage increases, the use of energy-intensive peripheral technologies such as printers, cameras, copiers, photo processors, servers and the like is keeping pace and even expanding. As the use of computer equipment in business continues to grow, as is the number of internal data servers outsourced to data storage facilities, financial systems and Internet-related companies requiring constant electrical availability and somewhat reducing traditional peak demand for reliable, low-cost, environmentally friendly electricity continues to grow. Other technological advances have also increased the demand for electricity. The increased use of energy-consuming devices in every aspect of life, from medical to industrial robots, as well as innovation in almost every field of research and industry, is supported by increasingly complex technology that requires more electricity. As a result, the federal government has deregulated power generation, and many states have begun to establish competitive retail energy markets. Unfortunately, the process has not provide consumers with price signals for intelligent demand-side energy management With deregulation in the media market, energy (kWh) has become a commodity that can be bought or sold. However, fluctuations in electricity costs. According to ETA, at least 393 GW of additional capacity should be added to meet the expected increase in demand over the next 20 years. In some areas, demand growth is much higher than the projected two percent average (e.g., California's peak electricity demand increased by only 0.3 percent). Despite california's highly publicized energy situation, a similar problem is also coming out in other states; The New York Independent System Operator recently stated that 8,600 MW of additional capacity (an increase of 25 percent) must be added by 2005 to avoid widespread shortages that could lead to black-outs. In addition to the discrepancy between demand and generation capacity, the physical transmission infrastructure necessary to supply energy from geographically remote generation facilities to the consumer's location is not able to maintain an increased burden. Even in today's operating conditions, the transmission network system and aout have become more common. Strategic industries want to reduce energy costs, increase reliability and ensure safety. This has led to an interest in distributed manufacturing has become vast without adequate resources to meet this need. Again, inefficience, reliability and environmental issues are the main barriers. Convincing economics are made on engine performance without the financial benefits of using waste heat, but with the existing distributed generation market is \$300 billion in the United States and \$800 billion worldwide. The need to use existing technology while switching to alternative energy sources is an important factor in meeting this challenge. Although most existing distributed generation plants use small gas turbines or piston engines for production, there are many alternatives that are considered in the long term. Technologies such as microturbines are currently available, but are only used in a relatively small number of places. These newer generators offer some inherent advantages, including built-in communication capabilities. Fuel cells are expected to be available in the next five years, which will provide some very attractive, for the option environment. Today, however, small gas turbines and piston engines are existing generator technologies on the market and will for some time come for many reasons. Engines provide the best conversion performance (40%) and can operate with non-pressure gas. Microturbines, on the other hand, require compressed gas and conversion efficiency is lower (about 30%). The latter generators are usually used in wastewater and landfills and other specialised sites where the conventional main operator is unable to withstand low fuel quality. Therefore, in order for utilities to actually benefit from a distributed generator technology in order to provide a sustainable and affordable solution. The use of waste heat or co-production is one way to meet this challenge. In the case of energy generation, waste heat is not used and the economy is largely based on the cost of electricity produced (i.e. the rate of heat generation is paramount), with little regard to improving reliability or independence from the electricity grid. Anticipated fluctuations in energy costs, reduced reliability and increasing demand have led end-users to consider maximising efficiency by using heat from on-site heat capture systems, i.e. cogeneration or combined heating and/or hot water from the same unit is one solution. Cogeneration provides both electricity and useful heat or useful heat from previously wasted energy associated with the electricity generation process. In the case of cogeneration, two problems were solved for the price of one. In both cases, electricity generation must meet stringent local air quality standards, which are usually much stricter than EPA (national) standards. On-site co-authoring is a potentially valuable resource for distributed generation tools. The tool can increase capacity by turning to the host (e.g. industrial user) with an existing generator and allow them to parallel with the network and use their generator power to handle peak volumes. From a tool point of view, the key advantages of a distributed manufacturing solution are twofold: increased reliability and system quality; and the possibility of deferring capital costs for the new transformer station. For customers who can benefit from the waste process/heat, the economics of cogeneration are an obstacle to widespread use. Cogeneration products enable industrial and commercial supply of their own energy supply, thus meeting their demand requirements, without relying on increasingly inadequate supply and public infrastructure. Unfortunately, to date, the most widespread and cost-effective electricity generation technologies are used, including nuclear and hydroelectric energy, as well as alternative technologies such as solar, wind and geothermal energy. However, fuel combustion remains the primary method of generating electricity. Unfortunately, emissions from the combustion of hydrocarbon fuels are generally considered harmful to the environment and the Environment Agency has consistently tightened emission standards for new power plants. Green gases, as well as entrained and other pollution of combustion products, are environmental challenges faced by hydrocarbon-based units. With fossil fuels, natural gas is the least harmful to the environment. Most natural gas consists mainly of methane and a combination of carbon dioxide, nitrogen, ethane, propane, iso-butane, pentane iso, N-pentane and hexane Plus. Natural gas has a very high octane number, about 130, which allows for higher compression ratios and wide bility limits. The problem with the use of natural gas is the reduction in power output compared to petrol, mainly due to the loss of volumetric efficiency with gaseous fuels. Another problem is the emissions produced by these natural gas engines. Although emissions are potentially lower than for petrol engines, these engines typically require certain types of emission controls, such as an exhaust grid (EGR), positive crankcase ventilation (PVC) and/or a unique three-way catalyst. Another problem with using natural gas is the slow flame speed, which requires the fuel to light up well in front of the best dead center (BTDC). In general, most petrol combustion engines operate with a spark above about 35 BTDC degrees. Reduced fuel combustion speed results in reduced thermal efficiency and low burn characteristics. It is well known that emission reductions for gas engines can be achieved by recycling exhaust gases to make the engines lean. A number of exhaust gas recycling systems have been developed for the internal combustion fuel engine for the preheating of the air-fuel mixture in order to facilitate its complete combustion in the combustion zone, the reuse of unburned or partially burned parts of the fuel that would otherwise pass into the exhaust gases and into the atmosphere. It found that about 15 to 20 percent of exhaust gase recycling is required under moderate engine loads to significantly reduce the nitrogen oxide content of exhaust gases discharged into the atmosphere, which is less than about 1,000 parts per million. Although previous artistic systems had the desired effect of reducing nitrogen oxides in the exhaust gases by lowering the maximum combustion temperature by diluting the air-fuel mixture with recycled exhaust gases under certain engine operating conditions, these systems were not commercially acceptable both from a cost point of view, as well as operational efficiency and have been complicated by the accumulation of gummy deposits, which tend to clog the limited by-pass pipe provided for exhaust gas recycling, and have been complicated by the desirability of reducing recycling under both engine idling conditions, when nitric oxide emissions are a minor problem and wide open throttle when maximum power is required, while gradually increasing engine load. In a regular hydrocarbon engine, fuel combustion can be carried out at a speed of about 1200°F. The formation of nitrogen oxides does not become particularly controversial as long as the combustion temperature does not exceed about 2200 °F., but the normal engine combustion temperature, which increases to about 2500 °F. It is known that recycling at least one twentieth and not more than a guarter of the total exhaust gases by the engine, depending on the load or power demand, Will lower the combustion temperature to less than 2200 ° F. Pollutants in the exhaust gases resulting from fuel additives desirable for improving combustion temperatures exceeding about 1700 ° F., but tend to condense and leave gummy residues, which is particularly controversial in place of dissuasive staging and valve sites in the exhaust pipe or bypass. Thermal nitrogen oxide emissions are a direct function of the combustion temperature are minimal, but appear to be problematic during throttle and prolonged operation at full speed. Thus, previous ko generation art systems using internal combustion engines and, in particular, natural gas engines have suffered from countless problems, including increased head temperatures and the inability to supply large amounts of process and/or utility heat to the co-production customer. Excessive head temperatures lead to inefficient operation and unacceptable environmental conditions, which include excessive fuel consumption as well as significant NOx production. Some of the inherent problems with natural gas engines, which use exhaust gas recycling techniques to reduce pollution, are the result of manure problems that them a slim escape. In particular, natural gas regulators have not been able to supply natural gas to the maintaining a fuel-to-air ratio that does not starve the engine or start it to a rich one. In the first case, the engine stops later, fuel economy and NOx production become off limits. Previous natural gas engines used as propulsion units for spinning electric generators use different types of fuel carburetor, regulation and input systems. One carburetor device uses a diaphragm that opens under the engine vacuum to operate a fuel metering valve that allows fuel to changes in the vacuum drawn by the engine. These systems have inherent disadvantages. First, the membrane must be several times larger than the gas inlet. For example, a three-inch diaphragm. For a while, when the exhaust gases are recycled, recycled gas tends to erode the membrane. Finally, these systems are prone to rupture of the diaphragm from the engine fire through the inlet system. The fuel/air/gas mixture for recycling from the mixture before injecting into the cylinder. The use of a turbocharger increases the vacuum on the carburetor unit. If the engine is turbocharged, the gas/fuel mixture for air/recycling passes through the turbocharger and then through the engine intercooler to cool the compressed air/gas/fuel mixture and into the engine cylinders. The combination of a large diaphragm section, mixing section and throttle in the carburetor unit makes it a large and bulky apparatus that must be mounted directly on the engine inlet. A more cost-effective, balanced venturi-style fuel/air mixing unit has been developed. This fuel entry style is currently used in most natural gas-fired internal combustion engines because it is easy to get parts, assemble and mount to the engine. One drawback is that a separate gas shut-off valve must be installed before the venturi to shut down the engine. Another is flooding from fuel sources under pressure. Finally, the load changes of these systems make the fuel adjustment before the constriced tapered. The engines that use this venturi fuel carburetor system use a series of small ports of the size determined by the fuel demand. Air is drawn into the chamber surrounding the ventricle through a vacuum. If the fuel is under positive pressure, the chamber floods before ignition, which prevents ignition Therefore, a regulator is required before the constrictor. One type of regulator uses one or more membranes that respond to changes in the vacuum of the motor or burner. For most applications, these vacuum devices work quite well because, like the burner, the fuel requirement is full or completely switched off. However, when using engines such as turbocharged engine speed to meet the electrical load requirements of the electrical system. Since this requires fuel carburization in a fairly wide range of inlet settings, some gas regulator to control the power supply it develops, which operates on the incremental movement of the electrically actuated valve. Such solutions, while effective, require complex control circuits as well as transducers to modulate the current flow to the electric valve. While these valves are not essentially analogue, engine carburizer is not smooth, leading to inefficiency, especially in the case of co-orthopaedic units. When inlet gas uses exhaust gas recycling to reduce thermal NOx, the regulation of the natural gas fuel jet becomes even more critical. This is especially true for so-called lean burn operations. Therefore, it would be beneficial if a simple fuel regulator device, which operates exclusively on the pressure of the engine operating range. In this way, external circuits would not be required to regulate the gas flow of the device, however, the reaction may be sensitive enough to keep the turbocharged fuel/air/exhaust gas recycled to the engine in the range from idle to full throttle, with a slight deviation in the proportion of the mixture. In this way, lean burn motors can operate in this configuration significantly throughout the engine operating range. In addition, it would be beneficial to use the measurement accuracy of the spring tensioned membrane without deterioration or a large inlet port to the ratio of the diaphragm size. SUMMARY OF INVENTIONS Natural gas regulator for power plant ko generation natural gas-powered internal combustion engine, which enables efficient, unloaded engine operation to produce full load without the requirement to regulate fuel limiting valves. The immediate invention gas regulator uses a pressure modulation chamber that suppresses incremental pressure changes from the engine carburetor system and allows the valve regulator uses a pressure modulation chamber that suppresses incremental pressure changes from the engine carburetor system and allows the valve regulator uses a pressure modulation chamber that suppresses incremental pressure changes from the engine carburetor system and allows the valve regulator uses a pressure modulation chamber that suppresses incremental pressure changes from the engine carburetor system and allows the valve regulator uses a pressure modulation chamber that suppresses incremental pressure changes from the engine carburetor system and allows the valve regulator uses a pressure modulation chamber that suppresses incremental pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and allows the valve regulator uses a pressure changes from the engine carburetor system and the engine carbure the entire engine acceleration range. In one aspect, the non-venturi fuel membrane/exhaust/air mixing unit, with post-throttle adjustment turbocharger, is below the regulator natural fuel to provide lean bum by recycling exhaust gases to maintain lower head temperatures, thereby reducing NOx thermal emissions. In one example, a natural gas source from a pressure inlet passes through a small micron fuel gas filter into an electrically motorized housing to keep the fuel shut-off valve open. Two dosing valves, one with diaphragm to detect small vacuum changes delivered to the chamber by changing the engine load to induce the second manual trim valve set to one position for moderate fuel flow to air/exhaust/fuel constriction. The pressure modulating chamber installed between the diaphragm chamber and the manual trimming valve chamber ensures that the pressure generated by the engine performance over the engine performance range, in particular the load change. BRIEF DESCRIPTION OF THE DRAWINGS The following drawings form part of the current specification and are included to further demonstrate some examples. These embodimentes may be better understood by reference to one or more of these drawings in conjunction with a detailed description of the specific performances presented herein. Fig. 1 is the perspective of the fuel regulator of immediate invention; Fig. 2 is an exploded view of the flowchart of the cooling loop of the fuel control chamber in accordance with the immediate invention; Fig. 3 is a cut-off along the line 3-3 FIG. Fig. 4. is the cut-off of the fuel control chamber in accordance with the immediate invention; Fig. 2 is an exploded view of the fuel control chamber in accordance with the immediate invention; Fig. 2 is an exploded view of the fuel control chamber in accordance with the immediate invention; Fig. 2 is a cut-off along the line 3-3 FIG. Fig. 4. is the cut-off of the fuel control chamber in accordance with the immediate invention; Fig. 2 is an exploded view of the fuel control chamber in accordance with the immediate invention; Fig. 2 is an explored view of the fuel control chamber in accordance with the immediate invention; Fig. 2 is an explored view of the fuel control chamber in accordance with the immediate invention; Fig. 2 is an explored view of the fuel control chamber in accordance with the immediate invention; Fig. 3 is a cut-off along the line 3-3 FIG. Fig. 4 is the cut-off of the fuel control chamber in accordance with the immediate invention; Fig. 5 is a cut-off along the line 3-3 FIG. Fig. 4 is the cut-off of the fuel control chamber in accordance with the immediate invention; Fig. 5 is a cut-off along the line 3-3 FIG. Fig. 5 is a cut-off along the line 3-3 FIG. Fig. 5 is a cut-off along the line 3-3 FIG. Fig. 5 is a cut-off along the line 3-3 FIG. Fig. 5 is a cut-off along the line 3-3 FIG. 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DETAILED DESCRIPTION OF THE PREFERRED FUEL REGULATOR EMBODIMENTSA for natural gas-fired heating unit regulates natural gas under pressure, from a remote fuel source, such as a tank, to an engine carburetor in which the fuel is mixed with air for the invention, exhaust gas recycling is mixed with air and fuel to reduce NOx emissions from the engine, as further explained below. According to a further aspect, the engine is supercharged using exhaust powered turbocharger to increase the engine is turbocharged using exhaust gases are mixed with the combustion air in front of the carburettor and then mixed with fuel, for example by fuel aspiration. The turbocharger places an additional vacuum load on the engine side of the carburetor. Preferably, the turbocharged mixture of hot gases, fuel and air is cooled before to the engine cylinder to reduce the head and thus NOx emissions from the engine. The fuel regulator may consist of one or more sections or components regulating the flow of fuel under pressure to the carburetor. According to the invention, the first gas measuring chamber is supplied to measure from the carburetor device. The second gas flow limiting chamber, behind the measuring chamber but in gas communication, is supplied to limit the flow of gas by means of a manual valve, which is used to tune the engine and is manually set and maintained. The upper diaphragm to modulate the fuel flow to the constriction to maintain engine speed during the load change. Between the first gas measurement chamber and the second gas flow limiting chamber in gas communication with both the gas metering chamber and the second programmed gas flow control chamber. As described below, the modulating chamber works to modulate the intake gas pressure and the vacuum pressure from the carburettor to ensure a smooth transition from the inlet to the gas outlet, as it is measured by a programmed gas measuring chamber in response to engine demand, as reported by the regulator by changing the vacuum pressure from the carburetor. Preferably, the dosing chamber contains at least one spring-loaded diaphragm that opens under the engine vacuum to operate a fuel metering valve that allows fuel to enter the gas measuring chamber. The dosing chamber contains a pressure-to-ambient pressure balancing line, which allows for significant immediate membrane deformation in relation to changes in the engine load result in very small changes in the vacuum that open and close the dosing chamber. Fig. 1 shows an image of the fuel regulator 10 device according to an immediate invention. The fuel regulator device 10 consists of an inlet coupling element 12 and an outlet coupling element 14, as better seen in FIG 2. The 12 inlet coupling element has a threaded plug 13 accepted for the reception of the 1.5 fuel line, which nominally operates in the range of about 1.5 to 2.0 PSIG. Fuel from a pressurized source (not shown) communicates with the inlet coupling element 12. Micron mesh fuel filter 16 connects inlet coupling element 12 with gas dosing/shut-off component 18. The filter prevents contaminants from entering the system through the fuel source. Component 10, which contains a standard electrically controlled electromagnet (not shown). The electromagnetic housing 20 is held in place on the gas dosing/shutoff part 18 by maintaining nut 22. Using an electrical connection 24, the standard electromagnet is a dead closing switch. As can be seen better in FIG. 4, when the electromagnet is disconnected from the power supply, the valve regulating fuel 40 is closed and the gas cannot pass through the regulator, which will be explained with respect to FIG. Modulation element 26 includes a pressure modulating of the fuel trimming valve assembly 28. The valve adjustment screw 30, which thread attaches the 32 thread sleeve to the outside of the manual housing of the fuel-trimming valve assembly 28, is manually set to tune the engine using the fuel regulating valve assembly 28 and transfers the threaded plug 82 for connection to the carburetor fuel line, as can be seen better in FIG. 5.As is more visible in FIG. 2, which is a side-looking exploded FIG view. 1, where similar components contain similar numbers, the individual components of the fuel regulator 10 are shown as mounted. The micron mesh 16 fuel filter is preferably used to provide clean fuel to the system, but is not required. As you can see in FIG 2, each element is twisted into itself, thus ensuring ease of replacement of components, as well as cleaning and maintenance. Turning to FIG. 3, a FIG cut-off is shown. 1 along lines 3-3. Fig. 3 shows the internal operation of the fuel regulator device 10 when the electromagnet is switched on. Fig. 3 does not show optional fuel filter from micron grid 16. The inlet coupling element 12 moves the threaded plug 13 and communicates with the gas dispensing/shut-off component 18, as shown in the figure. The gas dispensing/shut-off component 18 mounted on it an electromagnetic housing 20, which contains an electromagnet (not shown) to actuating the electromagnetic actuating rod 36, and a 34 diaphragm housing containing membranes regulating the gas, as described below. Solenoid actuator rod 36, the end of which is in contact with metal contact plate 38, which in turn is located on the valve seat 42 when the solenoid housing 20 is detachable, as shown in Figure 4. In this configuration, the entire gas flow is cut off using the fuel regulator device 10. In the dosing/shut-off part of gas 18 there is a fixed division of 44, which divides the gas measurement/shut-off component 18 into the upper chamber gas 84 and the lower gas receiving chamber 86 and contains valve seat 42 in it, so that when the valve regulating fuel 40 is fully seated in valve office 42, the gas flow is switched off. In operation, operation, as shown in Figure 3, the actuating rod of electromagnet 36 is reassemble, allowing the fuel regulating valve 40 to be opened and closed by means of valve pin 46. Valve pin 46 communicates with and is preferably attached to the lower part of the valve regulating fuel 40 at one end and top diaphragm 48 at the other. The upper membrane assembly includes the top diaphragm 48, which is sealed in a 34 diaphragm housing, and a top 50 diaphragm seat spring that turns on the bottom of the top 48 membrane and platform 52 is sealed by the side walls of the membrane housing 34 forms the upper membrane assembly, includes the lower membrane 60, which is sealed in diaphragm housing 34, and the lower seat spring of diaphragm 62, which turns on the bottom of the lower membrane 60 and rests on the lower closure of the membrane housing 34, forming a sealed unit. The upper side of the lower side of the lower and the lower side of the lower side of the membrane housing 34, forming a sealed unit. closure of the 34 diaphragm housing in cooperation with the sidewalls of the membrane housing 34 form the second lower membrane chamber of the membrane 56 and the first lower chamber of the membrane 58. The 64-level pipe communicates with the second lower 67 membrane chamber and the environment. These two devices equalize the pressure between the chambers when the membranes deform during operation. The modulating element 26 of the seal shall be attached to the gas dosing/shut-off part 18 so that the pressure modulating chamber 66 communicates with the lower gas receiving chamber, the inside of the gas dosing/shut-off part 18 and the modulating element 26 is sealed to the manual casing of the fuel trimming valve assembly 28. The manual housing of the fuel trimming valve assembly 28 contains a pair of valve valve 68, which is limited by the settings of the valve assembly 28 contains a pair of valve pair 68 is attached to the metal valve plate 70 mounted on the valve regulating fuel 72. In the manual housing of the fuel trimming valve assembly 28 there is a solid separating diaphragm 74, which divides the manual housing of the fuel trimming valve assembly 28 into the upper gas reception chamber 76 and the lower gas output chamber 78 and includes valve seat 80, so that when the valve regulating fuel 72 is fully valve office 42, 42, the flow is switched off. The outlet coupling element 14 transfers the threaded plug 82 to the fuel line of carburettor 92, as shown in FIG. 5. In operation, an electromagnet which is disconnected from the power supply so that the electromagnetic actuating rod 36 is in the fully extended position closes the fuel regulating valve 40 as shown in Figure 4. After ignition of the motor, the electromagnet is powered and the electromagnetic actuator rod 36 is completely reassemoved, which allows modulated opening and closing of the valve regulating fuel 40 in response to the movement of the upper gas receiving chamber 84 of the meterable gas/shut-off part 18, through valve seat 42 to the lower gas receiving chamber 76 in the manual housing of the fuel trimming valve seat 72, to the lower gas output chamber 78 and exits the outlet coupling element 14 to the fuel line 92. Valve seat 72 is manually positioned using the threaded adjustment of the screw valve setting 30 to adjust the maximum gas flow rate 28. To through the manual fuel trimming valve assembly housing, and to better understand the invention in operation, FIG. 5 shows the interfaces between the turbo-intercooler cooling circuit, turbocharger, engine intake manifold and recycled exhaust gas system. This interaction is important in that head temperatures and exhaust gas recycling temperatures can be tuned. The surrounding outdoor air passes through air filter 96 and inlet line 98 to EGR venturi 104, where the air is mixed with recycled exhaust gas from 180 wire, as will be fully described. Mixed air and exhaust gases remove the egr venturi 104 narrowing through inlet line 106 to the fuel-ventilation hose 108, where the air/exhaust mixture snatches fuel from the fuel regulator device 10. The fuel regulator device 10 is connected to a fuel source (not shown) via a 90 cable. The fuel regulator device 10 is connected to a fuel source (not shown) via a 90 cable.

the venturi 108 fuel/air via the turbocharger 112 inlet line and is compressed in turbocharger, which is translated back through the system to operate the fuel regulator, as further described. Recycled compressed fuel/air/exhaust gases come out of turbocharger 114 via 116 turbo inlet guide to turbo intercooler 110, where it is cooled from 400°F. 165°F. 100 intercooler 110 to cool compressed fuel/air/recycled exhaust gas mixture. Cooled inlet gas exits turbo intercooler 110 to engine intake manifold 118 through engine intake 122 and through the intake manifold 118 to the engine cylinders 120. Exhaust gases from motor cylinders 120 outputs to the liquid-cooled collector 124 and enters turbocharger 114 through engine intake manifold 118 to the engine cylinders 120. Exhaust gases from motor cylinders 120 outputs to the liquid-cooled collector 124 and enters turbocharger 114 through engine intake manifold 118 to the engine cylinders 120. Exhaust gases from motor cylinders 120. Exhaust gases from motor cylinders 120 outputs to the liquid-cooled collector 124 and enters turbocharger 114 through engine cylinders 120. Exhaust gases from motor cylinders 120. Exhaust gases from motor cylinders 120 outputs to the liquid-cooled collector 124 and enters turbocharger 114 through engine cylinders 120. Exhaust gas mixture into turbocharger 114 using turboco-co-order inlet line 116, as described earlier. As you can see, the exhaust stream 128 enters the three-way catalyst 130, followed by the exhaust heat recovery silencer 132. It will be realized by one skilled in the art that the exhaust heat recovery silencer 132 is on the cogeneration process/utility heat system and provides additional heat recovery for this system. Some of the recyclable exhaust gases pass through line 134 to the primary air-cooled EGR cooler 136; and, if necessary, egr cooler cooled with after air 138 by wire 134, and then passes to EGR venturi 104 through cable 180. The pressure of the exhaust/fuel mixture through the turbocharger 114 creates a vacuum in front of us, as described earlier. Since the fuel is towed through the fuel/air venturi 108, it creates a vacuum that is transferred through fuel line 92 to the fuel is towed through fuel line 92 to the fuel is towed through the fuel/air venturi 108, it creates a vacuum that is transferred through fuel line 92 to the fuel is towed through fuel line 92 to the fuel upper gas receiving chamber 76 through the pressure modulation chamber 86 and in the lower gas receiving chamber 86. The lower gas receiving chamber 86, as shown in Figure 3, the movable stem of valve 46 upwards to open the valve regulating fuel 40, as shown in the figure. Similarly, reducing the pressure in the upper chamber of diaphragm 56 results in an appropriate reduced pressure to compensate through a pressure equalization port of 54 to create a vacuum in the lower membrane chamber 67 below. the lower diaphragm 60. Thus, as the vacuum pressure pulled on the fuel in the fuel supply line 90 fluctuate the upper diaphragm of the seat spring 50 and the lower seat diaphragm 60, respectively, the valve regulating the fuel 40 at the valve office 42.Preferably, two membranes are used, as shown in the figure. This system prevents harmonic or fluttering of the first membrane as the vacuum sergeant is experienced by the fuel regulator device. However, it will be implemented by one skilled in the art that a single membrane apparatus will work according to an immediate invention. Thus, according to the inventively, the pressurised fuel is introduced into the upper gas receiving chamber 84. Fuel regulating valve 40 is modulated by the movement of the upper diaphragm 48 in response to vacuum vacuum system through differentiated engine throttling. The fuel regulating valve 72 shall be manually positioned to maintain as lean combustion as permissible at full load, as well as with an engine starting to exclude too rich a setting causing the spark plug to be missed and/or the three-way catalyst to be damaged during engine warm-up. During operation, when the generator experiences a load change with corresponding changes in the throttle position of the engine, an appropriate increase or decrease in vacuum pressure causes the fuel modulating membrane to deform or return to an unformed position due to the operation of the seat spring. These vacuum changes with corresponding pressure changes on the fuel modulating membrane cause engine instability. The pressure modulation chamber, according to an immediate invention, unexpectedly modulates rapid pressure changes, reducing large differences in the deformation of the fuel modulating membrane, which suppresses the amplitude of the fuel modulating membrane, which suppresses the amplitude of the fuel modulating membrane, which suppresses the amplitude of the fuel modulating membrane, which suppresses the amplitude of the fuel modulating membrane, which suppresses the amplitude of the fuel modulates rapid pressure modulating membrane, which suppresses the amplitude of the fuel modulates rapid pressure modulating membrane, which suppresses the amplitude of the fuel modulates rapid pressure modulating membrane, which suppresses the amplitude of the fuel modulates rapid pressure modulating membrane, which suppresses the amplitude of the fuel modulates rapid pressure modulates rapid in the full range of load conditions. Thus, instead of dynamically manipulating the valve adjustment screw with the control system, the modulating chamber and the spacing between the valves caused by the insertion of the chamber depends on the system. A modulating element with a thickness (height) in the range of 3/4 to 1.5 is useful according to the described system. Diameters from about 1.5 to 2.0 inches at the above reference thickness are located to ensure the required volume. Thus, according to the invention, the surrounding air (70 ° F) flows through the air filter to the EGR purifier, where it is mixed with up to 20% cooled exhaust (140 ° F.) at 100% load. The percentage of recycled exhaust gases used is a function of the engine load. This mixture (120° F.) then passes through the fuel/air taper, where the fuel is taken from the gas regulator and mixed with the ambient air and exhaust gases to be flowed into the inlet side of the turbocharger. The mixture of exhaust gases with fuel/air/recycling is then pressurized by an exhaust-driven turbine up to a pressure of the high temperature mixture to about 165°F. to be introduced into the intake manifold and then into the engine cylinders. After combustion, the exhaust gases from the cylinder (1100°F) pass through to recover heat, temperature of about 940°F. Exhaust combustion gas exhale (turbine drive section) of the turbocharger and after exit passes through T, and about 80% of the gas flows through the catalyst and heat recovery silencer or silencer, as described earlier, and is exhausted into the atmosphere. The second part consisting of approximately 20% of the exhaust gas is passed through the air coolers, as described earlier, into the EGR constriction for introduction into the exhaust gas is passed through the air coolers to about 110°F. before admixture with air in EGR narrowing. The above discussions and examples describe only the concrete embodiment of the current invention. It must be understood that such changes, in so far as they achieve essentially the same result, in essentially the same way, will continue to fall within the scope and spirit of the present invention. Invention.

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