

PRODUCT BULLETIN

PB NO. 103

Rev. 2

Subject: **8GTL Conversion Kits for
White Superior 8GT-825 Engines**

Problem: Are you experiencing problems with your older 8GT-825 engines such as detonation, piston and liner scuffing, premature wear, and unbalanced due to the control system?

Solution: If so, we suggest you join our list of satisfied customers by installing an 8GTL Conversion Kit during your next scheduled overhaul to reduce fuel consumption, maintenance costs and downtime.

EnDyn has proven to be a leader in the development of updating or conversion kits for existing White Superior engines. One of these kits pertains to the older style 8GT-825. These units have high compression pistons (10:1 ratio) which generate higher firing pressures and stresses on the upper block and internal components. They are also prone to detonation. The air/fuel system is controlled by the governor through a mechanical linkage which admits air and fuel based on engine speed. There is no relationship between air and fuel pressures. Overloads are experienced on an individual cylinder basis due to the system's inability to maintain balance of load. This can create piston-to-liner scuffing and/or excessive wear on the internal parts.

The 8GTL conversion kit includes a new camshaft, lower compression pistons (8.75:1 ratio) with ring and gasket kits, turbo conversion, fuel supply system, single air butterfly valve, and an electronic air/fuel ratio control system.

Major improvements/advantages include:

1. Lower Compression Six Ring Pistons

The new 8 3/4:1 compression ratio reduces peak firing pressures by 20%. This reduces dynamic stresses on the cylinder block, crankshaft, bearings and other internal components. This in-turn, decreases wear rates and maintenance costs, improving reliability and extending time between overhaul intervals. In addition, the kit provides more stable operation and enhances engine tolerance for variations in fuel composition.

2. Fuel Supply System

The new larger diameter fuel header reduces pulsations and precision orifice plates (non-adjustable) at each cylinder head improves combustion stability and maintains balance of loading between cylinders. The fuel metering valve is controlled by the governor to maintain speed regardless of load.

3. Camshaft

The cam profile has been revised and material specifications improved to reduce wear. The timing has been changed to maximize time for fuel mixing to reduce fuel consumption by 6%. Air flows are greater and the lower average peak firing compression pressure results in lower sensitivity to detonation.

4. Air/Fuel Control System

The new simplified system improves control of the air/fuel ratio throughout various speed and load ranges. The air/fuel mixture is controlled and maintained by a ratio controller in the panel. It senses fuel header pressure down-stream of the metering valve, which is a direct indication of load. Pneumatic or Electrical controller positions a single air butterfly valve to maintain air manifold pressure in relationship to gas header pressure at all times.

5. Emissions

NOx emissions can be reduced from 19.7 to 15.0 grams/bhp-hr (approximately 25%), or downwards to 8 grams/bhp.-hr. with derating and field tuning. CO is 0.9 gm/bhp-hr, while NMHC is 0.5 gm/bhp-hr.

Items included in the P-030-764-1 conversion kit are:

- | | |
|--|--|
| 1. Pistons | 10. Single Air Butterfly and Air Actuating Cylinder Installed by EnDyn |
| 2. Piston Rings | 11. Turbocharger Nozzle Ring & Gaskets |
| 3. Piston Pin Snap Rings | 12. Air/Fuel Control Panel - Electronic |
| 4. Cylinder Head Gasket Kits | 13. Starting System with Start and Run Regulators (If Required) |
| 5. Camshaft Assembly or Re-Lobe Existing Camshaft | 14. All Necessary Fittings, Hardware & Gaskets for Mounting |
| 6. Gas manifold Assembly & mounting Elbows | 15. Assembly Drawing, Initial-Start-up Adjustments and Instructions and Operating Data |
| 7. Gas Orifice Plates | |
| 8. Gas Metering Valve & Control Shaft Gas Inlet Piping | |
| 9. Air Butterfly Housing w/Fixed Deflectors | |

6. Upgrade Manual

EnDyn provides a user friendly upgrade kit manual to assist customers during the conversion, as well as detailed listings of the kit components.

Prior to your next overhaul, contact **EnDyn** or your local **PowerParts**® Distributor for a quotation on the complete kit and assistance in calculating your return on investment.

Technical Service Dept.
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GTL/SGT CONVERSION KIT SALES DATA SHEET

Company Name: _____ Plant Location: _____
Mailing Address: _____ Mailing Address: _____

Engine Model: _____ Serial Number: _____
Operating Speed Range: _____ RPM To _____ RPM
Engine Rating: _____ BHP@ _____ RPM Plant Elevation: _____
Ambient Temperature Extremes: _____ °F to _____ °F
Fuel Gas Temperature: _____ °F Heating Value _____ BTU/SCF
Governor Manufacturer: _____ Model: _____
Serial Number: _____ Designation: _____
Turbo Manufacturer: _____ Model: _____
Part Number: _____ Designation: _____
Starting System (√): Internal _____ External _____
Type and Model of Starter: _____
Control System (√): Electronic _____ Other notes _____
Manual Start _____ Auto Start _____
Air/Fuel Control Preference (√) Pnuematic _____ Electric _____
Ignition System Manufacturer: _____ Model _____
Type (√): Shielded _____ Non-Shielded _____
Timing Control Preference (√) Manual _____ Auto _____
Cylinder Head P/N: _____ Camshaft P/N- _____
Intercooler P/N: _____ Jacket Water Pump P/N: _____
Oil Cooler Included with (√): Intercooler Water System
Jacket Water System
Air Manifold Temperature Controller (√) Yes _____ No _____
Type & Model _____
Additional Information: _____

If you need additional copies, have any questions or require additional information, please contact **EnDyn's** Technical Service Department or your local **PowerParts®** Distributor or **EnDyn** Field Sales Representative.

09-17-09

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