

Waukesha G	Bas Engines U	ogrades Product	Catalog 11/28/2022
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VHP*	VGF	275GL/ATGL	For more information click on the links below
F2895G	F18GL	12V-AT27GL	You will need to be logged into the portal for the following links to work.
F2895GL	F18GSI	16V-AT27GL	Upgrade your Waukesha VHP S2 engine with S4 technology
F2895GSI	H24GL	12V275GL	Advanced Crankcase Breather Upgrade for Waukesha VHP gas engines
F3521G	H24GSI	16V275GL	ESM2 with AFR2 Control Upgrade
F3521GL	L36GL	12V275GL+	VHP P9394GSI S4 ESM to P9394GSI S5 ESM2
F3521GSI	L36GSI	16V275GL+	VHP AFR2 Air-fuel ratio control for Waukesha rich-burn gas engines
F3514/3524GSI	P48GL		Waukesha emPact Emission Control System Upgrade
L5790G	P48GSI		VGF Lean-Burn Cylinder Head Upgrade
L5790GL			VHP Extender Upgrade
L5790GSI			VHP Series 2 to xCooled Conversion
L5794LT			VHP Air Cleaner Upgrade
L5794GSI			VGF GL to GSI Conversion
L7042G			Upgrade your 275GL+ ESM1 to 275GL+ w/ESM2
L7042GL			
L7042GSI			
L7044GSI			
P9390GL			
P9390GSI			
P9394GSI			

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Model ship dates and product scope are approximate. The actual upgrade scope and quotation will depend on engine serial number and current configuration of the engine being converted. Contact Waukesha sales manager for more information.

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## F2895G

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 co	onversions (C	lick here fo	or more information	on)			
Stage I reUp	F2895G	1985 - 2000	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	Contact Waukesha for BOM
Stage lx reUp	F2895G	1985 - 2000	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	Contact Waukesha for BOM
Stage Ix	F2895G	1985 - 2000	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	Contact Waukesha for BOM
Stage III Plus model conversion	F2895G	1998 - 2000	F3524GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, AFR2 <i>Requires increasing crankcase cylinder bore</i>	Up to 464 more BHP, ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV Plus model conversion	F2895G	1985 - 1998	F3524GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, AFR2, crankshaft, connecting rods <i>Requires increasing crankcase cylinder bore</i>	<b>Up to 464 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
emPact (fo	r engines con	verted to S	64 GSI with ESM2	) (Click here for more information)			
Stage I	Converted F3524GSI with AFR2	1985 - 2000	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912B
Stage I Continued on n	Converted F3524GSI with AFR2	1985 - 2000	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912A

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# F2895G

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
Gas Reg	Gas Regulator									
	F2895G	1985 - 2000	Fisher S-200 gas regulator replacement	Fisher S-200 gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete S-200 gas regulators	S-200 gas regulator maintenance	(1) G-962-533			

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F2895GL

# Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 G	L to GSI conv	ersions (Cl	lick here for more	information)			
Stage III Plus model conversion	F2895GL	1998 - 2001	F3524GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2 <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 233 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV Plus model conversion	F2895GL	1985 - 1998	F3524GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2, crankshaft, connecting rods <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 233 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
GL Extend	led Life Cylind	ler Head Re	ebuild (Click here	for more information)			
Stage I	F2895GL	1985-2001	S2GL cylinder head rebuild kit	Rebuild kit with new exhaust valve, rotators, seats and springs.	60% longer time between top end interval	Top end overhaul	(6) G-962-1150
emPact (fo	or engines cor	verted to S	64 GSI with ESM2	) (Click here for more information	)		
Stage I	Converted F3524GSI with AFR2	1985 - 2001	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912B
Stage I	Converted F3524GSI with AFR2	1985 - 2001	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912A

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### F2895GSI

Return to Index

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Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 c	onversio	ns (Click h	ere for more infor	mation)			
Stage I reUp	F2895GSI	1985 - 2000	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	Contact Waukesha fo BOM
Stage Ix reUp	F2895GSI	1985 - 2000	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	Contact Waukesha fo BOM
Stage Ix	F2895GSI	1985 - 2000	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	Contact Waukesha fo BOM
Stage III Plus model conversion	F2895GSI	1998 - 2000	F3524GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2 <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 233 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha fo BOM
Stage IV Plus model conversion	F2895GSI	1985 - 1998	F3524GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2, crankshaft, connecting rods <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 233 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha fo BOM
emPact (fo	or engine	s converte	d to S4 GSI with E	SM2) (Click here for more information)			
Stage I	Converted F3524GSI with AFR2	1985 - 2000	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912B
Stage I	Converted F3524GSI with AFR2	1985 - 2000	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912A

Continued on next page

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#### **F2895GSI Return to** Index Model ship Kit Bill Product Description **Customer Benefit** Category Model Timing dates of Materials **Gas Regulator** Simplified gas regulator operation Mooney gas Mooney gas regulator Mooney gas regulator conversion including new gas F2895GSI 2003 - 2005 and maintenance, removes obsolete regulator (1) G-962-1143 replacement regulators, piping, and brackets. Mooney gas regulators maintenance



# F3521G

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 c	onversions (C	lick here fo	or more information	on)			
Stage I reUp	F3521G	1985 - 2014	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962-544
Stage Ix reUp	F3521G	1985 - 2014	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962-544X
Stage Ix	F3521G	1985 - 2014	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-544X
Stage III model conversion	F3521G	1998 - 2014	F3524GSI conversion Series 4 upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, AFR2	<b>Up to 384 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	F3521G	1985 - 1998	F3524GSI conversion Series 4 upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, AFR2, crankshaft, connecting rods	<b>Up to 384 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
emPact (fo	or engines con	verted to S	64 GSI with ESM2	) (Click here for more information)	)		
Stage I	Converted F3524GSI with AFR2	1985 - 2014	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912B
Stage I	Converted F3524GSI with AFR2	1985 - 2014	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912A

#### Continued on next page



# F3521G

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Gas Regula	ator						
	F3521G	1985 - 2014	Fisher S-200 gas regulator replacement	Fisher S-200 gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete S-200 gas regulators	S-200 gas regulator maintenance	(1) G-962-533



#### F3521GL

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
S2 to S4 0	GL to GSI conv	versions (C	lick here for more	e information)						
Stage III model conversion	F3521GL	1998 - 2006	F3524GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 233 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM			
Stage IV model conversion	F3521GL	1985 - 1998	F3524GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2, crankshaft, connecting rods	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 233 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM			
GL Exten	GL Extended Life Cylinder Head Rebuild (Click here for more information)									
Stage I	F3521GL	1985-2006	S2GL cylinder head rebuild kit	Rebuild kit with new exhaust valve, rotators, seats and springs.	60% longer time between top end interval	Top end overhaul	(6) G-962-1150			
emPact (f	or engines co	nverted to	S4 GSI with ESM2	) (Click here for more information	)					
Stage I	Converted F3524GSI with AFR2	1985 - 2006	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912B			
Stage I	Converted F3524GSI with AFR2	1985 - 2006	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912A			

#### Continued on next page

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### F3521GL

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
Gas Regu	Gas Regulator									
	F3521GL	2003 - 2006	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1143			



#### F3521GSI

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 c	conversio	ns (Click h	ere for more informa				
Stage I reUp	F3521GSI	1985 - 2005	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962-544
Stage Ix reUp	F3521GSI	1985 - 2005	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 544X
Stage Ix	F3521GSI	1985 - 2005	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-544X
Stage II reUp	F3521GSI	1985 - 2005	Series Four upgrade with power cylinders	reUp Series Four cylinder heads and rocker arms, head components, oil header, new piston, rings, liner (PRL), CEC ignition harness, ignition coils	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top / Bottom End Overhaul	(1) REM-G-962-545
Stage IIx reUp	F3521GSI	1985 - 2005	xCooled upgrade with power cylinders	reUp xCooled cylinder heads and rocker arms, head components, oil header, new piston, rings, liner (PRL) , CEC ignition harness, ignition coils	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top / Bottom End Overhaul	(1) REM-G-962- 545X
Stage IIx	F3521GSI	1985 - 2005	xCooled upgrade with power cylinders	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL) , CEC ignition harness, ignition coils	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top / Bottom End Overhaul	(1) G-962-545X
Stage III model conversion	F3521GSI	1998 - 2005	F3524GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 100 more BHP</b> , ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	F3521GSI	1985 - 1998	F3524GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, AFR2, crankshaft, connecting rods	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 100 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI industrial PC	Top / Bottom End Overhaul	Contact Waukesha for BOM



F3521GSI

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
emPact (	for engine	es converte	d to Series Four GS	with ESM2) (Click here for more info	ormation)		
Stage I	converted F3524GSI with AFR2	1985 - 2005	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912B
Stage I	converted F3524GSI with AFR2	1985 - 2005	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495912A
Gas Reg	ulator						
	F3521GSI	2003 - 2005	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1143



#### F3514GSI/F3524GSI

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
xCooled	Cylinder he	ead upgrad	le				
	F3514GSI/ F3524GSI	1998 - 2017	xCooled cylinder head upgrade	xCooled cylinder head with enhanced cooling	Enhanced cooling reduces cylinder head component temperatures by up to 40%, reducing thermal stresses to improve cylinder head reliability in harsh conditions operating on high BTU fuels	Top end overhaul	(6) NWC-AA205002H
SPARC C	ylinder hea	ad convers	sion <mark>(Click he</mark> i	e for more information)			
	F3514GSI/ F3524GSI	1998 - 2015	SPARC cylinder head conversion	New spark plug sleeve and spark plug sleeve extension to new SPARC system	Improved spark plug sleeve sealing, better corrosion resistance, new o- ring sealing new design prevents improper sleeve installation	Cylinder head maintenance	(6) G-962-1117
ESM2 wit	h AFR2 co	nversions	(Click here fo	r more information)			
Stage I	F3514GSI/ F3524GSI	1998 - 2000	ESM2	ESM2, harnesses and mounting brackets, power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, flywheel, flywheel housing, gear housing, cam timing disc, IPMD2.	ESM2 - Increased uptime with knock detection, fault diagnostics,		(1) G-962-1172
Stage II	F3514GSI/ F3524GSI	2000 - 2003	ESM2	ESM2, harnesses and mounting brackets, power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, IPMD2.	troubleshooting guide, improved engine performance with factory calibrated operating parameters. HMI, advanced diagnostics, remote	Existing control system	(1) G-962-1173
Stage III	F3514GSI/ F3524GSI	2003 - 2010	ESM2	ESM2, harnesses and mounting brackets, power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, new gas regulators, IPMD2.	thermocouples <b>AFR2</b> - includes AFR2 benefits <b>IPMD2</b> - Extended spark plug life up to 4 000 execution beun	maintenance or failure	(1) G-962-1174
Stage IV	F3514GSI/ F3524GSI	2010 - 2016	ESM2	ESM2, harnesses and mounting brackets, power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, IPMD2.			(1) G-962-1173



F3514GSI/F3524GSI

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Advance	d Breather	System ( <mark>C</mark>	lick here for n	nore information)			
	F3514GSI/ F3524GSI	1998 - 2018	Advanced Breather System	Closed breather system with centrifugal oil separation and automatic regulating valve	No adjustment needed for changes in speed/load. No maintenance until major overhaul	Anytime	(1) G-962-1193
emPact (	(for engines	shipped v	vith or upgrac	led to ESM2) (Click here for more i	nformation)		
	F3514GSI/ F3524GSI	Any model with ESM2	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather and ESM2</b> .	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495912B
	F3514GSI/ F3524GSI	Any model with ESM2	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather and ESM2</b> .	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495912A
IPMD2 a	nd spark pl	ug upgrade	9				
	F3524GSI	Any model with ESM2	IPMD2	New Ignition Power Module with Diagnostics (IPMD2) with optimized voltage profile, one new set of non-precious metal spark plugs	Extended spark plug life up to 4,000 operating hours. Improved combustion to reduce cylinder misfire. Simple "plug and play" installation without any software changes	Spark plug replacement	(1) G-962-1235



#### L5790G

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 c	onversio	ns (Click her	e for more inform	ation)			
Stage I reUp	L5790G	1985 - 2014	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962-551
Stage Ix reUp	L5790G	1985 - 2014	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962-551X
Stage Ix	L5790G	1985 - 2014	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-551X
Stage III model conversion	L5790G	1998 - 2014	L5794GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, advanced breather	<b>Up to 630 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage III Plus model conversion	L5790G	1998 - 2014	L7044GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, advanced breather <i>Requires increasing crankcase cylinder bore</i>	<b>Up to 930 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	L5790G	1985 - 1998	L5794GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather, crankshaft, connecting rods	<b>Up to 630 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV Plus model conversion	L5790G	1985 - 1998	L7044GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather, crankshaft, connecting rods. <i>Requires increasing crankcase</i> <i>cylinder bore</i>	<b>Up to 930 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM

L5790G

#### Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

#### Model ship Kit Bill Category Model Product Description **Customer Benefit** Timing dates of Materials emPact (for engines converted to S4 GSI with ESM2) (Click here for more information) Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 converted emPact for 0.15g NOx, post catalyst O2 sensors with sensor validates adjustments L5794GSI 1985 - 2005 emPact catalyst health monitoring. Requires advanced needed to maintain emissions (1) 495911B Stage I or breather compliance. Catalyst health L7044GSI monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals. Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 converted emPact for 1.0g NOx, post catalyst O2 sensors with sensor validates adjustments L5794GSI 1985 - 2005 emPact catalyst health monitoring. Requires advanced (1) 495911A needed to maintain emissions Stage I or breather compliance. Catalyst health L7044GSI monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals. **Gas Regulator** Simplified gas regulator operation S-200 gas Fisher S-200 das Fisher S-200 gas regulator conversion including new L5790G 1985 - 2014 and maintenance, removes regulator (1) G-962-534 regulator replacement gas regulators, piping, and brackets. obsolete S-200 gas regulators maintenance **Front Gear Housing** Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, Reduced oil leakage around the (1) G-962-1282 Front Gear Housing and installation hardware. Spanner Tool (p/n L5790G 2006-2022 front gear housing and cover (1) Upgrade 474066A) required for installation is sold separately. REM-G-962-1282 assembly Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n Reduced oil leakage around the (1) G-962-1285 Front Gear Housing L5790G 2006-2022 474066A) required for installation is sold separately. front gear housing and cover (1) Upgrade Applies to all VHP Extender Series engines having REM-G-962-1285 assembly engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.



#### L5790GL

Return to Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4	GL to GSI	conversions	(Click here for m	ore information)			
Stage III model conversion	L5790GL	1998 - 2005	L5794GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 165 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage III Plus model conversion	L5790GL	1998 - 2005	L7044GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 465 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	L5790GL	1985 - 1998	L5794GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather, crankshaft, connecting rods	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 165 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV Plus model conversion	L5790GL	1985 - 1998	L7044GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather, crankshaft, connecting rods <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 55% reduction in oil consumption, <b>Up to 465 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
S2 to S4	GL to LT o	conversions (	Click here for mo	re information)			
Stage III model conversion	L5790GL	1998 - 2005	L5794LT conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM, advanced breather	Up to 25% lifecycle extension 60% reduction in oil consumption <b>up to 235 more BHP</b> ESM control with knock detection	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	L5790GL	1985 - 1998	L5794LT conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM, advanced breather, crankshaft, connecting rods	Up to 25% lifecycle extension 60% reduction in oil consumption <b>up to 235 more BHP</b> ESM control with knock detection	Top / Bottom End Overhaul	Contact Waukesha for BOM

Waukesha

L5790	GL						Return to Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
GL Exter	nded Life (	Cylinder Hea	d Rebuild ( <mark>Click h</mark>	ere for more information)			
Stage I	L5790GL	1985-2005	S2GL cylinder head rebuild kit	Rebuild kit with new exhaust valve, rotators, seats and springs.	60% longer time between top end interval	Top end overhaul	(12) G-962-1150
emPact (	(for engine	es converted	l to S4 GSI with ES	M2) (Click here for more information	n)		
Stage I	converted L5794GSI or L7044GSI	1985 - 2005	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced</b> <b>breather</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495911B
Stage I	converted L5794GSI or L7044GSI	1985 - 2005	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495911A
Advance	d Breathe	r System <mark>(C</mark> l	lick here for more i	information)			
	L5790GL	1985 - 2005	Advanced Breather System, shallow oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-541
Extende	r Series ( <mark>C</mark>	lick here for	more information	)			
	L5790GL	1985 - 2005	Extender Series for shallow oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration	High efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.		Contact Waukesha for BOM

Waukesha

L5790GL

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
	L5790GL	1985 - 2005	Extender Series with deep sump oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan	High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals		Contact Waukesha for BOM
Gas Regi	ulator						
	L5790GL	2003 - 2005	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1147
Air Clean	er (Click h	nere for mor	e information)				
Stage I	L5790GSI	1985 - 2005	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1153
Stage II	L5790GSI	1985 - 2005	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1157
Stage III	L5790GSI	1985 - 2005	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 8 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 8 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-1159
Front Ge	ar Housing	q					
	L5790GL	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1282 (1) REM-G-962-1282
	L5790GL	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1285 (1) REM-G-962-1285



#### L5790GSI

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 o	conversio	ns (Click her	e for more informa				
Stage I reUp	L5790GSI	1985 - 2005	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM- G-962-551
Stage Ix reUp	L5790GSI	1985 - 2005	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM- G-962-551X
Stage Ix	L5790GSI	1985 - 2005	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-551X
Stage II reUp	L5790GSI	1985 - 2005	Series Four upgrade	reUp Series Four cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962-552
Stage IIx reUp	L5790GSI	1985 - 2005	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 552X
Stage IIx	L5790GSI	1985 - 2005	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-552X
Stage III model conversion	L5790GSI	1998 - 2005	L5794GSI conversion Series 4 upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 165 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage III Plus model conversion	L5790GSI	1998 - 2005	L7044GSI conversion Series 4 upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 465 more BHP</b> , ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	L5790GSI	1985 - 1998	L5794GSI conversion Series 4 upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather, crankshaft, connecting rods	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 165 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV Plus model conversion	L5790GSI	1985 - 1998	L7044GSI conversion Series 4 upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather, crankshaft, connecting rods <i>Requires increasing crankcase cylinder bore</i>	Up to 20% lifecycle extension, 66% reduction in oil consumption, <b>Up to 465 more BHP</b> , ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM

L5790GSI

#### Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

#### Kit Bill Model ship Model Product **Customer Benefit** Category Description Timing dates of Materials emPact (for engines converted to S4 GSI with ESM2) (Click here for more information) Factory designed and calibrated system reduces maintenance time for system adjustments to maintain converted compliance. Post catalyst O2 sensor emPact for 0.15g NOx, post catalyst O2 sensors with L5794GSI validates adjustments needed to 2010 - Present catalyst health monitoring. Requires advanced (1) 495911B emPact Stage I maintain emissions compliance. or breather L7044GSI Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals. Factory designed and calibrated system reduces maintenance time for system adjustments to maintain converted compliance. Post catalyst O2 sensor emPact for 1.0g NOx, post catalyst O2 sensors with L5794GSI validates adjustments needed to Stage I 2010 - Present emPact catalyst health monitoring. Requires advanced (1) 495911A maintain emissions compliance. or breather L7044GSI Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals. Advanced Breather System (Click here for more information) No adjustment needed for changes in Advanced Breather Closed breather system with advanced filter and L5790GSI 1985 - 2005 speed/load. Up to 50% extended Anytime (1) G-962-541 System, shallow oil pan automatic regulating valve service intervals Extender Series (Click here for more information) High efficiency air cleaner with 70% more dirt holding capacity, Microspin Contact Extender Series for Advanced air cleaner, spin on oil filters, mounted oil L5790GSI 1985 - 2005 oil filtration system to extend oil Waukesha for shallow oil pan cooler, turbine air starter, Microspin oil filtration change intervals, lubrication free BOM air/gas turbine starters. High efficiency air cleaner with 70% more dirt holding capacity, Microspin Advanced air cleaner, spin on oil filters, mounted oil Contact Extender Series with oil filtration system to extend oil L5790GSI 1985 - 2005 cooler, turbine air starter, Microspin oil filtration, deep Waukesha for deep sump oil pan change intervals, lubrication free sump oil pan BOM air/gas turbine starters, 2x oil capacity to extend oil change intervals



#### L5790GSI

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Gas Reg	ulator						
	L5790GSI	2003 - 2005	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1146
Air Clear	ner (Click h	nere for mor	e information)				
Stage I	L5790GSI	1985 - 2005	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1153
Stage II	L5790GSI	1985 - 2005	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1157
Stage III	L5790GSI	1985 - 2005	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 5.5 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 5.5 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-1158
Front Ge	ar Housin	g					
	L5790GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1282 (1) REM-G-962-128
	L5790GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1285 (1) REM-G-962-12



L5794I	_T						Return to Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
SPARC C	ylinder he	ad conversion	on (Click here for	more information)			
	L5794LT	1998 - 2015	SPARC cylinder head conversion	New spark plug sleeve and spark plug sleeve extension to new SPARC system	Improved spark plug sleeve sealing, better corrosion resistance, new o- ring sealing new design prevents improper sleeve installation	Cylinder head maintenance	(12) G-962- 1117
LT to GSI	conversi	on (Click her	e for more informa	ation)			
Stage III model conversion	L5794LT	2004 - current	L5794GSI conversion GSI conversion	reUp Series Four cylinder heads and rocker arms, new piston, rings, liner (PRL), turbocharger, wastegate, ESM calibration, AFR2, advanced breather	Rich-burn fuel flexibility Low emissions capability with emPact AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul, Emissions regulation	Contact Waukesha for BOM
Stage III model conversion	L5794LT	2000 - 2004	L5794GSI conversion GSI conversion with ESM2	reUp Series Four cylinder heads and rocker arms, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather	Rich-burn fuel flexibility Low emissions capability with emPact ESM2 control with knock detection AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul, Emissions regulation	Contact Waukesha for BOM
Stage III Plus model conversion	L5794LT	2004 - current	Conversion to L7044GSI	reUp cylinder heads and rocker arms, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM calibration, advanced breather. <i>Requires increasing crankcase cylinder bore</i>	Up to 10% lifecycle extension, 66% reduction in oil consumption, <b>Up to 230 more BHP,</b> AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage III Plus model conversion	L5794LT	2000 - 2004	Conversion to L7044GSI with ESM2	reUp Series Four cylinder heads and rocker arms, head components, oil header, new piston, rings, liner (PRL), turbocharger, wastegate, ESM2, advanced breather <i>Requires increasing crankcase cylinder bore</i>	Up to 10% lifecycle extension, 66% reduction in oil consumption, <b>Up to 230 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM

Waukesha

L5794LT

Return to

Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
ESM (Clic	ck here fo	r more inforn	nation)				
Stage II	L5794LT	2000 - 2004	ESM	ESM, Harnesses and mounting brackets	Increased uptime with knock detection, fault diagnostics, troubleshooting guide, extended spark plug life, improved engine performance with factory calibrated operating parameters. Latest harness design simplifies fault troubleshooting and maintenance	Existing control system maintenance or failure	G-962-1206
emPact (f	for engine	s converted	to S4 GSI with ES	M2) (Click here for more information)			
Stage I	converted L5794GSI	engines already upgraded to L5794GSI	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair or replacement of AFR1 stepper motors, harnesses, or gas regulators	(1) 495911B
Stage I	converted L5794GSI	engines already upgraded to L5794GSI	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair or replacement of AFR1 stepper motors, harnesses, or gas regulators	(1) 495911A
ESM harr	ness upgra	ade (Click he	re for more inforn	nation)			
Stage I	L5794LT	2003 - 2007	ESM wireways and power distribution box	New wireway harnesses and mounting brackets, new knock sensors, ECU calibration, new ignition coils with integrated harness, power distribution box and mounting brackets.	troubleshooting and maintenance. New power distribution box simplifies customer wiring connections and includes circuit fault protection, fault indicators, fault reset functions, enhanced noise suppression, and water	Repair or replacement of harnesses or power distribution box	G-962-1207
Stage III	L5794LT	2007 - 2015	ESM wireways	New wireway harnesses and mounting brackets, new ignition coils with integrated harness		Repair or replacement of harnesses	(1) G-962-1127

Waukesha

L5794LT

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Advance	d Breathe	r System <mark>(Cl</mark>	ick here for more i	information)			
	L5794LT	2000 - 2015	Advanced Breather System for shallow oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-541
	L5794LT	2007 - 2015	Advanced Breather System for deep sump oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-540
Extender	· Series (C	lick here for	more information				
	L5794LT	1998 - 2007	Extender Series for shallow oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration	High efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.		Contact Waukesha for BOM
	L5794LT	1998 - 2007	Extender Series with deep sump oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan	High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals		Contact Waukesha for BOM
Gas Reg	ulator						
	L5794LT	2003 - 2007	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1147

Waukesha

#### L5794LT

Return to
Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Air Clear	ner (Click I	nere for mor	e information)				
Stage I	L5794LT	1998 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1153
Stage II	L5794LT	1998 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1157
Stage III	L5794LT	1998 - 2015	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 8 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 8 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-1159
Stage I	L5794LTD	1998 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge draw-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1160
Stage II	L5794LTD	1998 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge draw-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1161
Front Ge	ar Housin	g					
	L5794LT	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1282 (1) REM-G-962- 1282
	L5794LT	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1285 (1) REM-G-962- 1285



Return to

#### L5794GSI

LJ/34	651						Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
xCooled	Cylinder he	ad upgrade					
	L5794GSI	1998 - 2017	xCooled cylinder head upgrade	xCooled cylinder head with enhanced cooling	Enhanced cooling reduces cylinder head component temperatures by up to 40%, reducing thermal stresses to improve cylinder head reliability in harsh conditions operating on high BTU fuels	Top end overhaul	(12) NWC- AA205002H
SPARC C	Cylinder hea	d conversior	n (Click here	for more information)			
	L5794GSI	1998 - 2015	SPARC cylinder head conversion	New spark plug sleeve and spark plug sleeve extension to new SPARC system	Improved spark plug sleeve sealing, better corrosion resistance, new o-ring sealing new design prevents improper sleeve installation	Cylinder head maintenance	(12) G-962-1117
ESM2 wit	th AFR2 cor	nversions (CI	ick here for I	more information)			
	L5794GSI	1998 - 2000	ESM2 with AFR2 (for use with shallow sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, flywheel, flywheel housing, gear housing, cam timing disc, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.	ESM2 - Increased uptime with knock detection, fault diagnostics, troubleshooting guide, improved engine performance with factory calibrated operating parameters. HMI, advanced diagnostics, remote monitoring capability, integrated exhaust and main bearing thermocouples AFR2 - Simplified step-by-step air/fuel ratio setup from HMI screen, automatic adjustments to changes in operating conditions, simplified fuel control valve provides fast response for changes in ambient and operating conditions, redesigned harness simplifies fault troubleshooting and maintenance IPMD2 - Extended spark plug life up to 4,000 operating hours	Existing control system maintenance or failure	(1) G-962-1185
	L5794GSI	2000 - 2003	ESM2 with AFR2 (for use with shallow sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.			(1) G-962-1187
	L5794GSI	2003 - 2007	ESM2 with AFR2 (for use with shallow sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, new gas regulators, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.			(1) G-962-1186
	L5794GSI	2007 - 2010	ESM2 with AFR2 (for use with deep sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, new gas regulators, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.			(1) G-962-1188
	L5794GSI	2010-2016	ESM2 with AFR2 (for use with deep sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.			(1) G-962-1189

Continued on next page

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L57940	GSI						Return to Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
emPact (fe	or engines s	shipped with	or upgraded	to ESM2) (Click here for more in	formation)		
	L5794GSI	Any model with ESM2	emPact	emPact for 0.15g Nox, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather and ESM2.</b>	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495911B
	L5794GSI	Any model with ESM2	emPact	emPact for 1.0g Nox, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather and ESM2.</b>	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495911A
ESM harn	ess upgrade	e (Click here	for more inf	ormation)			
Stage I	L5794GSI	2003 - 2007	ESM wireways and power distribution box	New wireway harnesses and mounting brackets, new knock sensors, new ignition coils with integrated harness, power distribution box and mounting brackets.	Redesigned harness simplifies fault troubleshooting and maintenance. New	Repair or replacement of harnesses or power distribution box	(1) G-962-1209
Stage III	L5794GSI	2007 - 2015	ESM wireways	New wireway harnesses and mounting brackets, new ignition coils with integrated harness	power distribution box simplifies customer wiring connections and includes circuit fault protection, fault indicators, fault reset functions, enhanced noise suppression, and water protection improvements.	Repair or replacement of harnesses	(1) G-962-1118
Advanced	Breather S	ystem (Click	here for mo	re information)			
	L5794GSI	1998 - 2015	Advanced Breather System for shallow oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-541
	L5794GSI	2007 - 2015	Advanced Breather System for deep sump oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-540
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Continued on next page

Waukesha

L5794	GSI						Return to Index			
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
IPMD2 ar	IPMD2 and spark plug upgrade									
	L5794GSI	Any model with ESM2	IPMD2	New Ignition Power Module with Diagnostics (IPMD2) with optimized voltage profile, one new set of non-precious metal spark plugs	Extended spark plug life up to 4,000 operating hours. Improved combustion to reduce cylinder misfire. Simple "plug and play" installation without any software changes	Spark plug replacement	(1) G-962-1236			
Extender	Extender Series (Click here for more information)									
	L5794GSI	1998 - 2007	Extender Series for shallow oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration	High efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.		Contact Waukesha for BOM			
	L5794GSI	1998 - 2007	Extender Series with deep sump oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan	High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals		Contact Waukesha for BOM			
Gas Reg	ulator									
	L5794GSI	2003 - 2007	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets. For use on engines without ESM.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1146			

Waukesha

L5794GSI

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Air Clean	er (Click he	re for more i	nformation)				
Stage I	L5794GSI	1998 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1153
Stage II	L5794GSI	1998 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1157
Stage III	L5794GSI	1998 - 2015	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 5.5 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 5.5 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-1158
Stage I	L5794GSID	1998 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge draw-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1160
Stage II	L5794GSID	1998 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge draw-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1161
Front Gea	ar Housing						
	L5794GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1282 (1) REM-G-962- 1282
	L5794GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1285 (1) REM-G-962- 1285



#### L7042G

Return to Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 c	conversio	ns (Click he	re for more inform	ation)			
Stage I reUp	L7042G	1985 - 2014	Series Four upgrade	reUp Series Four cylinder heads and rocker arms,, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 536
Stage Ix reUp	L7042G	1985 - 2014	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 536X
Stage Ix	L7042G	1985 - 2014	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-5362
Stage III model conversion	L7042G	1998 - 2014	L7044GSI conversion Series Four upgrade with power cylinders, power uprate	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, advanced breather	<b>Up to 768 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
Stage IV model conversion	L7042G	1985 - 1998	L7044GSI conversion Series Four upgrade with power cylinders, power uprate, with crankshaft and connecting rods	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), turbocharger, intercooler, wastegate, ESM2, advanced breather, crankshaft, connecting rods	<b>Up to 768 more BHP,</b> ESM2 control with knock detection, AFR2 air/fuel ratio control with HMI	Top / Bottom End Overhaul	Contact Waukesha for BOM
emPact (f	or engine	s converted	to S4 GSI with ES	M2) (Click here for more information	ו)		
Stage I	converted L7044GSI	2010 - 2015	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced</b> <b>breather</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495911B
Stage I	converted L7044GSI	2010 - 2015	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495911A

Continued on next page



## L7042G

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
Gas Regi	ulator									
	L7042G	1985 - 2014	Fisher S-200 gas regulator replacement	Fisher S-200 gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete S-200 gas regulators	S-200 gas regulator maintenance	(1) G-962-534			
Front Gea	Front Gear Housing									
	L7042G	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-128 (1) REM-G-962- 1282			
	L7042G	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-128 (1) REM-G-962- 1285			



#### L7042GL

Return to Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
S2 to S4	S2 to S4 model conversions									
reUp	L7042GSI	1988 - 1998	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler, new crankshaft	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5D (1) G-962-S5E (1) A200411E			
reUp	L7042GSI	1998 - 2001	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5E (1) G-962-S5E			
reUp	L7042GSI	2001 - 2007	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5C (1) G-962-S5E			
reUp	L7042GSI	2008 - 2014	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5E			

Waukesha

## L7042GL

Return to

							Index			
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
S2 to S4	S2 to S4 model conversions (continued)									
New	L7042GSI	1988 - 1998	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5D (1) G-962-S5E (1) A200411E			
New	L7042GSI	1998 - 2001	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5D (1) G-962-S5E			
New	L7042GSI	2001 - 2007	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5C (1) G-962-S5E			
New	L7042GSI	2008 - 2014	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5E			

#### L7042GL Return to Index Kit Bill Model ship Category Model Product Description **Customer Benefit** Timing dates of Materials S2 to S5 model conversions Full model conversion to L7044GSI S5 capable of up to (1) G-962-S5 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder (1) REM-Gheads, S5 pistons, rings, and liner (PRL), S5 turbocharger, S5 model Up to 28% more power, better fuel Bottom End 962-S5F wastegate, and intercooler, S5 camshaft utilizing Miller cycle L7042GL 1988 - 1998 conversion utilizing flexibility, up to 20% lower lifecycle costs, reUp combustion, S2 conversion components, intake manifolds Overhaul (1) G-962-S5D reUp and over 30% longer service intervals and fuel system for GSI engines, ESM2 control system, (1) G-962-S5E IPMD2 with 4,000 hour spark plugs, advanced breather (1) A200411E system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler, new crankshaft Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), (1) G-962-S5 S5 turbocharger, wastegate, and intercooler, S5 S5 model Up to 28% more power, better fuel (1) REM-Gcamshaft utilizing Miller cycle combustion, S2 Bottom End reUp L7042GL 1998 - 2001 conversion utilizing flexibility, up to 20% lower lifecycle costs. 962-S5F conversion components, intake manifolds and fuel Overhaul and over 30% longer service intervals (1) G-962-S5D reUp system for GSI engines, ESM2 control system, (1) G-962-S5E IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled (1) G-962-S5 cylinder heads, S5 pistons, rings, and liner (PRL), Up to 28% more power, better fuel (1) REM-G-S5 model S5 turbocharger, wastegate, and intercooler, S5 Bottom End reUp L7042GL 2001 - 2007 conversion utilizing flexibility, up to 20% lower lifecycle costs, 962-S5F camshaft utilizing Miller cycle combustion, S2 Overhaul reUp and over 30% longer service intervals (1) G-962-S5C conversion components, intake manifolds and fuel (1) G-962-S5E system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), (1) G-962-S5 S5 model Up to 28% more power, better fuel S5 turbocharger, wastegate, and intercooler, S5 Bottom End (1) REM-GreUp L7042GL 2008 - 2014 conversion utilizing flexibility, up to 20% lower lifecycle costs, camshaft utilizing Miller cycle combustion, S2 Overhaul 962-S5F reUp and over 30% longer service intervals conversion components, intake manifolds and fuel (1) G-962-S5E system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system

Waukesha

## L7042GL

Return to

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S5	model co	nversions (c	ontinued)				
New	L7042GL	1988 - 1998	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 28% more power, better fuel flexibility, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5E (1) G-962-S5E (1) G-962-S5E (1) A200411E
New	L7042GL	1998 - 2001	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 28% more power, better fuel flexibility, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5E (1) G-962-S5E
New	L7042GL	2001 - 2007	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 28% more power, better fuel flexibility, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5C (1) G-962-S5E
New	L7042GL	2008 - 2014	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, intake manifolds and fuel system for GSI engines, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 28% more power, better fuel flexibility, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5F

Wankesha

L7042	GL						Return to Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
GL Exten	ded Life G	Cylinder Hea	d Rebuild <mark>(Click</mark>	here for more information)			
Stage I	L7042GL	1985-2015	S2GL cylinder head rebuild kit	Rebuild kit with new exhaust valve, rotators, seats and springs.	60% longer time between top end interval	Top End Overhaul	(12) G-962- 1150
ESM (Clic	ck here fo	r more infori	mation)				
Stage I	L7042GL	1985 - 2000	ESM	ESM, Harnesses and mounting brackets, flywheel, flywheel housing, gear housing, cam timing disc.	<b>ESM</b> - Increased uptime with knock detection, fault diagnostics, troubleshooting guide, extended spark	Existing control system maintenance or failure	G-962-1210
Stage II	L7042GL	2000 - 2005	ESM	ESM, Harnesses and mounting brackets	plug life, improved engine performance with factory calibrated operating parameters.	Existing control system maintenance or failure	G-962-1211
emPact (	for engine	s converted	to S4 GSI with I	ESM2) (Click here for more informat	ion)		
Stage I	converted L7044GSI	2010 - 2015	emPact	emPact for 0.15g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced</b> breather.	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495911B
Stage I	converted L7044GSI	2010 - 2015	emPact	emPact for 1.0g NOx, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather.</b>	Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.		(1) 495911A
ESM harr	ness upgra	ade (Click he	ere for more info	prmation)			
Stage I	L7042GL	2005 - 2007	ESM wireways and power distribution box	New wireway harnesses and mounting brackets, new knock sensors, ECU calibration, power distribution box and mounting brackets, and ignition coil harnesses.	Redesigned harness simplifies fault troubleshooting and maintenance. New power distribution box simplifies customer wiring connections and includes circuit fault protection, fault indicators, fault reset functions, enhanced noise suppression, and water protection improvements.	Repair or replacement of harnesses or power distribution box	(1) G-962-1212

Continued on next page

PROPRIETARY INFORMATION - KEEP CONFIDENTIAL. The manufacturer reserves the right to change prices, specifications and design at any time without notice, and without incurring obligation. All prices quoted U.S. Dollars.

Waukesha

L7042GL

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to** 

L/042	GL						Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Stage III	L7042GL	2007 - 2015	ESM wireways	New wireway harnesses and mounting brackets, and ignition coil harnesses.		Repair or replacement of harnesses	(1) G-962-1128
Advance	d Breathe	r System (Cl	ick here for mor	e information)			
	L7042GL	1985 - 2015	Advanced Breather System for shallow oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-541
	L7042GL	2007 - 2015	Advanced Breather System for deep sump oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-540
Extende	r Series (C	lick here for	more information	on)			
	L7042GL	1985 - 2007	Extender Series for shallow oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration	High efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.		Contact Waukesha for BOM
	L7042GL	1985 - 2007	Extender Series with deep sump oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan	High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals		Contact Waukesha for BOM
Gas Reg	ulator						
Continued or	L7042GL	2003 - 2010	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1147

Waukesha

L7042GL

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

Return to

Index			
		Ind	ex

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Air Clear	ner (Click h	nere for more	e information)				
Stage I	L7042GL	1985 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre- filter element.	Air cleaner maintenance	(1) G-962-1153
Stage II	L7042GL	1985 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1157
Stage III	L7042GL	1985 - 2015	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 8 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 8 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-1159
Stage I	L7042GLD	1985 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge draw-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre- filter element.	Air cleaner maintenance	(1) G-962-1160
Stage II	L7042GLD	1985 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge draw-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1161
Front Ge	ar Housing	9					
	L7042GL	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1282 (1) REM-G-962- 1282
	L7042GL	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1285 (1) REM-G-962- 1285

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#### L7042GSI

Return to Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4 o	conversio	ns (Click her	e for more infor	mation)			
Stage I reUp	L7042GSI	1985 - 2014	Series Four upgrade	reUp Series Four cylinder heads and rocker arms,, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 536
Stage Ix reUp	L7042GSI	1985 - 2014	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G- 962-536X
Stage Ix	L7042GSI	1985 - 2014	xCooled upgrade	New xCooled cylinder heads, head components, oil header, CEC ignition harness, ignition coils	Up to 60% lifecycle extension	Top End Overhaul	(1) G-962-536X
Stage II reUp	L7042GSI	1985 - 2014	Series Four upgrade with power cylinders	reUp Series Four cylinder heads and rocker arms, head components, oil header, new piston, rings, liner (PRL), CEC ignition harness, ignition coils	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top / Bottom End Overhaul	(1) REM-G- 962-543
Stage IIx reUp	L7042GSI	1985 - 2014	xCooled upgrade with power cylinders	reUp xCooled cylinder heads and rocker arms, head components, oil header, new piston, rings, liner (PRL), CEC ignition harness, ignition coils	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top / Bottom End Overhaul	(1) REM-G- 962-543X
Stage IIx	L7042GSI	1985 - 2014	xCooled upgrade with power cylinders	New xCooled cylinder heads, head components, oil header, new piston, rings, liner (PRL), CEC ignition harness, ignition coils	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top / Bottom End Overhaul	(1) G-962-543X



#### L7042GSI

Return to Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4	model cor	nversions					
reUp	L7042GSI	1988 - 1998	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler, new crankshaft	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5D (1) A200411E
reUp	L7042GSI	1998 - 2001	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5D
reUp	L7042GSI	2001 - 2007	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F (1) G-962-S5C
reUp	L7042GSI	2008 - 2014	S4 model conversion utilizing reUp	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) REM-G- 962-S5F



L7042GSI

Return to
Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S4	model cor	nversions (co	ontinued)				
New	L7042GSI	1988 - 1998	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5D (1) A200411E
New	L7042GSI	1998 - 2001	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5D
New	L7042GSI	2001 - 2007	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F (1) G-962-S5C
New	L7042GSI	2008 - 2014	S4 model conversion	Full model conversion to L7044GSI capable of up to 1680 BHP @ 1200 RPM. Includes xCooled cylinder heads, S4 pistons, rings, and liner (PRL), S4 turbocharger, wastegate, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 13% more power, up to 60% lifecycle extension on cylinder heads, up to 66% less oil consumption	Bottom End Overhaul	(1) G-962-S4 (1) G-962-S5F

Waukesha

#### L7042GSI

Return to Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S5	model cor	nversions					
reUp	L7042GSI	1988 - 1998	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler, new crankshaft	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) REM-G- 962-S5F (1) G-962-S5D (1) A200411E
reUp	L7042GSI	1998 - 2001	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) REM-G- 962-S5F (1) G-962-S5D
reUp	L7042GSI	2001 - 2007	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) REM-G- 962-S5F (1) G-962-S5C
reUp	L7042GSI	2008 - 2014	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) REM-G- 962-S5F
reUp	L7042GSI	2008 - 2014		to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000	flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer		(1) F



L7042GSI

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

Return to Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S2 to S5	model cor	nversions (co	ontinued)				
New	L7042GSI	1988 - 1998	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5D (1) A200411E
New	L7042GSI	1998 - 2001	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5D
New	L7042GSI	2001 - 2007	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F (1) G-962-S5C
New	L7042GSI	2008 - 2014	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, S2 conversion components, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 28% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5F



L7042GSI

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

Return to Index

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Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
ness upgra	ade (Click he	ere for more info	rmation)			
L7042GSI	2005 - 2007	ESM wireways and power distribution box	New wireway harnesses and mounting brackets, new knock sensors, ECU calibration, power distribution box and mounting brackets, and ignition coil harnesses.	Redesigned harness simplifies fault troubleshooting and maintenance. New power distribution box simplifies customer wiring connections and includes circuit fault protection, fault indicators, fault reset functions, enhanced noise suppression, and water protection improvements.	Repair or replacement of harnesses or power distribution box	(1) G-962-120
L7042GSI	2007 - 2014	ESM wireways	New wireway harnesses, mounting brackets, and ignition coil harnesses.		Repair or replacement of harnesses	(1) G-962-111
ed Breather	r System <mark>(Cl</mark>	ick here for more	e information)			
L7042GSI	1985 - 2014	Advanced Breather System for shallow oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-541
L7042GSI	2007 - 2014	Advanced Breather System for deep sump oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-540
	rness upgra L7042GSI L7042GSI d Breather L7042GSI	Model     dates       rness upgrade (Click he       L7042GSI     2005 - 2007       L7042GSI     2007 - 2014       ed Breather System (Cl       L7042GSI     1985 - 2014	ModeldatesProductImess upgrade (Click here for more infoL7042GSI2005 - 2007ESM wireways and power distribution boxL7042GSI2007 - 2014ESM wirewaysL7042GSI2007 - 2014ESM wirewaysEd Breather System (Click here for more System for shallow oil panAdvanced Breather System for deep	ModeldatesProductDescriptionrness upgrade (Click here for more information)L7042GSI2005 - 2007ESM wireways and power distribution boxNew wireway harnesses and mounting brackets, new knock sensors, ECU calibration, power distribution box and mounting brackets, and ignition coil harnesses.L7042GSI2007 - 2014ESM wirewaysNew wireway harnesses, mounting brackets, and ignition coil harnesses.L7042GSI2007 - 2014ESM wirewaysNew wireway harnesses, mounting brackets, and ignition coil harnesses.ed Breather System (Click here for more information)Advanced Breather System for shallow oil panClosed breather system with advanced filter and automatic regulating valveL7042GSI2007 - 2014Advanced Breather System for deepClosed breather system with advanced filter and automatic regulating valve	Model datesProductDescriptionCustomer Benefitrmess upgrade (Click here for more information)Redesigned harness simplifies fault troubleshooting and maintenance. New wireway harnesses and mounting brackets, new power distribution boxRedesigned harness simplifies fault troubleshooting and maintenance. New power distribution box and mounting brackets, and ignition coil harnesses.Redesigned harness simplifies fault troubleshooting and maintenance. New power distribution box and mounting brackets, and ignition coil harnesses.L7042GS12007 - 2014ESM wirewaysNew wireway harnesses, mounting brackets, and ignition coil harnesses.New power distribution box and mounting brackets, and ignition coil harnesses.New power distribution box simplifies customer wiring connections and includes circuit fault protection, fault indicators, fault reset functions, enhanced noise suppression, and water protection improvements.ed Breather System (Click here for more information)Closed breather system with advanced filter and automatic regulating valveNo adjustment needed for changes in speed/load. Up to 50% extended service intervals.L7042GS12007 - 2014Advanced Breather System for deepClosed breather system with advanced filter and automatic regulating valveNo adjustment needed for changes in speed/load. Up to 50% extended service intervals.	ModeldatesProductDescriptionCustomer BenefitImingmess upgrade (Click here for more information)ImingL7042GSI2005 - 2007ESM wireways and power distribution boxNew wireway harnesses and mounting brackets, new knock sensors, ECU calibration, power distribution box and mounting brackets, and ignition coil harnesses.Redesigned harness simplifies fault troubleshooting and maintenance. New power distribution box simplifies customer wiring connections and includes circuit fault protection, fault indicators, fault reset functions, enhanced noise suppression, and water protection improvements.Repair or replacement of harnesses or power distribution boxL7042GSI2007 - 2014ESM wirewaysNew wireway harnesses, mounting brackets, and ignition coil harnesses.New wireway harnesses, mounting brackets, and ignition coil harnesses.New wireway harnesses, mounting brackets, and ignition coil harnesses.Repair or replacement of harnessesL7042GSI2007 - 2014ESM wirewaysNew wireway harnesses, mounting brackets, and ignition coil harnesses.No adjustment needed for changes in speed/load. Up to 50% extended service intervals.Repair or replacement of harnessesL7042GSI1985 - 2014Advanced Breather System for shallow oil panClosed breather system with advanced filter and automatic regulating valveNo adjustment needed for changes in speed/load. Up to 50% extended in speed/load. Up to 50% extended in speed/load. Up to 50% extended in speed/load. Up to 50% extendedAnytime



L7042GSI

Return to
Index

						Index
Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Series <mark>(C</mark> I	ick here for	more informatio	n)			
L7042GSI	1985 - 2007	Extender Series for shallow oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration	High efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.		Contact Waukesha for BOM
L7042GSI	1985 - 2007	Extender Series with deep sump oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan	High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals		Contact Waukesha for BOM
lator						
L7042GSI	2003 - 2007	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets. For use on engines without ESM.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-114
	Series (CI L7042GSI L7042GSI	Model dates   Geries (Click here for   L7042GSI 1985 - 2007   L7042GSI 1985 - 2007	Model dates Product   Series (Click here for more information   L7042GSI 1985 - 2007 Extender Series for shallow oil pan   L7042GSI 1985 - 2007 Extender Series with deep sump oil pan   L7042GSI 1985 - 2007 Extender Series with deep sump oil pan   L7042GSI 1985 - 2007 Mooney gas regulator	Model dates Product Description   Series (Click here for more information)   L7042GSI 1985 - 2007 Extender Series for shallow oil pan Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration   L7042GSI 1985 - 2007 Extender Series with deep sump oil pan Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan   L7042GSI 1985 - 2007 Extender Series with deep sump oil pan Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan   lator Image: L7042GSI 2003 - 2007 Mooney gas regulator Mooney gas regulator conversion including new gas regulators, piping, and brackets. For use on engines	ModeldatesProductDescriptionCustomer BenefitSeries (Click here for more information)L7042GSI1985 - 2007Extender Series for shallow oil panAdvanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtrationHigh efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.L7042GSI1985 - 2007Extender Series with deep sump oil panAdvanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil panHigh efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine sump oil panL7042GSI1985 - 2007Extender Series with deep sump oil panAdvanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil panHigh efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervalsIatorL7042GSI2003 - 2007Mooney gas regulatorMooney gas regulator conversion including new gas regulators, piping, and brackets. For use on enginesSimplified gas regulator operation and maintenance, removes	Model datesdatesProductDescriptionCustomer BenefitTimingSeries (Click here for more information)L7042GSI1985 - 2007Extender Series for shallow oil panAdvanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtrationHigh efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.L7042GSI1985 - 2007Extender Series with deep sump oil panAdvanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil panHigh efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervalsMooney gas regulator conversion including new gas and maintenance, removesMooney gas 



L7042GSI

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

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Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Air Clear	ner (Click h	ere for mor	e information)				
Stage I	L7042GSI	1985 - 2014	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1153
Stage II	L7042GSI	1985 - 2014	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1157
Stage III	L7042GSI	1985 - 2014	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 5.5 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 5.5 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-1158
Stage I	L7042GSID	1985 - 2014	Improved air cleaner for standard rain shield applications	Bolted hinge draw-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-1160
Stage II	L7042GSID	1985 - 2014	Improved air cleaner for inertia precleaner applications	Bolted hinge draw-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-1161
Front Ge	ar Housing	3					
	L7042GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1282 (1) REM-G-962- 1282
	L7042GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-1285 (1) REM-G-962- 1285



Return to

#### L7044GSI

L/044	631						Index				
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials				
xCooled	Cylinder head	upgrade									
	L7044GSI	1998 - 2017	xCooled cylinder head upgrade	xCooled cylinder head with enhanced cooling	Enhanced cooling reduces cylinder head component temperatures by up to 40%, reducing thermal stresses to improve cylinder head reliability in harsh conditions operating on high BTU fuels	Top end overhaul	(12) NWC- AA205002H				
SPARC	SPARC Cylinder head conversion (Click here for more information)										
	L7044GSI	1998 - 2015	SPARC cylinder head conversion	New spark plug sleeve and spark plug sleeve extension to new SPARC system	Improved spark plug sleeve sealing, better corrosion resistance, new o-ring sealing new design prevents improper sleeve installation	Cylinder head maintenance	(12) G-962-1117				
S4 to S5	model convers	sions									
reUp	L7044GSI	2008 - 2014	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 13% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) REM-G-962- S5				
reUp	L7044GSI	2001 - 2007	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 13% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) REM-G-962- S5 (1) G-962-S5C				



L7044GSI

Return to
Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
S4 to S5	model convers	sions (contin	ued)				
reUp	L7044GSI	1998 - 2001	S5 model conversion utilizing reUp	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) REM-G-962- S5 (1) G-962-S5D
New	L7044GSI	2008 - 2014	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system	Up to 13% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5
New	L7044GSI	2001 - 2007	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing	Up to 13% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5C
New	L7044GSI	1998 - 2001	S5 model conversion	Full model conversion to L7044GSI S5 capable of up to 1900 BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs, advanced breather system, spin on oil filters and gear housing, ESM2 flywheel, front engine mounted oil cooler	Up to 13% more power, better fuel flexibility, up to 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals	Bottom End Overhaul	(1) G-962-S5 (1) G-962-S5D



L7044GSI

Return to

						Index
Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
th AFR2 conve	rsions (Click	chere for more	information)			
L7044GSI	1998 - 2000	ESM2 with AFR2 (for use with shallow sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, flywheel, flywheel housing, gear housing, cam timing disc, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.			(1) G-962-1185
L7044GSI	2000 - 2003	ESM2 with AFR2 (for use with shallow sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.	knock detection, fault diagnostics, troubleshooting guide, improved engine performance with factory calibrated operating parameters. HMI, advanced diagnostics, remote monitoring capability,		(1) G-962-1187
L7044GSI	2003 - 2007	ESM2 with AFR2 (for use with shallow sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, new gas regulators, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.	bearing thermocouples <b>AFR2</b> - Simplified step-by-step air/fuel ratio setup from HMI screen, automatic adjustments to changes in operating conditions, simplified fuel control valve	Existing control system maintenance or failure	(1) G-962-1186
L7044GSI	2007 - 2010	ESM2 with AFR2 (for use with deep sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, new gas regulators, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.	provides fast response for changes in ambient and operating conditions, redesigned harness simplifies fault troubleshooting and maintenance <b>IPMD2</b> - Extended spark plug life up to 4,000 operating hours		(1) G-962-1188
L7044GSI	2010-2016	ESM2 with AFR2 (for use with deep sump oil pan)	ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.			(1) G-962-1189
	AFR2 conve      L7044GSI     L7044GSI     L7044GSI     L7044GSI	Model     dates       ch     AFR2 conversions (Clic)       L7044GSI     1998 - 2000       L7044GSI     2000 - 2003       L7044GSI     2003 - 2007       L7044GSI     2003 - 2007	WodeldatesProductch AFR2 conversions (Click here for moreL7044GSI1998 - 2000ESM2 with AFR2 (for use with shallow sump oil pan)L7044GSI2000 - 2003ESM2 with AFR2 (for use with shallow sump oil pan)L7044GSI2000 - 2003ESM2 with AFR2 (for use with shallow sump oil pan)L7044GSI2003 - 2007ESM2 with AFR2 (for use with shallow sump oil pan)L7044GSI2007 - 2010ESM2 with AFR2 (for use with cheep sump oil pan)L7044GSI2007 - 2010ESM2 with AFR2 (for use with cheep sump oil pan)	ModeldatesProductDescriptionIn AFR2 conversions (Click here for more information)L7044GSI1998 - 2000ESM2 with AFR2 (for use with shallow sump oil pan)ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, flywheel, flywheel housing, gar housing, cam timing disc, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.L7044GSI2000 - 2003ESM2 with AFR2 (for use with shallow sump oil pan)ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.L7044GSI2003 - 2007ESM2 with AFR2 (for use with shallow sump oil pan)ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.L7044GSI2003 - 2007ESM2 with AFR2 (for use with shallow sump oil pan)ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, enginability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.L7044GSI2007 - 2010ESM2 with AFR2 (for use with deep sump oil pan)ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, engine remote manitorial PC, new gas regulators, engine remote monitoring capability uti	Model datesdatesProductDescriptionCustomer Benefitth AFR2 conversions (Click here for more information)L7044GS11998 - 2000ESM2 with AFR2 (for use with shallow sump oil pan)ESM2, Harnesses and mounting brackets, Power distribution box, AFR2, exhaust & main bearing thermocouples, HMI industrial PC, flywheel, flywheel housing, gear housing, cam timing disc, engine remote monitoring capability utilizing Waukesha's Asset Performance Management (APM) system, IPMD2.ESM2 - Increased uptime with knock detection, fault diagnostics, troubleshooting quide, improved engine performance with factory calibrated operating parameters. Performance Management (APM) system, IPMD2.L7044GS12000 - 2003ESM2 with AFR2 	ModeldatesProductDescriptionCustomer BeheintTimingth AFR2 conversions (Click here for more information)L7044GSI1998 - 2000ESM2 with AFR2 (for use with shallow sump oil pan)ESM2 with AFR2 (for use with <b< td=""></b<>



L7044GSI

# Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

Return to Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
ESM har	ness upgrade (	(Click here fo	or more informa	ation)			
Stage I	L7044GSI	2003 - 2007	ESM wireways and power distribution box	New wireway harnesses and mounting brackets, new knock sensors, ECU calibration, new ignition coils with integrated harness, power distribution box and mounting brackets.	Redesigned harness simplifies fault troubleshooting and maintenance. New power distribution box simplifies customer wiring connections and includes circuit fault protection,	Repair or replacement of harnesses or power distribution box	G-962-1209
Stage III	L7044GSI	2007 - 2016	ESM wireways	New wireway harnesses and mounting brackets, new ignition coils with integrated harness.	fault indicators, fault reset functions, enhanced noise suppression, and water protection improvements.	Repair or replacement of harnesses	(1) G-962-1118
Advance	d Breather Sys	stem <mark>(Click h</mark>	ere for more in	formation)			
	L7044GSI	1998 - 2015	Advanced Breather System for shallow oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-541
	L7044GSI	2007 - 2015	Advanced Breather System for deep sump oil pan	Closed breather system with advanced filter and automatic regulating valve	No adjustment needed for changes in speed/load. Up to 50% extended service intervals.	Anytime	(1) G-962-540
emPact (	for engines sh	ipped with o	r upgraded to E	SM2) (Click here for more informat	ion)		
	L7044GSI	Any model with ESM2	emPact	emPact for 0.15g Nox, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced</b> <b>breather and ESM2</b> .	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495911B
	L7044GSI	Any model with ESM2	emPact	emPact for 1.0g Nox, post catalyst O2 sensors with catalyst health monitoring. <b>Requires advanced breather and ESM2.</b>	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495911A

Continued on next page

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#### L7044GSI

Return to Index

							Index			
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials			
IPMD2 a	nd spark plug ι	upgrade								
	L7044GSI	Any model with ESM2	IPMD2	New Ignition Power Module with Diagnostics (IPMD2) with optimized voltage profile, one new set of non-precious metal spark plugs	Extended spark plug life up to 4,000 operating hours. Improved combustion to reduce cylinder misfire. Simple "plug and play" installation without any software changes	Spark plug replacement	(1) G-962-1236			
Extende	Extender Series (Click here for more information)									
	L7044GSI	1998 - 2007	Extender Series for shallow oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration	High efficiency air cleaner with 70% more dirt holding capacity, Microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters.		Contact Waukesha for BOM			
	L7044GSI	1998 - 2007	Extender Series with deep sump oil pan	Advanced air cleaner, spin on oil filters, mounted oil cooler, turbine air starter, Microspin oil filtration, deep sump oil pan	High efficiency air cleaner with 70% more dirt holding capacity, microspin oil filtration system to extend oil change intervals, lubrication free air/gas turbine starters, 2x oil capacity to extend oil change intervals		Contact Waukesha for BOM			
Gas Reg	ulator									
Continued o	L7044GSI	2003 - 2007	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets. For use on engines without ESM.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1146			

Waukesha

L7044GSI

Return to Index

							Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Air Clear	ner (Click here	for more inf	ormation)				
Stage I	L7044GSI	1998 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge blow-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-115
Stage II	L7044GSI	1998 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge blow-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-115
Stage III	L7044GSI	1998 - 2015	Improved air cleaner for remote air inlet applications	Bolted hinge blow-thru air cleaner with inverted 5.5 inch air inlet connection	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. Inverted 5.5 inch air inlet connection allows use of piping for external air inlet	Air cleaner maintenance	(1) G-962-115
Stage I	L7044GSID	1998 - 2015	Improved air cleaner for standard rain shield applications	Bolted hinge draw-thru air cleaner with standard rain shield and foam pre-filter element	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance. New rain shield design allows use of cleanable foam pre-filter element.	Air cleaner maintenance	(1) G-962-116
Stage II	L7044GSID	1998 - 2015	Improved air cleaner for inertia precleaner applications	Bolted hinge draw-thru air cleaner with inertia precleaners	Improved hinge design replaces latches with bolted hinge provides enhanced air filter gasket sealing and simplifies air filter maintenance.	Air cleaner maintenance	(1) G-962-116
Front Ge	ar Housing						
	L7044GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-128 (1) REM-G-962- 1282
	L7044GSI	2006-2022	Front Gear Housing Upgrade	Improved design of front gear housing and cover assembly, includes gear housing, O-rings, gaskets, and installation hardware. Spanner Tool (p/n 474066A) required for installation is sold separately. Applies to all VHP Extender Series engines having engine mounted spin-on oil filters. To be used with extender bottom end gasket kit G-900-1066.	Reduced oil leakage around the front gear housing and cover assembly		(1) G-962-128 (1) REM-G-962- 1285

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P9390GL **Return to** Index Model ship **Kit Bill** Category Model Product Description **Customer Benefit** Timing of Materials dates GL Extended Life Cylinder Head Rebuild (Click here for more information) S2GL cylinder head Rebuild kit with new exhaust valve, rotators, seats 60% longer time between top end Top end 1985-2015 (16) G-962-1150 Stage I P9390GL rebuild kit and springs. interval overhaul **Gas Regulator** Simplified gas regulator operation Mooney gas Mooney gas regulator Mooney gas regulator conversion including new gas P9390GL 2003 - 2010 and maintenance, removes regulator (1) G-962-1149 replacement regulators, piping, and brackets. obsolete Mooney gas regulators maintenance **Crankcase Upgrade** One piece crankcase provides One piece crankcase One piece crankcase, additional oil sump parts for P9390GL 1985 - 2009 rigidity and simplified mounting and Major overhaul G-962-1155 upgrade conversion installation to oil pan

Waukesha

#### P9390GSI

**Return to Index** 

Category	Model	Model ship	Product	Description	Customer Benefit	Timing	Kit Bill
		dates					of Materials
S2 to xCo	oled conv	versions					
Stage lx reUp	P9390GSI	1981 - 2014	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, ignition coils, oil pump, CEC ignition harness <b>(for engines with non-CSA ignition system)</b>	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 1243X
Stage Ix reUp	P9390GSI	1981 - 2014	xCooled upgrade	reUp xCooled cylinder heads and rocker arms, head components, oil header, ignition coils, oil pump, CEC ignition coil jumper harnesses (for engines with CSA ignition system)	Up to 60% lifecycle extension	Top End Overhaul	(1) REM-G-962- 1242X
Stage IIx reUp	P9390GSI	1981 - 2014	xCooled upgrade with power cylinders	reUp xCooled cylinder heads and rocker arms, head components, oil header, new piston, ring, liner (PRL), ignition coils, oil pump, CEC ignition harness (for engines with non-CSA ignition system)	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top/Bottom End Overhaul	(1) REM-G-962- 1240X
Stage IIx reUp	P9390GSI	1981 - 2014	xCooled upgrade with power cylinders	reUp xCooled cylinder heads and rocker arms, head components, oil header, new piston, ring, liner (PRL), ignition coils, oil pump, CEC ignition coil jumper harnesses <b>(for engines with CSA</b> <b>ignition system)</b>	Up to 60% lifecycle extension, 66% reduction in oil consumption	Top/Bottom End Overhaul	(1) REM-G-962- 1239X
Gas Regu	lator						
Ū	P9390GSI	2003 - 2010	Mooney gas regulator replacement	Mooney gas regulator conversion including new gas regulators, piping, and brackets.	Simplified gas regulator operation and maintenance, removes obsolete Mooney gas regulators	Mooney gas regulator maintenance	(1) G-962-1148
Crankcas	e Upgrade	)					
	P9390GSI	1985 - 2009	One piece crankcase upgrade	One piece crankcase, additional oil sump parts for conversion	One piece crankcase provides rigidity and simplified mounting and installation to oil pan	Major overhaul	G-962-1155



## P9390GSI

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials		
Turbocharger Upgrade									
	P9390GSI	1985 - 2016	Turbocharger upgrade	New turbocharger, mounting brackets, water and oil tubing, air and exhaust connections. For use with low speed applications 700 – 1000 RPM	New turbocharger replaces obsolete turbocharger	Turbocharger maintenance	(1) G-962-1162		
	P9390GSI	1985 - 2016	Turbocharger upgrade	New turbocharger, mounting brackets, water and oil tubing, air and exhaust connections. For use with high speed applications 1001 – 1200 RPM	New turbocharger replaces obsolete turbocharger	Turbocharger maintenance	(1) G-962-1280		

Waukesha

#### P9394GSI

Return to Index

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Series Fo	our to Serie	es Five conv	ersions				
New	P9394GSI	2013-2019	S5 Model Conversion	Full model conversion to P9394GSI S5 with ESM2 capable of up to 2500BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs	Up to 250BHP more power, improved fuel flexibility, ESM2 with a full-color touch screen display panel, up to 4,000 hour longer oil change life and enhanced cylinder head design	Top End/ Bottom End Overhaul	(1) G-962-1255A (16) G-932-300 (16) DA205002H
reUp	P9394GSI	2013-2019	S5 Model Conversion utilizing reUp	Full model conversion to P9394GSI S5 with ESM2 capable of up to 2500BHP @ 1200 RPM. Includes S5 xCooled cylinder heads, S5 pistons, rings, and liner (PRL), S5 turbocharger, wastegate, and intercooler, S5 camshaft utilizing Miller cycle combustion, ESM2 control system, IPMD2 with 4,000 hour spark plugs	Up to 250BHP more power, improved fuel flexibility, ESM2 with a full-color touch screen display panel, up to 4,000 hour longer oil change life and enhanced cylinder head design	Top End/ Bottom End Overhaul	(1) G-962-1255A (16) G-932-300 (16) NWC- DA205002H
Advance	d Breather	<sup>-</sup> System					
New	P9394GSI	2013-2014	Advanced Breather System	Closed breather system with centrifugal oil separation and automatic regulating valve	No adjustment needed for changes in speed/load. No maintenance until major overhaul	Anytime	(1) G-962-1255C
emPact (	for engine	s shipped wi	th or upgraded to	ESM2) (Click here for more information	ation)		
	P9394GSI	Any model with ESM2	emPact	emPact for 0.15g Nox, post catalyst O2 sensors with catalyst health monitoring. <b>Requires</b> advanced breather and ESM2.	emPact - Factory designed and calibrated system reduces maintenance time for system adjustments to maintain compliance. Post catalyst O2 sensor validates adjustments needed to maintain emissions compliance. Catalyst health monitoring system provides differential pressure and temperature to indicate catalyst maintenance intervals.	Emissions regulations, repair	(1) 495923B
					emPact - Factory designed and		

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**F18GL** 

#### Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

#### Model ship Kit Bill Model Product Description **Customer Benefit** Timing Category dates of Materials GL Extended Life Cylinder Head Upgrade (Click here for more information) Up to 50% longer intervals between (6) G-962-558 Stage I New cylinder head components including top end overhauls, reduced valve (current version F18GL cylinder head Top end F18GL 1987 – 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear pinned intake (pinned upgrade Overhaul and valve retainers provided by optimized material and valve, see Service intake valve) Bulletin 7-2953) dimensions Up to 50% longer intervals between (6) G-962-559 Stage I New cylinder head components including top end overhauls, reduced valve (non-pinned F18GL cylinder head Top end F18GL 1987 - 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear intake valve, see (non-pinned Overhaul upgrade and valve retainers provided by optimized material and Service Bulletin 7intake valve) 2953) dimensions GL to GSI Conversion (Click here for more information) Stage I Cylinder head assembly, turbocharger, wastegate, (1) G-962-542 F18 GL to GSI Reduces NOx emissions and Top / Bottom F18GL (6) REM-1987-Current cylinder sleeves, damper, jacket water pump End Overhaul model conversion increases fuel range tolerances repair kit, camshaft bearings and main bearings ÀG300302C conversion **High Capacity Oil Pan Extension** 1987 -High Cap Oil Pan Extends oil change intervals by Top / Bottom F18GL (1) G-962-1083 New oil pan doubles oil capacity Stage I Apr 2003 Extender Kit doubling the capacity of the oil pan End Overhaul

Waukesha

F18G	SI						Return to Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
High Ca	pacity Oil	Pan Extension	on				
Stage I	F18GSI	1987 – Apr 2003	High Cap Oil Pan Extender Kit	New oil pan doubles oil capacity	Extends oil change intervals by doubling the capacity of the oil pan	Top / Bottom End Overhaul	(1) G-962-1083

H24GL

#### Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

#### Model ship Kit Bill Model Product Description **Customer Benefit** Timing Category dates of Materials GL Extended Life Cylinder Head Upgrade (Click here for more information) Up to 50% longer intervals between (8) G-962-558 Stage I top end overhauls, reduced valve (current version New cylinder head components including H24GL cylinder head Top end H24GL 1987 – 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear pinned intake (pinned upgrade Overhaul and valve retainers provided by optimized material and valve, see Service intake valve) Bulletin 7-2953) dimensions Up to 50% longer intervals between (8) G-962-559 Stage I New cylinder head components including top end overhauls, reduced valve (non-pinned H24GL cylinder head Top end H24GL 1987 - 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear intake valve, see (non-pinned Overhaul upgrade and valve retainers provided by optimized material and Service Bulletin 7intake valve) 2953) dimensions GL to GSI Conversion (Click here for more information) Stage I (1) G-962-553 Cylinder head assembly, turbocharger, wastegate, H24 GL to GSI Reduces NOx emissions and Top / Bottom (8) REM-H24GL 1987-Current cylinder sleeves, damper, jacket water pump model End Overhaul conversion increases fuel range tolerances repair kit, camshaft bearings and main bearings AG300302C conversion **High Capacity Oil Pan Extension** 1987 -High Cap Oil Pan Extends oil change intervals by Top / Bottom H24GL (1) G-962-1082 Stage I New oil pan doubles oil capacity doubling the capacity of the oil pan End Overhaul Apr 2003 Extender Kit

Waukesha

H24G	SI						Return to Index
Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
High Ca	pacity Oil	Pan Extensio	on				
Stage I	H24GSI	1987 – Apr 2003	High Cap Oil Pan Extender Kit	New oil pan doubles oil capacity	Extends oil change intervals by doubling the capacity of the oil pan	Top / Bottom End Overhaul	(1) G-962-1082

L36GL

#### Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

#### Model ship Kit Bill Category Model Product Description **Customer Benefit** Timing of Materials dates GL Extended Life Cylinder Head Upgrade (Click here for more information) Up to 50% longer intervals between (12) G-962-558 Stage I New cylinder head components including top end overhauls, reduced valve (current version Top end L36GL cylinder head L36GL 1987 – 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear pinned intake (pinned upgrade Overhaul and valve retainers provided by optimized material and valve, see Service intake valve) Bulletin 7-2953) dimensions Up to 50% longer intervals between (12) G-962-559 Stage I New cylinder head components including top end overhauls, reduced valve (non-pinned L36GL cylinder head Top end L36GL 1987 - 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear intake valve, see (non-pinned Overhaul upgrade and valve retainers provided by optimized material and Service Bulletin 7intake valve) 2953) dimensions Spin-on Oil Filter Upgrade Simple spin-on oil filter change Includes new housing assembly, spin-on filters, eliminates messy disassembly of Oil Change Stage I L36GL 1987 - 2016 Spin-on Filters (1) G-962-487 gaskets and mounting hardware internal oil filters and reduces oil Interval change time. **High Capacity Oil Pan Extension** Converts the standard oil pan to a high capacity (1) G-962-1087 High Cap Oil Pan Top / Bottom 1987 -Extends oil change intervals by L36GL pan by raising the dipstick location and oil level Stage I [Requires pre-Apr 2003 Extender Kit doubling the capacity of the oil pan End Overhaul controller lube pump]

Waukesha

# L36GSI

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Spin-on	Oil Filter l	Jpgrade					
Stage I	L36GSI	1987 - 2016	Spin-on Filters	Includes new housing assembly, spin-on filters, gaskets and mounting hardware	Simple spin-on oil filter change eliminates messy disassembly of internal oil filters and reduces oil change time.	Oil Change Interval	(1) G-962-487
High Cap	oacity Oil	Pan Extensio	n				
Stage I	L36GSI	1987 – Apr 2003	High Cap Oil Pan Extender Kit	Converts the standard oil pan to a high capacity pan by raising the dipstick location and oil level controller	Extends oil change intervals by doubling the capacity of the oil pan	Top / Bottom End Overhaul	(1) G-962-1087 [Requires pre- lube pump]

**P48GL** 

#### Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

#### Model ship Kit Bill Category Model Product Description **Customer Benefit** Timing of Materials dates GL Extended Life Cylinder Head Upgrade (Click here for more information) Up to 50% longer intervals between (16) G-962-558 Stage I New cylinder head components including top end overhauls, reduced valve (current version Top end P48GL cylinder head P48GL 1987 – 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear pinned intake (pinned upgrade Overhaul and valve retainers provided by optimized material and valve, see Service intake valve) Bulletin 7-2953) dimensions Up to 50% longer intervals between (16) G-962-559 Stage I New cylinder head components including top end overhauls, reduced valve (non-pinned P48GL cylinder head Top end P48GL 1987 - 2016 intake/exhaust valve rotators, valves, valve seats recession rates, reduced wear intake valve, see (non-pinned Overhaul upgrade and valve retainers provided by optimized material and Service Bulletin 7intake valve) 2953) dimensions Spin-on Oil Filter Upgrade Simple spin-on oil filter change Includes new housing assembly, spin-on filters, eliminates messy disassembly of Oil Change Stage I P48GL 1987 - 2016 Spin-on Filters (1) G-962-487 gaskets and mounting hardware internal oil filters and reduces oil Interval change time. **High Capacity Oil Pan Extension** Converts the standard oil pan to a high capacity (1) G-962-1087 High Cap Oil Pan Top / Bottom 1987 -Extends oil change intervals by P48GL pan by raising the dipstick location and oil level Stage I [Requires pre-Apr 2003 Extender Kit doubling the capacity of the oil pan End Overhaul controller lube pump]

Waukesha

# P48GSI

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
Spin-on	Oil Filter l	Jpgrade					
Stage I	P48GSI	1987 - 2016	Spin-on Filters	Includes new housing assembly, spin-on filters, gaskets and mounting hardware	Simple spin-on oil filter change eliminates messy disassembly of internal oil filters and reduces oil change time.	Oil Change Interval	(1) G-962-487
High Cap	oacity Oil	Pan Extensio	n				
Stage I	P48GSI	1987 – Apr 2003	High Cap Oil Pan Extender Kit	Converts the standard oil pan to a high capacity pan by raising the dipstick location and oil level controller	Extends oil change intervals by doubling the capacity of the oil pan	Top / Bottom End Overhaul	(1) G-962-1087 [Requires pre- lube pump]



12V-AT27GL

## Waukesha Gas Engines Upgrades Product Catalog 11/28/2022

**Return to Index** 

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
12V-AT2	7GL to 27	5GL+ with E	SM2 Upgrade (HCR	3)			
New	12V- AT27GL	1994-2011	12VAT27GL to 275GL+ with ESM2 Upgrade Kit - HCR 9:1	Upgrade to 275GL+ with ESM2 capable of up to 3750 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power distribution box (PDB), Cylinder head prechambers, turbo connections, intercooler, exhaust manifolds, air inlet connections, thermostat housing, gas regulator, carburetor, fuel manifold, flywheel, governor, and dual starters. Calibrations: 3130, 3375, 3625, and 3750 BHP	Up to 600 BHP more power - Additional BHP is Crankshaft dependent and not in Kit , ESM2 Controls with a full-color touch screen display panel, High Compression Ratio (HCR) Turbocharger, Lower Prechamber volume, Fuel Derate begins at 70 WKI, Low BTU Fuels from 600-900 range, Efficient fuel consumption, 0.5 NOx (g/BHP-hr.), Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e-Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1266
12V-AT2	7GL to 27	5GL+ with ES	SM2 Upgrade (LCR	)			
New	12V- AT27GL	1994-2011	12VAT27GL to 275GL+ with ESM2 Upgrade Kit - LCR Fuel Flex 8:1	Upgrade to 275GL+ with ESM2 and low compression ratio 8:1 piston and turbocharger capable of up to 3750 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power distribution box (PDB), Cylinder head prechambers, turbo connections, intercooler, exhaust manifolds, air inlet connections, thermostat housing, gas regulator, carburetor, fuel manifold, flywheel, governor, and dual starters. Calibrations: 3130, 3375, 3625, and 3750 BHP	Up to 600 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, Fuel Flex Low Compression Ratio (LCR): 8:1 LCR Pistons and turbocharger, Fuel Derate begins at 50 WKI, Lower derate than HCR option, Lower emissions 0.3 NOX (g/BHP-hr.), Lower Prechamber volume, Wide BTU Fuels from 900-2300 range, Efficient fuel consumption, Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e-Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1269
AT27GL	Diesel Cr	ankcase Plate	e Cover Kit				
New	12V- AT27GL	1994-2008	Diesel Crankcase Plate Cover	Add on Kit to AT27GL Diesel Crankcase Engines for 275GL+ ESM2 Conversions. Plates cover holes for any AT27GL engines that have Diesel crankcase. Not all engines are applicable.	Allows for ESM2 conversion for AT27GL engines with Diesel crankcases.	Top / Bottom End Overhaul	CMU-495896T

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Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
16V-AT2	7GL to 27	5GL+ with E	SM2 Upgrade (HCR	)			
New	16V- AT27GL	1997-2009	16VAT27GL to 275GL+ with ESM2 Upgrade Kit - 9:1 HCR	Upgrade to 275GL+ with ESM2 and High Compression Ratio Turbocharger capable of up to 5000 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power distribution box (PDB), Cylinder head prechambers, turbo connections, intercooler, exhaust manifolds, air inlet connections, thermostat housing, gas regulator, carburetor, fuel manifold, flywheel, governor, and dual starters. Calibrations: 4100, 4500, 4825, and 5000 BHP	Up to 900 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, High Compression Ratio (HCR) Turbocharger, Lower Prechamber volume, Fuel Derate begins at 60 WKI, Low BTU Fuels from 600-900 range, Efficient fuel consumption, 0.5 NOX (g/BHP-hr.), Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e-Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1271
16V-AT2	7GL to 27	5GL+ with E	SM2 Upgrade (LCR				
New	16V- AT27GL	1997-2009	16VAT27GL to 275GL+ with ESM2 Upgrade - LCR Fuel Flex 8:1	Upgrade to 275GL+ with ESM2 and Low Compression Ratio 8:1 pistons and turbocharger capable of up to 5000 BHP. Includes IPMD2 , Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power distribution box (PDB), Cylinder head prechambers, turbo connections, intercooler, exhaust manifolds, air inlet connections, thermostat housing, gas regulator, carburetor, fuel manifold, flywheel, governor, and dual starters. Calibrations: 4100, 4500, 4825, and 5000 BHP	Up to 900 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, Fuel Flex Low Compression Ratio (LCR): 8:1 LCR Pistons and turbocharger, Fuel Derate begins at 50 WKI, Lower derate than HCR option, Lower emissions 0.3 NOx (g/BHP-hr.), Lower Prechamber volume, Wide BTU Fuels from 900-2300 range, Efficient fuel consumption, Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e-Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1274
AT27GL	Diesel Cr	ankcase Plat	e Cover Kit				
New	16V- AT27GL	1994-2008	Diesel Crankcase Plate Cover	Add on Kit to AT27GL Diesel Crankcase Engines for 275GL+ ESM2 Conversions. Plates cover holes for any AT27GL engines that have Diesel crankcase. Not all engines are applicable.	Allows for ESM2 conversion for AT27GL engines with Diesel crankcases.	Top / Bottom End Overhaul	CMU-495897T

Waukesha

12V275GL

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
12V2750	GL to 275G	L+ with ESM	I2 Upgrade (HCR)				
New	12V275GL	2010-2012	12V275GL to 275GL+ with ESM2 Upgrade Kit - HCR 9:1	Upgrade to 275GL+ with ESM2 and High Compression Ratio Turbocharger capable of up to 3750 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB). Calibrations: 3130, 3375, 3625, and 3750 BHP	Up to 375 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, High Compression Ratio (HCR) Turbocharger, Fuel Derate begins at 70 WKI, Low BTU Fuels from 600- 900 range, Efficient fuel consumption, 0.5 NOx (g/BHP-hr.), Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e- Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1267
12V2750	GL to 275G	L+ with ESM	I2 Upgrade (LCR)				
New	12V275GL	2010-2012	12V275GL to 275GL+ with ESM2 Upgrade Kit - LCR Fuel Flex 8:1	Upgrade to 275GL+ with ESM2 and Low Compression Ratio 8:1 Pistons and Turbocharger capable of up to 3750 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB). Calibrations: 3130, 3375, 3625, and 3750 BHP	Up to 375 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, Fuel Flex Low Compression Ratio (LCR): 8:1 LCR Pistons and turbocharger, Fuel Derate begins at 50 WKI, Lower derate than HCR option, Lower derate than HCR option, Lower emissions 0.3 NOx (g/BHP-hr.), Wide BTU Fuels from 900-2300 range, Efficient fuel consumption, Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e-Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1270

Waukesha

16V275GL

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
16V2750	GL to 275G	L+ with ESM	2 Upgrade (HCR)				
New	16V275GL	2009-2011	16V275GL to 275GL+ with ESM2 Upgrade Kit - HCR 9:1	Upgrade to 275GL+ with ESM2 and High Compression Ratio turbocharger capable of up to 5000 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB). Calibrations: 4100, 4500, 4825, and 5000 BHP	Up to 500 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, High Compression Ratio (HCR) Turbocharger, Fuel Derate begins at 60 WKI, Low BTU Fuels from 600- 900 range, Efficient fuel consumption, 0.5 NOx (g/BHP-hr.), Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e- Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1272
16V2750	GL to 275G	L+ with ESM	2 Upgrade (LCR)				
New	16V275GL	2009-2011	16V275GL to 275GL+ with ESM2 Upgrade Kit - LCR Fuel Flex 8:1	Upgrade to 275GL+ with ESM2 and Low Compression Ratio 8:1 Pistons and Turbocharger capable of up to 5000 BHP. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB). Calibrations: 4100, 4500, 4825, and 5000 BHP	Up to 500 BHP more power- Additional BHP is Crankshaft dependent and not in Kit, ESM2 Controls with a full-color touch screen display panel, Fuel Flex Low Compression Ratio (LCR): 8:1 LCR Pistons and turbocharger, Fuel Derate begins at 50 WKI, Lower derate than HCR option, Lower emissions 0.3 NOx (g/BHP-hr.), Wide BTU Fuels from 900-2300 range, Efficient fuel consumption, Reliability, Uptime, No more wastegate learning, improved startup - automatic lean out after starting, e-Stop to minimize fuel in the engine at shutdown, NOx emissions read directly from exhaust stream; no calculations required, and reduction in unplanned shutdowns	Top / Bottom End Overhaul	(1) G-962-1275



12V275GL+

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
12V275G	L+ to 2750	SL+ with ES	M2 Upgrade (HCR)				
New	12V275GL+	2013-2020	12V275GL+ to 275GL+ with ESM2 Upgrade Kit - HCR 9:1	Upgrade to 275GL+ with ESM2. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB), Wastegates. Calibrations: 3130, 3375, 3625, and 3750 BHP	ESM2 Controls with a full-color touch screen display panel, Fuel Derate begins at 70 WKI, Low BTU Fuels from 600-900 range, Efficient fuel consumption, 0.5 NOx (g/BHP-hr.), Reliability, Uptime, Transient Capability, Starting/Shutdown: Full adjustability, automatic lean out after starting	Top/Bottom End Overhaul	(1) G-962-1261
12V275G	L+ to 2750	SL+ with ES	M2 Upgrade (LCR)				
New	12V275GL+	2013-2020	12V275GL+ to 275GL+ with ESM2 Upgrade Kit - LCR Fuel Flex 8:1	Upgrade to 275GL+ with ESM2 and Low Compression Ratio 8:1 Pistons and Turbocharger. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB), Wastegates. Calibrations: 3130, 3375, 3625, and 3750 BHP	ESM2 Controls with a full-color touch screen display panel, Fuel Flex Low Compression Ratio (LCR): 8:1 LCR Pistons and Turbocharger, Fuel Derate begins at 50 WKI, Lower derate than HCR option, Lower emissions 0.3 NOx (g/BHP-hr.), Wide BTU Fuels from 900-2300 range, Efficient fuel consumption, Reliability, Uptime, Transient Capability, Starting/Shutdown: Full adjustability, automatic lean out after starting	Top / Bottom End Overhaul	(1) G-962-1268



16V275GL+

Category	Model	Model ship dates	Product	Description	Customer Benefit	Timing	Kit Bill of Materials
16V275G	L+ to 2750	GL+ with ESI	M2 Upgrade (HCR)				
New	16V275GL+	2013-2020	16V275GL+ to 275GL+ with ESM2 Upgrade Kit - HCR 9:1	Upgrade to 275GL+ with ESM2 . Includes IPMD2 , Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB), Wastegates. Calibrations: 4100, 4500, 4825, and 5000 BHP	ESM2 Controls with a full-color touch screen display panel, Fuel Derate begins at 60 WKI, Low BTU Fuels from 600-900 range, Efficient fuel consumption, 0.5 NOx (g/BHP-hr.), Reliability, Uptime, Transient Capability, Starting/Shutdown: Full adjustability, automatic lean out after starting	Top/Bottom End Overhaul	(1) G-962-1262
16V275G	L+ to 2750	GL+ with ESI	M2 Upgrade (LCR)				
New	16V275GL+	2013-2020	16V275GL+ to 275GL+ with ESM2 Upgrade Kit - LCR Fuel Flex 8:1	Upgrade to 275GL+ with ESM2 and Low Compression Ratio 8:1 Pistons and Turbocharger. Includes IPMD2, Smart Thermocouple Modules (STU), New high temperature harnessing for actuators, sensors near exhaust, Air handling control actuators, Power Distribution Box (PDB), Wastegates. Calibrations: 4100, 4500, 4825, and 5000 BHP	ESM2 Controls with a full-color touch screen display panel, Fuel Flex Low Compression Ratio (LCR): 8:1 LCR Pistons and Turbocharger, Fuel Derate begins at 50 WKI, Lower derate than HCR option, Lower emissions 0.3 NOx (g/BHP-hr.), Wide BTU Fuels from 900-2300 range, Efficient fuel consumption, Reliability, Uptime, Transient Capability, Starting/Shutdown: Full adjustability, automatic lean out after starting	Top / Bottom End Overhaul	(1) G-962-1273