

OPTION LISTING (Last updated 1 November 2007)

This listing of options is based on information provided to the Australia LPG Association by LPG equipment suppliers and is *subject to the disclaimers following the listings*. The list contains information on automotive LPG vehicle retrofit systems that have undertaken 3rd party testing of emissions at an accredited facility and have gained a pass result in accordance with the Appendix D requirements of the joint Australian and New Zealand Standard AS/NZS 1425:2007 that applies to vehicles manufactured from December 2003 onwards.

Please Note: This is not an exhaustive listing of all options as it includes only vehicles from December 2003 onward. If your vehicle is built before December 2003 or if you don't see an option listed here please contact the option suppliers directly (their details are in the listing) to find out what options are available.

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OPTION LISTING – FORD



OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Courier Cab-Chassis/Tray, Crew Cab, Super Cab, Ute (4x2 and 4x4)	IL4 2.6 L Engine (4 Cyl Auto and Man.)	2000-COURIER-A (MID MOUNT) 2000-COURIER-B (REAR MOUNT) APPROVED FITMENT ONLY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	VIPAC VIC
Courier Cab-Chassis/Tray, Crew Cab, Super Cab, Ute (4x2 and 4x4)	V6 4.0L Engine	PSVI EG6 COURIER APPROVED FITMENT ONLY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
Econovan SWB Econovan MWB Econovan LWB	IL4 2.0L Engine	2000-ECON-4.0 2000-ECON-4.4 2000-ECON-4.7 APPROVED FITMENT ONLY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	VIPAC VIC
Falcon (BA) Sedan Falcon (BA) Ute Falcon (BA) Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	Ford BA 6 Cylinder Falcon 2002 Euro2	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
Falcon (BA) Sedan Falcon (BA) Ute Falcon (BA) Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	FORD-BA-S01 FORD-BA-C01 FORD-BA-W01	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Falcon (BA) Sedan, Ute and Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	U/B INJ KIT BA U/B BA OMEGAS	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Falcon (BA) Sedan, Ute, Wagon and Territory 2002 on	I6 4.0L (Euro 2) Barra 182 Engine (6 Cyl Auto)	Falcon and Territory 4.0L KME Injection IM240 KIT Euro 2 U/Bonnet	ELKO Auto Gas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Falcon (BA) Sedan, Ute and Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	KFFBAAVIM240	Impco Fuel Systems (02) 9699-7150	IM240	RTA NSW
Falcon (BA) Sedan, Ute and Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	BA SEQUENT FRONT	Impco Fuel Systems (02) 9699-7150	IM240	RTA NSW
Falcon (BA) Sedan Falcon (BA) Ute Falcon (BA) Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	K-FORFALBA	MED Aust P/L (02) 9726-3000 www.medauto.com.au	IM240	RTA NSW
Falcon (BA) Ute	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	PSVI EG6 BA UTE APPROVED FITMENT ONLY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	VIPAC VIC
Falcon (BA) Sedan, tray, Ute and Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	VSI6 BA-BF SED VSI6 BA-BF WAG VSI6 BA-BF UTE	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
Falcon (BA) Sedan Falcon (BA) Ute Falcon (BA) Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	FORD-BA-SCKIT FORD-BA-UCKIT FORD-BA-WCKIT	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Falcon (BA) Sedan, Ute and Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	KUINJBA6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Falcon (BA) Sedan, Ute and Wagon	I6 4.0L (Euro2) Barra 182 Engine (6 Cyl Auto)	UBKBA (All)	Victorian Autogas Supplies (03) 9775-1900 www.vags.net.au	IM240	RTA NSW

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OPTION LISTING – FORD

OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Falcon (BF) Sedan, Ute and Wagon	I6 4.0L (Euro3) Barra 190kW Engine (6 Cyl Auto)	Ford BF 6 cylinder Falcon 2007 Euro3 kit	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
Falcon (BF) Sedan, Ute and Wagon	I6 4.0L (Euro3) Barra 190kW Engine (6 Cyl Auto)	U/B INJ KIT BA U/B BA OMEGAS	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Falcon (BF) Sedan, tray, Ute and Wagon	I6 4.0L (Euro3) Barra 190kW Engine (6 Cyl Auto)	VSI6 BA-BF SED VSI6 BA-BF WAG VSI6 BA-BF UTE	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
Falcon (BF) Sedan, Ute and Wagon	I6 4.0L (Euro3) Barra 190kW Engine (6 Cyl Auto)	KUINJBA6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Territory Wagon (2WD and 4WD)	I6 4.0L (Euro2) Barra 182kW Engine (6 Cyl Auto)	Ford Territory 2005 6 cylinder Euro2 kit (under bonnet)	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
Territory Wagon (2WD and 4WD)	I6 4.0L (Euro3) Barra 190kW Engine (6 Cyl Auto)	Ford Territory 2007 6 cylinder Euro3 kit	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
Territory Wagon (2WD and 4WD)	I6 4.0L (Euro2) Barra 182kW Engine (6 Cyl Auto)	FORD-TERR-S01	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Territory Wagon (2WD and 4WD)	I6 4.0L (Euro2) Barra 182kW Engine (6 Cyl Auto)	PSVI EG6 BA TERRI APPROVED FITMENT ONLY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
Territory Wagon (2WD and 4WD)	I6 4.0L (Euro2) Barra 182kW Engine (6 Cyl Auto) & I64.0L (Euro3) Barra 190kW Engine (6 Cyl Auto)	VSI6 BA-BF TERRITORY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
Territory Wagon (2WD and 4WD)	I6 4.0L (Euro2) Barra 182 kW Engine (6 Cyl Auto)	KUINJBA6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW

OPTION LISTING - HOLDEN

OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Commodore VY & WK Series II Sedan, Ute, Wagon	ECOTEC (3.8L V6) Euro2 (up to Dec 2005)	ROMUBVSIVY (UNDER BONNET)	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
Commodore VY Series II Sedan and Wagon (Executive, Berlina), Ute (Base, S-Pack) and Calais	ECOTEC (3.8L V6) Engine	GMVY03AB01-FRONT GMHVX00RS01-REAR DEALER ECU UPGRADE	Impco Technologies P/L (03) 9584-5644	ADR 79/00	Holden Ltd
Commodore VY Series II Cab-chassis	ECOTEC (3.8L V6) Engine	GMVY03AB01-FRONT GMHVY03CCRK-REAR DEALER ECU UPGRADE	Impco Technologies P/L (03) 9584-5644	ADR 79/00	Holden Ltd
Commodore VY Series II Sedan, Ute and Wagon	ECOTEC (3.8L V6) Engine	MGA002 (All)	Mega-Gas-Australia P/L (08) 8369-1550 www.megagas.com.au	IM240	VIPAC VIC
Commodore VY Series II Sedan, Ute and Wagon	ECOTEC (3.8L V6) Euro2 (up to Dec 2005)	KUMHVY6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Commodore VZ Sedan Wagon Ute Crewman	ALLOYTEC (3.6L V6) Euro2 (up to Dec 2005)	U/B-VZ-V6-OME LR-OMEGAS-6CYL	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Commodore VZ Sedan Wagon Ute Crewman	Gen III (5.7L V8) Engine	COM-VZ-V8-S01 COM-VZ-V8-W01 COM-VZ-V8-C01 COM-VZ-V8-C02	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Commodore VZ & WL Sedan, Wagon, Ute	ALLOYTEC (3.6L V6) Euro2 (up to Dec 2005)	ROMUBVSIVZ (UNDER BONNET)	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
Commodore VZ & WL Sedan, Wagon, Ute Crewman	ALLOYTEC (3.6L V6) Euro2 (up to Dec 2005)	VIKHOL V2 V6 Under bonnet	LPG Conversions (03) 9330-3555 www.advancedfuels.com.au	IM240	RTA NSW
Commodore VZ & WL Sedan, Wagon, Ute Crewman	Gen III (5.7L V8) Euro2 (up to Dec 2005)	VIKHOL V2 V8 Under bonnet	LPG Conversions (03) 9330-3555 www.advancedfuels.com.au	IM240	RTA NSW
Commodore VZ Sedan Sedan, Wagon, Ute, Crewman	ALLOYTEC (3.6L V6) Euro2 (up to Dec 2005)	KUIHVZV6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Commodore VZ & WL Sedan Wagon Ute Crewman	ALLOYTEC (3.6L V6) Euro2 (up to Dec 2005)	VS16 VZ SEDAN VS16 VZ UTE B TORR VS16 VZ UTE A BARREL VS16 VZ UTE C C/CHASSIS	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
Commodore VZ & VE WM & WL Sedan, Wagon, Ute	ALLOYTEC (3.6L V6) Euro3 Engine (2006 on)	HOLDEN VE 6CYL COMMODORE	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW

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OPTION LISTING - HOLDEN



OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Rodeo (RA) Cab-Chassis/Tray, Crew Cab, Space Cab and Ute (4x2 and 4x4)	6VE1 (3.5L V6) Engine	RODEO-C10 (All)	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Rodeo (RA) Cab-Chassis/Tray, Crew Cab, Space Cab and Ute (4x2 and 4x4)	6VE1 (3.5L V6) Engine	GMHR05AB01	Impco Technologies P/L (03) 9584-5644	ADR 79/00	TMCA

OPTION LISTING - MITSUBISHI



OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
380	6G75 (V6 3.8L) Engine Euro 3	mitsubishi 380 KME Injection IM240 KIT (U/Bonnet)	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Express Van L300, MWB, SWB	4G63 (I4 2.0L) Engine	01-MITSUBISHI L300 2.0 EFI EMISSION CERTIFIED KIT	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Express Van L300 (2007 -)	4G64 (I4 2.4L) Engine Euro 3	L300 2.4L KME Injection IM240 KIT (U/Bonnet)	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Express Van L300 MWB, SWB	4G63 (I4 2.0L)	MIM305AB01	Impco Technologies P/L (03) 9584-5644	IM240	RTA NSW
Express Van L300 MWB, SWB	4G63 (I4 2.0L)	K-MITL300	MED Aust P/L (02) 9726-3000 www.medauto.com.au	IM240	RTA NSW
Express Van L300 MWB, SWB	4G63 (I4 2.0L)	KUOMMITL320 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Express Van WA MWB and Walk thru	4G64 (I4 2.0L)	MIEXL305AB01	Impco Technologies P/L (03) 9584-5644	IM240	VIPAC VIC
Express MWB and Walk thru	4G64 (I4 2.4L) Engine	K-MITWTHRU	MED Aust P/L (02) 9726-3000 www.medauto.com.au	IM240	RTA NSW
Express Van L300 SJ Series (2006)	4G64 (I4 2.4L) Engine Euro 3	ROMUBVSIL300 under bonnet	AMR Manufacturing (03) 9563 1508 www.amrgas.com	IM240	RTA NSW
Magna (TL) ES and LS Sedan and Wagon	6G74 (V6 3.5L) LPG Compatible (Euro2) Engine	MITSUBISHI TL MAGNA 2004 3.5L V6	AMR Manufacturing (03) 9563 1508 www.amrgas.com	IM240	RTA NSW
Magna (TL) ES and LS Sedan and Wagon	6G74 (V6 3.5L) LPG Compatible Engine	MIMG03TL01	Impco Technologies P/L (03) 9584-5644	ADR 79/00	MMAL
Pajero NP	6G75 (V6 3.8L) Engine Euro 3	mitsubishi 380 KME Injection IM240 KIT (U/Bonnet)	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Pajero NP	6G75 (V6 3.8L)	MIPJ05AB01	Impco Technologies P/L (03) 9584-5644	IM240	RTA NSW
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	4G64 (I4 2.4L) Engine	01-MITSUBISHI TRITON 2.4 EFI EMISSION APPROVED KIT	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G72 (V6 3.0L) Engine (Auto and Man.)	01-MITSUBISHI TRITON V6 4x4 EMISSION APPROVED KIT	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	4G64 (I4 2.4L) Engine	K-MITTRIT4	MED Aust P/L (02) 9726-3000 www.medauto.com.au	IM240	RTA NSW
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	4G64 (I4 2.4L) Engine	KUOMMIT-T2.4	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW

Mitsubishi Listing Continued on Next Page

OPTION LISTING - MITSUBISHI



OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G72 V6 3.0L Engine (V6 Auto and Man.)	MITR05AB01	Impco Technologies P/L (03) 9584-5644	ADR 79/00	TMCA
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G72 V6 3.0L Engine (V6 Auto and Man.)	K_MITTRITV6	MED Aust P/L (02) 9726-3000 www.medauto.com.au	IM240	RTA NSW
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G72 V6 3.0L Engine (V6 Auto and Man.)	PSV16 TRITON V6	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	VIPAC VIC
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G72 V6 3.0L Engine (V6 Auto and Man.)	KUOMMIT-TV6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
Triton Cab Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G72 V6 3.0L Engine (V6 Auto and Man.)	KITPETRTV6P (All)	Victorian Autogas Supplies (03) 9775-1900 www.vags.net.au	IM240	RTA NSW
Triton KA/KB Series Cab/Chassis/Tray, Double Cab, Extra Cab and Ute (4x2 and 4x4)	6G75 (V6 3.5L) Engine Euro 3	TRITON 3.5 V6 KME Injection IM240 KIT (U/Bonnet)	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW



OPTION LISTING - NISSAN

OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Navara Dual Cab Ute (DX & STR) (4x4)	VG33 (3.3L V6)	PSV16 NAVARA V6	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	VIPAC VIC
Navara and Pathfinder (2006)	VQ40 (4.0L V6) Engine Euro 3	NAVARA 4.0L V6 KME Injection IM240 KIT (U/Bonnet)	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Patrol (GU) 4WD	GR-FE (4.8L L6)	PATROL-4.8-W01	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW

OPTION LISTING - TOYOTA

OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
Avalon Conquest MCX10R Auto Sedan	1MZ-FE (3.0L V6) LPG Compatible Engine (Suffix: 2A, 4A, 6A)	TOT-AVA-S01 TOYOTA DEALER FIT ONLY	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	ADR 79/00	TMCA
Camry Altise MCV36R Auto Sedan	1MZ-FE (3.0L V6) LPG Compatible Engine (Suffix: 14)	TOT-CAM-S01 TOYOTA DEALER FIT ONLY	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	ADR 79/00	TMCA
Camry Ateva MCV36R Auto Sedan	1MZ-FE (3.0L V6) LPG Compatible Engine (Suffix: 52)	TOT-CAM-S01 TOYOTA DEALER FIT ONLY	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	ADR 79/00	TMCA
Camry Altise 2004 MCV30 Series	2AZ-FE (2.4L I4) Euro2 Engine	TOYOTA 2004 CAMRY ALTESE 4CYL 2.4L	AMR Manufacturing (03) 9563 1508 www.amrgas.com	IM240	RTA NSW
Camry MCV30 Series	2AZ-FE (2.4L I4) Euro2 Engine	KUOMTOCAM4 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
HiAce Commuter, Long/Wide Van, LWB, SLWB	2RZ-E (2.4L I4) LPG Compatible (post Aug 2003)	THFC03AB01 (inside) THFC04TU01 (under)	Impco Technologies P/L (03) 9584-5644	ADR 79/00	TMCA
HiAce Commuter, Long/Wide Van, LWB, SLWB	3RZ-FE (2.7L I4) LPG Compatible (post Aug 2003)	U/B VIK TOY2.7LT	LPG Conversions (03) 9330-3555 www.advancedfuels.com.au	IM240	RTA NSW
HiAce 200 series Commuter, Long/Wide Van, LWB, SLWB	2TR-FE (2.7L I4) Euro 3 (LPG compatible engine)	ROMUBVSIHiAce under bonnet	AMR Manufacturing (03) 9563 1508 www.amrgas.com	IM240	RTA NSW
HiLux Cab-chassis/Tray Dual cab	GR-FE (4.0L V6)	HILUX-V6-05-C01 (ute) HILUX-V6-05-C02 (tray)	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
HiLux Cab-chassis/Tray Dual cab	GR-FE (4.0L V6)	U/B-HILUX-4L OM (under bonnet kit) HILUX-V6-05-C03 (Omegas ute) HILUX-V6-05-C04 (Omegas tray)	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
HiLux Cab-chassis/Tray, Dual Cab (2WD/4WD)	GR-FE (4.0L V6)	U/B VIKTOYV6 40LT	LPG Conversions (03) 9330-3555 www.advancedfuels.com.au	IM240	RTA NSW
HiLux Cab-chassis/Tray Dual cab (2WD/4WD)	GR-FE (4.0L V6)	KUITHIL-PR6 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW
HiLux Cab-chassis/Tray Dual cab (2WD/4WD)	GR-FE (4.0L V6) Euro3 Engine	VSI6 HILUX 4.0 BARREL VSI6 HILUX 4.0T TORR	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
HiLux Cab-chassis/Tray, Dual cab, Pick-up, Ute	3RZ-FE (2.7L I4) LPG Compatible (post Aug 2003)	THL04PU01 THL04CC91	Impco Technologies P/L (03) 9584-5644	ADR 79/00	TMCA
HiLux Cab-chassis/Tray, Dual cab, Pick-up, Ute	3RZ-FE (2.7L I4) LPG Compatible (post Aug 2003)	K-TOYHIL2.7	MED Aust P/L (02) 9726-3000 www.medauto.com.au	IM240	RTA NSW

Toyota Listing Continued on Next Page

OPTION LISTING - TOYOTA

OPTION SUITS	ENGINE / TRANS	OPTION IDENTIFIER	OPTION SUPPLIER	TEST TYPE	TEST AUTHORITY
HiLux 150 series Cab-chassis, Tray, Dual cab 2WD only	2TR-FE (2.7L I4) Euro 3 Engine	ROMUBVSIHiLux under bonnet	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
HiLux 150 series Cab-chassis/Tray, Dual cab 2WD & 4WD	GR-FE (4.0L V6) Euro3 Engine	Toyota HiLux 2005 4.0L 6 cylinder Euro3	AMR Manufacturing (03) 9563-1508 www.amrgas.com	IM240	RTA NSW
LandCruiser 100 Series GXL	2UZ-FE (4.7L V8) Engine (V8 Auto & Man.)	TOY-LC100V8-W02	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
LandCruiser 100 Series GXL	2UZ-FE (4.7L V8) Engine (V8 Auto & Man.)	PSVI EG8 LANDV8 APPROVED FITMENT ONLY	Parnell LP Gas Systems (03) 9315-1699 www.parnell.com.au	IM240	RTA NSW
LandCruiser 100 Series GXL	2UZ-FE (4.7L V8) Engine (V8 Auto & Man.)	KITLCV8	Victorian Autogas Supplies (03) 9775-1900 www.vags.net.au	IM240	RTA NSW
Prado 120 Series GX, GXL, VX, Grande	GR-FE (4.0L V6) Euro2 Engine (Auto & Man.)	PRADO-V6-4LITRE 2003 LCS2	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Prado 120 Series GX, GXL, VX, Grande	GR-FE (4.0L V6)	U/B VIKTOYV6 40LT	LPG Conversions (03) 9330-3555 www.advancedfuels.com.au	IM240	RTA NSW
Prado 120 Series GX, GXL, VX, Grande	GR-FE (4.0L V6) Euro3 Engine (Auto & Man.)	PRADO-V6-4LITRE U/B V6 4L 7/05 ONWARD	ApolloGas Products (03) 9761-7883 www.apollogas.com.au	IM240	RTA NSW
Prado 120 Series (2005) GX, GXL, VX, Grande	GR-FE (4.0L V6) Euro 3 Engine	PRADO 4.0L V6 KME Injection IM240 KIT (U/Bonnet)	ELKO Autogas Supplies (03) 9761-6044 www.elko.com.au	IM240	RTA NSW
Tarago 2005	2AZ-FE (2.4 I4) Euro2 Engine	KUITTAR4 (UNDER BONNET)	Sprint Gas (Aust) P/L (03) 9350-5500 www.sprintgas.com.au	IM240	RTA NSW

DISCLAIMERS FOR LPG OPTION LISTING

1. The above list of automotive LPG options is based on information provided by automotive LPG equipment suppliers that a representative vehicle has undertaken third party testing of emissions at an accredited facility and the vehicle has achieved a pass result in accordance with the emissions requirements of the joint Australian and New Zealand Standard AS/NZS 1425:2007 Appendix D. Whilst the ALPGA has no reason to doubt the accuracy of those test results, the ALPGA will not be liable for any error in, for any loss or damage arising from the use of or reliance on, the automotive LPG option information contained on this web site or in the option listing.
2. The above listing of automotive LPG options deals with satisfying the emission requirements of AS/NZS 1425:2007 Appendix D and does not deal with the quality or standard of installation of the options.
3. It is the responsibility of the automotive LPG option supplier to ensure that their option is provided in such a manner that it can be fitted in accordance with all the requirements of relevant Acts and Regulations in force at the time.
4. It is the responsibility of the option installer to ensure that the automotive LPG option is installed in accordance with the requirements of relevant Acts and Regulations in force at the time.
5. Please confirm the suitability of the vehicle for conversion with the original vehicle manufacturer's service department.
6. In the case of conversion options developed for the Ford BA Falcon I6 4.0L Barra 182 engine, attention is drawn to the (attached) statement made by the Ford Motor Company.
7. In the case of conversion options developed for the Mitsubishi 380, attention is drawn to the (attached) statement made by Mitsubishi Motors Australia Limited.

Further detailed information on LPG Autogas for Vehicles can be found on the LPG Autogas web site at www.lpgautogas.com.au

Ford Motor Company of Australia Limited

A.B.N. 30 004 116 223

Registered Office:

1735 Sydney Road, Campbellfield, Victoria 3061

February 4, 2003

RE: Incompatibility of the BA Falcon petrol engine with LPG conversions

Dear Mr. Linahan,

I write to you with important information explaining the incompatibility of the BA Falcon petrol engine with aftermarket LPG conversions.

Please make this information available to all your members and associates via the most appropriate mediums, not limited to but including your website.

Uniqueness Of Barra E-Gas Engine

Both the Barra 182 petrol engine and the E-Gas LPG engine have been specifically engineered to perform optimally on their different fuels for all functional attributes, resulting in some divergence of hardware. The only Falcon engine designed to run on LPG is the E-Gas engine, which contains the following unique components or systems:

- Pistons: Higher Compression ratio
- Con Rods: Stiffened to cope with increased loads
- Intake Valves: LPG specification for hotter operating conditions
- Valve Seats: LPG specification for hotter operating conditions
- Air Intake System: Backfire and fire resistant air cleaner box and filter.
- Fuel System: Tanks, lines, converter, balance hose and Electronic Throttle Body
- Engine Oil, Spark Plugs: Unique LPG specification
- Powertrain Control Module (PCM): Unique to drive LPG system solenoids and stepper motor.

Engine Control

The Electronic Throttle Control, or 'Drive-by-wire' system, is highly complex and specifically designed to interact with Ford designed and developed components. Use of unauthorised aftermarket components may lead to sudden triggering of various failure modes including partial or total engine shutdown. The PCM of both the Barra 182 and the E-Gas engines can control engine shutdown if required. It is possible that an aftermarket system may not be calibrated to this command, causing uncontrolled acceleration in certain situations.

Air Intake System

The Air Intake System includes the air cleaner, air filter and ducts.

Due to package constraints, the E-Gas engine has a small venturi that is mounted in the throttle body. It is understood that the preferred aftermarket location of the venturi would be at the air filter end of the air intake duct. This would result in an additional 3.5 litres of aerated LPG that could ignite in the event of an engine backfire. While Ford have made every effort to minimise the potential for engine backfire, aftermarket conversions may increase the risk of this occurring. Such an event could result in noise, to potentially dangerous levels, as well as damage to engine components including, but not limited to, the air intake system. Even if an aftermarket venturi was situated in the same position as in the E-Gas engine the standard petrol air intake is not designed to withstand an LPG backfire.

Engine Performance

The Barra 182 engine is by nature free revving with high volumetric efficiency due to its Dual VCT 24 valve system. The placing of a throttling venturi in the intake of the Barra 182 will limit the engine's performance in terms of power, fuel efficiency and emissions of the engine on petrol, the fuel for which it was developed.

Exhaust Emissions and Regulations

New Falcons sold in Australia and New Zealand must meet the requirements of the Australian Design Rules, this includes LPG conversions carried out prior to the delivery of a new vehicle (e.g. during the course of new vehicle predelivery). LPG installations are governed by ADR 44 which requires LPG fuel systems to meet AS/NZS 1425. This standard is also a legal requirement of the Australian States and Territories for aftermarket LPG conversions.

Among other things, AS/NZS 1425 states: "An alteration made to a vehicle's original equipment or engine shall not adversely affect the original manufacturer's design, safety level and performance when operating on the fuel for which it was developed".

AS/NZ 1425 section 1.8 also requires that an engine management system "...be installed that results in exhaust emission levels for LP Gas operation that meet the requirements of the Australian Design Rules (ADR) applicable to the vehicle".

The BA Falcon has been certified to ADR 79/00 (Euro 2) emissions standard, therefore LPG conversions must also achieve this standard. ADR 79/00 requires significantly lower emission levels than the previous level, ADR 37/01 and the E-Gas engine has undergone significant development to achieve this. It is anticipated that it will be extremely difficult for aftermarket producers to develop conversion systems that can consistently meet ADR 79/00 emissions performance.

Since a petrol Falcon is not designed to run on LPG, it is clear that the unauthorised alteration of a Falcon to run on LPG will compromise the original manufacturer's design. This could result in safety, performance and emissions compliance issues as outlined above

Warranty

The Ford Express New Vehicle Warranty specifically excludes any defect in any vehicle component that is caused by or attributable to, or to the use of, an aftermarket LPG conversion. If a conversion to LPG is carried out we believe it is highly likely to result in damage to components including but not limited to the following:

Pistons, con-rods, rings, intake and exhaust valves and seats, engine bearings and seals, spark plugs, petrol fuel system components including pump and injectors, air intake system, any further backfire-related damage including but not limited to the hood.

E-Gas Falcon

The BA Falcon continues Ford Australia's leadership of alternative fuel development with the option of the E-Gas engine. First launched in 1999, the E-Gas Falcon has provided a distinct advantage by lowering operating costs and contributing to a reduction in greenhouse emissions.

CONCLUSION

The analysis by Ford of the technical details involved in the practice of aftermarket LPG conversions point to the robust, safe and legal conversion of the Barra 182 petrol engine to dual or single fuel LPG being technically extremely challenging. This results in the conclusion that the Barra 182 engine is technically incompatible with such a conversion with no exceptions.

Ford has been forced to act to protect its customers from the high likelihood of damage caused by aftermarket LPG conversion. Ford cannot recommend or endorse in any way the practice of aftermarket conversion to LPG for engines incompatible with LPG fitment, including the Barra 182 engine. This announcement affects both Falcon Passenger and Falcon Commercial I6 engines.

Yours sincerely,



Stephen Kruk
Marketing Manager
Passenger Vehicles



Guidelines for Fitment of LPG to ADR 79/01 (Euro 3) Compliant Engines

Customer Information Sheet

Explanation of Caution Notes

Throughout this document, the word **CAUTION** appears in conjunction with an ISO warning symbol of a triangle with an exclamation mark inside the triangle.

This is a reminder to be especially careful. Failure to follow instructions in this document could result in personal injury or damage to your vehicle.



CAUTION

Means hazards or unsafe practices which could cause personal injury, property damage or result in damage to your vehicle.

There are a number of vehicles marketed by Mitsubishi Motors Australia Ltd that contain some critical engine components especially engineered to maintain full engine durability with either petrol or LPG fuels. This enables conversion of the vehicle to dual fuel. However the LPG conversion must perform in a particular way to enable reliable operation and ensure the durability of your vehicle.

Please ask your Mitsubishi dealer to show you the information published by Mitsubishi Motors Australia Limited [MMAL] which confirms whether your vehicle's engine contains the internal components that make it suitable to operate on LPG. Alternatively, you may prefer to call the Mitsubishi Customer Assistance Centre on 1300 13 12 11.



CAUTION

Converting vehicles that do not have the necessary engine components to meet durability requirements can result in significant damage to the engine. Any such damage would not be covered by the New Vehicle Warranty.

An LPG conversion involves two parties:

- The LPG Systems Supplier who manufactures an LPG Conversion kit and sells it to their appointed LPG Systems Fitters,
- An LPG Systems Fitter, who sells LPG Conversions and fits them to your vehicle.

For simplicity, we will refer to these two parties as the "Supplier", but you should know who the LPG Systems Fitter is, and which LPG System Supplier they rely upon.

MMAL recommends you confirm that the conversion you authorise for fitting to your vehicle complies with the following specification point by point and that you obtain a document that confirms this from the Supplier.

MMAL expects you to keep this confirmation document and to pass it to any subsequent owner. This document is the sole document to connect the claims of the Supplier to you, the owner/lessee of the vehicle. It is as important as your purchase receipt.

- The LPG system should be fitted by a Supplier using licenced staff. The Supplier should be a member of an appropriate industry association (eg LPG Australia, formerly known as Australian Liquid Petroleum Gas Association, ALPGA) and display their credentials.
- The Supplier must be able to supply a certificate of compliance to Australia Standard 1425-2003. There are additional requirements in some States for provision of labels & data plates affixed to the vehicle after conversion.
- The Supplier can and will make fundamental changes to your vehicle to fit a LPG conversion, none of which changes are under the control of MMAL or your Mitsubishi dealer. You are reliant on the Supplier in all respects including the re-use of any parts supplied in your vehicle in the conversion process.
- Selection of the Supplier is important. MMAL recommends you seek independent advice, and the representations of the Supplier.

MMAL has designed & manufactured your vehicle with a fuel system designed to operate on petrol, and given great care & attention to its design, installation, development & proving tests in a wide range of operating conditions & provided diagnostic systems and detailed servicing requirements to ensure it will provide years of reliable service. You are entitled to expect as much from your Supplier.

- The conversion system should be a LPG multi-point injection system.
LPG conversions using a 'mixer' or 'gas carburettor' or any single point injection system will not have the range or sensitivity of air/fuel ratio to meet the operating characteristics of the engine and its ADR79/01 emissions system.
- The multi-point injection system must maintain the intake system including any ducting, aircleaner, and airflow sensor free of any air/LPG mixture during normal operation.
- The conversion system kit shall be certified by its Supplier to be free from the occurrence of engine backfire.
A declaration to this effect should be included in the sales documentation.
- The conversion system kit shall be certified to comply with the requirements of ADR79/01 by an independent emissions test laboratory.

A declaration shall be included in the sales documentation.

You should confirm the compliance statement relates to the LPG Conversion being fitted to your vehicle.

Note that ADR 79/01 compliance is part of a series of compliance requirements.

- Poorly calibrated LPG systems & conversions may result in damage to the catalytic converters, which are part of your vehicle's emission control system.

The conversion shall be certified to limit the temperature of the exhaust system catalyst(s) and oxygen sensors and spark plugs to less than the operating temperatures of the components when operating on petrol. Suppliers shall determine the maximum temperatures on petrol under all operating conditions. Suppliers may devise fuelling strategies including switching to petrol to achieve these temperature limitations.



CAUTION

Failure to control the catalyst temperature by an appropriate fuelling strategy will cause the catalyst to disintegrate and catalyst debris may enter the engine causing damage to engine bores, pistons & rings by scoring, impingement & crushing. Other consequential damage may occur in addition. Catalyst disintegration by overheating is a recognisable failure mode. Any LPG equipped vehicle presented with catalyst damage resulting from overheating of the catalyst will not be repaired under New Vehicle Warranty, and the customer will be referred to the Supplier.



CAUTION

Failure to provide a durable method of closed loop mixture control with an adequate margin for the service interval may cause the LPG system to run rich or lean, with obvious driving defects such as loss of power, misfire & backfire. However operation without these obvious driving defects may lead to damage to the catalytic converter, exhaust system, spark plugs, engine internal components, and intake systems including sensors.

- As part of the ADR79/01 emissions system, MMAL has fitted an on board diagnostic system with a Check Engine warning lamp. The function of this lamp is set out in the Owners Manual. When this lamp illuminates, diagnostic codes are generated & stored in the vehicle's engine electronic control module.

Since any diagnostic codes generated when running on LPG, or when running on petrol either by owner selection or by automatic LPG systems operating strategy are beyond the knowledge of MMAL, all diagnostic codes become the responsibility of the Supplier to determine the cause & required corrective action.

You should examine the warranty and operating instructions provided by the Supplier to confirm they have accepted this responsibility for your vehicle.

- If your vehicle is fitted with an Electronic Throttle Control system (sometimes referred to as "drive-by-wire"), you must request the Supplier to provide certification that the conversion recognises the operating modes of this system, including but not limited to partial or complete engine shut-down, and that the conversion will not cause uncontrolled activation of the throttle.
- Your vehicle is fitted with a low fuel warning lamp for the petrol fuel system because running out of fuel can damage the catalytic converter and lead to engine damage. MMAL recommends you seek certification by the Supplier that the LPG system incorporates a separate fuel gauge with its own low LPG fuel warning for the same reason.
- If your vehicle is fitted with a Trip Computer, the vehicle data displayed may include *range to empty, total fuel used, average fuel consumption, instantaneous fuel consumption, travelling time, total distance travelled, average speed, service reminder, rest reminder & speed alarm*. The Supplier should advise which, if any, of these functions provide misleading information when operating on either LPG and/or petrol as a result of the fitting of a LPG conversion.
- The Supplier should provide an instruction manual for dual fuel operation, all the servicing information and warranty information necessary for the LPG system.

In particular MMAL recommends the Supplier should certify that the instruction manual provides information relating to the operation of the Check Engine warning lamp, and what actions an operator should take in the event the warning lamp illuminates, and instructions to take the vehicle to the nearest agent of the Supplier to have the system checked as soon as possible.



CAUTION:

MMAL does not provide any servicing information or warranty information relating to the LPG system supplied by a Supplier.

MMAL does not provide any warranty on LPG system parts, or assemblies of LPG system parts, nor on any vehicle parts supplied as part of the Mitsubishi motor vehicle where the parts function is altered from the original design purpose [eg ducts or parts required to carry air alone when operating on petrol being re-used by the Supplier to carry air & LPG mixture when running on LPG or in the transition from petrol to LPG].

- You must ensure the LPG system is serviced in accordance with the Supplier's recommendations. Your Mitsubishi dealer may arrange this servicing for you at your cost upon your request.
- MMAL recommends your vehicle should be operated with at least a quarter of a tank-full of petrol to protect petrol fuel systems components. Your vehicle should be operated periodically on petrol to maintain correct operation of the petrol system and to prevent the petrol from going "stale". The Supplier should recommend the frequency & duration of operation on petrol.
- Switching between fuels should be conducted in accordance with the instructions for use provided with the conversion.
- You should pay particular attention to the Supplier's operating instructions.



CAUTION:

Failure to follow the Supplier's operating instructions may result in significant damage to the engine and/or vehicle.