



Catalogue 2011

VDO

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COCKPIT VISION

Cockpit Vision is the pinnacle of instrument technology. It represents latest advances in instrument illumination and installation techniques. Using fibre-optic technology to illuminate the pointer and VDO's Trioptic through dial lighting we achieve superb night time illumination.

The installation technique used, where possible, disregards U-brackets and studs and features instead a 360° locking ring thereby eliminating panel warping and gauge rotation. We call it the VDO Spin-lock.

SPEEDOMETERS, automotive



Illumination through dial and pointer. 12V globe included.

Field adjustable to suit 500 to 400,000 imp/km by pulse setting, or auto-calibration function through LCD readout via reset button. Total distance 999,999.9 not resettable. Speed display analogue; Odometer and trip distance LC-display trip distance 99,999.9 resettable.

Signal source Hall-effect, inductive or blocking oscillator sender units.

For 24V application use globe #240.053 (2 required).

For matching sender units refer to page 83.

Speedometer - Electronic

Part No.	Range	Size	Voltage
437 015 028	0 - 200km/h	80mm	12/24V
437 015 021	0 - 300km/h	80mm	12/24V
437 015 025	0 - 200km/h	85mm	12/24V
437 015 022	0 - 300km/h	100mm	12/24V
437 015 029	0 - 200km/h	100mm	12/24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

PITOT TUBE SPEEDO, marine

The Pitot Tube Speedo is designed to determine the speed of a boat over water. It consists of a Pitot tube foot and hose to transfer air pressure to the speedo head system where the air pressure is converted to speed.



Speedometer - Pitot Tube

Part No.	Range	Size	Voltage
260.111	50mph	85mm	12V

Accessories

Part No.	Description
170.702	pitot tube assembly black

TACHOMETERS

Suitable for most petrol and diesel engines. Field programmable to suit 4, 6 or 8 cyl./4 stroke ignition and alternator pick-up (terminal "W"). Single phase, not suitable for star point or magneto system. For standard, points ignition system, add a 1N4004 diode in series with the signal wire (cathode towards tacho). Illumination 12V included.

Tachometer - Electronic

Part No.	Range	Size	Voltage
333 015 037	0 - 4000rpm	52mm	12V
333 015 031	0 - 8000rpm	52mm	12V
333 015 038	0 - 4000rpm	80mm	12V
333 015 032	0 - 7000rpm	80mm	12V
333 015 046	0 - 10000rpm	80mm	12V
333 015 033	0 - 7000rpm	85mm	12V
333 015 047	0 - 4000rpm	100mm	12V
333 015 034	0 - 8000rpm	100mm	12V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

For external shift-light, use rev-switch p/n 660.990



TACHOMETER COLUMN MOUNT

Tachometer - Column Mount - Kit

Part No.	Range	Size	Voltage
333 015 033POD	0 - 7000rpm	85mm	12V

Note: Kit includes tacho, gauge, pod plug and terminals.



TACHOURMETER

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to 1, 2, 3, 4, 5, 6, 8 or 12 cyl./4-stroke, 1, 2, 3 or 4 cyl./2-stroke ignition and alternator pick-up ("W" terminal). Also suitable for signal from generator or inductive sender unit but not suitable for magneto ignition system. Incorporated hourmeter shows true engine hours. Operating hours 99,999.9. Pulse range 0.5-200 pulses per rev. Illumination 12V included.

For 24V application use globe #240.053 (2 required).

For matching sender units refer to page 83.

Tachourmeter - Electronic

Part No.	Range	Size	Voltage
333 015 035	0 - 7000rpm	85mm	12/24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.



FUEL GAUGES

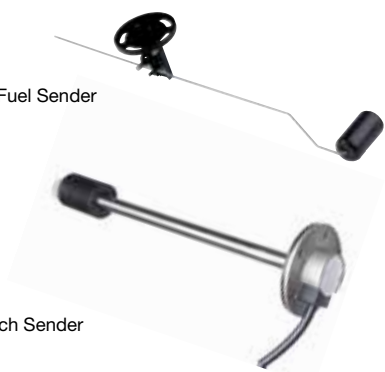
Suitable for use with most petrol, diesel fuel, and LPG systems.
Illumination 12V included.



Adjustable Float Arm Sender 220.003



Arm Type Fuel Sender



Reed Switch Sender



Sender-Tubular Tank



Flange Mounting Kit N05801432



Fuel Gauge - Float Arm Sender			52mm
Part No.	Description	Specifications	Voltage
301 010 011	Fuel gauge (float arm)	10 - 180 ohms	12V
301.105	Fuel gauge for USA application	240 - 33 ohms	12V
301 010 010	Fuel gauge LPG Suits 5 - 90 ohms LPG tank unit senders.	5 - 90 ohms	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Sender - Adjustable Float Arm		
Part No.	Specifications	Length
220.003	10 - 180 ohms	150 - 600mm
220.004	5 - 90 ohms	150 - 600mm
220.005	240 - 33 ohms	150 - 600mm

Note: Mounting kit part no. N05801432 not included in kit.

Arm Type Fuel Sender

See complete listing of arm type fuel senders on page 81.

Note: Mounting kit part no. N05801432 not included in kit.

Reed Switch Sender Fuel & Water

Just for 10 - 180 ohms gauges.

See complete listing of arm/reed switch senders on page 81.

Note: Mounting kit part no. N05801432 not included in kit.

Fuel Gauge - Tubular

Part No.	Description	Ohms		Voltage
		Empty	Full	
301 010 009	Fuel gauge-tubular	110/50	2 ohms	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Tubular Type Sender

See complete listing of tubular type senders on page 82.

Note: Mounting kit part no. N05801432 not included in kit.

Accessories

Part No.	Description	PCD
N05801432	Flange mounting kit	54mm

Note: For more Accessories, refer to pages 88 - 91.

Fuel Gauge - OE Senders

Part No.	Description	Specifications	Voltage
301 010 015	Suits OE senders	73 -10 ohms	12V

Matching Sender - Replaces gauge for Holden HQ (73-76) on, HJ, HX, HZ, Torana LH, LX, Ford XR to XC, Escort and Cortina.

PRESSURE GAUGE, electrical

Suitable for most vehicles.

Illumination 12V included.

Adaptors are listed on page 80.

Electric Pressure Gauge - 500Kpa			52mm
Part No.	Description	Specifications	Voltage
350 010 016	Oil pressure symbol on dial	500Kpa 10-184 ohms	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Sender			10-180 ohms
Part No.	Range	Thread	Terminal
360.001	500Kpa	1/8"-27NPTF	Spade
360.004	500Kpa	1/4"-18NPTF	Button
360.016	500Kpa	1/8"-28BSBT	Button
360.018	500Kpa	1/8"-27NPTF	M4 thread
360081030049K	5 Bar / 7 psi SW	1/8"-27NPTF	M4 thread

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 500 Kpa = 5 Bar = 72.5 psi 700 Kpa = 7 Bar = 101.5 psi
1000 Kpa = 10 Bar = 145 psi 2800 Kpa = 28 Bar = 406 psi



Sender 360.001

PRESSURE GAUGE, electrical

Suitable for most vehicles.

Illumination 12V included.

Adaptors are listed on page 80.

Electric Pressure Gauge - 500Kpa			52mm
Part No.	Description	Specifications	Voltage
350 010 017	Oil symbol on dial	1000Kpa 10-199 OHMS	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Senders			10-199 ohms
Part No.	Range	Thread	Terminal
360.002	1000Kpa	1/8"-27NPTF	Spade
360.019	1000Kpa	1/8"-27NPTF	M4 thread
360081030052C	10 Bar / 7 psi SW	1/8"-27NPTF	M4 thread

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 500 Kpa = 5 Bar = 72.5 psi 700 Kpa = 7 Bar = 101.5 psi
1000 Kpa = 10 Bar = 145 psi 2800 Kpa = 28 Bar = 406 psi



Sender 360.002

PRESSURE GAUGE, electrical

Suitable for most vehicles.
 Supplied with nut and cone to suit 3/16" PVC tubing.
 Illumination 12V included.



Sender 360.086



Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025

Pressure Gauge - 100psi			52mm
Part No.	Description	Specification	Voltage
350010021	Oil on dial	100psi	12V
	10-184 ohms		
350 010 001	Trans on dial	400psi	12V
	10-184 ohms		

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Sender		10-180 ohms	
Part No.	Range	Thread	Terminal
360.086	100psi	1/8"-27NPTF	M4 Thread
360081038003C	25 Bar*	1/8"-27NPTF	M4 Thread
360081038008C	400psi	1/8"-27NPTF	M4 Thread

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 500 Kpa = 5 Bar = 72.5 psi 700 Kpa = 7 Bar = 101.5 psi
 1000 Kpa = 10 Bar = 145 psi 2800 Kpa = 28 Bar = 406 psi
 * (0 - 25 Bar Sender is insulated return and can be used for 400 Psi gauge application)

PRESSURE GAUGES, mechanical

Suitable for most vehicles.
 Supplied with nut and cone to suit 3/16" PVC tubing.
 Illumination 12V included.

Pressure Gauge - Air, Oil & Water		52mm
Part No.	Range	Size
150 077 010	0 - 15psi	52mm
150 077 011	0 - 30psi	52mm
150 077 027	0 - 100psi	52mm
150 077 026	0 - 150psi	52mm
150 077 020	0 - 700Kpa	52mm

Accessories	
Part No.	Description
230.012	1.8m fitting kit - 3/16" PVC tubing & engine fitting
230.013	5m fitting kit - 3/16" PVC tubing & engine fitting
230.008	Nut and cone for 3/16" PVC Tubing, M12x1.5 thread
230.024	Engine fitting 1/8"-27NPTF male, 3/16" tubing
230.025	Nut and cone 1/8"-27NPTF nut
230.015	Air/Fuel pressure restrictor

BOOST GAUGES, mechanical

Suitable for diesel vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included.

Boost Gauge		52mm
Part No.	Range	Size
150 077 010	0-15 psi	52mm
150 077 011	0-30 psi	52mm

Note: Use airline kit 230.012 or 230.013
Accessories on page 10.
Includes Air Restrictor: 10027



TURBO CHARGER GAUGE, mechanical

Suitable for petrol vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included.

Turbo Charger Gauge		52mm
Part No.	Range	Size
150 077 004	-30" Hg/+25psi	52mm

Hg = Negative 30 inches of vacuum of mercury.

Note: Use airline kit 230.012 or 230.013
Accessories on page 10.
Includes Air Restrictor: 10027



VACUUM GAUGE, mechanical

Suitable for most vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included.

Vacuum Gauge		52mm
Part No.	Range	Size
150 077 005	-30-0" Hg	52mm

Hg = Negative 30 inches of vacuum of mercury.

Note: Use airline kit 230.012 or 230.013
Accessories on page 10.
Includes Air Restrictor: 10027



PRESSURE GAUGE ACCESSORIES



Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025



Accessories

Part No.	Description
230.012	1.8m fitting kit - 3/16" PVC tubing & engine fitting
230.013	5m fitting kit - 3/16" PVC tubing & engine fitting
230.025	Nut and cone 1/8"-27NPTF nut
230.008	Nut and cone for 3/16" PVC tubing, M12x1.5 thread
230.024	Engine fitting 1/8"-27NPTF male, 3/16" tubing
10027	Air restrictor to fit 3/16" PVC Tubing

CYLINDER HEAD TEMPERATURE GAUGE

Suitable for most engines including air cooled, industrial, agricultural.
 Thermocouple connection fits under 13mm spark plug, or a bolt of the same or smaller diameter.
 Illumination 12V included.

Temperature Gauge - Electric 52mm

Part No.	Range	Dial Colour	Kit Specifications
310.901	100 - 600°F	Black	Gauge, sender, loom

Accessories

Part No.	Description
323.010	Thermocouple spare part sender

TEMPERATURE GAUGES, electrical

Suitable for most vehicles.

Illumination 12V included.

For more matching sender units refer to page 78.

Adaptors are listed on page 80.

Temperature Gauge - Water				52mm
Part No.	Description	Specifications	Voltage	
310 010 014	Water temp. symbol on dial	40 - 120°C 287-23 ohms	12V	

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Temperature Sender				
Part No.	Range	Thread	Terminal	Body Type
320.002	40 - 120°C	1/8"-27NPTF	button	a
320.093	40 - 120°C	1/8"-27NPTF	M4 thread	b
323.801/005/001	40 - 120°C	1/8"-27NPTF	button	a
320.022	40 - 120°C	1/2"-14NPTF	spade	c
323801001006K	40 - 120°C	M14x1.5mm	spade	c
320.004	40 - 120°C	M16x1.5mm	button	a

Note: 40 - 120°C = 100 - 250°F

For calibration specs, see page 92.

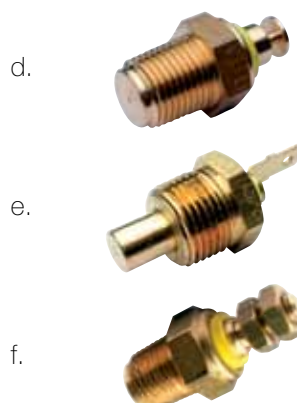
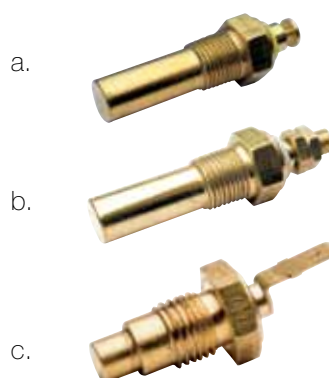
Temperature Gauge - Oil				52mm
Part No.	Description	Specifications	Voltage	
310 010 015	Engine oil temp. symbol on dial	50 - 150°C 323-18 ohms	12V	

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Temperature Sender				
Part No.	Range	Thread	Terminal	Body Type
320.021	50 - 150°C	1/8"-27NPTF	button	a
320.028	50 - 150°C	1/8"-27NPTF	button	d
320.070	50 - 150°C	1/8"-27NPTF	M4 thread	f
320.092	50 - 150°C	1/8"-27NPTF	M4 thread	d
320.016	50 - 150°C	1/2"-20Whit.S	spade 90°	c
320.023	50 - 150°C	3/8"-BSPF	spade	c
320.010	50 - 150°C	M12x1.5mm	button	a

Note: 50 - 150°C = 120 - 300°F

For calibration specs, see page 92.



TEMPERATURE GAUGES, mechanical



Thermowell 180.059

Suitable for most vehicles.

Process connection is 1/8"-27NPTF threaded removable thermowell.

Temperature is transmitted via capillary tube.

Coil up excess capillary tubing - do not cut to shorten!

Illumination 12V included.

Adaptors are listed on page 80.

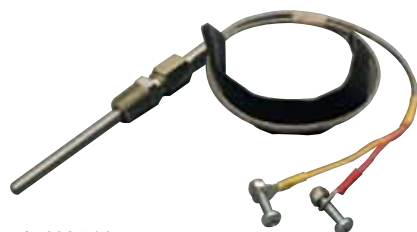
Temperature Gauge - Water		52mm
Part No.	Range	Capillary Length
180 077 022	40 - 120°C	1600mm
180 077 023	40 - 120°C	2600mm
180 077 021	40 - 120°C	4000mm

Temperature Gauge - Oil		52mm
Part No.	Range	Capillary Length
180 077 020	50 - 150°C	1600mm
180 077 019	50 - 150°C	4000mm

Accessories		
Part No.	Description	Note
180.059	Thermowell 1/8"-27NPTF	Suits adaptors # 320.xxx

Note: Refer page 80 for adaptors.

EXHAUST TEMPERATURE / PYROMETER, electrical



Thermocouple 320.714

Suitable for most exhaust systems.

Thermocouple connection is by 1/4"-18 compressing fitting.

Temperature is transmitted via capillary tube.

Illumination 12V included.

Pyrometer - Electrical Kit		52mm
Part No.	Range	Voltage
310.159	0 - 900°C (37.6mV@900°C)	12V

Note: Cutting or adding length of loom will not affect calibration.

Spare Parts for 310.159 exhaust temperature/pyrometer kit	
Part No.	Description
310 015 009	Instrument
320.714	Thermocouple 1/4" NPTF non bonded junction "K" type to be fitted 100mm after the turbo
240.035	Loom, 5m
320.059	Weld boss 1/4" - 1/8" NPTF

VOLTMETER

Suitable for most engines/vehicles where battery and charging systems need to be monitored.

Illumination 12V included.

Voltmeter			52mm
Part No.	Range	Voltage	
332 010 004	8 - 16V	12V	

Note: 2 pin plug kit part no. 240.031 recommended. Not included in kit.



AMMETERS, with internal shunt

Suitable for most engines which require battery and charging system monitoring.

Voltage dependent - suitable for 12V or 24V.

Ammeters with internal shunt are easily identified by the heavy duty threaded terminals on the back of the instrument.

Illumination 12V included.

Ammeter with Internal Shunt - metal body				52mm
Part No.	Description	Specifications	Voltage	
190077006	30-0-30 amp gauge	use 6mm wire	12V	
190077007	60-0-60 amp gauge	use 6mm wire	12V	



AMMETERS, with external shunt

Suitable for monitoring heavy duty electrical charging system.

Voltage dependent - suitable for 12V or 24V.

Illumination 12V included. For 24V application use dropping resistor N05801180 and globe 240.051.

Ammeter with External Shunt				52mm
Part No.	Description	Specifications	Voltage	
190.504	150-0-150 ammeter kit	12V		

Note: For installation use 10mm wire.

Spare Parts for 190.504 ammeter kit			
Part No.	Description	Specifications	
190 075 004	150-0-150 gauge, 52mm		
190.080	Shunt - 150 amps	50mV @ 150 amps	
190.888	5m loom		



CLOCK, analogue

Suitable for most vehicles.
Features a 12V quartz movement for high accuracy.
Illumination 12V included.



Clock	52mm
Part No.	Voltage
370 012 001	12V

Note: 2 pin plug kit part no. 240.031 recommended. Not included in kit.

INSTRUMENT KIT

Cockpit vision instrument kits are the perfect solution for the automotive enthusiast. The kit comprises of gauges and matching senders.

Cockpit Vision Kit	
Part No.	Description
740.106	Gauge kit

Note: Wiring and terminals not included.

Kit Contents - Gauges	
Part No.	Description
333 015 033	Tachometer (85mm)
310 010 014	Water Temperature (52mm)
301 010 011	Fuel (52mm)
350 010 017	Oil Pressure (52mm)
332 010 004	Volt Meter (52mm)

Kit Contents - Senders	
Part No.	Description
360.002	Oil Pressure
320.002	Water Temperature
220.003	Fuel

Note: Speedo & other gauges not part of the kit and can be purchased separately.



Sender 360.002



Sender 320.002



Adjustable Float Arm Sender 220.003

COCKPIT INTERNATIONAL

Cockpit International represents a range of heavy duty instruments designed for the commercial and industrial market. The best combination of colours for readability and reduced eye fatigue are used in the styling of our cockpit instruments.

State of the art manufacturing and quality control procedures ensure that the end product features up to date engineering and design standards, such as the unique air core electric movements.

These reliable gauges feature easy to read floodlit dial illumination for accurate referencing.

SPEEDOMETERS, electrical

The features of the programmable speedometer are a w/resettable LCD trip odometer with a push button and the trip odometer is displayed in the LCD window. Unique auto-calibration feature allows for easy adjustment and can be used with Hall Effect and inductive senders or most electronic controlled transmissions outputs.

Floodlit illumination. 12V globe included.

Field adjustable to suit 500 to 400,000 imp/km by pulse setting, or auto-calibration function through LCD readout via reset button. Total distance 999,999.9 not resettable. Speed display analogue; Odometer and trip distance LC-display trip distance 99,999.9 resettable.

Signal source Hall-effect, inductive or blocking oscillator sender units.

For 24V application use globe #240.053 (2 required).

For matching sender units refer to page 83.

Speedometer			
Part No.	Range	Size	Voltage
437 035 016	0 - 120km/h	85mm	12/24V
437 055 001	0 - 60km/h	100mm	12/24V
437 055 011	0 - 120km/h	100mm	12/24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

Speedometer			
Part No.	Range	Size	Voltage
1323020100010603	0 - 125km/h	140mm	12V
437 025 002	0 - 125km/h	140mm	24V

Note: 140mm Speedometer Impulse Ratio programmable 1,000-60,000 pulses/Km.

8 pin plug kit part no. 340.824 recommended. Not included in kit.

Sender					
Part No.	Voltage	Thread	Type	Imp/Rev	Plug Kit
K46020	12/24V	M22x1.5	H/E	8	K72221
K46021	12/24V	7/8" - 18UNF	H/E	8	K72221

Senders				
Part No.	Description	Drive Key	Pulses/ Rev	Nut Size
340.808	In line suits various vehicles with M22 nut size	3x8mm blade	8	M22 x 1.5mm Inc. 5mm dia lug drive key

See complete listing of arm senders on page 81.



TACHOURMETERS, electrical with LCD Hourmeter



The programmable tachometer w/LCD hourmeter can be used with most engine electronic control ignitions with tachometer output terminal, standard coil ignition, alternator signal, and 12V square wave applications. Non-resettable engine hourmeter is displayed in LCD windows.

Suitable for most petrol and diesel engines. Adjustable through LCD and reset button. Field programmable to 1, 2, 3, 4, 5, 6, 8 or 12 cyl./4-stroke, 1, 2, 3 or 4 cyl./2-stroke ignition and alternator pick-up ("W" terminal). Also suitable for signal from generator or inductive sender unit. Incorporated hourmeter shows true engine hours. Operating hours 99,999.9. Pulse range 0.5-200 pulses per rev. Not suitable for magneto system.

Illumination 12V included. For 24V application use globe #240.053 (2 required). For matching sender units refer to page 83.

Tachourmeter - for inductive sender

Part No.	Range	Size	Voltage
333 035 010	3000rpm	80mm	12/24V
333 035 011	4000rpm	80mm	12/24V
333 035 025	3000rpm	85mm	12/24V
333 035 013	4000rpm	85mm	12/24V
333 055 002	3000rpm	100mm	12/24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

TACHOMETERS, electrical

Suitable for most petrol and diesel engines. Field programmable to 4, 6 or 8 cyl./4-stroke ignition and alternator pick-up ("W" terminal). Single phase not suitable for star point or magneto system. Illumination 12V and 24V included.

Tachometer

Part No.	Range	Size	Voltage
333 035 017	6000rpm	52mm	12V
333 035 001	3000rpm	80mm	12V
333 035 002	4000rpm	80mm	12V
333 035 003	7000rpm	80mm	12V
333 045 001	3000rpm	80mm	24V
333 045 002	4000rpm	80mm	24V
333 035 004	3000rpm	85mm	12V
333 055 001	3000rpm	100mm	12V
333 055 011	4000rpm	100mm	12V
333 065 001	3000rpm	100mm	24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.



FUEL GAUGES, electrical

Suitable for use with most petrol, diesel fuel, and LPG systems.
 Illumination 12V and 24V included.
 For matching sender units refer to page 81.

Fuel Gauge - 10-180 ohms		52mm	
Part No.	Range	Size	Voltage
301 030 001	0-1/1	52mm	12V
301 040 001	0-1/1	52mm	24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
 Without ISO symbol.

Sender - Adjustable Float Arm		
Part No.	Specifications	Length
220.003	10 - 180 ohms	150 - 600mm
220.004	5 - 90 ohms	150 - 600mm

Note: Mounting kit part no. N05801432 not included in kit.

Arm Type Fuel Sender

See complete listing of arm type fuel senders on page 81.
Note: Mounting kit part no. N05801432 not included in kit.
 Suitable for 3 - 180 and 10 - 180 Ohms

Reed Switch Sender Fuel & Water

Just for 3 - 180 ohms gauges.
 See complete listing of arm reed switch senders on page 81.
Note: Mounting kit part no. N05801432 not included in kit.
 Suitable for 3 - 180 and 10 - 180 Ohms

Fuel Gauge - Tubular		52 mm	
Part No.	Range	Size	Voltage
301 030 002	0-1/1	52mm	12V
301 040 002	0-1/1	52mm	24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
 With ISO symbol.
 For tubular tank units, adjustable resistance.

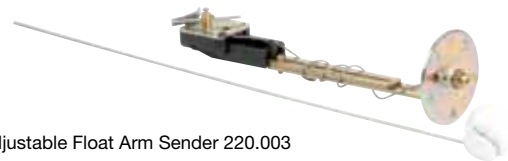
Tubular Type Sender

See complete listing of tubular type senders on page 82.
Note: Mounting kit part no. N05801432 not included in kit.

Accessories

Part No.	Description	PCD
N05801432	Flange mounting kit	54mm

Note: More Accessories, refer to pages 88 - 91.



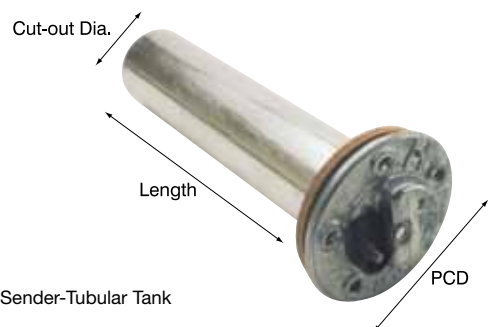
Adjustable Float Arm Sender 220.003



Arm Type Fuel Sender



Reed Switch Sender



Sender-Tubular Tank

PRESSURE GAUGES, electrical

Suitable for most vehicles and machines. Illumination 12V or 24V included.

Note: Not recommended for petrol.

Adaptors are listed on page 80.



Sender 360.001

Pressure Gauge - Engine Oil Pressure		52mm
Part No.	Range	Voltage
350 030 016	0 - 500Kpa	12V
350 040 016	0 - 500Kpa	24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
500Kpa = 5Bar = 72.5 psi

Sender - 500Kpa			10-180 ohms
Part No.	Range	Thread	Terminal
360.001	500Kpa	1/8"-27NPTF	Spade
360.004	500Kpa	1/4"-18NPTF	Button
360.016	500Kpa	1/8"-28BSBT	Button
360.018	500Kpa	1/8"-27NPTF	M4 thread

Note: 500 Kpa = 5 Bar = 72.5 psi
Refer to your engine manufacturers manual for correct oil pressure ratings.
For thread adaptors see page 80. For additional pressure senders see page 73.
For calibration specs, see page 92.



Sender 360.002

Pressure Gauge - Engine Oil Pressure		52mm
Part No.	Range	Voltage
350 030 017	0 - 1000Kpa	12V
350 040 017	0 - 1000Kpa	24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
1000Kpa = 10 Bar = 145 psi
For thread adaptors see page 80. For additional pressure senders see page 73.

Senders			10-199 ohms
Part No.	Range	Thread	Terminal
360.002	1000Kpa	1/8"-27NPTF	Spade
360.019	1000Kpa	1/8"-27NPTF	M4 thread
360081030052C	10 Bar / 7 psi SW	1/8"-27NPTF	M4 thread

Refer to your engine manufacturers manual for correct oil pressure ratings.
Note: 500 Kpa = 5 Bar = 72.5 psi 700 Kpa = 7 Bar = 101.5 psi
1000 Kpa = 10 Bar = 145 psi 2800 Kpa = 28 Bar = 406 psi
For calibration specs, see page 92.



Sender 360 081 038 003C

Pressure Gauge - Transmission Oil Pressure		52mm
Part No.	Range	Voltage
350 030 005	0 - 25bar	12V
350 030 006	0 - 25 bar	24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
2500Kpa = 25bar = 406psi
Dropping resistor 24 - 12V

Senders		Insulated Return 2 terminal
Part No.	Description	Specifications
360081038003C	0 - 25 bar 400 psi single station insulated return	1/8"-27 NPTF

For thread adaptors see page 80. For additional pressure senders see page 73.
For calibration specs, see page 92.

PRESSURE GAUGES, mechanical

Suitable for most vehicles and machines. Can be used on most non-aggressive gases and liquids. Supplied with nut and cone for 3/16" PVC tubing. Illumination 12V included.

For 24V application use globe part no. 240.053

Pressure Gauge		52mm
Part No.	Range	Voltage
150 035 019	0 - 700Kpa	12V
150 035 020	0 - 1000Kpa	12V
150 035 022	0 - 2500Kpa	12V



PRESSURE GAUGES, mechanical dual pointer

Suitable for most vehicles and machines. Two independent measuring systems indicated separate pressures on one scale.

Supplied with nut and cone for 3/16" PVC tubing.

Illumination 12V and 24V globes included. Part no. 240.053

Dual Pressure Gauge		
Part No.	Range	Size
150.316	0 - 1000Kpa	60mm
151.910	0 - 150 psi	52mm



Accessories	
Part No.	Description
230.012	1.8m fitting kit - 3/16" PVC tubing & engine fitting
230.013	5m fitting kit - 3/16" PVC tubing & engine fitting
230.008	Nut and cone for 3/16" PVC tubing, M12x1.5 thread
230.024	Engine fitting 1/8"-27NPTF male, 3/16" PVC tubing
230.025	Nut and cone 1/8"-27NPTF nut



Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025

TEMPERATURE GAUGES, electrical

Suitable for most vehicles and machines.

Illumination 12V or 24V included.

For matching sender units refer to page 78.



a.



b.



c.



d.



e.



f.



Temperature Gauge - Water		52mm	
Part No.	Range	Size	Voltage
310 030 002	40 - 120°C	52mm	12V
310 040 002	40 - 120°C	52mm	24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
40 - 120°C = 100 - 250°F

Senders				
Part No.	Range	Thread	Terminal	Body Type
320.002	40 - 120°C	1/8"-27NPTF	button	a
320.093	40 - 120°C	1/8"-27NPTF	M4 thread	b
323.801/005/001	40 - 120°C	1/8"-27NPTF	button	a
320.022	40 - 120°C	1/2"-14NPTF	spade	c
323801001006K	40 - 120°C	M14x1.5mm	spade	c
320.004	40 - 120°C	M16x1.5mm	button	a

Note: 40 - 120°C = 100 - 250°F

For thread adaptors see page 80. For calibration specs, see page 92.

Temperature Gauge - Engine Oil		52mm	
Part No.	Range	Size	Voltage
310 030 003	50 - 150°C		12V
310 040 003	50 - 150°C		24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
50 - 150°C = 120 - 300°F

Sender				
Part No.	Range	Thread	Terminal	Body Type
320.021	50 - 150°C	1/8"-27NPTF	button	a
320.028	50 - 150°C	1/8"-27NPTF	button	e
320.092	50 - 150°C	1/8"-27NPTF	M4 thread	f
320.010	50 - 150°C	M12x1.5mm	button	a
320.007	50 - 150°C	M14x1.5mm	spade	d

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
50 - 150°C = 120 - 300°F

For calibration specs, see page 92.

Temperature Gauge - Transmission Oil		52mm	
Part No.	Range	Size	Voltage
310 030 004	60 - 200°C		12V
310 040 004	60 - 200°C		24V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
60 - 200°C = 140 - 392°F

Sender				
Part No.	Range	Thread	Terminal	Body Type
320.006	60 - 200°C	1/8"-27NPTF	button	a
320.020	60 - 200°C	1/8"-27NPTF	button	e

For additional senders see page 78. For calibration specs, see page 92.

TEMPERATURE GAUGES, mechanical

Suitable for most vehicles and machines.

Process connection is 1/8"-27NPTF threaded removable thermowell.

Temperature is transmitted via capillary tube.

Coil up excess capillary tubing - do not cut to shorten!

Illumination 12V included. For 24V application use globe part no. 240.053.

Temperature Gauge		52mm
Part No.	Range	Capillary Length
180 035 002	40 - 120°C	1600mm
180 035 004	40 - 120°C	2600mm
180 035 005	40 - 120°C	4000mm
180 035 006	40 - 120°C	6000mm
180 035 008	50 - 150°C	2600mm

Accessories		
Part No.	Description	Note
180.059	Thermowell 1/8"-27NPTF	Suits adaptors # 320.xxx



Thermowell 180.059

EXHAUST TEMPERATURE / PYROMETER, electrical

Suitable for most exhaust systems.

Thermocouple connection is by 1/4"-18NPTF compression fitting.

Illumination 12V included.

For 24V application use dropping resistor part no. N05801180 and globe part no. 240.053.

Pyrometer - Electric Kit		52mm
Part No.	Range	Voltage
397 015 003	0 - 900°C (37.6mV@900°C)	12V

Complete kit - consisting of instrument, thermocouple, 5m loom & weld boss.

Note: Cutting or adding length of loom will not effect calibration.

Spare Parts for 397 015 003 Pyrometer Kit	
Part No.	Description
320.059	Weld boss 1/4"-18 NPTF
240.035	Loom, 5 meter
310 035 001	Instrument 0 - 900°C (37.6mv) 52mm
320.714	Thermocouple 1/4" NPTF non bonded junction "K" type



Thermocouple 320.714

AMMETERS, with internal shunt



Suitable for most engines which requires battery charging system, monitoring. Voltage independent - suitable for 12V or 24V.

Ammeters with internal shunt are easily identified by the heavy duty threaded terminals. Heavy duty wire must be used for wiring.

Illumination 12V included. For 24V application use globe #240.053.

Ammeter with Internal Shunt		52mm
Part No.	Range	Voltage
190 037 002	60-0-60 amp	12V
190 037 003	100-0-100 amp	12V

AMMETERS, with external shunt



Suitable for most engines. Monitors charge and battery condition.

Illumination 12V included.

For 24V application use dropping resistor part no. N05801180 and globe part no. 240.051.

Ammeter with External Shunt		52mm	
Part No.	Description	Specifications	Voltage
190.505	150-0-150AMP	52mm	12V

Complete kit consisting of instrument, shunt and loom.

Note: For shunt installation, use 10mm wire.



Spare Parts for 190.505 ammeter kit

Part No.	Description	Specifications
190 035 005C	150-0-150 gauge, 52mm	
190.080	Shunt - 150 amps	50mV @ 150 amps
190.888	5m loom	

VOLTMETERS

Suitable for all engines and machines.
Monitors charge and battery condition.
Dial colour coded.
Illumination 12V or 24V included.

Voltmeter		52mm
Part No.	Range	Voltage
332 030 001	8 - 16V	12V
332 040 001	18 - 32V	24V

Note: 2 pin plug kit part no. 240.031 recommended. Not included in kit.
With ISO symbol.



BATMAN III BATTERY MONITOR

It's like a fuel gauge for your battery. The Batman III lets you know everything that is essential to know about your battery.

- Battery voltage 8 - 30V
- Battery capacity used in amhours
- Battery capacity regained in amhours
- Charging and discharging current in amps

Benefits

- Measuring range, current: +0.1 - 200A
- Accuracy, voltage: better than 1%
- Accuracy, current: +5%
- Measuring range: amhours 0 - 999AH
- Measuring range voltage: 8 - 30V
- Accuracy: +0.5%



Batman III Battery Monitor - Kit		52mm
Part No.	Specification	Voltage
190.725	Liquid crystal readout	8 - 30V

Note: Kit includes gauge, loom shunt, push button switch

Accessories

Part No.	Description
190.727	Shunt

WARNING LIGHTS CLUSTER

Universal Warning Light Cluster can be used for monitoring vehicle temperature, pressure, battery charging, high beams and ignition.

Warning lights cluster		52mm
Part No.	Specifications	Voltage
231003001	Temp - Pressure - Volt - Headlights - Ignition	12V

Note: Cluster contains 5 globes socket assembly.



HOURMETERS, electrical

Suitable for all vehicles and machines.

Available with 360° minute hand sweep or as counters only.

12V globe included. For 24V applications, 24V globe part no. 240.055 required.



Hourmeter - Black bezel			52mm
Part No.	Range	Illumination	Voltage
331 032 004	0 - 99999.9hrs	Illuminated	12V
(T.58 Illumination terminal)			



Hourmeter - Black bezel			52mm
Part No.	Range	Illumination	Voltage
331 032 001	0 - 99999.9hrs	Not illuminated	12V
331810012004	0 - 99999.9hrs	Illuminated	12V
331810012007	0 - 99999.9hrs	Illuminated	24V



331.601

Hourmeters - Counter type - Black bezel			52mm
Part No.	Range	Illumination	Voltage
331.600	0 - 99999.9hrs	Not illuminated	10/80V
331.601	0 - 99999.9hrs	Not illuminated	10/80V



331.602

Hourmeter - Counter type - With Operation Indicator - Chrome bezel			52m
Part No.	Range	Illumination	Voltage
331.602	0 - 99999.9hrs	Not illuminated	10/80V

HOURMETER

Suitable for all vehicles and machines.

Overall Dimension 53 X 32mm.

Note - Connections not polarity specific.

Hourmeter			
Part No.	Range	Size	Voltage
331.534	0 - 99999.9hrs	37mm x 25mm	10/80V



HOURMETER, LCD

Hourmeter			
Part No.	Range	Illumination	Voltage
331.535	0 - 99999.9hrs	Not illuminated	10/277V



Accessories		
Part No.	Description	Note
240.031	Wiring kit	
230.043	Pressure switch - 1 terminal 70 Kpa - 5 watts - N/O	1/8"-27 NPTF 6-24V
230.050	Pressure switch - 2 terminal 48 Kpa - 5 watts - N/O	1/8"-27 NPTF 6-24V

An hourmeter can be activated by connecting to Ignition power +, off the "D" terminal of the alternator or a normally-open pressure switch during engine operation.

Wiring explanation:

K15 - ignition

K31 - earth

K30 - battery

K58 - illumination



Sender 230.043



Sender 230.050

COCKPIT TITANIUM

QUALITY

Gauges are designed and based on the proven & successful VDO 'Cockpit Vision' platform.

ACCURACY

World class instrument technology for accuracy and performance.

APPEARANCE

Trioptic thru-dial illumination using fibre optic technology to illuminate pointer.

STYLE

Modern design with an eye catching sports look.

DESIGN

Utilising VDO "Spin-Lock" locking ring – eliminating panel warping & gauge rotation.

SPEEDOMETER, automotive



Illumination through dial and pointer. 12V globe included.

Field adjustable to suit 500 to 400,000 imp/km by pulse setting, or auto-calibration function through LCD readout via reset button. Total distance 999,999.9 not resettable. Speed display analogue; Odometer and trip distance LC-display trip distance 99,999.9 resettable.

Signal source Hall-effect, inductive or blocking oscillator sender units.

For 24V application use globe #240.053 (2 required).

For matching sender units refer to page 83.

Speedometer		85mm
Part No.	Range	Voltage
437.900	200km/h	12/24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

PITOT TUBE SPEEDO, marine



The Pitot Tube Speedo is designed to determine the speed of a boat over water. It consists of a pitot tube foot and hose to transfer air pressure to the speedo head system where the air pressure is converted to speed.

Speedometer - Pitot Tube		85mm
Part No.	Range	Voltage
226.900	50mph	12V

Accessories	
Part No.	Description
170.702	Pitot tube assembly black

TACHOMETER

Suitable for most petrol and diesel engines. Field programmable to suit 4, 6 or 8 cyl./4 stroke ignition and alternator pick-up (terminal "W"). Single phase, not suitable for star point or magneto system.

Illumination 12V included.

Tachometer			85mm
Part No.	Range	Voltage	
333.900	8000rpm	12V	

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.



TACHOMETER COLUMN MOUNT

Tachometer - Column Mount - Kit			85mm
Part No.	Range	Voltage	
333.900POD	0 - 8000rpm	12V	

Note: Kit includes gauge, tacho and wiring.



FUEL GAUGE, electrical

Suitable for most petrol, diesel fuel, and LPG systems.

Illumination 12V included.

For matching sender units refer to page 81.

Fuel Gauge			
Part No.	Range	Size	Voltage
310.900	Empty-Full	52mm	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
For tank units with 10-180 ohms resistance.
Without ISO symbol.



Sender - Adjustable Float Arm		
Part No.	Specifications	Length
220.003	3 - 184 ohms	150 - 600mm

Note: Mounting kit part no. N05801432 not included in kit.



Adjustable Float Arm Sender 220.003

Reed Switch Sender Fuel & Water

Just for 3 - 180 ohms gauges.

See complete listing of reed switch senders on page 81.

Note: Mounting kit part no. N05801432 not included in kit.



Reed Switch Sender

VOLTMETER

Suitable for all engines and machines.
Monitors charge and battery condition.
Dial colour coded.
Illumination 12V or 24V included.



Voltmeter		52mm
Part No.	Range	Voltage
332.900	8-16V	12V

Note: 2 pin plug kit part no. 240.031 recommended. Not included in kit.
With ISO symbol.

TURBO CHARGER GAUGE, mechanical

Suitable for petrol vehicles.
Supplied with nut and cone to suit 3/16" PVC tubing.
Illumination 12V included. Use air filter supplied with gauge to avoid
air pulsation.



Turbo Charger Gauge		52mm
Part No.	Range	Size
150.900	-30"Hg/+25psi	52mm

Hg = Negative 30 inches of vacuum of mercury.

Note: Use airline kit 230.012 or 230.013
Accessories on page 10.
Air Restrictor: 10027

OIL PRESSURE GAUGES, electrical

Oil Pressure - Engine Oil		52mm	
Part No.	Range	Size	Voltage
350.900	0 - 80psi	52mm	12V
350.901	0-5 Bar	52mm	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.

Sender		
Part No.	Range	Thread
360.001	0 - 80psi (0-5Bar)	1/8"-27NPTF

See complete listing of arm type fuel senders on page 81.
For calibration specs, see page 92.



Sender 360.001

TEMPERATURE GAUGES, electrical

Suitable for most vehicles and engines.

Illumination 12V and 24V included.

For matching sender units refer to page 78.

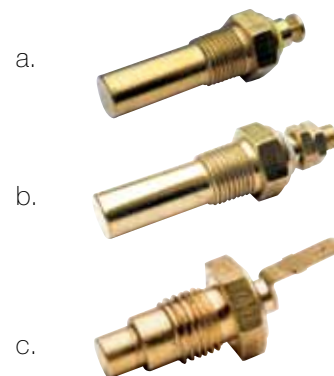
Temperature Gauge - Water			
Part No.	Range	Size	Voltage
301.900	100 - 250°F	52mm	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.
With ISO symbol.
100 - 250F = 40 - 120°C

Sender				
Part No.	Range	Thread	Terminal	Body Type
320.002	100 - 250°F	1/8"-27NPTF	button	a
320.093	100 - 250°F	1/8"-27NPTF	M4 thread	b
323.801/005/001	100 - 250°F	1/8"-27NPTF	button	a
320.022	100 - 250°F	1/2"-14NPTF	spade	c
323801001006K	100 - 250°F	M14x1.5mm	spade	c
320.004	100 - 250°F	M16x1.5mm	button	a

Note: 40 - 120°C = 100 - 250°F

For calibration specs, see page 92.



TEMPERATURE GAUGES, electrical

Suitable for most vehicles.

Illumination 12V included.

For more matching sender units refer to page 78.

Adaptors are listed on page 80.



a.



b.



c.



Temperature Gauge - Water			52mm
Part No.	Description	Specifications	Voltage
301.901	Water temp. symbol on dial	40 - 120°C 287-23 ohms	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Temperature Sender				
Part No.	Range	Thread	Terminal	Body Type
320.002	40 - 120°C	1/8"-27NPTF	button	a
320.093	40 - 120°C	1/8"-27NPTF	M4 thread	b
323.801/005/001	40 - 120°C	1/8"-27NPTF	button	a
320.022	40 - 120°C	1/2"-14NPTF	spade	c
323801001006K	40 - 120°C	M14x1.5mm	spade	c
320.004	40 - 120°C	M16x1.5mm	button	a

Note: 40 - 120°C = 100 - 250°F

For calibration specs, see page 92.



d.



e.



f.



Temperature Gauge - Oil			52mm
Part No.	Description	Specifications	Voltage
301.902	Engine oil temp. symbol on dial	50 - 150°C 323-18 ohms	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Temperature Sender				
Part No.	Range	Thread	Terminal	Body Type
320.021	50 - 150°C	1/8"-27NPTF	button	a
320.028	50 - 150°C	1/8"-27NPTF	button	d
320.092	50 - 150°C	1/8"-27NPTF	M4 thread	d
320.016	50 - 150°C	1/2"-20Whit.S	spade 90°	c
320.023	50 - 150°C	3/8"-BSPF	spade	c
320.010	50 - 150°C	M12x1.5mm	button	a
320.007	50 - 150°C	M14x1.5mm	spade 90°	e

Note: 50 - 150°C = 120 - 300°F

For calibration specs, see page 92.

GAUGE POD KIT

Suitable for VY-VZ Commodores.

- Fits all mode VY-VZ Commodore for Holden sports vehicle look and function.
- The Pod is made of the same material and colour as the genuine dashboard that will not warp or discolour.
- Gauges are genuine high quality VDO instruments for accuracy and performance.
- Kits come complete with all you need for simple "plug n play" installation. No cutting or drilling required.
Includes: Senders, Adaptors, Loom Extension, Cable Ties.
- Fitted correctly, this addition will not alter the vehicle's existing warning system.
- Gauge pod kit cannot be fitted to a vehicle with climate control.



Gauge Pod Kit

Part No.	Description
740.300	Gauge & Pod kit

Note: Wiring and terminals not included.
The pod is only available in grey.

Kit Contents

Part No.	Description
350.900	Pressure gauge 0-80 psi
332.900	Voltmeter 8-16V
500.302	Loom Binnacle - VY-VZ
B06020601P	Housing binnacles
240.072	Light cover blue



GAUGE POD KIT

Suitable for BA and BF Ford Falcon.

- Fits all mode BA-BF Falcon for Ford sports vehicle look and function.
- The Pod is made of the same material and colour as the genuine dashboard that will not warp or discolour.
- Gauges are genuine high quality VDO instruments for accuracy and performance.
- Kits come complete with all you need for simple "plug n play" installation. No cutting or drilling required.
Includes: Senders, Adaptors, Loom Extension, Cable Ties.
- Fitted correctly, this addition will not alter the vehicle's existing warning



Gauge Pod Kit

Part No.	Description
740.302	Gauge & Pod kit

Note: Wiring and terminals not included.
The pod is only in grey available.

Kit Contents

Part No.	Description
350.900	Pressure gauge 0-80 psi
332.900	Voltmeter 8 -16V
500.302	Loom Binnacle - VY-VZ
740.301	Housing binnacles
240.072	Light cover blue



COCKPIT WHITE

Cockpit White offers an alternative appearance to conventional black face dials, developed from VDO's strength and commitment to the automotive industry to provide a low cost range of gauges suited to a broad range of applications. These reliable gauges feature easy to read flood lit dial illumination for a fantastic look.

SPEEDOMETERS, automotive

Illumination through dial and pointer. 12V globe included.

Field adjustable to suit 500 to 400,000 imp/km by pulse setting, or auto-calibration function through LCD readout via reset button. Total distance 999,999.9 not resettable. Speed display analogue; Odometer and trip distance LC-display trip distance 99,999.9 resettable.

Signal source Hall-effect, inductive or blocking oscillator sender units.

For 24V application use globe #240.053 (2 required).

For matching sender units refer to page 83.



Speedometer - Electronic

Part No.	Range	Size	Voltage
437.202	0 - 120mph	85mm	12/24V
437.100	0 - 280km/h	100mm	12/24V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.

PITOT TUBE SPEEDO, marine

The Pitot Tube Speedo is designed to determine the speed of a boat over water. It consists of a pitot tube foot and hose to transfer air pressure to the speedo head system where the air pressure is converted to speed.

Speedometer - Pitot Tube

Part No.	Range	Size	Voltage
170.701	50Kn	85mm	12V

Accessories

Part No.	Description
170.702	Pitot tube assembly black



TACHOMETERS

Field programmable to suit 4, 6 or 8 cylinder, four stroke petrol engines with coil pickup or alternator pick-up (terminal "W") on diesel applications. Illumination 12V included. Single phase, not suitable for star point or magneto system.



Tachometer - Electronic

Part No.	Range	Size	Voltage
333.100	0 - 8000rpm	100mm	12V
333.255	0 - 7000rpm	85mm	12V

Note: 8 pin plug kit part no. 340.824 recommended. Not included in kit.



TACHOMETER COLUMN MOUNT

Tachometer - Column Mount - Kit

Part No.	Range	Voltage
333.255POD	0 - 7000rpm	12V

Note: Kit includes gauge, tacho and wiring.

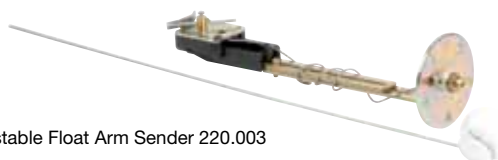


FUEL GAUGE, electrical

Suitable for use with most petrol and diesel fuel. Illumination 12V and 24V included.

Fuel Gauge	52mm		
Part No.	Range	Size	Voltage
301.216	Fuel gauge float arm	10 - 180 ohms	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.



Adjustable Float Arm Sender 220.003

Sender - Adjustable Float Arm

Part No.	Specifications	Length
220.003	10 - 180 ohms	150 - 600mm

Note: Mounting kit part no. N05801432 not included in kit.



Arm Type Fuel Sender

Arm Type Fuel Sender

See complete listing of arm type fuel senders on page 81.

Note: Mounting kit part no. N05801432 not included in kit.



Reed Switch Sender

Reed Switch Sender Fuel & Water

Just for 10 - 180 ohms gauges.

See complete listing of reed switch senders on page 81.

Note: Mounting kit part no. N05801432 not included in kit.



Flange Mounting Kit N05801432

Accessories

Part No.	Description	PCD
N05801432	Flange mounting kit	54mm

Note: More Accessories, refer to pages 88 - 91.

PRESSURE GAUGE, electrical

Suitable for most vehicles.
 Illumination 12V included.
 Adaptors are listed on page 80.

Electric Pressure Gauge - 80psi / 500Kpa		52mm
Part No.	Specifications	Voltage
350.240	80psi (500Kpa)	12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Sender			0-180 ohms
Part No.	Range	Thread	Terminal
360.001	500Kpa	1/8"-27NPTF	Spade
360.004	500Kpa	1/4"-18NPTF	Button
360.016	500Kpa	1/8"-28BSBT	Button
360.018	500Kpa	1/8"-27NPTF	M4 thread
360081030049K	5 Bar / 7 psi SW	1/8"-27NPTF	M4 thread

Refer to your engine manufacturers manual for correct oil pressure ratings.

Note: 500 Kpa = 5 Bar = 72.5 psi 700 Kpa = 7 Bar = 101.5 psi
 1000 Kpa = 10 Bar = 145 psi 2800 Kpa = 28 Bar = 406 psi



Sender 360.001

PRESSURE GAUGE, mechanical

Suitable for most vehicles.
 Supplied with nut and cone for 3/16" PVC tubing.
 Illumination 12V included.

Electric Pressure Gauge		52mm
Part No.	Specifications	Voltage
150.202	0 - 100psi	12V

Accessories	
Part No.	Description
230.012	1.8m fitting kit - 3/16" PVC tubing & engine fitting
230.013	5m fitting kit - 3/16" PVC tubing & engine fitting
230.008	Nut and cone for 3/16" PVC tubing, M12x1.5 thread
230.024	Engine fitting 1/8"-27NPTF male, 3/16" PVC tubing
230.025	Nut and cone 1/8"-27NPTF nut



Oil line kit 230.012



Nut and cone 230.008



Engine fitting 230.024



Nut and cone 230.025

TURBO CHARGER GAUGE, mechanical

Suitable for vehicles.

Supplied with nut and cone to suit 3/16" PVC tubing.

Illumination 12V included.



Engine fitting 230.024



Nut and cone 230.025

Turbo Charger Gauge		52mm
Part No.	Description	Specification
150.206	"TURBO" on dial	-30"HG/+25psi

Hg = Negative 30 inches of vacuum of mercury.

Note: Use airline kit 230.012 or 230.013
Accessories on page 10.
Air Restrictor: X39732002001

Accessories

Part No.	Description
230.012	1.8m fitting kit - 3/16" PVC tubing & engine fitting
230.013	5m fitting kit - 3/16" PVC tubing & engine fitting
230.008	Nut and cone for 3/16" PVC tubing, M12x1.5 thread

Note: For more Accessories, refer to pages 88 - 91.

EXHAUST TEMPERATURE / PYROMETER, electrical

Suitable for most exhaust systems. Thermocouple connection is by 1/4"-18 compressing fitting.

This kit features the VDO "Spin-lock" fastening system illumination 12V included.

Adaptors are listed on page 80.



Thermocouple 320.714

Pyrometer - Electrical Kit		52mm
Part No.	Range	Voltage
310.240	250 - 1600°F	12V

Complete kit - consisting of instrument, thermocouple, 5m loom.

Spare Parts for 310.240 exhaust temperature/pyrometer kit

Part No.	Description
320.714	Thermocouple 1/4" NPTF non bonded junction "K" type
240.035	Loom, 5m
320.059	Weld boss 1/4" - 1/8" NPTF

TEMPERATURE GAUGE, electrical

Suitable for most vehicles.

Illumination 12V included.

For more matching sender units refer to page 78.

Adaptors are listed on page 80.

Temperature Gauge - Water		52mm
Part No.	Description	Specifications
310.239	Electrical temp gauge	100 - 250°F, 12V

Note: 3 pin plug kit part no. 240.030 recommended. Not included in kit.

Sender				
Part No.	Range	Thread	Terminal	Body Type
320.002	100 - 250°F	1/8"-27NPTF	button	a
320.093	100 - 250°F	1/8"-27NPTF	M4 thread	b
323.801/005/001	100 - 250°F	1/8"-27NPTF	button	a
320.022	100 - 250°F	1/2"-14NPTF	spade	c
323801001006K	100 - 250°F	M14x1.5mm	spade	c
320.004	100 - 250°F	M16x1.5mm	button	a

Note: 40 - 120°C = 100 - 250°F

For calibration specs, see page 92.



a.



b.



c.



TEMPERATURE GAUGE, mechanical

Suitable for most vehicles.

Process connection is via 1/2"-14NPTF wet bulb.

Temperature is transmitted via capillary tube.

Coil up excess capillary tubing - do not cut to shorten!

Illumination 12V included.

Adaptors are listed on page 80.

Temperature Gauge - Water			52mm
Part No.	Description	Range	Capillary Length
180.204	Mechanical temp gauge	120 - 260°F	2438mm (96")



VOLTMETER

Suitable for all engines.
Illumination 12V or 24V included.



Voltmeter		52mm
Part No.	Description	Voltage
332.241	Voltmeter	8 - 16V

Note: 2 pin plug kit part no. 240.031 recommended. Not included in kit.

INSTRUMENT KIT

Cockpit White Kit

Part No.	Description
740.104	Gauge kit

Note: Wiring and terminals not included.



Kit Contents - Gauges

Part No.	Description
350.240	Oil Pressure (52mm)
310.239	Water Temperature (52mm)
301.216	Fuel (52mm)
332.241	Volt Meter (52mm)
333.255	Tachometer (85mm)



Kit Contents - Senders

Part No.	Description
360.001	Oil Pressure
320.002	Water Temperature
220.003	Fuel

Note: Speedo & other gauges not part of the kit and can be purchased separately.



Sender 360.001



Sender 320.002



Adjustable Float Arm Sender 220.003

TACHOMETER, digital

Suitable for most petrol engines. Field programmable to suit 4, 6 or 8 cyl./4 stroke ignition.

Tachometer	52mm	
Part No.	Specification	Voltage
333.003	10K RPM	12V



AIR FUEL RATIO GAUGE, digital

Suitable for monitoring engine performance.

Rich - Hard acceleration

Mid - Optimised engine response to acceleration

Lean - Better fuel economy

Air Fuel Ratio Gauge	52mm		
Part No.	Range	Size	Voltage
301.401	Lean - Rich	52mm	12V

Air Fuel Ratio Gauge Kit	52mm		
Part No.	Range	Size	Voltage
301.402	Lean - Rich	52mm	12V

Complete kit consists of gauge, oxygen sensor and loom.



PRESSURE GAUGE, digital

Suitable for most vehicles.

Pressure Gauge - Oil	52mm	
Part No.	Specification	Voltage
350.401	500 Kpa	12V

Note: Not recommended for petrol.

Sender - 500Kpa	10-180 ohms		
Part No.	Range	Thread	Terminal
360.001	500Kpa	1/8"-27NPTF	Spade
360.004	500Kpa	1/4"-18NPTF	Button
360.016	500Kpa	1/8"-28BSBT	Button
360.018	500Kpa	1/8"-27NPTF	M4 thread

Note: 500 Kpa = 5 Bar = 72.5 psi

Refer to your engine manufacturers manual for correct oil pressure ratings.

For thread adaptors see page 80. For additional pressure senders see page 73.

For calibration specs, see page 92.



Sender 360.001

VOLTMETER, digital

Suitable for most engines/vehicles where battery and charging systems need to be monitored.

Voltmeter	52mm
Part No.	Voltage
332.401	8 - 18V



TEMPERATURE GAUGES, digital

Digital Water Temperature Gauges (40-120°C) & Digital Oil Temperature Gauges (50-150°C) display an LED light which is clear and easy to see in any time of the day or night.



a.



b.



c.



d.



e.



f.



Temperature Gauge - Water		52mm
Part No.	Range	Voltage
310.401	40 - 120°C	12V

Temperature Sender				
Part No.	Range	Thread	Terminal	Body Type
320.002	40 - 120°C	1/8"-27NPTF	button	a
320.093	40 - 120°C	1/8"-27NPTF	M4 thread	b
323.801/005/001	40 - 120°C	1/8"-27NPTF	button	a
320.022	40 - 120°C	1/2"-14NPTF	spade	c
323801001006K	40 - 120°C	M14x1.5mm	spade	c
320.004	40 - 120°C	M16x1.5mm	button	a

Note: 40 - 120°C = 100 - 250°F
For calibration specs, see page 92.

Temperature Gauge - Oil		52mm
Part No.	Range	Voltage
310.701	50 - 150°C	12V

Temperature Sender				
Part No.	Range	Thread	Terminal	Body Type
320.021	50 - 150°C	1/8"-27NPTF	button	a
320.028	50 - 150°C	1/8"-27NPTF	button	d
320.092	50 - 150°C	1/8"-27NPTF	M4 thread	d
320.016	50 - 150°C	1/2"-20Whit.S	spade 90°	c
320.023	50 - 150°C	3/8"-BSPF	spade	c
320.010	50 - 150°C	M12x1.5mm	button	a
320.007	50 - 150°C	M14x1.5mm	spade 90°	e

Note: 50 - 150°C = 120-300°F
For calibration specs, see page 92.

CLOCK, digital

Clock		52mm
Part No.	Description	Voltage
370.701	12 Hr	12V

CONFIGURATION OPTIONS

CANcockpit is the flexible system solution for processing data from various analogue and digital sensors via A master instrument connected to a CAN bus. It can be precision configured to meet specific needs, and is simple to expand up to 16 instruments which can be controlled by one master instrument, whenever required. In addition, this modular instrumentation solution may be integrated into existing VDO panel solutions.

CANcockpit, the flexible solution for a wide range of applications, offers numerous configuration and expansion options. It is based around a master instrument which can be either a Tachometer, Speedometer or Black box. The master instrument features two CAN inputs supporting different CAN protocols, two frequency inputs, three resistive inputs, one 4-20 mA input, plus one 0-5 V input. In addition, it is equipped with two switched outputs, a configurable digital display field, and more.

MASTER GAUGE, TACHOMETER

Tachometer - Electronic

Part No.	Range	Size	Voltage
A2C60000020	0 - 3*1000/min S tb	80mm	12/24V
A2C60000070	0 - 3*1000rpm S tb	85mm	12/24V

Note: S = Single scale tb = Triangle black bezel



MASTER GAUGE, SPEEDOMETER

Speedometer - Electronic

Part No.	Range	Size	Voltage
A2C60000024	0 - 200km/h S tb	80mm	12/24V
A2C60000025	0 - 80mph D tb	80mm	12/24V
A2C60000072	0 - 120km/h S tb	85mm	12/24V
A2C60000073	0 - 80mph S tb	85mm	12/24V
A2C60000129	0 - 120km/h S tb	100mm	12/24V

Note: S = Single scale tb = Triangle black Bezel
D = Double scale



Only available from VDO authorized Service Agents.

SATELLITE GAUGES, TACHOMETER

Tachometer - Analog indication

Part No.	Range	Size	Voltage
A2C60000360	0 - 3*1000/min S tb	100mm	12/24V

Note: S = Single scale tb = Triangle black bezel



SATELLITE PRESSURE GAUGES

Pressure Gauges - Engine Oil Pressure - Analog indication

Part No.	Range	Size	Voltage
A2C60000253	0 - 500Kpa S tb	52mm	12/24V
A2C60000254	0 - 1000Kpa S tb	52mm	12/24V

Pressure Gauges - Break pressure - Dual line - Analog indication

Part No.	Range	Size	Voltage
A2C60000259	0 - 10bar S tb	52mm	12/24V
A2C60000260	0 - 10bar S tb	52mm	12/24V

Note: S = Single scale tb = Triangle black bezel
D = Double scale wo = Without ISO symbol



SATELLITE TEMPERATURE GAUGES

Temperature Gauges - Water - Analog indication

Part No.	Range	Size	Voltage
A2C60000273	40 - 120°C S tb	52mm	12/24V
A2C60000275	100 - 280°F D tb	52mm	12/24V

Note: S = Single scale tb = Triangle black bezel
D = Double scale on = On-road ISO symbol
wo = Without ISO symbol

SATELLITE FUEL GAUGE

Fuel Gauge - Analog indication

Part No.	Range	Size	Voltage
A2C60000279	E - F S tb	52mm	12/24V



SATELLITE AdBlue GAUGE

Fuel Gauge - Analog indication

Part No.	Range	Size	Voltage
A2C60000299	0 - 1 S tb	52mm	12/24V



SATELLITE VOLTMETER GAUGES

Voltmeter - Analog indication

Part No.	Range	Size	Voltage
A2C60000282	8 - 16V S tb	52mm	12/24V
A2C60000284	18 - 32V S tb	52mm	12/24V

Only available from VDO authorized Service Agents.

MASTER BLACK BOX

Usage instead of the master tachometer or speedometer

Master Black Box	
Part No.	Description
A2C60500641	CCM Black Box



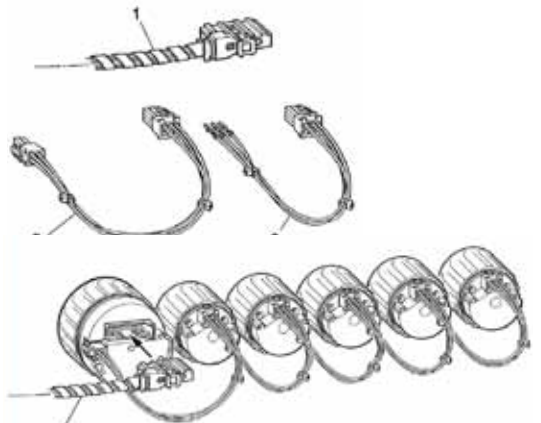
CLAMP RINGS

Clamp Ring		
Part No.	Size	Drawing No.
800.005.015	52mm	1
800.005.005	80mm	2



WIRING HARNESSES

Wiring Harnesses			
Part No.	Description	Size	Drawing No.
A2C53041729	Master main (26-pole)	3000mm	1
A2C53344035	Master to Satellite	200mm	2
A2C53344036	Satellite to Satellite	200mm	3



Wiring harness master

SOFTWARE ACCESSORIES

Software	
Part No.	Description
X11602000009	CANcockpit Interface (Wingauge CMD Line)
X11602000010	CANcockpit Interface (Wingauge)

Note: Software only available for authorized and factory trained Regional Partners and OEM's.



Only available from VDO authorized Service Agents.

TACHOMETERS

These tachometers reads 0-10,000 RPM, and also comes with plastic housing bezel and shift light accessory.



Performance Tachometer		95mm
Part No.	Specification	Voltage
333.201	10K RPM W/shift light	12V

Note: 8 pin plug kit part no. 340.824 recommended.



Monster Tachometer		120mm
Part No.	Specifications	Voltage
333.001	10K RPM W/shift light	12V

This four function gauge is used as a tachometer (0-10,000 RPM), voltmeter (8-16V), oil pressure gauge (0-100 PSI) and water temperature gauge (105F-250F) all in one. The housing color is black/titanium, and also comes with a shift light accessory and with 7 different illumination colour combinations.

Oil and temp senders are included in the kit.



Monster Tachometer		120mm
Part No.	Specifications	Voltage
333.002	10K RPM Oil/Temp/Volt W/shift light	12V

OIL PUMP, electrical

Electric Oil pump used to pump engine or gear oil.



Oil pump		12V
Part No.	Description	
405040001001	160 Litres per hour	
CSCS-9001	Connector Loom Oil Pump	

Note: 100°C to 150°C working temperature, 4 bar pressure.
Polarity is written on the socket.

KIMAX I

The economical, easy-to-install instrument Kimax I gives you a simple and precise overview of axle pressure, both for individual and axle groups. It is in two different models available.

A cabin version intended for mounting inside the cabin of the vehicle or in a trailer version intended for mounting outside on the chassis on your vehicle.

The trailer version is splash water proof and are designed to withstand the environment conditions around a vehicle on the road all the year.

The hydraulic sensor for heavy load vehicles are suitable for vehicles which are equipped with hydraulic suspensions. Also for loading equipment such as forklifts.

Each model is offered in a single or a dual inlet version. Single air inlet is used on vehicles with combined level control for one or more axles. Dual air inlet is used either on vehicles with split level control for one or more axles. Or on vehicles with two or more individual axles arranged in a combined level control system.

Kimax I - Cabin

Part No.	Description
X10732002003	Cabin Version with 1 Sensor
X10732002001	Cabin Version with 2 Sensors



Cabin Version

Kimax I - Trailer

Part No.	Description
X10732002004	Trailer Version with 1 Sensor
X10732002002	Trailer Version with 2 Sensors



Trailer Version

Kimax I - Hydraulic Sensor

Part No.	Description
10172	For heavy load vehicles



Hydraulic Sensor

KIMAX II

The universal system is designed for maximum flexibility. Kimax II can be tailored to provide you with detailed overview of your vehicle total weight, load and individual axle pressure. It also supplies you with weighing slips for easy documentation. Kimax II offers more combinations regarding setup on multiple suspension systems.

The DIN Radio Panel is an adaptable instrument for supervision of load on all axles on your carriages. Seamless fitting into your cabin. Customized for all Kimax accessories for your individual layout, including swapping between different trailer.

The Universal instrument is equal to DIN Radio Panel in functionality, however specially invented for panel mounting.

The sensor needs to be placed on the chassis sensor box. It enables easy communication with the DIN Radio Panel and Universal display instrument.



DIN Radio Panel 10117



Wireless Handheld 10119



Printer 10120



SG Sensor 10170

Kimax II - DIN Radio Panel

Part No.	Description
10117	For seamless cabin fitting

Kimax II - Universal

Part No.	Description
10107	For panel mounting

Kimax II - Sensor

Part No.	Description
10116	For placement on the chassis sensor box

Kimax II - Accessories

Part No.	Description
10119	Wireless Handheld
10120	Printer for easy and effective documentation
10170	SG Sensor for vehicles equipped with parable or leaf springs on one or more axles

CENTRAL LOCK UNIVERSAL REMOTE FOR KEYLESS ENTRY

This part converts cars with central locking to keyless entry. It has a great use for cars that have lost or broken factory remotes.

This kit contains 2 remote controls, indicator outputs, full relay outputs, vacuum control selectable and a boot release output.

Universal remote keyless entry system		
Part No.	Description	Voltage
880.770	Kit	12V



CENTRAL LOCK UNIVERSAL REMOTE FOR KEYLESS ENTRY WITH ALARM

This part converts cars with central locking to keyless entry. It has a great use for cars that have lost or broken factory remotes.

This kit contains universal remote control, immobilizer output and relay, shock sensor, also a door, boot and bonnet protection circuit, 2 black remote controls, 1 Pink remote control, indicator outputs, full relay outputs, vacuum control selectable, boot release output and a battery back up siren.

Universal remote keyless entry system with Alarm		
Part No.	Description	Voltage
900.550	Kit with alarm	12V



FLASH 2 OPEN - GARAGE DOOR OPENING SYSTEM

This is a significant step forward in convenience and security of entering and exiting your garage or property. With this system you have now fully integrated your car with your home by integrating the activation of your garage door opener remote into the high beam switch of your turn signal lever.

Benefits:

- No more broken remote controls
- No more fumbling in the dark to find remote controls
- Increase security by using your car to control the door

Flash 2 Open - Kit		
Part No.	Description	Voltage
880.660	Head Light Flash remote door	12V

Note: The Kit includes 1 Receiver for garage door motor, 2 Transmitters for in car use, 1 Handheld transmitter and Fitting hardware.

Flash 2 Open - Accessories	
Part No.	Description
F20-TX1	Hand Held Transmitter Flash 2 Open
F20-TXC	Spare in Car Transmitter Flash 2 Open
F20-RX	Spare Receiver for Flash 2 Open



REMOTE CONTROLLED IMMOBILISER, Australian Standards Approved



The VDO Remote Controlled Immobiliser features a high level of security, with the added convenience of keyless entry where central locking is fitted to the vehicle. Features include 2 point on board immobilisation, all black wire harness, auto immobilisation, status LED, indicator lamps output, 2 code hopping remote transmitters, boot lease output and full central door locking relay output. Interfaces with VDO central locking part no. 880.700 and most factory central locking systems (some vehicles may require additional actuator part no. 880.003 for drivers door).

Upgradeable to full alarm systems by adding siren part no. 880.013, shock sensor part no. 880.007 and/or microwave sensor part no. 880.006.

Remote Controlled Immobiliser		12V
Part No.	Description	
900.600	Universal Remote Immobiliser	

REMOTE CONTROLLED ALARM SYSTEM Australian Standards Approved



The VDO Remote Controlled Alarm System is a universal alarm system with a built in immobiliser for added security.

Features include 2 point on board immobilisation, all black wire harness, auto immobilisation, built in, entry point protection, status LED, glass break sensor, indicator lamps output, 2 code hopping remote transmitters, sector diagnostics, options programmable using remote transmitter, battery backup minisiren, boot release output and full central door locking relay output. Interfaces with VDO central locking part no. 880.700 and most factory central locking systems (some vehicles may require additional actuator part no. 880.003 for drivers door). Compatible with microwave sensor part no. 880.006.

Horn output = 155 dB @ 1 metre.

Remote Controlled Alarm System		12V
Part No.	Description	
900.505	Universal Alarm/Immobiliser	

REMOTE CONTROLLED CENTRAL LOCKING KIT

The VDO Remote Controlled Central Locking Kit is a universal kit which converts standard locks to transmitter operated central locking. Features indicator lamps output and an optional starter kill (use part no. 880.012), and boot release function (additional relays required.)

Central Locking Kit		12V
Part No.	Description	Specifications
900.705	Remote controlled	4 Actuators Central locking kit (key)



CENTRAL LOCKING KIT

The VDO Central Locking Kit is a universal kit which converts standard locks to key operated central locking, with master actuators for both front doors. This unit can be integrated with most remote controlled alarms and immobilisers for full keyless entry. The kit includes all necessary hardware, 4 actuators, wiring loom and control box. Can be integrated to VDO immobilisers part number: 900.600

Central Locking Kit		12V
Part No.	Description	Specifications
880.700	Central locking kit for	4 Actuators existing remote controls



Accessories		12V
Part No.	Description	
880.003	Slave locking actuator 2 wire	
880.004	Master locking actuator 5 wire	
880.005	Sliding door switch for vans	
880.006	Microwave sensor. Suits 880.600 & 880.505	
880.007	Shock sensor. Suits 880.600, 880.400	
880.008	Central locking control box. Suits 880.700	
880.012	Electric boot release kit 12V	
880.013	Battery backup siren	
880.015	Remote transmitter. Suits 880.705 kit and 900.705	
880.016	Central locking control box. Suits 880.705 kit	
880.017	Remote transmitter. Suits 880.555	
880.020	Remote 900.600 and 900.505	
880.021	Code key 900.605	



Control box 880.008



Slave locking actuator 880.003



Battery backup siren 880.013

LOW WATER ALARM



The VDO Low Water Alarm Electronic Module monitors current continuity while the low water level probe is submerged in water. The location of the probe in the radiator or header tank determines the critical water level. Warning occurs within a few seconds of this level being reached. The flashing warning light and continuously activated buzzer can only be cancelled by switching off the engine. The circuit design features a functional check which is carried out every time the ignition is turned off. It also includes a delay action to avoid premature triggering.

Note: For aluminium core radiators, fit water level probe to vehicle thermostat housing.

Low Water Alarm

Part No.	Description	Voltage
410.007	Low Water Warning Kit	12/24V

Specifications

Switch Point - when continuity broken R>10K

Probe Material - Stainless Steel

Operation - AC current to prevent Electrolysis

Note: Kit contents - Warning light, electronic module water level probe, buzzer adaptor, soldering bush, and all wiring plugs and sockets.

Accessories

Part No.	Description	Specification
410.006	Electronic Module	110 X 67 X 35mm
230.058	Water level probe	30mm Long
230.059	Water level probe	90mm Long
230.016	Soldering Bush	
230.017	Threaded Adaptor	M14 X1.5 Round.
230.056	2 terminal Ceramic Probe	M14 X1.5
170.708	Warning light	12 volt
240.022	Buzzer 12/24V	40mm,34mm deep 75dB

TYRE PRESSURE GAUGE

For the conscientious driver who likes to retain a consistent Tyre pressure. Supplied in a handy leather pouch. Dual scale bar/psi.



Tyre Pressure Gauge

Part No.	Range
150.050	0 - 4.5bar (0 - 64psi)

Accessories

Part No.	Description
150.050S	Replacement rubber seal

SPEED ALERT

Avoid expensive speeding fines and license suspension by installing a VDO Speed Alert. Features include acoustic and visual warnings when set speed is exceeded, with 1 km/h increments for set speed. Headlight “on” alert provides acoustic and visual warning when headlights are left on and ignition is switched off. Suitable for both electronic and mechanical speedometers. Easy calibration for all cars. Double sided tape mounting with an external alarm output.

For mechanical speed application, add speed sensor, refer to pages 83.



Speed Alert		12/24V
Part No.	Description	Size
124.130	Speed Alert Kit (Suits electronic speedometers)	70x45x22mm

WARNING LIGHTS

Warning Lights			
Part No.	Description	Specification	Size
170.708	Red Light	Holder & 12V globe	15mm hole
170.709	Amber light	Holder & 12V globe	15mm hole
170.712	Green light	Holder & 12V globe	15mm hole
240.057	Globe	24V	
240.056	Globe	12V	



WARNING BUZZERS

Warning Lights			
Part No.	Description	Specification	Voltage
240.022	Buzzer 75db	50mA	12/24V



Warning buzzer base

UNIVERSAL CRUISE CONTROL

Electronic cruise control suitable for petrol and diesel engines, automatic or manual transmission. Actuator & control box in one compact unit. Dip switch controls for quick calibration and fine tuning.



Pacesetter Cruise Control		12V
Part No.	Description	
X10397106825	Cruise control, complete kit, includes part no. 412.029 stalk control, electric actuator, wiring loom, bowden cable and clutch switch.	



Universal Stalk Control
X39737300006

Accessories	
Part No.	Description
412.030	Kit without stalk
412.029	Stalk Control RF
X39737300006	Universal Stalk Control

VEHICLE APPLICATION LISTING

ALFA ROMEO							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
75	Tween-Spark	88-92	4 Cyl 06224	2.0L	231.085		
75	AR162	86-92	6 Cyl 01911, 06174	2.5L, 3.0L	231.085		
147		00-On	4 Cyl, 6 Cyl	All	231.117		
156		99-04	4 Cyl, 6 Cyl	2.0L, 2.5L	231.117		
166		99-01	6 Cyl	3.0L	231.117		
GT	2D Coupe	04-on	4 Cyl, 6 Cyl	2.0L 3.0L	231.117		
GTV	All	98-on	4 Cyl, 6 Cyl	2.0L 3.0L	231.117		
Spider	JTS Lusso, Convert	03-05	4 Cyl, 6 Cyl	2.0L	231.117		

AUDI							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
80	CC, 1.8E Quattro, 2.0 & 2.0S	86-87	4 Cyl	1.8L	231.110	320.086	360.022
80	CC, 1.8E Quattro	86-87	4 Cyl	1.8L	231.111	320.086	360.022
90	Sport & Quattro	89-92	5 Cyl	2.3L	231.110		
100	CD	83-91	5 Cyl	2.1L	231.110		
100	CD	83-91	5 Cyl	2.1L	231.111		
200	Turbo	86-91	5 Cyl	2.2L	231.110		
A3	4D Hatchback	97-04	4 Cyl	1.6L	231.111		
A3	4D Hatchback, Turbo	97-04	4 Cyl	1.8L	231.111		
A4	4D Hatchback, Turbo	95-01	4 Cyl	1.8L	231.111	320.086	360.022
A4	1.8T (incl. Quattro)	95-99	4 Cyl	1.8L	231.111		
A4	2.4 V6	98-01	6 Cyl	2.4L	231.110		
A4	2.4 V6	98-on	6 Cyl	2.4L	231.111		
A4	2.4 V6	95-99	6 Cyl	2.6L	231.110		
A4	2.6 V6	95-99	6 Cyl	2.6L	231.110		
A4	2.6 V6 Quattro	95-99	6 Cyl	2.4L	231.111		
A4	2.6 V6 Quattro	94-97	6 Cyl	2.6L	231.111		
A6	2.8 Quattro	94-99	6 Cyl	2.8L	231.110		
A8	3.7 V8	96-99	6 Cyl	3.7L	231.110		
A8	4.2 V8	96-99	6 Cyl	4.2L	231.110		

BMW							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
316i - 320i	E36, E46	95-99	4 Cyl	1.6L	231.115		
318i, 319S	E30	88-91	4 Cyl	1.8L	231.115		
318i	E36, E46	94-98	4 Cyl	1.8L	231.115		
320i	E30, E36	88-95	6 Cyl	2.0L	231.115		
320i	E30	82-85	6 Cyl	2.3L	231.109		
323i - 323Ci	E46	98-on	6 Cyl	2.5L	231.115		
325i - 325e	E30, E36	86-95	6 Cyl	2.5L, 2.7L	231.115		
325Ti - 325Ci	E46	02-on	6 Cyl	2.5L	231.115		
328i - 328Ci	E36, E46	95-00	6 Cyl	2.8L	231.115		
330i - 330Ci	E36	00-on	6 Cyl	3.0L	231.115		
520i	E28	83-85	6 Cyl	2.0L	231.109		
520i	E34	90-96	6 Cyl	2.0L	231.115		
523i	E39	96-00	6 Cyl	2.5L	231.115		

VEHICLE APPLICATION LISTING

BMW Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
525i	E34	88-90	6 Cyl	2.5L	231.115		
528i	E28	82-85	6 Cyl	2.8L	231.109		
528i	E39	96-00	6 Cyl	2.8L	231.115		
530i	E34	93-96	8 Cyl	3.0L	231.115		
530i	E60	03-on	6 Cyl	3.0L	231.115		
530i	E28	86-88	6 Cyl	3.4L	231.109		
535i	E28	86-88	6 Cyl	3.4L	231.109		
535i & 535iS	E34	88-91	6 Cyl	3.4L	231.115		
535i	E39	96-on	8 Cyl	3.5L	231.115		
540i	E34	94-96	8 Cyl	4.0L	231.115		
540i	E39	96-03	8 Cyl	4.0L	231.115		
545i	E39	03-on	8 Cyl	4.0L	231.115		
730i	E32	86-94	6 Cyl	3.0L	231.115		
730i	E32 iL	91-94	8 Cyl	3.0L	231.115		
740iL	E32, E38	92-on	8 Cyl	4.0L & 4.4L	231.115		
745iL	E66 LWB	02-on	8 Cyl	4.4L	231.115		
M3, M3R	E36, E46	94-on	6 Cyl	3.0L & 3.2L	231.115		
X3, X5, Z3	E83, E53, E36	97-on	4 Cyl, 6 Cyl, 8 Cyl	1.9L 2.0L, 3.0L, 4.4L,4.6L	231.115		
Z4	2D Convertible	03-on	6 Cyl	2.5L & 3.0L	231.115		

CHRYSLER							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Valiant	All	62-81	6 Cyl, 8 Cyl	All	231.083	320.002	360.001
Charger	All	62-81	6 Cyl, 8 Cyl	All	231.083	320.002	360.001
Centura	KB	75-77	4 Cyl	2.0L	230.089		
Centura	KB, KC	75-78	6 Cyl	3.5L, 4.0L	231.083		
Galant	All	71-77	4 Cyl	All	231.083		

DAEWOO							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
1.5i		94-95	4 Cyl	1.5L	231.096	320.008	
Cielo	1.5 SOHC	94-95	4 Cyl	1.5L		320.008	
Cielo	1.5 SOHC, 1.5 DOHC	95-98	4 Cyl	1.5L	231.096	320.095	
Espero	2.0L SOHC	95-97	4 Cyl	2.0L	231.096		
Kalos	1.5L SOHC	03-04	4 Cyl	1.5L	231.098	320.098	
Lacetti	1.8L DOHC	03-04	4 Cyl	1.8L	231.098	320.095	
Lanos	1.5L SOHC, 1.6 DOHC	97-03	4 Cyl	1.5L	231.114	320.095	
Leganza	2.0L DOHC	97-99	4 Cyl	2.0L	231.114	320.095	
Leganza	2.2L DOHC	99-02	4 Cyl	2.2L	231.114	320.095	
Matiz	KL M100 SOHC	99-01	3 Cyl	0.8L	231.089	320.095	
Matiz	KL M150 SOC	02-04	3 Cyl	0.8L		320.095	
Musso	3.2L DOHC	98-02	6 Cyl	3.2L	231.094		
Nubira	J100	97-99	4 Cyl	1.6L	231.114	320.098	
Nubira	J100	97-99	4 Cyl	2.0L	231.114	320.099	
Nubira	J150	99-03	4 Cyl	2.0L	231.114	320.095	
Tacuma	Wagon 16DOHC	00-04	4 Cyl	2.0L		320.095	

VEHICLE APPLICATION LISTING

DAIHATSU							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Applause	A101	89-99	4 Cyl	1.6L	231.084		
Charade	G10, G11, G11 Turbo	80-87	3 Cyl	1.0L	231.084	320.040	
Charade	G100, G100 Turbo	87-93	3 Cyl	1.0L	231.084	320.040	
Charade	G102	88-93	4 Cyl	1.3L	231.084	320.040	

FORD							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Bronco		81-85	6 Cyl	4.1L	231.106		
Bronco		81-85	8 Cyl	5.8L	231.081		
Bronco		85-87	8 Cyl	4.9L	231.106		
Capri	All	74-84	4 Cyl, 6 Cyl	1.6L, 3.0L	231.107	360.067	
Courier	PC 4WD	87-98	4 Cyl	2.6L	231.084	320.067	
Courier	PE, PG, PH	99-on	4 Cyl	2.6L	231.084	320.067	
Courier	PH	99-on	4 Cyl	2.6L	231.084	320.067	
Econovan	1.4L, 1.8L	84-97	4 Cyl	1.4L, 1.8L	231.084	320.041	
Econovan	1.6L	84-97	4 Cyl	1.6L	231.084	320.068	
Econovan	1.8L, 2.0L	03-on	4 Cyl	1.8L, 2.0L	231.089	320.067	
Econovan	Diesel	81-84	4 Cyl	2.2L	231.084	320.068	
Econovan	Diesel	84-90	4 Cyl	2.2L	231.084	320.041	
Econovan	Diesel	90-97	4 Cyl	2.2L	231.084	320.067	
Escort	All, Mk1, Mk2	68-82	4 Cyl	1.6L, 2.0L	231.107	320.003	
Explorer	UN, UP, UQ, US	96-01	6 Cyl	4.0L			360.033
F100, F250, F350	RWD, 4WD	70-90	6 Cyl	4.1L	231.106	320.101	
F100	4WD EFI, RWD EFI	85-87	8 Cyl	4.9L		320.101	231.106
F150	4WD EFI, RWD EFI,	87-90	8 Cyl	4.9L		320.101	231.106
						320.102	
F250	RWD Carb,	87-90	8 Cyl	4.9L		320.101	231.106
F350	RM RWD EFI	01-02	8 Cyl	5.4L		320.103	
F100, F350	4WD Carb, RWD Carb	78-85	8 Cyl	5.8L		320.101	360.033
F150	4WD EFI, RWD EFI,	90-92	8 Cyl	5.8L			360.033
F250, F350	RWD Carb, 4WD EFI	91-93	8 Cyl	5.8L		320.102	360.033
F350	RWD Turbo Diesel	01-03	8 Cyl	7.3L		320.103	
Fairlane	ZA, ZG	67-76	6 Cyl, 8 Cyl	4.1L, 4.9L	231.081	320.003	
Fairlane	ZJ, ZK , EFI, Carb.	79-83	6 Cyl, 8 Cyl	4.1L, 4.9L	231.106		
Fairlane	ZH	76-79	8 Cyl	4.9L, 5.8L	231.081		360.003
Fairlane	ZL Leaded	84-86	6 Cyl	4.1L	231.106	320.003	
Fairlane	ZL Unleaded	86-88	6 Cyl	4.1L	231.106	320.003	
Fairlane	NA, NC, NF, NL	88-98	6 Cyl	3.9L, 4.0L	231.081	320.065	
Fairlane	NC, NF, NL	91-98	8 Cyl	5.0L	231.106		
Fairlane	NU, NU II	99-02	6 Cyl	3.9L, 4.0L	231.081		
Fairlane	BA, BF, XR6, XR8, UTE	03-on	6 Cyl, 8 Cyl	4.0L, 5.0L	231.100		360.001
Falcon	XK, XP, XR, XT, XW, XY	60-72	6 Cyl, 8 Cyl	All	231.081		
Falcon	XL, XM,	61-65	6 Cyl	All	231.081		
Falcon	XT Carb, XW Carb, XW GTHO Phase 1 & 2, XY Carb, XY GTHO Phase 3	69-71	8 Cyl	5.0L, 5.8L, 4.9L	231.081		

VEHICLE APPLICATION LISTING

FORD Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Falcon	XA, XB, XC, XC Carb	72-79	6 Cyl, 8 Cyl	All	231.081	320.003	360.003
Falcon	XD, XE, UTE	79-84		3.3L, 4.1L	231.106	320.011	360.013
Falcon	XF, UTE, EFI Carb	84-88	6 Cyl	4.1L	231.106	320.011	360.013
Falcon	EA, EA II, EB, ED	89-94	6 Cyl, 8 Cyl	3.2L, 3.9L, 4.0L, 5.0L	231.106	320.065	360.013
Falcon	EF, EFII, EL	94-98	6 Cyl	4.0L	231.106	320.065	360.045
Falcon	EF, EFII, EL	94-98	8 Cyl	5.0L	231.106		360.045
Falcon	AU, AUII, AUIII, UTE, XR6, XR6 UTE	98-02	6 Cyl,	4.0L	231.106		360.045
Falcon	AU, AUII, AUIII, XR8, UTE, XR8 UTE, AU TE50	98-02	8 Cyl	5.0L	231.106		360.045
Falcon	BA, XR6 Turbo, RTV, Ute	02-05	6 Cyl	4.0L	231.100		360.045
Falcon	BA SOHC, XR8 DOHC, Pursuit Ute DOHC	02-05	8 Cyl	5.4L	231.100		
Falcon	BF SOHC/DOHC	05-06	6 Cyl, 8 Cyl	4.0L, 5.4L	231.100		
Falcon	BF Turbo	05-06	6 Cyl	4.0L	231.100		
Falcon	BF MKII	05-06	6 Cyl	4.0L	231.100		
Falcon	BF MKII	06-08	8 Cyl	5.4L	231.100		
Falcon	FG, FG G6 (LPG), FG F6E (Turbo)	08-on	6 Cyl	4.0L	231.100		
Falcon	FG XR8	08-on	8 Cyl	5.4L	231.100		
Falcon	XH Ute / Van	96-98	6 Cyl, 8 Cyl	4.0L, 5.0L	231.106		
Festiva	WA	91-93	4 Cyl	1.3L	231.084		
Festiva	WA	93-94	4 Cyl	1.3L	231.084		
Festiva	WB, WD	94-97	4 Cyl	1.3L	231.102		
Festiva	WF	94-03	4 Cyl	1.3L	231.084 231.102		
Festiva	WD, WF	97-01	4 Cyl	1.5L	231.102		
Fiesta	WP, LX, Zetc, Ghia	04-05	4 Cyl	1.6L, 2.0L	231.107		
Fiesta	WQ, LX, Zetec, Ghia	06-08	4 Cyl	1.6L, 2.0L	231.107		
Fiesta Turbo	WS Turbo Diesel, WT Turbo Diesel	09-on	4 Cyl	1.6L	231.097		
Focus	LT, LV Turbo Diesel	07-on	4 Cyl	2.0L	231.097		
Ka	TA	99-02	4 Cyl	1.3L	231.107		
Laser	KA, KB, KC, KF, TX3, 4WD	81-91	4 Cyl	1.6L	231.084	320.067	
Laser	KC, KH, KJ, TX3	91-99	4 Cyl	1.6L	231.082		
Laser	KA, KB Incl Turbo	81-85	4 Cyl	1.3L, 1.5L	231.099	320.041	
Laser	KC, KC Carb	85-87	4 Cyl	1.3L, 1.6L	231.099	320.041	
Laser	KC Carb	85-90	4 Cyl	1.6L	231.084	320.041	
Laser	KE Carb	87-90	4 Cyl	1.3L	231.099	320.041	
Laser	KE Carb, EFI	87-89	4 Cyl	1.6L	231.084	320.041	
Laser	KE Carb, EFI	89-90	4 Cyl	1.6L	231.084	320.067	
Laser	KE EFI Turbo, EFI 16V 4x4 Turbo	87-88	4 Cyl	1.6L	231.099	320.041	
Laser	KE EFI Turbo, EFI 16V 4x4 Turbo	88-90	4 Cyl	1.6L	231.099	320.067	
Laser	KF Carb, EFI, EFI 16V	90-91	4 Cyl	1.6L, 1.8L	231.089	320.097	
Laser	KF EFI Turbo	90-91	4 Cyl	1.8L	231.102	320.097	
Laser	KH, TX3 EFI	91-94	4 Cyl	1.6L, 1.8L	231.089	320.097	
Laser	KH TX3 EFI Turbo	91-93	4 Cyl	1.8L	231.084	320.097	
					231.102		

VEHICLE APPLICATION LISTING

FORD Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Laser	KJ EFI	94-96	4 Cyl	1.6L	231.089	320.097	
Laser	KJ EFI	96-98	4 Cyl	1.6L, 1.8L	231.089		
Laser	KJ EFI	94-96	4 Cyl	1.8L	231.089	320.097	
Laser	KN	99-01	4 Cyl	1.6L	231.089		
Laser	KN	99-01	4 Cyl	1.8L	231.089		
Laser	KQ	01-02	4 Cyl	1.6L, 1.8L, 2.0L	231.089		
LTD	FD	83-84	6 Cyl	4.1L	231.106		
LTD	FE	84-88	6 Cyl	4.1L	231.106		
LTD	DA (MPI)	88-91	6 Cyl	3.9L	231.106		
LTD	DC	91-94	6 Cyl, 8 Cyl	4.0L, 5.0L	231.106		
LTD	DF	94-96	6 Cyl, 8 Cyl	4.0L, 5.0L	231.106		
LTD	DL	96-98	6 Cyl, 8 Cyl	4.0L, 5.0L	231.106		
LTD	AU	98-02	6 Cyl, 8 Cyl	4.0L, 5.0L	231.106		
LTD	BA	03-05	6 Cyl, 8 Cyl	4.0L, 5.4L	231.100		
Maverick	(Carb)	88-93	6 Cyl	4.2L	231.116		
Meteor	GA, GB, GC	82-85	4 Cyl	1.5L, 1.6L	231.084		
Meteor	GC	85-87	4 Cyl	1.6L	231.084		
Mondeo	HA, HB, HC	95-98	4 Cyl	2.0L	231.107		
Probe	ST, SU, SV	94-98	V6	2.5L	231.089		
Raider	UV	91-96	4 Cyl	2.6L	231.089		
Spectron	2XLT	84-90	4 Cyl	1.8L, 2.0L	231.107		
Taurus	DN, DP	96-98	V6	3.0L	231.107		
Telstar	AR (Carb), AT(Carb)	83-89	4 Cyl	2.0L	231.084	320.067	
Telstar	AS Inc TX5, Turbo	85-87	4 Cyl	2.0L	231.084	320.067	
Telstar	AT EFI Inc TX5, Turbo	87-89	4 Cyl	2.2L	231.084	320.067	
Telstar	AV, AV EFI-Turbo	90-92	4 Cyl	2.2L	231.089		
Telstar	AX DOHC, AY DOHC	92-96	4 Cyl, 6 Cyl	2.0L, 2.5L	231.089		
Territory	SX TX, SY TX, SY SR, Ghia, Ghia Turbo, SY TS MKII, SY TX MKII, SY MKII GHIA RWD	04-on	6 Cyl	4.0L	231.100		
Trader	0409, 0509	79-89	4 Cyl	2.0L, 3.0L, 3.5L	231.084		
Trader	0711, 0811 Diesel	81-95	4 Cyl	4.1L	231.084		
Trader	0811, 0812, Turbo Diesel	87-92	4 Cyl	3.5L	231.084		
Transit		73-81	6 Cyl	4.1L	231.081		
Transit	VF, VG	96-01	4 Cyl	2.0L	231.107		
Transit	VH, VJ	01-05	4 Cyl	2.3L	231.107		

HOLDEN							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Apollo	JK, JL Carb	89-93	4 Cyl	2.0L	231.102		
Apollo	JK, JL (EFI)	89-91	4 Cyl	2.0L	231.102		
Apollo	JM, JP	93-97	4 Cyl	2.2L	231.104		
Apollo	JM, JP	93-95	6 Cyl	3.0L	231.104		
Astra	LB, LC	84-89	4 Cyl	1.5L, 1.6L	231.087	320.039	
Astra	LD	87-89	4 Cyl	1.6L	231.087	320.039	
Astra	TR	96-98	4 Cyl	1.6L, 1.8L, 2.0L	231.114		
Astra	TS	98-04	4 Cyl	1.8L	231.114		

VEHICLE APPLICATION LISTING

HOLDEN Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Astra	AH	04-on	4 Cyl	1.8L	231.114		
Barina	MB, MF, ML	85-91	4 Cyl	1.3L	231.084		
Barina	MH	91-94	4 Cyl	1.3L	231.084		
Barina	SB, Gsi	94-00	4 Cyl	1.2L, 1.4L, 1.6L	231.114		
Barina	XC, Sri, Combo	01-on	4 Cyl	1.4L, 1.6L, 2.0L	231.114		
Calibra	YE, Ecotec, Turbo, YE95 DOHC	91-97	4 Cyl, 6 Cyl	2.0L, 2.5L	231.114		
Camira	JB, JD, JE	82-89	4 Cyl	1.6L, 1.8L, 2.0L	231.087	320.033	
Captiva	CG	06-on	6 Cyl	3.2L			360.015
Captiva Maxx	CG	07-on	6 Cyl	3.2L			360.015
Captiva Diesel	CG (SX, CX, LX)	07-on	4 Cyl	2.0L	231.114		
Colorado	RC	08-on	6 Cyl	3.6L			360.015
Colorado	RC	08-on	4 Cyl	2.4L	231.114		
Commodore	VC, VH	80-81	4 Cyl	1.9L	231.081	320.032	
Commodore	VB, VC, VH, VK EFI	78-86	6 Cyl	2.8L, 3.3L	231.081	320.032	360.004
Commodore	VB, VC, VH, VK EFI	78-86	8 Cyl	3.3L	231.081	320.024	
Commodore	VL, VL Turbo	86-88	6 Cyl	3.0L	231.089		
Commodore	VN, VP, VQ, VR	88-95	6 Cyl, 8 Cyl	3.8L, 5.0L	231.088	320.033	
Commodore	VS, VS Supercharged, Ute	95-00	6 Cyl	3.8L,	231.088	320.033	
Commodore	VS Series II	98-01	8 Cyl	5.0L	213.088	320.033	
Commodore	VT, VT I Supercharged, GTS	90-99	6 Cyl	3.8L,		320.033	
Commodore	VT	90-99	8 Cyl	5.0L	231.088	320.033	
Commodore	VT II	99-00	8 Cyl	GENIII LS1, 5.7L			360.009 for ecu
Commodore	Ute VG, VX, VY,	97-04	6 Cyl, 8 Cyl	3.8L, 5.0L	231.088		
Commodore	VX, VX Supercharged	00-01	6 Cyl	3.8L	231.088		
Commodore	VX	00-01	8 Cyl	5.7L			360.009 for ecu
Commodore	VX II, VX II Supercharged	01-02	6 Cyl	3.8L	231.088		
Commodore	VX II	01-02	8 Cyl	5.7L			360.009 for ecu
Commodore	VX II	02-03	6 Cyl	3.8L	231.088		
Commodore	VX II	02-03	8 Cyl	5.7L			360.009 for ecu
Commodore	VU Ute	01-02	6 Cyl	3.8L	231.088		
Commodore	VU Ute	01-02	8 Cyl	5.7L			360.009 for ecu
Commodore	VZ incl Crewman S, Crewman Cross 6, SV6, Adventra	04-07	6 Cyl	3.6L			360.015 for ecu
Commodore	VZ incl Crewman Cross8, Crewman SS	04-07	8 Cyl	5.7L,6.0L			360.009 for ecu
Commodore	VY, VYII, S/C	02-04	6 Cyl	3.8L	231.088		
Commodore	VY I, VYII, HSV, Crewman SS, Adventra CX8,Adventra LX8, Crewman Cross8	02-06	8 Cyl	5.7L			360.009 for ecu
Commodore	VE	07 on	6 Cyl	3.6L	ECU Data		360.015 for ecu
Commodore	VE	07 on	8 Cyl	6.0L	ECU Data		360.009 for ecu

VEHICLE APPLICATION LISTING

HOLDEN Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Commodore	VE	07 on	8 Cyl	6.0L	ECU Data		360.009 for ecu
Commodore	VE	08-on	8 Cyl	6.2L	ECU Data		360.009 for ecu
Epica	EP - Turbo Diesel	08-on	4 Cyl	2.0L	231.114		
Epica	EP	07-on	6 Cyl	2.0L, 2.5L	231.114		
Gemini	TX, TC, TE, TF, TG	75-85	4 Cyl	1.6L, 1.8L D	231.084	320.047	360.011
Gemini	RB FWD	75-85	4 Cyl	1.6L, 1.8L D	231.084	320.047	360.011
Drover	QB	85-87	4 Cyl	1.3L	231.089	320.038	
Holden	EH, HD, HR, HK, HT	53-68	6 Cyl	All	231.084	320.002	
Holden	HK, HT, HG, HQ	68-76	6 Cyl	All	231.084	320.002	360.004
Holden	HJ, HX, HZ, WB	76-85	8 Cyl	All	231.081	320.003	360.005
Frontera	UES30	98-04	4 Cyl	2.2L	231.114		
Jackaroo	UBS16, UBS17 Petrol, Diesel	85-92	4 Cyl	2.6L	231.084		
Jackaroo	UBS81, UBS521 Turbo Diesel	81-88	4 Cyl	2.2L	231.084		
Jackaroo	UBS55 Turbo Diesel	88-92	4 Cyl	2.8L	231.084		
Jackaroo	UBS69 Turbo Diesel	92-98	4 Cyl	3.1L	231.084		
Jackaroo	UBS73 Turbo Diesel	98-04	4 Cyl	3.0L	231.084		
Monaro	VX, VY, CV6 Supercharged	01-04	6 Cyl	3.8L	231.088	320.032	360.004
Monaro	VY	02-04	8 Cyl	GENIII LS1, 5.7	ECU Data		360.009 for ecu
Monaro	VZ	05-08	8 Cyl	GENIII LS1, 5.7	ECU Data		360.009 for ecu
Nova	LE, LF, EFI	89-94	4 Cyl	1.4L, 1.6L, 1.8L	231.084		
Rodeo	KB25, KB26, KB40, KB41	78-82	4 Cyl	1.4L, 1.6L	231.084	320.032	
Rodeo	KB47, KB48, KB49	83-84	4 Cyl	1.8L, 1.9L, 2.3L	231.084	320.032	
Rodeo	KB43, KB49	85-88	4 Cyl	2.3L	231.084		
Rodeo	TFR54, TFS54	88-93	4 Cyl	2.5L	231.084		
Rodeo	TFR25	98-98	4 Cyl	2.3L	231.084		
Rodeo	TFR26	98-03	4 Cyl	2.2L	231.114		
Rodeo	Diesel	79-82	4 Cyl	2.0L	231.084		
Rodeo	KBD42, KBD43, KBD47	83-88	4 Cyl	2.0L	231.084	320.067	
Rodeo	KBD27, KBD28	83-88	4 Cyl	2.2L	231.084		
Rodeo	Diesel	91-01	4 Cyl	2.8L	231.084	320.042	
Rodeo	RA03	03-on	4 Cyl	3.0L	231.084		
Rodeo	RA	03-06	4 cyl	2.4L	231.114		
Rodeo	RA Turbo Diesel	03-06	4 cyl	3.0L	231.084		
Rodeo	RA	03-06	6 cyl	3.5L	231.086	320.038	
Rodeo	RA	06-08	6 cyl	3.6L			360.015
Rodeo	RA07	07-08	4 Cyl	2.4L	231.114		
Rodeo	RA07	07-08	6 Cyl	3.6L			360.015
Statesman	VQ	90-94	8 Cyl	5.0L	231.088		
Statesman	VR	93-95	6 Cyl, 8 Cyl	3.8L, 5.0L, 5.7L	231.088		
Statesman	VS	95-99	6Cyl, 8Cyl	3.8L, 5.0L, 5.7L	231.088		
Statesman	WH	00-03	6 Cyl	3.8L	231.088		
Statesman (Inc Grange)	WH	99-01	8 Cyl	GENIII LS1, 5.7	231.088		360.009 for ecu
Statesman (Inc Grange)	WH	01-03	8 Cyl	GENIII LS1, 5.7	231.088		
Statesman	WK	03-04	6 Cyl	3.8L	231.088		

VEHICLE APPLICATION LISTING

HOLDEN Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Statesman	WK	03-04	8 Cyl	5.7L	231.088		360.009 for ecu
Statesman	WL	04-06	6 Cyl	3.6L	231.088		360.015
Statesman	WL	04-06	8 Cyl	5.7L	231.088		360.009 for ecu
Statesman	WL	04-06	8 Cyl	6.0L	231.088		360.009 for ecu
Statesman	WM	07-08	6 Cyl	3.6L	231.088		360.015
Statesman	WM	07-on	8 Cyl	6.0L, 6.2L	231.088		360.009 for ecu
Suburban	FK1	01-02	8 Cyl	5.7L			
Sunbird	LX, UC	76-80	4 Cyl	1.9L	231.081	320.004	
Tigra	XC	05-on	4 Cyl	1.8L			
Torana	LH, LX	74-76	4 Cyl	1.9L	231.087	320.003	
Torana	LC, LH, LJ, LX, UC	69-79	6 Cyl	All	231.081		
Torana	LH, LX	69-79	8 Cyl	All	231.081		360.005
Vectra	JR	97-98	4 Cyl, 6 Cyl	2.0L, 2.5L	231.114		
Vectra	JS	98-00	4 Cyl	2.0L, 2.2L	231.114		
Vectra	JS	98-00	6 Cyl	2.5L	231.114		
Vectra	JS II	00-01	4 Cyl, 6 Cyl	2.2L, 2.6L	231.114		
Vectra	ZC	03-05	4 Cyl, 6 Cyl	2.2L, 3.2L	231.114		
Zafira	TT	00-05	4 Cyl	2.2L	231.114		

HONDA							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Accord	SJD, SJFR	77-78	4 Cyl	1.6L	231.086	320.040	
Civic	ED, EE	87-91	4 Cyl	1.5L	231.086	320.040	
Civic	EG, EH	91-95	4 Cyl	1.5L, 1.6L	231.086	320.040	
Civic	EK4, VTi R	91-95	4 Cyl	1.5L, 1.6L	231.086	320.040	
Concerto	MA EX-I	88-93	4 Cyl	1.6L	231.086	320.040	
Legend	KA7, KA8, KA9	91-96	6 Cyl	2.7L, 3.2L	231.102	320.040	
Legend	KA9	96-05	6 Cyl	3.5L	231.102		
Odyssey	RA1	95-97	4 Cyl	2.2L	231.086	320.040	
Prelude	BA8, BB2	91-96	4 Cyl	2.2L, 2.3L	231.086	320.040	

HYUNDAI							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Accent		00-02	4 Cyl	1.5L	231.089	320.067	
Accent	LC,LS	00-06	4 Cyl	1.6L	231.089		
Accent	MC	06-09	4 Cyl VVT	1.6L	231.089		
Coupe RD, RDII	FX, SX, SFX	96-02	4 Cyl	1.8L, 2.0L	231.089	320.067	
Elantra	XD	00-03	4 Cyl	1.8L, 2.0L	231.089		
Elantra	XD MY04	03-06	4 Cyl	2.0L	231.089		
Elantra Elite	HD	06-on	4 Cyl VVT	2.0L	231.089		
Elantra	Lavita	01-03	4 Cyl	1.8L	231.089		
Excel	X1 (Carb)	86-89	4 Cyl	1.5L	231.089	320.067	
Excel	X2,	90-94	4 Cyl	1.5L	231.089	320.067	
Excel	X3 SOHC	94-98	4 Cyl	1.5L	231.089	320.067	

VEHICLE APPLICATION LISTING

HYUNDAI Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Excel	X3, DOHC	98-00	4 Cyl	1.4L	231.089		
Getz	TB	02-05	4 Cyl	1.5L	231.089	320.067	
Getz	TB	03-05	4 Cyl	1.3L	231.089		
Getz	TB MY06	05-07	4 Cyl	1.4L	231.089		
Getz	TB MY06	05-on	4 Cyl	1.6L	231.089		
Getz	TB SXi	06-on	4 Cyl	1.6L	231.089		
Lantra	KF2, KF3	91-95	4 Cyl	1.6L, 1.8L	231.107	320.038	
Lantra	J2	95-98	4 Cyl	1.8L	231.107	320.038	
Lantra	L3	99-00	4 Cyl	1.8L, 2.0L	231.089	320.067	
Santa - Fe	CM	06-09	4 Cyl Turbo Diesel	2.2L	231.089		
S-Coupe	UE2, UE3	90-91	4 Cyl	1.5L	231.107	320.038	
S-Coupe	UE3, UE4	92-95	4 Cyl	1.5L	231.107	320.038	
S-Coupe	UE3, UE4	92-95	4 Cyl	1.5L	231.089	320.038	
Sonata	AF2, AF3	89-92	4 Cyl	2.4L	231.089	320.067	
Sonata	AF2, AF3	90-93	4 Cyl	2.4L	231.089	320.038	
Sonata	DF2, DF4	93-96	4 Cyl	2.0L	213.107	320.038	320.038
Sonata	DF3, DF4	93-98	6 Cyl	3.0L	231.121	320.038	
Sonata	EF	98-00	4 Cyl	2.0L	231.089	320.067	
Sonata	EF	98-01	6 Cyl	2.5L	231.089	320.067	
Sonata	EF-B	01-05	4 Cyl	2.4L		320.038	
Trajet	GLS Wagon	00-07	6 Cyl	2.7L	231.089		
Tucson	Elite Wagon	04-on	4 Cyl, 6 Cyl	2.0L, 2.7L	231.089		

KIA							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Carens	DOHC Wagon	00-02	4 Cyl	1.8L	231.102		
Carnival	UP	99-06	6 Cyl	2.5L	231.121	320.067	
					231.102		
Credos	GC	98-01	4 Cyl	2.0L	231.102	320.067	
Pregio Van		02-on	4 Cyl	2.7L	231.089	320.067	
Rio	BC	00-on	4 Cyl	1.5L	231.102		
Shuma	FB	99-01	4 Cyl	1.8L	231.102	320.067	
Spectra	5D Hatch	01-04	4 Cyl	1.8L	231.102		
Sportage	JA	96-04	4 Cyl	2.0L	231.102	320.067	

LAND ROVER							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Defender	110 Turbo-Diesel	92-99	4 Cyl	2.5L	231.120		
Defender	90, 110, 130, TD5	99-on	5 Cyl	2.5L	231.116		
Discovery	TDi BF, MF	92-98	4 Cyl	2.5L	231.120		
Freelander	1.8L	98-03	4 Cyl	1.8L	231.115		
Freelander	1.8L, 2.5L	98-03	6 Cyl	2.5L	231.115		
Range Rover	2.4 TD4	89-90	4 Cyl	2.4L	231.120		
Range Rover	SE, HSE, TD6	02-on	6 Cyl	2.6L	231.115		
Range Rover	HSE, Vogue	02-on	8 Cyl	4.4L	231.115		

VEHICLE APPLICATION LISTING

LEXUS							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
ES300	VCV10R	92-96	6 Cyl	3.0L	231.104	320.067	
ES300	MCV20R	96-on	6 Cyl	3.0L	231.104	320.088	
GS300	JZS160R	97-05	6 Cyl	3.0L	231.104		
IS200	GXE10R	99-on	6 Cyl	2.0L	231.104		
LS400	UCF10R, UCF20R	90-00	8 Cyl	4.0L	231.104		
LS430		00-on	8 Cyl	4.3L	231.104		
RX330	MCU38R	03-on	8 Cyl	3.3L	231.104		

MAZDA							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
1.2L - 1.8L,		68-77	4 Cyl	1.5L, 1.6L, 1.8L	231.084		
B1500, B1600	Petrol	70-82	4 Cyl	1.5L, 1.6L, 1.8L	231.084		
B1800	Petrol	70-82	4 Cyl	1.5L, 1.6L, 1.8L	231.084		
B2000	Petrol	82-88	4 Cyl	2.0L	231.084		
B2200	Bravo Incl. MANUAL (Carb)	88-93	4 Cyl	2.2L	231.102		
B2200	Bravo Incl. AUTO	88 -91	4 Cyl	2.2L	231.102		
B2500, B2600	RWD, 4WD, Diesel, Turbo Diesel	96-on	4 Cyl	2.5L, 2.6L	231.102		
B2600 EFI	Bravo, 4WD	90-02	4 Cyl	2.6L	231.084		
Capella		70-78	4 Cyl	1.6L	231.084		
E1300, E1400		78-86	4 Cyl	1.3L, 1.5L	231.084		
E1600		78-86	4 Cyl	1.6L	231.084		
E2000		98-on	4 Cyl	2.0L	231.102		
E2500		97-on	4 Cyl	2.5L	231.102		
121	CD2	76-79	4 Cyl	1.8L	231.084	320.068	
121	DA	87-90	4 Cyl	1.3L	231.102	320.088	
121	DB1031,	90-97	4 Cyl	1.3L	231.102	320.088	
323	FA, BD, BF, BW, 4WD, Turbo	77-89	4 Cyl	1.3L, 1.5L, 1.6L	231.102		
323	BG, BJ, Astina, Protege`	89-04	4 Cyl	1.6L, 1.8L	231.102	320.067	
626	CB2	78-83	4 Cyl	2.0L	231.084	320.041	
626	GC Diesel, GD-Turbo	84-91	4 Cyl	2.0L, 2.2L	231.084	320.041	
626	GV10-Wagon, GE, GF	88-02	4 Cyl	2.0L, 2.2L	231.102	320.067	
626	GE	92-97	6 Cyl	2.5L	231.102	320.067	
808		72-78	4 Cyl	1.3L, 1.6L	231.084		
929	HBSHE	82-87	4 Cyl	2.0L	231.084	320.041	
929	HC10E1, HC10E2	87-91	6 Cyl	3.0L	231.084	320.041	
929	HC10E2 - 4WS	90-96	6 Cyl	3.0L	231.102	320.067	
MPV	LV	93-94	6 Cyl	3.0L	231.084	320.067	
MPV	LV II	94-99	6 Cyl	3.0L	231.084	231.067	
MX5	NA (DOHC)	93-98	4 Cyl	1.8L	231.102	320.067	
MX5	NB (DOHC), Incl Turbo	98-05	4 Cyl	1.8L	231.102	320.067	
MX6	GD Turbo, 2WD, 4WD	87-97	4 Cyl, 6 Cyl	2.0L, 2.2L, 2.5L	231.102	320.067	
MX6	GE10, GE20, 2WD, 4WD	94-97	4 Cyl, 6 Cyl	2.0L, 2.2L, 2.5L	231.102	320.067	
Premacy	CP Wagon	01-03	4 Cyl	1.8L	231.102		
R100		69-71	Rotary Eng		231.084		
RX2, 3, 4, 5		70-79	Rotary Eng	1.1L, 1.3L	231.084		
RX7	SA22 Series 1, 2, 3	79-85	Rotary Eng	1.1L	231.084		
RX7	FC10 IV	86-89	Rotary Eng	1.3L		320.067	

VEHICLE APPLICATION LISTING

MAZDA Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
T2000		81-82	4 Cyl	2.0L	231.089	320.067	
T3500, T4000	Diesel, Turbo	84-00	4 Cyl, 6 Cyl	3.5L, 4.0L	231.084	320.067	
T4100	Diesel	84-91	4 Cyl	4.0L, 4.1L	231.089	320.067	
T4600	Diesel	92-on	4 Cyl	4.6L	231.084	320.067	
Traveller	L, LX, LT, 1800, 2000	86-88	4 Cyl	1.8L	231.089		

EUNOS-MAZDA							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
30X	EC DOHC	96-97	6 Cyl	1.8L	231.102	320.067	
500	CA	92-96	6 Cyl	2.0L	231.102	320.038	
500	CA	96-99	6 Cyl	2.0L	231.102	320.067	
800	TA	94-96	6 Cyl	2.5L	231.089	320.038	
800M	TA	94-96	6 Cyl	2.3L		320.038	
800M	TA3, TA5, TB3	96-00	6 Cyl	2.3L	231.102	320.067	
Millenia		00-02	6 Cyl	2.3L	231.102	320.067	

MERCEDES-BENZ							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
190	E 1.8, E 2.0, E 2.3	82-87	4 Cyl	1.8L, 2.0L, 2.3L	231.087	320.035	360.021
190, 190D	E 1.8, E 2.0, E 2.3	88-93	4 Cyl	1.8L, 2.0L, 2.3L	231.087	320.035	360.021
200D, 220D, 240D, 140, 160	E, CE, TD, TE	74-86	4 Cyl	1.8L, 2.0L, 2.3L	231.087	320.002	360.021

MG							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
MG, MGA		45-62	4 Cyl, 6 Cyl	1.6L, 1.8L	231.083	320.046	
MGB, MGC		61-79	6 Cyl, 8 Cyl	1.8L, 3.0L, 3.5L	231.083	320.046	
MGF	TF	97-on	4 Cyl	1.8L	231.115		

MITSUBISHI							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
3000 GT		92-96	6 Cyl	3.0L	231.102	320.038	
Fuso Canter	FC212, FC432	81-92	4 Cyl	2.6L	230.089	320.067	
Challenger		98-on	6 Cyl	3.0L, 3.5L	230.089	320.067	
Colt	RA, RB, RC	80-84	4 Cyl	1.4L, 1.5L	230.089	320.036	
Colt	RC, RD, RE	84-90	4 Cyl	1.4L, 1.5L	231.102	320.036	
Galant	HG	89-90	4 Cyl	2.0L	231.102	320.038	
L200	MA, MB, MD 4WD	79-86	4 Cyl	2.0L, 2.3L	230.089		
L200	MC, MD	82-86	4 Cyl	1.6L	231.102		
L300 Express	SA, SB, SC, SD, SE 4WD	80-86	4 Cyl	1.6L, 1.8L	231.102		
Starwagon	SJ, 4WD, EFI, Diesel	86-94	4 Cyl	2.0L, 2.4L	231.102		
Starwagon	SF (EFI), SG (EFI), SH(EFI)	86-94	4 Cyl	2.4L	231.102		

VEHICLE APPLICATION LISTING

MITSUBISHI Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Express / Starwagon	SF, SG, SH, SJ, 4WD, EFI, Diesel	86-94	4 Cyl	2.0L, 2.4L	231.102		
Express/ Starwagon	SJ	94-04	4 Cyl	2.0L, 2.4L	231.102	320.038	
Express/ Starwagon	WA, EFI	94-98	4 Cyl, 6 Cyl	2.0L, 2.4L, 3.0L	231.102	320.038	
Lancer	CA, CB, CC	88-96	4 Cyl	1.5L, 1.6L, 1.8L	231.102	320.038	
Lancer	CC	92-96	4 Cyl	1.8L	231.102	320.067	
Lancer	CE, CG	96-04	4 Cyl	1.5L, 1.6L, 1.8L	231.102	320.067	
Magna	TM, TN, TP, TR	85-94	4 Cyl	2.6L	231.084	320.067	
Magna	TM, TN, TP, TR	85-94	6 Cyl	3.0L	231.102	320.067	
Magna	TS Carb, TS EFI	94-97	4 Cyl	2.6L	231.084	320.038	
Magna	TS, EFI	94-97	6 Cyl	3.0L	231.102	320.038	
Magna	TE, TF, EFI	96-97	4 Cyl	2.4L	231.089	320.067	
Magna	TF, EFI	97-99	6 Cyl	3.0L	231.102	320.067	
Magna	TH, TJ	99-03	6 Cyl	3.0L, 3.5L	231.102	320.067	
Magna	TL, TW	03-04	6 Cyl	3.0L	231.102	320.067	
Mirage	CE	96-05	4 Cyl	1.5L	231.089	320.067	
Nimbus	UA, UB	84-87	4 Cyl	2.0L	231.102	320.038	
Nimbus	UC	87-92	4 Cyl	2.0L	231.089	320.038	
Nimbus	UC	87-92	4 Cyl	2.0L	231.102	320.038	
Nimbus	UF	92-98	4 Cyl	2.4L	231.102	320.038	
Nimbus	UG	98-04	4 Cyl	2.4L	231.089	320.067	
Outlander	ZE, LS-XLS	03-04	4 Cyl	2.4L	231.089	320.067	
Pajero	NA, NB, NC, ND	83-87	4 Cyl	2.6L	231.102		
Pajero	ND Auto	86-87	4 Cyl	2.6L	231.102	320.038	
Pajero	NE, NF, NG	87-91	4 Cyl	2.6L	231.102	320.038	
Pajero	NK,	96-00	6 Cyl	3.5L	231.102	320.067	
Pajero	NL	96 -00	6 Cyl	3.0L, 3.5L	231.102	320.067	
Pajero	NJ	93-96	6 Cyl	2.8L	231.102	320.038	
Pajero	NH, Intercooler	91-93	6 Cyl	2.5L	231.102		
Pajero iO	QA	99-03	4 Cyl	1.8L	231.102		
Scorpion	GE	78-79	4 Cyl	2.0L	231.089		
Scorpion	GJ, GK, GL	80-85	4 Cyl	2.6L	231.089		
Sigma	GE, GH, GJ, GK	77-85	4 Cyl	1.6L, 2.0L	231.102		
Sigma	GK, GN	84-87	4 Cyl	1.6L, 2.0L	231.102		
Triton	ME, MF, MG, MH, MJ, Petrol	86-94	4 Cyl	2.6L	231.102		
Triton	ME, MF, MG, MH, MJ, Diesel	86-96	4 Cyl, 6 Cyl	2.5L, 3.0L	231.102		
Triton	MH, MJ, 4WD	90-96	6 Cyl	3.0L	231.102	320.038	
Triton	MK, 4WD	96-05	6 Cyl	3.0L	231.089	320.067	
Verada	KR, KS	91-94	6 Cyl	3.0L	231.102		
Verada	KE, KF, KH, KJ, KL, KW	96-05	6 Cyl	3.0L, 3.5L	231.089		

VEHICLE APPLICATION LISTING

NISSAN							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
120Y	B210	74-79	4 Cyl	1.2L	231.086		
180B, 200B	610, 810	72-81	4 Cyl	1.8L	231.086		
240, 260, 280	C, K, Z, ZX	70-84	6 Cyl	2.4L, 2.6L, 2.8L	231.086		
300ZX	Z31 Turbo	84-89	6 Cyl	3.0L	231.086		
520, 620, 720	RWD, FWD, Petrol, Diesel	71-85	4 Cyl	1.5L, 1.8L, 2.2L, 2.3L	231.086		
Bluebird	Series I, II	81-85	4 Cyl	2.0L	231.089		
Gazelle	S12	84-88	4 Cyl	2.0L	231.086		
Infinity	Q45	93-97	8 Cyl	4.5L	231.093	320.039	
Maxima	J30 SOHC FWD	90-92	6 Cyl	3.0L	231.093		
Maxima	A31 SOHC FWD	93-95	6 Cyl	3.0L	231.093	320.039	
Maxima	A32 DOHC FWD	95-99	6 Cyl	3.0L	231.093	320.096	
Maxima	A33 DOHC FWD	99-03	6 Cyl	3.0L	231.093	320.096	
Micra	K11E	95-97	4 Cyl	1.3L	231.093		
Navara	2X4, 4X4, Petrol, Diesel	86-88	4 Cyl	2.0L, 2.4L	231.086		
Navara	D21 Diesel DI 4WD, RWD	86-98	4 Cyl	2.5L	231.101	320.104	
Navara	D21 RWD	86-95	4 Cyl	2.0L	231.093	320.104	360.029
Navara	D21 Carb 4WD, RWD	86-92	4 Cyl	2.4L	231.093	320.039	360.029
Navara	D22 Diesel RWD, 4WD	97-99	4 Cyl	3.2L	231.093	320.096	
Navara	D22 DIESEL RWD	97-99	4 Cyl	2.7L	231.093	320.096	
Navara	D22 SOHC	97-99	4 Cyl	2.4L	231.093	320.096	360.029
Navara	D21 SOHC 4WD, RWD EFI	92-97	4 Cyl	2.4L	231.093	320.039	360.029
Navara	D21 Diesel DI 4WD, RWD	88-92	4 Cyl	2.5L	231.093	320.039	
Navara	D21 Diesel DI 4WD, RWD	88-97	4 Cyl	2.7L	231.093	320.039	
Navara	D21 SOHC MPFI	92-97	6 Cyl	3.0L		320.039	
Navara	D22 Series II 4WD, RWD	99-01	4 Cyl	2.4L	231.093	320.096	
Navara	D22 Series II Diesel 4WD, RWD	99-01	4 Cyl	3.2L	231.093	320.096	
Navara	D22	99-01	6 Cyl	3.0L		320.096	
Navara	D22 Diesel Turbo	01-on	4 Cyl	3.0L		320.096	
Navara	D22 SOHC	03-06	6 Cyl	3.3L		320.096	
Nomad	GC22	97-92	4 Cyl	2.4L	231.093		
NX/NX-R	B13	91-95	4 Cyl	2.0L	231.093	320.039	
Pathfinder	Carb	86-92	4 Cyl	2.4L	231.093	320.039	360.029
Pathfinder	D21 Carb 4WD MPFi	92-95	6 Cyl	3.0L	231.093		360.029
Pathfinder	R50 Series I	95-98	6 Cyl	3.3L	231.093	320.096	360.029
Pathfinder	R50 Series II	99-05	6 Cyl	3.3L	231.093	320.096	360.029
Patrol	G60, MQ	65-87	6 Cyl	2.8L, 4.0L	231.086		320.039
Patrol	G60, MQ, Turbo	80-87	6 Cyl	3.3L	231.086	320.090	
Patrol	GQ OHV Diesel Series I	87-93	6 Cyl	4.2L	231.093		
Patrol	GQ OHV Diesel, Series I, Series II	88-97	6 Cyl	4.2L	231.093		
Patrol	GQ OHC Carb	88-95	6 Cyl	4.2L	231.093		360.029
Patrol	GQ OHC Carb	92-99	6 Cyl	4.2L	231.093		
Patrol	GQ Series II OHV EFI	92-97	6 Cyl	4.2L	231.093	320.039	360.029
Patrol	GQ Series II SOHC Carb	92-97	6 Cyl	3.0L	231.093		
Patrol	GQ Series II SOHC Turbo Diesel	95-97	6 Cyl	2.8L	231.093	320.039	360.029
Patrol	GU OHV Diesel	99-00	6 Cyl	4.2L	231.093		
Patrol	GU SOHC MPFI	97-00	6 Cyl	4.5L	231.093		
Patrol	GU SOHC Turbo Diesel	98-00	6 Cyl	2.8L	231.093	320.096	360.029
Pintara	R31 Sedan RWD	86-90	4 Cyl	2.0L	231.093	320.096	
Pintara	U12 Sedan FWD	89-92	4 Cyl	2.0L	231.093	320.096	

VEHICLE APPLICATION LISTING

NISSAN Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Pintara	U12 SOHC	89-92	4 Cyl	2.4L	231.093		
Prairie	M10 SOHC Carb	82-86	4 Cyl	1.5L	231.084	320.039	
Pulsar	N10	80-81	4 Cyl	1.4L	231.086		
Pulsar	N12, EXA - ET	83-87	4 Cyl	1.5L	231.102		
Silvia	Imported S12 Turbo	84-88	4 Cyl	1.8L	231.089		
Skyline	C210	78-81	6 Cyl	2.4L	231.086		
Stanza	A10	78-83	4 Cyl	1.6L	231.086		
Terrano II	R20, R20 Turbo Diesel	97-00	4 Cyl	2.4L, 2.7L	231.093		
Urvan	E20, E23	74-82	4 Cyl	1.6L, 2.0L	231.086		
Urvan	E24, Diesel	87-92	4 Cyl	2.7L	231.086		
X Trail	T30 DOHC	01-03	4 Cyl	2.5L		320.096	

PEUGEOT							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
205	Gti SOHC	87-90	4 Cyl	1.9L	231.108		
205	S	90-94	4 Cyl	1.6L	231.108		

PORSCHE							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
924, 924S, 944	+ Turbo	79-89	4 Cyl	2.0L, 2.5L, 2.7L	231.085		
928, 928S		77-85	8 Cyl	4.5L, 4.7L	231.085		

SAAB							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
99		71-73	4 Cyl	1.9L	231.085		
900	EFI	79-88	4 Cyl	2.0L	231.085		

SEAT							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Cordoba	GLX	95-98	4 Cyl	1.8L	231.110		

SUBARU							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Brumby		78-94	4 Cyl	1.6L, 1.8L	231.102	320.043	
DL, GL, Leone		76-95	4 Cyl	1.6L, 1.8L	231.102	320.043	
Fiori		89-92	4 Cyl		231.102		
Forester		97-02	4 Cyl	2.0L	231.102	320.067	
Impreza	LX, GX, AWD	93-98	4 Cyl	1.6L, 1.8L	231.102	320.067	
Impreza	GX, RV, RX	00-on	4 Cyl	2.0L	231.102	320.067	
Impreza	WRX, Turbo	94-on	4 Cyl	2.0L	231.102	320.067	
Liberty	All	91-03	4 Cyl	2.0L, 2.2L, 2.5L	231.102	320.067	
Liberty	BC/BD	89-97	4 Cyl	2.2L	231.102	320.067	
Liberty	BD/BF Turbo	92-93	4 Cyl	2.0L	231.102	320.067	
Liberty	BD/BG	96-00	4 Cyl	2.5L	231.102	320.067	
Liberty		98-on	4 Cyl	2.0L	231.102	320.067	

VEHICLE APPLICATION LISTING

SUBARU Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Liberty		98-on	4 Cyl	2.5L	231.102	320.067	
Outback		96-00	4 Cyl	2.5L	231.102	320.067	
Vortex	XT, Turbo	85-89	4 Cyl	1.8L	231.102	320.043	

SUZUKI							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Sierra	SJ413	84-98	4 Cyl	1.3L	231.089	320.038	
Carry	ST80, ST90	78-85	4 Cyl		231.089	320.068	
Swift	SOHC, GTi, Carb. & EFI, 4WD	84-00	3 Cyl, 4 Cyl	All	231.089	320.038	
Vitara	SOHC, Carb. & EFI	88-98	4 Cyl	1.6L	231.089	320.038	
X90	4X4 EL	96-98	4 Cyl	1.6L	231.089	320.067	

TOYOTA							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
4Runner	YN60, YN63, YN130	84-90	4 Cyl	2.0L, 2.2L	231.089	320.044	
4Runner	RN130R	90-96	4 Cyl	2.4L	231.104	320.044	360.027
4Runner	LN60, LN61, Diesel	84-89	4 Cyl	2.4L, 2.8L	231.084	320.044	
4 Runner	VZN130	90-91	6 Cyl	3.0L			360.027
Camry	SV11, SV20	83-89	4 Cyl	1.8L, 2.0L	231.102	320.044	
Camry	SV21, SV22	87-91	4 Cyl	2.0L	231.102	320.067	
Camry	SDV10, SXV10	93-98	4 Cyl	2.2L	231.104	320.036	
Camry	SXV20, ACV36R	97-on	4 Cyl	2.2L, 2.4L	231.104		
Camry	VZV20, VZV21	88-93	6 Cyl	2.5L	231.102		
Camry	VDV10, MCV20R, MCV36R	93-on	6 Cyl	3.0L	231.104		
Camry Avensis	ACM20R	01-on	4 Cyl	2.0L, 2.4L	231.104		
Camry Vienta	VZV20, VZV21	88-93	6 Cyl	2.5L	231.102		
Camry Vienta	VDV10R, MCV20R	93-00	6 Cyl	3.0L	231.104		
Celica	RA23, RA28, TA22, TA23	71-77	4 Cyl	1.6L, 2.0L	231.089	320.043	
Celica	RA60R, SA63	81-84	4 Cyl	2.0L	231.089	320.044	
Celica	ST184R	89-94	4 Cyl	2.2L	231.102	320.036	
Celica	ST185R	90-92	4 Cyl	2.0L	231.102	320.044	
Celica	ST204R, SX, ZR	94-99	4 Cyl	2.2L	231.104	320.088	
Celica	ST205, GT	94-94	4 Cyl	2.0L	231.089	320.036	
Corolla	KE10	66-70	4 Cyl	1.1L	231.089	320.043	
Corolla	KE20	70-74	4 Cyl	1.2L	231.102	320.043	
Corolla	KE30, KE35, KE36, KE50	74-78	4 Cyl	1.2L	231.102	320.043	
Corolla	KE38, KE55	78-79	4 Cyl	1.3L	231.102	320.043	
Corolla	KE38, KE55, KE70R	78-85	4 Cyl	1.3L	231.102	320.044	
Corolla	AE71, AE80, AE82, DOHC	78-89	4 Cyl	1.3L, 1.6L	231.102		
Corolla	AE90	89-92	4 Cyl	1.4L	231.089		
Corolla	AE92, Carb	89-92	4 Cyl	1.4L	231.084	320.067	
Corolla	AE92, AE92R, EFI, 4WD	89-94	4 Cyl	1.6L	231.084	320.067	
Corolla	AE93	92-94	4 Cyl	1.8L	231.104	320.088	
Corolla	AE95R, 4WD	88-95	4 Cyl	1.6L	231.084	320.067	
Corolla	AE101R, AE102R, AE102X, AE112	94-01	4 Cyl	1.8L	231.104	320.088	
Corolla	ZZE122R, ZZE123, Sportivo	01-on	4 Cyl	1.8L	231.104		
Corona	RT40, RT72, RT80, RT81	64-74	4 Cyl	1.5L, 1.6L, 1.9L	231.084	320.043	
Corona	MX10, MX13, MX22, MX23, RT104	72-79	4 Cyl	2.0L, 2.3L, 2.6L	231.084	320.043	

VEHICLE APPLICATION LISTING

TOYOTA Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Corona	RT104, RT118, XT130	77-83	4 Cyl	2.0L, 2.3L, 2.6L	231.084	320.043	
Corona	RT132	79-82	4 Cyl	2.0L	231.089	320.044	
Corona	RT133	82-83	4 Cyl	2.0L	231.102	320.044	
Cressida	MX73R	84-85	6 Cyl	2.8L	231.084	320.044	
Cressida	MX73R-DOHC	85-88	6 Cyl	2.8L	231.084	320.044	
Cressida	MX83R	90-93	6 Cyl	3.0L	231.084	320.044	
Crown	RS56, MS65, MS83, MS85, MS111	68-80	4Cyl, 6 Cyl	2.0L, 2.8L	231.089	320.043	
Crown	MS112	80-83	6 Cyl	2.8L	231.084	320.044	
Crown	MS123	83-87	6 Cyl	2.8L	231.084	320.044	
Crown	MS125	83-88	6 Cyl	2.8L	231.084	320.044	
Echo	NCP10R, NCP12R, NCP13R	99-on	4 Cyl	1.3L, 1.5L	231.104		
Estima	TCR10W, TCR11W, TCR20W	93-99	4 Cyl	2.4L	231.104	320.036	
Hi-Ace	RH: 10, 11, 15, 16, 20, 30, 32	67-85	4 Cyl	1.5L, 1.6L	231.089	320.043	
Hi-Ace	YH: 50, 51, 53, 60, 61, 63, 71, 73	83-89	4 Cyl	1.8L, 2.0L, 2.2L	231.089	320.044	
Hi-Ace	RZH103, RZH113	89-98	4 Cyl	2.4L	231.104	320.036	
Hi-Ace	RZH103R, RXZH113R, EFI	98-05	4 Cyl	2.4L	231.089	320.036	
Hi-Ace - Diesel	LH: 20, 30, 50, 51, 60, 61, 70, 71	81-89	4 Cyl	2.2L, 2.4L	231.089	320.044	
Hi-Ace - Diesel	LH103R, LH113R, LH125R	89-00	4 Cyl	2.8L	231.084	320.036	
Hi-Ace - Diesel	LHR172R, LHR184R	99-05	4 Cyl	3.0L	231.084	320.036	
Hi-Lux	YN: 55, 56, 57, 58, 65, 67	83-88	4 Cyl	1.6L, 1.8L, 2.0L, 2.2L	231.089	320.044	
Hi-Lux	YN85R	88-97	4 Cyl	1.8L	231.104		
Hi-Lux	RN85R, RN90R, RN105R	90-92	4 Cyl	2.4L	231.102		
Hi-Lux	RN85R, RN90R, RN105R	88-97	4 Cyl	2.4L	231.104		360.027
Hi-Lux	RN106R, RN110	88-97	4 Cyl	2.4L	231.104	320.036	360.027
Hi-Lux	RZN147R, EFI,	97-05	4 Cyl	2.0L, 2.7L	231.104	320.036	
Hi-Lux	VZN167R, VZN172R	01-05	6 Cyl	3.4L	231.104	320.036	
Hi-Lux - Diesel	All 2.2L engines	78-83	4 Cyl	2.2L	231.089	320.036	
Hi-Lux - Diesel	All 2.4L engines	83-91	4 Cyl	2.4L	231.084	320.044	
Hi-Lux - Diesel	LN86R, LN106R, LN 107R	88-97	4 Cyl	2.8L	231.084	320.044	
Hi-Lux - Diesel	LN147R, LN167R, LN172R	97-05	4 Cyl	3.0L	231.084	320.044	
Kluger	MCU28R	03-on	6 Cyl	3.3L	231.104		
Landcruiser	FJ: 40, 45, 55, FJ60	79-82	6 Cyl	3.0L	231.089	320.043	360.027
Landcruiser	FJ: 40, 45, 55, FJ60	83-84	6 Cyl	3.0L	231.089	320.043	360.028
Landcruiser - Petrol	FJ60	80-84	6 Cyl	4.2L			360.027
Landcruiser - Diesel	HJ60 Diesel	81	6 Cyl	4.0L			360.027
Landcruiser - Diesel	BJ60 Diesel	91-87	6 Cyl	3.4L			360.027
Landcruiser	FJ62	84-90	6 Cyl	4.0L	320.067	320.044	360.028
Landcruiser	FJ70,FJ73, FJ80	84-91	6 Cyl	4.0L	231.084	320.044	360.028
Landcruiser	FZJ80R	92-98	6 Cyl	4.5L		320.036	360.028
Landcruiser	UZJ100R	00-on	8 Cyl	4.7L	231.104	320.088	
Landcruiser	UZJ100	04-05					360.026
Landcruiser	HZJ75RV	90-91	6 Cyl	4.2L			360.028
70 Series							
Landcruiser	HZJ78R, HZJ79R	04-on	6 Cyl	4.2L, 4.2LT			360.025
78 Series							

VEHICLE APPLICATION LISTING

TOYOTA Continued							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
Landcruiser GXL 80 Series	FZJ80, HZJ80, HDJ80	95-98	6 Cyl	4.5L, 4.2L, 4.2LDT		320.094	
Landcruiser 100 Series	FZJ105,	98-07	6 Cyl	4.5L		320.094	
Landcruiser 100 Series	HZJ105 Diesel	98-07	6 Cyl	4.2L		320.094	360.025
Landcruiser Prado	RZJ95R, RZJ120R	96-04	4 Cyl	2.7L	231.104	320.088	
Landcruiser Prado	VZJ95R, GRJ120R	99-04	6 Cyl	3.4L, 4.0L	231.104		
Landcruiser Prado	KZJ95R, KZJ120R	99-04	6 Cyl	3.4L, 4.0L	231.104		
Landcruiser Turbo Diesel	VDJ76R	07-on	8 Cyl	4.5L			360.030
Landcruiser Turbo Diesel	VDJ78R/VDJ79R	07-on	8 Cyl	4.5L	231.104		360.030
Landcruiser	UZJ200/VDJ200	07-on	8 Cyl	4.7L, 4.5LTD			360.026
Lexen	VN I	89-90	6 Cyl	3.8L	231.088		
Lexen	VN II	90-91	6 Cyl	3.8L	231.088	320.033	
Lexen	VP	91-93	6 Cyl	3.8L	231.088	320.033	
Lexen	VR	93-95	6 Cyl	3.8L	231.088	320.033	
Lexen	VS	95-97	6 Cyl	3.8L	231.088		
Light Ace	KM20, KM36	80-92	4 Cyl	1.3L, 1.5L	231.102	320.044	
Light Ace	YM21, YM30, YM40, YM41	84-88	4 Cyl	1.8L, 2.0L	231.102	320.044	
Light Ace Diesel	1C engines	83-92	4 Cyl	1.8L	231.084	320.044	
MR2	SW20R	90-94	4 Cyl	2.0L	231.102	320.044	
MR2	SW20R	95-99	4 Cyl	2.0L	231.102	320.036	
MR2	ZZW30R	00-on	4 Cyl	2.0L	231.104		
Paseo	EL44R, EL54R	91-95	4 Cyl	1.5L	231.104	320.067	
Paseo	EL44R, EL54R	95-99	4 Cyl	1.5L	231.104	320.088	
Prius	NHW11R, NHW20R	01-on	4 Cyl	1.5L	231.104		
RAV4	SX10R, SXA11R	94-00	4 Cyl	2.0L	231.104	320.036	
RAV4	ACA20R, ACA21R, ACA22R, ACA23R	94-00	4 Cyl	2.0L, 2.4L	231.104		
Soarer	JZZ30, JZZ31	91-00	6 Cyl	2.5L, 3.0L	231.104		
Soarer	UZZ30, UZZ31, UZZ32	91-00	8 Cyl	2.5L, 3.0L, 4.0L	231.104		
Spacia	YR22R	93-98	4 Cyl	2.2L	231.104	320.036	
Spacia	SR40R	98-01	4 Cyl	2.0L	231.104		
Starlet	EP91R	96-99	4 Cyl	1.3L	231.104	320.067	
Tarago	YR20	83-84	4 Cyl	1.8L	231.089	320.044	
Tarago	ACR30R	00-on	4 Cyl	2.4L	231.104	320.036	
Tarago - Diesel	CR21	83-88	4 Cyl	2.0L	231.084	320.044	
Tarago	TCR10R, TCR11R	90-00	4 Cyl	2.4L	231.104	320.036	
Tarago	TCR20R, TCR21R	90-03	4 Cyl	2.4L	231.102	320.044	
Toyo Ace - Diesel	LY30, LY31	82-85	4 Cyl	2.2L, 2.4L	231.089	320.044	

VEHICLE APPLICATION LISTING

VOLVO							
Make/Series	Model	Year	Engine	Capacity	Oil Switch	Temp Sender	Pressure Sender
240, 242, 244, 245		81-83	4 Cyl	2.3L	231.113		
360, 740	incl.Turbo	84-91	4 Cyl	2.0L, 2.3L	231.113		
850	incl.Turbo	92-97	4 Cyl	2.3L, 2.5L	231.113		
940, 960		90-97	4 Cyl, 6 Cyl	2.3L, 2.5L	231.113		
C70		99-04	5 Cyl	2.3L, 2.5L	231.113		
S40, V40	incl.Turbo	97-04	4 Cyl	1.8L	231.104		
S40, V40	incl.Turbo	97-04	4 Cyl	2.0L	231.113		
S60, S60R		02-04	5 Cyl	2.3L, 2.4L	231.113		
S70, V70	incl.Turbo	97-03	5 Cyl	2.3L, 2.4L	231.113		
S70R	Turbo	03-04	5 Cyl	2.3L	231.113		
S80	TS95, TS97	98-03	6 Cyl	2.9L	231.113		
S90, V90		97-98	6 Cyl	2.9L	231.113		
XC70, XC90		03-on	6 Cyl	2.9L	231.113		

Note: All care has been taken in preparing and compiling this senders' application list, although if errors are detected, please report them by phone (03) 9468 1151 or fax (03) 9468 1502 to VDO, Customer Service department.

MERCHANDISERS

All merchandisers consist of the following as well as the contents:
8 peg rack, measuring 400 x 400mm, header card, & application list.

FAST MOVERS

Fast Movers	
Part No.	Description
740.012	Mixed sensor & adaptors (most commonly used)

Merchandise Contents		
Part No.	Description	Qty.
231.081	Oil Pressure Switch N/C 25Kpa 1/4"-18NPTF 12/24V	2
231.084	Oil Pressure Switch N/C 21Kpa 1/8"-28BSPT 12/24V	3
231.086	Oil Pressure Switch N/C 21Kpa 1/8"-28BSPT 12/24V	3
231.088	Oil Pressure Switch N/C 21Kpa 1/4"-18NPTF 12/24V	3
320.002	Temperature Sender Water STD. 1/8"-27NPTF	2
320.003	Temperature Sender Water 73-10 OHM 1/8"-27NPTF	2
320.032	Temperature Sender Water 282-40 OHM 1/8"-27NPTF	2
320.053	Adaptor 1/2"-14NPTF TO 1/8"-27NPTF	2



OIL PRESSURE SWITCHES

Oil switch merchandisers have 8 of the fastest moving numbers.

Oil Pressure Switches	
Part No.	Description
740.007	Oil Pressure Switch Merchandiser

Merchandise Contents		
Part No.	Description	Qty.
231.081	Oil Pressure Switch N/C 25Kpa 1/4"-18NPTF 12/24V	3
231.082	Oil Pressure Switch N/C 21Kpa 1/8"-27NPTF 12/24V	2
231.083	Oil Pressure Switch N/C 55Kpa 1/8"-27NPTF 12/24V	2
231.084	Oil Pressure Switch N/C 21Kpa 1/8"-28BSPT 12/24V	3
231.086	Oil Pressure Switch N/C 21Kpa 1/8"-28BSPT 12/24V	3
231.087	Oil Pressure Switch N/C 21Kpa M14 x 1.5 12/24V	2
231.088	Oil Pressure Switch N/C 21Kpa 1/4"-18NPTF 12/24V	3
231.089	Oil Pressure Switch N/C 21Kpa 1/8"-28BSPT 12/24V	2



WATER TEMPERATURE SWITCHES

Temperature switch merchandiser has 6 of the fastest moving numbers.

Water Temperature Switches	
Part No.	Description
740.003	Temperature Switch Merchandiser

Merchandise Contents		
Part No.	Description	Qty.
230.045	Temperature Switch N/O 96°C 1/8"-27NPTF	4
230.046	Temperature Switch N/O 90°C M10x1.5	1
232.011/005/017D	Temperature Switch N/O 145°C M10x1.5	4
230.048	Temperature Switch N/O 170°C M10x1.5	1
230.051	Temperature Switch N/O 95°C 1/2"-14NPTF	1



OIL PRESSURE SENDERS

Oil sender merchandisers have 8 of the fastest moving numbers.



Oil Pressure Senders

Part No.	Description
740.009	Oil Pressure Sender Merchandiser

Merchandiser Contents

Part No.	Description	Qty.
360.001	Oil Pressure Sender 10-180 OHM 500Kpa 1/8"27NPTF	2
360.002	Oil Pressure Sender 10-180 OHM 1000Kpa 1/8"27NPTF	2
360.003	Oil Pressure Sender 73-10 OHM 700Kpa 1/4"18NPTF	2
360.004	Oil Pressure Sender 10-180 OHM 500Kpa 1/4"18NPTF	2
360.005	Oil Pressure Sender 73-10 OHM 500Kpa 1/4"18NPTF	1
360.013	Oil Pressure Sender 10-180 OHM 700Kpa 1/4"18NPTF	1
360.014	Oil Pressure Sender 10-180 OHM 600Kpa 1/8"27NPTF	1
360081030015C	Oil Pressure Sender 10-180 OHM 1000Kpa 1/8"27NPTF	1

WATER TEMPERATURE SENDERS

Temperature sender merchandisers have 8 of the fastest moving numbers.



Oil Pressure Senders

Part No.	Description
740.009	Water Temperature Sender Merchandiser

Merchandiser Contents

Part No.	Description	Qty.
320.002	Temperature Sender Water STD. 1/8"-27NPTF	2
320.003	Temperature Sender Water 73-10 OHM 1/8"-27NPTF	2
320.011	Temperature Sender Water STD. 1/8"-27NPTF Short	2
320.032	Temperature Sender Water 282-40 OHM 1/8"-27NPTF	2
320.033	Temperature Sender Water 282-40 OHM 1/8"-27 NPTF	2
320.043	Temperature Sender Water 184-17 OHM M16x1.5	2
320.044	Temperature Sender Water 313-22 OHM M16x1.5	2
320.067	Temperature Sender Water 232-22 OHM M8x0.75	2

T-PIECE & ADAPTORS

T-piece and Adaptor merchandiser have 4 of each fast moving adaptors and T-piece.



Oil Pressure Senders

Part No.	Description
740.011	T-Piece & Adaptor Merchandiser

Merchandiser Contents

Part No.	Description	Qty.
230.031	T-Piece 1/8"-27NPTF(M&F)-1/8"-27NPTF	2
230.032	T-Piece 1/4"-18NPTF(M&F)-1/8"-27NPTF	2
230.035	T-Piece M14x1.5 (M&F) -1/8"-27NPTF	2
230.036	T-Piece 1/8" -28BSPT(M&F) -1/8"-27NPTF	2
320.050	Adaptor 1/4" -18NPTF TO 1/8"-27NPTF	3
320.051	Adaptor 3/8"-18NPTF TO 1/8"-27NPTF	3
320.053	Adaptor 1/2"-14NPTF TO 1/8"-27NPTF	3
320.055	Adaptor M16x1.5 TO 1/8"-27NPTF	1

PRESSURE SENDERS & SWITCHES

Pressure Sender - Oil / Air				Single Station	
Part No.	Range Bar (Psi)	Thread Size	Switch Point Bar (Psi)	Picture	Ohms Range
360081032025C	0 - 2 Bar (30)	1/8"-27NPTF	---	B	10 - 180
360081032011C	0 - 2 Bar (30)	M 12x1.5	---	B	10 - 180

Pressure Sender - Oil / Air				Single Station	
Part No.	Range Bar (Psi)	Thread Size	Switch Point Bar (Psi)	Picture	Ohms Range
360.001	0 - 5 Bar (75)	1/8"-27NPTF	---	A	10 - 180
360.004	0 - 5 Bar (75)	1/4"-18NPTF	---	A	10 - 180
360.016	0 - 5 Bar (75)	1/8"-28BSPT	---	A	10 - 180
360.018	0 - 5 Bar (75)	1/8"-27NPTF	---	A	10 - 180
360081032001C	0 - 5 Bar (75)	1/8"-27NPTF	---	B	10 - 180
360081032002C	0 - 5 Bar (75)	M10x1.0	---	B	10 - 180

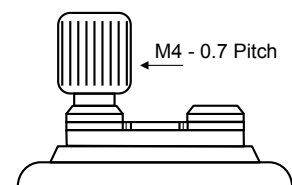
Pressure Sender & Switch - Oil / Air				Single Station	
Part No.	Range Bar (Psi)	Thread Size	Switch Point Bar (Psi)	Picture	Ohms Range
360081030001K	0 - 5 Bar (75)	M10x1.0	0.25 Bar (3.5)	C	10 - 180
360081030002K	0 - 5 Bar (75)	M10x1.0	0.5 Bar (7)	C	10 - 180
360081030028K	0 - 5 Bar (75)	M14x1.5	0.5 Bar (7)	C	10 - 180
360081030049K	0 - 5 Bar (75)	1/8"-27NPTF	0.5 Bar (7)	C	10 - 180
360081030014C	0 - 5 Bar (75)	M10x1.0	0.6 bar (8.5)	C	10 - 180
360081030010C	0 - 5 Bar (75)	1/8"-27NPTF	1.4 Bar (11.5)	C	10 - 180
360081039002C	0 - 5 Bar (75)	1/8"-27NPTF	11.5 Psi	D	10 - 180
360081039004C	0 - 5 Bar (75)	1/8"-27NPTF	10 Psi	D	10 - 180

Pressure Sender & Switch - Oil / Air				Single Station	
Part No.	Range Bar (Psi)	Thread Size	Switch Point Bar (Psi)	Picture	Ohms Range
360081030009K	0 - 10 Bar (150)	M10x1.0	0.5 Bar (7)	C	10 - 180
360081030022C	0 - 10 Bar (150)	M12x1.5	0.5 Bar (7)	C	10 - 180
360081030052C	0 - 10 Bar (150)	1/8"-27NPTF	0.5 Bar (7)	C	10 - 180
360081030039C	0 - 10 Bar (150)	M10x1.0	0.75 Bar (10.7)	C	10 - 180
360081030015C	0 - 10 Bar (150)	1/8"-27NPTF	0.8 Bar (11.5)	C	10 - 180
360081030017C	0 - 10 Bar (150)	M10x1.0	0.9 Bar (12)	C	10 - 180
360081039003	0 - 10 Bar (150)	1/8"-27NPTF	0.8 Bar (11.5)	D	10 - 180

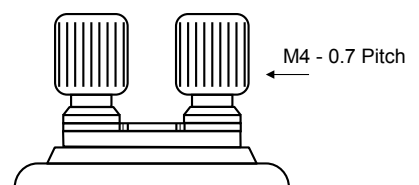
Pressure Sender - Oil / Air				Single Station	
Part No.	Range Bar (Psi)	Thread Size	Switch Point Bar (Psi)	Picture	Ohms Range
360.017	0 - 6 Bar (85)	1/8"-27NPTF	---		10 - 180
360081038008C	0 - 8 Bar (120)	1/8"-27NPTF	---		10 - 180
360081032014C	0 - 10 Bar (150)	1/8"-27NPTF	---	B	10 - 180
360081038003C	0 - 25 Bar (360)	1/8"-27NPTF	---	B	10 - 180
360.086	0 - 7 Bar (100)	1/8"-27NPTF	---		10 - 184
360.002	0 - 10 Bar (145)	1/8"-27NPTF	---		10 - 184
360.019	0 - 10 Bar (145)	1/8"-27NPTF	---		10 - 184

Pressure Sender - Oil / Air				Dual Station	
Part No.	Range Bar (Psi)	Thread Size	Switch Point Bar (Psi)	Picture	Ohms Range
362081001001K	0 - 5 Bar (75)	1/8"-27NPTF	---	B	5 - 90
362081001002K	0 - 10 Bar (150)	1/8"-27NPTF	---	B	5 - 90
362081003002K	0 - 10 Bar (150)	1/8"-27NPTF	---	A	5 - 90
362081002001K	0 - 25 Bar (350)	1/8"-27NPTF	---	B	5 - 90
362081004001C	0 - 25 Bar (350)	1/8"-27NPTF	---	A	5 - 90

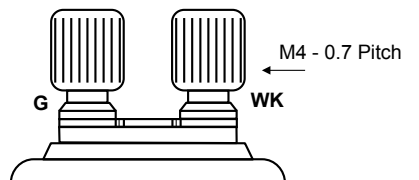
A



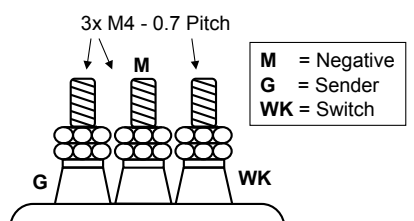
B



C



D



PRESSURE SWITCHES



231.081



231.082



231.083



231.085



231.086



231.087



231.088

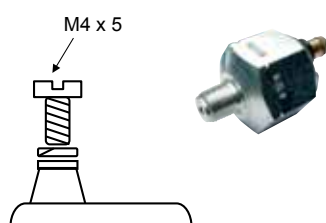


231.089

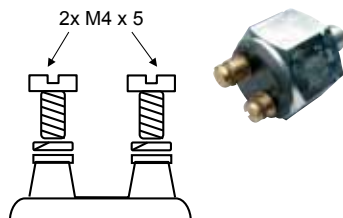
Pressure Switches - Light Duty

Part No.	Range	Thread Size	Terminals Contact	Switch
231.081	25Kpa	1/4"-18NPTF	button	N/C
231.082	21Kpa	1/8"-27NPTF	spade	N/C
231.083	55Kpa	1/8"-27NPTF	button	N/C
231.084	21Kpa	1/8"-28BSPT	button	N/C
231.085	25Kpa	M10x1.0mm	spade	N/C
231.086	21Kpa	1/8"-28BSPT	bullet	N/C
231.087	21Kpa	M14x1.5mm	spade	N/C
231.088	21Kpa	1/4"-18NPT	3 terminals	N/C
231.089	21Kpa	1/8"-28BSPT	spade	N/C

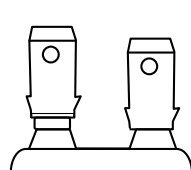
M



N



O



Pressure Switches - Heavy Duty

Part No.	Switch Point Bar (Psi)	Thread Size	Terminals Contact	Picture	Switch
230112005006	0.5 Bar (7) Fixed	1/8"-27NPTF	Screw x 2 Insulated Return	N	N/C
230.044	0.5 Bar (7) Fixed	1/8"-27NPTF	Screw x 2 Insulated Return	N	N/C
230213002004	4.5 Bar (64) Fixed	M10 x 1	Screw x 2 Insulated Return	N	N/C
230213002001	7.5 Bar (64) Fixed	1/8"-27NPTF	Screw x 2 Insulated Return	N	N/C
230.041	0.7 Bar (10) Fixed	1/8"-27NPTF	Screw x 1 Earth Return	M	N/C
230.043	0.7 Bar (10) Fixed	1/8"-27NPTF	Screw x 1 Earth Return	M	N/O
230.701	1.05 Bar (15) Fixed	1/8"-27NPTF	Screw x 2 Insulated Return	N	N/C
230.050	0.5 Bar (7) Fixed	1/8"-27NPTF	Screw x 2 Insulated Return	N	N/O
230.990	7 - 25 Psi Adjustable	1/8"-27NPTF	Screw x 2 Insulated Return	O	N/C
230.993	15 - 150 Psi Adjustable	1/8"-27NPTF	Screw x 2 Insulated Return	O	N/C

OIL PRESSURE SENDER SPECIFICATIONS

Oil Pressure Sender Specifications

Part No.	Range	Ohms	Thread	Body Type
360.001	500 Kpa	10-180	1/8" - 27 NPTF	F
360.002	1000 Kpa	10-199	1/8" - 27 NPTF	F
360.003	700 Kpa	73-10	1/4" - 18 NPTF	F
360.004	500 Kpa	10-180	1/4" - 18 NPTF	G
360.005	500 Kpa	73-13	1/4" - 18 NPTF	G
360.006	600 Kpa	292-39	1/8" - 28 BSPT	F
360.020*	600 Kpa	10-180	1/8" - 27 NPTF	
360.008	800 Kpa	0-90	1/8" - 27 NPTF	K
360.010	500 Kpa	0-88	1/8" - 27 NPTF	K
360.013	700 Kpa	20-183	1/4" x 18 NPTF	G
360.014	600 Kpa	10-184	1/8" - 27 NPTF	F
360.016	500 Kpa	10-180	1/8" - 28 BSPT	G
360.017	600 Kpa/ 7 psi	10-180	1/8" - 28 BSPT	J
360.018	500 Kpa	10-183	1/8" - 27 NPTF	G
360.019	1000 Kpa	10-199	1/8" - 27 NPTF	K
360.020	600 Kpa	10-184	1/8"-27 NPTF	K
360.031	500 Kpa/ 7 psi	10-180	1/8"-27 NPTF	B
360.041	1000 Kpa	110-7	1/8" - 28 BSPT	F
360.042	800 Kpa	10-180	1/8" - 28 BSPT	D
360.008*	800 Kpa	0-90	1/8" - 27 NPTF	
360.086	100 psi	10-180	1/8" - 28 BSPT	K
360.406	400 psi	10-180	1/8" - 28 BSPT	K

For connector types, refer page 80.

Note: Kpa/psi = Switch Point
Use 360.020 sender with 320.057 adaptor
Use 360.008 sender with 320.050 adaptor

OIL LINE KITS and related components

Suitable for mechanical pressure gauges.

Oil Line Kits & Accessories

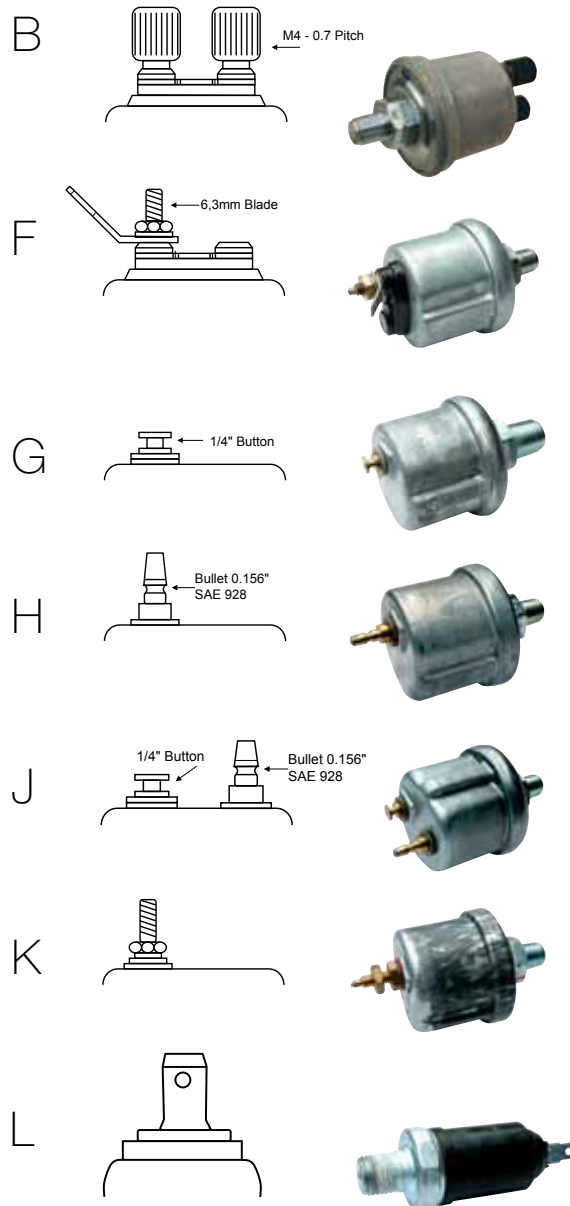
Part No.	Description	Size
230.008	Nut and cone for 3/16" PVC	Tubing
230.025	Adaptor, nut and cone for gauge	1/8"-27NPTF
230.024	Adaptor for oil line kit	1/8"-27NPTF
230.012	Oil line kit 1.8m	
230.013	Oil line kit 5.0m	

Note: An oil line kit consists of a length (1.6 or 5.m) of 3/6" PVC tubing and the engine side fitting 230.024

Accessories

Part No.	Description	Note
180.059	Thermowell 1/8"-27NPTF	Suits adaptors #320.xxx

Note: Refer page 80 for adaptors.



Oil line kit 230.012



Thermowell 180.059

PRESSURE SWITCHES for a range of applications

The VDO Pressure Switches are robust, compact and designed to operate in harsh environments at various pressures and in extended duty applications.

Because of its special internal design, this switch can tolerate high pressure spikes inherent in many pressure systems. The switch is factory calibrated but in the case that adjustment is needed in the field, the switch offers an adjustment screw to facilitate any fine tuning required within the given set point range. The standard polyimide diaphragm (Kapton), makes it compatible with many gases, oils, jet fuels and similar hydrocarbons media. Standard screw type electrical terminals are available. Also included with the switch are screw to blade converters.

The overall ruggedness of the VDO Pressure Switch makes it a popular choice for many OEM and aftermarket applications.

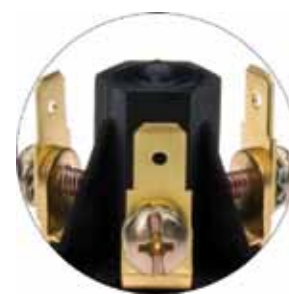
Pressure Switches - Fuel / Oil / Air					
Part No.	Description Pressure Switch Brass	Preset	Range	Thread Type	Terminals
330.101	Press Sw 2 Term N/O 0.5 - 1psi	1psi	0.5 - 1psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.101C	Press Sw 2 Term N/C 0.5 - 1psi	1psi	0.5 - 1psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.102	Press Sw 2 Term N/O 1.1 - 3psi	2psi	1.1 - 3psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.102C	Press Sw 2 Term N/C 1.1 - 3psi	2psi	1.1 - 3psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.104	Press Sw 2 Term N/O 3.1 - 7psi	4psi	3.1 - 7psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.104C	Press Sw 2 Term N/C 3.1 - 7psi	4psi	3.1 - 7psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.110	Press Sw 2 Term N/O 8 - 13psi	10psi	8 - 13psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.110C	Press Sw 2 Term N/C 8 - 13psi	10psi	8 - 13psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.1150	Press Sw 2 Term N/O 14 - 24psi	15psi	14 - 24psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.115C	Press Sw 2 Term N/C 14 - 24psi	15psi	14 - 24psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.135	Press Sw 2 Term N/O 25 - 50psi	35psi	25 - 50psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.135C	Press Sw 2 Term N/C 25 - 50psi	35psi	25 - 50psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.160	Press Sw 2 Term N/O 51 - 90psi	60psi	51 - 90psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.160C	Press Sw 2 Term N/C 51 - 90psi	60psi	51 - 90psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade
330.110	Press Sw 2 Term N/O 91 - 150psi	100psi	91 - 150psi N/O	1/8"-27NPFT	2 x Screw + 2 x Spade
330.1100C	Press Sw 2 Term N/C 91 - 150psi	100psi	91 - 150psi N/C	1/8"-27NPFT	2 x Screw + 2 x Spade



330.102C



430.104



Pressure Switches - universal - Fuel / Oil / Air					
Part No.	Description Pressure Switch Brass	Preset	Range	Thread Type	Terminals
430.101	Press Sw 3 Term NC/NO 0.5 - 1psi	1psi	0.5 - 1psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.102	Press Sw 3 Term NC/NO 1.1 - 3psi	2psi	1.1 - 3psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.104	Press Sw 3 Term NC/NO 3.1 - 7psi	4psi	3.1 - 7psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.110	Press Sw 3 Term NC/NO 8 - 13psi	10psi	8 - 13psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.115	Press Sw 3 Term NC/NO 14-24 psi	15psi	14 - 24psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.135	Press Sw 3 Term NC/NO 25-50 psi	35psi	25 - 50psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.160	Press Sw 3 Term NC/NO 51-90 psi	60psi	51 - 90psi	1/8"-27NPFT	3 x Screw + 3 x Spade
430.110	Press Sw 3 Term NC/NO 91-150 psi	100psi	91 - 150psi	1/8"-27NPFT	3 x Screw + 3 x Spade

TEMPERATURE SWITCHES

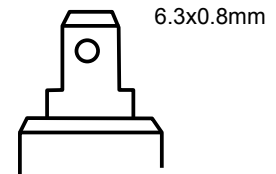
Temp Switch - Normally Open Contact - Single Terminal				3 Watt		
Part No.	Switch Point	Thread Size	Term	Body Length	Max Temp	Diam.
232011017148D	35±3°C	M14x1.5	P	29 mm	120	9.7
232011017087D	40±3°C	M14x1.5	T	29 mm	120	10
232011017038D	55±3°C	M14x1.5	P	29 mm	120	10
232011017017D	85±3°C	M14x1.5	P	29 mm	120	10
230.046	90±3°C	M10x1.5	Q	38.5 mm	120	6.9
232011017009D	90±3°C	M14x1.5	P	29 mm	120	10
232011017016D	95±3°C	M14x1.5	P	29 mm	150	10
230.051	95±3°C	1/2-14 NPTF	P	29 mm	120	10
230.045	96±3°C	1/8-27 NPTF	Q	33 mm	120	10
232011017080D	97±3°C	M14x1.5	P	29 mm	120	10
232011017099D	98±3°C	5/8-18 UNF-2A	P	29 mm	120	10
232011017034D	100±3°C	M14x1.5	P	29 mm	160	10
232011017131D	103±3°C	1/2-14 NPTF	P	29 mm	160	10
232.011/017/041	105±3°C	1/2-14 NPTF	P	29 mm	120	10
232011017010D	110±3°C	M14x1.5	P	29 mm	160	10
232011017032D	120±3°C	M14x1.5	P	29 mm	130	10
232011017103D	130±3°C	M14x1.5	P	29 mm	150	10
232011017004D	140±10°C	M14x1.5	P	29 mm	150	10
232011005027D	150±5°C	M10x1.5	R	38.5 mm	200	6.9
232011005017D	150±5°C	M10x1.5	Q	38.5 mm	200	6.9
232011005004D*	170±5°C	M10x1.5	Q	38.5 mm	220	6.9
232011005030D	185±5°C	M10x1.5	Q	38.5 mm	230	6.9
232011019003D	195±10°C	M10x1.5	Q	38.5 mm	250	6.9

Note: 232011005004D = 230.048

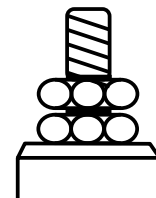
Temp Switch - Normally Open Contact - Dual Terminal				100 Watt		
Part No.	Switch Point	Thread Size	Term	Body Length	Max Temp	Diam.
X10232001001	64±3°C	M14x1.5	Y	35.5 mm	110	8
X10232001002	82±3°C	M18x1.5	Y	35.5 mm	110	8
X10232001003	86±3°C	M18x1.5	Y	35.5 mm	110	8
X10232001004	92±3°C	M18x1.5	Y	35.5 mm	110	8
X10232001005	96±3°C	M18x1.5	Y	35.5 mm	110	8
X10232001006	96±3°C	1/2-14 NPTF	Y	43.5 mm	110	8
X10232001007	96±3°C	M14x1.5	Y	35.5 mm	110	8
X10232001008	96±3°C	M22x1.5	Z	35.5 mm	110	8
X10232001009	100±3°C	M18x1.5	Y	35.5 mm	110	8
230.093	105±3°C	1/8-27NPTF	Y	33 mm	120	6.9
X10232001010	105±3°C	M18x1.5	Y	35.5 mm	160	8

Temp Control Switch				100 Watt		
Part No.	Switch Point	Thread Size	Term	Body Length	Max Temp	Diam.
230.079	95±3°C	1/2-14 BSP	Y	13 mm	120	12
230.080	102±3°C	1/2-14 BSP	Y	13 mm	120	12

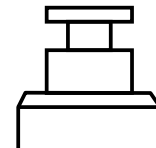
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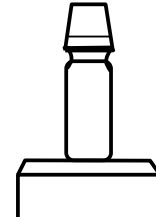
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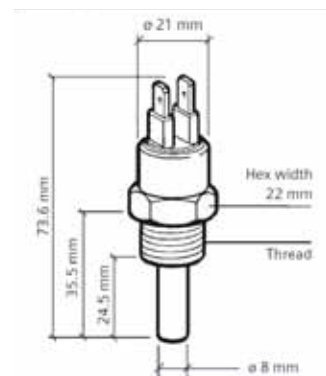
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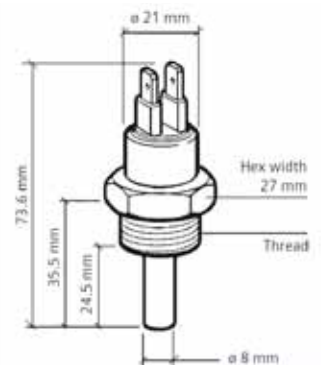
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Y

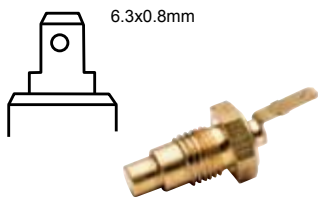


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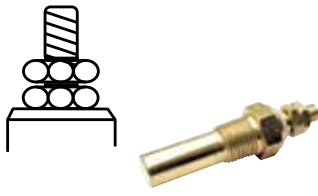


TEMPERATURE SENDERS & SWITCHES

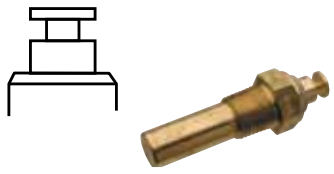
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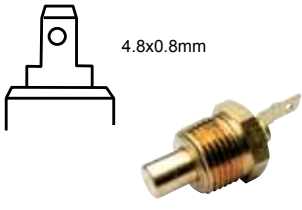
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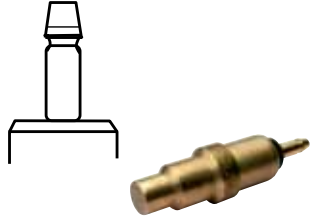
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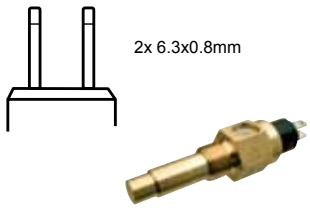
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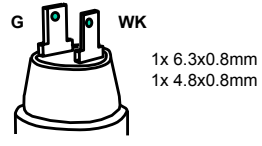
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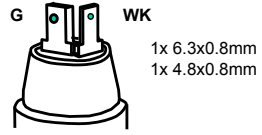
U



V



X



Note: Images shown are an example of terminals shape only.

Temp Sender				40 - 120 Deg. C		
Part No.	Switch Point	Thread Size	Term	Body Length	°C > Ohms	
323801001006K	-	M14x1.5	P	29mm	90 > 51.2 ± 5.3	
323801001040N	-	M16x1.5	P	29mm	90 > 51.2 ± 5.3	
323801001022K	-	M18x1.5	P	29mm	90 > 51.2 ± 5.3	
323801001010K*	-	1/2-14 NPTF	P	29mm	90 > 51.2 ± 5.3	
323801001009N	-	1/4-18 NPTF	P	29mm	90 > 51.2 ± 5.3	
320.011	-	1/8-27 NFTP	P	22mm	90 > 51.2 ± 5.3	
323801001007N	-	3/8-18 NPTF	P	29mm	90 > 51.2 ± 5.3	
323801001008N	-	5/8-18 UNF-3A	P	29mm	90 > 51.2 ± 5.3	
320.004	-	M16x1.5	R	29mm	90 > 51.2 ± 5.3	
320.002	-	1/8-27 NTPF	R	29mm	90 > 51.2 ± 5.3	
320.093	-	1/8-27 NTPF	Q	29mm	90 > 51.2 ± 5.3	
323805001001K	-	M14x1.5	U	29mm	90 > 51.2 ± 5.3	
323805001015N	-	M18x1.5	U	29mm	90 > 51.2 ± 5.3	
323805001004K	-	1/2-14 NPTF	U	29mm	90 > 51.2 ± 5.3	
323805001007N	-	1/4-18 NPTF	U	29mm	90 > 51.2 ± 5.3	
323805001005N	-	3/8-18 NPTF	U	29mm	90 > 51.2 ± 5.3	
323805001002C	-	5/8-18 UNF-3A	U	29mm	90 > 51.2 ± 5.3	
325801002002D	-	M18x1.5	P	29mm	90 > 36.5 ± 2.7	
325805003001C	-	1/4-18 NPTF	U	29mm	90 > 36.5 ± 2.7	
325805003002C	-	5/8-18 UNF-2A	U	29mm	90 > 36.5 ± 2.7	

Note: 323801001010K = 320.022

Temp Sender				50 - 150 Deg. C		
Part No.	Switch Point	Thread Size	Term	Body Length	°C > Ohms	
323801010001D	-	M10x1.5	U	29mm	120 > 36.5 ± 2.7	
323805003001N	-	M14x1.5	U	29mm	90 > 36.5 ± 2.7	
323805003002N	-	1/4-18 NPTF	U	29mm	90 > 36.5 ± 2.7	

Temp Sender & Switch				40 - 120 Deg. C		
Part No.	Switch Point	Thread Size	Term	Body Length	°C > Ohms	
323803001004D	90±3°C	M14x1.5	V	40mm	90 > 51.2 ± 5.3	
323803001006D	96±3°C	M14x1.5	V	40mm	90 > 51.2 ± 5.3	
323803001008D	110±3°C	M14x1.5	V	40mm	90 > 51.2 ± 5.3	
323803001011D	95±3°C	5/8-18 NF-3	V	40mm	90 > 51.2 ± 5.3	
323803001002D	98±3°C	5/8-18 NF-3	V	40mm	90 > 51.2 ± 5.3	
323803001012D	100±3°C	5/8-18 NF-3	V	40mm	90 > 51.2 ± 5.3	
323803001019D	95±3°C	1/2-14 NPTF	V	40mm	90 > 51.2 ± 5.3	
323803001013D	106±3°C	M14x1.5	V	40mm	90 > 51.2 ± 5.3	
323803004002D	105±3°C	M14x1.5	X	40mm	90 > 51.2 ± 5.3	

Temp Sender & Switch - Dual Station (2 Gauges)				40 - 120 Deg. C		
Part No.	Switch Point	Thread Size	Term	Body Length	°C > Ohms	
325805003001C	130±3°C	1/4-18NPTF	R	40mm	90 > 25.6 ± 2.65	

Temp Sender & Switch				50 - 150 Deg. C		
Part No.	Switch Point	Thread Size	Term	Body Length	°C > Ohms	
323805002007D	130±3°C	1/2-14NPTF	X	24mm	90 > 36.5 ± 5.7	

TEMPERATURE SENDER SPECIFICATION

Temp Sender							
Part No.	Range	Ohms (Ω)	Ω@ 100°C	Thread	Body Length	Insulator	Terminal
320.002	40-120°C	287-23	38.6	1/8"-27 NPTF	29.0mm	white	button
320.003	40-120°C	73-10	17.5	1/8"-27 NPTF	29.0mm	blue	button
320.004	40-120°C	287-23	38.6	M16x1.5	29.0mm	white	button
320.006	60-200°C	550-14	148.8	1/8"- 27 NPTF	29.0mm	red	button
320.007	50-150°C	323-18	62.2	M14x1.5	29.0mm	white	spade
320.009	40-120°C	282-40	77.4	5/8"-18 UNF	29.0mm	white	spade
320.010	50-150°C	323-18	62.2	M12x1.5	10.5mm	-	button
320.011	40-120°C	287-23	38.6	1/8"-27 NPTF	22.0mm	yellow	thread
320.012	40-120°C	282-40	77.4	M16x1.5	18.0mm	black	spade
320.016	50-150°C	323-18	62.2	1/2" UNF	29.0mm	white	spade
320.020	60-200°C	550-14	148.8	1/8"-27 NPTF	10.5mm	black	button
320.021	50-150°C	323-18	62.2	1/8"-27 NPTF	29.0mm	yellow	button
320.022	40-120°C	287-23	38.6	1/2"-14 NPTF	29.0mm	white	spade
320.023	50-150°C	323-18	62.2	3/8"16 UNF	29.0mm	yellow	spade
320.024	40-120°C	282-40	77.4	M12x1 .25	23.0mm	black	spade
320.026	40-120°C	323-18	77.4	M16x1.5	23.0mm	black	spade
320.028	50-150°C	323-18	62.2	1/8"-27 NPTF	10.5mm	yellow	button
320.030	-25-40°C	5780-371	0°C = 4082	M10x1.0	50.0mm	black	thread
323803001002D	-25-40°C	5780-371	0°C = 1893	M10x1.0	22.0mm	black	thread
320.032	40-120°C	282-40	77.4	1/8"-27 NPTF	29.0mm	black	button
320.033	40-120°C	282-40	77.4	1/8"-27 NPTF	29.0mm	white	button
323801001006K	40-120°C	287-23	38.6	M14x1.5	29.0mm	white	spade
320.036	40-120°C	287-23	38.6	M16x1.5	29.0mm	black	button
320.038	40-120°C	313-22	41.2	M16x1.5	27.0mm	black	spade
320.039	40-120°C	145-17	31.5	use old nut	17.0mm	black	bullet
320.040	40-120°C	175-20	31.5	M16x1.5	22.0mm	black	bullet
320.041	40-120°C	495-38	78.8	M16x1.5	22.0mm	black	bullet
320.042	40-120°C	395-40	83.2	M8x0.75	22.0mm	black	bullet
320.043	40-120°C	184-17	32.0	M16x1.5	22.0mm	black	spade
320.044	40-120°C	313-22	41.2	M16x1.5	27.0mm	black	spade
320.045	40-120°C	380-30	83.2	5/8"-18 UNF	27.0mm	red	spade
320.046	40-120°C	380-30	54.0	5/8"-18 UNF	29.0mm	red	spade
320.047	40-120°C	353-24	51.9	M16x1.5	24.0mm	black	bullet
320.048	40-120°C	432-30	-	5/8"-18 UNF	-	black	spade
320.049	40-120°C	375-29	-	1/2"-14 NPTF	-	black	spade
320.060	40-120°C	341-24	45.0	1/8"-27 NPTF	20.0mm	black	bullet
320.061	40-120°C	157-24	-	5/8"-18 UNF	-	white	spade
320.062	40-120°C	208-18	31.5	M16x1.5	27.0mm	black	spade
320.065	40-120°C	282-40	75.0	1/8"-27 NPTF	22.0mm	yellow	spade
320.067	40-120°C	232-22	65.9	M8x0.75	22.0mm	black	bullet
320.068	40-120°C	175-20	32.4	M16x1.5	22.0mm	black	bullet
320.092	50-150°C	323-18	62.2	1/8"-27NPTF	29.0mm	green	thread
320.093	40-120°C	287-23	62.2	1/8"-27NPTF	29.0mm	black	thread

Note: Not all the above temperature senders are suitable for the cockpit gauges.
Some temp senders are used in OEM applications.



Sender 320.002



Sender 320.023



Sender 323803001002D



Sender 320.093



Sender 320.028



Sender 320.039

ADAPTORS, brass

Suitable for pressure & temperature senders & switches with 1/8"-27NPTF thread. Mechanical temperature gauges with 1/8"-27NPTF thermowell (180.059). Oil line kits (230.012 & 230.013) for mechanical pressure gauges.



Adaptors Brass

Part No.	Internal Thread	External Thread	Overall Length
320.050	1/8"-27NPTF	1/4"-18NPTF	20mm
320.051	1/8"-27NPTF	3/8"-18NPTF	20mm
320.052	1/8"-27NPTF	5/8"-18UNF	20mm
320.053	1/8"-27NPTF	1/2"-14NPTF	20mm
320.054	1/8"-27NPTF	M14x1.5	20mm
320.055	1/8"-27NPTF	M16x1.5	20mm
320.056	1/8"-27NPTF	M18x1.5	20mm

Adaptors Brass

Part No.	Internal Thread	External Thread	Overall Length
320.058	5/8"-18UNF	1/2"-14NPTF	20mm
320.064	1/4"-18UNF	5/8"-18UNF	17mm

Adaptors Brass

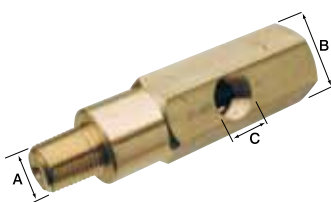
Part No.	Internal Thread	External Thread	Overall Length
180.059	Thermowell	1/8"-27NPTF	20mm
320.053	Adaptor	1/2"-14NPTF to 1/8"-NPT	

Adaptors Stainless Steel

Part No.	Internal Thread	External Thread	Overall Length
320.074	1/8"-27NPTF	1/8"BSPT	
320.075	1/4"-18NPTF	3/8"BSPT	
320.076	1/8"-27NPT	M12x1.25	

T-PIECE ADAPTORS, brass

Suits oil line kits and oil pressure sender units with 1/8"-27 NPTF male thread, while at the same time retaining the existing oil warning light switch.



Adaptors Brass

Part No.	Thread A	Thread B	Thread C	Length
230.031	1/8"-27NPTF	1/8"-27NPTF	1/8"-27NPTF	66mm
230.032	1/4"-18NPTF	1/4"-18NPTF	1/8"-27NPTF	66mm
230.033	M10x1.0	M10x1.0	1/8"-27NPTF	66mm
230.035	M14x1.5	M14x1.5	1/8"-27NPTF	66mm
230.036	1/8"-28BSPT	1/8"-28BSPT	1/8"-27NPTF	66mm

TANK UNIT SENDER ACCESSORIES

Neoprene Rubber Gasket 36373/9A



Welding Flange 22502641141



Flange Mounting Kit N05801432
Suits 220.003 / 220.004 / 220.005
and Tubular T / U Senders



Accessories

Part No.	Description	PCD
36373	Gasket-neoprene rubber	54mm
2251016	Gasket	80mm
22502641141	Welding flange	54mm
115910011401	Welding flange	80mm
N05801432	Flange mounting kit	54mm
2250234	Gasket-cork (dim. as per 36373/9A)	54mm
CTA0200	5-6 hole flange kit	

FUEL LEVEL SENDERS

Sender - Float Arm			
Part No.	Range	Depth	Voltage
220.003	10-180 ohm	150 - 535mm adjustable	6 - 24V
220.004	0-90 ohm	150 - 535mm adjustable	6 - 24V
220.005	240-33 ohm	150 - 535mm adjustable	6 - 24V
220.734	10-180 ohm	200mm fixed	6 - 24V

Float Arm Tank Unit - insulated return			
Part No.	Range	Depth	Voltage
220.735	10-180 ohm	150 - 600mm	6 - 24V



Adjustable float arm sender 220.003

ARM TYPE FUEL SENDERS

Arm Type Fuel Senders		Tank depth range 145 - 400mm
Part No.	Range	Voltage
A2C59510165	Sender with low fuel warning switch	2.5 -180 ohms
A2C59510171	Arm Type Fuel Sender	2.5 -180 ohms
A2C59510166	Sender with low fuel warning switch	240 - 33.5 ohms
A2C59510172	Arm Type Fuel Sender	240 - 33.5 ohms
A2C59510167	Sender with low	2 - 90 ohms
A2C59510173	Arm Type Fuel Sender	2 - 90 ohms
N05801432	Tank Flange Kit incl. balton flange	
CTA0200	Adaptor Kit 6 to 5 Holes	



Arm Type Fuel Sender

REED SWITCH SENDERS

Reed switch senders are better choice than float arm sender.

They can operate in tanks for petrol or diesel, without baffles or walls.

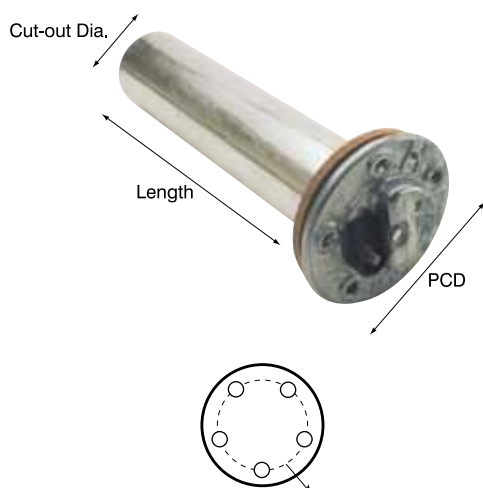
They have a long life in comparison to the variable resistors which are directly exposed to the fuel.

Reed switch senders can also be used in tanks containing water to measure their level. Just for 3- 180 ohms gauges.

Reed Switch Senders		PCD 54 mm
Part No.	Range E - F	Voltage
220.150-180	3-180 Ohms	150 mm
220.180-180	3-180 Ohms	180 mm
220.230-180	3-180 Ohms	230 mm
220.250-180	3-180 Ohms	250 mm
220.260-180	3-180 Ohms	260 mm
220.270-180	3-180 Ohms	270 mm
220.300-180	3-180 Ohms	300 mm
220.320-180	3-180 Ohms	320 mm
220.330-180	3-180 Ohms	330 mm
220.350-180	3-180 Ohms	350 mm
220.600-180	3-180 Ohms	600 mm
220.660-180	3-180 Ohms	660 mm
220.900- 180	3-180 Ohms	900 mm



TUBULAR TYPE SENDERS



Note: PCD = Pitch Circle Diameter



Sender- Tubular X10224014015

Tubular Senders - Fuel		PCD 54 mm - Cut-out Dia 41mm	
Part No.	Sender Length	Resistance at Full	Resistance at Empty
224011000015G	150mm	4.5	69
224011000016G	160mm	4.5	74
224011000017G	170mm	4.5	79.5
224011000018G	180mm	3	64
224011000019G	190mm	3	68
224011000020G	200mm	3	68
224011000021G	210mm	3	76
224011000022G	220mm	3	80
224011000023G	230mm	3	84
224011000024G	240mm	3	65.5
224011000025G	250mm	2.5	72
224011000026G	260mm	2.5	72
224011000027G	270mm	2.5	74.5
224011000028G	280mm	2.5	75.5
224011000029G	290mm	2.5	78
224011000030G	300mm	2.5	82.8
224011000031G	310mm	2.5	84
224011000032G	320mm	2.5	69.5
224011000033G	330mm	2.5	72
224011000034G	340mm	2.5	74
224011000035G	350mm	2.5	79.6
224011000036G	360mm	2.5	69
224011000037G	370mm	2.5	71
224011000038G	380mm	2.5	73
224011000039G	390mm	2.5	75
224011000040G	400mm	2.5	74.9
224011000045G	450mm	2.5	84.3
224011000050G	500mm	2.5	75.4
224011000055G	550mm	2.5	77.6
224011000060G	600mm	2.5	85.3
224011000065G	650mm	2.5	82.2
224011000070G	700mm	2	81.6
224011000075G	750mm	2	82
224011000080G	800mm	2	68.5

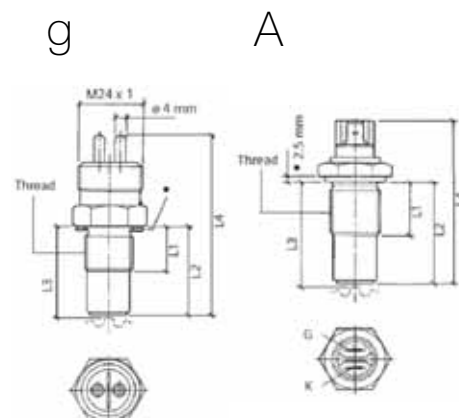
Tubular Senders - Fuel		PCD 80 mm - Cut-out Dia 63 mm	
Part No.	Sender Length		
X10224009039	596 mm		
X10224021002	596 mm		
X10224014022	616 mm		
X10224009048	641 mm		
X10224014002	686 mm		
X10224009029	741 mm		
X10224009019	781 mm		
X10224021004	803 mm		
X10224009026	831 mm		
X10224021006	846 mm		
X10224014003	881 mm		
X10224014011	916 mm		
X10224009057	946 mm		
X10224014015	996 mm		
X10224009022	1001 mm		
X10224021005	1045 mm		
X10224009040	1086 mm		
X10224014044	1250 mm		
X10224009072	1387 mm		

RPM SENDERS

Inductive Type - 2-wire set-up

Part No.	Thread Size	L1 mm	L2 mm	L3 mm	L4 mm	Picture
340.007	M18x1.5			25		g
340.008	M18x1.5			44		g
340.009	M18x1.5			84		g
340804007013C	M18x1.5	27	34	35.1 ± 0.1	62	g
340804007004C	3/4-16 UNF-2A	27.5	28.5	29.6 ± 0.1	70	g
340804007011C	M18x1.5	33	34	35.1 ± 0.1	70	g
340804007019C	M18x1.5	18.2	70.7	71.8 ± 0.1	79.7	g
340804005015C	M18x1.5	18	99.1	101.15-100.55	135.6	A

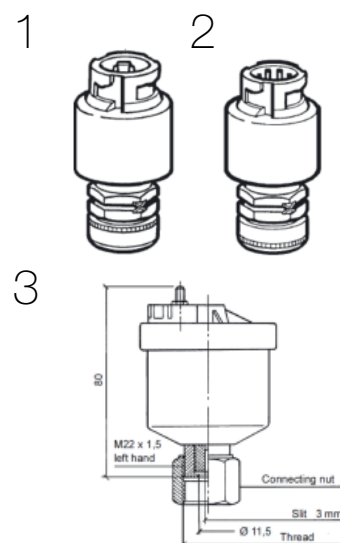
Note: Use twisted pair or shielded cable between inductive sensor and device requiring signal to eliminate possible electrical interference.



Proximity Switch & Hall Effect - Square wave output - 3-wire Bayonet closed style

Part No.	Voltage	Thread	Pic	Type	Imp/Rev	Plug Kit
K46020	12/24V	M22x1.5 L/H male	1	H/E	8	K72221
K46021	12/24V	7/8"-18UNF	1	H/E	8	K72221
K70450	12V	M22x1.5 L/H female	2	H/E	8	K72222
K70451	12V	7/8"18UNF female	2	H/E	8	K72222
340808001004G		7/8" - 18 NS-2A left hand	3	Gen	4	

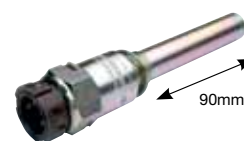
Note: Part numbers supplied without Plug Kit
Nuts to suit are optional
#230.070 7/8"-18UNF - M22x1.5LH
#230.071 M22x1.5LH - 3/4-26UNF



SPEEDOMETER SENDERS

Proximity Senders - 4 Blade Bayonet Type

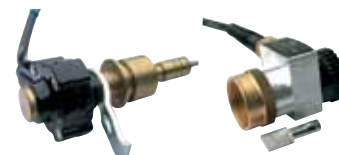
Part No.	Imp/Rpm	Connection	Length	Voltage
K70452	2 x 8 (180 out of Phase)	M18x1.5	90mm	12V
K70453	2 x 8 (180 out of Phase)	M18x1.5 (Volvo Type)	25mm	12V
340 216 001 024	2 x 8 (180 out of Phase)	M18x1.5 (Volvo Type)	63mm	12V
21590004301	2 x 8 (180 out of Phase)	M18x1.5	25mm	12V



Proximity Sender K70452 (Speed & RPM)

Speedometer Senders

Part No.	Description	Drive Key	Pulses/Rev	Nut Size
340.808	In line suits various vehicles with M22 nut size	3x8mm blade	8	M22 x 1.5mm Inc. 5mm dia lug drive key
340.011	In line suits G.M. U.S.A.	2.7mm square	16	7/8"-18UNF
340.013	Snap fit suits Ford U.S.A. (C4 transmission)		16	Snap fit
340.22M	In line fits most Japanese	2.7mm square	2	M22 x 1.5mm
412.009	Universal cut cable	2.7mm square	6	



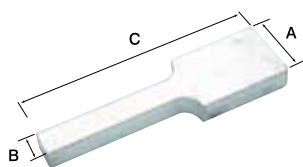
Speed Sensors 340.013 and 340.808



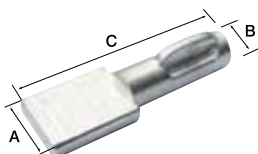
Speed sensor 412.009

DRIVE KEYS

Suitable for tacho and speedo generators, Hall-effect senders etc.



Drive key 230.061



Drive key 230.064



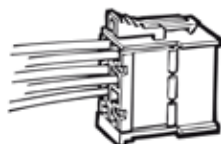
Double sided nut 230.070



Connector K72221



Connector K72222



Connector K70735



Terminals K70524
(One terminal per part number)

Drive Keys

Part No.	Dimension A	Dimension B Diam.	Dimension C
K72103	2.6 x 8mm	2.6mm	26mm
230.061	3.0 x 8mm	3.0mm	28mm
230.076	2.6 x 8mm	3.8mm	27mm
230.062	2.6 x 8mm	3.8mm	26mm
230.063	2.6 x 8mm	4.7mm	26mm
230.064	2.6 x 8mm	5.0mm	26mm
230.065	2.6 x 8mm	5.1mm	30mm
K72113	2.6 x 8mm	5.2mm	26mm

DOUBLE SIDED NUTS

Suitable for ratio boxes, angle drivers, Hall-effect sender units etc. with M22x1.5mm LH male connections.

Double Sided Nuts

Part No.	Description
230.070	M22x1.5mmLH to 7/8"-18UNF
230.071	M22x1.5mmLH to 3/4" x 26UNF

SPEED AND RPM SENDER CONNECTORS

Connectors

Part No.	Description
K72221	3 Spade Pin connector
K72222	4 Spade Pin connector

TACHOGRAPH CONNECTORS

Connectors

Part No.	Description
K70735	White power connector
K70710	Yellow speed connector
K70711	Red RPM connector
K70524	Terminal to suit 1318 connectors

STARTER SWITCHES

Push Button Switch

Part No.	Description	Specification	Size
170.713	Push button N/O	10 amp	15mm hole
170.714	Push button N/C	10 amp	15mm hole

Note: N/O = Normally Open Contact.
N/C = Normally Closed Contact.



Push button switch 170.713

Key Switches

Part No.	Description	Specification
170.706	Brass key switch	Off - On - Start
850.009	Plastic marine key switch with rubber boot	



Brass switch 170.706

ELECTRIC ADJUSTABLE SWITCH BOX



Switch Box 410.060



Switch Box 410.061



Switch Box 660.990



Switch Box 411.101

Designed to be used in conjunction with VDO electric temp or pressure gauges with senders, or can be used using VDO senders only (extra resistor 1K, 1W required).

Ideal for switching warning lams, buzzers, external relays, thermofan and other devices.

Features 5 amp N/O or N/C relay contact output.

Adjustable Electronic Switch Boxes		12/24V
Part No.	Description	Specification
410.060	Suitable for 1 warning function	2000-10 ohms input 5 amp relay output 1 input - 1 output
410.061	Suitable for 3 separate warning functions	2000-10 ohms input 5 amp relay output 3 input - 3 output

MULTI-FREQUENCY SWITCH BOX

The VDO RPM and Speed Switch has been designed to work with all standard ignition systems, and will provide a negative output once a predetermined RPM has been reached. In standard format the signal will turn off once the RPM falls below the pre-set point. Dip Switches are provided to program the level of hysteresis, or alternatively latch the relay on. Applications include driving a warning light or buzzer.

RPM Switch		
Part No.	Description	Specification
660.990	12V RPM switch	3 amp relay output RPM range 0-12000 rpm 4/6/8cyl
411.101	12/24V RPM switch	Switch range 2Hz - 9,990 Hz 5 amp relay contact output, 2 channels. Sine & Square wave inputs.

ELECTRONIC RATIO BOX

The VDO Electronic Ratio Box is designed to divide or multiply an input frequency by a fixed ratio. The input signal could be a speedometer or tachometer signal from a magnetic pickup, alternator pickup or Hall effect sender. Typical applications include correcting the speedometer on a vehicle which has had the diff ratio changed, or calibrating a tachometer which has no calibration adjustment.

Suitable for 12/24V applications.



Switch Box 411.105

Signal Amplifier/Divider		12/24V
Part No.	Description	Specification
411.105	12/24V Electronic Ratio box	Input: Hall effect, 0-10V p-p Inductive, 1.5-50V Output: Square wave 0-10V p-p

UNIVERSAL SIGNAL CONVERSION RATIO BOX

This product has an input signal filter (low level, noise etc.). Furthermore, it can be used for a wide operational range 6-24V. The signal output can be square or sine wave.



Universal Signal Conversion		6/24V
Part No.	Description	Specification
411.110	Input Voltage Level: Input Frequency Range: Output Voltage Level Sine: Output Voltage Level Square: DIP Switch Settable Ration Range:	1.5V p-p to V Supply 4Hz to 5000Hz 4-5V p-p into 1K ohm V Supply 0.0125 to 3.1875

SIGNAL AMPLIFIER/DIVIDER

The VDO Signal Amplifier/Divider is a general purpose module designed to work with most speedometer and tachometer signals. This box will amplify a low voltage signal to a 10V peak to peak square wave. This can be useful when a signal is too low to drive a speedometer, tacho, cruise control or any other such device. The signal may also be divided in frequency by a factor of 1, 2, 4, 8, or 16 to allow easier integration to another instrument.



Signal Amplifier/Divider		12/24V
Part No.	Description	Specification
411.096	Signal amplifier/divider programmable	Signal input: 2+V p-p 0-10khz Output: 10.0V square wave
411.095	Signal amplifier/divider by 16 (permanent)	Signal input: 1->2V p-p 0-10khz Output: 10.0V square wave

DIGITAL HAND HELD TACHOMETERS

The DT Model Range of hand held tachometers offers an easy solution to any workshop that requires measuring the RPM of Engine, Process, Machinery, Electric Motors etc.

Suits Photo, Photo/Mach, Inductive applications.



DT2236



DT2237

Digital Hand Held Tachometers

Part No.	Description
DT 2234B	Digital Hand Held Tacho (Photo Only)
DT 2236	Digital Hand Held Tacho (Photo/Mech)
DT 2237	Digital Hand Held Tacho (Inductive)

Specifications

Measurement:

Photo:	5 - 99,999 Rpm
Contact	0.5 - 19,999 Rpm
Surface Speed:	0.05 - 1,999.9 Mts / Min
	0.2 - 6,560 Ft / Min

Resolution

Photo:	0.1 Rpm (0.5 to 999.9 Rpm), 1 Rpm (over 1,000 Rpm)
Contact:	0.1 Rpm (0.5 to 999.9 Rpm), 1 Rpm (over 1,000 Rpm)
Surface Speed:	0.01 m / min to 0.05 - 99.99 m / min
	0.1 m / min (over 100 m/min)
	0.1 ft / min (0.1 to 999.9 ft / min)
	1 ft / min (over 1,000 ft / min)

Accessories

Part No.	Description
DT 2234 / 36 tape	Reflective tape for phototach
AS - 35A	Adaptor Cone
AS - 35B	Adaptor funnel
AS - 35C	Speed test Wheel

GAUGE CHECK



105.001

Gauge Check Tester

12V

Part No.	Description
105.001	Ohms tester for resistance gauges 0-300 ohms

Gauge Check helps the serviceman to determine whether electrical gauges fitted to your vehicle are functional and accurate without having to remove or replace them. Suitable for testing automotive, commercial and marine gauges, it comes complete with operating instructions covering test data all popular vehicles.

HOUSING BINNACLE, plastic

Suitable for BA and BF Ford Falcon in black.

Instrument Housing - Ford Falcon		
Part No.	Description	Suitable For
740.301	2 gauges Binnacle Housing	BA-BF Falcon



HOUSING BINNACLE, plastic

Suitable for VY and VZ Commodore in grey.

Instrument Housing		
Part No.	Description	Suitable For
B06020601P	2 gauges Binnacle Housing	VY-VZ Commodore



HOUSING, metal and related components

Steel mounting cups with smooth black or polished chrome finish.

Instrument Housing		
Part No.	Finish	Suitable For
240.018	Black	85mm instruments with max. installation depth of 80mm
240.019	Chrome	85mm instruments with max. installation depth of 80mm



Gauge housing 240.018

HOUSING, plastic

Plastic mounting cups with adjustable clip-on pedestal.

Instrument Housing	
Part No.	Suitable For
230.028	52mm instruments with max. installation depth of 62mm
230.029	52mm instruments with max. installation depth of 97mm
230.030	80mm instruments with max. installation depth of 90mm



Gauge housing 230.028

INSTRUMENT PANELS, metal black

Suitable for all 52mm instruments.

Instrument Panels	
Part No.	Configuration
230.005	Single
230.006	Double
230.007	Triple



Single gauge panel 230.005



Twin gauge panel 230.006



Spin lock clamp 800.005.015



Stud kit 600.402



Bracket 230.001



Spacer 230.037



Blank 230.038



Reduction ring 230.004

CLAMP RINGS & STUD KITS

Suitable for Vision range of instruments.

Clamp Rings & Stud Kits - Plastic White

Part No.	Description
800.005.015	Spin lock clamp ring for 52mm instruments
800.005.005	Spin lock clamp ring for 80mm instruments
800.005.006	Spin lock clamp ring for 85mm instruments
800.005.007	Spin lock clamp ring for 100mm instruments
600.402	Stud kit for 52mm (not for speedo, tacho & pyrometer)

BRACKETS, metal black

Suitable for single instrument mounting.

Brackets - Metal Black

Part No.	Description
230.001	52mm instruments
230.020	85mm instruments

CLAMP RINGS & STUD KITS

Suitable to align a 52mm panel-mounted instrument at a 15° angle.

Angled Spacer Ring - Plastic Black

Part No.	Description
230.037	Angled instrument adaptor

INSTRUMENT BLANK, plastic black

Suitable for plug a 52mm cut-out.

Clamp Rings & Stud Kits

Part No.	Description
230.038	Instrument blank

REDUCTION RINGS, metal black

Used for mounting 52mm and 80mm instruments in 60mm and 85mm cut-outs.

Reduction Rings

Part No.	Description
230.004	60mm – 52mm
230.019	85mm – 80mm

GLOBE HOLDERS & GLOBES

Globe Holders & Globes		
Part No.	Description	Specification
240.001	BA 7s style J	12V 2W
240.002	BA 7s style J	24V 2W
240.003	BA 9s style H	12V 2W
240.004	BA 9s style H	24V 3W
240.009	W2.0 x 4.6 mini wedge W5	12V 1.2W
240.011	W2.0 x 4.6 mini wedge W5	24V 1.2W
240.712	BA 9s style H insulated	12V 2W
240.713	BA 9s style H insulated	24V 3W
800005002	Vision range globe holder & globe	12V 2W
240.733	7mm 12V wedge red globe	12V 2W
240.734	7mm 24V wedge red globe	24V 2W
800005003	International range globe holder & globe	24V 3W



Globe holder 240.733



Globe holder 800005002

GLOBES

Globes			
Part No.	Description	To Suit	Specification
240.050	Mini wedge globe	240.009/733	12V 1.2W
240.051	Mini wedge globe	240.011/734	24V 1.2W
240.052	Wedge globe	800005002	12V 2W
240.053	Wedge globe	800005003	24V 3W
240.054	Bayonet globe 7mm	240.001/012	12V 2W
240.055	Bayonet globe 7mm	240.002/013	24V 3W
240.056	Bayonet globe 9mm	240.003/712	12V 2W
240.057	Bayonet globe 9mm	240.004/010/713	24V 3W

Note: WWG gauges use light globe Part no. 240.052 (12V 2W) or Part no. 240.053 (12V 3W) Suitable for speedo, tacho or all 52mm gauges



Wedge globe 240.050



Bayonet globe 240.055

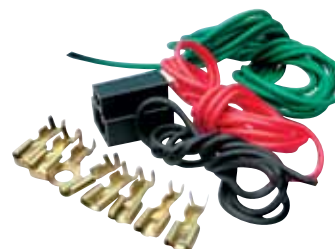
LIGHT COVERS

Light Covers		
Part No.	Description	To Suit
240.068	10mm green	240.052/053
240.069	5mm green	240.050/051
240.070	10mm red	240.052/053
240.071	5mm red	240.050/051
240.072	10mm blue	240.052/053
240.073	5mm blue	240.050/051



WIRING KITS

Wiring Kits		
Part No.	Description	Specifications
240.030	3 wire kit - oil - temp - fuel	3mm wire
240.031	2 wire kit - volts - clock	3mm wire
240.032	2 wire kit - ammeters	6mm wire
340.824	8 Pin plug kit for speedo's Tachometers / Tachourmeters	Plug + 8 terminals



Wiring Kit 240.030

CONVERSION TABLES

Boiling temperature vs Pressure				Thread Sizes & Turns Per Inch			Pressure Equivalents		
Celsius	Fahrenheit	PSI	lbs	Thread	Size	Diameter	Kpa	PSI	BAR
100	212	14.7	0	NPT	1/8"-27	10.287mm	10	1.45	0.1
101	213.3	15.3	1/2		1/4"-18	13.716mm	50	7.25	0.5
105	221	17.5	3		3/8"-18	17.145mm	100	14.5	1
107	225	19	4		1/2"-14	21.336mm	200	29	2
109	228	20	5	BSP	1/8"-28	9.728mm	350	50.7	3.5
112	233	22	7		1/4"-19	13.157mm	600	86.9	6
119	246	28	13		3/8"-19	16.662mm	850	123	8.5
121	250	30	15	1/2"-14	20.995mm	1750	254	17.5	
Note: Approximate values at sea level.				SAE(UNF)	5/8"-18	15.875mm	2500	363	25

TEMP SENDER CALIBRATION CHARTS

Range 40 - 120 Deg. C		Range 50 - 150 Deg. C		Range 60 - 200 Deg. C		Temp Equivalents	
Deg. C	Ohms	Deg. C	Ohms	Deg. C	Ohms	Celsius	Fahrenheit
20	676.9	40	481.5	60	581	-10	14
30	439	60	221.2	80	281.8	5	41
40	291.5	75	128	100	148.8	10	50
50	197.3	82.5	102	115	96	20	68
60	134	87.5	89.3	125	74	30	86
70	97.1	92.5	76.8	135	58.3	40	104
80	70.1	97.5	66	145	46.5	50	122
87	54	102.5	58	155	35.4	75	167
94	45	107.5	50	164	29.2	80	176
100	38.5	115	41	172	24	85	185
107	32.5	125	32.2	180	21.2	90	194
114	28	135	26	188	18	95	203
120	22.4	145	21	196	15.3	100	212
130	17.4	160	15.1	205	12.8	105	221
140	13.8	180	10.2	220	10.1	110	230

PRESSURE SENDER CALIBRATION CHARTS

Range 0 - 2 Bar (200 Kpa)		Range 0 - 5 Bar (500 Kpa)		Range 0 - 10 Bar (1000 Kpa)		Range 0 - 25 Bar (2500 Kpa)	
Bar	Ohms	Bar	Ohms	Bar	Ohms	Bar	Ohms
0	9.63	0	10.65	0	10.241	0	9.9
0.3	37.45	0.75	37.8	1.2	35.4	3	36.7
0.5	55.69	1.25	55.65	2	51.55	5	53.4
0.7	73.7	1.75	73.3	2.8	67.15	7	69.21
0.9	91.4	2.25	90.83	3.5	80.37	9	84.25
1.05	104.53	2.675	105.6	4.1	91.4	10.6	95.75
1.15	113.2	2.875	112.44	4.7	102.1	12.2	106.83
1.25	121.8	3.125	121	5.3	112.52	13.8	117.5
1.35	130.36	3.5	133.77	5.9	122.64	15.4	127.82
1.45	138.85	3.75	142.2	6.5	132.47	17	137.8
1.55	147.3	4	150.62	7.1	142	18.6	147.5
1.65	155.6	4.25	158.97	7.7	151.24	20.2	156.93
1.75	163.9	4.5	167.3	8.4	161.65	21.8	166.14
1.85	172.2	4.75	175.55	9.2	173.04	23.4	175.17
2	184.4	5	183.77	10	183.9	25	184.03

Note: For dual station senders, half the actual resistor value for the same temperature or pressure.

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