

SMITHS

Automotive instruments

ADDISONS



'keep a watchful eye'



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Introduction

Performance, maintenance, safety— the case for extra instrumentation

Instruments contribute to better motoring in three important ways. They help to achieve a car's best performance. They assist in checking such things as oil, water, battery charge, and thus ensure prompt minor maintenance. Finally, they give advance warning of potential trouble thus reducing the chances of a sudden emergency arising from the condition of the car. The makers of the more popular cars do not fit the required instruments as standard equipment. What they DO provide are warning lights covering the most important functions — ignition, oil pressure and sometimes water temperature. Today, however, more motorists are realising that the only way to get advance warning of abnormal conditions arising — as opposed to an indication of actual trouble having occurred (which is what a warning light tells you) — is to have dials and gauges that give continuous readings. This is made even more necessary by the modern 'lubricated-for-life' engines, which are attended to by service engineers at infrequent intervals. Between servicings, trouble could develop UNDETECTED. Instruments help you overcome this and give you a cross-check on related factors that may be contributing to the overall situation. Take just one example: oil pressure. The green light system in use on most cars operates when the oil pressure drops to about 5 lbs. to the square inch, which could be too late to avoid trouble in the engine (normal pressure is sometimes between 50-65 lbs. to the inch!) An oil pressure gauge, on the other hand, shows how the oil is at any

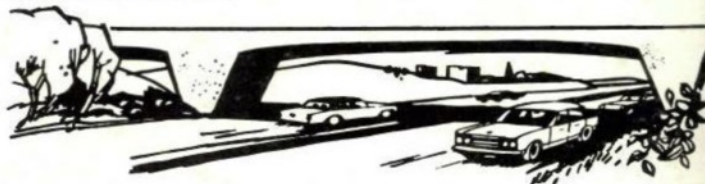


moment — starting from cold, at normal working engine temperature, in hot weather or in slow-moving traffic. Since engine temperature affects oil viscosity, and thus the pressure, the cooling-water temperature would be a handy additional check — as well as being valuable information in its own right. As the oil pressure drops from cold start through to normal running, so the water temperature shows a corresponding rise. The two sets of information balance each other to show that all is well. If, however, one instrument showed a variation that did not have a co-relation with the other, then you would know that something might be amiss and take immediate steps to put it right. A simple green light cannot do that for you. In dozens of other, similar ways,

additional instruments can help you in your everyday motoring. If you do add instruments to your car, you will be joining an ever-increasing number of motorists who find the standard equipment fitted to the majority of modern cars insufficient for their needs. During the past three years, purchases of accessory instruments have leapt up — the actual swing has been close to 100 per cent increase IN EACH YEAR. During this same period, Smiths Industries have been making a careful study of the demand, and have now rationalised the range of instruments they make available. This now includes instruments for water temperature, oil pressure and temperature, external air temperature, battery condition, ammeters, tachometers (or rev. counters), as well as a seat belt indicator and electric clocks. These are matched by special instrument panels for one, two or three instruments, that fit about 90 per cent of all cars now available. Smiths Industries, as you well know is the most famous name in instrumentation, not only for cars but for jetliners, ships, hovercraft, rocketry, and for hundreds of other uses throughout industry. The instruments they make are in daily operation in all parts of the world, under the most arduous conditions, and in the most inhospitable environments. You may rely on Smiths Instruments for complete accuracy, and long-life reliability. As you look through the instruments illustrated and described in this catalogue, remember that the more you know about how your car is functioning, particularly when on the move, the greater sense of security you will have.



You'll be more confident, more relaxed, able to concentrate fully on being a safe, careful driver. And when trouble does arise, as it inevitably must with any car sooner or later, you'll have information available to help you diagnose the fault and attend to it BEFORE it develops into a costly repair job, or worse still, causes an accident.



Oil pressure gauges

Indicate

Low oil level in sump, blocked oil filter, faulty pressure relief valve, badly worn bearings, blocked or fractured oil pipe, lost sump drain plug.



Part No. M37201 (61M2)

0-60 p.s.i. Black Dial

Part No. M73401 Complete Kit*



Part No. M37205 (61M4)

0-80 p.s.i. Black Dial

Part No. M73402 Complete Kit*



Part No. M37209 (61M3)

0-100 p.s.i. Black Dial

Part No. M73403 Complete Kit*

Correct oil pressure is as important to the well-being of a car engine as correct blood pressure is to the human body. Variations in oil pressure can be the result of all kinds of different problems, and can lead on to serious engine trouble unless quickly put right. An oil pressure gauge is, therefore, probably the most vital instrument to have on your dashboard. Most popular cars today are fitted with a warning light to indicate low pressure but this system only operates when oil pressure is excessively low, and considerable damage can occur before the light operates. With

a Smiths oil pressure gauge giving you continuous and consistent information you will be able to spot potential trouble before it becomes serious and perhaps costly to correct.

Smiths oil pressure gauges work on the bourden tube principle and are available in various models calibrated from 0-5 to 0-160 lbs. per square inch in the full scale model and from 0-60 to 0-100 lbs. in the arc scale range.

KITS—BLACK DIAL *	GAUGES—BLACK DIAL	GAUGES—BLUE DIAL	GAUGES—SILVER DIAL
Part No. M73401 0-60 p.s.i.	Part No. M37201 0-60 p.s.i.	Part No. M37215 0-80 p.s.i.	Part No. M37202 0-60 p.s.i.
Part No. M73402 0-80 p.s.i.	Part No. M37205 0-80 p.s.i.	Part No. M37216 0-100 p.s.i.	Part No. M37206 0-80 p.s.i.
Part No. M73403 0-100 p.s.i.	Part No. M37209 0-100 p.s.i.		Part No. M37210 0-100 p.s.i.

*Kits include gauge, light attachment, flexible line kit and engine adaptor.

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Oil pressure gauges



Part No. M37001
0-60 p.s.i. Black Dial



Part No. M37002
0-100 p.s.i. Black Dial



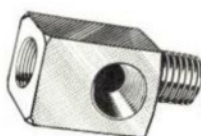
Part No. M37003
0-160 p.s.i. Black Dial

Accessories



Nylon flexible line kit comprises nylon tube and pipe connectors.

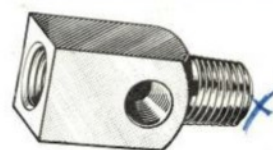
Part No. M73201—5' long line
Part No. M73202—15' long line



ENGINE ADAPTOR (3-way)
Special for Volkswagen.
Part No. M44702



ENGINE ADAPTOR (3-way)
 $\frac{1}{8}$ " Gas M.F.F.
For all BMC and other English vehicles.
Part No. M44704



ENGINE ADAPTOR (3-way)
 $\frac{1}{4}$ " Gas M.F.— $\frac{1}{8}$ " Gas F.
For Holden, Falcon and cars with $\frac{1}{4}$ " Gas Outlet.
Part No. M44705



Internal light attachment with 12V. globe for light.

Part No. M70001

Oil pressure gauge (electric)

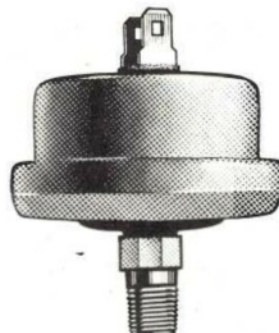
Indicates

Low oil level in sump, blocked oil filter, faulty pressure release valve, badly worn bearings, blocked or fractured oil pipe, lost sump drain plug.



Part No. M34001 12V

0-100 p.s.i.
Black Dial



Part No. PT1807/10 12V

0-100 p.s.i.
Oil Pressure Transmitter
 $\frac{1}{8}$ " 27 N.P.T. Thread

Most popular cars today are fitted with a warning light to indicate low pressure but this system only operates when oil pressure is excessively low, and considerable damage can occur before the light operates. With a Smiths oil pressure gauge giving you continuous and consistent information you will be able to spot potential trouble before it becomes serious and perhaps costly to correct.

Correct oil pressure is as important to the well-being of a car engine as correct blood pressure is to the human body. Variations in oil pressure can be the result of all kinds of different problems, and can lead on to serious engine trouble unless quickly put right. An oil pressure gauge is, therefore, probably the most vital instrument to have on your dashboard. The electrical oil pressure gauge is recommended for rear engined vehicles and other installations where the gauge is fitted an unusually long way from the engine. A single wire is connected from the transmitter to the gauge and a second wire from the gauge to the ignition. This equipment is only suitable for 12V. operation.

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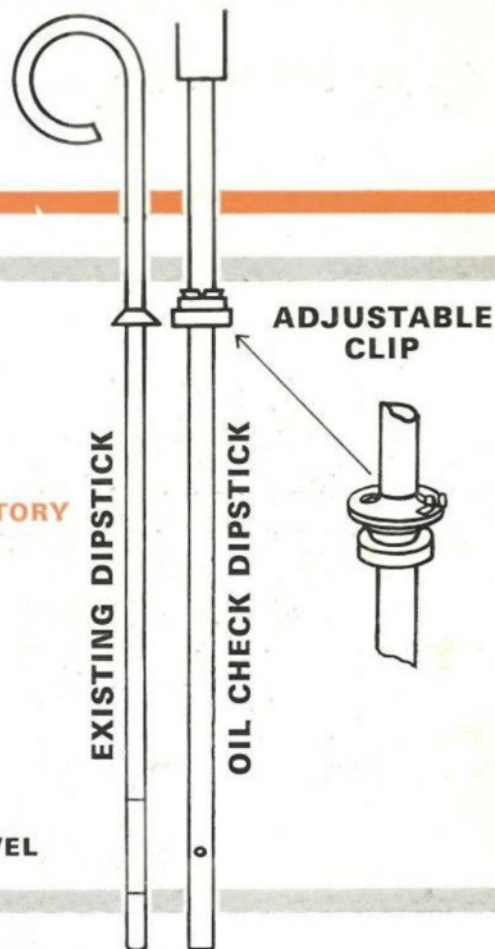
Oil check

Indicates

Engine oil level without removal of dipstick.



Indicator Part No. M77003
Dipstick Part No. M77002



How often do you check the level of oil in your engine sump? Probably less often than you really should. But then, who can blame you—all that bother of lifting the bonnet and fiddling with a messy dipstick and your hands feeling dirty afterwards.

Now, thanks to Smiths Industries, you can say goodbye to the last, tenacious symbol of motoring's earliest days, the dipstick. Oil Check is the new modern way to check your oil from your driving seat. It's easy, it's fast and it's foolproof. All you do is pull the instrument knob and there's the answer: a green indicator means 'oil level satisfactory'; a red indicator means 'top up now'. Use it every time before you start a journey, or when you call in for petrol. The Oil Check should only be operated when the engine is switched off, otherwise a false oil level will be shown. If the engine has been running immediately before use, wait for just one minute for oil level to settle.

Oil Check comes complete and ready to fit, which you can do in less than half-an-hour. There are four factors which will determine whether Smiths Oil Check will fit a car. If the following four questions can be answered with a 'Yes', then it will fit no matter what the make or model.

1. Is the present dipstick straight?
2. If there is anything likely to obstruct installation—can it be temporarily removed?
3. Is the dipstick fitted direct into the cylinder block (not housed in a separate pipe connected to the sump below oil level)?
4. Is the dipstick at an angle *not exceeding 25°*.

CAUTION

Oil Check is an indication of sump oil level. It cannot warn you of sudden loss of oil due to lubrication system failures. An Oil Pressure Gauge is required to indicate falling oil pressure. The standard Warning Light will show total loss of oil pressure.

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Oil pressure switches



MAKE	MODEL	TYPE	MAKE	MODEL	MAKE
AUSTIN	A30, A40, A55, Lancer Series	65M15	HOLDEN	48, 50, F.J. to Eng. No. 173092	65M15
	1 LD1 and LD2 Vans, 10/12 cwt., 152 Series and Series IV, F.G.—Cab, 30 cwt.	65M15		F.J. from Eng. No. 173093, F.E., FC, FB, EK,	65M14
	1800, 1800 MK II	65M17		EJ, EH, HD, HR, HK and HT	65M19
		65M12		Torana	65M19
CHRYSLER	Royal AP1, AP2, and AP3	65M12	HUMBER	Hawk, All Models	65M3
COMMER	Valiant AP5, AP6, VC, VE and VF	65M18	MORRIS	Mini-Minor, Mini-Moke	65M17
	Cob Light Van, 8 cwt., Phase II to Phase VIIA	65M3			or 65M15
	4 to 12 ton F/C Diesel	65M15		Minor Ser. II, O.H.V. and "1000", Major Ser I and	
FORD	Consul, Zephyr, Mark I	65M15		Marshall J2 Vans, A152 and Series IV F.G. Cab, 30 cwt.	65M15
	Consul, Zephyr, Mark II	65M5		"1100" and "1500"	65M17
	Zephyr Mark III	65M11		750 c.c.	65M15
	Anglia (Early Models) and Prefect	65M5	RENAULT	60, 75 and 90—All models Landrovers	PS1224/10
	Anglia 105E and Cortina	65M11	ROVER	"Eight" and "Ten"	65M5
	Falcon, Customline, Mainline and Fairlane	65M13	STANDARD	Herald, All models	65M5
	Thames Vans, 5–15 cwt.	65M5	TRIUMPH	"2000", All models	65M5
	Thames Trader, 30 cwt. to 5 ton	65M15	VALIANT	Valiant AP5, AP6, VC, VE, and V.F.	65M18
HILLMAN	Husky, Minx, Mark V to VIII	65M3			
	S.V.—Minx, Mark VIII, VIIIA, O.H.V. Series I to IIIB and Super Minx	65M15			
		65M5			

Every motorist knows that oil pressure is the "blood pressure" of any engine and without it the engine will, very quickly, cease to function. The oil pressure switch, together with the warning light fitted to the dashboard of motor cars, is one of the most vital units and one that is very often forgotten.

In the absence of an oil pressure gauge it is the minimum protection against the dangers of improper engine lubrication.

A faulty oil pressure switch leaves the driver without any warning should the pressure drop to a dangerous level and with today's fast distance travelling, the loss of pressure could mean a new engine, or, at least, a costly repair.

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Oil temperature gauge

Indicates

Lack of lubricant, need for oil cooling radiator, oil header tank required, worn parts in engine, blocked oil line.



Part No. M36203

Black Dial
White Figures
White Pointer
Chrome Bezel

Motoring enthusiasts, sports car drivers, rally drivers and racing drivers, need to know the temperature of the oil in their engine sump. Many cars these days are capable of sustained high speed for long periods, not only sports cars but small capacity sedans, either tuned or fitted with high performance conversions. In some cars, the oil sump capacity may prove too small to cope with the demands of this improved engine performance, and it is therefore vital to know the oil temperature. If it becomes too high, the lubrication efficiency may be impaired, leading to rapid disaster.

An Oil Temperature Gauge, keeps you fully and accurately informed—you will see at once if your oil temperature is getting too high, and slow the engine until it cools again. It will also show, if oil temperature is persistently high, a need for an oil header tank and/or an oil cooling radiator in the system.

SIMPLE INSTALLATION

This instrument is supplied as a complete kit, ready for installation, either in the existing dash board or in a mounting panel.

The instrument consists of a bulb, which is fitted to the engine sump by an adaptor, and an indicator, as illustrated above, calibrated from 90°–230°. 6½ feet of capillary tubing is supplied, connecting the bulb to the indicator. The dial is illuminated internally at night.

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Temperature gauges

Indicate

Faulty water pump, blocked or leaking radiator or hoses, faulty thermostat, lack of coolant, etc.

Mechanical types



Full Scale Types

Part No. M36201 6' 6" cap. 90-230°F. Black Dial

Part No. M36202 10' cap. 90-230°F. Black Dial

Arc Scale Types

Part No. M36401 (92M8) 6' 6" cap. 90-230°F. Black Dial

Part No. M36402 (92M8) 10' cap. 90-230°F. Black Dial

Part No. M36403 6' 6" cap. 90-230°F. Silver Dial

Accurate information about cooling-water temperatures is essential for proper care of your car engine. Extremes of heat or cold are bad for any engine; overheating indicates several kinds of trouble; failure to reach correct running temperature means the engine cannot possibly be efficient. Starting from cold, temperature information will enable you to use the choke with greater accuracy and eliminate unnecessary fuel wastage. You will also know when the water is hot enough for maximum output from your heater.

Mechanically operated temperature gauges consist of a bulb and an indicator, interconnected by a sealed length of capillary tube. The bulb is connected into the cooling system and when heated, the increase in vapour pressure of the fluid inside it is transmitted by the tube and registered on the dial. Calibrations are from 90° to 230°F. Each gauge is supplied with a 6½ foot or 10 foot capillary tube, plus special fittings to facilitate connection to the cooling system.

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Temperature gauges

Electrical type



Part No. 94M7
90–230°F, Black Dial, 12V.

Part No. 94M7A
As above, Complete Kit.



Part No. M60101 (TT3200/00A)
Temp. Transmitter 12V

The electrical type temperature gauge, calibrated from 90° to 230°F., is a semi-conductor type indicator. The complete kit consists of 3 items—an instrument, transmitter and an engine adaptor. The transmitter is inserted directly into the cooling system or, where necessary, by means of the adaptor. A single wire is then connected from the transmitter to the gauge and a second wire is connected from the gauge to the ignition. The gauge and transmitter are suitable only for 12V. electrical systems.

COMPLETE KITS

Part No. 93M7A Black Dial
Part No. M28202 Silver Dial

GAUGE—BLACK DIAL

Part No. 94M7
90–230°F. 12V.

GAUGE—BLUE DIAL

Part No. 94M12
90–230°F. 12V.

GAUGE—SILVER DIAL

Part No. M28201
90–230°F. 12V.

Accessories for mechanical and electrical temperature gauges.



Part No. M44707 Engine Adaptor
 $\frac{3}{8}$ " BSP male x $\frac{5}{8}$ " UNF female

Part No. M44708 $\frac{5}{8}$ " UNF male x $\frac{5}{8}$ " UNF female. (Mini-Minor Cap. Gauge only).



Part No. M44703
Engine Adaptor
 $\frac{1}{2}$ " Gas male x $\frac{5}{8}$ " UNF female
To suit Holden.

Part No. M44706
Engine Adaptor Plate
 $\frac{3}{8}$ " UNF suit all B.M.C. cars.



Part No. M44701
Radiator Hose Adaptor
For all cars without engine block connections.

Temperature switches

Indicates

Warning of trouble in the cooling system by operating the dash warning light.



Part No. M61001 228°F

To suit Holden FE, FC, FB, EK, EJ, EH.

Part No. M61002 239°F

To suit Holden HD, HR, HK, HT, including 253 and 307 C.I.D. V8.

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Air temperature gauge

Indicates

Outside air temperature, danger of ice on road, need for anti-freeze in cooling system.



Part No. TG1303/01

—20°F. to + 120° F.
—30°C. to + 50°C.

This gauge shows the ambient air temperature outside the car at all times, whether stationary or moving. This information is vital both to safety and engine protection.

CE WARNING

The gauge is connected to a temperature sensing unit fitted externally (usually behind the front bumper). When the external air temperature drops below freezing, you will have a clear warning that ice may be encountered on the roads—a most important safety factor. In addition, as winter approaches, you will have accurate temperature readings to show when the time has come for Bluecol anti-freeze to be put into the cooling system.

SIMPLE INSTALLATION

The gauge, which is internally illuminated at night, can be fitted in the existing dashboard if there is sufficient space, or in one of a range of special

Smiths mounting panels. The instrument is supplied in a complete kit, ready for installation. No special tools are required and full fitting instructions are included.

13 feet of capillary tubing is supplied with this instrument.

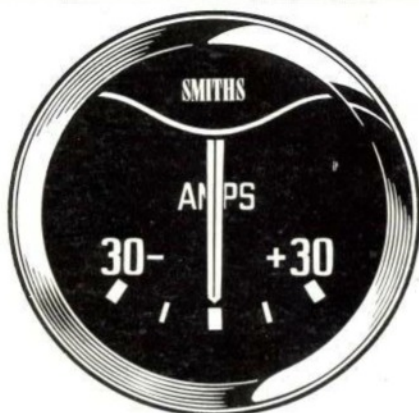
The dial has sections coloured green and red: the red indicating when ice is likely on the road.

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Ammeters

Indicate

Broken fan belt, faulty generator, short in electrical system, defective battery, battery not charging.



**Part No.
M00401**

30-0-30 Amps Types

Part No. M00401 (IM1) Black Dial

Part No. M73501 Black Dial, Complete Kit*

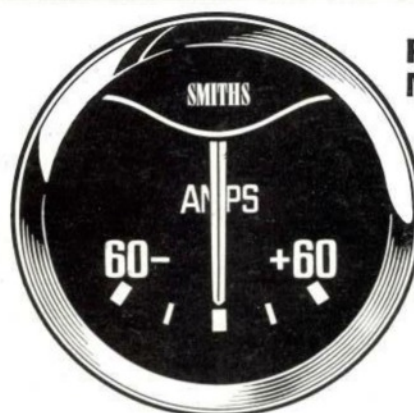
Part No. M00409 (IM2) Blue Dial

Part No. M00402 Silver Dial

*Kit includes Gauge, Light Attachment, and Wiring

The extra drain on the battery of all modern electrical equipment and accessories makes recharging a vital factor. An ammeter will show you whether the generator or alternator is charging when it should be, and also the rate of charge or discharge.

If the ammeter indicates that, even though the engine is running above idling speed, there is still a discharge from the battery, then there is a fault of some kind. You will have time to check this fault before a breakdown leaves you stranded. A number of common faults often encountered are: a broken or slipping fan belt; faulty generator;



**Part No.
M00405**

60-0-60 Amps Types

Part No. M00405 (IM5) Black Dial

Part No. M73502 Black Dial, Complete Kit*

Part No. M00406 Silver Dial

*Kit includes Gauge, Light Attachment and Wiring.

voltage regulator or a short circuit. On the other hand a constant charge (e.g. +) may mean that the generator or alternator is over-charging and needs adjustment, or it may mean a faulty battery, unable to hold the charge and likely to fail completely.

The 60-0-60 Ammeter is designed for cars fitted with alternators instead of the conventional generator. Alternators have an increased charging rate and this is reflected in the expanded scale which is calibrated from +60 to -60 amps.

Accessories



Part No. M70001

Internal light attachment with 12V. globe.



Part No. M73001

Ammeter wiring kit. Kit comprises wire and terminals.

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Dual gauges

Indicate

Oil: Low level in sump, blocked filter, faulty pressure release valve, blocked or fractured pipe, badly worn bearings, lost sump drain plug.
Water: Lack of coolants, faulty pump, blocked radiator or hoses, faulty thermostat.



Part No. M40001

Black Dial (0-100 P.S.I. 90-230°F.) 6' 6" capillary

Part No. M40002

as above 10' capillary

Part No. GD 1500/108

Black Dial (90-212°F.) Twin Temp. gauge

Oil pressure and water temperature are closely linked factors in a car engine and for that reason many motorists like to have instrument readings for both.

For those who have limited dashboard space available, or who prefer simplified installation, Smiths Industries have designed this combined oil pressure and water temperature gauge. The main features are exactly the same as for the separate gauges. Oil pressure reading is from 0-100 lbs. to the square inch, and operates on the bourden tube principle. Water temperatures are shown from 90° to 230°F.

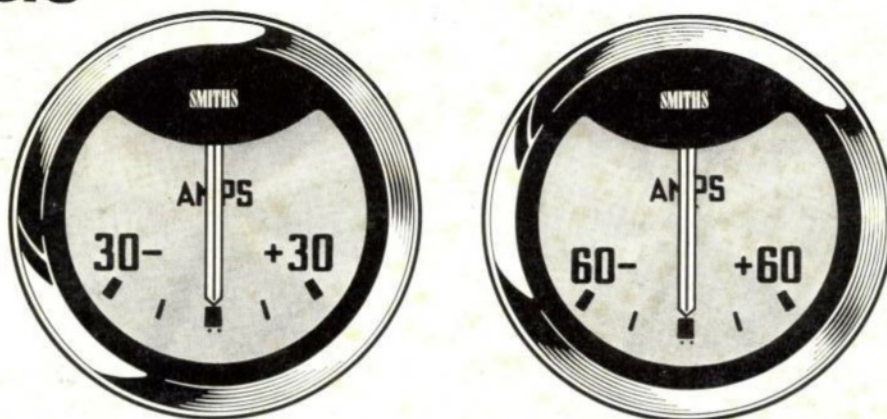
This is operated by a bulb connected to the gauge by a sealed length of capillary tube either 6'-6" or 10'. Heat acting on the bulb increases the vapour pressure of the fluid in it, which in turn causes the indicator to move round on the dial.

In cases where fixing points for extra instruments are not provided in the car dashboard, suitable mounting panels are available for Smiths instruments, either singly, or in two's and three's.

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Silver Line gauges

Ammeters



Oil pressure gauges



The new "Silver Line" range of SMITHS gauges introduces a new concept in car instrument presentation. A "Silver" spun dial with bold black printing, a fire orange pointer, a thin black surrounding ring for extra depth of reading, a heavy chrome rim add up to the most stylish standard of instruments design.

All gauges in the range offer the well known SMITHS matched presentation which gives any car dashboard a "planned" look rather than that of "afterthought" fitment.

All SMITHS "Silver Line" gauges are supplied complete with 12V. internal lighting fixtures—night lighting is most effective and makes the dials most easy to read under any conditions.

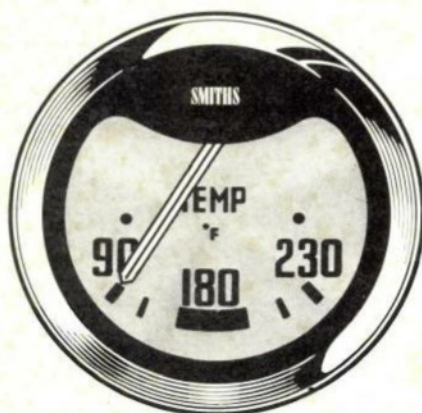
As with all other SMITHS instruments, fitting instructions are supplied with each gauge.

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Silver Line gauges

Temperature gauges

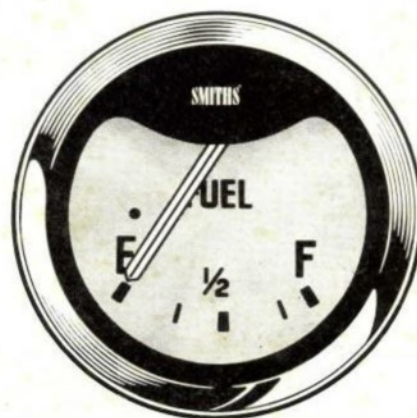
Mechanical



Electrical



Fuel gauges



PART NO.	ITEM	DESCRIPTION
M00402	Ammeter	30-0-30 Amps.
M00406	Ammeter	60-0-60 Amps.
M29001	Fuel Gauge	12V. Universal type
M37202	Oil Gauge	0-60 P.S.I.
M37206	Oil Gauge	0-80 P.S.I.
M37210	Oil Gauge	0-100 P.S.I.
M36403	Temp. Gauge	90-230°F. 6' 6" capillary
M28201	Temp. Gauge	90-230°F. 12V. electric
M28202	Temp. Gauge Kit	12V. Gauge, Transmitter and Fittings.

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2½" Impulse tachometer

Indicates

The maximum performance capability of engine within recommended safe limits, avoiding risk of over-revving.



0-8000 R.P.M., for 12V., + or - Earth Systems

Part No. RVI.5000/00A

4 cyl. Engine Model

Part No. RVI.5000/006

6 cyl. Engine Model

Part No. RVI.5000/008

8 cyl. Engine Model

Many motoring enthusiasts, looking for maximum performance, prefer to supplement the conventional speedometer with a tachometer, or as it is commonly called, a rev. counter. Principally, the tachometer indicates the R.P.M. or revs. per minute of the engine, thus allowing gear changes to take place at the precise moments when the next higher or lower gear should be selected. This ensures that the risk of engine damage through over-revving is eliminated. Further, the tachometer is a useful aid in engine tuning. Smiths top dash impulse tachometer operates electrically, without in any way disturbing the normal functioning of the car's ignition system. Being electrical, it registers to a high degree of accuracy. The small dimensions of this instrument (3" diameter x 4" long) and the method of fitting, make it capable of installation in a readily seen position on almost

any make of car, thus overcoming a difficulty frequently experienced with normal size tachometers.

The tachometer is supplied in kit form complete with wires, etc., ready for immediate installation. A further feature of this unit is that it is supplied with internal illumination for night driving.

APPLICATION

The instrument is suitable for installation to all 12 volt coil ignition systems.

There are 3 basic models available as follows:

- 4 cylinder, 4 stroke (2 cylinder 2 stroke)
- 6 cylinder, 4 stroke (3 cylinder 2 stroke)
- 8 cylinder, 4 stroke (4 cylinder 2 stroke)

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3½" Impulse tachometer

Indicates

The maximum performance that can be achieved in each gear without risking engine damage through over-revving.



**0-8000 R.P.M., for 6 or 12V.
+ or - Earth Systems**

Part No. K.P. 2504 /00

4 cyl. Engine Model

Part No. K.P. 2504 /006

6 cyl. Engine Model

Part No. K.P. 2504 /008

8 cyl. Engine Model

Part No. K.P. 2504 /03

0-10,000 R.P.M., for 6 or 12V.

+ or - Earth Systems
(4 Cyl. Engines Only)



Tachometer Housing

Part No. M44501 (TH1250A)

Getting the best out of a car is an enthusiasm shared by more and more motorists who take pride in their driving. To this end, it is essential to know the R.P.M. of the engine, which can only be achieved by using a tachometer (or rev. counter to give it its everyday name). Only with this information can you be sure of engine or gearbox behaviour, and thus be certain it is being used ONLY WITHIN THE RECOMMENDED SAFE PERFORMANCE LIMITS.

Smiths Industries engineers have spent many years developing these safe, accurate, reliable transistorised tachometers. They are safe because they do NOT interfere with the normal operation of the car's ignition system. Reliable because built into them are the standards of design and construction learned from experience in road cars, rally and racing cars. This high level of accuracy can not be affected by eddy currents in the H.T. leads, the distributor contact setting, erosion of the sparking plug points, or differences in the gap setting.

The tachometer also incorporates a manually controlled maximum R.P.M. pointer as a warning for top engine revs. It is supplied in kit form complete with mounting bracket, wires, etc., ready for immediate installation. It is also supplied complete with internal illumination for night driving.

APPLICATION

This instrument is suitable for installation to all 6 or 12 volt coil ignition systems. There are 3 basic models available as follows:

- 4 cylinder 4 stroke (2 cylinder 2 stroke)
- 6 cylinder 4 stroke (3 cylinder 2 stroke)
- 8 cylinder 4 stroke (4 cylinder 2 stroke)

As a separate item a housing is available for the 3½" Impulse Tachometer. This is a spun aluminium case with satin brush finish. It can be adjusted to suit any driving position and it can be mounted on top against or under the dash as well as on the steering column.

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Battery condition indicator

Indicates

State of battery charge, charging voltage too high or too low.



Part No. M73301

Black Dial
Coloured Segments
White Figures
White Pointer
Chrome Bezel
Kit with all fittings
For 12V systems only

The need for a battery condition indicator grows in direct proportion to the ever-increasing demands made on a battery in the modern car—lighting, windscreen wipers, heating, radio, cigarette lighter, and other optional extras fitted today, all take a heavy toll of the battery. Small wonder that one of the most frequent causes of breakdown currently is a flat or worn out battery.

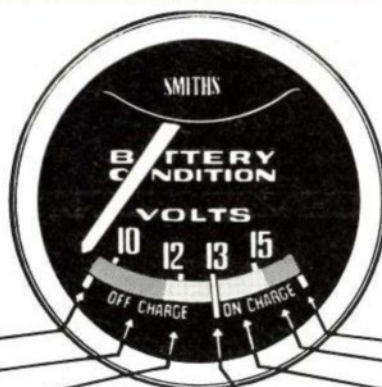
Battery care pays dividends. First, because a neglected battery will have a shorter life and you will be faced with expensive replacement earlier. Secondly, because particularly with automatic transmission cars, your battery could give up unexpectedly and leave you stranded.

Smiths battery condition indicator helps you in two important ways. It tells you the state of battery charge at any given moment at a glance. You will know for sure whether you can leave your parking lights on for a long period without running your battery flat. It also shows you what the charging voltage is and how this may be affecting your battery. Too high a voltage is harmful and will shorten battery life. Too low a voltage will lead to a

lessening of power and finally a flat battery. With the information from the indicator always under your eye, you will get advance warning of either extreme and have time to correct the fault before permanent damage occurs.

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Battery condition indicator



ENGINE NOT RUNNING			ENGINE RUNNING ABOVE IDLE		
BATTERY CHARGE EXTREMELY LOW	BATTERY CHARGE LOW	BATTERY WELL CHARGED	CHARGING VOLTAGE LOW	CHARGING VOLTAGE SATISFACTORY	CHARGING VOLTAGE TOO HIGH
If with the ignition and electrical equipment, e.g., headlights, etc., switched on, but with the engine not running the indicator settles in this section, your battery requires attention.			This condition may be indicated when the headlights and other equipment are in use.	The indicator should point to this section when the engine is running above idle.	If the indicator continues to point to this section after 10 minutes' running, either your voltage regulator requires adjustment or some other fault has developed.

IMPORTANT

All readings on the indicator should be ignored when the engine is idling, since readings may vary at very slow engine speeds due solely to operation of the voltage regulator.

OFF CHARGE

This means more energy is being used from your battery than is being replaced by the generator on your car. This condition is satisfactory provided it does not persist for long periods, when the engine is running above idle or at speed. If the indicator remains in this section, it may mean that you have a broken or slipping fan belt, a faulty generator, a badly adjusted voltage regulator or some other fault.

ON CHARGE

This means your battery is having more energy put into it than is being taken out of it. In the ordinary way this condition predominates and your battery is continuously being recharged by the generator whenever the engine is running above idle. If, however, the engine is continually running slowly as may be the case in traffic—or when, in winter, lights and cold starting make extra demands on the battery—you may find the rate of discharge exceeds the rate of charge—that is to say the battery is running down, as will be indicated on your Battery Condition Indicator and you may need an extra charge if 'battery charge low or extremely low' is indicated by the instrument.

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Engine performance gauge

Indicates

Heavy fuel consumption due to poor driving, incorrect ignition timing, incorrect contact breaker setting, spark plug gaps incorrectly set, carburettor in need of adjustment, etc.



Part No. M73101

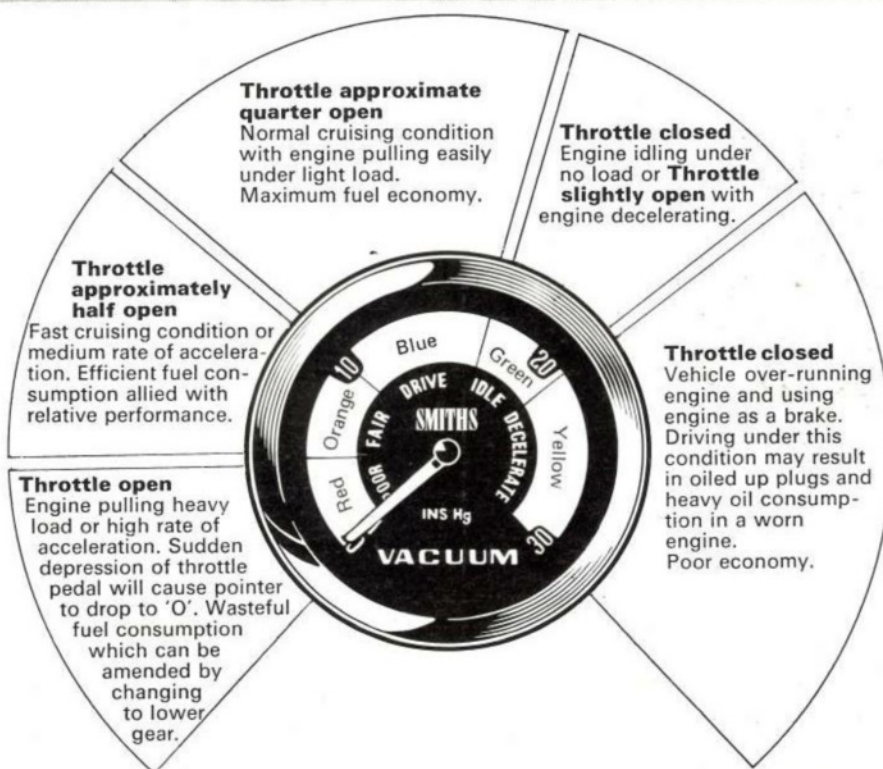
Kit complete with all fittings.

This gauge allows you to obtain maximum fuel economy from your engine. It records the difference in pressure between the outside atmosphere and the inlet manifold. The lower pressure in the inlet manifold, or the "vacuum" as it is usually called, governs the petrol/air mixture supplied to the pistons. A variety of engine conditions can lead to poor fuel economy and this gauge will help you diagnose them. These include: faulty or badly adjusted carburettor, poor compression, faulty ignition timing, piston rings, valves or incorrect valve settings, faulty spark plug settings. In addition, they assist in engine tuning and setting correct idling mixture. All in all, a most valuable accessory.

The engine performance gauge is calibrated 0-30" of mercury and has the advantage of coloured segments around the dial to give visual indication of different engine conditions. It is supplied in kit form ready for immediate fitting.

INTERNAL ILLUMINATION • SIMPLE INSTALLATION • ACCURATE AND RELIABLE • 12 MONTHS' GUARANTEE

Engine performance gauge



Driving Conditions

OPERATING INFORMATION WITH ENGINE IN GOOD CONDITION
(See diagrams at bottom of page)
The colour chart shows gauge indication generally obtained. It should be noted that throttle opening under load will cause pointer to move towards the red sector and deceleration cause pointer to move towards the yellow sector.

Engine Running Vehicle Stationary

With engine idling on fast tick-over (400/500 r.p.m.) and gear in neutral, gauge pointer should be in the green sector. See dial-bottom right (5). Under similar conditions dials 1-4 indicate engine inefficiency and relating possible cause.



Pointer remaining in red sector indicates leak in manifold, carburettor or carburettor gasket.



Slow oscillation in blue sector indicates incorrect sparking plug gapping or contact breaker points pitted—or carburettor out of adjustment.



Pointer drops slightly from normal position suggests leaky or burnt valves.



Pointer giving steady low reading indicates incorrect ignition or valve timing or poor condition of piston rings.



A steady gauge reading inside the green sector indicates good engine condition.

INTERNAL ILLUMINATION • SIMPLE INSTALLATION • ACCURATE AND RELIABLE • 12 MONTHS' GUARANTEE

Vacuum gauges

Indicate

Heavy fuel consumption due to poor driving, incorrect ignition timing, incorrect contact breaker setting, spark plug gaps incorrectly set, carburettor in need of adjustment, etc.



Part No. VD2501/01
0-30" Hg.—Black Dial



Part No. M38001
0-30" Hg.—Black Dial

These gauges allow you to obtain maximum fuel economy from your engine. They record the difference in pressure between the outside atmosphere and the inlet manifold. The lower pressure in the inlet manifold, or the "vacuum" as it is usually called, governs the petrol/air mixture supplied to the pistons. A variety of engine conditions can lead to poor fuel economy and these gauges will help you diagnose them. These include: faulty or badly adjusted carburettor, poor compression, faulty ignition timing, piston rings, valves or incorrect valve settings, faulty spark plug settings. In addition, they assist in engine tuning and setting correct idling mixture. All in all, a most valuable accessory.

Note: Part No. 30 EPG kit of fittings.

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Fuel gauges

Indicate

The level of fuel in the petrol tank.



Part No. 58M15

6V. Black Dial

Part No. 58M11

12V. Black Dial

Part No. 58M12

12V. Blue Dial

Part No. M29001

12V. Silver Dial

The electro-magnetic fuel level indicating system is made up of two separate units. These are the fuel gauge mounted on the instrument panel and the tank unit.

The fuel gauge is calibrated for universal application and is available for 6 volt and 12 volt systems.

The Smiths universal tank unit has been designed to provide a variable length of float arm and is therefore suitable for a wide range of tank depths, varying from 4" to 14" deep. The unit is supplied in a kit complete with fittings, which include a special split mounting ring, which is necessary for tanks not having provision for the installation of fuel content equipment.



Tank Units

Part No. 87M16 6V.

Part No. 87M15 12V.

Electric car clocks

Important

It is essential to determine whether your car has a positive or negative earth ignition system before fitting a Smiths electric clock. Fitting a clock with the wrong polarity will result in damage to the clock.



2" Dia.

Part No. CE2160/08

12V. + Earth

Part No. CE2160/10

12V.—Earth



2 1/4" Dia.

Part No. CE2194/02

12V + Earth

Part No. CE2194/16

12V.—Earth

A reliable and easily read clock is a valuable item in any car. The clocks illustrated here are the latest models in a long line in which steady development and improvement has led to an outstandingly high level of quality and accuracy. All these models incorporate a miniature rectifier and gold nickel alloy contacts for maximum efficiency.

These developments, tested and proved by Smiths Industries' engineers, ensure a long life of accurate time keeping. There are two versions of the famous Smiths electric car clocks. These are the 2" type (CE2160 series) with bottom reset and the 2 1/4" type (CE2194 series) with front reset and regulation.

ALL MODELS FOR 12V SYSTEMS ONLY

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Seat belt indicator

Indicates

An important reminder for the safety of
Driver and Passenger.



Part No. WL 2004/00
12 Volt.

Fitting seat belts to your car is only half a safety measure. It's wearing them at all times—even on the shortest journey—that counts. Smiths seat belt indicator, fitted in a position readily visible from the front seats, lights up the moment you switch on the ignition. You and your passenger get the reminder—'Fasten seat belts'. It helps you not to be indifferent about a vital safety factor, one which can prevent serious injury. You get this reminder at the start of every journey, so that fastening your seat belt becomes a regular part of your 'cockpit drill'. To cancel the message you simply press the button on the front of the dial.

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Instrument mounting panels

The range

An attractive range of panels for use in fitting Smiths universal instruments.

Super panels

These panels consist of a standard mounting panel, with an attractively styled fascia which has a simulated black leather grained finish. They are supplied together with 2BA nuts, bolts and washers to facilitate fitting.



Part No. SP3



Part No. SP2



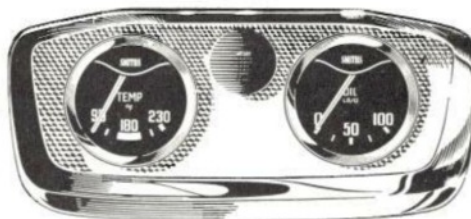
Part No. SP1



Part No. SP4

De-luxe panel

The de-luxe mounting panel has provision for two SMITHS 2" instruments. Cigarette lighter or an extra switch may also be incorporated in the space provided. Attractively styled with a chromium bezel and silver background, it enhances the appearance of any dashboard.



Part No. 53M16

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Instrument mounting panels

Standard panels

These panels are available for one, two or three instruments. They are supplied in 2 models, in either chrome or a black crinkle finish.

These panels provide an attractive and inexpensive way of mounting any of the 2-inch diameter Smiths Supplementary Instruments. 2BA nuts, bolts and spring washers are provided for use in fitting.



Chrome
Part No. 53M21

Black
Part No. 53M22



Chrome—Part No. 53M19

Black —Part No. 53M20



Chrome—Part No. 53M17

Black —Part No. 53M18

Cowls

These cowls have an attractive simulated black leather grained appearance, which gives the bright chrome bezel the right contrast. They improve appearance and stop upward glare and reflection.



Part No. C2
(card of 2)

Gauge housing

A neat and versatile accessory that makes it possible to fit any 2" dial gauge on top of the vehicle's dashboard. Drivers can thus see and "read" a gauge without taking their eyes from the road. Easy to fit, its black leatherette finish will blend in with any dashboard colour.



Part No. M44601

Instrument displays

'Salesmaster' display



Part No. 1603

The SMITHS "Salesmaster" Display features 15 of the most popular instruments in the SMITHS range. Supplied with metal legs, it makes an attractive and attention getting floor or wall display. A hinged compartment at the rear of the 4' x 2' frame, stows empty cartons and a small range of fittings. Printed part numbers readily identify instruments, additional illustrations and list of parts provide "on the spot" catalogue reference. The SMITHS "Salesmaster" is a complete stock, display and sell outfit.

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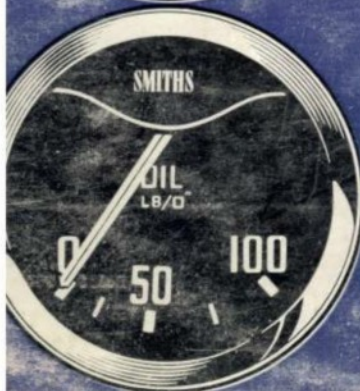
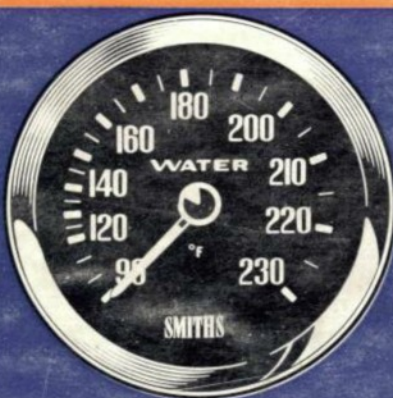
SMITHS

Automotive instruments



'SMITHS' INDUSTRIES PTY. LIMITED

46-52 Ferndell Street, Guildford, N.S.W., Australia. 2161 (644-5522)
132 Bank Street, South Melbourne, Vic., Australia. 3205 (69-7331)
168 Angas Street, Adelaide, S.A., Australia. 5000 (23-3858)



SMITHS AUTOMOTIVE INSTRUMENTS

PRICE LIST

All prices are subject to Sales Tax

Prices effective
17th August 1970

DESCRIPTION AND PART NO.	Suggested List Price \$ c	DESCRIPTION AND PART NO.	Suggested List Price \$ c
AMMETERS		OIL CHECK UNIT	
1M1 (New Part No. M00401)	3.95	M77002 Dipstick	2.00
1M2 (New Part No. M00409)	3.95	M77003 Indicator	7.00
1M5 (New Part No. M00405)	4.50		
M00401	3.95	OIL PRESSURE GAUGES	
M00402	4.35	61M2 (New Part No. M37201)	4.50
M00405	4.50	61M3 (New Part No. M37209)	4.50
M00406	4.90	61M4 (New Part No. M37205)	4.50
M00409	3.95	61M5 (New Part No. M37215)	4.50
M73001 Wiring Kit	1.95	61M6 (New Part No. M37216)	4.50
M73501 Kit	6.10	PG 1301 /00 See M37002	
M73502 Kit	6.65	PG 1501 /72 See M37003	
		PG 1501 /78 See M37001	
BATTERY CONDITION INDICATOR		PT 1807 /10 12V. Oil Transmitter	8.00
KP9300 /00 See M73301		M34001	7.00
M73301	8.50	M37001	6.95
		M37002	6.95
CLOCKS		M37003	6.95
CE 2160 /08	18.50	M37201	4.50
CE 2160 /10	18.50	M37202	4.90
CE 2194 /02	21.00	M37205	4.50
CE 2194 /16	21.00	M37206	4.90
CET 3104 /00	24.00	M37209	4.50
		M37210	4.90
DUAL GAUGES		M37215	4.50
GD 1301 /15 6' 6" See M40001		M37216	4.50
GD 1301 /15 10' See M40002		M44702 Adaptor	1.00
GD 1500 /108	17.50	M44704 Adaptor	0.75
M40001	15.00	M44705 Adaptor	0.75
M40002	15.50	M44709 Adaptor	0.35
		M73201 Oil Line Kit (5')	1.90
ENGINE PERFORMANCE GAUGE		M73202 Oil Line Kit (15')	2.85
KP 4506 /00 See M73101		M73401 Kit	7.40
M73101	12.50	M73402 Kit	7.40
		M73403 Kit	7.40
FUEL GAUGES		OIL PRESSURE SWITCHES	
58M11	6.88	65M3	1.35
58M12	6.88	65M5	1.35
58M15	6.88	65M6 See PS 1224 /10	
M29001	7.28	65M11	1.35
		65M12	1.35
2" GAUGE HOUSING		65M13	1.35
M44601	2.25	65M14	1.35
		65M15	1.35
INSTRUMENT COWLING		65M17	1.35
C2 2" Type (2 per card)	0.80	65M18	1.35
		65M19	1.35
INSTRUMENT MERCHANDISERS		M54000 Merchandiser	11.50
1602	13.30	PS 1224 /10	2.30
1603	170.15		
LIGHT ATTACHMENTS		PANELS	
L12 See M70001		SP 1	1.10
47M11 See M70101		SP 2	1.40
M70001	0.50	SP 3	1.80
M70101	0.75	SP 4	2.30
		53M16	5.00

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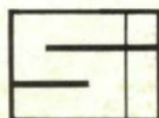
SMITHS AUTOMOTIVE INSTRUMENTS

PRICE LIST (cont'd)

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Prices effective
17th August 1970

DESCRIPTION AND PART NO.	Suggested List Price \$ c	DESCRIPTION AND PART NO.	Suggested List Price \$ c
53M17	0.75	TG 1301/10 6' 6" See M36201	
53M18	0.60	TG 1301/10 10' See M36202	
53M19	1.10	TG 1303/01	16.00
53M20	0.90	M28201	5.65
53M21	1.40	M28202 Kit	9.30
53M22	1.10	M36201	10.50
SEAT BELT INDICATOR		M36202	11.00
WL 2004/00	7.50	M36203	10.50
SPEEDOMETERS		M36401	7.95
Z 56888/1 150 m.p.h.	20.00	M36402	8.45
Z 56888/2 130 m.p.h.	20.00	M36403	8.35
TACHOMETERS		M44701 Adaptor	1.50
KP 2504/00 4 cyl.	33.00	M44703 Adaptor	0.50
KP 2504/03 4 cyl.	33.00	M44706 Adaptor	0.50
KP 2504/006 6 cyl.	33.00	M44707 Adaptor	0.50
KP 2504/008 8 cyl.	33.00	M44708 Adaptor	0.50
TH 1250/00A See M44501		TEMPERATURE SWITCHES	
M44501 Housing	5.80	M61001	2.50
RV1 5000/00A 4 cyl.	33.00	M61002	2.00
RV1 5000/006 6 cyl.	33.00	TEMPERATURE TRANSMITTERS	
RV1 5000/008 8 cyl.	33.00	TT 3200/00A See M60101	
TANK UNITS		M60101	2.75
87M15 6V.	6.50	THERMOSTATS	
87M16 12V.	6.50	85025 Series	3.25
TEMPERATURE GAUGES		85035 Series	3.25
92M8 (6' 6") (New Part No. M36401)	7.95	VACUUM GAUGES	
92M8 (10') (New Part No. M36402)	8.45	VD 2501/01	7.00
94M7	5.25	VG 1100/02	7.55
94M7 A Kit	8.50	M38001	9.00
94M12	5.25	VG 1301/02A See M38001	
		30 E.P.G. Kit	3.00



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