

100% maintenance free program
covering passenger and light
commercial applications



Batteries

2010



BOSCH

Invented for Life



From the very beginning, Bosch's history has been characterised by a drive for innovation and social commitment. Environmental and social responsibilities are core values at Bosch. Our slogan "Invented for life" conveys the ambitious standards we have set ourselves and the values that we have long stood for. "Invented for life" stands for reliable technology designed and built to last. At the same time it embodies innovations and technology that contribute to the conservation of resources, sustainable development, and helping people improve their quality of life.

The Robert Bosch Stiftung (Robert Bosch Foundation) was established in 1964 to keep alive the philanthropic and social endeavours of its founder Robert Bosch. Through its programs and institutes, the foundation has since issued 840 million euros in project funds. In 2007, it made available 58.9 million euros for non-profit projects. Education, international understanding, and public welfare are the top priorities stated in Robert Bosch's will and are the pillars of our work today.

Responsibility for the environment is a core value at Bosch and is firmly anchored in our principles for safety and environmental

protection. Our environmental focuses are on renewable energies, energy efficiency, and emissions reduction. At Bosch we believe we have an obligation to develop innovative and beneficial technology and in order to meet such demands, considerable amounts of money are spent each year on research and development. We employ more than 25,000 research and development associates worldwide, all working towards the creation of technology that is innovative, beneficial and environmentally friendly.

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Batteries

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The Bosch Automotive Story



The Bosch Group is a leading global supplier of technology and services, with more than 300 subsidiaries and regional companies in over 50 countries.

The beginnings were humble. In 1898 Robert Bosch developed a magneto ignition device and adapted it to suit a vehicle engine. In doing this he developed the first reliable ignition system, solving one of the greatest technical problems faced by the automotive industry at that time. This key innovation was the first chapter in the success story of Bosch as an automotive supplier.

From 1902 Bosch developed a high voltage magneto ignition system incorporating spark plugs. While the magneto ignition has long since been replaced by battery ignition systems, Bosch today manufactures more than 300 million spark plugs per year, using the very latest precious metal technology.

As cars became a product for the masses, Bosch recognised the prospects for developing motor vehicle lighting. Research in this area resulted in the launch of the Bosch automotive lighting system, comprising of headlights, a generator, a regulator and a battery. This was a significant milestone for both Bosch and the industry, being the first all-in-one system available to consumers, and also the basis for components such as starters, horns, windshield wipers, indicators and car heating systems to be developed and added to the business.

From about 1920, the growth of diesel engines in trucks was a concern at Bosch, because diesel engines did not need an ignition system, the company's main sales driver. To capitalise on this technological advance, Bosch began developing diesel injection pumps and in 1936 launched the first diesel injection pump for passenger cars. Today, Bosch is the global leader in diesel technology, whether it be for passenger cars, trucks or injection systems for ships.

In the years that followed, Bosch made numerous developments with other automotive products. Gasoline injection systems were developed from

1935 and by 1967 had all but displaced the carburettor. Braking systems have also been part of the Bosch offering since 1927. The introduction of the Bosch ABS antilock braking system in 1978 was a significant development in vehicle safety, laying a foundation for the development of further systems, such as Traction Control and the Electronic Stability Program (ESP®).

In today's market, vehicle manufacturers and service organisations face the worldwide challenge of efficient service for highly evolved vehicle systems. This includes not only mastering the electronic systems in today's automobiles, but also utilising the latest state-of-the-art diagnostics technologies to improve servicing efficiencies. The growing range of Bosch diagnostic and service equipment delivers a sophisticated solution for today's workshops to meet these challenges.

Bosch spends billions of dollars annually in research and development to preserve its position as a technological leader. The company's technological competence is evident in the fact that Bosch is world leader in the number of automotive technology patent applications it submits each year. Every hour Bosch research teams create new patents to make Bosch products safer, more efficient and more environmentally friendly.

As one of the world's largest independent manufacturers of automotive parts and systems, Bosch products and technology, supplied through a global network of factories, can be found on virtually every make of car currently produced throughout the world. This strong link to original equipment development and innovation means Bosch is able to deliver a superior aftermarket offering to its customers.

With most vehicles on the road incorporating many Bosch manufactured components, it made sense for Bosch to support these products with local service centres. The Bosch Service Network is a group of over 14,000 independent workshops worldwide, offering the latest technical expertise, tools and equipment to motorists.



In just over a hundred years, Bosch successfully transformed from a small automotive supplier into a modern, multinational group, which today has a workforce of more than 270,000 people worldwide.

Bosch employs over 2,300 associates in Australia and New Zealand with activities spanning three business sectors: Automotive Technology, Consumer Goods and Building Materials, and Industrial Technology.

During the past five decades Bosch has grown into a major force in the Australian automotive industry. Today, Robert Bosch Australia is no longer a local company manufacturing automotive components only for Australian customers. It is truly an integrated member of the Bosch global network supplying overseas customers in Europe, Asia and America.

In the automotive industry the name Bosch is now synonymous with leading technology, sophisticated service solutions and high quality replacement parts.



Optimal starting power for all vehicles



The leaders in battery development

Bosch has been manufacturing batteries since 1927 when battery ignition for motor vehicles was first introduced. Since that time the demands on batteries have increased significantly with the introduction of features such as electric windows, air conditioning, ABS and airbags. With unmatched expertise in automotive electrical systems, Bosch has kept pace with these developments and now provides a range of batteries which meet the demands of modern vehicles.

Compact program, comprehensive coverage

The Bosch battery program offers comprehensive market coverage within a compact program. Three levels of performance are available, each colour coded to make selecting the right battery easy.

Bosch Battery S3

Maintenance free and provides economical and reliable power for standard vehicle applications.

Bosch Battery S4

A powerful maintenance free energy source with long service life and low self-discharge. Suitable for virtually all passenger vehicles.

Bosch Battery S5

Premium maintenance free battery for high performance. Includes Silver Alloy technology to ensure the highest level of starting power and longer service life.



	S3 ☆☆☆ Reliable performance	S4 ☆☆☆☆ Premium performance and value	S5 ☆☆☆☆☆ Maximum performance and extra long life
Product Features and Benefits	Factory sealed Maintenance Free Expanded grid Calcium Calcium technology provides Long Service Life	Factory sealed Maintenance Free High density expanded grid Calcium Calcium technology provides Longer Service Life	Factory sealed Maintenance Free Silver technology further resists heat and corrosion providing Extra Long Service Life
Nationwide Warranty for Private Use Vehicles <small>Refer to details on page A15</small>	24 months	36 months	36 months
Suitable Applications	Standard vehicles	Standard vehicles with additional electronic devices eg. Driving lights, reverse sensors etc.	Modern vehicles with many electronic devices and 4WD's
			

Bosch Battery S3: Economic Power and Dependable Starting



Powerful start to every journey

Power windows and mirrors

Radio and instrument display

The **Bosch Battery S3** is an economic solution, suitable for a wide range of passenger vehicles, trucks and other commercial vehicles with few energy consuming components. It provides dependable starting power and is maintenance free.

Advantages of the Bosch Battery S3

- ▶ Maintenance free.
- ▶ High performance.
- ▶ Long service life.
- ▶ Good, reliable Bosch quality.
- ▶ Best solution for conversion of conventional range.
- ▶ Economic power supply.
- ▶ Minimised self discharge rate.
- ▶ Strong performance against corrosion.



Bosch Battery S4: Strong Power for Every Vehicle



Powerful start to every journey

Electrical seat heating in rear

Cockpit and steering wheel electronics

Vehicles come in all shapes and sizes, each with varying electrical needs. The **Bosch Battery S4** meets the electrical demands of a wide range of vehicles, ensuring a dependable supply of power to keep the energy consuming components working properly at all times.

Advantages of the Bosch Battery S4

- ▶ Maintenance free.
- ▶ 15% more cold-starting power.
- ▶ Safely ensures the energy supply of medium convenience features in a vehicle.
- ▶ Permanently meets the high requirements of international auto manufacturers regarding electrical values.
- ▶ Suitable for most passenger vehicles.



Bosch Battery S5: Premium Energy for Highest Performance



Electric seat settings



Display-supported setting for seat heating



Are your customers looking for the highest starting power? Increased service life and safety?

Then look no further than the **Bosch Battery S5**. Specifically designed with Silver Alloy Technology, the S5 surpasses international standards set by original equipment manufacturers. Even at extreme temperatures the S5 provides safe and powerful energy supply for highly sophisticated, energy consuming components.



On-board navigation

On-board tv

Advantages of the Bosch Battery S5

- ▶ Maintenance-free.
- ▶ Innovative Bosch Silver Technology.
- ▶ 30% more cold-starting power.
- ▶ Safe starting even in extreme temperatures.
- ▶ 30% increased service life.
- ▶ Fulfils and surpasses original equipment recommendations.
- ▶ Dependable supply of power for vehicles with additional safety features such as ESP and ABS.
- ▶ Minimal self-discharge.
- ▶ Extreme short-distance tolerance .
- ▶ Maximum safety with:
 - Leak-proof, patented labyrinth cap.
 - Double backfire protection.

The Battery Expertise of Bosch: Safety and Convenience for Every Use



Strong Brand, Strong Power

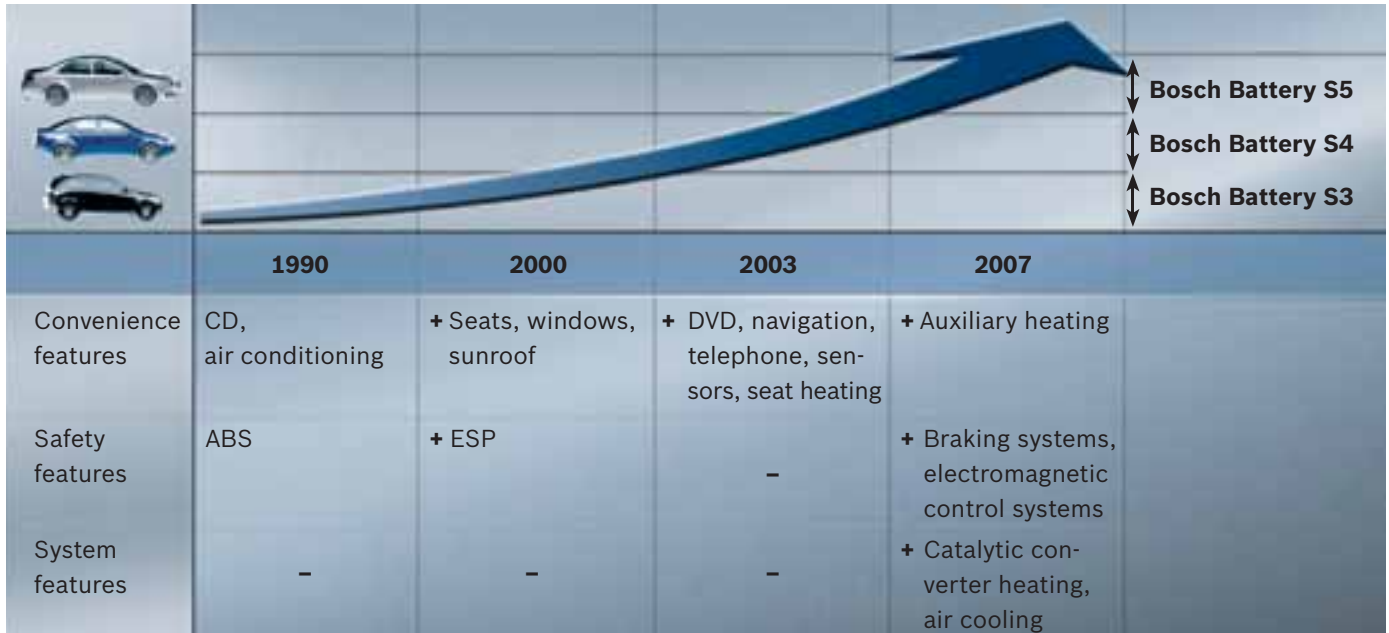
Bosch technologies are continuously developed in close cooperation with car manufacturers. This ensures that Bosch remains at the cutting-edge of automotive technology, delivering products that meet the increasing demands of modern vehicles.

Bosch has specific expertise in engine management and electrical systems and has applied this knowledge in the development of the new battery program.

The Battery Recycling System of Bosch

Take your old battery back to your local Bosch battery stockist for disposal.





The development of energy consumption of new cars

Bosch batteries are designed to handle the increasing energy demands of modern vehicles.

The Quality Battery Program of Bosch

The battery program of Bosch, the world's leading automotive supplier, has the right battery for most automotive applications, covering up to 90% of the market.

Smart Starting and More

With their extremely high capacity and cold-start currents, Bosch batteries provide reliable starting power in virtually any outside temperature. Their innovative grid technology makes these energy packs resistant to high temperatures in the engine chamber. At the same time, water consumption and corrosion are significantly reduced. This translates into minimum self-discharge, extreme tolerance for short-distance driving and perfect operational safety throughout their entire service life.

Longer Service Life

Today's enclosed engines are really putting the heat on car batteries. Whereas 20 years ago, temperatures in the engine chamber wouldn't climb above 50°C, today they often exceed 100°C. The employment of Bosch Silver Technology considerably reduces corrosion caused by heat, significantly increasing the service life of batteries.

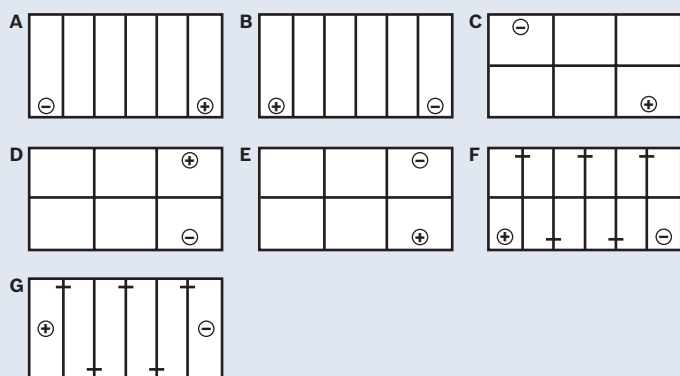
Technical Data

Bosch Part Number	20Ah Rate	RC	CCA	CCA Norm	Length (mm)	Width (mm)	Total Height (mm)	Terminal	Terminal Layout	Bottom Hold Down	Assembly Layout
S3											
54316	43	70	420	SAE	211	175	175	STD	(+)	B3/B4	A
55065	50	80	430	SAE	208	175	190	STD	(+)	B3	B
55066	50	80	430	SAE	208	175	190	STD	(+)	B3	A
55457	54	90	500	SAE	245	175	175	STD	(+)	B3	A
55458	54	90	500	SAE	245	175	175	STD	(+)	B3	B
56318	63	110	580	SAE	277	175	175	STD	(+)	B3/B4	A
56217	62	100	520	SAE	245	175	190	STD	(+)	B3	B
56219	62	100	520	SAE	245	175	190	STD	(+)	B3	A
56638	66	110	580	SAE	278	175	190	STD	(+)	B3	A
56640	66	110	580	SAE	278	175	190	STD	(+)	B3	B
58014	80	135	700	SAE	315	175	175	STD	(+)	A	B3
58515	85	140	740	SAE	353	175	175	STD	(+)	A	B3
115F51	120	230	900	SAE	505	183	240	STD	(+)	B0	D
145G51	150	300	1000	SAE	508	222	241	STD	(+)	B0	D
190H52	200	430	1150	SAE	523	279	248	STD	(+)	B0	D
22F-530	56	95	530	BCI	240	174	205	STD	(+)	B9	A
22F-530DF	56	95	530	BCI	240	174	211	DF	(+)	B9	A
22FR-530	56	95	530	BCI	240	174	205	STD	(+)	B9	B
31-930	112	190	930	BCI	330	173	240	STD	CENTER	B0	B
40B19L	35	49	300	SAE	187	127	226	SMALL	(+)	-	A
40B19LS	35	49	300	SAE	187	127	226	STD	(+)	-	A
40B19R	35	49	300	SAE	187	127	226	SMALL	(+)	-	B
40B19RS	35	49	300	SAE	187	127	226	STD	(+)	-	B
55B24L	45	80	430	SAE	238	129	225	SMALL	(+)	-	A
55B24LS	45	80	430	SAE	238	129	225	STD	(+)	-	A
55B24R	45	80	430	SAE	238	129	225	SMALL	(+)	-	B
55B24RS	45	80	430	SAE	238	129	225	STD	(+)	-	B
55D23L	60	100	500	SAE	232	173	225	STD	(+)	-	A
55D23R	60	100	500	SAE	232	173	225	STD	(+)	-	B
55D26L	60	100	500	SAE	260	173	222	STD	(+)	-	A
55D26R	60	100	500	SAE	260	173	222	STD	(+)	-	B
75D31L	75	120	630	SAE	303	173	225	STD	(+)	-	A
75D31R	75	120	630	SAE	303	173	225	STD	(+)	-	B
95D31L	90	145	730	SAE	303	173	225	STD	(+)	-	A
95D31R	90	145	730	SAE	303	173	225	STD	(+)	-	B
95E41	100	180	830	SAE	410	175	235	STD	(+)	B0	B
AU22-530DF	56	95	530	BCI	231	169	211	DF	(+)	B0	A
AU22R-530	56	95	530	BCI	231	169	205	STD	(+)	B0	B
U1-230	23	30	230	BCI	197	136	186	LUG	(+)	B0	A
U1R-230	23	30	230	BCI	197	136	186	LUG	(+)	B0	B
S4											
105D31L	90	160	710	BCI	305	172	225	STD	(+)	B7	A
105D31R	90	160	710	BCI	305	172	225	STD	(+)	B7	B
130E41R	110	190	700	BCI	406	172	231	STD	(+)	B0	B
150F51	135	245	1005	BCI	503	182	231	STD	(+)	B0	A
165G51	150	300	1050	BCI	507	213	231	STD	(+)	B0	A
22F-610	55	90	610	BCI	240	172	205	STD	(+)	B9	A
22F-610FD	55	90	610	BCI	240	172	209	DF	(+)	B9	A
22FR-610	55	90	610	BCI	240	172	205	STD	(+)	B9	B



Bosch Part Number	20Ah Rate	RC	CCA	CCA Norm	Length (mm)	Width (mm)	Total Height (mm)	Terminal	Terminal Layout	Bottom Hold Down	Assembly Layout
S4 (cont.)											
22NF-330D	40	60	330	BCI	238	134	204	DF	CENTER	B9	G
31-901	100	160	900	BCI	330	173	239	STD	CENTER	B0	G
50D20L	50	80	500	JIS	208	173	219	STD	(-+)	B7	A
60038	100	170	800	SAE	354	175	190	STD	(-+)	B3	A
80D23L	70	120	560	BCI	229	172	225	STD	(-+)	B7	A
80D23R	70	120	560	BCI	229	172	225	STD	(+-)	B7	B
90D26L	75	140	620	BCI	260	172	225	STD	(-+)	B7	A
90D26R	75	140	620	BCI	260	172	225	STD	(+-)	B7	B
DC24	70	120	500	BCI	275	172	229	MRN	(+-)	B7	B
DC27	80	145	570	BCI	320	172	229	MRN	(+-)	B7	B
DC31	100	180	625	BCI	330	172	234	MRN	CENTER	B0	G
HCM24-600	80	140	600	SAE	260	174	225	TM	(-+)		
HCM27-700	95	160	680	SAE	304	174	225	TM	(-+)		
HCM31-850	110	200	830	SAE	330	173	240	TM	(-+)		
N200(L) (8D-1300)	210	440	1300	BCI	510	275	238	STD	(-+)	B0	D
N200(R) (8D-1300)	210	440	1300	BCI	510	275	238	STD	(+-)	B0	E
U1-260	26	33	260	JIS	196	126	184	LUG	(-+)	B0	A
U1R-260	26	33	260	JIS	196	126	184	LUG	(+-)	B0	B
S5											
560.035	60	95	600	SAE	244	175	175	STD	(-+)	A	B3
574.035	74	120	680	SAE	279	175	190	STD	(-+)	A	B3
574.135	74	120	680	SAE	279	175	190	STD	(+-)	B	B3
575.035	75	120	680	SAE	279	175	175	STD	(-+)	A	B3/B4
22F-680	60	105	680	BCI	240	172	205	STD	(-+)	B9	A
22FR-680	60	105	680	BCI	240	172	205	STD	(+-)	B9	B
90D23L	75	125	650	BCI	229	172	225	STD	(-+)	B7	A
90D23R	75	125	650	BCI	229	172	225	STD	(+-)	B7	B
110D26L	90	160	680	BCI	260	172	225	STD	(-+)	B7	A
110D26R	90	160	680	BCI	260	172	225	STD	(+-)	B7	B
125D31L	92	165	760	BCI	305	172	225	STD	(-+)	B7	A
125D31R	92	165	760	BCI	305	172	225	STD	(+-)	B7	B
46B19LS	45	63	370	BCI	186	127	225	STD	(-+)	B0	A
46B19RS	45	63	370	BCI	186	127	225	STD	(+-)	B0	B

Assembly Layout



Abbreviations

- B0 No bottom hold down
- B1 2 bottom hold-downs 10.5mm high on long sides
- B3 4 bottom hold-downs 10.5mm high on all four sides
- B4 2 bottom hold-downs 19mm high on long sides
- B3/B4 B4 BHD available with adaptor on long sides
- B7 2 bottom hold-downs 9.7mm high on long sides
- B9 4 bottom hold-downs 9.7mm high on long sides, 29mm on short sides
- BN Bolt nut terminal
- DF Dual fit terminal
- SM Small terminal
- STD Standard terminal
- TM Twin marine

Product Interchange



Competitor Part Number	Bosch Replacement
22F530SMF	22F-530
22F530SMFDF	22F-530DF
22F600SMFDF	22F-610FD
22FR530SMF	22FR-530
22FR600SMF	22FR-610
41	22NF-330D
43	22NF-330D
46	22NF-330D
47	22NF-330D
51	22NF-330D
53	22NF-330D
55D23L	55D23L
55D23R	55D23R
57	22FR-530
57EF	AU22R-530
58	22F-530DF
58EB	AU22-530DF
58VT	22F-530
67	22FR-610
68	22F-610FD
68VT	22F-610
AU22530SMFDF	AU22-530DF
AU22R530SMF	AU22R-530
DIN44	54316
DIN44LMF	54316
DIN53L	55457
DIN53LMF	55457
DIN53RMF	55458
DIN65L	56318
DIN65LMF	56318
DIN65RMF	56640
DIN85L	58515
DIN92LMF	58515

Competitor Part Number	Bosch Replacement
MF40B20DF	40B19R
MF40B20L	40B19L
MF43	22NF-330D
MF50	22FR-610
MF50	22FR-530
MF52	22F-610FD
MF52	AU22-530DF
MF52	22F-530DF
MF53	22F-610
MF53	22F-530
MF54	AU22R-530
MF55B24LS	55B24LS
MF55B24RS	55B24RS
MF75D23L	80D23L
MF75D23R	80D23R
MF80D26L	90D26L
MF80D26R	90D26R
MF95D31L	95D31L
MF95D31R	95D31R
N70ZZ	75D31R
N70ZZ4WD	95D31R
N70ZZH	95D31R
N70ZZL	75D31L
N70ZZL4WD	95D31L
N70ZZLH	95D31L
NS40Z	40B19R
N70ZZX	75D31R
N70ZZLX	75D31L
NS40ZL	40B19L
NS40ZLS	40B19LS
NS40ZLSX	42B19LS
NS40ZS	40B19RS
NS40ZSX	42B19RS

Competitor Part Number	Bosch Replacement
NS60LS	55B24LS
NS60RS	55B24RS
NS60S	55B24RS
NS70	55D26R
NS70L	55D26L
NS70LX	90D26L
NS70X	90D26R
S40B20L	40B19L
S40B20LS	40B19LS
S40B20R	40B19R
S40B20RS	40B19RS
S54316	54316
S55457	55457
S55458	55458
S55B24LS	55B24LS
S55B24RS	55B24RS
S55D23L	55D23L
S55D23R	55D23R
S55D26L	55D26L
S55D26R	55D26R
S56318	56318
S56638	56638
S56640	56640
S58515	58515
S70D23L	80D23L
S70D23R	80D23R
S75D31L	75D31L
S75D31R	75D31R
S80D26L	90D26L
S80D26R	90D26R
S85B60L	22F-610
S95D31LHD	95D31L
S95D31RHD	95D31R

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To the extent permitted by law, Bosch excludes all liability including negligence for any loss incurred in reliance on the contents of this publication. From time to time, Bosch may (in its discretion) issue bulletins containing updates to this information to which users of this publication should have regard.

Robert Bosch Australia

General Warranty Information

Introduction

All products manufactured and/or sold by Bosch Australia carry a statutory and voluntary warranty. Consumer's rights to such warranty are limited to failures and defects caused by a material or manufacturing fault within the specified warranty period.

This warranty information describes very broadly the general procedure for the settlement of warranty claims. Detailed information relating to the most commonly submitted non-warranty cases should also be reviewed prior to any warranty submission. Only genuine warranty cases are accepted.

What is a Warranty Case?

A warranty case exists when a Bosch product or spare part fails within the specified warranty period as a result of a manufacturing or material fault.

What are Non-warranty Cases?

A warranty case does not exist if the fault is caused by a violation of the operating, maintenance or installation instructions, inappropriate or improper use, incorrect handling or unauthorised repairs and modifications performed by third parties. Other examples of non-warranty cases are failures caused by foreign contamination and water entry.

Natural Wear and Tear

Damage caused by natural wear and tear does not constitute a warranty case even if it occurs within the warranty period.

Wrong Deliveries and Transit Damage

Wrong deliveries, incorrect or damaged packing and transit damage claims are not warranty cases and will not be processed as a warranty claim. Such cases should be directed to Bosch Customer Service on 1300 30 70 40.

Warranty Responsibility and Evaluation

All warranty claims are to be resolved in the most economical and efficient way, either by repair or replacement. In the case of Bosch Batteries, they must be sent the Bosch Battery Distributor from which they were purchased for warranty evaluation and/or repair.

For details of your nearest Bosch Battery Distributor please call our Customer Service Centre on 1300 30 70 40 or visit www.bosch.com.au

Initiating a Claim

If a Bosch product fails within the specified warranty period as a result of a manufacturing or material fault, consumers should:

- ▶ Stop using the goods
- ▶ Let the seller know as soon as possible
- ▶ Look after the goods until they are returned
- ▶ Return the goods, including proof of purchase (while there are no time limits, this should be done as soon as possible).

Packaging

Goods do not have to be returned with the original packaging to obtain a refund.

Warranty Periods and Proof of Purchase

The warranty period begins from the date of sale to the customer (generally the consumer). The warranty period is not renewed nor extended as a result of a warranty repair or with the supply of a replacement part. The seller is entitled to ask for proof of purchase when goods are claimed under warranty and consumers are obligated to provide proof of purchase when claiming goods under warranty. Proof of purchase will generally indicate if the purchased product is covered under warranty.

The warranty period for Bosch Batteries is as follows: Private vehicles – S3 24 months, S4 36 months, S5 36 months. Truck/Commercial/Industrial/4 x 4/Marine - 12 months (all batteries). Taxis – 3 months (all batteries).

Deadlines for submitting Warranty Claims

Bosch Australia aims to rectify genuine quality problems as a priority. This is generally achieved by investigating why defective products have failed and by introducing immediate corrective action measures to prevent re-occurring warranty failures. It is therefore critical that all warranty cases are promptly reported to Bosch Australia. Bosch reserves the right to request the prompt return of all defective parts.

Product Liability and Product Safety

Bosch Australia should be informed immediately about potential product safety concerns within and outside the warranty period. Bosch Australia is well aware of its product liability and product safety obligations and responsibilities. It is our aim to ensure appropriate product safety standards are met in order to avoid injury, loss and damage caused by defects in Bosch products.



Technical Information



1. Introduction

The Technical Information section provides essential information on the operation, characteristics, design, handling and charging of lead-acid batteries as well as the correct procedures for using, stocking and maintaining batteries for road vehicles, in addition to providing information on the main areas of care needed to be taken for the safety of staff who work with Bosch batteries, so as to get the most from our products and for customer satisfaction.

1.1 Safety Warnings and Standards

	Observe the information on the battery, the battery's operating manual and the vehicle's operating manual.
	Wear eye protection as a precautionary measure when working on the battery.
	Keep acid and filled batteries out of reach of children. Keep out of reach of children when working on the battery.
	<p>Fire, sparks, naked flames and smoking are prohibited:</p> <ul style="list-style-type: none"> ▶ Avoid creating sparks when handling cables and electrical equipment as well as those caused by electrostatic discharge. ▶ Avoid short-circuits. Never connect the positive terminal to the negative terminal of the same battery because it will cause a short circuit. A short circuit can cause burns, fire or the explosion of the battery. ▶ Clean with damp cloth only and wear appropriate clothing. Dry cleaning cloth might become electrically charged and produce sparks.
	<p>Danger of explosion:</p> <ul style="list-style-type: none"> ▶ An explosive oxyhydrogen gas mixture is formed when batteries are charged. Explosive gases can cause blindness and injury.
	<p>Corrosive hazard:</p> <ul style="list-style-type: none"> ▶ Battery acid is extremely corrosive. The acid can cause burns and blindness. Under normal operation conditions, there should be no contact with the electrolyte (diluted sulphuric acid). Please note that when the battery casing of a battery with fixed electrolyte is destroyed or damaged, bound electrolyte in glass fibre mats or jellified electrolyte is as corrosive as when liquid. ▶ Wear protective gloves and goggles. ▶ Do not tilt the battery permitting acid to leak out of vent openings.

	<p>First aid:</p> <ul style="list-style-type: none"> ▶ Drops of acid coming into contact with eyes should be rinsed for several minutes using clear water. Then consult a doctor without delay. ▶ Drops of acid on the skin or clothes should be neutralized immediately using acid neutralizer or soap suds and rinsed with plenty of water. ▶ If acid is swallowed, drink plenty of water and consult a doctor immediately.
	<p>Warning:</p> <ul style="list-style-type: none"> ▶ The enclosure becomes brittle with time, therefore: Do not expose batteries to direct sunlight. ▶ Discharged batteries can freeze so store in a place where they are protected from frost. ▶ It is dangerous to use tools such as hammers on the battery terminal when connecting cables. ▶ Never rub with dry cloth on the battery casing. This might produce sparks because of electrostatic discharges and can cause an explosion.
	<p>Disposal:</p> <ul style="list-style-type: none"> ▶ Dispose old batteries at a battery collection point. ▶ Never dispose old batteries as household waste. ▶ If a battery with glass fibre materials is destroyed or damaged, the released fibre material must be disposed in line with the official local regulations. ▶ Do not let electrolyte penetrate into the sewage system, the soil or into groundwater.
	<p>Corrosive hazard:</p> <ul style="list-style-type: none"> ▶ The item is hazardous according to the criteria of Work Safe Australia.

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2. Battery Recharging Procedure

2.1 Battery Charging Indicators

Charging of the battery is required when the:

- ▶ Storage period is more than 6 months without charging.
- ▶ Colour of state of charge (SOC) indicator turns black.
- ▶ Battery operating current voltage (OCV) is less than 12.4V.

2.2 Steps Prior to Charging

- ▶ Wear protective glasses whilst handling the battery.
- ▶ Do not carry out charging near fire or spark.
- ▶ Do not charge damaged or frozen battery.
- ▶ Boost charge is not recommended.
- ▶ If the battery has accessible screw-in plugs, check the electrolyte level in each cell and top up with distilled water if necessary.
- ▶ Do not switch on the charger until battery has been connected. Do not switch off the charger until charging is complete.
- ▶ Position the batteries so that there is a space of at least 20mm between them.
- ▶ Only use batteries with the same capacity and same state of charge in the same circuit. This prevents the slightly discharged batteries from being overcharged when connected to the same circuit as a battery that needs a longer time to recharge.
- ▶ Batteries must always be connected in series, that is, the positive pole of a battery should be connected to the negative pole of the neighbouring battery, thus the positive pole of the first battery and the negative pole of the last battery will always be open.
- ▶ All of the batteries for recharging should have their density and/or open voltage checked, so that the batteries could be grouped (based on state of charge) for the purpose of placing them in the right circuit for the recharging process.

Warning: Never connect the positive pole to the negative pole of the same battery or in the same series, as this will cause a short circuit. Check that the connections (lugs) make good contact by twisting them slightly while pressing them onto the pole.

2.3 Recharging with a Constant Current

When recharging the battery with a constant current, the voltage will increase slowly during the recharging. Towards the end, the voltage increases rapidly and the process should be stopped at the voltage value limit.

Example: 45Ah battery.

Recharging Current: $45 \times 0.1 = 4.5A$ (10% of the nominal capacity of the battery).

The recharging time depends on the state of charge of the battery.

OCV in stable condition	State of charge	Battery capacity (20Ah)					
		35-40	41-50	51-65	66-75	76-90	91-110
12.5 - 12.59	70%	3X4	4X4	5X4	6X4	6X5	7X5
12.4 - 12.49	60%	3X6	4X6	5X6	6X6	6X7	7X7
12.3 - 12.39	50%	3X8	4X8	5X8	6X8	6X9	7X10
12.2 - 12.29	40%	3X10	4X10	5X10	6X10	6X12	7X12
12.1 - 12.19	30%	3X13	4X12	5X12	6X12	6X14	7X15
Below 12.09	20%	3X15	4X14	5X14	6X14	6X16	7X17

Warning: The battery temperature must not exceed 50°C during the recharging process.

Note:

- ▶ The above table shows approximate Ah and charging hours needed for recharging according to the battery capacity and the OCV under a constant current charging method. Accordingly, the Ah or the charging hours may be adjusted depending on the type and the state of the charged battery.
- ▶ Always charge the battery according to the amount of charge needed. Prolonged charging times, especially with a constant current, could cause the battery to become overcharged, causing an unnecessary loss of water in the process.
- ▶ Avoid quick charges that are done without controlling the temperature, current or time.
- ▶ Some batteries below 12.1V can be hard to re-charge due to the long time elapsed since the last re-charge. It is very difficult to recover its original performance.



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2.4 Recharging with a Constant Voltage

When using this charging method, the initial current applied to the battery should be limited to 25A and the voltage to 14.4V.

The battery charging time will vary according to its state of charge, as shown in the table below:

Battery voltage when empty (volts)	Recharging Time (hours)
12.00 to 12.20	6 to 12
11.80 to 11.99	10 to 16
11.50 to 11.79	16 to 20
11.00 to 11.49	20 to 24
Deeply discharged batteries	24 to 30

Warning: the battery temperature must not exceed 50°C during the recharging process.

2.5 Actions During and After Recharging

▶ Electrolyte Temperature

The electrolyte temperature, hence the battery container temperature must not exceed 50°C. The recharging process should be stopped if this temperature is exceeded.

The process may be resumed once all batteries in the recharging circuit reach 45°C or less.

▶ Recharging Time

We recommend waiting approximately 20 minutes to allow gases to dissipate before removing the leads from the batteries, as some chargers remain in a charged state and can generate sparks. Replace the vent caps and gas tubes if they were removed. Wash the battery using warm water and dry it.

3. Battery Usage and Defects

3.1 Jump Start

When performing a jump start using jumper cables, there can be bursts of high voltage of hundreds of volts when connecting the cables. If the vehicle's electrical system is not protected against such surges, they can cause damage to sensitive electronic components, like the ABS system, the airbags control units, etc. Please follow the vehicle manufacturer's operating instructions!

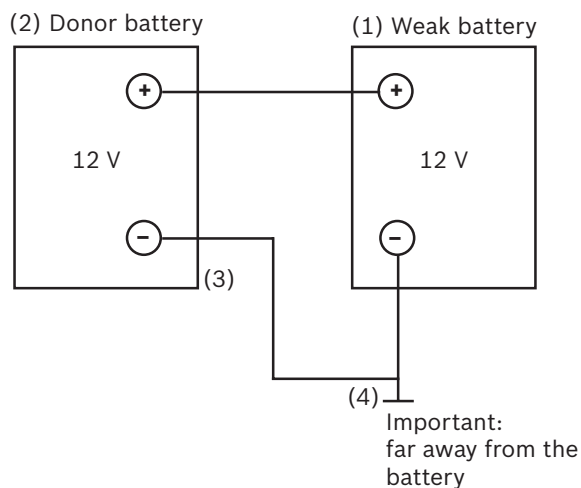
- ▶ Do not attempt to jump start a damaged battery.
- ▶ When giving starting aid with jumper cables, high voltage peaks of several hundred volts can occur when connecting the cables. If the vehicle electrical system is not protected from these peaks, they can damage sensitive electronic components.
- ▶ Only use standardised battery jumper cables. Only connect batteries of the same nominal voltage.
- ▶ Before giving starting aid, try to figure out the reason for the battery weakness. If the reason is a failure in the vehicle electrical system, starting aid should not be given. The battery or the electric system of the vehicle giving starting aid might become damaged.
- ▶ Warning: Always protect your eyes and hands from the battery.

How to do it: 4 easy steps

1. Turn off both vehicle engines.
2. Connect the positive terminals (1) and (2) and then connect the charged battery's negative terminal (3) with a bare metallic point (4) away from the battery of the vehicle requiring assistance.
3. Start the engine in the vehicle providing assistance, followed by the engine in the vehicle requiring assistance for a maximum of 15 seconds.
4. Disconnect the cables in reverse order (4-3-2-1). Use only standard jumper cables for connecting the batteries. Connect only batteries with the same nominal voltage.

Caution: Before performing a jump start, try to find out what caused the battery failure. If the cause was a fault in the electrical system, do not jump start. The battery or the electrical system of the vehicle providing the jump start could be damaged.

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3.2 Battery Installation and Removal

Modern vehicles are equipped with sensitive electrical systems such as airbag controllers, ABS, stability and traction control units, onboard computers etc. For some vehicles, it is necessary to follow certain procedures in order to install or take the battery out of service. For example, the electrical components may require resetting after they have been turned off.

Please follow the vehicle manufacturer's operating instructions!

1. Switch off the engine and all electrical equipment before installing or removing the battery.
2. Install only batteries that are fully charged and undamaged.
3. Install the type of battery recommended for the particular vehicle.
4. Avoid causing short-circuits with tools or cables. After having installed the battery in the vehicle, remove the covers from the terminal poles just before connecting the cables to the terminals.
5. For removing, disconnect the negative terminal (-) first and then the positive terminal (+). Before installing the battery, clean the surface inside the vehicle. Fix the battery safely and securely. If the battery is not securely installed, it will be subjected to a larger degree of vibration which can reduce its service life. Friction between the battery container and the support area can cause damage and wear to the container. Also, the container can rupture, causing the electrolyte to leak out.
6. Clean the battery terminals and its lugs. Lubricate them lightly with acid-free grease. When installing, connect the positive terminal (+) first, then the negative terminal (-). Check that the terminal lugs are firmly in place. Make use of the accessories from the previous battery such as hose connections, terminal supports and covers for terminals. Use the top-up caps supplied.

7. At least one vent must remain open to avoid the risk of an explosion.

3.3 Taking the Vehicle out of Service

When a vehicle is taken out of service (for example, when it is used only seasonally), charge up the battery and store it in a cool place. If it is necessary to leave the battery in the vehicle, disconnect the negative terminal. Check the OCV of the battery every two months. If the OCV is below 12.4V, recharge the battery.

3.4 Technical Information on Battery Problems

3.4.1 Manufacturing Defects

Short Circuit / Dead Cell

If a battery has a service life that is less than 12 months, the problem is usually caused by a dead cell, that is, one of the cells has a density value that is much lower than the others. The affected cell bubbles visibly during the high-discharge test. To evaluate the density, a high-discharge test should be carried out. In some cases, the dead cell may be visible in the form of a sulphated cell.

Internal Breakage

The battery has good density values, but the voltage across the terminals cannot be measured.

3.4.2 Mishandling and Warranty Exclusion

The following technical problems are caused by mishandling the battery. Such cases are not subject to warranty.

Low State of Charge

A low state of charge is the first stage of deep discharge. With a low state of charge, the active material will not have sustained any damage. The battery can still be charged with a standard charger.

The causes of a low state of charge are:

- ▶ A defective alternator.
- ▶ A low voltage output from the regulator.
- ▶ High contact resistances caused by loose cable connections or dirt on the cable terminals.
- ▶ Slack drive belts.
- ▶ Insufficient engine running time due to short journey times.
- ▶ Subsequent addition of electrical equipment.
- ▶ Defective equipment causing continuous discharge.

Deep Discharge

A battery suffers a deep discharge when its capacity is totally used up. The longer the battery remains in this state, the greater will

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be the damage done to the active material. The plates begin to suffer sulphation and recharging becomes impossible. This damage is irreversible.

Possible causes of deep discharge are:

- ▶ See 'Causes of Low State of Charge'
- ▶ Headlights or other electrical equipment are not switched off.

A battery in a good state of charge will usually have a load-free voltage >12.6V. Therefore, the voltage without charge for each cell is about 2.1V. If there is a short circuit in just a single cell, this will result in a reduction of about 2.1V of the terminal voltage, which would be a typical 'short-circuit' voltage of 10.5V. The likelihood of two cells within the same battery having a short circuit is very low. In the case of two cells with short circuits, the OCV drops by 4.2V to a value of 8.4V. In order to exclude the effects of long shipment and storage times on the terminal voltage, as well as the possibility of two cells with short circuits etc., only batteries with a load-free voltage lower than 8 volts are regarded as deeply discharged and a claim on warranty will be rejected.

Sulphation

If a battery is left in a discharged state for an excessive period of time, there will be a chemical reaction known as sulphation, which will certainly compromise its performance. During the discharge process, lead sulphate is generated on the positive and negative plates and distributed evenly among them.

The longer the battery is left in a discharged state, the more the small sulphate crystals grow into larger crystals and it becomes very difficult to convert these back into lead dioxide. Sulphation can become visible in the form of a white/grey layer on the plates. In most cases, this damage is irreversible and the battery cannot be used anymore.



Figure 1 – Picture of battery with deep discharge and sulphation

Sulphation can either occur during storage or if the battery is installed in a vehicle (or equipment) that is not used for a long period of time. While in a vehicle, the battery is constantly drained by the clock, the alarm system, etc., resulting in a decrease in the level of charge of the battery and, after a certain period of time, sulphation of the plates. However, even a disconnected battery undergoes sulphation due to self-discharge.

The causes of sulphation can be summed up as follows:

- ▶ There is an excessive lapse of time between one recharging and the next.
- ▶ An engine starter battery is used for "deep cycles". This type of battery is not resistant to deep discharges.
- ▶ The battery is undercharged or the charging and adjustment of levels is carried out incorrectly.
- ▶ Low electrolyte level: a battery plate exposed to air starts to experience sulphation immediately. Sulphation (lead sulphate) impedes the chemical reaction between the acid (electrolyte) and the active material (made up of lead) on the plates and it prevents normal operation of the battery. Even after recharging, the voltage will be low (< 12.4V), but, usually the cells will show equal values. Sulphation is not a manufacturing defect.

Acid Stratification

Acid stratification is a common cause of battery failure. In a stratified battery, the electrolyte is concentrated at the bottom and the top half of the cell has very little acid. Stratification takes place when the battery is kept with low charge (below 80%) and is never fully recharged. Short journeys that include the use of the windscreen wipers and electric heaters contribute to this phenomenon. Acid stratification reduces the general performance of the battery.

Figure 2 shows a normal battery in which the acid is distributed evenly from top to bottom. This battery has good performance because the correct concentration of acid is distributed evenly over the plates. Figure 3 shows a stratified battery in which the acid concentration is light at the top and heavy at the bottom. A light acid limits the plate activation, speeds up corrosion and reduces the performance. On the other hand, high acid concentration at the bottom artificially increases the open circuit voltage. The battery seems to be fully charged, but it delivers low starting power. High acid concentration also results in sulphation and further reduces the already low conductivity. If this condition goes undetected, it will ultimately result in battery failure.

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Figure 2 – Without acid stratification



Figure 3 – With acid stratification

Fully recharging or shaking the battery tends to correct the problem.

Overcharging

Overcharging is often caused by an unsuitably high temperature in the engine compartment. Other than this, a defective voltage regulator is often another cause of overcharging. A high level of corrosion, loose particles of positive active material, damaged active material and high water consumption are characteristics of overcharging. A low level of electrolyte and a black layer on the filler caps are usually evidence for an overcharged battery. Excessive water consumption leads to an increase in electrolyte density. Also, a high temperature results in a lower internal battery resistance, causing an increase in the charge current and this increases the effect of overcharging.

Physical Damage

The battery container and the terminals will suffer obvious damage if the battery is installed incorrectly, if the cables are wrongly connected or if the cables are hammered incorrectly into the terminals.

In addition, if the terminal poles are melted, this indicates that the battery has had a short circuit. (Figure 4 and Figure 5)



Figure 4 – Picture of a melted battery terminal



Figure 5 – Picture of a melted battery terminal

Incorrect Application

Batteries recommended by Bosch match or exceed the original equipment specifications. Choosing a battery of lower capacity or power will result in a shorter service life and premature battery failure. Usually, the result is a low charge level together with the effects described above.

Wear and Tear

During the charging and discharging cycle, the battery plate material (active material) moves about due to the electrochemical processes occurring. Every time that the battery undergoes a charging or discharging cycle, a small amount of active material comes loose from the plates. This normal aging process, caused by the charging and discharging cycles, results in a loss of battery capacity and, ultimately, the loss of its capacity to start the vehicle or power its equipment.

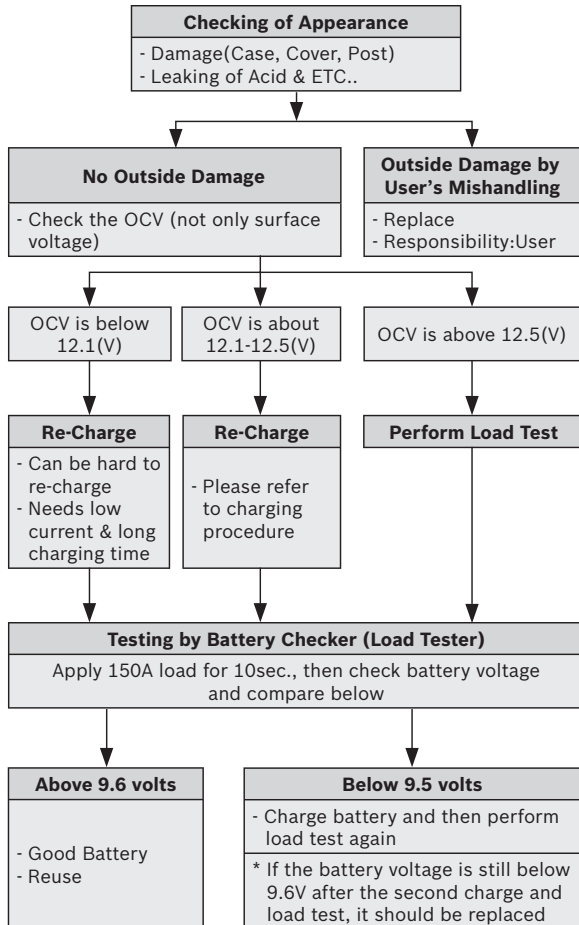
A battery has a finite number of cycles that it undergoes before losing its capacity. Vehicles that do a large number of short journeys, such as taxis, mini-cabs, trucks and buses, reach the maximum number of cycles in a shorter time than vehicles that do longer journeys. As a result, the batteries used in these types of vehicles may exhibit the above mentioned symptoms earlier than expected.



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3.5 Checking for Malfunction by Load Tester



4. Inspection, Storage and Stacking

4.1 Inspection on Receipt of Goods

Before unloading the consignment of batteries, please check the details on the invoice against the goods delivered and your order details.

Check:

- ▶ The battery type.
- ▶ The quantities.
- ▶ Damaged batteries, batteries that were not transported in a horizontal position or those with leakage of electrolyte, should be rejected and sent back to the supplier, at the carrier's expense.

After unloading and before stocking the batteries, check:

- ▶ The age of the battery, calculating this from its date of manufacture.
- ▶ The open circuit voltage.
- ▶ Do a visual inspection (container, cover, terminals, charge indicator, colours, and labels).

4.2 Storage

The batteries should be stored in a horizontal position on wooden palettes or racks (not tilted). Do not place them directly onto the ground, because small stones or sharp edges on the concrete floor can damage the battery container and cause leaks.

Batteries should be stored in a dry place and must not be exposed to direct sunlight. The storage temperature should be between 10°C and 35°C. Storage temperatures that are higher than this will result in greater water consumption, corrosion and self-discharge. The storage temperature must not exceed 35°C. The maximum period for storing decreases when batteries are stored at high temperatures.

4.3 Stacking

In order to avoid scratches and damage of labels, do not store unpackaged batteries on top of the other.

Always ensure that the instructions for stacking batteries are followed. Batteries up to 75Ah may be stacked in up to 5 tiers; batteries above 90Ah in up to 3 tiers and batteries above 150Ah in a maximum of 2 tiers. Do not remove the plastic shrink-wrapping. Use cardboard or polystyrene as an additional layer between the batteries. Do not stack batteries with their terminal poles protruding without taking special measures to protect these terminals and to ensure that the stack is stable.

Follow the First in / First out (FiFo) procedure strictly. Following the FiFo procedure means that the first battery stored in stock is also the first battery to leave.

Frequently Asked Questions

Q - What is the difference between a cell and a battery?

A - The smallest electrochemical unit of a battery is called a cell. The cell does not have a complete container or contacts ready for use and is usually connected to neighbouring battery cells by means of soldered contacts.

Unlike a cell, it is easy to recognize a battery by its completed container that is equipped with contacts that are ready for use. Additionally, the container bears the manufacturer's name clearly printed on it, the name of the type, the battery voltage, etc.

Q - How is the battery constructed?

A - A 12V starter battery contains six individually separated cells that are connected in series in a polypropylene container. Each cell contains an element (cell package) that is made up of a set of positive and negative plates. In turn, these sets comprise lead plates (lead grid and active material) and micro-porous insulation material (separators) between the plates with opposite polarities. The electrolyte is diluted sulphuric acid. It permeates the pores of the plates and the separators and fills up the voids in the cells. The terminals, the cell connectors and the plate connections are all made of lead. A thermal sealing process is used to permanently bond the battery to its container, providing a superior quality seal for the battery.

Q - What is the electrolyte?

A - The electrolyte is diluted sulphuric acid that permeates the pores of the plates and separators. It fills up the voids in the cells. The sulphuric acid component is responsible for turning pure water conductive so that it can be used as electrolyte.

Q - What happens when a battery becomes discharged?

A - If a device (for example, a lamp) is connected to the terminals of a lead-acid battery, the difference in power between the poles results in a flow of electrons leaving the negative pole and flowing through the device and on to the positive pole.

This flow of electrons transforms the lead dioxide on the positive plate and the spongy lead on the negative plate into lead sulphate. This chemical process consumes the sulphuric acid and yields water. The specific gravity of the electrolyte is thus decreased and it is because of this that the state of charge of the battery can be determined, by measuring the specific gravity of the electrolyte.

Q - What happens when a battery is charged?

A - When a battery is being charged, the flow of electrons and the chemical processes that occur during discharge are reversed. The result of the charging process is that the lead sulphate that is formed during the discharge process is once again converted into lead dioxide, lead and sulphuric acid and this restores the necessary chemical energy that will be converted into electrical power during future use.

An optimum charge voltage is important for charging a battery. If the voltage is too high, the water will be electrolysed. This reduces the electrolyte level over a period of time. If the voltage is too low, the battery cannot be adequately charged and this can also reduce its service life.

Q - What are the consequences of a short circuit in the battery?

A - An external short circuit can occur if the battery terminals are connected by any type of conductive material. Depending on the battery system, a short circuit can have serious consequences. Lead-acid batteries are very powerful and a short circuit can cause burns, fires or an explosion of the battery.

Never connect the positive pole of the battery to its negative pole. When installing the battery, or when attaching the connecting cables to the battery poles, take all necessary measures to avoid short-circuits caused by tools or other conductive materials.

Q - What does the abbreviation OCV mean and what does it tell me concerning the battery?

A - OCV stands for Open Circuit Voltage – the voltage in an open circuit. Other common terms are 'off-load voltage' or 'voltage without load'. As the name indicates, OCV is the voltage measured between the two poles of the battery when the battery is not under load (no current consumption).

The OCV changes on completion of the charging or discharging process due to the effects of polarization and diffusion. The battery should be set aside, in a state of rest, sometimes up to a few days, until it reaches a stable state. If the OCV is measured shortly after a charging or discharging process, it will not be possible to obtain a correct value for the state of charge.



Frequently Asked Questions



Q - What is meant by battery capacity?

A - The capacity is the amount of electrical power that a battery can deliver under specific conditions. It is the product of the current and the time (ampere-hour, Ah).

The capacity is not a fixed parameter, but depends, among other things, on the following factors:

- ▶ The level of the discharge current (the larger the discharge current, the smaller the capacity that can be used).
- ▶ The discharge process according to time (the capacity will be greater if there is a pause during the discharge than if the discharge process is continuous).
- ▶ The age of the battery (due to the loss of active material from the plates, the Ah capacity decreases when the battery is coming to the end of its service life).

Q - What does cold start performance mean?

A - For a car battery used to supply electrical power to the starter motor, the starting capacity at low temperatures is usually more important than the Ah capacity. Cold start performance is defined according to different norms in different countries. Its value is indicated in amperes.

For example, according to the SAE J537 Norm, cold start performance is the maximum amount of current that a battery can produce for 30 seconds at -18°C without falling to 7.2V or below.

Q - What does self-discharge mean?

A - Even if no consumption device is connected to the battery, "it is drained" electrically after a certain period of time since the electrochemical processes cannot be stopped or avoided, as they are part of any battery technology. This is not a phenomenon that is limited only to lead-acid batteries.

The self-discharge rate increases at higher temperatures. Therefore, batteries should be stored in a place with a low temperature.

Due to this effect of self-discharge, the state of the battery should be checked regularly during its storage period (for example, if you decide not to use your vehicle over a certain period of time) as the battery may require recharging and this should be done when necessary.

Q - What is the effect of temperature on the performance of a battery in general?

A - Of all the environmental factors, temperature has the greatest effect on the charge of the battery and its discharge behaviour. The reason lies with the electrochemical reactions that depend on temperatures and occur during the electrode-electrolyte interface, which are regarded as the very heart of the battery. If the temperature drops, the value of the electrode reaction also decreases. If the battery voltage remains constant but the discharge current drops, then the battery power output will also decrease. The opposite effect occurs if the temperature increases, namely, the battery power output will increase.

Temperature also affects the speed of the transport process within the electrolyte and its porous electrodes. A rise in temperature speeds up the transport processes and a drop in temperature slows them down. The charge/discharge performance of the battery may also be affected. The higher the temperature, the greater the rate of self-discharge will be, and vice-versa.

The effects of relative humidity will depend on the battery system. These play a key role in "open" battery systems (in contrast with closed battery systems).

Q - What effect does heat have on the battery?

A - Extreme heat causes the water in the battery electrolyte to evaporate. Additionally, heat speeds up the corrosion of the positive battery grid. In the long term, these conditions will adversely affect the service life of the battery. Avoid using or storing a battery at high temperatures.

Q - Can I use a starter battery for other purposes?

A - Each battery should be used only according to what is recommended for it in order to ensure optimum performance. There are many types of batteries, including starter batteries for cars or trucks, batteries for motorcycles, semi-traction batteries etc.

They differ one from the other, not just in their external appearance, but also in their internal technology. For example, the layout of the positive and negative grid may differ (thicker/thinner, weaker/stronger grid structures), different lead alloys may be used for the positive and negative grids and different separation materials may be used. So, each battery is optimised for a particular application and may not give full performance if used for another purpose.

Frequently Asked Questions

Q - Why should you not use a starter battery as a power supply source for long periods of time?

A - The main task of a starter battery is to supply a high electrical power output for a short period of time, which is what is needed to start a combustion engine. Electrodes with large surface areas are necessary in order to deliver such high outputs of electrical current. This is achieved by using a large number of thin electrodes connected up in parallel.

Performing this cycle on a permanent basis, that is, with a 60% to 80% charge and discharge of the nominal capacity with average currents over a long period of time, can generate strong mechanical forces within the thin battery plates. Such forces can cause a separation of the active material from the electrode grids and result in premature battery wear. Therefore, for a discharge of 60% to 80% of the nominal battery capacity, use special batteries that were designed for the particular type of application.

Q - What is the electrical system of a vehicle?

A - Basically, the electrical system of a vehicle comprises an energy storage device (the battery), a device for converting (the generator) and several consuming devices (electrical equipment).

The starter motor (an electricity consumer) starts the engine using electrical power supplied by the battery. When the engine is running, the generator converts mechanical energy into electrical energy and, depending on the revolutions per minute (rpm) of the generator and the amount of electrical equipment connected up, under ideal conditions there will be enough energy to feed all of the consuming devices and charge the battery. If the load demanded by the electrical equipment is greater than the current supplied by the generator, the voltage of the vehicle's electrical system will drop below the battery voltage and cause it to lose its charge.

Q - How does the charging system of a car work?

A - The charging system of a modern vehicle comprises two components:

- ▶ **The alternator:** This is a mechanical device that is driven by a secondary belt from the engine. It supplies the continuous voltage needed to recharge the battery while the engine is running.
- ▶ **The voltage regulator:** This monitors the state of charge of the battery and adjusts the activity of the alternator according to what is needed for charging the vehicle's battery and supplying the power needed to operate the vehicle's accessories.

Q - What do I need to do to install or remove the battery from the vehicle?

A - Modern vehicles are equipped with sensitive electrical systems, such as airbag controllers, ABS, stability and traction control systems, onboard computers etc. With some vehicles, it is necessary to follow certain procedures when installing or removing the battery. So, be sure to adhere to the vehicle manufacturer's instructions!

The following steps need to be taken:

- ▶ Switch off the engine and all the other electrical equipment before installing or removing the battery.
- ▶ Install only batteries that are fully charged and undamaged.
- ▶ Install the type of battery recommended for the vehicle.
- ▶ Avoid causing short-circuits with the tools or cables.
- ▶ When removing the battery, disconnect the negative terminal (-) first followed by the positive terminal (+). Before installing the battery, clean the surface of the installation location.
- ▶ Fix the battery firmly in place. If it is not firmly fixed in place, it will be affected considerably by vibrations and this can reduce its service life. Friction between the battery container and its support area can result in wear to the container, causing it to break and the electrolyte to leak out.
- ▶ Clean the battery terminals and the connection terminals. Lubricate them lightly with non-acidic grease to prevent oxidation.
- ▶ When installing the battery, connect the positive terminal (+) first followed by the negative terminal (-). Check that the terminal connections are firm, but do not over-tighten them.
- ▶ Use the fittings from the old battery, such as the hose connection, terminal supports and terminal covers. Use the top-up caps supplied.

Q - How can I extend the life of my battery?

1. The battery surface areas should be kept clean and dry. Otherwise, leakages of current may occur, causing an additional loss of charge. Use only a damp anti-static cloth to clean the battery. Check from time to time that the battery and its terminals are properly in place. Tighten them, if necessary, but do not use undue force so as not to damage the battery or the terminal connections.
2. Batteries should always be kept with the largest amount of charge possible so as to prevent the formation of large lead sulphate crystals. Never store batteries in a discharged or partially discharged state!
3. Check stored charged batteries regularly and recharge them when the acid density falls below 1.20 kg/l or if the open circuit voltage (OCV) drops below 12.4V.



Frequently Asked Questions



Q - Should I add water to the battery?

A - No, the Bosch S3, S4 and S5 (100% maintenance-free batteries), require no water replacement during their entire service life (thus they are totally sealed).

Q - How often should I replace my battery?

A - The service life of a battery varies from one vehicle to another and it depends on many factors. If the performance of the vehicle's starting system is poor, or if a failure is shown on the dashboard instrumentation, take the vehicle to a workshop to have the electrical system / starter system checked.

If you install additional electrical equipment in the vehicle, such as amplifiers, navigation systems, electrical window openers, etc., be sure to also install a battery with a larger capacity. The original size of the battery suggested by the vehicle manufacturer corresponds to the original equipment of the car. Additional electrical equipment will use up more energy from the battery and this will result in a permanent state of low charge if you do not install a larger battery. A permanent state of low charge will result in the reduction of the service life of your battery.

Q - Why doesn't it seem possible to recharge the discharged battery?

A - If a battery is stored for a prolonged period in a state of low charge, the grids experience sulphation, a process in which the active material is transformed into white sulphuric acid (an irreversible state). The longer it is left in this state, the more difficult it becomes to recharge the battery. So, recharge any discharged battery as soon as possible.

A battery with deep discharge should be charged with 1/20 of the capacity of the battery. If it does not recharge under these conditions, you will need to replace it.

Any attempt to charge it using a larger current will probably damage it and result in its complete discharge. Recharging a battery with deep discharge using a high-power charger will, at best, have no effect or worse cause permanent damage to the battery.

Q - What kind of problems could arise during use?

- ▶ **Low charge level:** This is caused by a defective alternator, extremely short journeys or an excess of electrical equipment. Dirty terminals can cause a loss of current. The battery is not fully charged and parts of the active material have become inactive (sulphation). The consequences are a loss of capacity and reduced starting power.
- ▶ **Overcharging:** This is caused by a defective voltage regulator. Overcharging results in high water consumption, extreme electrode corrosion and severe damage to the battery.
- ▶ **Strong cyclical use:** This is caused by numerous discharging and recharging deep cycles. Usually, these charges do not occur under normal circumstances, unless the starter battery is frequently activated in congested traffic with lots of stop-start activity, or when it is used for other purposes, for example in taxis, to operate loading platforms on trucks or as a traction battery (there are special batteries for such applications).
- ▶ **Wrong size of battery:** Choosing a battery with an inadequate capacity for a vehicle results in a larger cyclical charge and damage to the battery. Such damage also results from excessive power consumption by electrical equipment installed subsequently (for example, sound systems, portable telephones, stationary heating).

Q - How can I do a simple check for poor battery operation?

A - Perform the following list of steps, one at a time, to check the state of the battery.

- 1. Check the outer surfaces of the battery.** Damage (for example, cracks) to the external surface of the battery can cause leakage of electrolyte which, in turn, results in corrosion of the car. A dirty battery surface can cause discharge. So, keep it as clean as possible. Use only a damp anti-static cloth for cleaning.
- 2. Check the charge indicator.** Bosch S5 and S6 starter batteries are fitted with a charge indicator. It is a fast and convenient way to get a first impression on the state of charge of the battery.
- 3. Measuring the voltage (OCV).** Let the car engine rest for about one hour after switching it off before measuring the voltage. Based on the measured value of the voltage, you can work out the state of charge. The voltage of your battery should be between 12.2V and 12.8V. A voltage that is lower or higher may be an indication that there is a fault in the electrical system of the car or that the battery is damaged. In these cases, have the battery checked at an authorized workshop.
- 4. Check the battery using a professional battery testing instrument.** Check with the nearest authorised dealer for more information concerning the state of the battery.

Frequently Asked Questions

Q - What are some of the causes of battery discharge in a car?

- ▶ Forgetting to turn off electrical equipment, for example, fog lights or improperly shut doors that keep the dome light switched on.
- ▶ The electricity load exceeds the capacity of the vehicle's alternator. For example, when the car is stopped the generator supplies only 10% to 30% of its capacity. Discharge may occur if there is an excessive demand for electrical power at such a time.
- ▶ An increase in the number of electrical accessories in the car. The capacity of the generators may not be adequate for feeding all the accessories.
- ▶ Long journey times at low speed or electrical overcharging during night trips. For example, driving in urban traffic, proceeding with many stops and starts, or on congested roads, together with an excessive use of the air conditioning or other electrical components.
- ▶ Problems with the voltage regulator or with electrical components.
- ▶ Loose connections between the terminals and the cables.
- ▶ Leaving the vehicle parked for long periods of time.
- ▶ Poor operation of the starting device (ignition), requiring excessive ignition.
- ▶ Loose fan belts, which reduces the capacity of the generator.
- ▶ The wearing of wire insulations in older cars caused by abrasion, which can cause the current to leak to other parts of the car.
- ▶ Spent batteries.

Q - What should I do with my old or damaged battery?

A - Car batteries contain lead and sulphuric acid. These materials are hazardous if disposed of in regular refuse or thrown out in the open. Most of the battery and its materials are recyclable. To help protect the environment, adhere to the following instructions:

- ▶ Never dispose of spent batteries or their components in domestic refuse.
- ▶ Stores, manufacturers, importers and scrap dealers take spent batteries and send them on to secondary foundries for recycling. When you buy a new battery, hand in the spent one to the workshop.
- ▶ If a battery is destroyed or damaged, the leaked electrolyte, lead plates and separators should not be disposed of in domestic refuse. Place these materials in an acid-resistant box and return them as you would do with any other spent or undamaged battery.
- ▶ The electrolyte and diluted sulphuric acid should never be emptied [by someone] without specific technical knowledge. Never allow the electrolyte to get into the sewer system, the soil or the water table.

Q - Can the batteries be recycled?

A - Yes. Simply take your old battery back to your local battery stockist for disposal.

Q - How is the battery recycled?

- ▶ The acid of the battery is recycled by neutralising it in water or by converting it into sodium-sulphate or powdered detergent, or by using it in glass and textile production.
- ▶ The plastic is recycled by cleaning up the battery container, melting it down and transforming it into plastic pellets which will be used once again for manufacturing batteries.
- ▶ The lead, which accounts for 50% of each battery, is melted down into bars and refined. The lead retains all its characteristics after having been refined and can be used for the production of new batteries.



Battery Chargers



BAT 430 shown

Safety and comfort components in vehicles are highly sensitive and need to be protected from voltage peaks when the battery is being charged. Up until now, the battery had to be disconnected from the vehicle electrical system for that purpose. Bosch electronic battery chargers enable the charging of batteries on the vehicle electric system without any impairment of the vehicle electronics.

For the workshop this means:

- ▶ No more cumbersome battery removals or disconnecting, improving safety and convenience for workshops.
- ▶ Data memories of car radios, ECUs, phones and onboard computers are preserved.
- ▶ Electrical components, such as ECUs and airbags are protected.
- ▶ No hazardous battery gassing even during trickle charging.

The Bosch micro processor controlled battery charger range protects vehicle electronics from voltage peaks during in-car charging.

- ▶ The entry level BML 2415 offers a voltage regulated charging characteristic, with overload protection and temperature compensation for maintenance free, calcium, 12 and 24V batteries.
- ▶ The BSL 2470 workshop charger offers the same features, plus “automatic start assistance”, supplying a charging current of up to 105A.
- ▶ The premium BAT 415/430 units have a special charging characteristic required for gel and AGM batteries and a back-up mode that preserves the vehicle’s ECU memory when changing a battery.

Battery Testers



BAT 110 shown

Bosch BAT 110 and BAT 121 battery testers can test all battery types, including standard, maintenance free, calcium, gel and AGM batteries, with only a small nominal charge required. They use a non-load “conductance” test procedure to measure the battery’s internal resistance, resulting in more informative test data being displayed. Battery test results are displayed as battery voltage, charge state and importantly starting capability as a percentage of the cold-start current. The BAT testers offer a wide range of testing norms, such as SAE, EN, DIN, IEC, CCA and JIS.

BAT 110

Features

- ▶ 4 digit LED voltage screen, 3 LED indicators and scrollable arrow keys ensure easy and intuitive handling.
- ▶ 200 A to 850 CCA operating range.
- ▶ No printer or multi-language operation.

BAT 121 (with printer)

Features

- ▶ 8 digit LCD display with 50 to 1550 CCA operating range.
- ▶ An alternator test function also monitors regulator and the diodes.
- ▶ The test result can be printed on an internal printer.

Vehicle Application Listing

	1	2	3	4	5	6	7	8	9	10
B2 ALFA ROMEO										
1	ALFA ROMEO									
	Alfa 33									
	907	01.90 - 03.92	4	1.7	AR30737 <M6>	55066				
					AR30746 <M8>	55066				
		01.90 - 10.94	4	1.7	AR30747 <M9>	55066				
2	Alfa 75									
		02.86 - 02.92	6	2.5	AR 01911 KAT <M1>	56219				
		01.87 - 02.92	4	2.0	AR 06224 <M10>	56219				
			6	3.0	AR 06120 <M2>	56219				
		09.87 - 02.92	4	2.0	AR 06166 KAT <M11>	56219				
	Alfa 90									
		02.86 - 12.90	6	2.5	AR 01911	56219				
3	Alfa 147									
	937	11.00 ->	4	2.0	AR 32310 <M10>	56219				
		06.05 ->	4	1.9	937A5000 <M92>		574.035			
	Alfa 147 GTA									
4	937	01.03 ->	6	3.2	932A000 <M20>	56219				
	Alfa 156									
	932	10.97 - 09.00	4	2.0	AR32301 <M3>	55066				
			6	2.5	AR32401 <M4>	56219				
		09.00 - 12.01	4	2.0	AR32310 CF3 <M20>	56219				
		01.02 - 10.05	4	2.0	AR32310 CF3 <M11>	56219				
			6	2.5	AR32405 <M15>	56219				
		01.02 - 12.05	4	2.0	937A1.000 <M10>	56219				
		03.02 - 10.05	6	3.2	932A000 <M20>		574.035			
	Alfa 159									
5	939	06.05 ->	4	1.9	939A2000 <M92 E4>	56219				
			5	2.2	939A5000 <M50 E4>	56219				
			5	2.4	939A3000 <M95 E4>		574.035			
		01.06 ->	6	3.2	939A000 <M61>		574.035			
6	Alfa 164									
	164	04.88 - 09.92	6	3.0	AR 06412 <M4>	56219				
		09.90 - 09.92	6	3.0	AR 64301 <M5>	56219				
	Alfa 166									
	936	10.98 - 09.00	6	3.0	AR 34301 <M15>		574.035			
		09.00 - 10.07	6	3.0	AR 36101 <M17>		574.035			
7	Brera									
	939	01.06 ->	4	2.2	939A5000 <M50>	56219				
			6	3.2	939A000 <M61>	56219				
	GT									
	937	10.03 ->	4	2.0	937A1000 <M5>	56219				
			6	3.2	936A000 <M10>	56219				
	GTV									
	916	04.95 - 04.98	4	2.0	AR 16201 <M1>	56219				
		05.98 - 07.00	6	3.0	AR 16102 <M4/M7>	56219				
		08.00 - 12.05	4	2.0	AR 32310 <M6>	56219				
			6	3.0	AR 16105 <M7>	56219				
Bosch Automotive Aftermarket										
2010										

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**ALFA ROMEO****Alfa 33**

907	01.90 - 03.92	4	1.7	AR30737 <M6>	55066
				AR30746 <M8>	55066
	01.90 - 10.94	4	1.7	AR30747 <M9>	55066

Alfa 75

	02.86 - 02.92	6	2.5	AR 01911 KAT <M1>	56219
	01.87 - 02.92	4	2.0	AR 06224 <M10>	56219
		6	3.0	AR 06120 <M2>	56219
	09.87 - 02.92	4	2.0	AR 06166 KAT <M11>	56219

Alfa 90

	02.86 - 12.90	6	2.5	AR 01911	56219
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Alfa 147

937	11.00→	4	2.0	AR 32310 <M10>	56219
	06.05→	4	1.9	937A5000 <M92>	574.035

Alfa 147 GTA

937	01.03→	6	3.2	932A000 <M20>	56219
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Alfa 156

932	10.97 - 09.00	4	2.0	AR32301 <M3>	55066
		6	2.5	AR32401 <M4>	56219
	09.00 - 12.01	4	2.0	AR32310 CF3 <M20>	56219
	01.02 - 10.05	4	2.0	AR32310 CF3 <M11>	56219
		6	2.5	AR32405 <M15>	56219
	01.02 - 12.05	4	2.0	937A1.000 <M10>	56219
	03.02 - 10.05	6	3.2	932A000 <M20>	574.035

Alfa 159

939	06.05→	4	1.9	939A2000 <M92 E4>	56219
			2.2	939A5000 <M50 E4>	56219
		5	2.4	939A3000 <M95 E4>	574.035
	01.06→	6	3.2	939A000 <M61>	574.035

Alfa 164

164	04.88 - 09.92	6	3.0	AR 06412 <M4>	56219
	09.90 - 09.92	6	3.0	AR 64301 <M5>	56219

Alfa 166

936	10.98 - 09.00	6	3.0	AR 34301 <M15>	574.035
	09.00 - 10.07	6	3.0	AR 36101 <M17>	574.035

Brera

939	01.06→	4	2.2	939A5000 <M50>	56219
		6	3.2	939A000 <M61>	56219

GT

937	10.03→	4	2.0	937A1000 <M5>	56219
		6	3.2	936A000 <M10>	56219

GTV

916	04.95 - 04.98	4	2.0	AR 16201 <M1>	56219
	05.98 - 07.00	6	3.0	AR 16102 <M4/M7>	56219
	08.00 - 12.05	4	2.0	AR 32310 <M6>	56219
		6	3.0	AR 16105 <M7>	56219



916	04.03 - 12.05	4	2.0	937A1.000 <M8>	56219
		6	3.2	936A6.000 <M9>	56219
Spider					
916	04.95 - 04.98	4	2.0	AR 16201 <M1>	56219
		6	3.0	AR 16101 <M2>	56219
	08.00 - 03.03	6	3.0	AR 16105 CF3 <M7>	56219
	08.00 - 02.06	4	2.0	AR 32310 CF3 <M6>	56219
	04.03 - 02.06	6	3.2	936A6.000 <M9>	56219
939	03.06 →	4	2.2	939A5000 <M50>	56219
	09.06 →	6	3.2	939A000 <M61>	56219

ASIA (ASIA MOTORS)**Rocsta**

CA	02.94 - 12.98	4	1.8	SOHC	22NF-330D
	08.95 - 12.98	4	2.2	R2 <SOHC>	22NF-330D

ASTON MARTIN**DB7**

	03.94 - 02.99	6	3.2	AJ6 Kompressor	574.035
	03.99 - 08.02	12	5.9		574.035

DB9

	01.04 →	12	5.9		60038
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Vanquish

	09.04 - 08.07	12	5.9		60038
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Vantage

	02.04 →	8	4.2		60038
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AUDI**A3**

8L1	09.96 - 06.01	4	1.6	AEH	55066
			1.8	AGN	56219
	12.96 - 06.03	4	1.8	AGU	56219
	08.98 - 05.00	4	1.8	APP	56219
	08.98 - 04.03	4	1.8	APG	56219
	05.00 - 04.02	4	1.6	AVU	55066
	05.00 - 06.03	4	1.8	AUM	56219
	05.02 - 06.03	4	1.6	BFQ	55066
8P1	05.03 - 05.05	4	1.6	BGU	56219
	05.03 - 06.08	4	2.0	BKD	574.035
	01.04 - 08.04	4	2.0	BMB	574.035
	06.04 - 12.04	4	2.0	BLX	56219
8PA	09.04 - 01.05	4	2.0	BLX	56219
	09.04 - 05.05	4	1.6	BGU	56219
	09.04 - 10.05	4	2.0	AXX	56219
8P1	09.04 - 10.05	4	2.0	BLY	574.035
8PA	09.04 - 06.08	4	2.0	BKD	574.035
	06.05 →	4	1.6	BSE	56219
					BSF
8P1	06.05 →	4	1.6	BSE	56219
					BSF
8PA	09.05 - 06.08	4	2.0	BWA	56219



◀ AUDI

8PA	11.05 - 11.06	4	2.0	BVY	56219	
	11.05 - 05.09	4	1.9	BLS		574.035
	03.06 - 06.08	4	2.0	BMN		574.035
	11.06 - 06.07	4	1.8	BYT	56219	
8P1	11.06 - 06.07	4	1.8	BYT	56219	
8PA	06.07 - 06.08	4	1.8	BZB	56219	

A3 Cabriolet

8P7	04.08 - 01.09	4	1.8	BZB	56219	
			2.0	CAWB	56219	

A3 Quattro

8L1	08.97 - 08.00	4	1.8	AGU	56219	
	08.98 - 06.99	4	1.8	AGN	56219	
8P1	07.03 - 08.04	6	3.2	BDB		574.035
8PA	09.04 - 10.05	4	2.0	AXX	56219	
		6	3.2	BMJ		574.035
8P1	09.04 - 10.05	6	3.2	BMJ		574.035
8PA	11.05 - 06.08	4	2.0	BWA	56219	
	11.05 - 05.09	6	3.2	BUB		574.035

A4

8D2, B5	11.94 - 07.98	4	1.8	AEB	56219			
		6	2.6	ABC	56219			
		4	1.8	ADR	56219			
		6	2.8	ACK	56219			
		6	2.4	AGA		574.035		
					ALF	56219		
		4	1.8	AJL	56219			
		6	2.4	APS	56219			
		6	2.8	APR	56219			
		6	2.4	AMM	56219			
		8E2, B6	12.00 - 12.04	4	2.0	ALT	56219	
				6	3.0	ASN		60038
6	3.0			BBJ		574.035		
8H7, B6	04.02 - 12.05	6	2.4	BDV	56219			
		4	1.8	BFB	56219			
		6	3.0	BBJ		60038		
8E2, B6	07.02 - 12.04	4	1.8	BFB	56219			
		4	1.8	BEX	56219			
8EC, B7	11.04 - 05.05	4	2.0	BLB		574.035		
		4	2.0	BGB	56219			
		4	1.8	BFB	56219			
			2.0	ALT	56219			
		6	3.2	AUK		60038		
8HE, B7	01.06 - 03.09	4	1.8	BFB	56219			
			2.0	BWE	56219			
		6	3.2	AUK		60038		
8K2, B8	06.08 →	6	2.7	CGKA		574.035		

A4 Avant

8D5, B5	11.94 - 07.98	6	2.6	ABC	56219	
	10.95 - 07.98	4	1.8	AEB	56219	
	03.96 - 07.98	6	2.8	ACK	56219	
	08.97 - 07.98	6	2.4	AGA	56219	
	08.97 - 09.01	4	1.8	AJL	56219	
	08.98 - 06.00	6	2.4	APS		574.035
8E5, B6	06.00 - 09.01	6	2.4	AMM	56219	
		4	2.0	ALT	56219	
		4	1.8	BFB	56219	
	11.02 - 12.04	4	1.8	BEX	56219	

8ED, B7	11.04 - 08.05	4	2.0	BGB		56219		
	11.04 - 06.08	4	1.8	BFB		56219		
			2.0	ALT				574.035
	06.05 - 06.08	4	2.0	BRE				574.035
8K5, B8	04.08→	4	2.0	CAGA				574.035
	06.08→	4	1.8	CDHB		56219		
A4 Quattro								
8D2, B5	11.94 - 12.98	4	1.8	AEB		56219		
	11.94 - 04.99	4	1.8	ADR		56219		
	03.96 - 07.98	6	2.8	ACK		56219		
	08.97 - 07.98	6	2.4	AGA		56219		
	08.97 - 10.00	4	1.8	AJL		56219		
	02.99 - 06.00	6	2.8	APR		56219		
	02.99 - 10.00	6	2.4	APS		56219		
8E2, B6	12.00 - 12.04	6	3.0	ASN			60038	
	03.01 - 12.04	6	3.0	BBJ				574.035
	07.02 - 12.04	4	1.8	BFB		56219		
8EC, B7	11.04 - 08.05	4	2.0	BGB		56219		
	11.04 - 06.08	4	1.8	BFB		56219		
	09.05 - 06.08	4	2.0	BWE		56219		
	01.06 - 06.08	6	3.0	ASB				574.035
A4 Quattro Avant								
8D5, B5	11.94 - 07.98	6	2.6	ABC		56219		
	11.94 - 04.99	4	1.8	ADR		56219		
	03.96 - 07.98	6	2.8	ACK		56219		
	08.97 - 09.01	4	1.8	AJL		56219		
	08.98 - 09.01	6	2.4	APS		56219		
8E5, B6	09.01 - 06.02	4	1.8	AVJ		56219		
8ED, B7	11.04 - 08.05	4	2.0	BGB		56219		
	09.05 - 06.08	4	2.0	BWE		56219		
A4 2.0 TDI								
8K2, B8	11.07→	4	2.0	CAGA				574.035
A4 2.7 TDI								
8K2, B8	11.07 - 05.08	6	2.7	CAMA				574.035
A6								
4A2, C4	06.94 - 10.97	6	2.6	ABC				574.035
			2.8	AAH			574.035	
4B2, C5	04.97 - 07.98	6	2.8	ACK				574.035
	04.97 - 01.99	6	2.4	AGA				574.035
	11.98 - 04.01	6	2.4	APS				574.035
			2.8	APR			574.035	
	06.01 - 05.04	6	2.4	BDV		56219		
		3.0	ASN				574.035	
			BBJ				574.035	
4F2, C6	04.04 - 05.06	6	3.0	BBJ				574.035
	04.04 - 10.08	6	2.4	BDW		58014		
			3.2	AUK		58014		
	06.05→	4	2.0	BPJ				574.035
11.06 - 10.08	6	2.8	BDX		58014			
A6 Avant								
4A5, C4	06.94 - 06.96	6	2.6	ABC				574.035
4B5, C5	04.97 - 01.99	6	2.4	AGA				574.035
	02.98 - 07.98	6	2.8	ACK				574.035
	11.98 - 06.00	6	2.4	APS				574.035
4BH, C5	05.00 - 05.03	6	2.5	AKE				574.035



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4F5, C6	03.05 - 10.08	6	2.4	BDW	58014	
	06.05 →	4	2.0	BPJ		574.035
4FH, C6	05.06 - 10.08	6	3.0	ASB		60038

A6 Quattro

4A2, C4	06.94 - 10.97	6	2.6	ABC		574.035
			2.8	AAH	56219	
4B2, C5	04.97 - 12.98	6	2.8	ACK		574.035
	11.98 - 06.99	6	2.4	APS		574.035
	01.99 - 05.01	6	2.8	APR		574.035
4B4, C5	04.99 - 05.01	8	4.2	ARS		574.035
	06.00 - 05.04	8	4.2	ASG		574.035
4B2, C5	06.01 - 06.02	6	2.7	ARE		574.035
	06.01 - 05.04	6	3.0	ASN		574.035
	07.02 - 05.04	6	2.7	BES		574.035
4F2, C6	04.04 - 05.06	8	4.2	BAT		574.035
	04.04 - 10.08	6	3.2	AUK	58014	
	06.06 - 10.08	6	3.0	ASB	58014	
	11.06 - 10.08	6	2.8	BDX	58014	

A6 Quattro Avant

4B5, C5	11.98 - 06.99	6	2.4	APS		574.035
4BH, C5	05.00 - 06.02	6	2.7	ARE		574.035
	07.02 - 08.05	6	2.7	BES		574.035
		8	4.2	BAS		574.035
	06.03 - 08.05	6	2.5	BAU		574.035
4F5, C6	03.05 - 10.08	6	3.2	AUK	58014	

A8

4D2, D2	06.94 - 03.96	6	2.8	AAH	56219	
	07.95 - 12.98	8	3.7	AEW		60038
	05.97 - 12.98	8	3.7	AKJ		60038
4E, D3	06.05 →	6	3.2	BPK		60038

A8 Quattro

4D2, D2	06.94 - 12.98	8	4.2	ABZ		60038
	10.98 - 02.01	8	4.2	AQF		60038
4E, D3	11.02 - 05.06	8	3.7	BFL		60038
			4.2	BFM		574.035
	01.04 →	6	3.0	ASB		60038
	02.04 →	12	6.0	BHT		60038
	06.05 →	6	3.2	BPK		60038
	07.05 →	8	4.2	BVN		60038
	06.06 →	8	4.2	BVJ		60038

Q7

4LB	03.06 - 05.08	8	4.2	BAR		60038
	08.06 - 09.07	6	3.0	BUG		60038
	03.07 - 06.09	8	4.2	BTR		60038
	03.07 →	6	3.6	BHK		60038

RS4

8D5, B5	05.00 - 10.00	6	2.7	ASJ		574.035
	11.00 - 09.01	6	2.7	AZR		574.035

RS6

4B6	05.02 - 04.04	8	4.2	BCY	58014	
4B4	07.02 - 04.04	8	4.2	BCY		60038
4B6	04.04 - 09.04	8	4.2	BRV	58014	



S3							
8L1	08.98 - 08.00	4	1.8	APY		574.035	
	08.01 - 06.03	4	1.8	BAM		574.035	
8P1	11.06 - 06.08	4	2.0	BHZ		574.035	
S3 Quattro							
8P1	02.07 - 06.08	4	2.0	BZC		574.035	
S4							
4A2, C4	07.92 - 07.94	5	2.2	AAN		575.035	
8D2, B5	10.97 - 10.00	6	2.7	AGB		575.035	
8D5, B5	10.97 - 09.01	6	2.7	AGB		575.035	
8E2, B6	03.03 - 12.04	8	4.2	BBK	58014		
8E5, B6	03.03 - 12.04	8	4.2	BBK	58014		
8H7, B7	02.04 - 12.05	8	4.2	BBK	55457	560.035	
8ED, B7	11.04→	8	4.2	BBK		60038	
S6							
4B4, C5	09.99 - 05.01	8	4.2	AQJ		60038	
	06.01 - 05.04	8	4.2	ANK		60038	
S8							
4D2	09.96 - 12.98	8	4.2	AHC		574.035	
	09.00 - 09.02	8	4.2	AVP		60038	
TT							
8N3	07.98 - 08.00	4	1.8	AJQ	56219		
	07.98 - 08.01	4	1.8	APX	56219		
	09.00 - 05.05	4	1.8	ARY	56219		
	09.00 - 06.06		4	1.8	AUQ	56219	
					BAM	56219	
	01.01 - 06.06	4	1.8	AUM	56219		
8J3	07.06→	4	2.0	BWA	58014		
TT Quattro							
8N3	07.03 - 06.06	6	3.2	BHE	56219		
8J3	07.06→	6	3.2	BUB	58014		
TT Quattro Roadster							
8N9	03.99 - 08.01	4	1.8	APX	55457	560.035	
	09.00 - 05.05	4	1.8	ARY	56318		
	09.00 - 06.06	4	1.8	BAM	56318		
	07.03 - 06.06	6	3.2	BHE	56318		
8J9	02.07→	6	3.2	BUB	58014		
TT Roadster							
8N9	08.00 - 06.06	4	1.8	AUQ	56318		
8J9	02.07→	4	2.0	BWA	58014		
V8 Quattro							
44, 4C, D11	09.90 - 12.92	8	3.6	PT		60038	
80							
89, 8A2, B3	09.86 - 12.91	4	1.8	JN	55457	560.035	
8C2, B4	09.91 - 11.94	5	2.3	NG	55457	560.035	
	09.91 - 05.95	4	2.0	ABK	55457	560.035	
		6	2.8	AAH	55457	560.035	
	07.92 - 05.95	6	2.6	ABC	55457	560.035	



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80 Quattro

8C2, B4	09.91 - 11.94	5	2.3	NG	55457	560.035
	09.91 - 12.94	4	2.0	ABK	55457	560.035
	09.91 - 05.95	6	2.8	AAH	55457	560.035
	07.92 - 05.95	6	2.6	ABC	55457	560.035
	02.93 - 05.95	5	2.2	ABY	55457	560.035

90

89, 8A2, B3	04.87 - 12.91	5	2.3	NG	55457	560.035
	08.88 - 12.91	5	2.3	7A	55457	560.035

90 Quattro

89, 8A2, B3	04.87 - 09.91	5	2.3	NG	55457	560.035
	07.88 - 09.91	5	2.3	7A	55457	560.035

100

44, 44Q, C3	09.84 - 12.90	5	2.2	KU	55457	560.035
	08.86 - 12.90	5	2.3	NF	55457	560.035
4A2, C4	12.90 - 07.94	6	2.8	AAH		575.035
	04.92 - 07.94	6	2.6	ABC		575.035

100 Quattro

44, 44Q, C3	08.84 - 11.90	5	2.2	KU	55457	560.035
4A2, C4	03.92 - 07.94	6	2.6	ABC		575.035

200

44, C3	08.85 - 12.91	5	2.2	MC	55457	560.035
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200 Quattro

44, C3	01.85 - 12.90	5	2.2	MC	55457	560.035
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BENTLEY

Arnage

	04.98 - 03.99	8	4.4	Cosworth V8 <ECE>	55D26R	90D26R	110D26R
	04.99 - 03.06	8	6.8	L410IT <EMS3>	55D26R	90D26R	110D26R
	04.02→	8	6.8		55D26R	90D26R	110D26R

Azure

	03.94 - 08.99	8	6.8	L410IT <ECE>	55D26R	90D26R	110D26R
	09.98 - 08.03	8	6.8	L410MT 1T	55D26R	90D26R	110D26R

Brooklands

	09.92 - 07.93	8	7.0	L 410 I	55D26R	90D26R	110D26R
	07.93 - 07.98	8	6.8	L 410 MN 1T	55D26R	90D26R	110D26R

Continental

	03.91 - 07.95	8	6.8	L 410 IT	55D26R	90D26R	110D26R
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Continental GT

	10.94 - 12.04	8	6.8	L 410 IT	55D26R	90D26R	110D26R
	06.03→	12	6.0		55D26R	90D26R	110D26R
	10.04→	12	6.0		56219		

Eight

	09.84 - 09.92	8	6.8	V8 <OHV>	55D26R	90D26R	110D26R
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Turbo R

	11.91 - 03.93	8	6.8	V8 <OHV>	55D26R	90D26R	110D26R
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	04.93 - 07.95	8	6.8	L 410 MT		55D26R	90D26R	110D26R
	07.95 - 07.99	8	6.8	L 410 MT 1T		55D26R	90D26R	110D26R
BMW								
M3								
E 36	09.92 - 09.95	6	3.0	30 6S 1 <S 50 B 30..>				575.035
	10.95 - 12.98	6	3.2	32 6S 1/3 <S 50 B 32..>				575.035
E 46	09.00 - 05.06	6	3.2	32 6S 4 <S 54 B 32>				574.035
E 92	05.07→	8	4.0	S65 B40A				574.035
M3 Cabriolet								
E 46	04.01 - 08.06	6	3.2	32 6S 4 <S 54 B 32>		58014		
M3 CSL								
E 46	03.03 - 12.03	6	3.2	32 6S 4 <S 54 B 32>				574.035
M5								
E 34	10.88 - 12.93	6	3.6	36 6S 1 <S 38 B 36..>		55457		560.035
	11.90 - 12.94	6	3.6	36 6S 1 <S 38 B 36..>		58515		
E 39	10.98 - 07.03	8	5.0	50 8S 1 <S 62 B 50>			60038	
E 60	11.04→	10	5.0	S85 B50A			60038	
X3								
E 83	01.04 - 08.06	6	3.0	30 6S 3 <M 54>		58014		
	03.04 - 08.06	6	2.5	25 6S 5 <M 54>		58014		
	09.05 - 08.08	6	3.0	30 6D 3 <M 57N2>			60038	
	09.06 - 08.08	6	2.5	N52 B25... <NG6>		58014		
			3.0	N52 B30... <NG6>		58014		
X5								
E 53	03.99 - 09.03	8	4.4	44 8S 2 <M 62 B 44>			60038	
	10.99 - 09.06	6	3.0	30 6S 3 <M 54>			60038	
	03.01 - 09.03	6	3.0	30 6D 1 <M 57 D 30>			60038	
	02.02 - 09.03	8	4.6	46 8S 1 <M 62 B 46>			60038	
	10.03 - 10.06	6	3.0	30 6D 2 <M 57N>			60038	
		8	4.4	N62 B44A <NGV8>			60038	
	03.04 - 10.06	8	4.8	N62 B48A <NGV8>			60038	
E 70	11.06 - 09.08	6	3.0	N52 B30... <NG6>			60038	
		8	4.8	N62 B48B <NGV8>			60038	
	03.07 - 09.08	6	3.0	30 6D 3 <M 57N2>			60038	
	10.07 - 09.08	6	3.0	30 6D 5			60038	
Z3								
E 36/7	09.95 - 12.99	4	1.9	19 4S 1 <M 44 B 19>		56219		
	11.96 - 08.00	6	2.8	28 6S 1/2 <M 52 B 28>		56219		
	04.99 - 12.00	6	2.0	20 6S 4 <M 52 B 20>		56219		
	05.00 - 06.02	6	3.0	30 6S 3 <M 54>		56219		
	09.00 - 09.02	6	2.2	22 6S 1 <M 54>		56219		
Z4								
E 85	10.02 - 01.06	6	2.5	25 6S 5 <M 54>		56219		
			3.0	30 6S 3 <M 54>		56219		
	02.06 - 08.08	6	3.0	N52 B30... <NG6>		56219		
			3.2	32 6S 4 <S 54>		56219		
E 86	03.06 - 08.08	6	3.0	N52 B30... <NG6>		56219		
116i								
E 87	09.04→	4	1.6	N45 B16A <NG4>		55066		



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118i						
E 87	11.04 - 03.07	4	2.0	N46 B20B <NG4>	55066	
	03.07→	4	2.0	N46 B20B <NG4>		574.035
120d						
E 87	09.04 - 03.07	4	2.0	20 4D 4 <M 47N>	58014	
	03.07→	4	2.0	N47 D20...	58014	
120i						
E 87	09.04 - 03.07	4	2.0	N46 B20... <NG4>	55066	
120i Cabrio						
E 88	03.08→	4	2.0	N46 B20... <NG4>	56219	
125i						
E 82	03.08→	6	3.0	N52 B30... <NG6>	56219	
125i Cabrio						
E 88	03.08→	6	3.0	N52 B30... <NG6>	56219	
130i						
E 87	09.05→	6	3.0	N52 B30... <NG6>	55066	
135i						
E 82	10.07→	6	3.0	N54 B30A <NG6>		60038
E 88	03.08→	6	3.0	N54 B30A <NG6>	58014	
316i						
E 46	02.02 - 03.04	4	1.8	N42 B18A <NG4>	56219	
316i Compact						
E 36	03.94 - 09.00	4	1.6	16 4E 2 <M 43 B 16>	56219	
	11.95 - 09.00	4	1.6	16 4E 2 <M 43 B 16..Gas CNG>	56219	
	12.98 - 09.00	4	1.9	19 4E 1 <M 43 B 19>	56219	
316ti Compact						
E 36	09.94 - 09.96	4	1.8	18 4S 1 <M 42 B 18>	55457	560.035
	12.95 - 09.00	4	1.9	19 4S 1 <M 44 B 19>	55457	560.035
E 46	06.01 - 03.04	4	1.8	N42 B18A <NG4>	56219	
	04.04 - 12.04	4	1.6	N45 B16A <NG4>	56219	
		4	1.8	N46 B18A <NG4>	56219	
318i						
E 30	09.87 - 12.91	4	1.8	18 4E 1 <M 40 B 18>	55066	
	07.88 - 12.92	4	1.8	18 4E 1 <M40 B18>	55457	560.035
E 36	12.90 - 02.94	4	1.8	18 4E 1 <M 40 B 18>	55457	560.035
	03.92 - 10.96	4	1.8	18 4S 1 <M 42 B 18>	55457	560.035
	09.93 - 12.98	4	1.8	18 4E 2 <M 43 B 18>	55457	560.035
E 46	09.01 - 03.04	4	2.0	N42 B20A <NG4>	56219	
	04.04 - 03.05	4	2.0	N46 B20... <NG4>	56219	
318i Cabriolet						
E 30	09.90 - 12.93	4	1.8	18 4E 1 <M 40 B 18>	55066	
318iS						
E 30	09.89 - 12.91	4	1.8	18 4S 1 <M 42 B 18>	55066	
E 36	03.92 - 09.96	4	1.8	18 4S 1 <M 42 B 18>	56219	
	03.93 - 12.96	4	1.8	18 4S 1 <M 42 B 18>	55457	560.035
	03.95 - 12.98	4	1.9	19 4S 1 <M 44 B 19>	55457	560.035
	12.95 - 08.99	4	1.9	19 4S 1 <M 44 B 19>	56219	

B

E 36	07.96 - 10.98	4	1.8	19 4S 1 <M44 B 19>		55457		560.035
318ti Compact								
E 46	04.04 - 12.04	4	2.0	N46 B20... <NG4>				574.035
320Ci								
E 46	09.00 - 05.06	6	2.2	22 6S 1 <M 54>				574.035
320d								
E 90	03.05 - 09.07	4	2.0	20 4D 4 <M 47N>		58014		
320i								
E 30	12.85 - 12.91	6	2.0	20 6E E/K A <M 20 B 20>		55066		
E 36	09.90 - 12.95	6	2.0	20 6S 1/2 <M 50 B 20>				575.035
	10.91 - 10.96	6	2.0	20 6S 1/2 <M50 B20>		55457		560.035
E 46	09.00 - 03.05	6	2.2	22 6S 1 <M 54>				574.035
E 90	03.05→	4	2.0	N46 B20... <NG4>		55066		
320i Touring								
E 46	09.00 - 09.05	6	2.2	22 6S 1 <M 54>				574.035
E 91	09.05→	4	2.0	N46 B20... <NG4>		55066		
323Ci								
E 46	04.98 - 09.00	6	2.5	25 6S 4 <M 52 B 25>				574.035
323Ci Cabriolet								
E 46	03.00 - 09.00	6	2.5	25 6S 4 <M 52 B 25>		58014		
323i								
E 36	10.94 - 12.98	6	2.5	25 6S 3 <M 52 B 25>				575.035
	03.95 - 06.99	6	2.5	25 6S 3 <M 52 B 25>				574.035
	10.96 - 10.98	6	2.5	25 6S 3 <M52 B25>		56318		
E 46	04.98 - 09.00	6	2.5	25 6S 4 <M 52 B 25>				574.035
E 90	09.05→	6	2.5	N52 B25... <NG6>				574.035
323i Cabriolet								
E 36	05.95 - 09.99	6	2.5	25 6S 3 <M 52 B 25>				575.035
323i Coupe								
E 92	09.06→	6	2.5	N52 B25A <NG6>				574.035
323i Touring								
E 91	09.05→	6	2.5	N52 B25A <NG6>				574.035
323ti								
E 36	06.97 - 09.00	6	2.5	25 6S 3 <M 52 B 25>				575.035
325Ci								
E 46	09.00 - 05.06	6	2.5	25 6S 5 <M 54>				574.035
325Ci Cabriolet								
E 46	09.00 - 08.06	6	2.5	25 6S 5 <M 54>		58014		
325i								
E 30	12.86 - 12.91	6	2.5	25 6K 1 <M 20 B 25 Kat.>				574.035
E 36	09.90 - 12.95	6	2.5	25 6S 1/2 <M 50 B 25>				575.035
	04.91 - 08.95	6	2.5	25 6S 1/2 <M50 B25>		55457		560.035
	03.92 - 12.95	6	2.5	25 6S 1/2 <M 50 B 25>				574.035
	04.92 - 08.93	6	2.5	25 6S 2 <M50 B 25>		55457		560.035



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E 46	09.00 - 03.05	6	2.5	25 6S 5 <M 54>		574.035
E 90	03.05→	6	2.5	N52 B25... <NG6>		574.035
325i Cabrio						
E 93	03.07→	6	2.5	N52 B25A <NG6>		574.035
325i Cabriolet						
E 36	03.93 - 12.95	6	2.5	25 6S 2 <M 50 B 25>		575.035
325i Coupe						
E 92	09.06→	6	2.5	N52 B25... <NG6>		574.035
325ti Compact						
E 46	06.01 - 12.04	6	2.5	25 6S 5 <M 54>		574.035
328Ci						
E 46	04.98 - 09.00	6	2.8	28 6S 2 <M 52 B 28>		574.035
328i						
E 36	10.94 - 12.98	6	2.8	28 6S 1 <M 52 B 28>		575.035
	03.95 - 06.99	6	2.8	28 6S 1 <M 52 B 28>		574.035
	08.95 - 10.98	6	2.8	28 6S 1 <M 52 B 28>	56318	
E 46	11.98 - 09.00	6	2.8	28 6S 2 <M 52 B 28>	55457	560.035
328i Cabriolet						
E 36	03.95 - 09.99	6	2.8	28 6S 1 <M 52 B 28>		575.035
330Ci						
E 46	05.00 - 05.06	6	3.0	30 6S 3 <M 54>		574.035
330Ci Cabriolet						
E 46	05.00 - 08.06	6	3.0	30 6S 3 <M 54>	58014	
330i						
E 46	05.00 - 03.05	6	3.0	30 6S 3 <M 54>		574.035
E 90	03.05→	6	3.0	N52 B30... <NG6>		574.035
335i						
E 90	09.06→	6	3.0	N54 B30A <NG6>		574.035
335i Cabrio						
E 93	03.07→	6	3.0	N54 B30A <NG6>		574.035
335i Coupe						
E 92	09.06→	6	3.0	N54 B30A <NG6>		574.035
335i Touring						
E 91	09.06→	6	3.0	N54 B30A <NG6>		574.035
520d						
E 60	09.07→	4	2.0	N47 D20...	60038	
520i						
E 34	09.89 - 12.95	6	2.0	20 6S 1/2 <M 50 B 20>	55066	
E 60	09.07→	4	2.0	N43 B20A <NG4>	58515	
523i						
E 39	09.95 - 09.00	6	2.5	25 6S 3/4 <M 52 B 25>	60038	
E 60	03.05→	6	2.5	N52 B25... <NG6>	58014	


B

E 60	03.07→	6	2.5	N53 B25A <NG6>	58014			
525i								
E 34	01.88 - 12.90	6	2.5	25 6K 1 <M 20 B 25>	55457			560.035
	09.89 - 12.95	6	2.5	25 6S 1/2 <M 50 B 25>	56219			
E 39	09.00 - 07.03	6	2.5	25 6S 5 <M 54>			60038	
E 60	09.03 - 03.05	6	2.5	25 6S 5 <M 54>	58014			
	03.05→	6	2.5	N52 B25... <NG6>	58014			
	03.07→	6	3.0	N53 B30A <NG6>	58014			
528i								
E 39	09.95 - 09.00	6	2.8	28 6S 1/2 <M 52 B 28>				574.035
528i Touring								
E 39	01.97 - 09.00	6	2.8	28 6S 1/2 <M 52 B 28>			60038	
530d								
E 60	09.05→	6	3.0	30 6D 3 <M 57N2>			60038	
530i								
E 34	09.92 - 09.95	8	3.0	30 8S 1 <M 60 B 30>				574.035
E 39	09.00 - 07.03	6	3.0	30 6S 3 <M 54>			60038	
E 60	07.03 - 03.05	6	3.0	30 6S 3 <M 54>	58014			
	03.05→	6	3.0	N52 B30... <NG6>	58014			
	03.07→	6	3.0	N53 B30A <NG6>	58014			
530i Touring								
E 39	09.00 - 05.04	6	3.0	30 6S 3 <M 54>			60038	
E 61	03.05→	6	3.0	N52 B30... <NG6>			60038	
	03.07→	6	3.0	N53 B30A <NG6>			60038	
535i								
E 34	01.88 - 04.93	6	3.5	34 6K B <M 30 B 35>				575.035
E 39	01.96 - 07.03	8	3.5	35 8S 1/2 <M 62 B 35>				574.035
540i								
E 34	09.92 - 09.95	8	4.0	40 8S 1 <M 60 B 40>				574.035
E 39	01.96 - 07.03	8	4.4	44 8S 1/2 <M 62 B 44>			60038	
E 60	09.05→	8	4.0	N62 B40A <NGV8>	58014			
545i								
E 60	09.03 - 09.05	8	4.4	N62 B44A <NGV8>			60038	
550i								
E 60	09.05→	8	4.8	N62 B48B <NGV8>	58014			
645Ci								
E 63	01.04 - 09.05	8	4.4	N62 B44A <NGV8>			60038	
645Ci Cabriolet								
E 64	04.04 - 09.05	8	4.4	N62 B44A <NGV8>			60038	
650i								
E 63	09.05→	8	4.8	N62 B48B <NGV8>			60038	
650i Cabriolet								
E 64	09.05→	8	4.8	N62 B48B <NGV8>			60038	



◀ BMW

730i, 730iL

E 32	09.86 - 06.94	6	3.0	30 6K A <M 30 B 30>	58014	
	09.91 - 10.94	8	3.0	30 8S 1 <M 60 B 30>	58014	
E 38	06.94 - 12.96	8	3.0	30 8S 1 <M 60 B 30>		60038

735i

E 65	11.01 - 03.05	8	3.6	N62 B36A <NGV8>		60038
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735i, 735iL

E 32	09.86 - 12.92	6	3.4	34 6E C/K B <M 30 B 35>		574.035
E 38	09.94 - 10.01	8	3.5	35 8S 1/2 <M 62 B 35>		60038

735Li

E 66	03.02 - 03.05	8	3.6	N62 B36A <NGV8>		60038
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740i, 740iL

E 32	09.91 - 10.94	8	4.0	40 8S 1 <M 60 B 40>	58014	
E 38	06.94 - 06.96	8	4.0	40 8S 1 <M 60 B 40>		60038
	01.96 - 08.01	8	4.4	44 8S 1/2 <M 62 B 44>		60038

745Li

E 66	03.02 - 03.05	8	4.4	N62 B44A <NGV8>		60038
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750i, 750iL

E 32	09.87 - 10.94	12	5.0	50 12 A <M 70 B 50>		574.035
E 38	06.94 - 06.01	12	5.4	54 12 1/2 <M 73 B 54>		60038

760Li

E 66	12.02 - 10.08	12	6.0	N73 B60... <NGV12>		60038
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840Ci

E 31	09.94 - 12.99	8	4.4	44 8S 1 <M 62 B 44>		575.035
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840CSi

E 31	08.92 - 10.96	12	5.6	56 12 1 <M 70 B 56>		575.035
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840i

E 31	04.93 - 03.96	8	4.0	40 8S 1 <M 60 B 40>		575.035
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850i, 850Ci

E 31	07.89 - 12.94	12	5.0	50 12 A <M 70 B 50>		575.035
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CHRYSLER

Neon

PL	06.94 - 12.05	4	2.0	ECB	56217	
	09.97 - 12.00	4	1.8	EBD	56217	

PT Cruiser

PT	06.00 - 12.04	4	2.0	ECC	55457	560.035
	06.00 - 08.08	4	2.4	EDZ	55457	560.035

Viper

	06.97→	10	8.0	EWB		574.135
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Voyager

GS	03.97 - 12.99	6	3.3	EGA,EGM		574.135
RS	02.01→	6	3.3	EGA	56640	

**300C**

LX	09.04→	8	6.1	ESF		60038
LE	10.04→	6	3.5	EGG <G>	58014	
		8	5.7	EZB <H>	58014	
	01.05→	8	6.1	ESF	58014	
	10.05→	6	3.0	EXL		60038

CITROEN**Berlingo**

M49	07.96 - 11.02	4	1.4	KFX <TU3JP>	56219	
M59	11.02→	4	1.4	KFW <TU3JP>	56219	
	09.05→	4	1.6	9HW <DV6B>		574.035

BX

X56	03.86 - 12.94	4	1.9	DFZ Kat. <XU9J1/Z>	55066	
	03.88 - 03.93	4	1.9	DFW Kat. <XU9J4/Z>	56219	

CX

	07.83 - 12.92	4	2.5	M25-659 <EN5L>		574.035
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C3

A8	01.02 - 08.05	4	1.4	KFV <TU3JP>	55066	
			1.6	NFU <TU5JP4>	55066	
A42	05.03→	4	1.6	NFU <TU5JP4>	55066	
A31	09.05→	4	1.6	NFU <TU5JP4>	55066	
				9HX <DV6ATED4>	56219	

C4

B5	11.04→	4	1.6	9HY/ 9HZ <DV6TED4>	56219	
			2.0	RFJ <EW10A>	56219	
				RFK <EW10J4S>	56219	
				RHR <DW10BTED4>	56219	
B58	10.06→	4	2.0	RHR <DW10BTED4>		574.035
	02.07→	4	1.6	9HZ <DV6TED4>		574.035
			2.0	RFJ <EW10A>		574.035

C5

X4	03.01 - 09.04	4	2.0	RFN <EW10J4>	56219	
				RHZ <DW10ATED>		574.035
		6	3.0	XFX <ES9J4S>		574.035
X3	10.04 - 09.05	4	2.2	4HX <DW12TED4>		574.035
	10.04 - 04.07	6	3.0	XFU <ES9A>		574.035
	10.04 - 03.08	4	2.0	RFJ <EW10A>	56219	
				RHR/ RHL <DW10BTED4>		574.035
	03.06 - 03.08	4	2.2	4H ... <DW12BTED4>		574.035

C6

X6	11.05→	6	3.0	XFV <ES9A>		575.035
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Dispatch

G9	02.07→	4	2.0	RHK <DW10UTED4>		574.035
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Xantia

X1	03.93 - 01.98	4	2.0	RFX Kat. <XU10J2C/Z, L3>	56219	
	12.94 - 01.98	4	2.0	RFV <XU10J4R>	56219	
	05.95 - 01.98	4	2.0	RGX <XU10J2CTE>	56219	
X2	12.97 - 12.01	4	1.9	DHX <XUD9BTF/L3>	56219	
			2.0	RFV <XU10J4R>	56219	



◀ CITROEN

X2	12.97 - 12.01	4	2.0	RFX <XU10J2C/L3>	56219		
				RGX <XU10J2TE>	56219		

Xantia Break

X1	09.95 - 01.98	4	2.0	RFX Kat. <XU10J2C/Z, L3>	56219		
X2	01.98 - 12.01	6	3.0	XFZ <ES9J4>			574.035

XM

Y3	05.89 - 06.93	6	3.0	SFZ,S6A <ZPJ>			574.035
	06.93 - 06.94	6	3.0	UFZ <ZPJ>			574.035
Y4	07.94 - 12.97	6	3.0	UFZ <ZPJ>			574.035
	09.97 - 10.00	6	3.0	XFZ <ES9J4>			574.035

Xsara

N6	07.97 - 08.00	4	1.6	NFZ <TU5JP>	55066		
			1.8	LFY <XU7JP4>	56219		
				LFZ <XU7JP>	55066		
			2.0	RFS <XU10J4RS>	55066		
				RFV <XU10J4R>	56219		
N7	09.00 →	4	1.6	NFU <TU5JP4>	55066		
			2.0	RFN <EW10J4>	56219		
				RFS <XU10J4RS>	56219		

DAEWOO

Cielo	08.94 - 08.97	4	1.5	A15MF <DOHC>	56219		
				G15MF <SOHC>	56219		

Espero

KLEJ	09.93 - 10.94	4	2.0	C20LE	56219		
	03.97 - 10.99	4	2.0	C20LE	56219		

Korando

KJ	07.96 - 12.00	6	3.2	M162 E32 <MB-M 104.>	75D31R	105D31R	125D31R
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Lacetti

KLAN	03.04 - 01.05	4	1.8	T18SED	56219		
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Lanos

KLAT	11.96 - 09.03	4	1.5	A15SMS <E-TEC>	56219		
	04.97 - 09.03	4	1.6	A16DMS	56219		
				A16DMS <E-TEC>	56219		
	04.00 - 05.03	4	1.5	A 15 SMS <SOHC Family I>	55458		

Leganza

KLAV, V100	03.97 - 12.02	4	2.0	X20SED	56217		
	09.98 - 12.02	4	2.2	T22SED	56217		

Musso

MJ	07.93 - 12.00	5	2.9	OM 662 D29 <OM 602.910>	75D31R	105D31R	125D31R
	01.96 - 12.00	6	3.2	M162 E32 <MB-M 104.992>	75D31R	105D31R	125D31R
	05.96 - 12.00	4	2.3	M161 E23 <MB-M 111.970>	75D31R	105D31R	125D31R
	05.97 - 12.00	5	2.9	OM662 D29 <MB-OM 602.>	75D31R	105D31R	125D31R



DAIHATSU

Charade

L251	03.03 - 12.07	3	1.0	EJ	40B19L
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Hijet

S75	01.84 - 04.86	3	1.0	CB	40B19R
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Mira

L201	01.90 - 12.92	3	0.9	ED10	40B19RS
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L200	01.92 - 12.95	3	0.7	EFEL	40B19RS
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Centro	01.95 - 01.05	3	0.7	EFEL	40B19LS
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Move

L601	01.97 - 09.98	3	0.9	ED20	40B19LS
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	06.97 - 12.00	3	0.9	ED20	40B19LS
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Pyzar

G303G	08.96 - 07.02	4	1.5	HEEG	40B19LS
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	08.98 - 12.00	4	1.6	HD	40B19LS
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Sirion

M301	10.04→	4	1.3	K3VE	40B19L
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Terios

J102	05.00 - 12.05	4	1.3	K3VE	40B19LS
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YRV

M201G	08.00 - 04.05	4	1.3	K3VE	40B19LS
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DODGE

Avenger

JS	01.07→	4	2.0	ECD	55066
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				ECN	55066
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FERRARI

F50

	07.95→	12	4.7		574.035
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Mondial

	10.89 - 02.94	8	3.4	F 119 D	574.035
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348

	02.90 - 04.94	8	3.4	F 119 F 000	574.035
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355

	05.94 - 10.95	8	3.5	F129B/40	574.035
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	10.95→	8	3.5	F129C/40	574.035
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360

	03.99 - 12.04	8	3.5	F131	575.035
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	06.00→	8	3.5	F131B	575.035
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◀ FERRARI

456	03.96 - 12.04	12	5.5	F 116 V12				574.035
456GT	01.93 - 03.96	12	5.5	F 116 B 00				574.035
512	01.92 - 10.94	12	5.0	F 113 D 00/40				574.135
512M	10.94→	12	5.0	F 110 HB				574.135
550	10.96→	12	5.5	F 133				574.035
575	02.02→	12	5.7	F 133 48V	55D26R	90D26R		110D26R
599GTB	01.06→	12	6.0	6.0 48V		60038		
612	03.04→	12	6.0		55D26R	90D26R		110D26R

FIAT

Ducato								
243..	04.02 - 08.06	4	2.3	F1AE0481C <M10>				60038
244..	04.02 - 08.06	4	2.8	8140.43S <M15>				60038
				8140.43S <M20>				60038
245..	04.02 - 08.06	4	2.3	F1AE0481C <M10>				60038
Punto								
199..	10.05→	4	1.3	199 A 3.000 <M72>	56219			
			1.9	939 A 1.000 <M88>	56219			
	01.06→	4	1.9	199 A 5.000 <M89>	56219			
Ritmo								
198	03.07→	4	1.9	192 A 8.000 <M88>	56219			
	04.07→	4	1.9	937 A 5.000 <M92>	56219			
	07.07→	4	1.4	198 A 1.000 <M21>	55066			
Scudo								
272..	01.07→	4	2.0	RHK <M5>				574.035
500								
150..	07.07→	4	1.3	169 A 1.000 <M73>	55066			

FORD

Capri Convertible								
SA	10.89 - 09.90	4	1.6	F	40B19LS			
SA II	10.90 - 03.92	4	1.6	D	40B19LS			
				T	40B19LS			
SC	04.92 - 07.93	4	1.6	D	55D23L	80D23L		90D23L
	07.92 - 07.93	4	1.6	T	55D23L	80D23L		90D23L
SE	08.93 - 07.94	4	1.6	D	40B19LS			
				T	55D23L	80D23L		90D23L



Corsair								
UA	09.88 - 08.92	4	2.0	CA20E	22F-530DF	22F-610FD		
			2.4	KA24E	22F-530DF	22F-610FD		
Cougar								
	08.98 - 12.00	6	2.5	LCBC <MP25 Duratec-VE SEFI>	55457	560.035		
Courier								
	01.79→	4	1.8	VC	22F-530DF	22F-610FD		
	09.88 - 08.93	4	2.2	F2	22F-530DF	22F-610FD		
	11.89 - 02.95	4	2.0	FE	22F-530DF	22F-610FD		
	01.90 - 04.95	4	2.2	R2	75D31L	105D31L	125D31L	
PC								
	09.90 - 02.96	4	2.6	G6	22F-530DF	22F-610FD		
	03.96 - 05.99	4	2.6	G6	55D23L	80D23L	90D23L	
PD								
	03.96 - 11.99	4	2.6	G6	55D23L	80D23L	90D23L	
	05.96 - 01.99	4	2.6	G6	55D26L	90D26L	110D26L	
PE								
	02.99 - 10.02	4	2.6	G6	55D23R	80D23R	90D23R	
	08.02→	4	2.5		75D31L	105D31L	125D31L	
				WL	75D31L	105D31L	125D31L	
PG								
	11.02 - 08.04	4	2.5	WLAT	75D31L	105D31L	125D31L	
			2.6	G6	55D23R	80D23R	90D23R	
PH								
	09.04 - 01.06	4	2.6	G6	55D23R	80D23R	90D23R	
	09.04→	4	2.5	WLAT	75D31L	105D31L	125D31L	
Econovan								
	07.81 - 12.97	4	2.2	S2	75D31R	105D31R	125D31R	
	01.84 - 02.97	4	1.8	F8	40B19LS			
	02.86 - 12.99	4	2.0	RF <Mazda>	75D31R	105D31R	125D31R	
JG								
	02.97 - 09.99	4	2.0	FE	40B19LS			
JH								
	10.99 - 11.05	4	2.0	FE	40B19LS			
	11.02 - 11.05	4	1.8	F8	40B19LS			
Escape								
ZA	09.00 - 08.05	6	3.0	Duratec	55D23R	80D23R	90D23R	
			3.0	Duratec	55D26L	90D26L	110D26L	
BA	12.00 - 08.08	6	3.0	Duratec <1>	55D26L	90D26L	110D26L	
			4	2.3	L3 <L3 MZR>	55D23R	80D23R	90D23R
ZB	01.06 - 08.08	6	3.0	Duratec	55D23R	80D23R	90D23R	
Explorer								
UN/UP/UQ/US	09.95 - 08.01	8	5.0				575.035	
			6	4.0			575.035	
UT/UX/UZ	09.01 - 01.08	6	4.0				575.035	
Fairlane								
NA	06.88 - 09.89	6	3.9	P	22F-530DF	22F-610FD		
NA II	10.89 - 06.91	6	3.9	P	22F-530DF	22F-610FD		
NC	07.91 - 02.92	6	3.9	P	AU22-530DF			
		8	5.0	Z	AU22-530DF			
NC II	03.92 - 02.95	6	4.0	H	AU22-530DF			
		8	5.0	Z	AU22-530DF			
NF	03.95 - 09.95	6	4.0	H	AU22R-530			
		8	5.0	Z	AU22R-530			
NF II	10.95 - 08.96	6	4.0	H	AU22R-530			
		8	5.0	Z	AU22R-530			
NL	09.96 - 02.99	6	4.0	H	AU22R-530			
					X	AU22R-530		
			8	5.0	Z	AU22R-530		
AU	02.99 - 06.00	6	4.0	Y	AU22R-530			
		8	5.0	Z	AU22R-530			
AU II	07.00 - 02.03	6	4.0	Y	AU22R-530			



◀ FORD

AU II	07.00 - 02.03	8	5.0	Z	AU22R-530
BA	07.03 - 02.05	6	4.0	H <Barra 182>	AU22R-530
		8	5.4	Z <Barra 220>	AU22R-530
BA II	03.05 - 09.05	6	4.0	H <Barra 182>	AU22R-530
		8	5.4	Z <Barra 220>	AU22R-530
BF	10.05 - 12.07	6	4.0	H <Barra 190>	AU22R-530
		8	5.4	Z <Barra 230>	AU22R-530

Falcon / Fairmont (inc G & XR Series)

EA	03.88 - 12.88	6	3.2	A <CFI>	22F-530DF	22F-610FD
		6	3.9	D <CFI>	22F-530DF	22F-610FD
				P <MPFI>	22F-530DF	22F-610FD
EA II	10.89 - 06.91	6	3.9	D <CFI>	22F-530DF	22F-610FD
				P <MPFI>	22F-530DF	22F-610FD
EB	07.91 - 02.92	6	3.9	D <CFI>	AU22-530DF	
				P <MPFI>	AU22-530DF	
		8	5.0	Z	AU22-530DF	
EB II	03.92 - 07.93	6	4.0	H	AU22-530DF	
		8	5.0	Z	AU22-530DF	
	10.92 - 04.93	8	5.0	J	AU22-530DF	
	10.92 - 07.93	6	4.0	X	AU22-530DF	
ED	08.93 - 07.94	6	4.0	X	AU22-530DF	
		6	4.0	H	AU22-530DF	
		8	5.0	T	AU22-530DF	
EF	09.94 - 09.95			Z	AU22-530DF	
		6	4.0	H	AU22R-530	
				X	AU22R-530	
EF II	10.95 - 08.96	8	5.0	Z	AU22R-530	
		6	4.0	H	AU22R-530	
				X	AU22R-530	
EL	09.96 - 08.98	8	5.0	Z	AU22R-530	
		6	4.0	H	AU22R-530	
				X	AU22R-530	
AU	09.98 - 02.00	8	5.0	Z	AU22R-530	
		6	4.0	X	AU22R-530	
		6	4.0	H	AU22R-530	
AU II	09.98 - 03.00			Y	AU22R-530	
		8	5.0	Z	AU22R-530	
		6	4.0	X	AU22R-530	
AU III	04.00 - 03.01	6	4.0	H	AU22R-530	
		6	4.0	H	AU22R-530	
				Y	AU22R-530	
		8	5.0	Z	AU22R-530	
BA	04.00 - 09.01	6	4.0	S	AU22R-530	
		6	4.0	H	AU22R-530	
				Y	AU22R-530	
		8	5.0	Z	AU22R-530	
BA II	07.00 - 03.01	6	4.0	H	AU22R-530	
				S	AU22R-530	
				X	AU22R-530	
		8	5.0	Z	AU22R-530	
BA III	10.01 - 09.02	6	4.0	Y	AU22R-530	
		6	4.0	H	AU22R-530	
				S	AU22R-530	
				X	AU22R-530	
BA	10.02 - 09.04	8	5.4	Z	AU22R-530	
		6	4.0	H <Barra 182>	AU22R-530	
				S <GAS>	AU22R-530	
				Y <Barra 240T>	AU22R-530	
BA II	10.04 - 09.05	8	5.4	Z <Barra 220>	AU22R-530	
				Z <Boss 260>	AU22R-530	
		6	4.0	H <Barra 182>	AU22R-530	
				S <GAS>	AU22R-530	
BA II	03.05 - 09.05			Y <Barra 240T>	AU22R-530	
		8	5.4	Z <Barra 220>	AU22R-530	
		8	5.4	Z <Boss 260>	AU22R-530	
		8	5.4	Z <Boss 260>	AU22R-530	
BF	10.05 - 09.06	6	4.0	H <Barra 190>	AU22R-530	
				S <Egas>	AU22R-530	
				Y <Barra 245T>	AU22R-530	
		8	5.4	Z <Barra 230>	AU22R-530	



BF	10.05 - 09.06	8	5.4	Z <Boss 260>	AU22R-530	
BF II	10.06 - 05.08	6	4.0	H <Barra 190>	AU22R-530	
				S <Egas>	AU22R-530	
				Y <Barra 245T>	AU22R-530	
		8	5.4	Z <Barra 230>	AU22R-530	
				Z <Boss 260>	AU22R-530	

Falcon Utility / Van (inc XR Series)

XF	09.84 - 10.86	6	3.3	V	22F-530DF	22F-610FD
	09.84 - 02.93	6	4.1	N	22F-530DF	22F-610FD
XG	03.93 - 03.96	6	4.0	H	AU22-530DF	
					22F-530DF	22F-610FD
				X	AU22-530DF	
XH	04.96 - 11.99	6	4.0	H	22F-530DF	22F-610FD
AU	06.99 - 03.00	6	4.0	H <Intech>	AU22R-530	
		8	4.9	Z	22F-530DF	22F-610FD
AU II	04.00 - 09.01	6	4.0	H <Intech>	22F-530DF	22F-610FD
				S <GAS>	22F-530DF	22F-610FD
				X <Intech>	22F-530DF	22F-610FD
		8	5.0	Z <Intech>	22F-530DF	22F-610FD
AU III	10.01 - 09.02	6	4.0	H <Intech>	22F-530DF	22F-610FD
				S <GAS>	22F-530DF	22F-610FD
		8	5.0	Z <Intech>	22F-530DF	22F-610FD
BA	10.02 - 09.04	6	4.0	H <Barra 182>	22F-530DF	22F-610FD
				S <GAS>	22F-530DF	22F-610FD
				Y <Barra 240T>	22F-530DF	22F-610FD
		8	5.4	Z <Barra 220>	22F-530DF	22F-610FD
				Z <Boss 260>	22F-530DF	22F-610FD
BA II	10.04 - 09.05	6	4.0	H <Barra 182>	22F-530DF	22F-610FD
				S <GAS>	22F-530DF	22F-610FD
		8	5.4	Z <Barra 220>	22F-530DF	22F-610FD
	03.05 - 09.05	6	4.0	Y <Barra 240T>	22F-530DF	22F-610FD
				8	5.4	Z <Boss 260>
BF	10.05 - 09.06	6	4.0	H <Barra 190>	22F-530DF	22F-610FD
				S <GAS>	22F-530DF	22F-610FD
				Y <Barra 245T>	22F-530DF	22F-610FD
		8	5.4	Z <Barra 220>	22F-530DF	22F-610FD
				Z <Boss 260>	22F-530DF	22F-610FD
BF II	10.06 - 05.08	6	4.0	H <Barra 190>	22F-530DF	22F-610FD
				S <GAS>	22F-530DF	22F-610FD
				Y <Barra 245T>	22F-530DF	22F-610FD
		8	5.4	Z <Barra 220>	22F-530DF	22F-610FD
				Z <Boss 260>	22F-530DF	22F-610FD

Festiva

WA	06.91 - 03.94	4	1.3	U	40B19LS		
WB	04.94 - 12.96	4	1.3	U	22F-530DF	22F-610FD	
WBII	02.97 - 12.97	4	1.3	U	55D23L	80D23L	90D23L
			1.5	E	55D23L	80D23L	90D23L
WF	01.98 - 12.00	4	1.3	U	55D23L	80D23L	90D23L
			1.5	E	55D23L	80D23L	90D23L

Fiesta

02/05	11.01 - 09.08	4	1.6	FYJ... <Duratec 16V SFI>	55457	560.035
	11.04 - 09.08	4	2.0	N4JB <Duratec 16V SFI>	55457	560.035

Focus

LR	08.98 - 05.05	4	1.8	EYDC <ZH18,Zetec-E,SFI>	55457	560.035
			2.0	EDDC <ZH20,Zetec-E,SFI>	55457	560.035
	02.02 - 05.05	4	2.0	ALDA <Duratec-ST>	55457	560.035
LS	06.04->	4	2.0	Duratec HE <DOHC 16v>	55457	560.035
	07.04->	4	2.0	AOD... <Duratec-HE>	55457	560.035



◀ FORD

LS	10.05 - 01.08	5	2.5	HYDA <Duratec-ST>	55457	560.035
	12.07 →	5	2.5	<Duratec-ST>	56318	
FPV Force 6						
BF II	10.06 - 05.08	6	4.0	Y <F6 270>	AU22R-530	
FPV Force 8						
BF II	10.06 - 05.08	8	5.4	Z	AU22R-530	
FPV F6 Tornado						
BA II	01.05 - 09.05	6	4.0	Y <F6 270>	AU22R-530	
BF	10.05 - 09.06	6	4.0	Y <F6 270>	AU22R-530	
BF II	10.06 - 05.08	6	4.0	Y <F6 270>	AU22R-530	
FPV F6 Typhoon						
BA II	10.04 - 09.05	6	4.0	Y <F6 270>	AU22R-530	
BF	10.05 - 09.06	6	4.0	Y <F6 270>	AU22R-530	
BF II	10.06 - 05.08	6	4.0	Y <F6 270>	AU22R-530	
FPV F6X						
SY	02.08 →	6	4.0	T <F6 270>	AU22R-530	
FPV GT						
BA	02.03 - 09.04	8	5.4	Z <Boss 290>	AU22R-530	
BA II	10.04 - 09.05	8	5.4	Z <Boss 290>	AU22R-530	
BF	10.05 - 09.06	8	5.4	Z <Boss 290>	AU22R-530	
BF II	10.06 - 05.08	8	5.4	Z <Boss 302>	AU22R-530	
FPV GT-P						
BA	02.03 - 09.04	8	5.4	Z <Boss 290>	AU22R-530	
BA II	10.04 - 09.05	8	5.4	Z <Boss 290>	AU22R-530	
BF	10.05 - 09.06	8	5.4	Z <Boss 290>	AU22R-530	
BF II	10.06 - 05.08	8	5.4	Z <Boss 302>	AU22R-530	
FPV Pursuit						
BA	02.03 - 09.04	8	5.4	Z <Boss 290>	AU22R-530	
BA II	10.04 - 09.05	8	5.4	Z <Boss 290>	AU22R-530	
BF	10.05 - 09.06	8	5.4	Z <Boss 290>	AU22R-530	
BF II	10.06 - 05.08	8	5.4	Z <Boss 302>	AU22R-530	
FPV Super Pursuit						
BA II	06.05 - 09.05	8	5.4	Z <Boss 290>	AU22R-530	
BF	10.05 - 09.06	8	5.4	Z <Boss 290>	AU22R-530	
BF II	10.06 - 05.08	8	5.4	Z <Boss 302>	AU22R-530	
F150						
	09.87 - 04.90	8	5.0		22F-530DF	22F-610FD
	09.91 - 12.93	8	5.8		22F-530DF	22F-610FD
F250						
	03.99 - 03.06	6	4.2	6.07 TCA	22F-530DF	22F-610FD
	01.01 - 09.07	8	5.4	<5,4L SOHC V8>	22F-530DF	22F-610FD
F350						
	09.98 - 08.04	8	5.4		22F-530DF	22F-610FD
Ka						
TA/TB	09.96 - 10.02	4	1.3	J4D <HCS,Endura-E SEFI>	54316	
				J4M <HCS,Endura-E SEFI>	54316	



Landau

P6	08.73 - 09.76	8	5.8	351 cu.in	22F-530DF	22F-610FD
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Laser

KE II	02.90 - 09.94	4	1.6	B	40B19LS						
KF	03.90 - 09.91	4	1.6	B	40B19LS						
				1.8	C	55D23L	80D23L	90D23L			
					N	55D23L	80D23L	90D23L			
				06.90 - 09.91	4	1.8	H	55D23L	80D23L	90D23L	
KH	10.91 - 09.92	4	1.6	B	40B19LS						
				1.8	C	55D23L	80D23L	90D23L			
					H	55D23L	80D23L	90D23L			
					N	55D23L	80D23L	90D23L			
KH II	10.92 - 07.93	4	1.8	H	55D23L	80D23L	90D23L				
				10.92 - 09.94	4	1.6	B	55D23L	80D23L	90D23L	
							1.8	C	55D23L	80D23L	90D23L
								N	55D23L	80D23L	90D23L
KJ	10.94 - 11.96	4	1.6	B	55D23L	80D23L	90D23L				
				1.8	N	55D23L	80D23L	90D23L			
					1.6	B	55D23L	80D23L	90D23L		
KJ II	12.96 - 12.97	4	1.6	B	55D23L	80D23L	90D23L				
				1.8	N	55D23L	80D23L	90D23L			
KJ III	12.97 - 03.99	4	1.6	B	55D23L	80D23L	90D23L				
				1.8	N	55D23L	80D23L	90D23L			
KN	03.99 - 02.01	4	1.6	ZM	55D23L	80D23L	90D23L				
				1.8	FP	55D23L	80D23L	90D23L			
KQ	03.01 - 12.03	4	1.6	ZM	55D23L	80D23L	90D23L				
				1.8	FP	55D23L	80D23L	90D23L			
					2.0	FS	55D23L	80D23L	90D23L		

LTD

DA II	10.89 - 06.91	6	3.9	P	22F-530DF	22F-610FD		
DC	07.91 - 02.92	6	3.9	P	AU22-530DF			
				8	5.0	Z	AU22-530DF	
				03.92 - 02.95	6	4.0	H	AU22-530DF
DC II	03.92 - 02.95	8	5.0	Z	AU22-530DF			
DF	03.95 - 09.95	6	4.0	H	AU22R-530			
				8	5.0	Z	AU22R-530	
DF II	10.95 - 08.96	6	4.0	H	AU22R-530			
				8	5.0	Z	AU22R-530	
DL	09.96 - 05.99	6	4.0	H	AU22R-530			
				8	5.0	Z	AU22R-530	
AU	05.99 - 05.00	8	5.0	Z	AU22R-530			
				10.99 - 09.00	6	4.0	Y	AU22R-530
AU II	06.00 - 06.03	6	4.0	Y	AU22R-530			
				8	5.0	Z	AU22R-530	
BA	07.03 - 09.04	8	5.4	Z	AU22R-530			
BA II	03.05 - 09.05	8	5.4	Z <Barra 220>	AU22R-530			
BF	10.05 - 12.07	8	5.4	Z <Barra 230>	AU22R-530			

Maverick

	04.88 - 12.94	6	4.2	TB42	22F-530DF	22F-610FD
				TDB42	75D31L	105D31L
						125D31L

Mondeo

HA/HB	03.95 - 07.96	4	2.0	NGA <ZH20,ZETEC>	55457	560.035		
HC/HD/HE	08.96 - 09.00	4	2.0	NGD <ZH20, ZETEC-E>	55457	560.035		
				6	2.5	SEA <MP25, DURATEC-VE>	55457	560.035
				08.98 - 09.00	4	2.0	NGB <ZH20, ZETEC-E>	55457
MA	02.07 ->	4	2.0	N7BB <DURAORQ TDCi>		575.035		
				5	2.5	HU... <DURATEC-ST>	55457	560.035



◀ FORD

Mustang								
	09.96 - 08.02	8	4.6			22F-530DF	22F-610FD	
Probe								
	04.94 - 07.97	6	2.5	KL		55457	560.035	
Ranger								
	03.06→	4	2.5	WLC <DuraTORQ TDCi>		75D31R	105D31R	125D31R
			3.0	WEC <DuraTORQ TDCi>		75D31R	105D31R	125D31R
Sierra								
	02.84 - 10.95	4	2.3	YYT		40B19LS		
Spectron								
	01.88 - 12.98	4	2.0	RF		75D31R	105D31R	125D31R
Taurus								
	09.95 - 08.99	6	3.0	Duratec 30				575.035
Telstar								
AV	01.90 - 10.91	4	2.2	T		40B19LS		
AX	01.92 - 08.94	4	2.0	N		40B19LS		
		6	2.5	U		55D23L	80D23L	90D23L
AY	09.94 - 11.96	4	2.0	N		40B19LS		
		6	2.5	U		55D23L	80D23L	90D23L
Telstar Turbo								
AV	01.90 - 10.91	4	2.2	T <Turbo>		40B19LS		
Territory								
SX	05.04 - 09.05	6	4.0	H <Barra 182>		AU22R-530		
SY	10.05 - 04.09	6	4.0	H <Barra 190>		AU22R-530		
Territory Turbo 4WD								
SY	09.07 - 04.09	6	4.0	T <Barra 245T>		AU22R-530		
Territory 4WD								
SY	10.05 - 04.09	6	4.0	H <Barra 190>		AU22R-530		
TE50								
AU	10.99 - 09.00	8	5.0	Z		AU22R-530		
AU II	10.00 - 10.01	8	5.0	Z		AU22R-530		
AU III	11.01 - 12.02	8	5.6	Z		AU22R-530		
TL50								
AU	10.99 - 09.00	8	5.0	Z		AU22R-530		
AU II	10.00 - 10.01	8	5.0	Z		AU22R-530		
AU III	11.01 - 12.02	8	5.6	Z		AU22R-530		
Trader								
	10.80 - 12.95	0	4.1	ZB <T4.1>		55D26R	90D26R	110D26R
Transit								
E_	08.91 - 07.94	4	2.5	4DA <D25P>		55457		560.035
	08.94 - 07.00	4	2.0	NSF <DOHC 8V SEFI>		55457		560.035
				NSG <DOHC 8V SEFI>		55457		560.035
	08.94 - 08.00	4	2.5	4EB <D25TP>		55457		560.035
				4EC <D25TP>		55457		560.035
				4GB <D25TN>		55457		560.035



E__	08.94 - 08.00	4	2.5	4HB <D25P>	55457	560.035
F___	01.00 - 07.06	4	2.4	DOFA <PD24PP>	58014	
				D2F... <PD24P>	58014	
				D4FA <PD24>	58014	
	08.01 - 07.06	4	2.3	E5FC <DOHC 16V BI-FUEL>	55457	560.035
	03.04 - 07.06	4	2.4	FXFA <DuraTorq DI>	58014	
				H9FA <Duratorq TDCi>	58014	
				H9FA <DuraTorq TDCi>	58014	
	04.06→	4	2.2	QVFA <PD22>	58014	
	07.06→	4	2.4	H... <PD24>	58014	

TS50

AU	10.99 - 09.00	8	5.0	Z	AU22R-530
AU II	10.00 - 10.01	8	5.0	Z	AU22R-530
AU III	11.01 - 12.02	8	5.6	Z	AU22R-530

HOLDEN

Adventra

VY II	08.03 - 08.04	8	5.7	VF <LS1>	22FR-530	22FR-610	22FR-680
VZ	09.04 - 08.06	8	5.7	VF <LS1>	22FR-530	22FR-610	22FR-680
	04.05 - 08.06	6	3.6	H7	22FR-530	22FR-610	22FR-680

Apollo

JK	08.89 - 07.91	4	2.0	3SFC <L4>	40B19LS		
				3SFE <L4>	55D23L	80D23L	90D23L
JL	08.91 - 02.93	4	2.0	3SFE <DOHC 16V MPFI>	55D23L	80D23L	90D23L
				3SFE <L4>	55D23L	80D23L	90D23L
JM	04.93 - 07.95	4	2.2	5SFE <LA4>	55D23L	80D23L	90D23L
		6	3.0	3VZFE <LA6>	55D23L	80D23L	90D23L
JP	08.95 - 05.97	4	2.2	5SFE <LA4>	55D23L	80D23L	90D23L
		6	3.0	3VZFE <LA6>	55D23L	80D23L	90D23L

Astra

TR	09.96 - 09.98	4	1.6	C16SE <L55>	55457	560.035
			1.8	C18SEL <2HO>	55457	560.035
			2.0	X20XEV <L34>	55457	560.035
TS	02.99 - 11.00	4	1.8	X18XE1 <2H9>	55457	560.035
	09.00 - 08.05	4	2.2	Z22SE		575.035
	12.00 - 09.04	4	1.8	Z18XE	54316	
	09.02 - 08.05	4	2.0	Z20LET <Turbo Ecotec>	55457	560.035
AH	09.03→	4	2.2	Z22YH <Ecotec>	55457	560.035
	03.04→	4	1.8	Z18XE		575.035
	03.05→	4	2.0	Z20LER <Turbo Ecotec>	55457	560.035
	06.06→	4	1.9	Z19DTH <Turbo Ecotec>	55457	560.035

Astra Convertible

TS	09.00 - 08.05	4	2.2	Z22SE	55457	560.035
	05.03 - 12.04	4	2.0	Z20LET <Turbo Ecotec>	55457	560.035

Astra Coupe

TS	09.00 - 08.05	4	2.2	Z22SE	55457	560.035
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Barina

MF	01.89 - 08.91	4	1.3	G13B <LN5>	40B19RS	
MH	09.91 - 04.94	4	1.3	G13B <LN5>	40B19RS	
SB	04.94 - 11.95	4	1.6	C16XE <L91>	55457	560.035
	04.94 - 07.97	4	1.2	C12NZ <L71>	55457	560.035
			1.4	C14NZ <LH6>	55457	560.035
	12.95 - 09.98	4	1.6	X16XE <L91>	55457	560.035



◀ HOLDEN

SB	08.97 - 03.01	4	1.4	C14SE <L48>	55457		560.035
XC	04.01 - 10.05	4	1.4	Z14XE	55457		560.035
	09.01 - 10.05	4	1.8	Z18XE <GSI /Ecotec>	55457		560.035
	09.03 - 10.05	4	1.4	Z14XEP <Twinport ECO>			575.035
	11.05→	4	1.6	F16D3	55457		560.035

Calibra

YE	09.91 - 07.95	4	2.0	C20NE <ML4>	55457		560.035
				C20XE <MT5>	55457		560.035
	09.91 - 10.97	4	2.0	C20LET <M23>	55457		560.035
	08.95 - 10.97	4	2.0	X20XEV <MG4 F18>	55457		560.035
		6	2.5	C25XE, X25XE <MG4 F18>	55457		560.035

Caprice

VQ	03.90 - 10.91	8	5.0	VU	22FR-530	22FR-610	22FR-680
VQ II	12.91 - 02.94	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VR	03.94 - 08.94	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VR II	09.94 - 04.95	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS	03.95 - 08.96	8	5.0	VU	22FR-530	22FR-610	22FR-680
	04.95 - 08.96	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
VS II	09.96 - 04.98	6	3.8	VS S/C <L67>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
	09.96 - 05.98	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
VS III	05.98 - 06.99	6	3.8	VS S/C <L67>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
WH	06.98 - 05.99	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		6	3.8	VS S/C <L67>	22F-530	22F-610	22F-680
WH II	06.99 - 07.01	8	5.7	VF <LS1>	22F-530	22F-610	22F-680
		6	3.8	VH <LN3>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
WK	05.03 - 08.04	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
WL	09.04 - 12.05	8	5.7	VF <LS1>	22F-530	22F-610	22F-680
	09.04 - 08.06	6	3.6	H7 <Premium>	22F-530	22F-610	22F-680
	01.06 - 08.06	8	6.0	6M	22F-530	22F-610	22F-680
WM	09.06→	6	3.6	H7 <Premium>	55457		560.035
		8	6.0	L98 <LS2>	55457		560.035

Captiva

	05.06→	6	3.2	Z32SE <Ecotec>	56640		
CG	03.07→	4	2.0	Z20S1 <Ecotec>	56640		

Combo

SB	02.96 - 06.97	4	1.4	C14NZ <2H6>	55457		560.035
	08.97 - 12.02	4	1.4	C14SE <L48>	55457		560.035
XC	10.01→	4	1.6	Z16SE	55457		560.035
	09.04→	4	1.4	Z14XEP	54316		

Commodore / Calais

VN	08.88 - 09.91	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VN II	03.90 - 09.91	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VP	10.91 - 12.92	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VP II	01.93 - 06.93	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
	02.93 - 06.93	8	5.0	VU	22FR-530	22FR-610	22FR-680



VR	07.93 - 08.94	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VR II	09.94 - 03.95	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS	04.95 - 05.96	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS II	06.96 - 07.97	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
				VS S/C <L67>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VT	09.97 - 05.99	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.0	VM High Performance <LB9>	22F-530	22F-610	22F-680
VT II	06.99 - 08.00	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VX	10.00 - 07.01	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VX II	08.01 - 09.02	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VY	10.02 - 07.03	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VY II	08.03 - 08.04	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VZ	09.04 - 08.06	6	3.6	H7 <Premium>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
	09.04 - 04.08	6	3.6	HB <Decontent>	22F-530	22F-610	22F-680
	01.06 - 08.06	8	6.0	L76	22F-530	22F-610	22F-680
VE	09.06→	6	3.6	HNG	56219		
				H7	56219		
				H7 <Premium>	56219		
		8	6.0	L98 <LS2>	56219		

Commodore Utility

VG	08.90 - 08.91	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VP	09.91 - 06.93	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VR	07.93 - 03.95	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS	04.95 - 05.96	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS II	06.96 - 07.97	8	5.0	VU	22FR-530	22FR-610	22FR-680
VS III	05.98 - 12.00	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
VU	12.00 - 07.01	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VU II	08.01 - 09.02	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VY	10.02 - 07.03	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VY II	08.03 - 08.04	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VZ	09.04 - 08.07	6	3.6	HB <HFV6>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
	01.06 - 08.07	8	6.0	6M	22F-530	22F-610	22F-680
	05.07 - 08.07	6	3.6	H7 <Premium>	22FR-530	22FR-610	22FR-680
VE	10.07→	6	3.6	HB <HFV6>	22FR-530	22FR-610	22FR-680





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VE	10.07→	6	3.6	H7 <Premium>	22FR-530	22FR-610	22FR-680
		8	6.0	6M	22FR-530	22FR-610	22FR-680

Crewman

VY II	08.03 - 08.04	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VZ	09.04 - 08.06	6	3.6	HB <HFV6>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680

Cruze

	12.03 - 06.06	4	1.5	M15A	40B19LS		
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Epica

EP	10.07→	6	2.0	X20D1	22FR-530	22FR-610	22FR-680
			2.5	X25D1	22FR-530	22FR-610	22FR-680

Frontera

UT	01.95 - 03.99	4	2.0	X20SE OHC <Ecotec>	55D26L	90D26L	110D26L
B	03.99 - 08.05	4	2.2	X22SE	55D26L	90D26L	110D26L
		6	3.2	6VD1	55D26L	90D26L	110D26L

Jackaroo

UBS	07.88 - 12.90	4	2.6	4ZE1	22FR-530	22FR-610	22FR-680
		4	2.8	4JB1-T	75D31R	105D31R	125D31R
		4	3.1	4JG2	55D26R	90D26R	110D26R
		6	3.2	6VD1	55D26R	90D26R	110D26R
UBS II	07.95 - 12.97	4	3.1	4JG2	55D26R	90D26R	110D26R
		6	3.2	6VD1	55D26R	90D26R	110D26R
L8	01.98 - 09.99	4	3.0	4JX1	75D31R	105D31R	125D31R
		6	3.5	6VEI	55D23R	80D23R	90D23R
U8	10.99→	4	3.0	4JX1	75D31R	105D31R	125D31R

Monaro

V2	12.01 - 12.02	6	3.8	VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22FR-530	22FR-610	22FR-680
V2 II	01.03 - 07.03	6	3.8	VS S/C <L67>	22F-530	22F-610	22F-680
		8	5.7	VF <LS1>	22F-530	22F-610	22F-680
V2 III	08.03 - 08.06	8	5.7	VF <LS1>	22F-530	22F-610	22F-680
VZ	09.04 - 08.06	8	5.7	VF <LS1>	22F-530	22F-610	22F-680

Nova

LE	07.89 - 08.91	4	1.4	6AFC <L41>		22NF-330D	
			1.6	4AFC <LC9>		22NF-330D	
LF	09.91 - 11.92	4	1.4	6AFC <L41>		22NF-330D	
			1.6	4AFC <LC9>		22NF-330D	
	10.92 - 10.94	4	1.8	7AFE <LV6>		22NF-330D	
			1.6	4AFE <L55>		22NF-330D	
LG	09.94 - 09.96	4	1.6	4AFE <L55>		22NF-330D	
			1.8	7AFE <LV6>		22NF-330D	

Rodeo

	07.88 - 12.90	4	2.6	4ZE1	22FR-530	22FR-610	22FR-680
TF	07.88 - 12.92	4	2.5	4JA1	75D31R	105D31R	125D31R
		4	2.8	4JB1	75D31R	105D31R	125D31R
		4	2.3	4ZD1		22NF-330D	
		4	2.6	4ZE1	22FR-530	22FR-610	22FR-680
		4	2.6	4ZE1	55D23L	80D23L	90D23L
R7	01.97 - 05.98	4	2.6	4ZE1	55D23L	80D23L	90D23L
TF	06.98 - 02.03	4	2.2	22NE	55D23L	80D23L	90D23L
		6	3.2	6VD1	55D23L	80D23L	90D23L
		4	3.0	4JH1	75D31R	105D31R	125D31R



RA	03.03 - 01.06	6	3.5	6VE1	55D23L	80D23L	90D23L
	03.03→	4	3.0	4JH1TC	75D31L	105D31L	125D31L
RA	03.03→	4	2.4	C24SE	55D23L	80D23L	90D23L
			3.0	4JH1TC	75D31R	105D31R	125D31R
	01.06→	6	3.6	H9 <HFV6 Euro3>	55D23L	80D23L	90D23L
	01.07→	4	3.0	4JH1	75D31R	105D31R	125D31R

Statesman

VQ	03.90 - 10.91	8	5.0	VU	22FR-530	22FR-610	22FR-680
VQ II	12.91 - 02.94	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VR	03.94 - 04.95	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS	03.95 - 08.96	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
		8	5.0	VU	22FR-530	22FR-610	22FR-680
VS II	09.96 - 04.98	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
				VS S/C <L67>	22FR-530	22FR-610	22FR-680
VS III	05.98 - 06.99	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
				VS S/C <L67>	22FR-530	22FR-610	22FR-680
WH	06.99 - 07.01	6	3.8	VH <LN3>	22FR-530	22FR-610	22FR-680
				VS S/C <L67>	22F-530	22F-610	22F-680
WH II	08.01 - 04.03	8	5.7	VF <LS1>	22F-530	22F-610	22F-680
				VH <LN3>	22F-530	22F-610	22F-680
WK	05.03 - 08.04	6	3.8	VH <LN3>	22F-530	22F-610	22F-680
				VS S/C <L67>	22F-530	22F-610	22F-680
WL	09.04 - 12.05	8	5.7	VF <LS1>	22F-530	22F-610	22F-680
				09.04 - 08.06	6	3.6	H7 <Premium>
WM	09.06→	8	6.0	6M	22F-530	22F-610	22F-680
				H7 <Premium>	22F-530	22F-610	22F-680
WM	09.06→	6	3.6	H7 <Premium>	22F-530	22F-610	22F-680
				8	6.0	L98 <LS2>	22F-530

Suburban

K8	01.98 - 08.05	8	5.7	L31	22FR-530	22FR-610	22FR-680
			6.5	L65	22FR-530	22FR-610	22FR-680

Tigra

B	09.04 - 09.07	4	1.8	Z18XE <Ecotec>	55457		560.035
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Vectra

JR	06.97 - 07.98	4	2.0	C20SEL <L34>	55457		560.035		
		6	2.5	X25XE <L80>	55457		560.035		
JS	08.98 - 06.99	4	2.0	C20SEL <L34>	55457		560.035		
			2.2	C22SEL <LA9>	22F-530	22F-610	22F-680		
JS II	07.99 - 08.00	6	2.5	X25XE <L80>	55457		560.035		
				07.99 - 09.02	4	2.0	C20SEL <L34>	55457	560.035
				09.00 - 09.02	6	2.6	Y26SE	55457	560.035
ZC	09.01→	4	2.2	Z22SE <Ecotec>	55457		560.035		
				08.02→	6	3.2	Z32SE <Ecotec>	55457	560.035

Viva

JF	10.05→	4	1.8	F18D3	22FR-530	22FR-610	22FR-680
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HONDA

Accord

CA/CB/CD	11.89 - 09.93	4	2.2	F22A5	55B24RS		
	01.93 - 01.02	4	2.2	F22B1	55D23L	80D23L	90D23L
				F22B3	22F-530DF	22F-610FD	
	10.93 - 12.97	4	2.2	F22A6	55D23L	80D23L	90D23L
	12.97 - 04.99	4	2.3	F23A1	22F-530DF	22F-610FD	
CG	12.97 - 12.02	6	3.0	J30A1	55D26R	90D26R	110D26R
	12.97→	6	3.0	J30A1	55D26R	90D26R	110D26R
	01.98 - 11.06	6	3.0	J30A4	55D26R	90D26R	110D26R
	01.99→	4	2.3	F23A1	55D23L	80D23L	90D23L
	01.00 - 10.06	4	2.4	K24A4	55D23L	80D23L	90D23L
CL/CN/CM	02.03 - 06.08	4	2.4	K24A3	55D23L	80D23L	90D23L
	04.08→	4	2.4	K24K2 <DOHC i-VTEC>	55D23L	80D23L	90D23L

Accord Aerodeck

CA/CB/CD	06.93 - 01.97	4	2.2	F22B1	55D23L	80D23L	90D23L
CB/CC/CD/CE	10.93 - 06.96	4	2.2	F22B3	55D23L	80D23L	90D23L

Civic

EC/ED/EE	11.87 - 10.91	4	1.5	D15B4	55B24RS		
EG/EH	10.91 - 09.93	4	1.3	D13B2	55B24RS		
	11.91 - 09.93	4	1.6	D16A6	40B19RS		
	11.91 - 09.95	4	1.5	D15B4	40B19RS		
	02.93 - 09.95	4	1.5	D15Z1	40B19RS		
	10.93 - 09.95	4	1.5	D15B7	40B19RS		
				D15Z2	40B19RS		
			1.6	D16Y1	40B19RS		
EJ/EK	10.95 - 09.98	4	1.6	D16A1	55B24RS		
	10.95 - 09.00	4	1.6	D16Y4	55B24RS		
	10.95 - 02.01	4	1.6	B16A2	55B24RS		
				D16Y5	55B24RS		
	05.96 - 04.99	4	1.6	D16Y8 <VTEC>	55B24RS		
	01.99 - 12.00	4	1.6	B16A2	55B24RS		
EJ	04.99 - 04.00	4	1.6	D16Y7	55B24RS		
ES	10.00 - 12.05	4	1.7	D17A2	55B24RS		
EJ/EK	10.00→	4	1.7	D17A2	55B24RS		
ES	10.00→	4	1.7	D17Z1	55D26L	90D26L	110D26L
	02.01 - 12.02	4	1.4	D14Z6	40B19RS		
	11.01 - 12.05	4	1.3	LDA1	55B24RS		
	05.03→	4	2.0	K20A3	55B24RS		
FD	01.06→	4	1.3	LDA2	55D26R	90D26R	110D26R
	04.06→	4	2.0	K20A	55B24RS		
UH	06.06→	4	1.8	R18A11 <i-VTEC>	55B24RS		

Civic Hatchback

FK/FN	04.07→	4	2.0	K20Z4	55B24RS		
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Concerto

MA	11.88 - 07.93	4	1.6	D16A6	55066		
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CR-V

RD	09.96 - 12.01	4	2.0	B20B3	55B24LS		
	05.04→	4	2.4	K24A1	55B24LS		

CRX

ED/EE	11.87 - 05.92	4	1.6	D16A8	55B24RS		
EG/EH	06.92 - 06.98	4	1.6	B16A2	40B19RS		





HR-V							
GH	12.98 - 12.01	4	1.6	D16W2	55B24LS		
	12.98 - 07.02	4	1.6	D16W1	55B24LS		
Insight							
	01.89 - 01.99	5	2.0	G20A	40B19R		
Integra							
DA	06.89 - 07.93	4	1.8	B18A1	55D26R	90D26R	110D26R
DC	08.93 - 10.99	4	1.8	B18B2	55D26R	90D26R	110D26R
				B18C2	55D26R	90D26R	110D26R
	07.01 - 07.06	4	2.0	K20A	55B24RS		
Integra Type-R							
DC	01.98 - 10.01	4	1.8	B18C6	55B24LS		
	02.02→	4	2.0	K20A	55B24LS		
Jazz							
GD	03.02 - 12.08	4	1.3	L13A1	40B19R		
	09.02 - 10.07	4	1.5	L15A	40B19L		
	06.04 - 01.08	4	1.5	L15A1	40B19L		
Legend							
	01.87 - 02.91	6	2.7	C27A1	55D26L	90D26L	110D26L
	03.91 - 04.96	6	3.2	C32A3 <MPFI>	55D26R	90D26R	110D26R
	01.96 - 04.98	6	3.5	C35A2	55B24RS		
	04.98 - 12.04	6	3.5	C35A5	55D26R	90D26R	110D26R
	10.04 - 09.08	6	3.5	J35A8	55D26R	90D26R	110D26R
MDX							
YD1	03.03 - 06.06	6	3.5	J35A	55D26L	90D26L	110D26L
NSX							
NA	06.90 - 12.96	6	3.0	C30A3	40B19R		
	06.90 - 06.00	6	3.0	C30A4	40B19R		
	09.90 - 12.05	6	3.0	C30A	40B19R		
NA	01.97 - 09.05	6	3.2	C32B2	40B19R		
NSX-T							
NA	01.95 - 01.05	6	3.0	C30A4	40B19R		
	01.97 - 09.05	6	3.2	C32B2	40B19R		
Odyssey							
RA	06.95 - 12.97	4	2.2	F22B6 <MPFI>	55D23L	80D23L	90D23L
	01.98 - 02.00	4	2.3	F23A7	55D26L	90D26L	110D26L
	03.00→	4	2.3	F23Z4	55D26R	90D26R	110D26R
		6	3.0	J30A3	55D23R	80D23R	90D23R
	10.03 - 10.08	4	2.4	K24A	55D23L	80D23L	90D23L
Prelude							
BA	04.87 - 01.92	4	2.0	B20A5	55D26R	90D26R	110D26R
	10.87 - 12.90	4	2.0	B20A7		22NF-330D	
	10.87 - 12.91	4	2.0	B20A6	55D26R	90D26R	110D26R
BB	12.91 - 12.96	4	2.2	F22A1	55D26L	90D26L	110D26L
	01.94 - 12.96	4	2.2	H22A1	55D26L	90D26L	110D26L
	03.95 - 12.96	4	2.3	H23A1	55D26L	90D26L	110D26L
	01.97 - 02.02	4	2.2	H22A4	55D26L	90D26L	110D26L
	01.97 - 07.02	4	2.2	F22A6	55D26L	90D26L	110D26L





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S2000	04.99→	4	2.0	F20C1 <S2A>	55B24LS		
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HSV (HOLDEN SPECIAL VEHICLES)

Avalanche Utility

VY II	03.04 - 09.04	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VZ	10.04 - 12.05	8	5.7	VF <Gen III,LS1>	22F-530	22F-610	22F-680

Avalanche Wagon

VY II	12.03 - 09.04	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VZ	10.04 - 12.05	8	5.7	VF <Gen III, LS1>	22F-530	22F-610	22F-680

Avalanche XUV

VZ	10.04 - 12.05	8	5.7	VF <LS1>	22F-530	22F-610	22F-680
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Clubsport

VN	08.88 - 10.91	8	5.0	VU	22FR-530	22FR-610	22FR-680
VP	11.91 - 07.93	8	5.0	VU	22FR-530	22FR-610	22FR-680
VR	06.93 - 04.95	8	5.0	VU	22FR-530	22FR-610	22FR-680
VS	05.95 - 08.97	8	5.0	VU	22FR-530	22FR-610	22FR-680
VT	09.97 - 05.99	8	5.0	VM <LB9>	22F-530	22F-610	22F-680
VT II	06.99 - 08.00	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VX	09.00 - 08.02	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VY	09.02 - 08.03	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VY II	09.03 - 09.04	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680
VZ	10.04 - 07.06	8	6.0	VF <LS2, Gen IV>	22F-530	22F-610	22F-680

Clubsport R8

VT II	06.99 - 08.00	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VX	06.00 - 08.02	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VY	09.02 - 08.03	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VY II	09.03 - 09.04	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
VZ	10.04 - 07.06	8	6.0	VF <LS2, Gen IV>	22F-530	22F-610	22F-680
VE	08.06→	8	6.0	ZL <LS2 307>	22F-530	22F-610	22F-680
	03.08→	8	6.2	ZLF <LS3 317>	22F-530	22F-610	22F-680

Coupe GTO

V2	09.00 - 01.03	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
V2 II	02.03 - 08.03	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680
V2 III	09.03 - 09.04	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680
VZ	10.04 - 12.06	8	6.0	VF <Gen IV, LS1>	22F-530	22F-610	22F-680

Coupe GTS

V2	09.00 - 01.03	8	5.7	VF <LS1, Gen III>	22F-530	22F-610	22F-680
V2 II	02.03 - 02.04	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680
V2 III	03.04 - 12.04	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680

Coupe4

V2 III	06.04 - 09.04	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680
VZ	10.04 - 12.05	8	5.7	VF <Gen III, LS1>	22F-530	22F-610	22F-680

Grange

VS	05.95 - 05.99	8	5.0	VU	22FR-530	22FR-610	22FR-680
			5.7	VF	22FR-530	22FR-610	22FR-680
WH	06.99 - 08.01	8	5.7	VF <LS1, Gen III>	22FR-530	22FR-610	22FR-680
WH II	09.01 - 08.03	8	5.7	VF <Gen III>	22FR-530	22FR-610	22FR-680
WK	09.03 - 09.04	8	5.7	VF <Gen III>	22F-530	22F-610	22F-680
WL	10.04 - 12.06	8	6.0	VF <LS1, Gen IV>	22F-530	22F-610	22F-680

WM	08.06→	8	6.0	ZL <LS2 307>		22F-530	22F-610	22F-680
	03.08→	8	6.2	ZLF <LS3 317>		22F-530	22F-610	22F-680
Group A								
VN	06.91 - 12.91	8	5.0	VU		22FR-530	22FR-610	22FR-680
Group A (Walkinshaw)								
VL	02.88 - 12.88	8	5.0	VU		22FR-530	22FR-610	22FR-680
GTS								
VP	11.91 - 07.93	8	5.0	VU		22FR-530	22FR-610	22FR-680
VR	06.93 - 04.95	8	5.7	VF		22FR-530	22FR-610	22FR-680
VS	05.95 - 08.97	8	5.7	VF		22FR-530	22FR-610	22FR-680
VT	09.97 - 05.99	8	5.7	VF		22FR-530	22FR-610	22FR-680
VT II	06.99 - 08.00	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VX	09.00 - 08.02	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VY	09.02 - 09.04	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VZ	10.04 - 07.06	8	6.0	VF <LS2, Gen IV>		22F-530	22F-610	22F-680
VE	08.06→	8	6.0	ZL <LS2 307>		22F-530	22F-610	22F-680
	03.08→	8	6.2	ZLF <LS3 317>		22F-530	22F-610	22F-680
Maloo								
VG	08.88 - 10.91	8	5.0	VU		22FR-530	22FR-610	22FR-680
VR	06.93 - 04.95	8	5.0	VU		22FR-530	22FR-610	22FR-680
VS	05.95 - 12.00	8	5.0	VU		22FR-530	22FR-610	22FR-680
VU	03.01 - 08.01	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VU II	09.01 - 09.02	8	5.7	VF <Gen III>		22FR-530	22FR-610	22FR-680
VY	10.02 - 08.03	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VY II	09.03 - 09.04	8	5.7	VF <Gen III>		22F-530	22F-610	22F-680
VZ	10.04 - 08.07	8	6.0	VF <LS1, Gen IV>		22F-530	22F-610	22F-680
VZ II	01.07 - 08.07	8	6.0	ZL <LS2 307>		22F-530	22F-610	22F-680
VE	03.08→	8	6.2	ZLF <LS3 317>		22F-530	22F-610	22F-680
Maloo R8								
VU	03.01 - 08.01	8	5.7	VF <Gen III>		22FR-530	22FR-610	22FR-680
VU II	09.01 - 09.02	8	5.7	VF <Gen III>		22FR-530	22FR-610	22FR-680
VY	10.02 - 08.03	8	5.7	VF <Gen III>		22FR-530	22FR-610	22FR-680
VY II	09.03 - 09.04	8	5.7	VF <Gen III>		22F-530	22F-610	22F-680
VZ	10.04 - 08.07	8	6.0	VF <LS1, Gen IV>		22F-530	22F-610	22F-680
Senator								
VP	11.91 - 07.93	8	5.0	VU		22FR-530	22FR-610	22FR-680
VR	06.93 - 04.95	8	5.0	VU		22FR-530	22FR-610	22FR-680
			5.7	VF		22FR-530	22FR-610	22FR-680
VS	05.95 - 08.97	8	5.0	VU		22FR-530	22FR-610	22FR-680
			5.7	VF		22FR-530	22FR-610	22FR-680
VT	09.97 - 05.99	8	5.0	VM <LB9>		22FR-530	22FR-610	22FR-680
			5.7	VF		22FR-530	22FR-610	22FR-680
VT II	06.99 - 08.00	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VX	09.00 - 08.02	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VY	09.02 - 08.03	8	5.7	VF <LS1, Gen III>		22FR-530	22FR-610	22FR-680
VY II	09.03 - 09.04	8	5.7	VF <Gen III>		22F-530	22F-610	22F-680
VZ	10.04 - 07.06	8	6.0	VF <LS2, Gen IV>		22F-530	22F-610	22F-680
VE	08.06→	8	6.0	ZL <LS2 307>		22F-530	22F-610	22F-680
Senator Signature								
VE	03.08→	8	6.2	ZLF <LS3 317>		22F-530	22F-610	22F-680
SV6000								
VZ	10.04 - 07.06	8	6.0	VF <LS2, Gen IV>		22F-530	22F-610	22F-680





◀ HSV

VXR							
AH	10.06→	4	2.0	Z200LER	22F-530	22F-610	22F-680
XU6							
VT	09.97 - 08.00	6	3.8	VS <L67>	22F-530	22F-610	22F-680
VX	09.00 - 08.02	6	3.8	VS <L67>	22F-530	22F-610	22F-680
VY	09.02 - 06.03	6	3.8	VS <L67>	22F-530	22F-610	22F-680

HYUNDAI

Accent							
LC	05.00 - 02.03	4	1.5	G4EC-G <DOHC Alpha>	55066		
	03.03 - 03.06	4	1.6	G4ED-G	55066		
MC	04.06→	4	1.6	G4ED	55066		

Coupe							
RD	05.96 - 09.01	4	2.0	G4GF <Beta>	22FR-530	22FR-610	22FR-680
	07.97 - 09.01	4	1.8	G4GM <Beta>	22FR-530	22FR-610	22FR-680

Elantra							
XD	06.00 - 08.06	4	1.8	G4GB	22F-530DF	22F-610FD	
	08.00 - 09.06	4	2.0	G4GC	22F-530DF	22F-610FD	

Excel							
X2	02.90 - 07.94	4	1.5	G4DJ	22F-530DF	22F-610FD	
X3	07.94 - 07.99	4	1.5	G4EK	22F-530DF	22F-610FD	
	11.95 - 07.99	4	1.5	G4FK	22F-530DF	22F-610FD	

Getz							
TB	03.03 - 08.05	4	1.3	G4E-A	55066		
	09.05→	4	1.4	G4EE-G	55066		
	10.05→	4	1.6	G4ED-G	55066		

Grandeur							
XG	09.98 - 03.02	6	2.5	G6BW <DOHC Delta>	22F-530DF	22F-610FD	
			3.0	G6CT <DOHC Sigma>	22F-530DF	22F-610FD	
	02.00→	6	3.0	Sigma	22F-530DF	22F-610FD	
	03.02 - 06.05	6	2.0	G4CP <DOHC Delta>	22F-530DF	22F-610FD	
	03.02 - 07.05	6	2.7	G6BA <DOHC>	22F-530DF	22F-610FD	
	12.05→	6	3.8	G6DA5 <DOHC>	22F-530DF	22F-610FD	

i30							
	09.07→	4	1.6	D4FB <1.6L-U>			574.035

Lantra							
J1	10.90 - 04.95	4	1.6	G4CR <New Sirius>	22FR-530	22FR-610	22FR-680
				G4DJ <New Sirius>	22F-530DF	22F-610FD	
	06.92 - 04.95	4	1.8	G4CN <New Sirius>	22FR-530	22FR-610	22FR-680
J2	05.95 - 09.00	4	1.8	G4GM <Beta>	56219		
	08.96 - 09.00	4	2.0	G4GF <Beta>	56219		

Santa Fe							
SM	02.00 - 12.05	4	2.4	G4JSX	56219		
CM	03.06→	4	2.2				574.035
				D4EB6			574.035
			6	2.7	G6EA		
	01.07→	6	3.3		55D26L	90D26L	110D26L



Scoupe							
	02.90 - 06.92	4	1.5	G4DJ	22FR-530	22FR-610	22FR-680
				G4DJ <New Orion>	22FR-530	22FR-610	22FR-680
	02.90 - 05.95	4	1.5	G4EK <SOHC>	22FR-530	22FR-610	22FR-680
	07.92 - 04.95	4	1.5	G4EK <Alpha>	22FR-530	22FR-610	22FR-680
				G4EK-TC <Alpha>	22FR-530	22FR-610	22FR-680
Sonata							
Y2	01.89 - 10.93	4	2.4	G4CS VIN-S <New Sirius 4G64>	22FR-530	22FR-610	22FR-680
	09.89 - 06.93	6	3.0	G6AT <6G72>	22FR-530	22FR-610	22FR-680
	01.02 - 12.05	6	2.4	Sirius I4 <DOHC>	22F-530DF	22F-610FD	
NF	10.05→	4	2.4	G4JSY <VTVT>	55457		560.035
Sonata II							
Y3	07.93 - 06.98	6	3.0	G6AT	22FR-530	22FR-610	22FR-680
Sonata III							
EF	03.98 - 03.01	6	2.5	G6AV			574.035
Sonata IV							
	01.01 - 09.04	4	2.0	G4P <DOHC Sirius II>	22F-530DF	22F-610FD	
EF	04.01 - 11.04	6	2.7	G6BA	56219		
Sonata V							
NF	12.04 - 12.07	6	3.3	G6DB	22F-530DF	22F-610FD	
Terracan							
HP	01.01→	6	3.5	G6CU <DOHC Sigma>	55D26R	90D26R	110D26R
	07.01 - 10.06	6	3.5	G6CU1 <Sigma>	55D26R	90D26R	110D26R
	11.03 - 10.06	4	2.9	J3	55D26R	90D26R	110D26R
Tiburon							
GK	03.02 - 12.03	4	2.0	G4GC-G	22FR-530	22FR-610	22FR-680
	03.02→	6	2.7	G6BA-G	22FR-530	22FR-610	22FR-680
Trajat							
FO	01.00 - 06.07	6	2.7	G6BA	56219		
ISUZU							
Isuzu 7.8D							
	05.01→	6	7.8	6HK1	55D26R	90D26R	110D26R
Isuzu 8.0D							
	05.01→	6	8.0	6HK1-TC	55D26R	90D26R	110D26R
Mu							
	04.89 - 10.93	4	2.6	4ZE1	55D26R	90D26R	110D26R
	07.90 - 10.93	4	2.8	4JB1T	55D26R	90D26R	110D26R
	10.93 - 07.98	4	3.1	4JG2	55D26R	90D26R	110D26R
	10.95→	4	3.1		55D26R	90D26R	110D26R
	05.98 - 07.01	4	3.0	4JX1	55D26R	90D26R	110D26R
	05.00 - 05.02	6	3.2	6VD1	55D26R	90D26R	110D26R
N-Series 3.0D							
	06.93 - 09.02	4	3.0	4KH1	55D26R	90D26R	110D26R



IVECO

Daily 29 L 14

09.04 - 03.06 4 2.3 F1AE0481M... **56318**

Daily 35 C 14

09.04 - 03.06 4 3.0 F1CE0481A... **60038**

Daily 35 C 17

09.04 - 03.06 4 3.0 F1CE0481B... **60038**

Daily 35 S 13

05.99 - 03.06 4 2.8 8140.43S... **60038**

Daily 35 S 14

09.04 - 03.06 4 2.3 F1AE0481M... **56318**

Daily 35 S 17

09.04 - 03.06 4 3.0 F1CE0481B... **56318**

Daily 40 C 13

01.01 - 09.04 4 2.8 8140.43S... **56318**

Daily 40 C 14

09.04 - 03.06 4 3.0 F1CE0481A... **56318**

Daily 40 C 17

09.04 - 03.06 4 3.0 F1CE0481B... **56318**

Daily 50 C 14

09.04 - 03.06 4 3.0 F1CE0481A... **56318**

Daily 50 C 15

05.01 - 09.04 4 2.8 8140.43N.43... **56318**

Daily 50 C 17

09.04 - 03.06 4 3.0 F1CE0481B... **56318**

Daily 65 C 14

09.04 - 03.06 4 3.0 F1CE0481A... **56318**

Daily 65 C 15

05.00 - 09.04 4 2.8 8140.43N.43... **56318**

Daily 65 C 17

09.04 - 03.06 4 3.0 F1CE0481B... **56318**

JAGUAR

Daimler

10.86 - 12.90	6	3.6	9 DPANA <AJ6>	55457	560.035
10.86 - 12.92	12	5.3	7P <Kat.>		60038
09.89 - 10.94	6	4.0	9 EPCNA <AJ6 KAT>		60038
12.93 - 12.94	12	6.0	8C		60038
09.94 - 10.98	6	4.0	9 JPFRB <AJ16>		60038
09.97 - 08.02	8	4.0	DC <AJV8>		60038

**Sovereign**

09.89 - 08.99	6	4.0	AJ6	574.035
03.93 - 12.95	12	6.0		574.035
09.97 - 08.02	8	4.0	BC <AJ-V8>	574.035

S-Type

CCX	10.98 - 04.02	8	4.0	AJ-V8	60038
	10.98 - 03.08	6	3.0	AJ-V6	60038
	10.01 - 07.05	6	2.5		60038
	10.01 - 03.08	8	4.2	AJ-V8	60038
	06.04 - 03.08	6	2.7		60038

XJR

03.03→	8	4.2	AJ-V8	574.035
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XJR8

09.97 - 09.02	8	4.0	DC <AJV8>	574.035
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XJS

09.75 - 09.91	12	5.3		574.035
03.92 - 09.96	12	6.0		574.035

XJ6

09.89 - 09.94	6	4.0	AJ6 <Kat.>	574.035
10.90 - 09.94	6	3.2	9BPMNA <AJ6>	574.035
10.94 - 12.98	6	4.0	AJ16	574.035
10.05→	6	2.7		574.035

XJ8

09.97 - 09.00	8	4.0	BC <AJV8>	574.035
09.97 - 01.03	8	3.2	AC <AJV8>	574.035
03.03→	8	3.5	AJ-V8	574.035
		4.2	AJ-V8	574.035

XJ12

07.81 - 09.94	12	5.3	<Kat.>	574.035
10.94 - 12.99	12	6.0	8D	574.035

XKR8

QDV	03.98 - 09.02	8	4.0	EC <AJV8>	60038
	03.03→	8	4.2	(A34) <AJ-V8>	60038

XK8

QDV	03.96 - 09.02	8	4.0	<AJV8>	60038
QEV	03.96 - 09.02	8	4.0	CE,CC <AJV8>	60038
QDV	03.03→	8	4.2	(AJ34) <AJ-V8>	60038
QEV	03.03→	8	4.2	(AJ34) <AJ-V8>	60038

X-Type

CF1	03.01→	6	2.5		574.035
			3.0	AJ-V6	574.035
	03.02 - 10.05	6	2.1	2.1V6	574.035
	09.05→	4	2.2		58014

**JEEP****Cherokee**

XJ	09.93 - 08.01	6	4.0	ERH		574.135
	10.95 - 12.01	4	2.5	ENC, ENO <VM HR 425 CLIRX>		575.035
KJ	03.01 - 12.04	4	2.5	ENJ, ENO		574.135
	03.03 - 12.07	4	2.8	ENR <T>		574.135

Commander

XH	01.06→	6	3.0	EXL	60038	
		8	4.7	EVA <N>		574.035
			5.7	EZB <2>		574.035

Compass

MK	10.06→	4	2.0	ECD	55457	560.035
			2.4	ED3 <K>	55457	560.035

Grand Cherokee

ZG	09.92 - 04.99	6	4.0	ERH, ERO <6L <S MPI>>		574.135
WG	09.00 - 12.04	6	4.0	ERH, ERO <Power Tech>		574.035
		8	4.7	EVA <Power Tech>		574.035
	10.01 - 12.04	5	2.7	ENF	60038	
		8	4.7	EVC-HO, V8, MPI <High-Output>		574.035
WK	10.04→	6	3.7	EKG	58014	
WH	03.05→	6	3.0	EXL	60038	
		8	4.7	EVA, EVO <Power Tech V8>		574.035
			5.7	EZB, EZO <Hemi V8>		574.035
	01.06→	8	6.1	ESF		574.035
WK	01.06→	8	6.1	ESF	58014	

Wrangler

TJ	01.97 - 02.07	6	4.0	ERH	56217	
JK	01.07→	4	2.8	ENS	55458	
		6	3.8	EGT	55458	

Wrangler 4.0

TJ	08.03→	6	4.0	ERH	56217	
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KIA**Carens**

FC	04.99 - 05.02	4	1.8	TB <TED>	56219	
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Carnival

	01.98 - 01.01	6	2.5	KV6 <DOHC>	55D26L	90D26L	110D26L
UP	09.99 - 09.01	6	2.5	K5	55D26L	90D26L	110D26L
MB	01.06→	6	3.8	<3>	55D26L	90D26L	110D26L
	09.06→	6	2.7	G6EA	55D26L	90D26L	110D26L

Cerato

FE	03.04→	4	2.0	G4GC	55066	
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Ceres

	11.94 - 12.03	4	2.2	SC	75D31R	105D31R	125D31R
	06.99→	4	2.4	SC	75D31R	105D31R	125D31R

Credos

	02.98 - 07.00	4	2.0	FE <DOHC FED>	55458	
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K 2700								
SD	04.98 - 08.04	4	2.7	J2		75D31R	105D31R	125D31R
	08.04→	4	2.7	J2		75D31R	105D31R	125D31R
Magentis								
GE	09.06→	6	2.7	G6EA		56219		
Mentor								
FX	01.98 - 12.00	4	1.5	B5D		55458		
			1.8	TE <B5D>		55458		
Optima								
	07.00 - 04.02	6	2.5	G6B <DOHC>		55D26L	90D26L	110D26L
Rio								
DC	07.00 - 02.05	4	1.5	A5D		55D23L	80D23L	90D23L
DE	03.05→	4	1.4	G4EE		55D23L	80D23L	90D23L
			1.6	G4ED		55D23L	80D23L	90D23L
Shuma								
FB	01.00 - 12.00	4	1.8	TE <T8D>		56318		
Sorento								
JC	03.03 - 08.09	6	3.5	G6CU		55458		
	03.06→	4	2.5	D4CB		55458		
	12.06→	6	3.3	G6DB		55458		
Spectra								
FB	04.01 - 06.04	4	1.8	TE <T8D>		56219		
Sportage								
JA	11.98 - 03.04	4	2.0	FED		55458		
	09.04 - 08.08	6	2.7	G6BA		55458		
Sportage New								
	01.06 - 07.08	4	2.0	D4EA-V		55458		
LADA								
Niva								
	07.83 - 12.96	4	1.6	2121		56217		
	01.93 - 12.99	4	1.7	2121.3		56217		
Samara								
	07.88 - 09.90	4	1.3	2108		56217		
	09.91 - 02.96	4	1.5	21083		22FR-530	22FR-610	22FR-680
LAMBORGHINI (S+L+H)								
Diablo								
	01.90 - 12.01	12	5.7					574.035
	10.99 - 12.01	12	6.0					574.035
Diablo 5.7 SE								
	09.93 - 12.97	12	5.7					574.035



◀ LAMBORGHINI

Murcielago						
	01.02 - 08.06	12	6.2	V12 48V		574.035
	09.06→	12	6.5	V12 48V		574.035

LANCIA

Beta						
	01.73 - 12.75	4	1.8	828 A 1.000	56217	
	01.76 - 12.79	4	2.0		56217	
	01.80 - 12.84	4	2.0	828 CB 1 A..	56217	

Beta Coupe						
	06.73 - 12.75	4	1.8	828 AC 100	56217	

LAND ROVER GROUP

Defender							
	08.90 - 12.01	4	2.5	Gemini TCI D.I. 23L <200/300 Tdi>	75D31R	105D31R	125D31R
Series 110							
	08.90 - 12.01	4	2.5	Gemini TCI D.I. 23L <200/300 Tdi>	22FR-530	22FR-610	22FR-680
	08.07→	4	2.4	Td4	58515		

Discovery							
	09.89 - 09.94	4	2.5	12L,21L <200-Gemini-2>	55D26R	90D26R	110D26R
	09.89 - 12.98	8	3.5	V8 3.5 EFi <Kat.>	55D26R	90D26R	110D26R
	10.93 - 12.98	4	2.5	19L 21L <300 Gemini>	55D26R	90D26R	110D26R
		8	3.9	V8 3.9 <EFi>	55D26R	90D26R	110D26R
	10.98 - 08.04	8	4.0	V8 - EFi <OHV>	55D26R	90D26R	110D26R
	09.04 - 08.09	6	2.7	TDV6 <Lion 2.7V6-14>		60038	
			4.0	4.0-V6 <V6-SOHC-EFi>	55D26R	90D26R	110D26R

Freelander							
	09.97 - 11.00	4	1.8	18K4F <K-Serie>	56219		
	09.97 - 09.03	4	2.0	TCie 17N,18N <L-Serie>			574.035
	09.01 - 03.07	4	2.0	M47			574.035
			2.5	KV 6 MPI <K-Serie>	56219		
	10.06→	6	3.2	Sl6			574.035

Freelander II							
	10.06→	4	2.2				574.035

Land Rover 110							
	10.83 - 07.90	0	3.9		22FR-530	22FR-610	22FR-680

Range Rover							
	11.88 - 08.94	8	3.9	37D,38D <V8-EFi-KAT>	22FR-530	22FR-610	22FR-680
	03.02 - 07.05	8	4.4	M62B44 V8		60038	
	03.02 - 09.06	6	2.9	M57 D30		60038	
	03.05 - 08.09	6	2.7	Lion 2.7-Liter-V6		60038	
		8	4.2	AJ-V8		60038	
				AJ-V8 4.2 Kompr.		60038	
			4.4	AJ-V8		60038	
	01.07 - 08.09	8	3.6	3.6 32V Lion		60038	



LEXUS

ES300

VCV10	03.92 - 08.96	6	3.0	3VZFE	55D23L	80D23L	90D23L
MCV20	08.96 - 07.01	6	3.0	1MZFE	55D26L	90D26L	110D26L
MCV30	07.01 - 07.03	6	3.0	1MZFE	55D23L	80D23L	90D23L

GS300

JZS160	08.97 - 01.05	6	3.0	2JZGE	55D26L	90D26L	110D26L
GRS190	01.05→	6	3.0	3GRFSE	55D26L	90D26L	110D26L

GS430

UZS161	07.00 - 01.05	8	4.3	3UZFE	55D26L	90D26L	110D26L
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GS450

GWS191	02.06→	6	3.5	2GRFSE	55D26L	90D26L	110D26L
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GS460

URS190	09.07→	8	4.6	1URFSE	55D26L	90D26L	110D26L
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IS200

GXE10	01.99 - 07.05	6	2.0	1GFSE	55D23L	80D23L	90D23L
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IS300

JCE10	07.01 - 07.05	6	3.0	2JZGE	55D26L	90D26L	110D26L
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LS400

UCF10	12.89 - 09.94	8	4.0	1UZFE	55D26R	90D26R	110D26R
UCF20	10.94 - 08.00	8	4.0	1UZFE	55D26R	90D26R	110D26R

LS430

UCF30	08.00 - 08.06	8	4.3	3UZFE	55D26R	90D26R	110D26R
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LX470

UZJ100	01.98 - 08.07	8	4.7	2UZFE	55D26L	90D26L	110D26L
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LX570

URJ201	11.07→	8	5.7	3URFE	55D26L	90D26L	110D26L
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RX330

MCU33	03.02→	6	3.3	3MZFE	55D23L	80D23L	90D23L
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RX350

GSU30/35	01.06→	6	3.5	2GRFE	55D26R	90D26R	110D26R
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RX400

MHU38	03.05→	6	3.3	3MZFE	55D26R	90D26R	110D26R
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SC430

UZZ40	05.01→	8	4.3	3UZFE	55D26R	90D26R	110D26R
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**LOTUS**

Elan						
	09.89 - 06.92	4	1.6	Isuzu 4XE1	56219	
Elise						
	01.96→	4	1.8	K-Serie	54316	
	01.04→	4	1.8	2ZZ-GE	54316	
Esprit						
	02.80 - 07.92	4	2.2	910	55457	560.035
	05.89 - 01.93	4	2.2	910 S	55457	560.035
Excel						
	10.85 - 07.92	4	2.2	912 S	56219	
Exige						
	10.01 - 10.04	4	1.8	K-Serie VVC	55457	560.035
	04.06→	4	1.8		54316	

MASERATI

Spyder						
	12.01→	8	4.2	V8		574.035

MAZDA

Bravo						
	09.93 - 08.00	6	4.0		75D31R	105D31R 125D31R
B2200						
UF	08.91 - 03.96	4	2.2		40B19RS	
B2500						
	09.96 - 07.02	4	2.5	WL	22FR-530	22FR-610 22FR-680
B2600						
UF	03.96 - 05.99	4	2.6	G6	22FR-530	22FR-610 22FR-680
Eunos 30X						
EC	12.91 - 10.93	6	1.8	K8	55D23L	80D23L 90D23L
	11.93 - 01.98	6	1.8	K8	55D26R	90D26R 110D26R
Eunos 500						
CA	04.94 - 09.96	6	2.0	KF	55457	560.035
Eunos 800						
TA	09.93 - 06.96	6	2.5	KL	55D26R	90D26R 110D26R
	02.94 - 02.04	6	2.3	KJ	55457	560.035
	06.96→	6	2.5		55457	560.035
E2000						
	07.89 - 03.95	4	2.0	FEET	40B19LS	
	09.96→	4	2.0	FE	55D26R	90D26R 110D26R



Millenia							
TA	08.00→	6	2.3	KJ <Miller-Cycle>	55D23L	80D23L	90D23L
MPV							
LV	08.93 - 04.96	6	3.0	E	55D26L	90D26L	110D26L
	04.96 - 07.99	6	3.0	JE	55D26L	90D26L	110D26L
	05.99 - 04.02	6	2.5	GY	55D26L	90D26L	110D26L
LW	06.99→	6	2.5	G	55D26L	90D26L	110D26L
	03.02 - 06.04	4	2.3	L3	55D26L	90D26L	110D26L
	03.02 - 12.05	6	3.0	AJ/AJDE	55D26L	90D26L	110D26L
LW	05.02 - 08.04	6	3.0	E	55D26L	90D26L	110D26L
MX-5							
NA	08.89 - 08.93	4	1.6	B64F	54316		
	09.93 - 11.97	4	1.8	BP	54316		
NB	01.98 - 07.05	4	1.8	BPD	54316		
	09.00 - 07.05	4	1.8	BPZE	54316		
NC	07.05→	4	2.0		54316		
MX-6							
GD	09.89 - 06.91	4	2.2	F2	40B19LS		
GE	07.94 - 06.97	6	2.5	KL	40B19LS		
Premacy							
CP	02.00 - 05.03	4	1.8	FP	55D23L	80D23L	90D23L
	11.01 - 05.03	4	2.0	FS	55D23L	80D23L	90D23L
RX-7							
FC	03.89 - 11.91	2	1.3	13B	55D23L	80D23L	90D23L
FD	01.92 - 07.94	2	1.3	13B	55D23L	80D23L	90D23L
	07.94 - 02.96	2	1.3	RE13B	55D23L	80D23L	90D23L
RX-8							
SE	04.03 - 04.08	2	1.3	13B	55D23L	80D23L	90D23L
Tribute							
	12.00 - 12.03	4	2.0	YF	55D23L	80D23L	90D23L
	12.00→	6	3.0	AJ	56219		
	03.04→	4	2.3	L3	55D26L	90D26L	110D26L
2							
DE	06.07→	4	1.5		40B19LS		
3							
BJ	01.01→	4	1.8	FP	55D23L	80D23L	90D23L
BK	07.03 - 12.08	4	2.0	LF	55457		560.035
	07.06 - 12.08	4	2.3		55457		560.035
	12.06 - 12.08	4	2.0	RF7J	55D23L	80D23L	90D23L
6							
GG/GY	02.02 - 08.07	4	2.3	L3	55D23L	80D23L	90D23L
	06.02 - 08.07	4	2.0	RF	55D26L	90D26L	110D26L
	07.05 - 08.07	4	2.3		55D23L	80D23L	90D23L
GH	12.07→	4	2.5		56219		
121							
DA	04.89 - 10.90	4	1.3	B3A6	40B19LS		
DB	11.90 - 10.93	4	1.3	B3	40B19LS		
	11.93 - 12.95	4	1.3	B3	55B24LS		
			1.5	B5M1	40B19LS		



◀ MAZDA

DB	11.95 - 11.97	4	1.3	B3	55D23L	80D23L	90D23L
			1.5	B5	55D23L	80D23L	90D23L
DW	08.96 - 12.99	4	1.3	B3	55D23L	80D23L	90D23L
			1.5	B5	55D23L	80D23L	90D23L
	01.00 - 12.02	4	1.3	B3	40B19LS		
			1.5	B5	40B19LS		

323

BG	06.89 - 07.94	4	1.8	BP <DOHC Kat.>	40B19LS		
	07.89 - 05.94	4	1.8	BP	40B19LS		
	07.89 - 12.95	4	1.6	B6	40B19LS		
BA	05.94 - 07.95	6	2.0	KF	55D23L	80D23L	90D23L
	05.94 - 09.95	6	2.0	KF/F	55D23L	80D23L	90D23L
	05.94 - 06.98	4	1.8	BP	55D23L	80D23L	90D23L
	08.95 - 06.98	4	1.6	B6	55D23L	80D23L	90D23L
	10.96 - 07.98	6	2.0	KF	55D23L	80D23L	90D23L
BJ	05.98 - 12.03	4	1.8	FP	55D23L	80D23L	90D23L
	07.98→	4	1.6	ZM	55D23L	80D23L	90D23L
	12.00 - 12.03	4	2.0	FS	55D23L	80D23L	90D23L

626

GD	09.89 - 09.91	4	2.2	F2	40B19LS		
GE	09.91 - 06.97	6	2.5	KL	55D23L	80D23L	90D23L
	01.92 - 06.97	4	2.0	FS	55D23L	80D23L	90D23L
	11.92 - 05.94	6	2.5	KL	40B19LS		
GF	06.97 - 10.99	4	2.0	FSD	55D23L	80D23L	90D23L
	11.99 - 08.02	4	2.0	FSD	55D23L	80D23L	90D23L

626 Turbo

GD	09.89 - 09.91	4	2.2	F2	40B19LS		
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929

HC	02.87 - 06.91	6	3.0	JE	55D23L	80D23L	90D23L
	01.90 - 08.91	6	3.0	JED	55D23L	80D23L	90D23L
HD	05.91 - 12.95	6	3.0	JE	55D23L	80D23L	90D23L
HE	11.95 - 09.97	6	3.0	JE	55D23L	80D23L	90D23L

MERCEDES-BENZ

A140

W168	10.97 - 08.04	4	1.4	M 166.940 <E 14>	56219		
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A150

W169	09.04 - 04.09	4	1.5	M 266.920 <E 15>	56219		
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A160

W168	10.97 - 08.04	4	1.6	M 166.960 <E 16>	56219		
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A170

W169	09.04 - 04.09	4	1.7	M 266.940 <E 17>	56219		
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A190

W168	03.99 - 08.04	4	1.9	M 166.990 <E 19>	56219		
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A200

W169	09.04→	4	2.0	M 266.960 <E 20>	56219		
	06.05→	4	2.0	M 266.980 <E 20 LA>	56219		



B180						
W245	04.05→	4	2.0	OM 640.940 <DE 20 LA>		574.035
B200						
W245	04.05→	4	2.0	M 266.960 <E 20>	56219	
				M 266.980 <E 20 LA>	56219	
CLC200 Kompressor						
W203	03.08→	4	1.8	M 271.955 <KE 18 ML>	56219	
CLK55 AMG						
W208	05.99 - 04.02	8	5.4	M 113.984 <E55>		574.035
W209	08.01 - 08.06	8	5.4	M 113.987 <E 55>		574.035
CLK63 AMG						
W209	09.06→	8	6.2	M 156.982 <E 63>		60038
CLK200						
W208	06.97 - 06.00	4	2.0	M 111.945 <E20>	56219	
CLK200 Kompressor						
W208	06.00 - 01.03	4	2.0	M 111.956 <E 20 EVO ML>	56219	
W209	09.02 - 09.06	4	1.8	M 271.940 <KE 18 ML>	56219	
CLK230 Kompressor						
W208	06.97 - 06.00	4	2.3	M 111.975 <E23 ML>	56219	
	06.00 - 04.02	4	2.3	M 111.982 <EVO ML>	56219	
CLK240						
W209	05.02 - 03.05	6	2.6	M 112.912 <E 26>	56219	
CLK280						
W209	04.05→	6	3.0	M 272.940 <E 30>		574.035
CLK320						
W208	06.98 - 01.03	6	3.2	M 112.940 <E32>		574.035
W209	05.02 - 03.05	6	3.2	M 112.955 <E 32>	56219	
	02.03 - 03.05	6	3.2	M 112.955 <E 32>		574.035
CLK350						
W209	04.05→	6	3.5	M 272.960 <E 35>		574.035
CLK430						
W208	09.98 - 01.03	8	4.3	M 113.943 <E43>		574.035
CLK500						
W209	05.02 - 07.06	8	5.0	M 113.968 <E 50>	56219	
	02.03 - 07.06	8	5.0	M 113.968 <E 50>		574.035
	09.06→	8	5.0	M 273.967 <E 55>		574.035
CL55 AMG						
W215	09.99 - 08.02	8	5.4	M 113.986 <E 55>		60038
CL55 AMG Kompressor						
W215	09.02 - 08.06	8	5.4	M 113.991 <E 55 ML AMG>		60038
CL63 AMG						
W216	01.07→	8	6.2	M 156.984 <E 63>		60038





◀ MERCEDES-BENZ

CL65 AMG						
W215	09.03 - 08.06	12	6.0	M 275.980 <E 60>		60038
W216	09.07→	12	6.0	M 275.982 <E 60>		60038
CL500						
W215	09.99 - 05.06	8	5.0	M 113.960 <E 50>		60038
W216	06.06→	8	5.5	M 273.961 <E 55>		60038
CL600						
W215	09.99 - 08.02	12	5.8	M 137.970 <E 58>		60038
	09.02 - 08.06	12	5.5	M 275.950 <E 55>		60038
W216	09.06→	12	5.5	M 275.953 <E 55>		60038
C32 AMG Kompressor						
W203	01.01 - 01.04	6	3.2	M 112.961 <E 32 AMG>		574.035
C36 AMG						
W202	01.94 - 05.97	6	3.6	M 104.941 <AMG>		574.035
C43 AMG						
W202	11.97 - 04.00	8	4.3	M 113.944		574.035
C55 AMG						
W203	02.04 - 08.07	8	5.4	M 113.988 <E 55>		574.035
C180						
W202	03.93 - 08.95	4	1.8	M 111.920 <E 18>		56219
	09.95 - 04.00	4	1.8	M 111.921 <E 18>		56219
W203	10.00 - 08.02	4	2.0	M 111.951 <E 20 EVO>		56219
C180 Kompressor						
W203	09.02 - 02.08	4	1.8	M 271.946 <KE 18 ML>		56219
C180 T-Model						
W202	05.96 - 02.01	4	1.8	M 111.920 <E 18>		56219
C200						
W202	01.94 - 04.00	4	2.0	M 111.941 <E 20>		56219
C200 Kompressor						
W203	09.02 - 02.07	4	1.8	M 271.940 <KE 18 ML>		56219
	04.03 - 08.04	4	1.8	M 271.942 <DE 18 ML>		56219
W204	03.07→	4	1.8	M 271.950 <KE 18 ML>		56219
C200 Kompressor Sportcoupe						
W203	09.02 - 02.08	4	1.8	M 271.940 <KE 18 ML>		56219
C200 Kompressor T-Model						
W203	01.01 - 08.02	4	2.0	M 111.955 <E 20 EVO ML>		56219
	09.02 - 08.07	4	1.8	M 271.940 <KE 18 ML>		56219
W204	09.07→	4	1.8	M 271.950 <KE 18 ML>		56219
C200 T-Model						
W202	05.96 - 02.01	4	2.0	M 111.941 <E 20>		56219
C220						
W202	03.93 - 09.96	4	2.2	M 111.961 <E 22>		56219
W203	05.00 - 02.03	4	2.2	OM 611.962 <DE LA>		574.035
	03.03 - 02.07	4	2.2	OM 646.963 <DE 22 LA>		574.035



W204	03.07 - 04.09	4	2.2	OM 646.811 <DE 22 LALL EVO>	58014			
	09.07 - 03.09	4	2.1	OM 646.811 <DE 22>	58014			
C230								
W202	09.96 - 08.97	4	2.3	M 111.974 <E 23>	56219			
W203	06.05 - 07.07	6	2.5	M 272.920 <E 25>	56219			
C230 Kompressor Sportcoupe								
W203	08.03 - 05.05	4	1.8	M 271.948 <KE 18 ML>	56219			
C230 Sportcoupe								
W203	06.05 - 02.08	6	2.5	M 272.920 <E 25>	56219			
C230 T-Model								
W202	05.96 - 05.97	4	2.3	M 111.974	56219			
W203	06.05 - 08.07	6	2.5	M 272.920 <E 25>	56219			
C240								
W202	06.97 - 04.00	6	2.4	M 112.910 <E 24>	56219			
W203	05.00 - 05.05	6	2.6	M 112.912 <E 26>	56219			
C240 T-Model								
W202	06.97 - 02.01	6	2.4	M 112.910 <E 24>	56219			
W203	01.01 - 05.05	6	2.6	M 112.912 <E 26>	56219			
C250								
W202	05.93 - 08.95	5	2.5	OM 605.910			574.035	
	09.95 - 04.00	5	2.5	OM 605.960 <AD 25 LA>			574.035	
C280								
W202	05.93 - 05.97	6	2.8	M 104.941			574.035	
	06.97 - 04.00	6	2.8	M 112.920 <E 28>			574.035	
W204	03.07 →	6	3.0	M 272.947 <KE 30>	56219			
C320								
W203	05.00 - 05.05	6	3.2	M 112.946 <DE LA>			574.035	
W204	06.07 - 04.09	6	3.0	OM 642.960 <D 30>	58014			
C320 Sportcoupe								
W203	09.02 - 05.05	6	3.2	M 112.946 <E 32>			574.035	
C350								
W203	06.05 - 02.07	6	3.5	M 272.960 <E 35>			574.035	
E36 AMG								
W124	03.94 - 06.98	6	3.6	M 104.992			574.035	
E55 AMG								
W210	09.97 - 03.03	8	5.5	M 113.980 <E55>			574.035	
E200 Kompressor								
W210	09.00 - 03.02	4	2.0	M 111.957 <E20 EVO ML>	56219			
E220								
W124	07.93 - 06.95	4	2.2	M 111.960	56219			
E220 Cabriolet								
W124	07.93 - 06.98	4	2.2	M 111.960	56219			





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E220 Coupe					
W124	07.93 - 06.97	4	2.2	M 111.960	56219
E220 T-Model					
W124	07.93 - 05.96	4	2.2	M 111.960	56219
E230					
W210	06.95 - 08.97	4	2.3	M 111.970 <E23>	56219
E230 T-Model					
W210	05.96 - 08.97	4	2.3	M 111.970 <E23>	56219
E240					
W210	09.97 - 04.00	6	2.4	M 112.911 <E24>	56219
E240 T-Model					
W210	09.97 - 05.99	6	2.4	M 112.911 <E24>	56219
	06.99 - 01.03	6	2.6	M 112.914 <E26>	56219
E270					
W210	06.99 - 03.02	5	2.7	OM 612.961 <DELA>	574.035
E280					
W124	07.93 - 06.95	6	2.8	M 104.942	574.035
W210	06.95 - 01.03	6	2.8	M 112.921 <E28>	574.035
E280 T-Model					
W124	07.93 - 05.96	6	2.8	M 104.942	574.035
E300					
W124	07.93 - 06.95	6	3.0	OM 606.910	574.035
W210	03.97 - 05.99	6	3.0	OM 606.962 <D30 LA>	574.035
E320					
W124	07.93 - 06.95	6	3.2	M 104.992	574.035
W210	06.95 - 02.97	6	3.2	M 104.995	574.035
	03.97 - 05.99	6	3.2	M 112.941 <E32>	574.035
E320 Cabriolet					
W124	05.93 - 06.98	6	3.2	M 104.992	574.035
E320 Coupe					
W124	07.93 - 06.98	6	3.2	M 104.992	574.035
E430					
W210	09.97 - 05.99	8	4.3	M 113.940 <E43>	574.035
	07.99 - 03.02	8	4.3	M 113.940 <E43>	574.035
E500					
W124	09.93 - 08.94	8	5.0	M 119.974	574.035
GL320					
W164	02.06→	6	3.0	OM 642.940 <D 30>	60038
GL500					
W164	02.06→	8	5.5	M 273.963 <E 55>	60038
G320					
W463	12.97→	6	3.2	M 112.945 <E 32>	60038





MB100					
	01.96→	4	2.3	OM 661.911	56318
		5	2.9	OM 662.911	56318
	11.96→	4	2.3	M 161.971	56318
MB140					
	11.96→	5	2.9	OM 662.911	56318
ML55 AMG					
W163	03.00 - 06.05	8	5.4	M 113.981 <E 55>	58515
ML270					
W163	11.99 - 06.05	5	2.7	OM 612.963 <DE LA>	58515
ML320					
W163	03.98 - 09.02	6	3.2	M 112.942 <E 32>	60038
ML350					
W163	08.02 - 01.03	6	3.7	M 112.970 <E 37>	60038
ML430					
W163	09.98 - 07.02	8	4.3	M 113.942 <E 43>	60038
ML500					
W163	09.01 - 06.05	8	5.0	M 113.965 <E 50>	58014
SLK32 AMG					
W170	06.99 - 03.04	6	3.2	M 112.960 <E32 ML>	56219
SLK55 AMG					
W171	04.04→	8	5.4	M 113.989 <E 55>	574.035
SLK200					
W170	09.96 - 01.00	4	2.0	M 111.946 <E20>	56219
SLK200 Kompressor					
W170	09.96 - 01.00	4	2.0	M 111.943 <E20 ML>	56219
	02.00 - 03.04	4	2.0	M 111.958 <E20 EVO ML>	56219
W171	04.04 - 11.07	4	1.8	M 271.944 <KE 18 ML>	574.035
	12.07→	4	1.8	M 271.954 <KE 18 ML>	574.035
SLK230 Kompressor					
W170	09.96 - 01.00	4	2.3	M 111.973 <E23 ML>	56219
	02.00 - 03.04	4	2.3	M 111.983 <E23 EVO ML>	56219
SLK280					
W171	05.05 - 02.09	6	3.0	M 272.942 <E 30>	574.035
SLK320					
W170	06.99 - 03.04	6	3.2	M 112.947 <E32>	56219
SLK350					
W171	04.04 - 11.07	6	3.5	M 272.963 <E 35>	574.035
	12.07→	6	3.5	M 272.969 <E 35>	574.035
SL280					
W129	07.93 - 05.98	6	2.8	M 104.943	60038
	06.98 - 08.01	6	2.8	M 112.923	60038





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SL320

W129	06.98 - 08.01	6	3.2	M 112.943	60038
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SL500

W129	09.93 - 08.95	8	5.0	M 119.972	60038
	09.95 - 05.98	8	5.0	M 119.982	60038
	06.98 - 08.01	8	5.0	M 113.961	60038

SL600

W129	07.93 - 09.95	12	6.0	M 120.981	60038
	09.95 - 08.01	12	6.0	M 120.983	60038

Sprinter

WT1N	02.95 - 03.00	4	2.3	OM 601.943	574.035
		5	2.9	OM 602.980 DE LA	574.035
	04.00 - 05.06	4	2.2	OM 611.981 DE LA	574.035
				OM 611.987 DE LA	574.035
		5	2.7	OM 612.981 DE LA	574.035
08.02 - 05.06	4	2.1	OM 611.981 DE LA	574.035	
WNCV3	04.06 →	4	2.1	OM 646.9... DE 22 LA <Euro 4>	574.035
				OM 646.984 DE 22 LA <Euro 4>	574.035
				OM 646.985 DE 22 LA <Euro 4>	574.035
		6	3.0	OM 642.99... <Euro 4>	60038

S280

W140	06.93 - 09.98	6	2.8	M 104.944	60038
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S320

W220	10.98 - 08.02	6	3.2	M 112.944 <E32>	60038
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S420

W140	06.93 - 09.98	8	4.2	M 119.971;981	60038
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S430

W220	10.98 - 09.05	8	4.3	M 113.941 <E43>	60038
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S500

W220	06.00 - 08.05	8	5.0	M 113.960 <E50>	60038
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S600

W140	06.93 - 05.96	12	6.0	M 120.980;982	60038
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Vario

WT2W	09.96 - 01.01	4	4.2	OM 904.923,936 LA <Euro 2>	574.035
	01.01 - 09.06	4	4.2	OM 904.936 LA <Euro 3>	574.035

Viano

W639 TON	09.03 →	4	2.1	OM 646.982 <OM 646 DE22LA (MOC3)>	574.035
	06.04 - 08.07	6	3.7	M 112.976 <M 112.E37 (MGO)>	574.035

Vito

W638 TON	11.95 - 09.03	4	2.0	M 111.950 <E20>	574.035
			2.3	OM 601.942	60038
	04.99 - 09.03	4	2.2	OM 611.980	60038
W639 TON	10.03 - 10.06	4	2.1	OM 646.983 <OM 646 DE22LA>	574.035
	10.03 →	4	2.1	OM 646.982 <OM 646 DE22LA>	574.035
		6	3.2	M 112.951 <M 112.E32>	574.035
	04.06 →	6	3.0	642.990 <OM 642 DE30LA>	574.035
	11.06 →	4	2.1	OM 646.980 <OM 646 DE22LA>	574.035
			OM 646.981 <OM 646 DE22LA>	574.035	

180E								
W201	09.91 - 04.94	4	1.8	M 102.910		56219		
190D								
W201	09.85 - 08.93	5	2.5	OM 602.911				574.035
190E								
W201	08.84 - 08.93	4	2.3	M 102.985				574.035
	09.86 - 09.93	4	2.0	M 102.962				574.035
	09.89 - 08.92	4	2.3	M 102.985		56219		
	03.90 - 08.93	4	1.8	M 102.910		55066		
220E								
W124	09.92 - 06.93	4	2.2	M 111.960		56219		
230E								
W124	12.84 - 06.93	4	2.3	M 102.982				574.035
230TE								
W124	09.85 - 08.93	4	2.3	M 102.982				574.035
260E								
W124	09.85 - 10.92	6	2.6	M 103.940				574.035
300CE								
W124	03.87 - 06.93	6	3.0	M 103.983				574.035
	09.89 - 12.92	6	3.0	M 104.980				574.035
300D								
W124	01.85 - 06.93	6	3.0	OM 603.912				574.035
300E								
W124	01.85 - 08.93	6	3.0	M 103.980;983				574.035
	09.92 - 06.93	6	2.8	M 104.942		56219		
300GD								
W460	12.79 - 08.91	5	3.0	OM 617.931			60038	
300SE								
W126	09.85 - 06.91	6	3.0	M 103.981				574.035
W140	03.91 - 05.93	6	3.2	M 104.990			60038	
300TD								
W124	09.89 - 06.93	6	3.0	OM 603.912				574.035
300TE								
W124	01.86 - 08.92	6	3.0	M 103.983				574.035
320CE								
W124	09.92 - 06.93	6	3.2	M 104.992				574.035
320E								
W124	09.92 - 06.93	6	3.2	M 104.992				574.035
400SE								
W140	02.91 - 05.93	8	4.2	M 119.971;981			60038	
420SEL								
W126	09.85 - 06.91	8	4.2	M 116.965				574.035





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500SE

W140	02.91 - 05.93	8	5.0	M 119.970;980	60038
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500SEC

W140	10.92 - 05.93	8	5.0	M 119.970;980	60038
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500SL

W129	09.89 - 08.92	8	5.0	M 119.960	60038
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560SEC

W126	10.85 - 06.91	8	5.6	M 117.968	574.035
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560SEL

W126	10.85 - 06.91	8	5.6	M 117.968 <KAT>	574.035
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600SL

W129	07.92 - 06.93	12	6.0	M 120.981;983	60038
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MG

MGF

	10.95 - 03.02	4	1.8	18K4F <K-Serie>	55457	560.035
				18K4K <MPI VVC K-Serie>	55457	560.035

MGTF

	03.02 - 05.05	4	1.8	18 K4F K-Serie- VVC- <DOHC>	56219
	03.02→	4	1.8	18 K4F K-Serie <DOHC>	56219

ZR

	10.01 - 05.05	4	1.8	18 K4K -K-Serie-VVC	55457	560.035
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ZS

	10.01 - 05.05	6	2.5	25 K4F <K-Serie 2.5KV6>	55066
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ZT

	10.01 - 05.05	6	2.5	25 K4F <K-Serie>	56219
	03.02 - 05.05	8	4.6	46F2F <260>	56219

MINI (BMW)

Cooper Cabrio

R 52	07.04 - 02.09	4	1.6	W10 B16A	55066
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Cooper S Cabrio

R 52	08.04 - 02.09	4	1.6	W11 B16A	55066
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John Cooper Works

R 53	08.04 - 11.06	4	1.6	W11 B16A	55066
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John Cooper Works Cabrio

R 52	08.04 - 02.09	4	1.6	W11 B16A	55066
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New Mini Cooper

R 50	06.01 - 11.06	4	1.6	W10 B16A	55066
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New Mini Cooper S

R 53	03.02 - 11.06	4	1.6	W11 B16A	55066
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MITSUBISHI

Challenger

	05.96 - 07.97	4	2.5	4D56	55D26R	90D26R	110D26R
	05.96 - 05.99	4	2.8	4M40	55D26R	90D26R	110D26R
	08.97 - 08.01	6	3.5	6G74 (DOHC)	55D26R	90D26R	110D26R
PA	02.98→	6	3.0	6G72	55D26R	90D26R	110D26R

Colt

RE	09.88 - 12.90	4	1.4	4G33	40B19LS		
			1.6	4G32	40B19LS		
CZ	04.04→	4	1.5	4A91	55066		
CJ	10.04 - 05.06	4	1.5	4G15 (DOHC)	55D23R	80D23R	90D23R
	10.04→	4	1.5	4A91	55D23R	80D23R	90D23R

Delica

	04.86 - 08.99	4	2.5	4D56	40B19RS		
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FTO

	09.94 - 07.00	4	1.8	4G93 (SOHC)	55B24RS		
		6	2.0	6A12 (DOHC)	55B24RS		

Galant

HG	01.89 - 12.90	4	2.0	4G63 SOHC	55D23R	80D23R	90D23R
HG/HH	01.89 - 12.93	4	2.0	4G63 DOHC	55D23R	80D23R	90D23R
HH	01.90 - 12.93	4	2.0	4G63 SOHC	55D23R	80D23R	90D23R
HJ	11.92 - 05.96	4	2.0	4G63 Kat.	55D23R	80D23R	90D23R
				4G63 SOHC Kat.	55D23R	80D23R	90D23R
		6	2.0	6A12 Kat.	55D23R	80D23R	90D23R
	08.07→	4	2.0	4B11	22FR-530	22FR-610	22FR-680

Galant VR4

HH	01.90 - 12.93	4	2.0	4G63 DOHC	55D23R	80D23R	90D23R
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Grandis

	01.04→	4	2.4	4G69 MIVEC	95D31L	105D31L	125D31L
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Lancer

CA	08.88 - 09.90	4	1.5	4G15	40B19LS		
CB	10.90 - 09.92	4	1.5	4G15 SOHC	40B19LS		
			1.6	4G61 DOHC	40B19LS		
CA/CB/CD	05.92 - 12.96	4	1.8	4G93 Kat.	40B19LS		
C6/C7	06.92 - 07.95	4	1.5	4G15	40B19LS		
			1.6	4G92 Kat.	40B19LS		
CC	10.92 - 06.96	4	1.5	4G15	40B19RS		
			1.6	4G92 Kat.	40B19LS		
			1.8	4G93 Kat.	40B19LS		
CA/CB/CD	07.93 - 12.97	4	1.5	4G15 <MPI>	40B19RS		
	12.93 - 12.96	4	1.6	4G92 MVV	40B19LS		
CK/CP/CN	11.95 - 09.00	4	1.5	4G15	40B19LS		
			1.6	4G92 Kat.	40B19LS		
	05.96 - 05.01	4	1.8	4G93 Kat.	40B19LS		
MG21/41	01.98 - 02.03	4	1.5	4G15	40B19RS		
CS/CT	06.03→	4	1.3	4G13	40B19RS		
			2.0	4G63	40B19LS		

Lancer Evo

CK/CP/CN	08.96 - 06.97	4	2.0	4G63 Kat.	40B19LS		
	01.98 - 09.00	4	2.0	4G63 Kat.	40B19LS		
CS/CT	12.00 - 12.03	4	2.0	4G63	40B19RS		





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	01.01 - 01.07	4	2.0	4G63 (DOHC)	40B19LS		
CS/CT	01.04 - 07.05	4	2.0	4G63	40B19LS		
	08.05 →	4	2.0	4G63 MIVEC	55D23L	80D23L	90D23L

Lancer GSR

	10.92 - 05.96	4	1.8	4G93 (DOHC)	40B19LS		
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L200

K0/K1/K2/K3	06.90 - 05.91	6	3.0	6G72	40B19R		
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L300

P	11.88 - 05.96	4	2.4	4G64 Kat.	40B19R		
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Magna / Verada

TP	06.89 - 04.92	4	2.6	4G54 <Astron II>	22NF-330D		
				4G54 EFI <Astron II>	22NF-330D		
TR	04.91 - 02.94	4	2.6	4G54 EFI	22FR-530	22FR-610	22FR-680
KR	07.91 - 02.94	6	3.0	6G72	22FR-530	22FR-610	22FR-680
TR	10.91 - 02.94	4	2.6	4G54	22FR-530	22FR-610	22FR-680
	04.93 - 02.94	6	3.0	6G72	22FR-530	22FR-610	22FR-680
KS	03.94 - 09.96	6	3.0	6G72 <E32>	22FR-530	22FR-610	22FR-680
TS	03.94 - 02.97	4	2.6	4G54	22FR-530	22FR-610	22FR-680
		6	3.0	6G72	22FR-530	22FR-610	22FR-680
TE	04.96 - 05.97	4	2.4	4G64	22FR-530	22FR-610	22FR-680
		6	3.0	6G72	22FR-530	22FR-610	22FR-680
KE	10.96 - 05.97	6	3.0	6G72	22FR-530	22FR-610	22FR-680
			3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
KF	06.97 - 03.99	6	3.0	6G72	22FR-530	22FR-610	22FR-680
			3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
TF	06.97 - 03.99	4	2.4	4G64	22FR-530	22FR-610	22FR-680
		6	3.0	6G72	22FR-530	22FR-610	22FR-680
KH	04.99 - 07.00	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
TH	04.99 - 07.00	6	3.0	6G72 <E32>	22FR-530	22FR-610	22FR-680
			3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
KJ	08.00 - 06.02	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
TJ	08.00 - 06.02	6	3.0	6G74 <E32>	22FR-530	22FR-610	22FR-680
			3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
KJ II	07.02 - 07.03	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
TJ II	07.02 - 01.04	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
KL	06.03 - 09.04	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
TL	06.03 - 09.04	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
KW	10.04 - 09.05	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
TW	10.04 - 09.05	6	3.5	6G74 <E35>	22FR-530	22FR-610	22FR-680
				6G74 <E40>	22FR-530	22FR-610	22FR-680

Mirage

	01.93 →	4	1.5	4G15 <SOHC Kat.>	40B19RS		
CE	06.96 - 12.03	4	1.5	4G15 S3	40B19RS		

Nimbus

UC	09.87 - 11.91	4	2.0	4G63	40B19LS		
UF	01.92 - 11.98	4	2.4	4G64 SOHC		22NF-330D	
UG	12.98 →	4	2.4	4G64	55B24LS		

Outlander

ZE	05.03 - 07.04	4	2.4	4G64S4M	55D23L	80D23L	90D23L
ZF	08.04 - 10.06	4	2.4	4G69 MIVEC	55D23L	80D23L	90D23L
ZG	11.06 →	4	2.4	4B12	55D23L	80D23L	90D23L
	10.07 →	6	3.0	6B31	55D23L	80D23L	90D23L



Pajero							
NA/NB/NC/ND/NE/NF/NG	12.82 - 04.91	4	2.6	4G54	55D26R	90D26R	110D26R
NF/NG	09.88 - 04.91	6	3.0	6G72	55D26R	90D26R	110D26R
	09.88 - 09.99	6	3.0	6G72 (SOHC)	55D26R	90D26R	110D26R
NH	05.91 - 10.93	4	2.6	4G54	55D26R	90D26R	110D26R
NH/NJ/NK	05.91 - 08.97	6	3.0	6G72	55D26R	90D26R	110D26R
	07.93 - 05.97	6	3.5	6G74 (DOHC)	95D31L	105D31L	125D31L
	07.93 - 09.99	4	2.8	4M40	75D31R	105D31R	125D31R
	04.96 - 09.99	4	2.4	4G64 (SOHC)	55D23L	80D23L	90D23L
	05.97 - 09.99	6	3.5	6G74 (DOHC)	55D26R	90D26R	110D26R
	08.97 - 10.05	6	3.5	6G74 (DOHC)	55D23R	80D23R	90D23R
	06.99 - 11.04	4	3.2	4M41	75D31L	105D31L	125D31L
NM	01.00 →	6	3.5	6G74 DOHC 24V	55D23R	80D23R	90D23R
	07.00 - 09.06	6	3.0	6G72 (SOHC)	75D31R	105D31R	125D31R
	01.03 →	6	3.8	6G75	75D31L	105D31L	125D31L

Pajero iO							
	03.99 - 09.01	4	1.6	4G18 <6-T1>	55D23L	80D23L	90D23L
V	03.99 - 09.01	4	1.8	4G93 Kat.	55D23L	80D23L	90D23L
H	07.00 →	4	2.0	4G94	56219		

RVR							
	09.97 - 08.02	4	1.8	4G93 (DOHC)	55D23R	80D23R	90D23R

Triton							
MH	09.90 - 07.92	4	2.5	4D56	55D26R	90D26R	110D26R
			2.6	4G54	55D26R	90D26R	110D26R
MJ	10.90 - 09.96	6	3.0	6G72	55D26R	90D26R	110D26R
	08.92 - 09.96	4	2.5	4D56	55D26R	90D26R	110D26R
			2.6	4G54	55D26R	90D26R	110D26R
MK	10.96 - 12.03	4	2.4	4G64	22FR-530	22FR-610	22FR-680
	10.96 - 04.07	6	3.0	6G72	55D26R	90D26R	110D26R
	10.96 →	4	2.8	4M40	75D31R	105D31R	125D31R
	08.05 →	4	3.2	4M41 <DOHC DI-D>	75D31L	105D31L	125D31L
	02.07 →	6	3.5	6G74 (SOHC)	75D31L	105D31L	125D31L
MK	10.07 →	4	2.4	4G64	55B24RS		

380							
DL I	10.05 - 03.06	6	3.8	6G75	55D23R	80D23R	90D23R
DL II	04.06 - 06.07	6	3.8	6G75	55D23R	80D23R	90D23R
DL III	07.07 - 03.08	6	3.8	6G75	55D23R	80D23R	90D23R

NISSAN

Bluebird							
	09.91 - 11.95	4	2.0	SR20DET	22FR-530	22FR-610	22FR-680
U13	07.93 - 09.97	4	2.4	KA24DE	22FR-530	22FR-610	22FR-680

Cefiro							
	09.88 - 08.94	6	2.0	RB20DE	55D23L	80D23L	90D23L
				RB20DET	55D23L	80D23L	90D23L
				RB20E	55D23L	80D23L	90D23L
	06.92 - 08.94	6	2.5	RB25DE	55D23L	80D23L	90D23L
	08.94 - 12.98	6	2.5	VQ25DE	55D23L	80D23L	90D23L
A32	01.98 - 06.01	6	3.0	VQ30DE	55D23L	80D23L	90D23L
	12.98 - 08.02	6	2.5	VQ25DD	55D23L	80D23L	90D23L

Exa							
KEN13	10.87 - 10.90	4	1.8	CA18DE	40B19LS		



◀ NISSAN

Fairlady							
	07.89 - 08.00	6	3.0	VG30DE		22NF-330D	
				VG30DETT		22NF-330D	

GT-R							
	01.91 - 12.93	6	2.6	RB26DETT		40B19L	

Maxima								
A34	02.03 - 05.08	6	3.5	VQ35DE		55D23L	80D23L	90D23L

Navara								
D21	09.85 - 09.95	4	2.0	Z20		75D31R	105D31R	125D31R
	06.92 - 03.97	6	3.0	VG30E		55D23L	80D23L	90D23L
D22	06.00 - 11.01	4	3.2	QD32		75D31R	105D31R	125D31R
	06.00 - 11.05	6	3.0	VG30E		55D23L	80D23L	90D23L
	11.01 →	4	3.0	ZD30		75D31R	105D31R	125D31R
D40	05.05 →	4	2.5	YD25DDTI				574.135
	06.06 →	6	4.0	VQ40DE		55D23R	80D23R	90D23R

Nomad							
	12.86 - 12.92	4	2.4	Z24		40B19LS	

NX							
B13	08.90 - 09.93	4	2.0	SR20DE		40B19LS	

Pathfinder								
D21	08.86 - 07.92	4	2.4	Z24S		55D26R	90D26R	110D26R
	09.90 - 12.92	4	2.4	Z24		55D23R	80D23R	90D23R
D21	07.92 - 07.95	6	3.0	VG30E		22FR-530	22FR-610	22FR-680
R50	09.95 - 06.05	6	3.3	VG33E		22FR-530	22FR-610	22FR-680
R51	01.05 →	4	2.5	YD25DDTI				574.035
	06.05 →	6	4.0	VQ40DE		56219		

Patrol								
Y60	08.87 - 09.97	6	4.2	TD42		95D31L	105D31L	125D31L
	02.88 - 12.95	6	4.2	TB42S		55D26R	90D26R	110D26R
Y60	04.90 - 11.97	6	3.0	RB30S		55D26L	90D26L	110D26L
	01.92 - 12.95	6	4.2	TB42E		55D26L	90D26L	110D26L
	09.93 - 06.00	4	4.2	TD42T		95D31L	105D31L	125D31L
Y60	10.94 - 09.97	6	2.8	RD28T		55D26L	90D26L	110D26L
Y61	08.97 - 10.01	6	4.5	TB45E		75D31L	105D31L	125D31L
	10.97 - 02.00	6	2.8	RD28TI		75D31L	105D31L	125D31L
	10.97 →	6	4.2	TD42		95D31L	105D31L	125D31L
	03.00 →	4	3.0	ZD30DDTI		75D31L	105D31L	125D31L
Y61	08.04 →	6	4.8	TB48DE		55D26L	90D26L	110D26L
	01.07 →	4	3.0	ZD30DDTI		75D31L	105D31L	125D31L

Pintara								
R31	06.86 - 12.90	4	2.0	CA20E		22FR-530	22FR-610	22FR-680
U12	08.89 - 10.92	4	2.0	CA20E		22F-530DF	22F-610FD	
			2.4	KA24E		22F-530DF	22F-610FD	

Pulsar							
N13	08.87 - 10.91	4	1.6	16LF		40B19LS	
			1.8	18LE		40B19LS	
	08.90 - 12.94	4	2.0	SR20DET		40B19LS	
N14	08.91 - 05.95	4	1.6	GA16DE		40B19LS	
			2.0	SR20DE		40B19LS	
N15	08.95 - 06.00	4	1.6	GA16DE (Sedan)		40B19LS	
				GA16DE (Hatchback)		40B19RS	

N15	08.95 - 06.00	4	2.0	SR20DE		40B19RS		
N16	07.00→	4	1.6	QG16DE <DOHC-16V-EFI>		40B19L		
			1.8	QG18DE <DOHC-16V-EFI>		40B19L		
Serena								
	07.92 - 12.95	4	2.0	SR20DE		55D26R	90D26R	110D26R
Silvia								
S15	11.01 - 08.03	4	2.0	SR20DE		40B19LS		
Skyline								
R31	07.86 - 12.90	6	3.0	RB30E		22FR-530	22FR-610	22FR-680
	05.89 - 08.93	4	1.8	CA18I		40B19L		
		6	2.0	RB20DE		40B19L		
				RB20DET		40B19L		
	05.89 - 01.99	6	2.0	RB20E		40B19L		
	08.91 - 06.01	6	2.5	RB25DE		40B19L		
	08.93 - 06.01	6	2.5	RB25DET		40B19L		
	05.98 - 06.01	6	2.0	RB20DE		40B19L		
	06.01 - 10.06	6	2.5	VQ25DD		40B19L		
	01.02 - 09.07	6	3.5	VQ35DE		40B19L		
Skyline GT-R								
	08.89 - 11.94	6	2.6	RB26DETT		40B19L		
	01.95 - 08.02	6	2.6	RB26DETT		40B19L		
Sylvia								
	05.88 - 01.91	4	1.8	CA18DE		40B19LS		
				CA18DET		40B19LS		
	01.91 - 08.02	4	2.0	SR20DE		40B19LS		
				SR20DET		40B19LS		
Terrano								
	08.86 - 01.93	4	2.7	TD27		55D26R	90D26R	110D26R
WD21	08.86 - 11.95	4	2.4	Z24		55D23R	80D23R	90D23R
	11.88 - 08.95	4	2.7	TD27T		55D26R	90D26R	110D26R
	10.89 - 08.95	6	3.0	VG30E		55D23R	80D23R	90D23R
	09.95 - 02.99	4	2.7	TD27Ti		55D26R	90D26R	110D26R
	09.95 - 08.02	6	3.3	VG33E		55D23R	80D23R	90D23R
	08.96 - 02.99	4	3.2	QD32ETi		55D26R	90D26R	110D26R
R20	11.96 - 12.99	4	2.4	KA24E		55D23R	80D23R	90D23R
	11.96→	4	2.7	TD27Ti		55D26R	90D26R	110D26R
	02.99 - 08.02	4	3.0	ZD30DDTi		55D26R	90D26R	110D26R
Tiida								
	01.05→	4	1.8	MR18DE		40B19L		
						55066		
C11	02.07→	4	1.8	MR18DE		40B19L		
	03.07→	4	1.8	MR18DE		55066		
Urvan								
	11.80→	4	1.6	J16		75D31R	105D31R	125D31R
E24	11.86 - 06.97	4	2.4	Z24S		75D31R	105D31R	125D31R
			2.7	TD27		75D31R	105D31R	125D31R
Vanette								
GC22	05.86 - 04.93	4	2.0	Z20S		40B19RS		
	06.86 - 10.91	4	2.4	Z24S		40B19RS		
	09.86 - 04.93	4	2.0	Z20		40B19RS		



◀ NISSAN

X-Trail							
	09.01→	4	2.5	QR25DE	55D26L	90D26L	110D26L
	08.07→	4	2.5	QR25DE	55D23L	80D23L	90D23L
180SX							
	03.89 - 01.91	4	1.8	CA18DET	22FR-530	22FR-610	22FR-680
	01.91 - 01.99	4	2.0	SR20DET	22FR-530	22FR-610	22FR-680
	08.96 - 01.99	4	2.0	SR20DE	22FR-530	22FR-610	22FR-680
200SX							
S13	09.88 - 12.93	4	1.8	CA18DT <CA18ET>	22FR-530	22FR-610	22FR-680
S14	04.94 - 12.99	4	2.0	SR20DET	22FR-530	22FR-610	22FR-680
300ZX							
Z32	01.90 - 11.95	6	3.0	VG30DE	55D26L	90D26L	110D26L

PEUGEOT

Expert							
G9	02.07→	4	2.0	RHK <DW10UTED4>			574.035
				RHR <DW10BTED4>			574.035
205							
	10.87 - 09.98	4	1.9	D6B <XU9JA>	55066		
205 GTi							
	10.87 - 03.91	4	1.9	DFZ <XU9J1 Kat.>	55066		
	04.91 - 04.94	4	1.9	DFY,DKZ <XU9JAZ Kat.>	55066		
205 Si							
	04.91 - 04.94	4	1.6	BDY <XU5M Kat.>	55066		
206							
T1	06.98 - 08.07	4	1.6	NFZ <TU5JP>	55066		
	03.00 - 08.07	4	1.6	NFU <TU5JP4>	55066		
	03.00 - 02.09	4	1.4	KFW <TU3JP/L4/FL5>	55066		
	10.00 - 11.04	4	2.0	RFN <EW10J4>	56219		
	06.01 - 02.07	4	1.6	N6A <TU5JP4>	55457		560.035
T1	03.03 - 08.06	4	2.0	RFK <EW10J4S>	56219		
	02.04 - 12.05	4	1.4	KFW <TU3JP>	55457		560.035
206CC							
T1	09.00 - 03.07	4	1.6	NFU <TU5JP4>	55066		
			2.0	RFN <EW10J4>	56219		
207							
A7	05.06→	4	1.4	KFU <ET3J4>	55066		
				KFV <TU3A>	55066		
			1.6	9HZ / 9HY <DV6TED4>	56219		
	07.06→	4	1.6	5FX <EP6DT>	55066		
	03.07 - 06.09	4	1.6	5FW <EP6>	55066		
	04.07→	4	1.6	5FY <EP6DTS>	55066		
	06.07→	4	1.6	9HZ / 9HY <DV6TED4>	56219		
207CC							
A7	03.07→	4	1.6	5FW <EP6>	56219		
				5FX <EP6DT>	56219		

306								
N3	05.93 - 04.97	4	1.9	D8A <XUD9TE>	56219			
	08.93 - 04.97	4	2.0	RFX <XU10J2 KAT.>	55066			
				RFY <XU10J4>	55066			
				R6D <XU10J2>	55066			
N5	05.97 - 10.03	4	1.8	LFY <XU7JP4>	55066			
				LFZ <XU7JP KAT.>	55066			
				L6A <XU7JP>	55066			
				1.9	DHY <XUD9TE>	56219		
	12.97 →	4	1.8	2.0	RFS <XU10J4RS>	55066		
				RFV <XU10J4R>	55066			
				R6E <XU10J4R>	55066			
				XU7JP4	55066			
N5	06.99 - 10.03	4	2.0	RHY <DW10TD>	56219			
306CC								
N3	01.93 - 04.97	4	1.8	LFZ <XU7JP KAT.>	55066			
N5	05.97 - 10.03	4	1.8	LFY <XU7JP4>	55066			
			2.0	RFV <XU10J4R>	55066			
307								
T5	08.00 - 05.05	4	1.6	NFU <TU5JP4>	55066			
			2.0	RFN <EW10J4>	56219			
				RHY <DW10TD>	56219			
	10.03 - 05.05	4	2.0	RFK <EW10J4S>	56219			
				RHR <DW10BTED4/FAP>	56219			
	02.04 - 05.05	4	1.6	9HZ / 9HY <DV6TED4>	56219			
T6	06.05 - 05.08	4	1.6	9HZ / 9HY <DV6TED4>	56219			
			2.0	RHR <DW10BTED4/FAP>	56219			
	06.05 →	4	2.0	RFJ <EW10A>	56219			
				RFK <EW10J4S>	56219			
308								
T7	09.07 →	4	1.6	5FW <EP6>	56219			
				5FX <EP6DT>	56219			
				9HZ <DV6TED4/FAP>		574.035		
			2.0	RHR <DW10BTED4/FAP>		574.035		
405								
15	04.88 - 12.92	4	1.9	DFW <XU9J4Z Kat.>	56219			
	07.88 - 12.92	4	1.9	DFZ <XU9J1 Kat.>	56219			
				DKZ,DFY <XU9JAZ Kat.>	56219			
	02.89 - 11.91	4	1.9	DFV <XU9J2 Kat.>	56219			
4	06.92 - 04.97	4	1.9	D8A <XUD9TE>		574.035		
			2.0	RFX <XU10J2 Kat.>	56219			
	01.93 - 04.97	4	2.0	RFT <XU10J4>	56219			
				RFY <XU10J4>	56219			
406								
D8	10.95 - 03.99	4	2.0	RFV <XU10J4R>	55066			
	12.95 - 03.99	4	2.1	P8C <XUD11BTE>	56219			
	08.96 - 03.99	6	3.0	XFZ <ES9J4>	56219			
D9	04.99 - 08.00	4	2.0	RFR <EW10J4>	55066			
	04.99 - 06.04	4	1.8	LFY <XU7JP4>	55066			
			2.0	RHZ <DW10ATED>	56219			
	04.99 - 02.05	4	2.0	RFV <XU10J4R>	55066			
			6	3.0	XFZ <ES9J4>	56219		
	12.99 - 02.05	6	3.0	XFX <ES9J4S>	56219			
	03.00 - 06.04	4	2.2	4HX <DW12TED4>	56219			
08.00 - 06.04	4	2.0	RFN <EW10J4>	55066				



◀ PEUGEOT

407					
D2	05.04→	4	2.0	RFN <EW10J4>	56219
				RHR / RHL <DW10BTED4>	574.035
			2.2	3FZ <EW12J4>	56219
		6	3.0	XFV <ES9A>	56219
	10.05→	6	2.7	UHZ <DT17TED4>	574.035
	09.06→	6	2.7	UHZ <DT17TED4>	56219

505					
	03.86 - 12.93	4	2.2	851X <ZDJL Kat.>	574.035

605					
Y30	07.93 - 05.99	6	3.0	UFZ <ZPJ KAT.>	55066

607					
Z8	03.00 - 11.04	6	2.9	XFV <ES9J4S>	574.035
Z9	12.04→	6	3.0	XFV <ES9A>	574.035

PORSCHE

Boxster					
986	10.96 - 08.99	6	2.5	M96.20	58014
	09.99 - 08.02	6	2.7	M96.22	58014
			3.2	M96.21	58014
	09.02 - 08.04	6	2.7	M96.23	58014
3.2			M96.24	58014	
987	09.04 - 08.06	6	2.7	M96.25	58014
			3.2	M96.26	58014
	09.06 - 01.09	6	3.4	M97.21	58014

Carrera GT					
	10.04 - 04.06	10	5.7	M80.01	58515

Cayman					
987C	11.05 - 01.09	6	3.4	M97.21	58515

911 Carrera					
964	09.89 - 08.93	6	3.6	M64.01/.02	574.035
993	09.93 - 08.95	6	3.6	M64.05 / M64.06	574.035
	09.94 - 08.97	6	3.8	M64.20	574.035
	09.95 - 08.97	6	3.6	M64.21 / M64.22	574.035
996	09.97 - 08.99	6	3.4	M96.01	574.035
996T/GT2/GT3	03.99 - 08.01	6	3.6	M96.76	574.035
	09.99 - 08.01	6	3.4	M96.04	574.035
09.01 - 07.04			6	3.6	M96.03
997	08.04 - 05.08	6	3.6	M96.05	574.035
			3.8	M97.01	574.035
997 GT3	03.06 - 12.08	6	3.6	M97.76	574.035

911 Carrera 4					
964	09.89 - 08.93	6	3.6	M64.01	574.035
993	09.94 - 08.95	6	3.6	M64.05	574.035
	09.95 - 08.97	6	3.6	M64.21	574.035
996	09.98 - 08.99	6	3.4	M96.02	574.035
	09.01 - 07.04	6	3.6	M96.03	574.035
997	10.05 - 05.08	6	3.8	M97.01	574.035

911 Turbo					
964	12.90 - 08.92	6	3.3	M30.69	574.035



964	02.93 - 08.93	6	3.6	M64.50		574.035
993	03.95 - 08.97	6	3.6	M64.60		574.035
996T/GT2/GT3	06.00 - 09.05	6	3.6	M96.70		574.035
	06.01 - 09.04	6	3.6	M96.70S		574.035
	02.03 - 09.05	6	3.6	M96.70E		574.035
997 GT2, GT3	09.07→	6	3.6	M97.70S		574.035

928	08.86 - 07.91	8	5.0	M28.41,.42		574.035
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944	09.87 - 07.91	4	2.5	M44.52	55457	560.035
	12.88 - 07.91	4	3.0	M44.41		575.035

968	08.91 - 11.95	4	3.0	M44.43/.44		575.035
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PROTON

GEN2	02.04→	4	1.6	S4PH <Campro>	55D23L	80D23L	90D23L
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New Persona	08.07→	4	1.6	S4PH <Campro>	55D23R	80D23R	90D23R
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Persona							
C90 CC0	01.93 - 12.97	4	1.5	4G15 Euro I	22FR-530	22FR-610	22FR-680
C90 CC1	12.95→	4	1.3	4G13 Euro II	22FR-530	22FR-610	22FR-680
				4G15 <Euro II>	22FR-530	22FR-610	22FR-680
				4G15 Euro II	22FR-530	22FR-610	22FR-680
				4G92 Euro II <SOHC>	22FR-530	22FR-610	22FR-680

Satria							
C90	03.96→	4	1.3	4G13	22FR-530	22FR-610	22FR-680
			1.5	4G15	22FR-530	22FR-610	22FR-680
			1.6	4G92	22FR-530	22FR-610	22FR-680
			11.98→	4	1.8	4G93	22FR-530

Satria Neo							
C90	11.06→	4	1.6	<Campro DOHC 16v>	55D23R	80D23R	90D23R

Waja							
CF1	09.00→	4	1.6	4G18 S4	55D23L	80D23L	90D23L

Wira							
	05.95 - 11.96	4	1.5	4G15	55D23R	80D23R	90D23R
C90	05.95 - 12.96	4	1.6	4G92	55458		

RENAULT

Clio							
BB./CB./SB.	06.98 - 10.07	4	1.6	K4M 748	55066		
	03.99 - 10.07	4	2.0	F4R 730	55066		
	10.99 - 10.07	4	1.4	K4J 712	55066		
				K4J 713	55066		
	05.00 - 10.07	4	1.4	K4J 711	55066		
				K4J 715	55066		
	08.00 - 10.07	4	1.4	K4J 710	55066		



◀ RENAULT

BB./CB./SB.	08.00 - 10.07	4	1.6	K4M 708	55066	
	06.01 - 10.07	4	1.6	K4M 744	55066	
			2.0	F4R 732	55066	
				F4R 736	55066	
LB.	06.01 - 10.07	4	1.4	K4J 712	55066	
	11.01 - 10.07	4	1.4	K4J 713	55066	
BB./CB./SB.	12.02 - 10.07	4	1.6	K4M 742	55066	
	03.03 - 10.07	4	2.0	F4R 738	55066	
BR./CR.	06.05 →	4	1.4	K4J 780	55457	560.035
	12.05 →	4	2.0	F4R 830	55457	560.035

Kangoo

FC./KC.	01.03 - 12.07	4	1.6	K4M 732	55066	
	04.05 - 12.07	4	1.5	K9K 718		574.035

Laguna

B56	01.94 - 12.96	4	2.0	F3R 722	55066	
	01.94 - 02.01	4	2.0	F3R 723	56219	
		6	3.0	Z7X 760	56219	
BG.	03.01 - 09.07	4	2.0	F4R 712	55457	560.035
		6	3.0	L7X 731		575.035
	06.01 - 09.07	4	2.0	F4R 713	55457	560.035
	07.05 - 09.07	4	2.2	G9T 605		575.035
BT.	10.07 →	4	2.0	F4R 811	56219	
				M9R 742	58014	
KT.	10.07 →	4	2.0	F4R 811	56219	
				M9R 742	58014	

Master

X70	10.03 - 10.06	4	2.5	G9U 750		574.035
	11.06 →	4	2.5	G9U 650 (M1) <120BO, Euro 4>		574.035

Megane

X64	03.99 - 09.03	4	1.6	K4M 700		574.035
BM./CM./GM./SM.	03.03 - 10.08	4	2.0	F4R 774	55457	560.035
LM.	07.03 →	4	2.0	F4R 771	55457	560.035
EM.	10.03 →	4	1.6	K4M 760	55457	560.035
				K4M 761	55457	560.035
				2.0	F4R 771	55457
BM./CM./GM./SM.	05.05 - 10.08	4	1.6	K4M 812	55457	560.035
LM.	05.05 →	4	1.9	F9Q 803	55457	560.035

R 19

X53	09.88 - 12.95	4	1.7	F3N 742 Kat.	55066	
				F3N 743 Kat.	55066	
	05.92 - 12.95	4	1.8	F3P 700 Kat.	56219	
	09.94 - 12.95	4	1.8	F3P 682 Kat.	56219	
	10.94 - 12.95	4	1.8	F3P 765 Kat.	56219	

R 21

L48	07.86 - 12.94	4	2.2	J7T 754,755 Kat.	56219	
	10.86 - 03.93	4	2.0	J7R 750,751	56219	

R 25

	10.86 - 12.92	4	2.2	J7T 732,733 Kat.	55066	
	05.88 - 12.92	6	2.9	Z7W 701	56219	

Scenic

JA.	03.99 - 04.03	4	1.6	K4M 700	55457	560.035
	06.99 - 04.03	4	2.0	F4R 744	55457	560.035
	06.00 - 04.03	4	2.0	F4R 746	55457	560.035



JM.	05.03 - 04.09	4	2.0	F4R 770	55457	560.035
				F4R 771	55457	560.035
Scenic II						
JM.	05.05 - 04.09	4	1.9	F9Q 803	55457	560.035
				F9Q 814	55457	560.035
Trafic						
EL./FL./JL.	06.01 - 12.06	4	1.9	F9Q 760		574.035
	01.06→	4	2.0	M9R 780		574.035

ROLLS-ROYCE

Corniche						
	04.93 - 08.94	8	6.8	L 410 M	55D26R	90D26R 110D26R
	01.00 - 12.02	8	6.8	OHV V8	55D26R	90D26R 110D26R
Park Ward						
	03.00 - 12.02	12	5.4		55D26R	90D26R 110D26R
Phantom						
RR1	03.03→	12	6.8	N73 B68		60038
Silver Dawn						
	09.94 - 08.97	8	6.8	OHV V8	55D26R	90D26R 110D26R
Silver Seraph						
	03.98 - 12.02	12	5.4	V12	55D26R	90D26R 110D26R
Silver Spirit						
	01.89 - 03.93	8	6.8	OHV V8	55D26R	90D26R 110D26R
	03.94 - 05.98	8	6.8	L 410 MN 1T	55D26R	90D26R 110D26R
Silver Spur						
	07.89 - 03.93	8	6.8	OHV V8 <Kat.>	55D26R	90D26R 110D26R
	04.93 - 12.98	8	6.8	OHV V8	55D26R	90D26R 110D26R

ROVER

75						
	01.99 - 05.05	6	2.5	25K4F <KV 6>		574.035
	01.03 - 05.05	4	2.0	M 47 R <M 47 D 20>		574.035
827						
	02.88 - 10.91	6	2.7	C27A V6	56219	

SAAB (SAAB AUTOMOBILE AB)

9-3						
9400	03.98 - 08.00	4	2.0	B204I	56219	
				B204L	56219	
				2.3 B234I	56219	
	09.98 - 08.00	4	2.0	B204E	56219	
	09.99 - 08.00	4	2.3	B235R	56219	
	09.99 - 08.02	4	2.0	B205E <(Ecopower)>	56219	
				B205L	56219	
				B205R <Ecopower DOHC>	56219	



◀ SAAB

9440	09.02 - 08.06	4	2.0	B207L	56219	
	09.02→	4	2.0	B207E	56219	
	02.03→	4	2.0	B207R	56219	
	09.04→	4	1.9	Z19DTH		574.035
	09.05→	6	2.8	B284 <Turbo>	56219	
	02.08→	4	1.9	Z19DTR		574.035

9-3 Cabriolet

9440	08.03→	4	2.0	B207E	56219	
				B207L	56219	
				B207R	56219	
	09.05→	6	2.8	B284 <Turbo>		574.035
	01.06→	4	1.9	Z19DTH	58014	

9-3 Kombi

9440	03.05→	4	1.9	Z19DTH		574.035
			2.0	B207L	56219	
				B207R	56219	
			6	2.8	B284 <Turbo>	

9-5

06.97 - 08.01	4	2.0	B205E <Ecopower>	574.035
06.99 - 08.03	6	3.0	B308E <Ecopower>	574.035
09.00→	4	2.3	B235E <Ecopower>	574.035
09.01→	4	2.3	B235R	574.035
09.03→	4	2.3	B235L	574.035
09.05→	4	1.9	Z19DTH	574.035

9-5 Kombi

09.00→	4	2.3	B235E <Ecopower>	574.035
09.01→	4	2.3	B235R	574.035
01.06→	4	1.9	Z19DTH	574.035

900

09.85 - 08.91	4	2.0	B 201 I Kat.	56219
09.85 - 08.92	4	2.0	B 202 I Kat.	56219
09.90 - 08.94	4	2.1	B 212 I Kat.	56219
09.93 - 08.98	4	2.0	B 206 I Kat.	56219
09.93 - 10.98	6	2.5	B 258 I	574.035
09.94 - 08.98	4	2.0	B 204 I Kat.	56219

900 Turbo

08.84 - 08.93	4	2.0	B 202 L Kat.	56219
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900 Turbo Cabriolet

09.86 - 08.93	4	2.0	B 202 L Kat.	56219
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9000

08.86 - 08.93	4	2.0	B 202 I <Kat>	574.035
09.89 - 08.93	4	2.0	B 202 I <Kat>	56219
09.89 - 12.98	4	2.3	B 234 I <Kat>	574.035
01.90 - 08.93	4	2.0	B 202 L <Turbo- Katalysator>	56219
09.90 - 08.93	4	2.3	B 234 L <Turbo- Katalysator>	574.035
09.92 - 12.98	4	2.0	B 202 S <Turbo- Katalysator>	56219
09.93 - 12.98	4	2.3	B 234 L <Kat>	574.035
09.94 - 12.98	6	3.0	B 308 I <Kat>	574.035



SEAT

Cordoba

6K2	09.93 - 04.96	4	2.0	2E	55457	560.035
	07.94 - 12.02	4	1.8	ADZ	55457	560.035
	12.95 - 11.02	4	1.6	AFT	55457	560.035
	03.97 - 12.98	4	1.6	AEE	54316	

Ibiza

6K1	03.93 - 04.96	4	2.0	2E	55066	
	09.93 - 12.95	4	1.4	ABD	55066	
	12.95 - 12.97	4	1.4	AEX	55066	
	06.96 - 10.99	4	2.0	ABF	55066	

Toledo

1L2	05.91 - 06.96	4	2.0	2E	54316	
	03.96 - 03.99	4	2.0	AGG	54316	

SKODA

Octavia

1Z3	05.04→	4	2.0	BKD		574.035
	10.05→	4	2.0	BWA	56219	
	11.05→	4	2.0	BVY	56219	
	03.06→	4	1.9	BXE		574.035

Octavia Combi

1U5	08.00→	4	1.8	AUM	55066	
1Z5	05.04→	4	2.0	BKD		574.035
	11.04→	4	1.9	BXE		574.035
	10.05→	4	2.0	BWA		574.035
	11.05→	4	2.0	BVY	56219	
	12.05→	4	2.0	BMM		574.035

Roomster

5J7	05.06→	4	1.6	BTS	55066	
			1.9	BSW	56219	

120 L

	08.76 - 12.90	4	1.2		54316	
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SMART (MCC)

FORFOUR

454	01.04 - 06.07	4	1.3	135.930	55066	
			1.5	135.950	55066	
			04.05 - 06.07	4	1.5	122.950

FORTWO

450	02.04 - 03.07	3	0.7	160.910	55066	
451	04.07→	3	1.0	132.910 <RA1>	55066	

Roadster

452	04.03 - 11.05	3	0.7	160.922	55066	
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Smart

450	01.03 - 01.04	3	0.7	160.920	55066	
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SSANGYONG

Chairman

09.03 - 01.08 6 3.2 162-994-000 <DOHC M104> **60038**

Musso

10.02 - 12.05 5 2.9 662-902 **75D31R** **105D31R** **125D31R**

SUBARU

Forester

SF	03.98 - 05.02	4	2.0	EJ202	55D23L	80D23L	90D23L
				EJ205	55D23L	80D23L	90D23L
	07.98 - 05.02	4	2.5	EJ25	55D23L	80D23L	90D23L
SG	06.02 - 05.05	4	2.5	EJ251	55D23L	80D23L	90D23L
	04.03 - 11.07	4	2.5	EJ255	55D23L	80D23L	90D23L
	06.05 - 11.07	4	2.5	EJ253	55D23L	80D23L	90D23L

Impreza

	01.93 - 12.95	4	1.6	EJ16	55B24LS		
GF	01.93 - 12.95	4	1.8	EJ18S	40B19LS		
GC	01.93 - 12.95	4	1.8	EJ18S	55B24LS		
	01.93 - 07.96	4	1.8	EJ18E	55B24LS		
	10.93 - 09.00	4	1.6	EJ16E	40B19LS		
GC,GF	08.95 - 07.98	4	2.0	EJ20E	40B19LS		
	08.96 - 07.98	4	1.6	EJ16J	40B19LS		
GD,GG	10.00 - 06.07	4	2.0	EJ201	40B19LS		
	07.01 - 05.05	4	2.5	EJ251	40B19LS		
	11.02 - 05.05	4	2.0	EJ205	40B19LS		
	06.05 - 06.07	4	2.0	EJ204	40B19LS		

Impreza WRX

GC,GF	12.93 - 07.98	4	2.0	EJ20G	40B19LS		
	08.98 - 09.00	4	2.0	EJ205	40B19LS		
GD,GG	10.00 - 05.05	4	2.0	EJ205	40B19LS		
	06.05 - 06.07	4	2.5	EJ255	40B19LS		
GH	06.07→	4	2.0	EJ204	40B19LS		

Impreza WRX STi

GD,GG	10.01 - 05.05	4	2.0	EJ207	40B19LS		
	06.05 - 06.07	4	2.5	EJ257	40B19LS		

Legacy

05.03 - 05.09 4 2.0 EJ20 (DOHC) **40B19R**

Liberty

BC,BF,BJ	01.89 - 12.93	4	2.2	EJ22	40B19R		
	05.92 - 12.93	4	2.0	EJ20G	40B19R		
BD,BG	01.94 - 05.97	4	2.2	EJ22E	40B19R		
	06.96 - 11.98	4	2.5	EJ25D <4CAM>	40B19R		
BE	10.98 - 06.03	4	2.5	EJ251	40B19RS		
BE,BH	10.98 - 06.03	4	2.0	EJ201	40B19R		
BH	10.98 - 06.03	4	2.5	EJ251	40B19R		
BE,BH	05.01 - 06.03	4	2.0	EJ208	40B19R		
BL,BP	07.03 - 05.09	6	3.0	EZ30D	40B19R		
	09.03 - 06.05	4	2.0	EJ202	40B19R		
	09.03 - 06.06	4	2.5	EJ25	40B19R		





MV							
	11.84 - 12.94	4	1.8	EA81	40B19R		
Outback							
BD,BG	06.96 - 12.99	4	2.5	EJ25D <4CAM>	40B19R		
BE,BH	10.98 - 06.03	4	2.5	EJ251	40B19R		
	07.00 - 06.03	6	3.0	EZ30D	40B19R		
BL,BP	07.03 - 06.06	4	2.5	EJ25	40B19L		
	07.03 - 05.09	6	3.0	EZ30D	55D23L	80D23L	90D23L
	10.03 - 05.09	4	2.5	EJ25 (SOHC)	40B19L		
Sherpa							
M80	04.89 - 02.92	4	0.8	EN08	40B19R		
SVX							
	09.92 - 12.96	6	3.3	EG33	40B19R		
Tribeca							
B9	04.06 - 10.07	6	3.0	EZ 30 H6	55D23L	80D23L	90D23L
	11.07→	6	3.6		55D23L	80D23L	90D23L
SUZUKI							
Alto							
EF	10.94 - 02.02	4	1.0	G10B	40B19L		
APV							
	09.04→	4	1.6	G16A <SOHC MPI>	40B19L		
Carry							
ST	09.76 - 11.80	0	0.0	LJ50	40B19RS		
ED	10.85 - 12.90	4	1.0	F10A	40B19RS		
FD	03.99 - 03.09	4	1.3	G13B	40B19RS		
Grand Vitara							
	03.98→	4	2.0	J20A	22F-530DF	22F-610FD	
	04.98 - 12.05	6	2.5	H25A	22F-530DF	22F-610FD	
	06.01→	6	2.7	H27A	22F-530DF	22F-610FD	
	10.05→	4	1.9	F9Q	22F-530DF	22F-610FD	
Ignis							
	10.00 - 09.03	4	1.3	M13A	54316		
	12.03 - 02.05	4	1.5	M15A	54316		
Jimny							
	10.98 - 10.08	4	1.3	G13BB	40B19RS		
	10.00 - 10.05	4	1.3	M13A	40B19LS		
Sierra							
	01.90 - 12.95	4	1.3	G13BA	40B19RS		
Swift							
EZ	11.04→	4	1.5	M15A	54316		
	09.05→	4	1.6	M16A	54316		
SX4							
	07.06→	4	2.0	J20A	40B19R		



◀ SUZUKI

Wagon R+

EM	10.96 - 05.00	4	1.0	G10	55B24LS
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Wagon R Wide

	02.97 - 06.99	4	1.0	K10A	55B24LS
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X90

	09.95 - 05.98	4	1.6	G16B	40B19LS
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TOYOTA

Aurion

GSV40R	06.06→	6	3.5	2GRFE	55D23L	80D23L	90D23L
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Avalon

MCX10R	04.00 - 06.05	6	3.0	1MZFE	55D23L	80D23L	90D23L
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Avensis

AZT220	07.00 - 01.03	4	2.0	1AZFSE		22NF-330D	
ACM20	05.01 - 11.03	4	2.0	1AZFE		22NF-330D	
ACM21	10.03→	4	2.4	2AZFE		22NF-330D	

Camry / Vienta

SV21	01.87 - 11.92	4	2.0	3SFE	40B19LS		
VZV21	06.88 - 02.93	6	2.5	2VZFE	55D23L	80D23L	90D23L
SV22	07.89 - 06.91	4	2.0	3SFC	40B19LS		
SDV10	02.93 - 06.95	4	2.2	5SFE	40B19LS		
VDV10	02.93 - 06.95	6	3.0	3VZFE	55D23L	80D23L	90D23L
VCV10	07.95 - 06.97	6	3.0	3VZFE	55D23L	80D23L	90D23L
SXV10	07.95 - 04.98	4	2.2	5SFE	55D23L	80D23L	90D23L
MCV20	07.97 - 08.02	6	3.0	1MZFE	55D23L	80D23L	90D23L
SXV20	05.98 - 02.02	4	2.2	5SFE	55D23L	80D23L	90D23L
ACV36	09.02 - 05.06	4	2.4	2AZFE	55D23L	80D23L	90D23L
MCV36	09.02 - 06.06	6	3.0	1MZFE	55D23L	80D23L	90D23L
ACV40	06.06→	4	2.4	2AZFE	55D23L	80D23L	90D23L

Celica

ST185	10.89 - 08.93	4	2.0	3SGTE	55D23L	80D23L	90D23L
ST184	10.89 - 09.97	4	2.2	5SFE	55D23L	80D23L	90D23L
ST182	10.90 - 11.93	4	2.0	3SGE	40B19LS		
ST204	11.93 - 08.99	4	2.2	5SFE	55D23L	80D23L	90D23L
ST205	02.94 - 08.99	4	2.0	3SGTE	40B19LS		
ST202	08.94 - 05.99	4	2.0	3SGE	40B19LS		
ST202C	12.97 - 08.99	4	2.0	3SGE	40B19LS		
ZZT231	08.99 - 04.06	4	1.8	2ZZGE	55B24RS		
	08.00 - 08.05	4	1.8	2ZZGE		22NF-330D	

Corolla

AE92	05.87 - 06.91	4	1.6	4AGE		22NF-330D	
	01.88 - 06.94	4	1.6	4AFE		22NF-330D	
	01.89 - 04.92	4	1.6	4AFC		22NF-330D	
AE90	02.89 - 05.92	4	1.4	6AF	40B19LS		
AE92	02.89 - 06.94	4	1.6	4AF		22NF-330D	
AE93	08.89 - 05.91	4	1.6	4AGE	40B19LS		
AE92	01.91 - 12.92	4	1.6	4AFC	40B19LS		
AE94	01.91 - 12.92	4	1.8	4AFE		22NF-330D	
AE92	06.91 - 08.92	4	1.6	4AGE	40B19LS		
AE94	07.91 - 06.94	4	1.6	4AFE		22NF-330D	
AE96	10.92 - 06.94	4	1.8	7AFE		22NF-330D	
AE101	07.94 - 08.98	4	1.6	4AFE		22NF-330D	

		Cyl	Power	Type	S3	S4	S5		
AE102	07.94 - 12.99	4	1.8	7AFE					22NF-330D
AE112R	10.98 - 10.01	4	1.8	7AFE				40B19LS	
ZZE122	08.00 - 10.06	4	1.8	1ZZFE				40B19LS	
ZZE122G	08.00 - 10.06	4	1.8	1ZZFE				40B19LS	
ZZE122	08.00→	4	1.8	1ZZFE				40B19L	
ZZE123	11.01→	4	1.8	2ZZGE				56219	
Corolla 4WD									
AE95	02.88 - 07.95	4	1.6	4AFE				40B19LS	
Cressida									
LX80	08.88 - 08.96	4	2.4	2L				55D23L	80D23L 90D23L
MX83	09.88 - 08.92	6	3.0	7MGE				55D23L	80D23L 90D23L
Cresta									
GX90	10.92 - 09.96	6	2.0	1GFGE				55D23L	80D23L 90D23L
JZX90	10.92 - 09.96	6	2.5	1JZGE				55D23L	80D23L 90D23L
				1JZGTE				55D23L	80D23L 90D23L
LX90	10.92 - 09.96	4	2.4	2LTE				55D23L	80D23L 90D23L
SX90	10.92 - 09.96	4	1.8	4SFE				55D23L	80D23L 90D23L
GX100	09.96 - 08.98	6	2.0	1GFGE				55D23L	80D23L 90D23L
LX100	09.96 - 08.99	4	2.4	2LTE				55D23L	80D23L 90D23L
JZX100	09.96 - 06.01	6	2.5	1JZGE				55D23L	80D23L 90D23L
				1JZGTE				55D23L	80D23L 90D23L
JZX101	09.96 - 06.01	6	3.0	2JZGE				55D23L	80D23L 90D23L
JZX105	09.96 - 06.01	6	2.5	1JZGE				55D23L	80D23L 90D23L
Dyna									
YH81	08.87 - 03.92	4	1.8	2Y				55D26R	90D26R 110D26R
LH80	08.87 - 05.95	4	2.5	2L				75D31R	105D31R 125D31R
BU60	08.88 - 05.95	4	3.0	B				75D31R	105D31R 125D31R
BU61	08.88 - 05.95	4	3.0	11B				75D31R	105D31R 125D31R
YU62	08.88 - 05.95	4	2.2	4Y				75D31R	105D31R 125D31R
YY100L	05.95 - 05.99	4	1.8	2Y				55D26R	90D26R 110D26R
LY212R,LY230R	11.99→	4	3.0	5L				55D23L	80D23L 90D23L
Echo									
NCP10	08.99 - 02.05	4	1.3	2NZFE				40B19LS	
NCP12	09.99→	4	1.5	1NZFE				40B19LS	
NCP13	06.03→	4	1.5	1NZFE				40B19RS	
Harrier									
SXU10W	12.97 - 11.00	4	2.2	5SFE				22F-530DF	22F-610FD
SXU15W	12.97 - 11.00	4	2.2	5SFE				22F-530DF	22F-610FD
MCU10W	12.97 - 02.03	6	3.0	1MZFE				22F-530DF	22F-610FD
	03.98→	6	3.0	1MZFE				22F-530DF	22F-610FD
ACU10W	11.00 - 02.03	4	2.4	2AZFE				22F-530DF	22F-610FD
ACU15W	11.00 - 02.03	4	2.4	2AZFE				22F-530DF	22F-610FD
Hiace									
RZH103	08.89 - 08.98	4	2.4	2RZ				40B19RS	
LH105	08.89 - 08.00	4	2.8	3L				75D31R	105D31R 125D31R
LH113/115	08.89 - 08.00	4	2.8	3L				75D31R	105D31R 125D31R
RZH113	08.89 - 02.05	4	2.4	2RZE				55D23R	80D23R 90D23R
RZH103	08.93 - 02.05	4	2.4	2RZE				55D23L	80D23L 90D23L
RCH12R/S.B.V	08.95 - 12.03	4	2.4	2RZE				55D23R	80D23R 90D23R
RCH22	03.97 - 12.03	4	2.4	2RZE				55D23R	80D23R 90D23R
LH174/184	08.98 - 02.05	4	3.0	5L				75D31R	105D31R 125D31R
KLH12/22	08.01→	4	2.5	2KDFTV				75D31R	105D31R 125D31R
KDH200K/KDH200V/ KDH220K	08.04 - 09.07	4	2.5	2KDFTV				75D31R	105D31R 125D31R



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TRH223B	01.05→	4	2.7	2TRFE	55D23R	80D23R	90D23R
TRH 201, 221, 223	03.05→	4	2.7	2TRFE	55D23R	80D23R	90D23R

Hiace Commuter

RZH124B	08.93 - 07.03	4	2.0	1RZE	55D23R	80D23R	90D23R
RZH125B	08.98 - 07.03	4	2.4	2RZE	55D23R	80D23R	90D23R
LH184B/LH186B	08.98 - 10.04	4	3.0	5L	75D31R	105D31R	125D31R
KDH222B	01.05 - 09.07	4	2.5	2KDFTV	75D31R	105D31R	125D31R

Hilux

LN51/56/60/61/65	08.84 - 07.98	4	2.4	2L	40B19RS		
RN50/55/58/61/67	01.86 - 07.98	4	2.4	22R	40B19RS		
YN67R	02.86 - 08.98	4	2.2	4Y	55D23L	80D23L	90D23L
YN50/55	08.86 - 07.98	4	1.6	1Y	40B19R		
YN58/62/63/67	08.86 - 07.98	4	2.2	4Y	40B19RS		
YN51R	11.86 - 08.98	4	1.8	2Y	55D23L	80D23L	90D23L
YN85	08.88 - 08.94	4	1.8	2Y	40B19R		
YN106	08.88 - 08.94	4	2.2	4Y	40B19R		
YN110	08.88 - 08.94	4	2.2	4Y	40B19R		
LN85	08.88 - 08.97	4	2.4	2L	75D31R	105D31R	125D31R
RN110R	08.88 - 08.97	4	2.4	22R	75D31R	105D31R	125D31R
LN105	09.88 - 08.97	4	2.4	2L	75D31R	105D31R	125D31R
RN110	09.88 - 08.97	4	2.4	22RE	40B19R		
LN86R	10.88 - 12.97	4	2.8	3L	75D31R	105D31R	125D31R
LN106R, 107R, 111R	10.88 - 12.97	4	2.8	3L	75D31R	105D31R	125D31R
YN85	01.89 - 10.94	4	1.8	2Y	55D23L	80D23L	90D23L
VZN130	08.89 - 11.95	6	3.0	3VZE	55D23L	80D23L	90D23L
LN130	01.90 - 11.95	4	2.4	2LT	75D31R	105D31R	125D31R
LN57/67	08.95 - 07.98	4	2.8	3L	75D31R	105D31R	125D31R
LN67R	10.95 - 08.98	4	2.8	3L	75D31R	105D31R	125D31R
RZN147/RZN152H	08.97 - 12.02	4	2.0	1RZE	55D23L	80D23L	90D23L
LN167R, 172R	10.97 - 02.05	4	3.0	5L	75D31R	105D31R	125D31R
RZN147R, 149R, 154R	10.97 - 02.05	4	2.7	3RZFE	55D23L	80D23L	90D23L
RZN169R, 174R	10.97 - 02.05	4	2.7	3RZFE	55D23L	80D23L	90D23L
LN192R	01.98 - 12.02	4	3.0	5L	75D31R	105D31R	125D31R
LN167R	10.98 - 06.00	4	3.0	5L	75D31R	105D31R	125D31R
RZN169H/RZN174H	08.99 - 07.04	4	2.7	3RZFE	55D23L	80D23L	90D23L
KNZ165R	07.00 - 05.05	4	3.0	1KZTE	75D31R	105D31R	125D31R
LN167R	11.00 - 05.02	4	3.0	5LE	75D31R	105D31R	125D31R
LN192R	11.00 - 12.02	4	3.0	5LE	75D31R	105D31R	125D31R
RZN169R, 174R	10.02→	6	3.4	5VZFE	55D23L	80D23L	90D23L
VZN210W	11.02 - 08.05	6	3.4	5VZFE	75D31R	105D31R	125D31R
GGN25R	03.05→	6	4.0	1GRFE	55D26L	90D26L	110D26L
KUN26R	03.05→	4	3.0	1KDFTV	95E41		
TGN26R	06.05→	4	2.7	2TR-FE <VVTi>	55D23L	80D23L	90D23L

Hilux Surf

YN130G	04.89 - 08.91	4	2.0	3YE	55D23L	80D23L	90D23L
LN131V	04.89 - 08.93	4	2.8	3L	75D31R	105D31R	125D31R
LN130G/LN130W	08.90 - 08.93	4	2.4	2LTE	75D31R	105D31R	125D31R
VZN130G	08.90 - 11.95	6	3.0	3VZE	55D23L	80D23L	90D23L
KZN130G/KZN130W	08.93 - 11.95	4	3.0	1KZTE	75D31R	105D31R	125D31R
KZN185G/KZN185W	11.95 - 08.00	4	3.0	1KZTE	75D31R	105D31R	125D31R
RZN185W	11.95 - 11.02	4	2.7	3RZFE	55D23L	80D23L	90D23L
VZN185W	11.95 - 11.02	6	3.4	5VZFE	75D31R	105D31R	125D31R
KZN185W	07.96 - 08.00	4	3.0	1KZTE	75D31R	105D31R	125D31R
KDN185G/KDN185W	06.00 - 11.02	4	3.0	1KDFTV	75D31R	105D31R	125D31R
RZN215W	11.02 - 08.04	4	2.7	3RZFE	55D23L	80D23L	90D23L
KDN215W	11.02 - 08.05	4	3.0	1KDFTV	75D31R	105D31R	125D31R

Kluger

MCU28R	10.03→	6	3.3	3MZFE	55D26L	90D26L	110D26L
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Land Cruiser								
BJ73	11.84 - 02.94	4	3.4	3B	75D31R	105D31R	125D31R	
FJ75RP	02.86 - 04.92	6	4.0	3F	75D31R	105D31R	125D31R	
RJ70	12.88 - 12.90	4	2.4	22R	55D26R	90D26R	110D26R	
PZJ70	01.90 - 08.92	5	3.5	1PZ	75D31R	105D31R	125D31R	
PZJ73	01.90 - 08.92	5	3.5	1PZ	75D31R	105D31R	125D31R	
HDJ80	01.90 - 01.95	6	4.2	1HDT	75D31L	105D31L	125D31L	
HZJ80	01.90 - 01.98	6	4.2	1HZ	75D31L	105D31L	125D31L	
HZJ70	01.90 - 08.99	6	4.2	1HZ	75D31R	105D31R	125D31R	
HZJ73	01.90 - 08.99	6	4.2	1HZ	75D31R	105D31R	125D31R	
FZJ80	08.92 - 01.98	6	4.5	1FZFE	75D31L	105D31L	125D31L	
HZJ75	08.92 - 08.99	6	4.2	1HZ	75D31R	105D31R	125D31R	
HDJ80	01.95 - 01.98	6	4.2	1HDFTE	75D31L	105D31L	125D31L	
KZJ90/95	04.96 - 09.02	4	3.0	1KZTE	75D31L	105D31L	125D31L	
HDJ100	01.98 - 07.08	6	4.2	1HDFTE	75D31L	105D31L	125D31L	
UZJ100	01.98 - 07.08	8	4.7	2UZFE	75D31L	105D31L	125D31L	
UZJ100W	01.98 - 07.08	8	4.7	2UZFE	75D31L	105D31L	125D31L	
FZJ75, 78, 79, 105	03.98 - 04.05	6	4.5	1FZFE	75D31R	105D31R	125D31R	
HZJ78, 79, 105	03.98→	6	4.2	1HZ	95D31L	105D31L	125D31L	
HZJ78	08.99 - 08.01	6	4.2	1HZ	75D31L	105D31L	125D31L	
HZJ79	08.99 - 08.01	6	4.2	1HZ	75D31L	105D31L	125D31L	
HDJ78, 79	06.01→	6	4.2	1HDFTE	75D31L	105D31L	125D31L	
GRJ120	01.03→	6	4.0	1GRFE	75D31L	105D31L	125D31L	
UZJ200	09.07→	8	4.7	2UZFE	75D31L	105D31L	125D31L	
Land Cruiser Prado								
LJ71G/LJ78G/LJ78W	04.90 - 05.93	4	2.4	2LTE	55D23L	80D23L	90D23L	
KZJ71G/KZJ71W/ KZJ78G/KZJ78W	05.93 - 04.96	4	3.0	1KZTE	55D26L	90D26L	110D26L	
RZJ90W/RZJ95W	04.96 - 09.02	4	2.7	3RZFE	55D23L	80D23L	90D23L	
VZJ90W/VZJ95W	04.96 - 09.02	6	3.4	5VZFE	55D26L	90D26L	110D26L	
VZJ90/95	04.96 - 01.03	6	3.4	5VZFE	55D26L	90D26L	110D26L	
RZJ90/95	10.96 - 08.04	4	2.7	3RZFE	55D23L	80D23L	90D23L	
KZJ95	03.00 - 09.02	6	3.0	1KZTE	55D26L	90D26L	110D26L	
RZJ120W/RZJ125W	09.02 - 08.04	4	2.7	3RZFE	55D23L	80D23L	90D23L	
KZJ120R	09.02→	4	3.0	1KZTE	75D31R	105D31R	125D31R	
KDJ120W/KDJ121W/ KDJ125W	11.02 - 07.07	4	3.0	1KDFTV	75D31R	105D31R	125D31R	
KZJ120L	01.05→	4	3.0	1KZTE	75D31L	105D31L	125D31L	
Lexcen								
VN19, VN35	06.89 - 08.91	6	3.8	VH	22FR-530	22FR-610	22FR-680	
VP19, VP35	09.91 - 05.93	6	3.8	VH	22FR-530	22FR-610	22FR-680	
VR19, VR35	06.93 - 04.95	6	3.8	VH	22FR-530	22FR-610	22FR-680	
VS19, VS35	05.95 - 04.97	6	3.8	VH	22FR-530	22FR-610	22FR-680	
Liteace								
YM30G	09.85 - 01.92	4	1.8	2YU	55D26R	90D26R	110D26R	
YM40G	10.85 - 01.92	4	2.0	3YU	55D26R	90D26R	110D26R	
M3	01.90 - 01.92	4	2.0	2YC	55D26R	90D26R	110D26R	
MR-S								
ZZW30	10.99 - 07.07	4	1.8	1ZZFE	55B24LS			
MR2								
SW20	12.89 - 08.99	4	2.0	3SGE	55B24LS			
				3SGTE	55B24LS			
ZZW30	12.99 - 08.05	4	1.8	1ZZFE	55B24LS			
Paseo								
EL44	09.91 - 08.95	4	1.5	5EFE	22FR-530	22FR-610	22FR-680	



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EL54R	08.95 - 07.99	4	1.5	5EFE	22FR-530	22FR-610	22FR-680
Prius							
NHW11	09.00 - 08.03	4	1.5	1NZFXE	40B19L		
NHW20	09.03→	4	1.5	1NZFXE	40B19L		
RAV4							
SXA 10/11	04.94 - 08.00	4	2.0	3SFE	55B24RS		
ACA 20/21	05.00 - 07.03	4	2.0	1AZFE	55B24RS		
ACA 22/23	07.03 - 01.06	4	2.4	2AZFE	40B19RS		
ACA33/38	11.05→	4	2.4	2AZFE	40B19RS		
GSA33/38	11.05→	6	3.5	2GRFE	40B19RS		
Soarer							
UZZ30/UZZ31/UZZ32	05.91 - 09.97	8	4.0	1UZFE	75D31L	105D31L	125D31L
	05.91 - 12.01	8	4.0	1UZFE	75D31L	105D31L	125D31L
JZZ31	01.94 - 12.00	6	3.0	2JZGE	75D31L	105D31L	125D31L
UZZ40	04.01 - 07.05	8	4.3	3UZFE	75D31L	105D31L	125D31L
Soarer Turbo							
JZZ30	05.91 - 12.00	6	2.5	1JZGTE	75D31L	105D31L	125D31L
Soarer Twin Turbo							
	05.91 - 12.01	6	2.5	1JZGTE	75D31L	105D31L	125D31L
Spacia							
YR22	10.93 - 08.96	4	2.2	4YEC	40B19R		
SR40G	02.98 - 11.01	4	2.0	3SFE	55D26R	90D26R	110D26R
Sprinter							
AE102	11.92 - 05.95	4	1.8	7AFE		22NF-330D	
Starlet							
EP82	12.89 - 01.96	4	1.3	4EFTE	40B19RS		
EP91	01.96 - 07.99	4	1.3	4EFTE	40B19RS		
Supra							
MA70	08.88 - 12.90	6	3.0	7MGE	75D31R	105D31R	125D31R
	08.88 - 04.93	6	3.0	7MGTE	75D31R	105D31R	125D31R
MA71	10.88 - 04.93	6	3.0	7MGTE	75D31R	105D31R	125D31R
JZA80	05.93 - 08.02	6	3.0	2JZGE	55D23L	80D23L	90D23L
				2JZGTE	75D31R	105D31R	125D31R
Tarago							
TCR10W/TCR11W	05.90 - 01.98	4	2.4	2TZFE	55B24LS		
TCR20W/TCR21W	05.90 - 01.98	4	2.4	2TZFE	55B24LS		
TCR10R	05.90 - 12.00	4	2.4	2TZFE	55D23L	80D23L	90D23L
ACR30W	02.00 - 04.03	4	2.4	2AZFE	55D23L	80D23L	90D23L
	04.03 - 01.06	4	2.4	2AZFE	55B24LS		
ACR50W	01.06→	4	2.4	2AZFE	55B24LS		
GSR50W	01.06→	6	3.5	2GRFE	55B24LS		
Townace							
CR21G/CR28G	08.87 - 09.93	4	2.0	2CT	22FR-530	22FR-610	22FR-680
CR30G/CR37G	08.87 - 09.93	4	2.0	2CT	22FR-530	22FR-610	22FR-680
YR39	04.92 - 12.96	4	2.0	3YC	22FR-530	22FR-610	22FR-680
KR42V	11.96 - 12.98	4	1.8	7K	40B19RS		
	12.98 - 12.03	4	1.8	7KE	22FR-530	22FR-610	22FR-680



Yaris							
NCP92	01.06→	4	1.3	2NZFE	40B19RS		
4-Runner							
YN63	08.89 - 12.90	4	2.2	4YE	40B19RS		
RN130	08.89 - 11.95	4	2.4	22R	40B19RS		
LN130	10.89→	4	2.8	3L	75D31R	105D31R	125D31R
VZN130	01.90 - 11.95	6	3.0	3VZE	40B19RS		
RN130	08.90 - 08.95	4	2.4	22RE	55D23L	80D23L	90D23L

VOLVO

C30							
	10.06 - 07.07	5	2.5	B5254T3	55457	560.035	
	10.06→	5	2.4	B5244S4	55457	560.035	
				D5244T..	58014		
C70							
	09.97 - 07.02	5	2.3	B5234T3	56219		
	03.99 - 07.00	5	2.4	B5244S	56219	574.035	
	08.99 - 07.02	5	2.4	B5244T		574.035	
	08.02 - 03.06	5	2.3	B5234T9	56219		
C70 II							
	03.06 - 07.07	5	2.5	B5254T3	56219		
	03.06→	5	2.4	B5244S4	56219		
S40							
	09.95 - 07.99	4	2.0	B4204S	56219		
	05.97 - 07.99	4	1.9	B4194T	56219		
	04.98 - 07.99	4	2.0	B4204T	56219		
	08.99 - 07.00	4	1.9	B4194T2	56219		
				B4204T2	56219		
	08.99 - 01.04	4	1.8	B4184S2	56219		
			2.0	B4204S2	56219		
	08.00 - 01.04	4	1.9	B4204T5	56219		
	08.01 - 01.04	4	1.9	B4204T3	56219		
P 11							
	12.03 - 07.07	5	2.5	B5254T3		575.035	
	12.03→	5	2.4	B5244S4		575.035	
	03.06→	5	2.4	D5244T8	58014		
S60							
P 24							
	11.00 - 07.03	5	2.4	B5244T3	56219		
	11.00 - 03.04	5	2.3	B5234T3	56219		
	11.00→	5	2.4	B5244S	56219		
	03.03 - 07.07	5	2.5	B5254T4	56219		
	04.04→	5	2.5	B5254T2	56219		
S70							
	01.97 - 07.99	5	2.4	B5254S	56219		
				B5254T	56219		
	01.97 - 07.00	5	2.3	B5234T3	56219		
	08.99 - 07.00	5	2.4	B5244S2	56219		
S80							
P 23							
	06.98 - 07.99	6	2.9	B6304S3		574.035	
	06.98 - 07.01	6	2.8	B6284T	56318		
	08.01 - 07.06	6	2.9	B6294T	56219		
	08.03 - 07.06	5	2.5	B5254T2	56219		



◀ VOLVO

S80 II

03.06 - 07.09	5	2.4	D5244T4	58014	
03.06→	8	4.4	B8444S		574.035
08.06→	6	3.2	B6324S		574.035

S90

01.97 - 05.98	6	2.9	B6304S	56219	
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V40

01.96 - 07.99	4	2.0	B4204S	56219	
05.97 - 07.99	4	1.9	B4194T	56219	
04.98 - 07.99	4	2.0	B4204T	56219	
08.99 - 07.00	4	1.9	B4194T2	56219	
			B4204T2	56219	
08.99 - 04.04	4	1.8	B4184S2	56219	
		2.0	B4204S2	56219	
08.01 - 04.04	4	1.9	B4204T3	56219	

V50

P 12 04.04 - 07.07	5	2.5	B5254T3		575.035
04.04→	5	2.4	B5244S4		575.035
04.06→	5	2.4	D5244T8	58014	

V70

01.97 - 03.00	5	2.4	B5254S	56219	
			B5254T	56219	
01.97 - 07.04	5	2.3	B5234T3	56219	
03.00 - 07.03	5	2.4	B5244T3		60038
03.00 - 07.07	5	2.4	B5244S	56219	
03.03 - 07.07	5	2.5	B5254T4		60038
04.04 - 07.07	5	2.5	B5254T2		60038

V90

01.97 - 07.98	6	2.9		56219	
			B6304S	56219	

XC70

08.02 - 07.07	5	2.5	B5254T2		574.035
08.04 - 07.07	5	2.4	B5244T4		574.035
08.07→	6	3.2	B6324S	58014	

XC90

10.02→	5	2.5	B5254T2		574.035
01.03 - 07.06	6	2.9	B6294T		574.035
03.05→	8	4.4	B8444S		574.035
05.05→	5	2.4	D5244T4		60038
08.06→	6	3.2	B6324S		60038

240 Series

01.85 - 02.86	4	2.3	B230E	56219	
08.88 - 12.91	4	2.3	B230F Kat.	56219	
08.92 - 07.93	4	2.3	B230F	56219	

440

10.93 - 12.96	4	2.0	B20F Kat.	56219	
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740

08.84 - 07.91	4	2.3	B230E	56219	
08.84 - 10.91	4	2.3	B230FT Kat.		574.035
08.84 - 07.92	4	2.3	B230F Kat.	56219	



760	05.86 - 11.90	6	2.8	B280F Kat.		574.035
850	09.91 - 07.97	5	2.5	B5254S Kat.	56219	
	09.92 - 07.97	5	2.5	B5252S Kat.	56219	
	09.93 - 07.96	5	2.3	B5234FT Kat.	56219	
	08.95 - 07.97	5	2.3	B5234T4 Kat.	56219	
	09.96 - 07.97	5	2.5	B5254T Kat.	56219	
940	12.90 - 07.92	4	2.3	B234F Kat.		574.035
	12.90 - 12.93	4	2.3	B230FT Kat.		574.035
	06.91 - 07.95	4	2.3	B230F Kat.	56219	
	05.95 - 12.96	4	2.3	B230FK Kat.	56219	
960	09.90 - 07.91	6	2.8	B280F Kat.		574.035
	12.91 - 02.97	6	3.0	B6304FS Kat.		574.035

VW (VOLKSWAGEN)

Bora						
1J2	09.98 - 02.01	5	2.3	AGZ	56219	
	09.98 - 05.05	4	2.0	APK	56219	
	01.00 - 04.01	6	2.8	AUE	56219	
1J6	05.00 - 02.01	5	2.3	AGZ	56219	
1J2	09.00 - 05.05	5	2.3	AQN	56219	
	05.01 - 05.05	6	2.8	BDE	56219	
Bus						
24, 25	08.85 - 07.92	4	2.1	MV		54316
Caddy						
2K	02.04 - 05.08	4	1.9	BJB	56219	
	06.04→	4	1.6	BGU	55457	560.035
	06.05 - 05.08	4	1.9	BLS	56219	
California						
7H	06.03 - 11.09	4	2.0	AXA		58014
Caravelle						
256	06.87 - 12.91	5	2.1	DJ	55457	560.035
70, 7D	05.00 - 06.03	6	2.8	AMV	55066	
7H	01.06 - 11.09	5	2.5	BNZ	58014	
				BPC	58014	
Crafter 35						
2E, 2F	04.06→	5	2.5	BJK		574.035
				BJL		574.035
				BJM		574.035
Crafter 50						
2E, 2F	04.06→	5	2.5	BJK		574.035
				BJL		574.035
				BJM		574.035
Eos						
1F7	05.06 - 05.08	4	2.0	BMM	56219	



◀ VW
1F7 05.06→ 4 2.0 BWA **56219**

Golf Cabriolet

15 07.90 - 08.93 4 1.8 JH **54316**

Golf II

19, 1G 07.90 - 11.92 4 1.8 RV **54316**

Golf III

1H1 09.93 - 07.96 4 1.9 1Z **58014**

04.94 - 09.94 4 2.0 2E **56219**

04.94 - 12.97 6 2.8 AAA **56219**

10.94 - 12.97 4 2.0 ADY **56219**

1E7 02.95 - 07.95 4 2.0 ADY **56219**

07.95 - 04.98 4 2.0 AGG **56219**

1H1 10.95 - 12.97 4 1.8 ADZ **56219**

Golf IV

1J1 10.97 - 10.00 4 1.8 AGN **56219**

10.97 - 05.03 4 1.8 AGU **56219**

10.97 - 05.04 4 1.6 AKL **55066**

01.98 - 05.04 4 1.6 AEH **55066**

1E7 04.98 - 12.01 4 2.0 AGG **56219**

1J1 08.98 - 05.04 4 2.0 APK **56219**

12.98 - 05.00 4 2.0 AEG **54316**

09.00 - 05.04 4 1.6 AVU **55066**

07.03 - 02.04 4 2.0 APK **56219**

1J1 10.03 - 05.04 6 3.2 BML **55457** **560.035**

Golf V

1K1 10.03 - 02.06 4 1.9 BKC **574.035**

10.03 - 11.08 4 2.0 BKD **574.035**

01.04 - 05.05 4 1.6 BGU **55066**

08.04 - 11.05 4 2.0 BLX **56219**

09.04 - 11.05 4 2.0 AXX <TFSI> **574.035**

12.04 - 11.08 4 2.0 BMM **574.035**

05.05→ 4 1.6 BGU **55457** **560.035**

11.05 - 05.07 6 3.2 BUB **58014**

11.05 - 11.08 4 1.4 BLG **55066**

2.0 BMN **574.035**

BVY **56219**

02.06 - 11.08 4 1.9 BXE **574.035**

1K5 05.07 - 03.09 4 2.0 BWA <TFSI> **574.035**

Jetta

1K2 08.05 - 11.05 4 2.0 BLR **56219**

08.05 - 06.08 4 2.0 BKD **574.035**

09.05 - 06.08 4 2.0 BWA **56219**

10.05 - 11.05 4 2.0 BLY **56219**

10.05 - 06.08 4 2.0 BMM **574.035**

1K6 03.06→ 4 2.0 AXX **574.035**

BVX **574.035**

Jetta V

1K6 03.06→ 4 2.0 BVZ **574.035**

LT

2D, 2H 05.99 - 04.06 5 2.5 ANJ **58014**

02.02 - 04.06 4 2.8 AUH **58014**

**Multivan**

7H	02.03 - 11.09	5	2.5	AXE	58014
	05.03 - 11.09	6	3.2	BKK	56219

New Beetle

1C1, 9C1	01.98 - 10.01	4	2.0	AEG	56219
	11.98 - 06.05	4	2.0	AQY	56219
	06.00 - 06.04	4	1.8	AWV	56219
	06.00 - 06.05	4	1.6	AYD	56219
	10.00 - 12.07	4	1.8	AWU	56219
	06.01→	4	2.0	AZJ	56219
	06.02→	4	1.6	BFS	56219
1Y7	01.03→	4	2.0	AZJ	56219
				BGD	56219
1C1, 9C1	07.05→	4	1.9	BSW	56219

Passat

31, 35, 3A, 3A5, 3A2	07.95 - 03.97	4	2.0	AGG	575.035
	08.95 - 03.97	6	2.8	AAA	575.035
3B2	10.96 - 11.00	4	1.8	AEB	574.035
		5	2.3	AGZ	574.035
	12.96 - 01.99	4	1.8	ADR	574.035
	01.97 - 11.00	6	2.8	ACK	574.035
	06.97 - 11.00	6	2.8	ALG	574.035
3B5	06.97 - 11.00	6	2.8	ACK	574.035
				ALG	574.035
	09.97 - 11.00	5	2.3	AGZ	574.035
3B2	08.98 - 11.00	4	1.8	ANB	574.035
				APT	574.035
	01.99 - 11.00	4	1.8	APU	574.035
3B5	01.99 - 11.00	4	1.8	ANB	574.035
				APT	574.035
				APU	574.035
3B2	02.99 - 11.00	4	1.8	ARG	574.035
3B5	02.99 - 11.00	4	1.8	ARG	574.035
3B3	10.00 - 05.05	4	1.8	AWT	56219
		5	2.3	AZX	56219
		6	2.8	AMX	56219
				BBG	56219
	05.02 - 09.04	8	4.0	BDN	56219
3C2	03.05 - 06.08	4	2.0	BKP	574.035
				BMR	574.035
3C5	08.05 - 06.08	4	2.0	BKP	574.035
				BMR	574.035
3C2	09.05→	6	3.2	AXZ	574.035
	11.05 - 02.08	4	2.0	BWA	56219
3C5	11.05 - 02.08	4	2.0	BWA	55066
	11.05→	6	3.2	AXZ	60038
3C2	04.07→	6	3.6	BWS	574.035
	05.08→	4	2.0	CBAB	574.035
				CBBB	574.035

Polo

9N1	09.01 - 05.04	4	1.4	BBY	55066
	06.03→	4	1.6	BCD <EA113>	56219
9N2	07.03 - 05.07	4	1.4	BBY	55066
9N3	04.05 - 05.07	4	1.4	BBZ	55066
	04.05→	4	1.9	AXR	574.035
	08.05→	4	1.8	BJX	574.035
	05.06→	4	1.4	BUD	55066
				1.6	BTS
	08.06→	4	1.6	BAH <EA111>	54316



◀ VW

Tiguan

5N1	11.07 - 11.09	4	2.0	CAWB	56219	
	11.07→	4	2.0	CBAB		574.035

Touareg

7LA	11.02 - 05.04	6	3.2	AZZ		574.035
	11.02 - 11.06	10	5.0	AYH	60038	
	12.02 - 11.06	8	4.2	AXQ	60038	
	01.03 - 11.06	5	2.5	BAC		574.035
	04.03 - 11.06	8	4.2	BHX	60038	
	05.04 - 11.06	6	3.2	BMV		574.035
	11.04 - 11.06	6	3.0	BKS		574.035
		10	5.0	BLE	60038	
	08.05 - 11.06	6	3.6	BHK		574.035
	01.06 - 11.06	5	2.5	BPE	58515	
7L6	12.06 - 05.08	6	3.0	BKS		574.035
	12.06→	6	3.6	BHK		574.035
		10	5.0	BLE	60038	
	08.07→	10	5.0	CBWA	60038	
	01.08→	6	3.0	CASC		574.035

Transporter

24, 25	07.85 - 07.92	4	2.1	DJ	54316	
	08.85 - 07.92	4	2.1	MV	54316	
70, 7D	11.92 - 09.98	5	2.4	AAB	58014	
	03.98 - 06.03	5	2.5	ACV	58014	
	05.99 - 06.03	5	2.5	AUF	55066	
	04.01 - 06.03	5	2.5	AXL	58014	
				AYC	55066	
7H	02.03 - 11.09	5	2.5	AXD	58014	
				AXE	58014	
	04.03 - 11.09	4	1.9	AXB	58014	
				AXC	58014	
7J	04.03 - 11.09	4	1.9	AXB	56219	
		5	2.5	AXD	56219	
7H	05.03 - 11.09	6	3.2	BKK	56219	
	06.03 - 11.09	4	2.0	AXA	56219	
7J	01.04 - 11.09	5	2.5	AXE	56219	
	06.06 - 11.09	4	1.9	BRS	56219	

Vento

1H2	07.95 - 03.97	4	2.0	AGG	56219	
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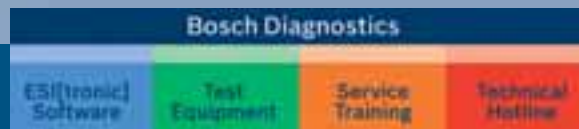


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