How to Use this Catalogue

Date

The date is listed in short code format, i.e. Month/Year (01.98 = January 1998), with an approximate manufacture/ introduction date to last manufacture / sale date.

28 VEHICLE APPLICATION

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
AUDI						
A4	Avant 1.8	11.94-	1.8	ADR, AFY	BX310022	BX107066
	Avant 1.8 Quattro	11.94-	1.8	ADR, AFY	BX310022	BX107066
	Avant 1.8 T	10.95-	1.8	AEB, AJL		BX107066
	Avant 1.8 T	06.96- 11.98	1.8	APU	BX310022	BX107066
	Avant 1.8 T	12.96-	1.8	APU	BX310022	BX107066
	Avant 1.8 T Quattro	02.96-	1.8	AEB, AJL	-	BX107066
	Avant 2.4	07.95 -	2.4	AFA, AGA, AJG, ALF	BX510061	BX106113
	Avant 2.4	12.96-	2.4	AFA, AGA, ALF	-	BX106113
	Avant 2.6	11.94- 11.96	2.6	ABC	BX510061	BX106113
	Avant 2.6	01.96-	2.6	ACZ	-	BX106113
	Avant 2.6	12.96-	2.6	ABC	BX510061	BX106113
	Avant 2.6	11.94- 11.96	2.6	AAH, ACK, ALG	-	BX106113
	Avant 2.6	12.96-	2.6	AAH, ACK, ALG	BX510061	BX106113
	Avant 2.6 Quattro	11.94-	2.6	AAH, ACK	-	BX106113
A6	1.8	06.94- 07.96	1.8	AFY	BX310022	BX107066
	1.8	06.94- 10.97	1.8	ADR	BX310022	BX107066
	1.8	11.97-	1.8	ADR, AJP	BX310022	-
	1.8	06.96-	1.8	AFY	BX310022	BX107066
	1.8 Quattro	10.95- 10.97	1.8	ADR	BX310022	BX107066
	1.8 T	04.97-	1.8	AEB, AJL	BX310022	BX107066
	1.8 T Quattro	04.97- 01.99	1.8	AEB, AJL	BX310022	BX107066
	2.0 Quattro	06.94- 10.97	2.0	ACE	BX310022	BX107066
	2.0	06.94- 10.97	2.0	ACE	-	BX107066
	2.4	04.97-	2.4	AAE, ABK, ADW	0 120 469 01 2	BX107066
	2.4 Quattro	04.97- 01.99	2.4	ALW, AJG, ALF, AGA	BX485047	BX107066
	2.6	06.94- 01.96	2.6	AJG, AGA, ALF	BX510061	BX107066
	2.6	02.96-	2.6	ACZ, ABC	-	BX107066
	2.6 Quattro	06.94- 10.97	2.6	ACZ, ABC	BX510061	BX107066
	2.8	06.94- 01.96	2.6	ACZ, ABC	-	0 001 106 174
	2.8	02.96-	2.6	AEI, AAH, ACK	BX510061	0 001 106 174
	2.8	06.94- 10.97	2.8	AEI, AAH, AGK	-	BX106113
	2.8 Quattro	06.94- 01.96	2.8	AGE, ACK, ALG	BX510061	BX106113
	2.8 Quattro	02.96-	2.8	AAH, AEI, ACK	-	BX106113
	2.8 Quattro	04.97-	2.8	AFC	BX510061	0 001 106 174
	Avant 1.8	06.94- 10.97	1.8	ACK, AGE, ALG	-	0 001 106 174
	Avant 1.8	06.94- 10.97	1.8	ADR, AFY	BX510061	0 001 106 174
	Avant 1.8 Quattro	04.97-	1.8	AJP	-	BX106113
	Avant 1.8 T	10.95-	1.8	ADR	BX510061	-
	Avant 1.8 T Quattro	02.96-	1.8	AEB, AJL	-	BX107066
	Avant 2.0	10.95- 10.97	1.8	AEB, AJL	BX510061	BX107066
	Avant 2.0	02.96-	1.8	ABK, ADW	-	BX107066
	Avant 2.0 Quattro	02.96-	1.8	ADW	BX510061	BX107066
	Avant 2.4	06.94- 10.97	1.8	ACE	-	BX107066
	Avant 2.4 Quattro	09.94- 10.97	2.0	ALW, AJG, ALF, AGA	BX510061	BX107066
	Avant 2.6	06.94- 10.97	2.0	AGA, AJG, ALF	-	BX107066
	Avant 2.6	04.97-	2.4	ABC, ACZ	BX510061	BX107066
	Avant 2.6 Quattro	04.97- 01.99	2.4	ABC, ACZ	-	BX107066
	Avant 2.6 Quattro	06.94- 01.96	2.6	ABC, ACZ	BX510061	BX107066
	Avant 2.8	02.96- 07.96	2.6	AAH, ACK, AEJ	-	0 001 106 174
	Avant 2.8	06.94- 10.97	2.6	AAH, ACK, AEJ	BX510061	0 001 106 174
	Avant 2.8	02.96- 10.97	2.6	ACK, AGE, ALG	-	BX106113
	Avant 2.8	06.94- 01.96	2.6	AAH, ACK, AEJ	BX510061	BX106113
	Avant 2.8 Quattro	02.96- 10.97	2.8	ACK, AGE, ALG	-	BX106113
	Avant 2.8 Quattro	02.96-	2.8	AAH, ACK, AEJ	BX510061	0 001 106 174
	Cabriolet 1.8	06.94- 10.97	2.8	ACK, AGE, ALG	-	0 001 106 174
	Cabriolet 2.0	02.96-	2.8	ADR	BX510061	0 001 106 174
		01.97-	1.8	ABK	-	BX106113
		01.93- 10.95	2.0		BX310022	0 001 106 174
					BX485047	-

Example

0 120 006 001 is not available as a stock unit, but can be obtained from Germany upon request.
BX..... readily available as a stock item.

Alternator Systems

Design criteria

The following data are decisive for alternator design:

– Vehicle type and the associated operating conditions,
– Speed range of the engine with which the alternator is to be used,
– Battery voltage of the vehicle electrical system,
– Power requirements of the loads which can be connected,
– Environmental loading imposed on the alternator (heat, dirt, dampness, etc.),
– Specified service life,
– Available installation space, dimensions.

The requirements to be met by an automotive alternator differ very considerably depending upon application and the criteria as listed above. Regarding economic efficiency the criteria also vary along with the areas of application.

It is therefore impossible to design an all-purpose alternator which meets all requirements.

The different areas of application, and the power ranges of the vehicle types and engines concerned, led to the development of a number of basic models which will be described in the following.

Electrical data and sizes

The vehicle size is not decisive for determining the required alternator output power. This is solely a function of the loads installed in the vehicle.

The selection of the correct alternator is governed primarily by:

– the alternator voltage (14V/28V),
– the power output as a product of voltage and current throughout the rotational-speed range,
– the maximum current,
– the cutting-in speed.

With these electrical data, it is possible to define the electrical layout, and therefore the required alternator size.

The different alternator sizes are identified by a letter of the alphabet, and increase in alphabetical order. A further important feature is the alternator or rotor system (e.g., claw-pole alternator as a compact alternator or alternator with compact diode assembly, or with salient-pole rotor or windingless rotor).

This characteristic is identified by numbers or letters. In addition, the various alternators are identified by an alphanumeric code e.g., GC, KC, NC, G1, K1, N1 for passenger cars, and K1, N1, T1 for commercial vehicles and buses.

Further variations are possible with regard to the type of mounting, the fan shape, the pulley, and the electrical connections.

Table 1. Alternator types

Design	Application	Type	No. of poles
Compact	Passenger cars, motorcycles	GC, KC, NC	12
Compact diode assembly	Passenger cars, commercial vehicles, tractors, motorcycles	G1	
	Passenger cars, commercial vehicles, tractors, motorcycles	K1, N1	

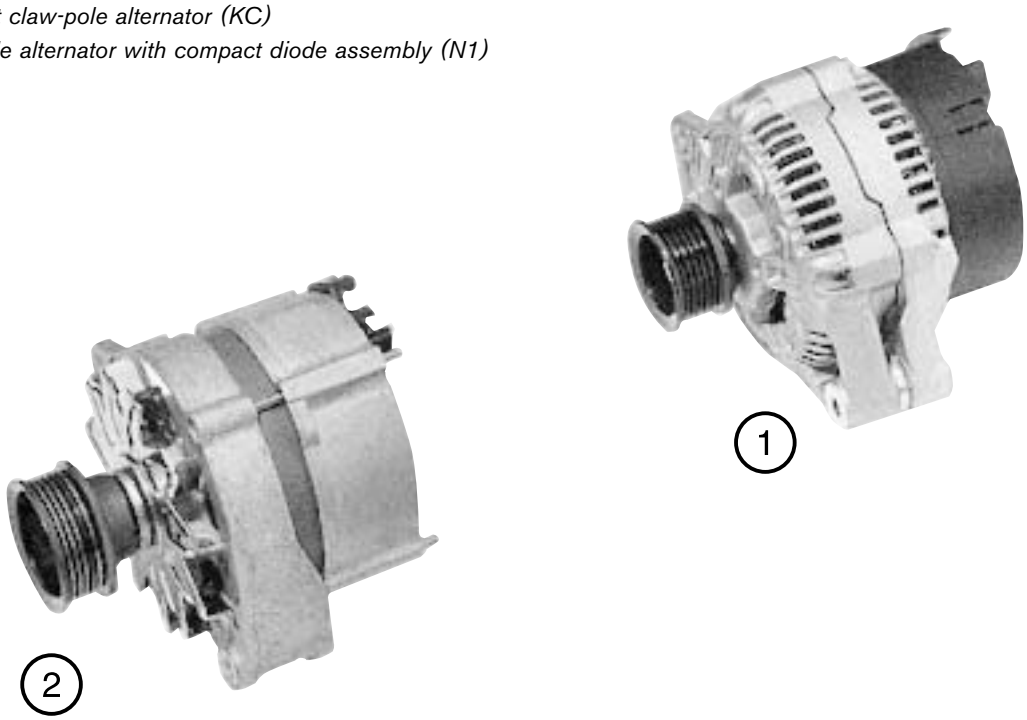
Alternators (continued)

A

Fig. 1: Alternator types

1. Compact claw-pole alternator (KC)

2. Claw-pole alternator with compact diode assembly (N1)



Alternators (continued)

Characteristic curves

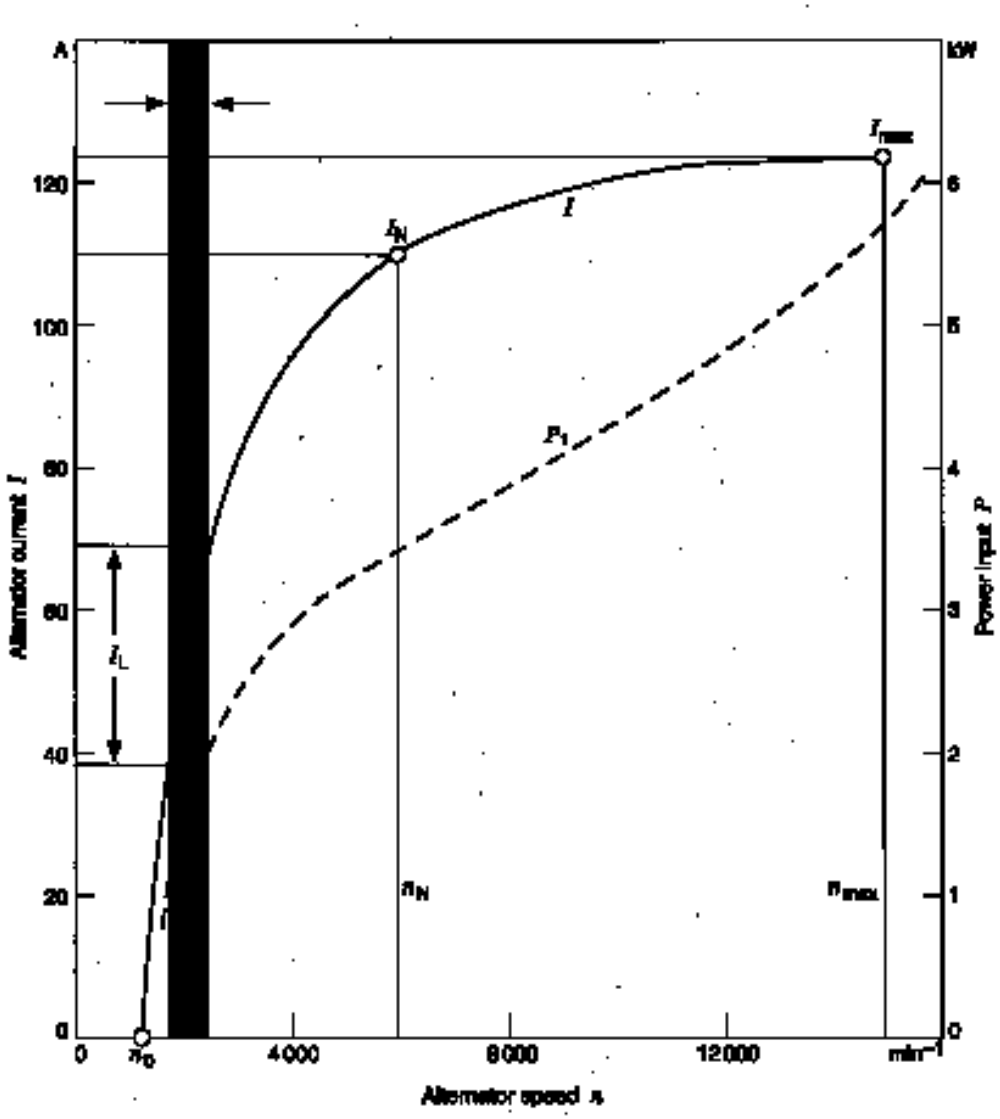
Alternator performance

The characteristic performance of the alternator at a variety of different speeds is shown by the characteristic curves. Due to the constant transmission ratio between alternator and engine, the alternator must be able to operate at greatly differing speeds.

As the engine takes the alternator from standstill up to maximum speed, the alternator passes through certain speeds. Each of these rotational speeds is of particular importance for understanding the alternator's operation and each has therefore been allocated a specific name.

Normally, the curves for alternator current and drive power are shown as a function of the rotational speed (Fig. 2).

The characteristic curves of an alternator are always referred to a constant voltage and precisely defined temperature conditions. For instance, an ambient temperature of 80°C (or a room temperature of 23°C) is specified for the limit-temperature test.



Alternators (continued)

A

Characteristic curves

Current characteristic curve (I)

n_0 0-Ampere speed

The 0-Ampere speed is the speed (approx. 1000min^{-1}) at which the alternator reaches its rated voltage without delivering power. This is the speed at which the curve crosses the min^{-1} abscissa.

The alternator can only deliver power at higher speeds.

n_L Speed with engine idling
I_L Current with engine idling

With the speed increasing, alternator speed n_L is reached with the engine at idle. This point is shown as an area in Fig. 1 since the precise value depends upon the transmission ratio between engine and alternator. At this speed, the alternator must deliver at least the current required for the long-term consumers. This value is given in the alternator's type designation. In the case of compact-diode-assembly alternators, n_L =1500 min^{-1}, for compact alternators n_L =1800 min^{-1} due to the usually higher transmission ratio.

n_N Speed at rated current
I_N Rated current

The speed at which the alternator generates its rated current is stipulated as $n_N = 6000$ min^{-1}. The rated current should always be higher than the total current required by all loads together. It is also given in the type designation.

n_{max} Maximum speed
l_{max} Maximum current

l_{max} is the maximum achievable current at the alternator's maximum speed.

Maximum speed is limited by the rolling bearings and the carbon brushes as well as by the fan. With compact alternators it is 18,000 ... 20,000 min^{-1}, and for compact-diode-assembly alternators 15,000 ... 18,000 min^{-1}. In the case of commercial vehicles, it is 8,000 ... 15,000 min^{-1} depending upon alternator size.

nA Cutting-in speed

The cutting-in speed is defined as that speed at which the alternator starts to deliver current when the speed is increased for the first time. It is above the idle speed, and depends upon the preexcitation power, the rotor's remanence, the battery voltage, and the rate of rotational-speed change.

Characteristic curve of power input (P_1)

The characteristic curve of power input is decisive for drive-belt calculations.

Information can be taken from this curve concerning the maximum power which must be taken from the engine to drive the alternator at a given speed. In addition, the power input and power output can be used to calculate the alternator's efficiency. The example in Fig. 2 shows that after a gradual rise in the medium speed range, the characteristic curve for power input rises again sharply at higher speeds. This is due to the increased power required to drive the fan at higher speeds.

Explanation of the type designation

Every Bosch alternator carries a rating plate containing type designation and 10-digit Part Number which in the case of alternators always starts with 0 12... ... .

The type designation gives information on the alternator's most important technical data such as current at engine idle and rated voltage etc.

Example of a type designation

K C (→) 14V 40-70A

K	Alternator size (stator OD),
C	Compact-Alternator,
(→)	Direction of rotation, clockwise,
14V	Alternator voltage,
40A	Current at $n = 1800$ min^{-1},
70A	Current at $n = 6000$ min^{-1}.

Alternators (continued)

Alternator circuitry

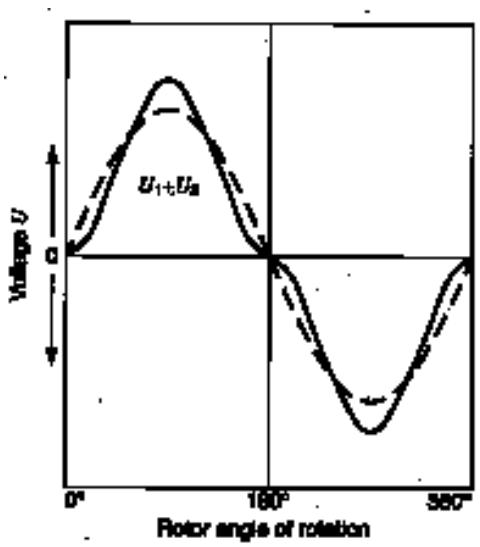
Due to harmonics and slight differences in the claw-system geometry, it is possible for the neutral point to assume a varying potential which changes periodically from positive to negative. This potential is mainly caused by the "third harmonic" which is superimposed on the fundamental wave and which has three times its frequency (Fig. 3). The energy it contains would normally be lost, but instead it is rectified by two diodes connected as power diodes between the neutral point and the positive and negative terminals (Fig. 2). As from around 3000 min^{-1}, this leads to an alternator power increase of max. 10%.

These auxiliary diodes slightly increase the ripple of the alternator voltage.

Operation of alternators in parallel

If demanded by power requirements, alternators with the same power rating can be connected in parallel. Special balancing is not necessary, although the voltage regulators concerned must have the same characteristics, and their characteristic curves must be identical.

Fig. 3: Voltage with third harmonic
U1 Phase voltage [fundanebtal wave]
U3 Third-Harmonic voltage



Terminal "W"

For specific applications, Terminal "W" can be connected to one of the three phases as an additional terminal (Fig. 2). It provides a pulsating DC (halfwave-rectified AC) which can be used for measuring engine speed (for instance on diesel engines).

According to the following equation, the frequency (number of pulses per second) depends on the number of pole pairs and upon alternator speed.

$f = p \cdot n/60$
f Frequency (pulses per second),
p Number of pole pairs (6 on Size G, K and N; 8 on Size T),
n Alternator Speed (min^{-1}).

Interference-suppression measures

The main source of electrical interference in the SI engine is the ignition system, although some interference is also generated by alternator and regulator, as well as by other electrical loads.

If a 2-way radio, car radio, or car telephone, etc. is operated in the vehicle itself or in the vicinity, it is necessary to install intensified interference suppression of alternator and regulator. For this purpose, alternators can be equipped with a suppression capacitor (if not already connected as standard) which is attached to the outside of the collectorring shield. On compact alternators it is already integrated in the rectifier.

Older versions of the contact regulator are combined with an interference-suppression filter or are replaced by an interference-suppressed version.

Transistor regulators do not require additional suppression measures. If Terminal "W" is connected, this can be suppressed with a resistor which is installed in the "W" line (Fig. 2).

Alternators (continued)

A

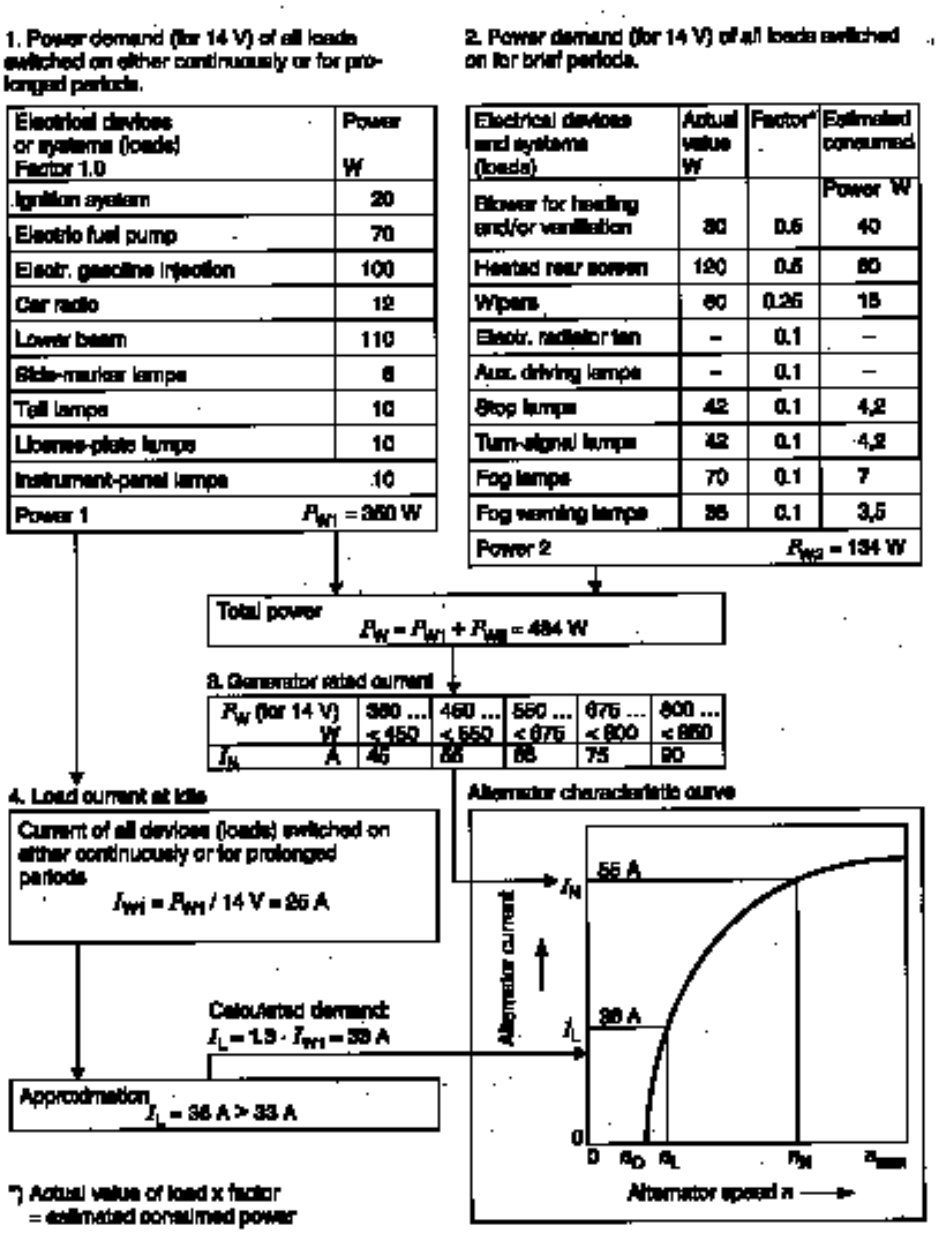
(Example refers to the Table below.)

The following method enables a check to be made whether the installed alternator version suffices for supplying the vehicle electrical system:

1. Determine the power input for all the loads that are switched on permanently or for prolonged periods at 14V.

The sum results in a power input of:
$P_{W1} = 350$ W.

Fig.4: Checking the Alternator size. Alternator type K1-14V 23/55A



Alternators (continued)

Determining the correct alternator

2. Determine the power input of all short-term loads at 14V.

The sum results in a power input of:
$P_{W2} = 134$ W (rounded off).

The system's total power input P_W results from the addition of P_{W1} and P_{W2}: $P_W = 484$ W.

3. Using the reference table, it is now possible to determine the minimum rated current necessary:
$I_N = 55$A.

Provided the correct size of alternator has been fitted, this rated current, or a higher figure, appears in the type designation – in our example 55A.

4. A further check can be made using the alternator current I_L at engine idle.

I_L can be taken from the alternator's characteristic curve, provided that the alternator speed n_L at engine idle is known. In our example, the alternator speed is: $n_L = 2000\ \text{min}^{-1}$.

Practical experience has shown that for passenger cars, at engine idle I_L should exceed the current I_{W1} by a factor of 1.3. I_{W1} results from the input power P_{W1} for all permanent and long term loads. This ensures efficient battery charging even at engine idle and when only short distances are travelled.

In the example: At idle, the alternator delivers a current of $I_L = 36$A. The current I_{W1} is calculated from the power P_{W1} ($I_{W1} = P_{W1}/14$V). This results in $I_{W1} = 25$A from which a required current of 33A is calculated. Since $I_L = 36$A, this means that the power demand is safely covered.

Alternator Installation and Drive

Installation

The motor-vehicle operator usually has little say concerning the alternator or regulator fitted in his vehicle. And in every vehicle, the alternator's installation position is dependent upon the conditions prevailing in the engine compartment due to construction and design.

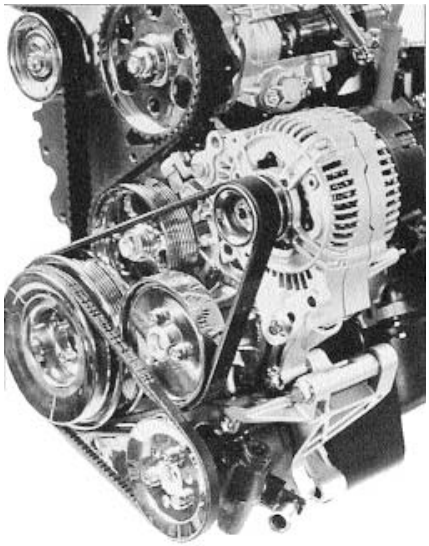
However, certain basic factors must always be borne in mind concerning installation:

- Good accessibility for readjusting the V-belt tension and for any maintenance work which may be required,
- Adequate cooling for alternator waste heat as well as for heat conducted and radiated from the engine.
- Protection against dirt, moisture, shock, impact, fuel and lubricants (ingress of gasoline leads to the danger of fire and explosion, and diesel fuel damages the carbon brushes and collector rings).

Almost without exception, alternators which are driven by the engine through normal V-belts are attached by means of a swivel-arm mounting. In addition to the mounting using a swivel bearing, an adjustment facility (to pivot the alternator around a swivel arm) is provided for adjusting the V-belt tension.

If the alternator is driven through a ribbed V-belt (poly-V belt), the alternator is usually rigidly mounted. The belt is adjusted using a belt tensioner (Fig. 5).

Fig. 5: V-Belt and ribbed V-Belt alternator drive



Starter Systems

A

Starting Requirements

In designing a starting system, both engine specifications and starting requirements must be considered. These requirements include:

– Minimum starting temperature. This is the lowest engine and battery temperature at which the system must ensure that the engine starts (Fig. 1),

– The engine's resistance to rotation. This equals the resistance to rotation, as measured at the crankshaft at the minimum starting temperature (thus including permanently-connected ancillaries, Fig. 2),

– Minimum required engine speed at the minimum starting temperature,

– Starter pinion/ring gear ratio,

– Rated voltage of the starting system,

– Specifications/capacity of the starter battery,

– Length and resistance of the cable from the battery to the starter (voltage drop),

– Torque, speed and capacity of the starter (starter characteristic curve, starting process), etc.

Of particular importance in this respect is the minimum starting temperature, i.e. the lowest temperature at which an engine with a given electrical system, a defined state of battery charge, and given oil viscosity can be brought to self-sustaining speed.

An engine's minimum starting temperature is defined by the climatic conditions at the place of use, the conditions under which the engine must operate and economic considerations (the power required of a starting system, as well as its costs, increase rapidly in response to downward definitions of the minimum starting temperature).

Fig. 1: Starting limit temperature (example)

a) Starter speed; decreases as the temperature drops due to increased intemal resistance of the battery

b) Minimum required initial engine speed; increases as temperature drops due to increased cranking resistance. The intersection of both curves yields the starting limit temperature (here –23°C).

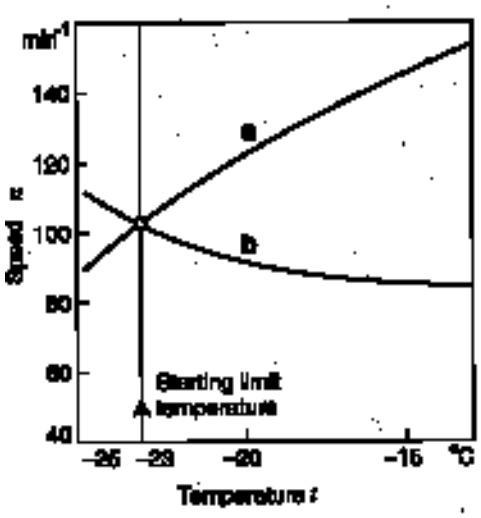


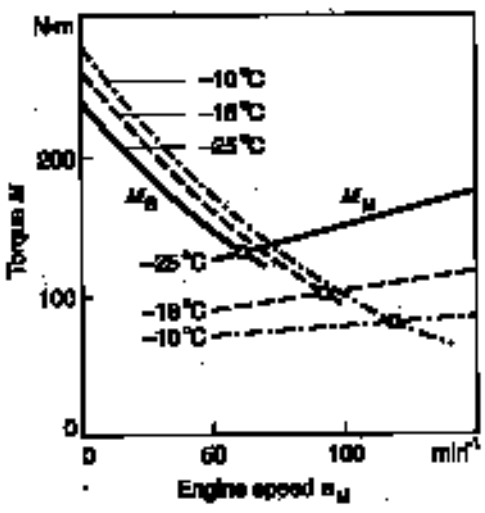
Fig. 2: Engine torques (cranking resistances) and starter torques

M_S Starter torque for various temperatures (referred to the engine crankshaft)

M_M Torque required for starting a 3-litre SI engine at the different temperatures shown.

The intersection point of the relevant curves determines the speed at which the engine is cranked at –25°C, –18°C, and –10°C.

The torque curve is referred to a 20% discharged 55Ah battery



Starters [continued]

Starting requirements

In the example below, a 2.2 kW starter and a 12V, 90Ah, 450A battery are required for a minimum starting temperature of –23°C. The battery in the example is discharged to 80% of its rated capacity (Fig. 1). The colder the engine, the higher the rotating speed needed to get it started. Ideally, the starter should compensate for the engine's cold response pattern with higher output speeds.

Unfortunately, since it depends upon the battery for its energy supply, and the battery responds to colder temperatures with a disproportionate increase in internal resistance, the starter turns more slowly. Bosch frequently examines these patterns in starting and cranking tests in the cold-climate chamber at its Technical Center for Automotive Electrical Systems.

Starter systems intended for application within Europe are usually designed with reference to the minimum starting temperatures listed in Table 1.

The starting resistance – the torque required to overcome friction and inertia and turn the crankshaft – is largely a function of engine displacement and oil viscosity (index of the engine's internal friction).

As a general rule, the mean rotational resistance in spark-ignition engines continues to increase as a function of crankshaft speed (on diesels, in contrast, resistance peaks at 80 to 100 min^{-1} before again falling as the relatively high levels of compression energy are fed back into the system).

The intersection of the engine and starter torque curves (Fig. 2) indicates the engine's rotational speed at any given temperature.

Additional factors include: Engine design and number of cylinders, bore/stroke ratio, compression ratio, engine speed, mass of engine's moving parts, crankshaft assembly, etc., along with bearings, additional loads from clutch assembly, transmission, etc.

The minimum starting speed will vary substantially according to the design of the engine and its induction system.

Auxiliary starting devices are another important factor on diesel engines.

Table 2 provides some interesting empirical data.

Table 1

Starting limit temperatures

Engines for	Starting limit temperatures
Passenger cars	–18…–25°C
Trucks and buses	–15…–20°C
Tractors	–12…–15°C
Drive and equipment engines on ships	–5°C
Diesel locomotives	+5°C

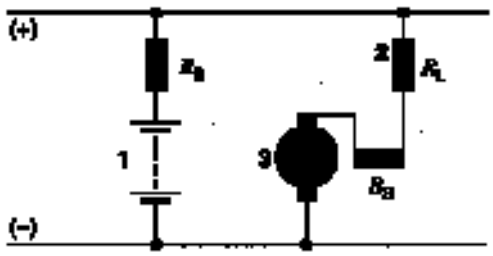
Table 2

Empirical values for minimum cranking speeds

Required cranking speeds at –20°C	Cranking speed min^{-1}
Reciprocating-piston SI engine	60…90
Rotary-piston SI engine	150…180
Direct-injection diesel engine	
without starting aid	80…200
with starting aid (e.g. glow plug)	60…140
Pre-chamber and whirl-chamber diesel engines	
without starting aid	100…200
with glow-plug starting aid	60…100
with glow plugs as starting aid	60…100

Basic circuit diagram of a starting system

R_L *line resistance*
R_B *internal battery resistance*
R_S *internal starter resistance.*
1. Battery
2. Starter cable
3. Starter



Starters [continued]

A

Starting requirements

Figure 3 illustrates an actual starting process. The engine's combustion mixture starts to ignite at the minimum starting speed. The torque curve then rises during the transition to selfsustaining operation (Curve 1, simplified illustration showing constant progression).

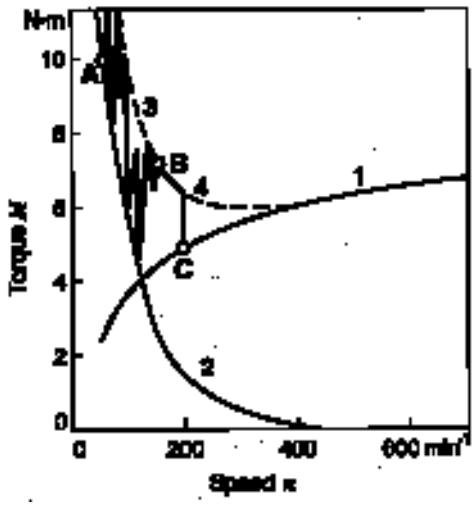
The engine's torque has been superimposed on the downward curve (Curve 2) for starter torque. In this transitional phase, the engine's speed rises to the levels required for self-sustaining operation. The starter reverts to a supporting function which continues until it is overtaken by the engine.

The sum of the two torque curves provides a theoretical composite curve (Curve 3, broken line). In actual practice, initial fluctuations in the combustion process that started at Point A mean that this theoretical curve is achieved only sporadically. This condition continues until engine operation becomes consistent at Point B. At Point C the starter is deactivated and the engine continues to operate without external assistance.

Fig. 3: Internal-combustion engine: Starting procedure

1. *Theoretical engine torque assuming smooth combustion*
2. *Starter torque*
3. *Theoretical total torque (sum of curves 1 and 2)*
4. *Actual total torque as a result of irregular combustion*

A. *Irregular combustion begins*
B. *Uniform engine speed*
C. *Self-sustaining engine operation*



Starting-system voltage ratings

Starting systems are available with various rated voltages:

- Passenger cars today generally have 12V systems.
- Tractors, small auxiliary power units and marine engines also usually have 12V systems.
- Systems designed for 24V are used in some engines of this type as well as in special-purpose vehicles.
- Trucks and buses use 12V and 24V systems.
- The starters on large commercial vehicles are generally rated at 24V, as the higher voltage makes it possible to obtain higher specific output from more compact starters.

Capacity rating

Along with its voltage rating, the starter's rated capacity is also an essential index of performance.

The capacity rating is a precisely defined parameter determined on the test bench. It is referred to the largest permissible battery for the starter in question, with a 20% discharge at a temperature of –20°C. It is connected to the starter via a cable with a resistance of 1 mΩ. These criteria guarantee that the starter will operate even under adverse conditions. The torque transmitted through the starter pinion represents its generated torque minus iron, copper and friction losses.

Starter output is therefore highly dependent upon line resistance and internal battery resistance. The lower the internal resistance of the battery, the higher the starter output.

Some of the testing employed to determine starter performance under severe conditions is carried out in the cold-climate chamber

Starters [continued]

Starting systems for passenger cars

Passenger cars are defined as motor vehicles designed to carry up to 9 persons. Passenger-car starting systems generally have pre-engaged drive starters with a nominal output of approx.

2 kW. The standard rated voltage is 12V. These systems can start spark-ignition engines and diesel engines up to a displacement of approx. 7 and 3 litres, respectively. The required cranking power greatly depends upon the type of combustion: A diesel engine requires a more powerful starter than a spark-ignition engine of equal size.

Passenger-car starter circuits are usually very simple. The engine is located in the vicinity of the driver, who is usually easily able to hear when the engine starts. The driver is therefore not likely to attempt to restart an engine which is already running, thereby possibly damaging the starter pinion as it attempts to engage the ring gear on the engine flywheel. For this reason, passenger cars usually do not have start protection and monitoring devices.

Many passenger-car models have ignition/starter switches which incorporate additional start repeating blocks to avoid any possibility of accidental starter operation.

Starting systems for passenger cars with spark-ignition engines

The basic circuit for this starting system is shown in Figure 4. The starting system is usually activated by a multiple-position ignition/starter switch.

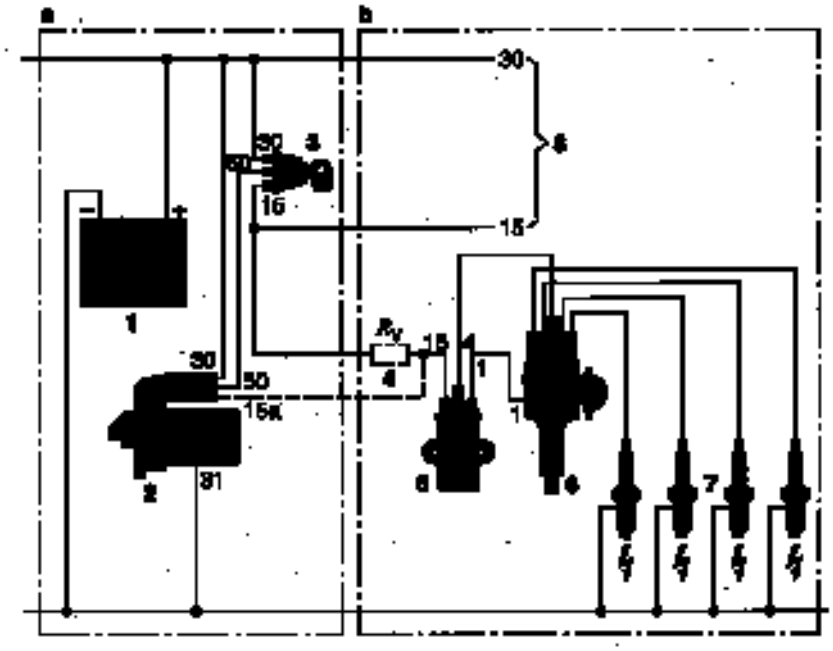
The ignition system is switched on before the key reaches the “start” position, because the ignition system must be on for the spark-ignition engine to start, and must remain on for the engine to run.

Ignition continues after the starter is switched off, and allows the spark-ignition engine to continue running.

In systems with breaker-triggered ignition coils with ballast resistors, starting can be facilitated by increasing the available voltage. This is done by

Fig. 4: Diagram of a passenger-car starting system for vehicles with SI engine

a) Starting system:
1. Battery
2. Starter
3. Ignition and starting switch
b) Ignition system
4. Ballast resistor (not always fitted, starter with terminal 15a required)
5. Ignition coil
6. Ignition distributor
7. Spark plugs
8. Other loads



Starters [continued]

Starting systems for passenger cars

bridging the ignition-coil ballast resistor, and requires starters with an additional terminal (15a).

Starting systems for passenger cars with diesel engines

Before the engine can be started, the preheating system must be switched on. Most late-model passenger-car preheating systems have a combined driving/glow plug and starter switch which, at the end of the glow duration, can be turned farther to the starting position (Figure 5). In the case of older diesel starting systems, the driving switch and glow plug and starter switch are still fitted separately. As soon as the surface of the glow plug becomes hot enough to ignite the diesel fuel, the engine can be started. In contrast to the ignition system of the spark-ignition engine, the preheating system of the diesel engine is switched off together with the starter after the engine is started.

Starters [continued]

Starter Types

Summary

There are many different kinds of internal-combustion engines and vehicle electrical systems, and there are therefore just as many different operating conditions which determine the design of electrical starting systems and compatible starters. A broad range of starter types must therefore be available. The most impoffant starter characteristics are:

– Rated voltage

– Rated output

– Direction of rotation

– Starter size (diameter of starter motor field frame)

– Type

– Design.

Rated voltage is determined by the type of starter used. Small starters are designed for 12V, medium-sized starters for 12 and 24V and large starters for various rated voltages between 24 and 110V, depending upon application. The starter's performance specifications are defined according to whether the unit will be used on a diesel or spark-ignition engine (starters for diesel engines must be more powerful) and the engine's displacement.

The starter pinion's rotating direction is determined by the unit's installation position and the engine's normal operating direction. The starter's size is a function of the required power rating.

The basic design is determined by the pinion-engagement concept being used which, in turn, is largely determined by the starter's power rating and the resulting dimensions. The unit's mechanical construction features will depend upon space requirements, mounting type and operating conditions (Figures 12 and 13).

Type designation

The type designation provides peffinent initial information and is given together with the part number in the technical starter documents (Fig. 11).

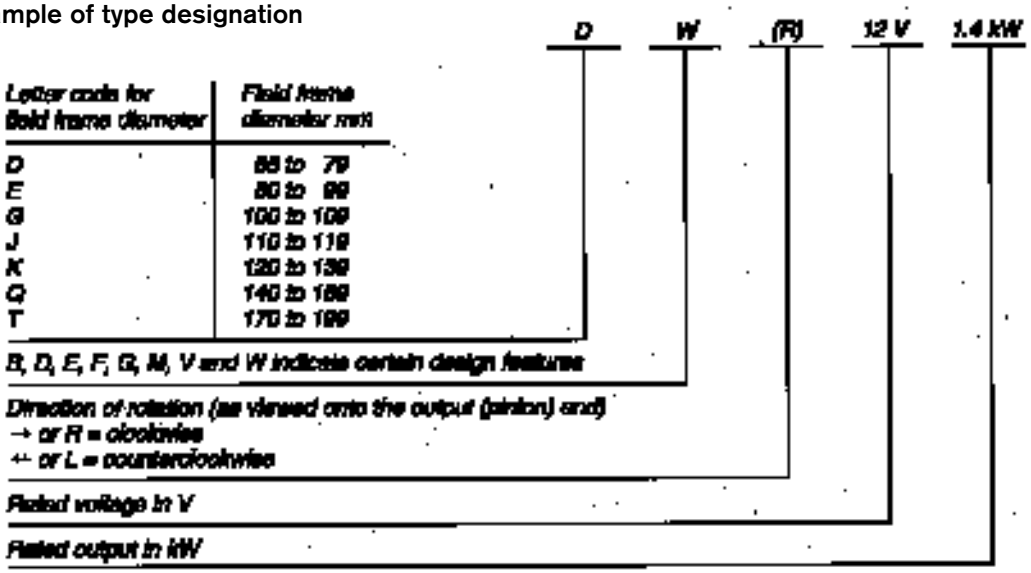
Starter labelling

Starter labels (stamped into the housing) are a combination of part number, direction of rotation and rated voltage.

Example:

0 001 314 002 → 12

Fig. 11: Example of type designation



Starters [continued]

A

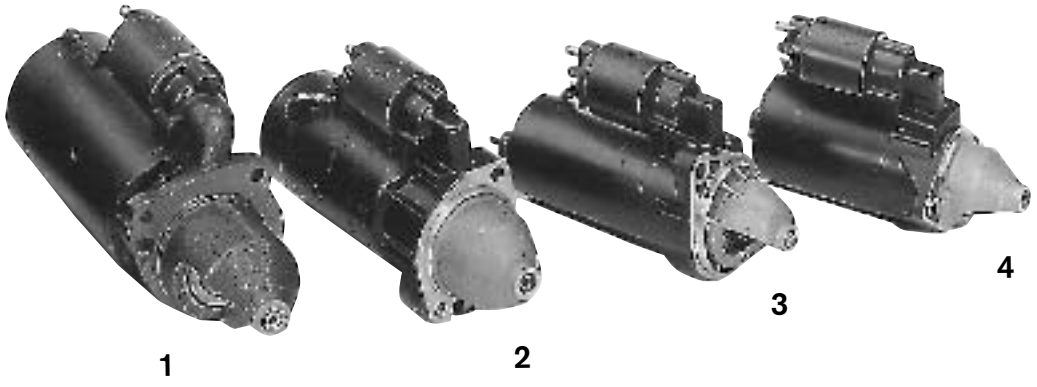
Starter types

Fig. 12: Chart of starter types

Pinion-engaging drive, function	Reduction gear	Design E Pinion-engaging drive M Motor, R Relay	Based on design	Similar types	Starter motors
Pre-engaged drive Pinion moves forward with screw action until it meets ring gear, and is meshed by solenoid Meshing is facilitated by spiral spline. Full starter current is switched on at the end of solenoid travel.	without		JF	JD	Series-wound motor
	with		EV	–	Motor with permanent-magnet excitation
			DW	–	
	without		DM	–	

Fig 13.: Examples of pre-engaged drive starters

1 Type JF, 2 Type EV, 3 Type DW, 4 Type DM



B

B

Part Number	Application	Type
BXC1233	**MITSUBISHI** Galant, Lancer, Sigma	K1 > 14V 22/55A
BXD1242	**HOLDEN** 4 Cyl - Astra / **NISSAN** Various	K1 > 14V 22/60A
BXF1230	**FORD** 4 Cyl - Laser MAZDA 323	K1 > 14V 20/65A
BXF1238	**FORD** 4 Cyl - Capri 6 Cyl - Cortina, Fairlane, Falcon/Fairmont, LTD 8 Cyl - Fairlane, Falcon/Fairmont	K1 > 14V 20/55A
BXF1242	**FORD** 4 Cyl - Cortina, Escort	K1 > 14V 20/55A
BXF1246	**FORD** 6 Cyl - Fairlane 8 Cyl - Fairlane, Falcon/Fairmont	K1 > 14V 20/55A
BXF1247	**FORD** 6 Cyl - Cortina, Fairlane, Falcon/Fairmont, LTD	K1 > 14V 14/60A
BXF1248	**FORD** 4 Cyl - Telstar **MAZDA** 626	K1 > 14V 22/60A
BXF1249	**FORD** 4 Cyl - Laser, Meteor **MAZDA** 323	K1 > 14V 22/55A
BXF1250	**FORD** 6 Cyl - Fairlane, Falcon/Fairmont	K1 > 14V 24/60A
BXF1255	**FORD** 6 Cyl - Fairlane, Falcon/Fairmont, LTD	K1 > 14V 14/85A
BXF1257	**FORD** 6 Cyl - Falcon/Fairmont	K1 > 14V 14/85A
BXF1259	**FORD** 6 Cyl - Fairlane, Falcon/Fairmont, LTD	K1 > 14V 14/85A
BXF1260	**FORD** 6 Cyl - Falcon/Fairmont	NCA > 14V 52/108A
BXH1231	**HOLDEN** 8 Cyl - Calais, Caprice, Commodore	K1 > 14V 14/85A
BXH1236	**HOLDEN** 4 Cyl - Commodore, Sunbird, Torano 6 Cyl - Various 8 Cyl - Various **TOYOTA** Corona	K1 > 14V 22/55A
BXH1237	**HOLDEN** 4 Cyl - Camira	K1 > 14V 14/60A
BXH1239	**HOLDEN** 4 Cyl - Camira	K1 > 14V 24/60A
BXH1240	**HOLDEN** 4 Cyl - Commodore	K1 > 14V 14/85A
BXH1241	**HOLDEN** 6 Cyl - Calais, Commodore, Statesman	K1 > 14V 14/85A
BXH1250	**HOLDEN** 4 Cyl - Apollo 8 Cyl - Commodore	NCA > 14V 120A
BXH1253	**HOLDEN** 4 Cyl - Apollo 8 Cyl - Calais, Commodore	NCA > 14V 120A
BXH1333	**HOLDEN** 6 Cyl - Calais, Caprice, Commodore, Statesman	KCA > 14V 40/100A
BXH1334	**HOLDEN** 6 Cyl - Calais, Caprice, Commodore, Statesman	KCA > 14V 40/100A
BXM1231	**MITSUBISHI** Magna	K1 > 14V 17/70A
BXM1232	**MITSUBISHI** Magna	K1 > 14V 14/85A
BXM1233	**MITSUBISHI** Magna	K1 > 14V 14/85A
BXM1236	**MITSUBISHI** Magna, Verada	K1 > 14V 70A
BXM1237	**MITSUBISHI** Magna, Verada [65mm pulley]	NCA > 14V 120A
BXM1348	**MITSUBISHI** Magna, Verada [60mm pulley]	NCA > 14V 52/108A
BXN1231	**HOLDEN** 6 Cyl - Commodore / **NISSAN** Skyline	K1 > 14V 17/70A
BXN1235	**NISSAN** Bluebird	K1 > 14V 14/60A
BXT1250	**TOYOTA** Camry	K1 > 14V 17/70A
BXT1346	**TOYOTA** Camry	K1 > 14V 70A
BXU12121	**UNIVERSAL** {For Agricultural use only - harvesters, tractors operating at constsant speed}	K1 > 14V 2/120A
BXU1285	**HOLDEN** 6 Cyl - Commodore **UNIVERSAL**	K1 > 14V 14/85A
BXU1296	**UNIVERSAL**	K1 - 14V 18/95A
BXU2455	**UNIVERSAL**	K1 > 28V 55A
BXU2456	**UNIVERSAL**	K1 > 28V 55A
BX110008	**NISSAN** Micra	GC > 14V 70A
BX120001	**HOLDEN** 4 Cyl - Astra, Barina, Calibra, Vectra	GC > 14V 70A
BX214002	**BMW** 5 Series; 7 Series; 8 Series	NC > 14V 45/140A
BX310006	**BMW** 3 Series	KC > 14V 40/70A
BX310019	**VW** Golf III; Jetta; Passat; Vento	KC > 14V 70A
BX310022	**AUDI** A4; A6 **VW** Passat	KC > 14V 40/70A
BX310051	**NISSAN** Terrano II	KC - 14V 70A
BX315004	**BMW** 3 Series	KC > 14V 40/70A
BX320001	**VW** Caddy; Caravelle; Golf III; Multivan; Passat; Polo; Polo Classic; Transporter; Vento	KC > 14V 90A
BX320005	**VW** Corrado; Passat	KC > 14V 90A
BX320006	**VW** Caravelle; Corrado; Golf III; Multivan; Polo; Polo Classic; Transporter; Vento	KC > 14V 90A
BX320039	**SAAB** 9000	KC > 14V 45/90A
BX320057	**SAAB** 900 II; 9-3	KC > 14V 45/90A
BX320111	**VW**	GL < 14V 30A
BX334632	**NISSAN** Terrano II	K1 - 14V 26/60A
BX335002	**M-BENZ** 200; 220; 280; 300; 314; 320; C Series; E Series; SLK	KC > 14V 45/90A
BX335003	**M-BENZ** 208; 210; 212; 308; 312; 408; 410; 412; C Series; E Series **SSANGYONG** Family, Musso	KC > 14V 45/90A
BX465031	**BMW** 3 Series	NC > 14V 45/140A
BX468007	**BMW** 5 Series; 7 Series	N1 - 14V 40/115A

Part Number	Application	Type
BX468019	**AUDI** S4	N1 > 14V 40/110A
BX468042	**BMW** 5 Series	N1 - 14V 40/115A
BX469551	**AUDI** 80; 100; 200; Coupe	N1 - 14V 29/80A
BX469555	**NISSAN** Santana / **VW** Passat; Santana	N1 - 14V 29/90A
BX469563	**VOLVO** 240; 760	N1 - 14V 31/70A
BX469567	**VOLVO** 240; 260; 740	N1 - 14V 31/70A
BX469682	**SAAB** 900; 9000	N1 - 14V 36/80A
BX469684	**SAAB** 9000	N1 - 14V 36/80A
BX469734	**AUDI** 80; 90; 100; 200	N1 - 14V 34/90A
BX469777	**BMW** 3 Series; 5 Series; 7 Series; M Series; Z1	N1 - 14V 34/90A
BX469782	**BMW** 3 Series; 5 Series; M Series	N1 - 14V 34/90A
BX469808	**JAGUAR** XJ6	N1 - 14V 34/90A
BX469811	**M-BENZ** S Class	N1 - 14V 36/80A
BX469862	**AUDI** 80; 100; Coupe	N1 > 14V 34/90A
BX469864	**VW** Corrado; Golf II; Passat	N1 - 14V 34/90A
BX469908	**AUDI** 90; 100; 200 **VW** Corrado	N1 - 14V 34/90A
BX469914	**BMW** 3 Series	N1 > 14V 34/90A
BX469915	**VOLVO** 740; 780	N1 - 14V 34/90A
BX469928	**M-BENZ** 190; 300	N1 - 14V 36/80A
BX469945	**M-BENZ** 560; S Class	N1 > 14V 36/80A
BX469947	**M-BENZ** S Class	N1 > 14V 36/80A
BX469992	**VOLVO** 240; 740; 940; 960	N1 - 14V 31/80A
BX485047	**AUDI** 80; 100; A6; Cabriolet; Coupe	KC > 14V 37/70A
BX485048	**BMW** 5 Series	KC > 14V 50/80A
BX488119	**ALFA** 33	K1 > 14V 23/65A
BX488184	**BMW** 3 Series	K1 > 14V 23/65A
BX488219	**BMW** 3 Series	K1 - 14V 23/65A
BX489025	**M-BENZ** 380; 420; S Class	K1 - 14V 28/70A
BX489030	**BMW** 3 Series; 5 Series	K1 14V 65A21
BX489046	**BMW** 3 Series; 5 Series	K1 > 14V 13/45A
BX489065	**VOLVO** 240; 340; 345; 360; 740; 760	K1 - 14V 23/55A
BX489152	**ALFA** 33; 75	K1 > 14V 23/65A
BX489195	**VW** Caddy; Golf II; Jetta; Passat; Santana	K1 - 14V 23/65A
BX489310	**SAAB** 900	K1 - 14V 28/70A
BX489325	**M-BENZ** 380; 420; S Class	K1 - 14V 28/70A
BX489328	**M-BENZ** 190; 200; 210; 230; 250; 300; 310; 410; 510; S Class	K1 - 14V 28/70A
BX489361	**VW** Corrado; Golf II; Jetta; Passat	K1 > 14V 23/65A
BX489362	**AUDI** 80; Coupe **VW** Caddy; Golf II; Jetta	K1 - 14V 23/55A
BX489367	**VW** Passat; Santana	K1 - 14V 20/45A
BX489469	**M-BENZ** 200; 207; 208; 209; 230; 250; 280; 300; 307; 308; 309; 407; 409; 507	K1 - 14V 23/55A
BX489473	**BMW** 316	K1 - 14V 23/65A
BX489935	**M-BENZ** 280; S Class	K1 - 14V 23/65A
BX500005	**VOLVO** 740; 960	NC > 14V 55/100A
BX505014	**VOLVO** 850; C70; S70; V70	NC > 14V 55/100A
BX510005	**VW** Corrado; Golf I; Golf III; Jetta; Passat; Vento	NC > 14V 120A
BX510006	**VW** Passat; Vento	NC > 14V 70/120A
BX510053	**VW** Golf III; Passat; Vento	NC > 14V 70/120A
BX510061	**AUDI** 80; 100; A4; A6; A8; Cabriolet; Coupe **VW** Passat	NC > 14V 70/115A
BX510063	**HOLDEN** 4 Cyl - Frontera	NC > 14V 120A
BX510064	**HOLDEN** 6 Cyl - Vectra	NC > 14V 120A
BX690170	**UNIVERSAL**	K1 > 14V 55A

Part Number	Application	Type
BXF129	**FORD** 6 Cyl - Cortina, Fairlane, Falcon/Fairmont, LTD	DW > 12V 1.4kW
BXH136	**HOLDEN** 8 Cyl - Calais, Caprice, Commodore	DW > 12V 1.4kW
BXH137	**HOLDEN** 4 Cyl - Commodore; 6 Cyl - Commodore, Torano, Belmont, Statesman, Monaro, Premier, Kingswood	DW > 12V 1.4kW
BXH139	**HOLDEN** 6 Cyl - Calais, Caprice, Commodore, Statesman	DW > 12V 1.4kW
BXH140	**HOLDEN** 4 Cyl - Astra, Calibra, Frontera, Vectra	DW > 12V 1.4kW
BXM132	**MITSUBISHI** Magna	DW > 12V 1.4kW
BXM133	**MITSUBISHI** Magna	DW > 12V 1.4kW
BXM134	**MITSUBISHI** Magna, Verada	DW < 12V 1.2kW
BXM135	**MITSUBISHI** Magna, Verada	DW < 12V 1.2kW
BXT133	**HOLDEN** 4 Cyl - Apollo / **TOYOTA** Camry, Lexcen	DW < 12V 1.2kW
BX107007	**VW** Caravelle; Golf II; Jetta; Multivan; Passat; Transporter	DW < 12V 1.1kW
BX107009	**ALFA** 33	DW > 12V 1.1kW
BX107015	**HOLDEN** 4 Cyl - Calibra	DW > 12V 1.1kW
BX107020	**AUDI** A3 **VW** Corrado; Golf III; Jetta; Passat; Polo Classic; Vento	DW < 12V 1.1kW
BX107022	**VW** Corrado; Golf III; Golf IV; Passat	DW < 12V 1.1kW
BX107025	**VW** Caddy; Golf III; Polo; Polo Classic; Vento	DW > 12V 1.1kW
BX107027	**VW** Golf III	DW > 12V 1.1kW
BX107048	**M-BENZ** 190;200; 210; 230; 300; 310; 410	DW > 12V 1.1kW
BX107068	**AUDI** 80; 100; A4; A6; Cabriolet; Coupe **VW** Passat	DW > 12V 1.1kW
BX107403	**M-BENZ** 200; 220; 314; C Series; E Series; SLK	DW > 12V 1.1kW
BX108026	**AUDI** 80; 90; 100; 200; Coupe **NISSAN** Santana **VW** Passat; Santana	DW > 12V 1.4kW
BX108063	**BMW** 3 Series; 5 Series; 7 Series M Series	DW > 12V 1.4kW
BX108064	**BMW** 3 Series; 5 Series; Z Series	DW > 12V 1.4kW
BX108088	**AUDI** 100 **VOLVO** 240; 260; 340; 345; 360; 740; 760; 780; 940; 960; C202; C303; C304; C306	DW > 12V 1.4kW
BX108091	**SAAB** 90; 900; 9000	DW > 12V 1.4kW
BX108092	**SAAB** 9000	DW > 12V 1.4kW
BX108113	**AUDI** 80; 100; A4; A6; A8; Cabriolet; Coupe **VW** Passat	DW > 12V 1.4kW
BX108151	**SAAB** 9-3; 900 II; 9000	DW > 12V 1.4kW
BX108157	**BMW** 3 Series; 5 Series; 7 Series; Z Series	DW > 12V 1.4kW
BX108166	**VOLVO** 850; C70; S40; S70; V40; V70	DW > 12V 1.4kW
BX108170	**HOLDEN** 6 Cyl - Calibra, Vectra	DW > 12V 1.4kW
BX108170	**SAAB** 9000	DW > 12V 1.4kW
BX109040	**LAND ROVER** 2.5; Defender; Discovery **RANGE ROVER** 2.5; 3.9; 4.0; 4.2; 4.6	DW > 12V 1.7kW
BX110007	**AUDI** 80; 90 **VW** Passat; Santana	DW > 12V 1.7kW
BX110011	**JAGUAR** Daimler; Sovereign; XJ6; XJS	DW > 12V 1.7kW
BX110041	**BMW** 5 Series; 7 Series; M Series	DW > 12V 1.7kW
BX110059	**PORSCHE** 911	DW < 12V 1.7kW
BX110072	**BMW** 5 Series; 7 Series; 8 Series; M Series; Z Series	DW > 12V 1.7kW
BX110086	**VW** Corrado; Golf I; Golf III; Jetta; Passat; Vento	DW < 12V 1.7kW
BX110106	**AUDI** 80; 90	DW > 12V 1.8kW
BX110112	**M-BENZ** 190; 260; 280; 300; 320; C Series; E Series; S Class **SSANGYONG** Korando; Musso	DW > 12V 1.8kW
BX110113	**M-BENZ** C Series	DW > 12V 1.8kW
BX112027	**NISSAN** Micra / **VW** Caddy; Golf III; Polo	DM > 12V .9kW
BX112032	**SUZUKI** Samurai; Vitara	DM > 12V 0.9kW
BX113004	**ALFA** 145; 146; 33	DM > 12V 0.8kW
BX125001	**VW** Caravelle; Multivan; Transporter	EB > 12V .95kW
BX208711	**AUDI** 80; 90; 100; Coupe **VW** Passat; Santana	EF > 12V 0.95kW
BX212208	**PORSCHE** 911	EB < 12V 0.8kW
BX212400	**VW** Caddy; Golf II; Jetta	EB > 12V 0.95kW
BX218162	**M-BENZ** 108; 110; 208; 212; 308; 312; 408; 412; C Series; E Series; S Class	EV > 12V 2.2kW
BX218165	**M-BENZ** 190; 200; 250; 300; E Series; S Class	EV > 12V 2.2kW
BX218168	**LAND ROVER** 2.5; Defender; Discovery	EV > 12V 2.2kW
BX312110	**PORSCHE** 911; 959	GB < 12V 1.5kW
BX312111	**PORSCHE** 928	GB > 12V 1.5kW
BX314018	**M-BENZ** 200; 208; 250; 280; 308; 350; 380; 420; 450; 560; S Class	GF > 12V 1.5kW
BX314027	**M-BENZ** 200; 230; 510	GF > 12V 1.5kW
BX362300	**M-BENZ** 200	IF > 12V 2.7kW
BX362600	**M-BENZ** 200; 207; 209; 300; 307; 309; 407; 409; 507	IF > 12V 2.3kW

B

Make / Model	Series	From - To	Litre	Engine	Alternator Part No.	Starter Motor Part No.
ALFA ROMEO						
ALFA 33	1.2	01.90 - 08.91	1.2	AR 30743	0 120 488 191	BX113004
	1.3	02.90 - 10.94	1.3	AR30732	0 120 488 191	BX113004
	1.3 IE	09.91 - 10.94	1.3	AR 30753 MPI-Weber	BX488119	BX113004
	1.3 Sport Wagon	01.90 - 10.94	1.3	AR 30732	0 120 488 191	BX113004
	1.4 IE	09.91 - 09.94	1.4	AR 30755	BX488119	BX113004
	1.5	02.90 - 03.92	1.5	AR30734	BX488119	BX113004
	1.5 IE	06.90 - 10.94	1.5	AR 30750, AR 30751, AR30738	BX488119	BX113004
	1.5 IE 4x4	04.92 - 10.94	1.5	AR 30751	BX488119	BX113004
	1.5 IE Sport Wagon	06.90 - 03.92	1.5	AR 30751 Cat.	BX488119	BX113004
	1.7 IE 16V	01.90 - 10.94	1.7	AR30746, 30747 Cat	BX488119	BX107009
	1.7 IE 16V Sport Wagon	01.90 - 10.94	1.7	AR30746, 30747 Cat	BX488119	BX107009
	1.7 IE 4x4	04.92 - 10.94	1.7	AR30737	BX488119	-
	1.7 IE 4x4	07.90 - 03.92	1.7	AR 30736, AR 30737 Cat.	BX488119	BX107009
	1.7 IE Q.V.	04.88 - 12.89	1.7	AR30550	BX488119	BX107009
	1.7 IE Sport 16V	01.90 -	1.7	AR30746	BX488119	BX107009
	1.7 IE Sport Wagon	09.88 - 12.89	1.7	AR30558, AR30558 Cat	BX488119	BX107009
	1.7 IE Sport Wagon	07.90 - 03.92	1.7	AR30736, 30737, 30737 Cat	BX488119	BX107009
	1.7 IE Sport Wagon	03.92 - 10.94	1.7	AR30558 Cat	BX488119	-
	1.8 TD	09.86 - 12.89	1.8	VM 82 A	BX489152	0 001 218 125
	1.8 TD Sport Wagon	03.88 - 12.89	1.8	VM 82 A	BX489152	0 001 218 125
ALFA 75	2.0 TD	04.83 - 05.83	2.0	VM 80 A	BX489152	-
	2.4 TD	06.83 - 12.84	2.4	VM 81 A	BX489152	-
ALFA 144	2.0 GTV	01.83 - 01.86	2.0	16.23	0 120 489 903	0 001 108 024
ALFA 145	1.3ie	04.94 - 11.96	1.3	AR33501 MPI-Weber	0 123 310 014	BX113004
	1.6ie	04.94 - 11.96	1.6	AR33201 MPI-Bosch, MPI-Roch	0 123 310 014	BX113004
ALFA 146	1.3ie	12.94 - 11.96	1.3	AR33501 MPI-Weber	0 123 310 014	BX113004
	1.6ie	05.95 - 11.96	1.6	AR33201 MPI-Roch	0 123 310 014	BX113004
AUDI						
80	1.3	08.81 - 08.86	1.3	EP	BX489195	BX208711
	1.4	08.87 - 08.91	1.4	SE	BX469862	BX107068
	1.6	08.78 - 07.80	1.6	WP, YY, YN,WY, WV, WVA, YP, YZ	BX469551	-
	1.6	08.80 - 07.83	1.6	WP, YY, YN,WY, WV, WVA, YP, YZ	BX469551	BX208711
	1.6	08.83 - 08.86	1.6	DT, DTA, JU	BX489195	BX208711
	1.6	09.86 - 09.87	1.6	PP, RN {Fig No <89J180000}	BX469862	-
	1.6	09.87 - 08.91	1.6	PP, RN {Fig No >89J180001}	BX469862	BX107068
	1.6	08.90 - 08.91	1.6	ABB	BX469862	BX208711
	1.6	01.92 - 01.96	1.6	ABM, ABB, ADA	BX485047	BX107068
	1.6 Diesel	08.80 - 07.82	1.6	CR	0 120 489 966	BX110007
	1.6 Diesel	08.82 - 08.86	1.6	JK	-	BX110007
	1.6 Diesel	09.86 - 08.91	1.6	JK	BX469734	BX110106
	1.6 T Diesel	08.81 - 05.86	1.6	CY	-	BX110007
	1.6 T Diesel	04.88 - 08.91	1.6	SB, RA	BX469734	BX110106
	1.7	08.80 - 07.83	1.7	WT	BX469551	BX208711
	1.8	01.83 - 08.86	1.8	DZ	BX469551	BX208711
	1.8	01.83 - 08.86	1.8	DS, JV, JN, JN Cat	BX489195	BX208711
	1.8	10.84 - 08.91	1.8	MU, PV, SF, RU, PM	BX489362	BX208711
	1.8 E	09.87 - 08.91	1.8	DZ	BX469862	-
	1.8 E	09.86 - 09.87	1.8	DZ > Fig No 89J180000	BX469862	BX107068
	1.8 S	09.86 - 09.87	1.8	SF, JN, NE > Fig No 89J180000	BX469862	BX107068
	1.8 S	09.87 - 08.91	1.8	SF, JN, NE	BX469862	-
	1.8 Quattro	08.84 - 07.85	1.8	JV, NE, JN, PV, DZ, MU	BX489195	BX208711
	1.8 Quattro	03.85 - 08.86	1.8	JV, NE, JN, PV, DZ, MU	0 120 489 369	BX208711

B

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
AUDI cont.						
80	1.8 Quattro	09.86 - 09.87	1.8	SF, JN, DZ > Fig No 89J180000	BX469862	BX107068
	1.8 Quattro	09.87 - 08.91	1.8	SF, JN, DZ	BX469862	-
	1.8 Quattro	08.90 - 08.91	1.8	PM	BX469862	-
	1.9 5S	09.81 - 07.83	1.9	WN	BX469551	BX108026
	1.9 Diesel	08.89 - 08.91	1.9	1Y	BX469734	BX110106
	1.9 T Diesel	09.91 - 01.96	1.9	AAZ	0 120 320 003	BX110106
	1.9 Tdi	09.91 - 01.96	1.9	1Z	0 120 320 003	BX110106
	2.0	08.88 - 08.91	2.0	3A, AAD	BX469862	BX208711
	2.0	09.91 - 01.96	2.0	ABT, ABK	BX469862	BX107068
	2.0 5E	08.83 - 07.84	2.0	HP, JS	BX489195	BX108026
	2.0 Quattro	08.83 - 07.84	2.0	JS, JS Cat	BX489195	BX108026
	2.0 Quattro	08.88 - 08.91	2.0	3A, AAD	BX469862	-
	2.0 Quattro	09.91 - 01.96	2.0	ABK	BX469862	BX107068
	2.2 5E	10.80 - 08.83	2.2	WE	BX469551	BX108026
	2.2 Quattro	08.82 - 07.84	2.2	KL, KK	BX489195	BX108026
	2.6	07.92 - 01.96	2.6	ABC, ACZ	BX510061	BX108113
	2.6 Quattro	08.92 - 01.93	2.6	ABC	-	BX108113
	2.6 Quattro	01.93 - 01.96	2.6	ABC Fig No 8CP175001 >	BX510061	BX108113
	2.8	09.91 - 01.93	2.8	AAH	-	BX108113
	2.8	01.93 - 01.96	2.8	AAH Fig No 8CP175001 >	BX510061	BX108113
	2.8 Quattro	09.91 - 01.93	2.8	AAH	-	BX108113
	2.8 Quattro	01.93 - 01.96	2.8	AAH Fig No 8CP175001 >	BX510061	BX108113
90	1.6 T Diesel	10.84 - 06.85	1.6	CY	-	BX110007
	1.6 T Diesel	07.85 - 03.87	1.6	CY	0 120 489 966	BX110007
	1.6 T Diesel	07.87 - 10.87	1.6	RA	BX469734	-
	1.6 T Diesel	10.87 - 07.91	1.6	SB, RA Fig No 89J180000 >	BX469734	BX110106
	2.0	10.84 - 03.87	2.0	HP, JL, JS	BX489195	BX108026
	2.0	02.86 - 03.87	2.0	SK	0 120 489 369	BX108026
	2.0	04.87 - 05.87	2.0	PS, PS Cat	-	BX108026
	2.0	05.87 - 07.91	2.0	PS, PS Cat Fig No 89H460000 >	BX469908	BX108026
	2.0	09.87 - 10.90	2.0	3A	-	BX208711
	2.2	10.84 - 03.87	2.2	KX, HY, KV	BX489195	BX108026
	2.2	04.87 - 07.91	2.2	KV	BX469908	BX108026
	2.2 Quattro	10.84 - 10.85	2.2	JT, HY, KV	-	BX108026
	2.2 Quattro	11.85 - 03.87	2.2	JT, HY, KV	0 120 469 933	BX108026
	2.2 Quattro	04.87 - 09.91	2.2	KV	BX469908	BX108026
	2.3	04.87 - 07.91	2.3	NG	BX469908	BX108026
	2.3 Quattro	04.87 - 09.91	2.3	NG	BX469908	BX108026
100	1.6	08.76 - 07.80	1.6	YV	BX485047	-
	1.6	08.80 - 07.82	1.6	YV	BX485047	BX208711
	1.6	03.92 - 07.94	1.6	ABB	BX485047	BX107068
	1.8	08.82 - 07.89	1.8	DS, DR, JW, PH	BX489195	BX208711
	1.8	08.86 - 07.90	1.8	RS, SH	0 120 489 369	BX208711
	1.8	01.92 -	1.8	JW	-	BX208711
	1.8 Quattro	08.85 - 07.88	1.8	JW, NP, PH	BX489195	BX208711
	1.8 Quattro	02.86 - 07.88	1.8	SH	-	BX208711
	1.8 Quattro	08.88 - 11.90	1.8	4B	BX469862	-
	1.9	08.82 - 07.84	1.9	WH	BX489195	BX108026
	1.9 5	08.80 - 07.82	1.9	WH	BX469551	0 001 108 181
	2.0	07.77 - 07.78	2.0	WF	-	BX108026
	2.0	08.84 - 10.87	2.0	SL, KP	-	BX108026
	2.0	12.90 - 07.91	2.0	AAE, AAD	BX469862	-
	2.0	08.91 - 07.94	2.0	AAE, AAD	BX469862	BX107068
	2.0	01.93 - 07.94	2.0	ADW, ABK	BX485047	BX107068
	2.0 Diesel	08.82 - 07.89	2.0	CN	BX469734	-

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
AUDI cont.						
100	2.0 T Diesel	08.82 - 11.90	2.0	DE, NC	BX469734	-
	2.0 Quattro	12.90 - 07.91	2.0	AAD	BX469862	-
	2.0 Quattro	08.91 - 07.92	2.0	AAD	BX469862	BX107068
	2.2	08.82 - 12.82	2.2	WU	BX489195	-
	2.2	08.82 - 07.84	2.2	KF, WC, WU	BX489195	BX108026
	2.2	08.84 - 11.90	2.2	KZ, HX, KU	BX469734	BX108026
	2.2 5E	04.77 - 06.80	2.2	WB, WC	BX469551	BX108026
	2.2 5E	07.80 - 07.82	2.2	WB, WC	BX469551	-
	2.2 5E	08.80 - 07.82	2.2	WE	BX469551	0 001 108 101
	2.2 Quattro	08.84 - 12.87	2.2	HX	BX469734	BX108026
	2.2 Quattro	08.84 - 11.90	2.2	KU	BX469862	BX108026
	2.2 Quattro	08.85 - 07.86	2.2	PX	-	BX108026
	2.2 T Quattro	03.86 - 07.98	2.2	MC	-	BX108026
	2.2 T Quattro	08.98 - 11.90	2.2	MC	BX469908	BX108026
	2.3	10.86 - 11.90	2.3	NF	BX469862	BX108026
	2.3 Quattro	08.86 - 11.90	2.3	NF	BX469908	BX108026
	2.4 Diesel	08.89 - 07.94	2.4	3D, AAS	BX469908	-
	2.6	04.92 - 07.94	2.6	ABC	BX561001	BX108113
	2.6	01.93 - 07.94	2.6	ACZ	-	BX108113
	2.6 Quattro	03.92 - 07.94	2.6	ABC	BX510061	BX108113
	2.8	12.90 - 07.94	2.8	AAH	BX510061	BX108113
	2.8 Quattro	12.90 - 07.94	2.8	AAH	BX510061	BX108113
	4.2 S4 Quattro	10.92 - 07.94	4.2	ABH	BX468019	BX108088
200	2.2	10.79 - 09.82	2.2	WC	BX469551	BX108026
	2.2 Turbo	10.79 - 09.82	2.2	WK, WJ, WS, KJ	BX469551	BX108026
	2.2 Turbo	08.83 - 01.88	2.2	KG	BX469734	BX108026
	2.2 Turbo	08.85 - 02.88	2.2	MC < Fig No 44J231678	-	BX108026
	2.2 Turbo	02.88 - 12.91	2.2	1B, 2B	BX469734	0 001 108 101
	2.2 Turbo	03.88 - 12.91	2.2	MC Fig No 44J231679 >	BX469908	BX108026
	2.2 T Quattro	11.84 - 12.90	2.2	MC, JY, KG	BX469734	BX108026
	2.2 T Quattro	02.88 - 07.88	2.2	1B < Fig No 44K012700	-	BX108026
	2.2 T Quattro	08.88 - 11.90	2.2	1B Fig No 44K012701 >	BX469908	BX108026
500	2.8 SE	03.92 -	2.8	AAH	-	BX108113
	2.8 SEL	03.92 -	2.8	AAH	-	BX108113
A3	1.6	09.96 -	1.6	AEH, AKL	-	BX107020
	1.8	09.96 -	1.8	AGN	-	BX107020
	1.8 T	12.96 -	1.8	AGU	-	BX107020
A4	1.6	11.94 - 08.97	1.6	ADP, AHL	BX310022	BX107068
	1.8	11.94 -	1.8	ADR AFY	BX310022	BX107068
	1.8	08.98 -	1.8	ANA, ARM	BX310022	-
	2.4	07.95 - 11.98	2.4	AGA, AJG, AFM, ALF	-	BX108113
	2.4	12.98 -	2.4	AGA, AJG, AFM, ALF	BX510061	BX108113
	2.6	11.94 -	2.6	ABC, ACZ	-	BX108113
	2.6	12.98 -	2.6	ABC	BX510061	BX108113
	2.8	11.94 - 11.98	2.8	AAH, ACK, AFC, ALG	-	BX108113
	2.8	12.98 -	2.8	AAH, ACK, AFC, ALG	BX510061	BX108113
	1.8 Quattro	11.94 -	1.8	ADR, AFY	BX310022	BX107068
	1.8 T	11.94 -	1.8	AEB, AJL, APU	BX310022	BX107068
	1.8 T Quattro	11.94 -	1.8	AEB, AJL	BX310022	BX107068
	2.6 Quattro	11.94 -	2.6	ABC, ACZ	BX510061	BX108113
	2.8 Quattro	11.94 -	2.8	AAH, ALG	BX510061	BX108113
	Avant 1.6	11.94 -	1.6	ADP, AHL	BX310022	BX107068
	Avant 1.6	08.98 -	1.6	ANA, ARM	124315010	BX107068

B

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
AUDI						
A4	Avant 1.8	11.94-	1.8	ADR, AFY	BX310022	BX107068
	Avant 1.8 Quattro	11.94-	1.8	ADR, AFY	BX310022	BX107068
	Avant 1.8 T	10.95-	1.8	AEB, AJL	BX310022	BX107068
	Avant 1.8 T	08.98- 11.98	1.8	APU		BX107068
	Avant 1.8 T	12.98-	1.8	APU	BX310022	BX107068
	Avant 1.8 T Quattro	02.96-	1.8	AEB, AJL	BX310022	BX107068
	Avant 2.4	07.95 -	2.4	AFA, AGA, AJG, ALF	-	BX108113
	Avant 2.4	12.98-	2.4	AFA, AGA, ALF	BX510061	BX108113
	Avant 2.6	11.94- 11.98	2.6	ABC	-	BX108113
	Avant 2.6	01.96-	2.6	ACZ	-	BX108113
	Avant 2.6	12.98-	2.6	ABC	BX510061	BX108113
	Avant 2.8	11.94- 11.98	2.8	AAH, ACK, ALG	-	BX108113
	Avant 2.8	12.98-	2.8	AAH, ACK, ALG	BX510061	BX108113
	Avant 2.8 Quattro	11.94-	2.8	AAH, ACK	BX510061	BX108113
A6	1.8	06.94- 07.98	1.8	AFY	-	BX107068
	1.8	06.94- 10.97	1.8	ADR	BX310022	BX107068
	1.8	11.97 -	1.8	ADR, AJP	BX310022	-
	1.8	08.98-	1.8	AFY	BX310022	BX107068
	1.8 Quattro	10.95- 10.97	1.8	ADR	BX310022	BX107068
	1.8 T	04.97 -	1.8	AEB, AJL	BX310022	BX107068
	1.8 T Quattro	04.97 - 01.99	1.8	AEB, AJL	BX310022	BX107068
	2.0 Quattro	06.94- 10.97	2.0	ACE	-	BX107068
	2.0	06.94- 10.97	2.0	ACE	0 120 469 012	BX107068
	2.0	06.94- 10.97	2.0	AAE, ABK, ADW	BX485047	BX107068
	2.4	04.97 -	2.4	ALW, AJG, ALF, AGA	BX510061	0 001 108 174
	2.4 Quattro	04.97 - 01.99	2.4	AJG, AGA, ALF	BX510061	0 001 108 174
	2.6	06.94- 01.96	2.6	ACZ, ABC	-	BX108113
	2.6	02.96-	2.6	ACZ, ABC	BX510061	BX108113
	2.6 Quattro	06.94- 10.97	2.6	ACZ, ABC	BX510061	BX108113
	2.8	06.94- 01.96	2.8	AEJ, AAH, ACK	-	BX108113
	2.8	02.96-	2.8	AEJ, AAH, ACK	BX510061	0 001 108 174
	2.8	04.97 -	2.8	AGE, ACK, ALG	BX510061	0 001 108 174
	2.8 Quattro	06.94- 10.97	2.8	AAH, AEJ, ACK	BX510061	BX108113
	2.8 Quattro	08.94- 10.97	2.8	AFC	BX510061	-
	2.8 Quattro	04.97 -	2.8	ACK, AGE, ALG	BX510061	0 001 108 174
	Avant 1.8	10.95-	1.8	ADR, AFY	BX310022	BX107068
	Avant 1.8	02.98-	1.8	AJP	BX310022	-
	Avant 1.8 Quattro	10.95- 10.97	1.8	ADR	BX310022	BX107068
	Avant 1.8 T	02.98-	1.8	AEB, AJL	BX310022	BX107068
	Avant 1.8 T Quattro	02.98-	1.8	AEB, AJL	BX310022	BX107068
	Avant 2.0	06.94- 10.97	2.0	ABK, ADW	BX485047	BX107068
	Avant 2.0	09.94- 10.97	2.0	ADW	0 120 335 001	BX107068
	Avant 2.0 Quattro	06.94- 10.97	2.0	ACE	-	BX107068
	Avant 2.4	04.97 -	2.4	ALW, AJG, ALF, AGA	BX510061	0 001 108 174
	Avant 2.4 Quattro	04.97 - 01.99	2.4	AGA, AJG, ALF	BX510061	0 001 108 174
	Avant 2.6	06.94- 01.96	2.6	ABC, ACZ	-	BX108113
	Avant 2.6	02.96- 07.96	2.6	ABC, ACZ	BX510061	BX108113
	Avant 2.6 Quattro	06.94- 10.97	2.6	ABC, ACZ	-	BX108113
	Avant 2.6 Quattro	02.96- 10.97	2.6	ABC, ACZ	BX510061	BX108113
	Avant 2.8	06.94- 01.96	2.8	AAH, ACK, AEJ	-	0 001 108 174
	Avant 2.8	02.96- 10.97	2.8	AAH, ACK, AEJ	BX510061	0 001 108 174
	Avant 2.8	02.98-	2.8	ACK, AGE, ALG	BX510061	0 001 108 174
	Avant 2.8 Quattro	06.94- 10.97	2.8	AAH, ACK, AEJ	BX510061	BX108113
	Avant 2.8 Quattro	02.98-	2.8	ACK, AGE, ALG	BX510061	0 001 108 174
	Cabriolet 1.8	01.97 -	1.8	ADR	BX310022	-
	Cabriolet 2.0	01.93- 10.96	2.0	ABK	BX485047	-

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
AUDI						
A6	Cabriolet 2.0	11.96-	2.0	ABK	BX485047	BX107068
	Coupe 2.0	09.91 - 07.94	2.0	ABK	BX485047	BX107068
A8	2.8	06.94-	2.8	AAH, ACK, AEJ	BX510061	BX108113
	2.8 Quattro	09.94 - 12.98	2.8	AAH, ACK, AEJ	BX510061	BX108113
Cabriolet	2.0	01.93 - 07.98	2.0	ABK	BX485047	BX107068
	2.6	01.94-	2.6	ABC, ACZ	BX510061	BX108113
	2.8	11.92 - 07.98	2.8	AAH	BX510061	BX108113
Coupe	1.6	04.81 - 08.81	1.6	YN	BX469551	BX208711
	1.8	08.81 - 08.82	1.8	DD	BX469551	-
	1.8	09.82 - 07.84	1.8	DS	BX469551	-
	1.8	08.84 - 10.88	1.8	DS	BX469551	BX208711
	1.8	01.85 - 10.88	1.8	JN, JV	BX489195	BX208711
	1.8	04.86 - 10.88	1.8	SF, PV, DZ	BX489362	BX208711
	1.8	08.89 - 07.91	1.8	DZ	BX469862	-
	1.9	08.80 - 08.82	1.9	WN	BX469551	0 001 108 101
	1.9	09.82 - 07.83	1.9	WN	BX469551	BX108026
	2.0	02.86 - 07.86	2.0	SK	0 120 489 369	BX108026
	2.0	05.89 - 07.91	2.0	3A, AAD	BX469862	BX208711
	2.0	09.91 - 07.94	2.0	ABK	BX485047	BX107068
	2.0 5E	08.83 - 07.86	2.0	HP, JS	BX489195	BX108026
	2.2	01.84 - 10.88	2.2	KX, HY, KV	BX489195	BX108026
	2.2 Quattro	12.84 - 10.88	2.2	JT, HY, KV	BX489195	BX108026
	2.3	02.87 - 10.88	2.3	NG	0 120 469 933	BX108026
	2.3 Quattro	01.87 - 10.88	2.3	NG	0 120 469 933	BX108026
	2.6	08.92 - 12.95	2.6	ABC	BX510061	BX108113
	2.6 Quattro	08.92 - 05.95	2.6	ABC	BX510061	BX108113
	2.8	09.91 - 05.95	2.8	AAH	BX510061	BX108113
	2.8 Quattro	08.91 - 05.95	2.8	AAH	BX510061	BX108113
BMW						
3 Series	315	03.81 - 12.83	1.6	164VB	BX489046	BX108063
	316	09.80 - 12.80	1.8	184VC	BX489046	-
	316	01.81 - 12.83	1.8	184VC	BX489046	BX108063
	316	09.82 - 08.83	1.8	184VD	BX469782	BX108063
	316	09.83 - 12.88	1.8	184VD	BX489473	BX108063
	316 Ci Coupe	10.99-	1.6	164E3	-	BX108157
	316 g Compact	11.95 - 09.00	1.6	164E2 Gas	BX310006	-
	316i	09.87 - 12.88	1.6	184KA	BX469782	BX108063
	316i	09.88 - 11.90	1.6	164E1	BX488184	-
	316i	12.90 - 02.94	1.6	164E1	BX315004	BX108157
	316i	09.93 - 12.98	1.6	164E2	BX310006	BX108157
	316i	04.98-	1.6	164E3	-	BX108157
	316i	10.94 - 10.98	1.8	184E1	BX469914	BX108157
	316i	04.98-	1.9	194E1	-	BX108157
	316i Compact	03.94 - 09.00	1.6	164E2	BX310006	BX108157
	316i Compact	01.99 - 09.00	1.6	164E1	-	BX108157
	316i Coupe	09.93 - 12.99	1.6	164E2	BX310006	BX108157
	316i Touring	09.91 - 11.93	1.6	164E1	BX488184	-
	316i Touring	01.96 - 12.99	1.6	164E2	BX310006	-
	316i Touring	12.93 - 06.94	1.6	164E1	BX488184	BX108157
	318 ti Compact	10.94 - 09.96	1.8	184S1	BX310006	BX108157
	318 ti Compact	12.95 - 09.00	1.9	194S1	BX310006	BX108157

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
BMW cont.						
3 Series	318i	09.82 - 12.83	1.8	184EA	BX489030	BX108063
	318i	09.83 - 12.87	1.8	184EB	BX469782	BX108063
	318i	10.84 - 04.94	1.8	184KA	BX469782	BX108063
	318i	12.90 - 02.94	1.8	1840	BX315004	BX108157
	318i	09.93 - 12.98	1.8	18400	BX310006	BX108157
	318i	04.98-	1.9	1940	-	BX108157
	318i	11.98-	2.0	1940	BX310006	BX108157
	318i Cabrio	01.94 - 12.99	1.8	18400	BX310006	BX108157
	318i Ci Coupe	04.99-	1.9	1940	-	BX108157
	318i S	09.89 - 07.91	1.8	184S1	BX488219	-
	318i S	08.91 - 04.94	1.8	184S1	BX488219	BX108157
	318i S	09.93 - 12.96	1.8	184S1	BX310006	BX108157
	318i S	09.94 - 06.96	1.9	194S1	BX310006	BX108157
	318i S	07.96 - 10.98	1.9	194S1	-	BX108157
	318i S Coupe	03.92 - 12.96	1.8	184S1	BX315004	BX108157
	318i S Coupe	12.95 - 12.99	1.9	194S1	BX310006	BX108157
	318i Touring	04.89 - 04.94	1.8	1840	BX488184	-
	318i Touring	07.95 - 12.99	1.8	18400	BX310006	-
	318i Touring	10.99-	1.9	1940	-	BX108157
	320Ci Cabrio	00.90-	2.2	226S1	0 124 515 050	BX108157
	320Ci Coupe	04.98-	2.0	206S4	0 123 325 010	BX108157
	320Ci Coupe	00.90-	2.0	226S1	0 124 515 050	BX108157
	320i	09.82 - 04.94	2.0	206EB, 206EE, 206KA	BX469777	BX108064
	320i	09.90 - 12.95	2.0	206S1, 206S2	BX465031	BX108157
	320i	10.92 - 10.96	2.0	206S1, 206S2	BX465031	-
	320i	09.94 - 12.98	2.0	206S3	BX465031	BX108157
	320i	04.98-	2.0	206S4	0 123 325 010	BX108157
	320i	00.90-	2.0	226S1, 226S2	0 124 515 050	BX108157
	320i Cabrio	01.92 - 12.99	2.0	206S2, 206S3	BX465031	-
	320i Coupe	03.92 - 12.98	2.0	206S1, 206S2, 206S3	BX465031	BX108157
	320i Touring	01.88 - 4.94	2.0	206EE, 206KA	BX469777	BX108064
	320i Touring	03.95 - 12.99	2.0	206S3	BX465031	BX108157
	320i Touring	10.99-	2.0	206S4	0 123 325 010	BX108157
	320i Touring	00.90-	2.2	226S1	0 124 515 050	BX108157
	320iS	01.98 - 04.94	2.0	204EA	0 120 469 805	BX108063
	323Ci Cabrio	03.00 - 09.00	2.5	256S4	0 123 515 022	BX108157
	323Ci Coupe	04.98 - 09.00	2.5	256S4	0 123 515 022	BX108157
	323i	09.82 - 12.86	2.3	236EB, 236EC, 236EW	BX469777	BX108064
	323i	10.92 - 10.96	2.5	256S3	-	BX108157
	323i	04.98-	2.5	256S4	-	BX108157
	323i Cabrio	10.95 - 12.99	2.5	256S3	BX465031	-
	323i Coupe	06.95 - 12.99	2.5	256S3	BX465031	-
	323i Touring	12.95 - 12.99	2.5	256S3	BX465031	-
	325 e	01.85 - 12.87	2.7	276KA, 276KB	BX469777	BX108064
	325Ci Cabrio	09.00-	2.5	256S5	0 124 515 050	BX108157
	325Ci Coupe	09.00-	2.5	256S5	0 124 515 050	BX108157
	325i	09.85 - 04.94	2.5	256E1, 256E2	BX469777	BX108064
	325i	12.86 - 04.94	2.5	256K1	BX469777	BX108064
	325i	09.90 - 12.95	2.5	256S1/S2	BX465031	BX108157
	325i	04.92 - 08.93	2.5	256S1	-	BX108157
	325i	09.00-	2.5	256S5	0 124 515 050	BX108157
	325i Cabrio	03.93 - 12.95	2.5	256S2	BX465031	-
	325i Coupe	03.92 - 12.95	2.5	256S1/S2	BX465031	BX108157

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
BMW cont.						
3 Series	325i Touring	07.87 - 04.94	2.5	256K1	BX469777	BX108064
	325i Touring	09.00 -	2.5	256S5	0 124 515 050	BX108157
	325iX	03.86 - 04.94	2.5	256E1, 256E2, 256K1	BX469777	BX108064
	325iX Touring	06.88 - 04.94	2.5	256K1	BX469777	BX108064
	325iX Touring	09.00 -	2.5	256S5	0 124 515 050	BX108157
	328Ci Coupe	04.98 - 09.00	2.8	286S2	0 123 325 010	BX108157
	328i	08.95 - 10.98	2.8	286S1	-	BX108157
	328i	11.98 -	2.8	286S2	BX456031	BX108157
	328i Cabrio	03.95 - 12.99	2.8	286S1	BX456031	-
	328i Coupe	03.95 - 12.99	2.8	286S1	BX456031	-
	328i Touring	03.95 - 12.99	2.8	286S1	BX456031	-
	328i Touring	10.99 - 09.00	2.8	286S2	0 123 325 010	BX108157
5 Series	518	07.74 - 07.81	1.8	184VB	BX489046	BX108063
	518	06.81 - 12.87	1.8	184VD, 184VU	BX489046	BX108063
	518i	10.81 - 01.84	1.8	184EZ	BX489030	BX108063
	518i	09.84 - 12.87	1.8	184EB	BX469782	BX108063
	518i	09.89 - 12.95	1.8	184E1, 184E2	-	BX108157
	518i Touring	03.93 - 12.96	1.8	184E1, 184E2	-	BX108157
	520i	06.81 - 12.87	2.0	206EA	BX489030	-
	520i	09.82 - 12.87	2.0	206EB, 206EC,206EZ,206KA	BX469777	-
	520i	01.88 - 12.90	2.0	206EE, 206KA	BX468042	BX108064
	520i	09.89 - 12.95	2.0	206S1, 206S2	BX465031	BX108157
	520i	09.95 - 09.00	2.0	206S3, 206S4	0 123 515 022	BX108157
	520i	09.00 -	2.0	226S1	0 124 515 050	BX108157
	520i Touring	11.91 - 12.96	2.0	206S1, 206S2	BX485048	BX108157
	520i Touring	12.96 - 09.00	2.0	206S3, 206S4	0 123 515 022	BX108157
	520i Touring	09.00 -	2.0	206S1	0 124 515 005	BX108157
	520i Touring	01.97 - 09.00	2.5	256S3, 256S4	0 123 515 022	BX108157
	523i	09.95 - 09.00	2.5	256S3, 256S4	0 123 515 022	BX108157
	524 TD	03.83 - 12.87	2.4	246TA	BX489030	1109025
	525e	05.83 - 12.96	2.7	276EB, 276KA, 276KB	BX469777	-
	525e	01.87 - 12.87	2.7	276EB, 276KA, 276KB	BX469777	BX108064
	525i	06.81 - 12.87	2.5	256EA	BX469777	BX108063
	525i	01.88 - 12.90	2.5	256K1	BX468042	BX108064
	525i	09.89 - 12.95	2.5	256S1, 256S2	BX485048	BX108157
	525i	09.00 -	2.5	256S5	0 124 515 050	BX108157
	525i Touring	11.91 - 12.96	2.5	256S1, 256S2	BX485048	BX108157
	525i Touring	09.00 -	2.5	256S5	0 124 515 050	BX108157
	525iX	09.91 - 12.95	2.5	256S1, 256S2	BX485048	BX108157
	525iX Touring	02.92 - 12.96	2.5	256S1, 256S2	BX485048	BX108157
	528i	09.95 - 09.00	2.8	286S1, 286S2	0 123 515 022	BX108157
	528i Touring	01.97 - 09.00	2.8	286S1, 286S2	0 123 515 022	BX108157
	530i	09.00 -	3.0	306S3	0 124 515 050	BX108157
	530i	01.88 - 12.90	3.0	306KA	BX468007	BX110041
	530i	09.92 - 12.95	3.0	308S1	BX214002	BX110072
	530i Touring	09.00 -	3.0	306S3	0 124 515 050	BX108157
	530i Touring	09.92 - 12.96	3.0	308S1	BX214002	BX110072
	535i	09.84 - 12.87	3.4	346KA/EC	BX469777	-
	535i	01.88 - 12.93	3.5	346KB	BX468007	BX110041

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
BMW cont.						
5 Series	535i	01.96 - 09.98	3.5	358S1, 358S2	0 123 515 023	BX110072
	535i	10.98 -	3.5	358S1, 358S2	-	BX110072
	540i	09.92 - 12.95	4.0	408S1	BX214002	BX110072
	540i	01.96 - 09.98	4.4	448S1, 448S2	0 123 515 023	BX110072
	540i	10.98 -	4.4	448S1, 448S2	-	BX110072
	540i Touring	10.93 - 12.96	4.0	408S1	BX214002	BX110072
	540i Touring	01.96 - 09.98	4.4	448S1, 448S2	0 123 515 023	BX110072
	540i Touring	10.98 -	4.4	448S1, 448S2	-	BX110072
7 Series	728i	06.81 - 06.86	2.8	286EA	BX469777	BX108063
	728i	09.95 -	2.8	286S1, 286S2	0 123 515 004	BX108157
	730i	09.86 - 06.94	3.0	306KA	BX468007	BX110041
	730i	06.94 - 12.96	3.0	308S1	0 123 515 002	BX110072
	730i V8	09.91 - 10.94	3.0	308S1	BX214002	BX110072
	735i	09.86 - 12.92	3.4	346EC, 346KB	BX468007	BX110041
	735i	01.96 - 09.98	3.5	358S1, 358S2	0 123 515 023	BX110072
	735i	10.98 -	3.5	358S1, 358S2	-	BX110072
	740i	09.91 - 10.94	4.0	408S1	BX214002	BX110072
	740i	06.94 - 06.96	4.0	408S1	0 123 515 002	BX110072
	740i	01.96 - 09.98	4.4	448S1, 448S2	0 123 515 023	BX110072
	740i	10.98 -	4.4	448S1, 448S2	-	BX110072
	745i	05.83 - 06.86	3.4	346TA	BX469777	-
8 Series	840Ci	09.94 - 12.99	4.4	448S1	0 123 515 023	BX110072
	840i	04.93 - 03.96	4.0	408S1	BX214002	BX110072
M Series	M3	07.86 - 12.91	2.3	234EA, 234S2	0 120 469 805	BX108063
	M5	01.85 - 12.87	3.5	356ED	BX469782	-
	M5	10.88 - 12.95	3.5	366S1	-	BX110041
	M5	03.92 - 12.95	3.8	386S1	0 120 468 074	BX110041
	M5	10.98 -	5.0	508S1	0 123 515 030	BX110072
	M5 Touring	04.92 - 12.95	3.8	386S1	0 120 468 074	BX110041
	M535i	09.84 - 12.87	3.4	346EA, 346KA	BX469777	-
	M635i	03.84 - 04.89	3.5	356ED	BX469782	-
Z Series	Z1	07.88 - 06.91	2.5	256K1	BX469777	BX108064
	Z3 1.8i	09.94 - 12.98	1.8	18400	0 123 325 010	BX108157
	Z3 1.9i	08.00 -	1.9	1940	0 123 325 010	BX108157
	Z3 1.9i 16V	09.95 - 12.99	1.9	194S1	0 123 325 011	BX108157
	Z3 2.0i	04.99 - 12.00	2.0	206S4	0 123 515 004	BX108157
	Z3 2.2i	09.94 - 12.98	2.2	1840	0 123 325 010	BX108157
	Z3 2.8i 24V	11.96 - 09.00	2.8	286S1, 286S2	0 123 515 004	BX108157
	Z3 2.8i 24V Coupe	09.97 - 09.00	2.8	286S1, 286S2	0 123 515 004	BX108157
	Z3 3.0i	05.00 -	3.0	306S3	0 124 515 050	BX108157
	Z3 3.0i Coupe	05.00 -	3.0	306S3	0 124 515 050	BX108157
	Z8	03.00 -	5.0	508S1	0 123 515 030	BX110072

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
FORD- 4 Cyl.						
Capri		00.69 - 00.73	1.6		BXF1238	-
	SC	00.92 - 00.93	1.6	B6	BXF1238	-
	SE	00.93 - 00.94	1.6	B6	BXF1238	-
Corsair	UA	00.90 - 00.92	2.0	CA20E	BXN1233	-
Cortina		00.68 - 00.71	2.0		BXF1242	-
	TE	00.77 - 00.82	2.0		BXF1242	-
	TF	00.77 - 00.82	2.0		BXF1242	-
Escort		00.76 - 00.81	1.6		BXF1242	-
		00.76 - 00.81	2.0		BXF1242	-
Laser	KA	00.81 00.83	1.3,1.5	E3, E5	BXF1249	-
	KB	00.83 - 00.85	1.3,1.5	E3, E5	BXF1249	-
	KC	00.85 - 00.87	1.3,1.5	E3, E5	BXF1249	-
	KE	00.87 - 00.90	1.3,1.5,1.6	E3, E5, B6	BXF1230	-
	KF	00.90 - 00.91	1.6,1.8	B6, BP	BXF1230	-
Meteor	GA	00.81 - 00.83	1.3,1.5	E3, E5	BXF1249	-
	GB	00.83 - 00.85	1.3,1.5	E3, E5	BXF1249	-
	GC	00.85 - 00.87	1.3,1.5	E3, E5	BXF1249	-
Telstar	AR	00.83 - 00.85	2.0	FE	BXF1248	-
	AR Carb	00.85 - 00.87	2.0	FE	BXF1248	-
FORD - 6 Cyl.						
Cortina	TC	00.72 - 00.77	3.3, 4.1		BXF1238	-
	TD	00.72 - 00.77	3.3, 4.1		BXF1238	-
	TE Iron Cyl. Head	00.77 - 00.80	3.3, 4.1		BXF1238	-
	TE Alloy Cyl. Head	00.79 - 00.80	3.3, 4.1		BXF1247	-
	TF	00.80 - 00.82	3.3, 4.1		BXF1247	-
Fairlane	ZA	03.67 - 03.68	3.3		BXF1238	BXF129
	ZB	03.68 - 07.69	3.6		BXF1238	BXF129
	ZC	07.69 - 11.70	3.6		BXF1238	BXF129
	ZD	11.70 - 03.72	4.1		BXF1238	BXF129
	ZF	03.72 - 10.73	4.1		BXF1238	BXF129
	ZG	11.73 - 05.76	4.1		BXF1238	BXF129
	ZJ X Flow	05.79 - 03.82	4.1		BXF1247	BXF129
	ZJ Non X Flow	05.79 - 03.82	4.1		BXF1238	BXF129
	ZK Carb	03.82 - 10.84	4.1		BXF1250	BXF129
	ZK EFI	03.82 - 10.84	4.1		BXF1246	BXF129
	ZL	10.84 - 01.88	4.1		BXF1247	BXF129
	NA	06.88 - 07.91	3.9		BXF1255	BXF129
	NC	07.91 - 03.95	4.0		BXF1259	BXF129
	NF	03.95 - 10.96	4.0		-	BXF129
	NL	10.96 - 03.99	4.0		-	BXF129
	AU	02.99 - 06.00	4.0		-	BXF129
	AUII	07.00 -	4.0		-	BXF129
Fairmont	XP	02.65 - 09.66	3.3		BXF1238	BXF129
	XR	09.66 - 03.68	3.3		BXF1238	BXF129
	XT	04.68 - 06.69	3.1, 3.6		BXF1238	BXF129
	XW	06.69 - 11.70	3.1, 3.6		BXF1238	BXF129
	XY	11.70 - 02.72	3.3, 4.1		BXF1238	BXF129

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
FORD 6 cyl. cont.						
Fairmont	XA	02.72 - 11.73	3.3, 4.1		BXF1238	BXF129
	XB	11.73 - 07.76	3.3, 4.1		BXF1238	BXF129
	XC	07.76 - 03.79	3.3, 4.1		BXF1238	BXF129
	XD Iron Cyl. Head	03.79 - 03.82	3.3, 4.1		BXF1238	BXF129
	XD Alloy Cyl. Head	03.79 - 03.82	3.3, 4.1		BXF1247	BXF129
	XE Carb	03.82 - 10.84	3.3		BXF1250	BXF129
	XE Carb	03.82 - 10.84	4.1		BXF1250	BXF129
	XE Efi	03.82 - 10.84	4.1		BXF1247	BXF129
	XF Carb	10.84 - 02.88	3.3, 4.1		BXF1250	BXF129
	XF Efi	10.84 - 02.88	3.3, 4.1		BXF1247	BXF129
	EA	02.88 - 00.89	3.2, 3.9		BXF1255	BXF129
	EAII	00.89 - 07.91	3.2, 3.9		BXF1257	BXF129
	EB	07.91 - 08.93	4.0		BXF1259	BXF129
	ED	08.93 - 08.94	4.0		BXF1259	BXF129
	EF	08.94 - 09.96	4.0		BXF1260	BXF129
	EL	09.96 - 10.98	4.0		BXF1260	BXF129
	AU	09.98 - 03.00	4.0		-	BXF129
	AUII	04.00 -	4.0		-	BXF129
Falcon	XP	02.65 - 09.66	3.3		BXF1238	BXF129
	XR	09.66 - 03.68	3.3		BXF1238	BXF129
	XT	04.68 - 06.69	3.1, 3.6		BXF1238	BXF129
	XW	06.69 - 11.70	3.1, 3.6		BXF1238	BXF129
	XY	11.70 - 02.72	3.3, 4.1		BXF1238	BXF129
	XA	02.72 - 11.73	3.3, 4.1		BXF1238	BXF129
	XB	11.73 - 07.76	3.3, 4.1		BXF1238	BXF129
	XC	07.76 - 03.79	3.3, 4.1		BXF1238	BXF129
	XD Iron Cyl. Head	03.79 - 03.82	3.3, 4.1		BXF1238	BXF129
	XD Alloy Cyl. Head	03.79 - 03.82	3.3, 4.1		BXF1247	BXF129
	XE Carb	03.82 - 10.84	3.3		BXF1250	BXF129
	XE Carb	03.82 - 10.84	4.1		BXF1250	BXF129
	XE Efi	03.82 - 10.84	4.1		BXF1247	BXF129
	XF Carb	10.84 - 02.88	3.3, 4.1		BXF1250	BXF129
	XF Efi	10.84 - 02.88	3.3, 4.1		BXF1247	BXF129
	EA	02.88 - 00.89	3.2, 3.9		BXF1255	BXF129
	EAII	00.89 - 07.91	3.2, 3.9		BXF1257	BXF129
	EB	07.91 - 08.93	4.0		BXF1259	BXF129
	ED	08.93 - 08.94	4.0		BXF1259	BXF129
	EF	08.94 - 09.96	4.0		BXF1260	BXF129
	EL	09.96 - 10.98	4.0		BXF1260	BXF129
	AU	09.98 - 03.00	4.0		-	BXF129
	AUII	04.00 -	4.0		-	BXF129
LTD	FC X Flow	06.79 - 03.82	4.1		BXF1238	BXF129
	FC Non X Flow	06.79 - 03.82	4.1		BXF1247	BXF129
	FD Carb	03.82 - 10.84	4.1		-	BXF129
	FD Efi	03.82 - 10.84	4.1		-	BXF129
	FE	10.84 - 06.88	4.1		-	BXF129
	DA	06.88 - 00.89	3.9		BXF1255	BXF129
	DAII	00.89 - 08.91	3.9		BXF1257	BXF129
	DC	07.91 - 03.95	4.0		BXF1259	BXF129
	DF	03.95 - 10.96	4.0		-	BXF129
	DL	10.96 - 06.99	4.0		-	BXF129
	AU	06.99 - 06.00	4.0		-	BXF129
	AUII	07.00 -	4.0		-	BXF129

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
FORD - 8 Cyl.						
Fairlane	ZA	03.67 - 03.68	4.7		BXF1238	-
	ZB	03.68 - 07.69	4.9		BXF1238	-
	ZC	07.69 - 11.70	4.9, 5.8		BXF1238	-
	ZD	11.70 - 03.72	4.9, 5.8		BXF1238	-
	ZF	03.72 - 10.73	4.9, 5.8		BXF1238	-
	ZG	11.73 - 05.76	4.9, 5.8		BXF1238	-
	ZJ	05.79 - 03.82	4.9, 5.8		BXF1238	-
	ZK	03.82 - 10.84	4.9		BXF1246	-
Fairmont	XR	09.66 - 03.68	4.7		BXF1238	-
	XT	04.68 - 06.69	4.9		BXF1238	-
	XW	06.69 - 11.70	4.9		BXF1238	-
	XY	11.70 - 02.72	4.9, 5.8		BXF1238	-
	XA	02.72 - 11.73	4.9, 5.8		BXF1238	-
	XB	11.73 - 07.76	4.9, 5.8		BXF1238	-
	XC	07.76 - 03.79	4.9, 5.8		BXF1238	-
	XD	03.79 - 03.82	4.9, 5.8		BXF1238	-
	XE	03.82 - 10.84	4.9, 5.8		BXF1246	-
	XE	03.82 - 10.84	5.8		BXF1246	
Falcon	XR	09.66 - 03.68	4.7		BXF1238	-
	XT	04.68 - 06.69	4.9		BXF1238	-
	XW	06.69 - 11.70	4.9		BXF1238	-
	XY	11.70 - 02.72	4.9, 5.8		BXF1238	-
	XA	02.72 - 11.73	4.9, 5.8		BXF1238	-
	XB	11.73 - 07.76	4.9, 5.8		BXF1238	-
	XC	07.76 - 03.79	4.9, 5.8		BXF1238	-
	XD	03.79 - 03.82	4.9, 5.8		BXF1238	-
	XE	03.82 - 10.84	4.9, 5.8		BXF1246	-
	XE	03.82 - 10.84	5.8		BXF1246	-
HOLDEN - 4 Cyl.						
Apollo	JL	00.91 - 00.93	2.0	3S-FE	BXT1250	BXT133
	JM	00.94 - 00.95	2.2	5S-FE	BXT1250	BXT133
	JP	00.95 - 00.97	2.2	5S-FE	BXT1253	BXT133
Astra	LB	00.84 - 00.86	1.5	E15	BXD1242	-
	LC	00.86 - 00.87	1.6	E16	BXD1242	-
	F	04.96 - 02.98	1.8	C18SEL	BX120001	BXH140
Barina	SB	04.96 - 09.00	1.4	X14SZ	BX120001	-
	SB	03.93 - 09.00	1.6	C16XE	BX120001	-
Calibra	YE	06.90 - 03.97	2.0	C20NE	BX120001	BX107015
	YE	06.90 - 03.97	2.0	C20XE	BX120001	BX107015
	YE	03.92 - 03.97	2.0	C20LET	BX120001	BX107015
	YE	11.93 - 03.97	2.0	X20XEV	BX120001	BXH140
Camira	JB	00.84 - 00.86	1.6	16JH	BXH1237	-
	JD	00.86 - 00.87	1.6	16JH	BXH1237	-
	JD	00.86 - 00.87	1.8	18JC, 18JU	BXH1237	-
	JE	00.87 - 00.89	2.0	20JD	BXH1239	-
Commodore	VC	01.80 00.81		VN	BXH1236	-
	VH	00.81 00.84	1.9	VN	BXH1236	-
	VN Export	00.89 - 00.91	2.0	H20SE	BXH1240	BXH137

B

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
HOLDEN 4 cyl. cont.						
Frontera	UT	02.95 - 08.98	2.0	X20SE	BX510063	-
	UT	02.95 - 08.98	2.2	X22XE	BX510063	BXH140
Sunbird	LX	00.77 - 00.78	1.9	UN	BXH1236	-
	UC	00.78 - 00.80	1.9	UN	BXH1236	-
Torana	HB	00.67 - 00.69	1.2		BXH1236	-
	LC	00.71 - 00.72	1.2,1.6, 2.3		BXH1236	-
	LH	00.74 - 00.76	1.9		BXH1236	-
	LJ	00.72 - 00.74	1.3		BXH1236	-
	LJ	00.72 - 00.74	1.8		BXH1236	-
	LJ	00.72 - 00.73	2.3		BXH1236	-
	TA	00.74 - 00.75	1.3		BXH1236	-
Vectra	JR	05.97 -	2.0	C20SEL	BX120001	BXH140
HOLDEN - 6 Cyl.						
Belmont	HK	00.68 - 00.69	2.6		BXH1236	BXH137
	HT	00.69 - 00.70	2.6		BXH1236	BXH137
	HG	00.70 - 00.71	2.6		BXH1236	BXH137
	HQ	00.71 - 00.74	2.8		BXH1236	BXH137
	HJ	00.74 - 00.76	2.6, 3.3		BXH1236	BXH137
	HX	00.76 - 00.77	3.3		BXH1236	BXH137
	HZ	00.77 - 00.80	3.3		BXH1236	BXH137
Calais	VN Auto	00.88 - 00.91	3.8	VH	BXH1241	BXH139
	VN Manual	00.88 - 00.91	3.8	VH	BXH1241	-
	VP Auto	00.91 - 00.93	3.8	VH	BXH1241	BXH139
	VP Manual	00.91 - 00.93	3.8	VH	BXH1241	-
	VR Auto	00.93 - 00.95	3.8	VH	BXH1241	BXH139
	VR Manual	00.93 - 00.95	3.8	VH	BXH1241	-
	VS	00.95 - 00.97	3.8	VH	BXH1241	BXH139
	VS Supercharge	00.95 - 00.97	3.8	VH	BXH1334	BXH139
	VT	00.97 -	3.8	VH	BXH1333	BXH139
	VT Supercharge	00.97 -	3.8	VS	BXH1334	BXH139
Calibra	YE	04.93 - 03.97	2.5	C25XE	-	BX108170
Caprice	VR	00.94 - 00.95	3.8	VH	BXH1241	BXH139
	VS	00.95 - 00.97	3.8	VH	BXH1241	BXH139
	VS Supercharge	00.96 - 00.97	3.8	VH	BXH1334	BXH139
	VSIII	05.98 - 06.99	3.8	VH	BXH1333	BXH139
	VSIII Supercharge	05.98 - 06.99	3.8	VS	BXH1334	BXH139
	WH	06.99 -	3.8	VH	BXH1333	BXH139
	WH Supercharge	06.99 -	3.8	VS	BXH1334	BXH139
Commodore	VB	00.78 - 00.80	2.8, 3.3	VD, VL	BXH1236	BXH137
	VC	00.80 - 00.81	2.8, 3.3	VD, VL	BXH1236	BXH137
	VH	00.81 - 00.84	2.8, 3.3	VD, VL	BXH1236	BXH137
	VK	00.84 - 00.86	3.3	VL	BXH1236	BXH137
	VK	00.84 - 00.86	3.3	VL	BXU1285	BXH137
	VL	00.86 - 00.88	3.0	RB30E	BXN1231	-
	VL Export	00.86 - 00.88	2.0	RB20E	BXN1231	-
	VL Turbo	00.86 - 00.88	3.0	RB30ET	BXN1231	-
	VN Auto	00.88 - 00.91	3.8	VH	BXH1241	BXH139
	VN Manual	00.88 - 00.91	3.8	VH	BXH1241	-
	VP Auto	00.91 - 00.93	3.8	VH	BXH1241	BXH139

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
HOLDEN 6 cyl.						
Commodore	VP - Manual	00.91 - 00.93	3.8	VH	BXH1241	-
	VR - Auto	00.93 - 00.95	3.8	VH	BXH1241	BXH139
	VR - Manual	00.93 - 00.95	3.8	VH	BXH1241	-
	VS	00.95 - 00.97	3.8	VH	BXH1241	BXH139
	VT	00.97 - 06.99	3.8	VH	BXH1333	BXH139
	VT Supercharge	00.97 - 06.99	3.8	VH	BXH1334	BXH139
	VTII	06.99 - 09.00	3.8	VH	BXH1333	BXH139
	VTII Supercharge	06.99 - 09.00	3.8	VS	BXH1334	BXH139
	VX	10.00 -	3.8	VH	BXH1333	BXH139
	VX Supercharge	10.00 -	3.8	VS	BXH1334	BXH139
Kingswood	HK	00.68 - 00.69	2.6		BXH1236	BXH137
	HT	00.69 - 00.70	2.6		BXH1236	BXH137
	HG	00.70 - 00.71	2.6		BXH1236	BXH137
	HQ	00.71 - 00.74	2.8		BXH1236	BXH137
	HJ	00.74 - 00.76	2.6, 3.3		BXH1236	BXH137
	HX	00.76 - 00.77	3.3		BXH1236	BXH137
	HZ	00.77 - 00.80	3.3		BXH1236	BXH137
Monaro	HK	00.68 - 00.69	2.6		BXH1236	BXH137
	HT	00.69 - 00.70	2.6		BXH1236	BXH137
	HG	00.70 - 00.71	2.6		BXH1236	BXH137
	HQ	00.71 - 00.74	2.8		BXH1236	BXH137
	HJ	00.74 - 00.76	2.6, 3.3		BXH1236	BXH137
	HX	00.76 - 00.77	3.3		BXH1236	BXH137
	HZ	00.77 - 00.80	3.3		BXH1236	BXH137
Premier	HK	00.68 - 00.69	2.6		BXH1236	BXH137
	HT	00.69 - 00.70	2.6		BXH1236	BXH137
	HG	00.70 - 00.71	2.6		BXH1236	BXH137
	HQ	00.71 - 00.74	2.8		BXH1236	BXH137
	HJ	00.74 - 00.76	2.6, 3.3		BXH1236	BXH137
	HX	00.76 - 00.77	3.3		BXH1236	BXH137
	HZ	00.77 - 00.80	3.3		BXH1236	BXH137
Statesman	HK	00.68 - 00.69	2.6		BXH1236	BXH137
	HT	00.69 - 00.70	2.6		BXH1236	BXH137
	HG	00.70 - 00.71	2.6		BXH1236	BXH137
	HQ	00.71 - 00.74	2.8		BXH1236	BXH137
	HJ	00.74 - 00.76	2.6, 3.3		BXH1236	BXH137
	HX	00.76 - 00.77	3.3		BXH1236	BXH137
	HZ	00.77 - 00.80	3.3		BXH1236	BXH137
	VQII	00.92 - 00.94	3.8	VH	BXH1241	BXH139
	VR	00.94 - 00.95	3.8	VH	BXH1241	BXH139
	VS	00.95 - 00.96	3.8	VH	BXH1241	BXH139
	VS Supercharge	09.96 - 08.97	3.8	VH	BXH1334	BXH139
	VSIII	05.98 - 06.99	3.8	VH	BXH1333	BXH139
	VSIII Supercharge	05.98 - 06.99	3.8	VS	BXH1334	BXH139
	WH	06.99 -	3.8	WH	BXH1333	BXH139
	WH Supercharge	06.99 -	3.8	V6 OHC	BXH1334	BXH139
Torana	LC	00.71 - 00.72	2.6, 2.8		BXH1236	BXH137
	LJ	00.72 - 00.74	3.3		BXH1236	BXH137
	LH	00.74 - 00.76	2.8, 3.3		BXH1236	BXH137
	LX	00.76 - 00.78	2.8, 3.3		BXH1236	BXH137
	UC	00.78 - 00.79	2.8, 3.3		BXH1236	BXH137

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
HOLDEN 6 Cyl. cont.						
Vectra	JR	09.95-	2.5	X25XE	BX510064	BX108170
HOLDEN 8 Cyl.						
Belmont	HK	00.68 - 00.69	5.0		BXH1236	-
	HT	00.69 - 00.70	4.2, 5.0		BXH1236	-
	HG	00.70 - 00.71	4.2, 5.0		BXH1236	-
	HQ	00.71 - 00.74	4.2, 5.0,5.8		BXH1236	-
	HJ	00.74 - 00.76	4.2, 5.0		BXH1236	-
	HX	00.76 - 00.77	4.2, 5.0		BXH1236	-
	HZ	00.77 - 00.80	4.2, 5.0		BXH1236	-
Calais	VN	00.88 - 00.91	5.0	VU	BXH1231	BXH136
	VP	00.91 - 00.93	5.0	VU	BXH1231	BXH136
	VR	00.93 - 00.95	5.0	VU	BXH1231	BXH136
	VS	00.95 - 00.97	5.0	VU	BXH1231	BXH136
	VT	00.97 - 05.98	5.0	VM	BXH1253	BXH138
Caprice	VQ	00.94 - 00.95	5.0	VU	BXH1231	BXH136
	VQII	00.94 - 00.95	5.0	VU	BXH1231	BXH136
	VR	00.94 - 00.95	5.0	VU	BXH1231	BXH136
	VS	00.95 - 00.97	5.0	VU	BXH1231	BXH136
Commodore	VB	00.78 - 00.80	4.2	VD	BXH1236	-
	VC	00.80 - 00.81	4.2	VR	BXH1236	-
	VH	00.81 - 00.84	4.2, 5.0	VR, WT	BXH1236	-
	VK	00.84 - 00.86	4.9	VA, VB, VG, VC	BXH1236	-
	VK	00.84 - 00.86	5.0	VT	BXH1236	-
	VL	00.86 - 00.88	5.0	VJ, VP, VW	BXH1231	-
	VN	00.88 - 00.91	5.0	VE, VU	BXH1231	BXH136
	VP	00.91 - 00.93	5.0	VU	BXH1231	BXH136
	VR	00.93 - 00.95	5.0	VU	BXH1231	BXH136
	VS	00.95 - 00.97	5.0	VU	BXH1231	BXH136
	VS Police Special	00.95 - 00.97	5.0	VU	BXH1250	BXH136
	VT	00.97 - 06.99	5.0	VM	BXH1253	BXH138
Kingswood	HK	00.68 - 00.69	5.0		BXH1236	-
	HT	00.69 - 00.70	4.2, 5.0		BXH1236	-
	HG	00.70 - 00.71	4.2, 5.0		BXH1236	-
	HQ	00.71 - 00.74	4.2, 5.0,5.8		BXH1236	-
	HJ	00.74 - 00.76	4.2, 5.0		BXH1236	-
	HX	00.76 - 00.77	4.2, 5.0		BXH1236	-
	HZ	00.77 - 00.80	4.2, 5.0		BXH1236	-
Monaro	HK	00.68 - 00.69	5.0		BXH1236	-
	HT	00.69 - 00.70	4.2, 5.0		BXH1236	-
	HG	00.70 - 00.71	4.2, 5.0		BXH1236	-
	HQ	00.71 - 00.74	4.2, 5.0,5.8		BXH1236	-
	HJ	00.74 - 00.76	4.2, 5.0		BXH1236	-
	HX	00.76 - 00.77	4.2, 5.0		BXH1236	-
	HZ	00.77 - 00.80	4.2, 5.0		BXH1236	-
Premier	HK	00.68 - 00.69	5.0		BXH1236	-
	HT	00.69 - 00.70	4.2, 5.0		BXH1236	-
	HG	00.70 - 00.71	4.2, 5.0		BXH1236	-
	HQ	00.71 - 00.74	4.2, 5.0,5.8		BXH1236	-
	HJ	00.74 - 00.76	4.2, 5.0		BXH1236	-
	HX	00.76 - 00.77	4.2, 5.0		BXH1236	-

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
HOLDEN 8 cyl. cont.						
Premier	HZ	00.77 - 00.80	4.2, 5.0		BXH1236	-
Statesman	HK	00.68 - 00.69	5.0		BXH1236	-
	HT	00.69 - 00.70	4.2, 5.0		BXH1236	-
	HG	00.70 - 00.71	4.2, 5.0		BXH1236	-
	HQ	00.71 - 00.74	4.2, 5.0,5.8		BXH1236	-
	HJ	00.74 - 00.76	4.2, 5.0		BXH1236	-
	HX	00.76 - 00.77	4.2, 5.0		BXH1236	-
	HZ	00.77 - 00.80	4.2, 5.0		BXH1236	-
JAGUAR						
Daimler	3.6	10.86 - 08.89	3.6	DOHC, DOHC Cat	-	BX110011
Sovereign	2.9	10.86 - 08.90	2.9	AJ6, AJ6 Cat	-	BX110011
	3.6	10.86 - 08.89	3.6	DOHC AJ6.4	-	BX110011
XJ6	2.9	10.86 - 08.90	2.9	AJ6/OHC	BX469808	BX110011
	3.2	10.90 - 09.94	3.2	OHC	-	BX110011
	3.6	10.86 - 08.89	3.6	DOHC AJ6.4 / Cat	BX469808	BX110011
	4.0	09.89 - 09.94	4.0	DOHC AJ6.4 / Cat	-	BX110011
XJS	3.6 Cabrio	10.86 - 12.88	3.6	DOHC, DOHC Cat	-	BX110011
	3.6 Coupe	10.86 - 12.88	3.6	DOHC, DOHC Cat	-	BX110011
MAZDA						
323	FWD	00.80 - 00.82	1.3, 1.5	E3,B5	BXF1249	-
	1.6	00.89 00.94	1.6	B6	BXF1230	-
626	RWD	00.79 00.83	2.0	MA	BXF1248	-
MERCEDES BENZ						
108 Series	108D Vito	11.95 -	2.3	OM601942	0 123 320 029	BX218162
110 Series	110D Vito	11.95 -	2.3	OM601970	0 123 510 058	BX218162
190 Series	190	10.82 - 08.93	2.0	M102921, M102924	BX489325	BX107048
	190D 2.5	04.85 - 08.88	2.5	OM602911	BX489325	BX218165
	190E	09.85 - 08.93	1.8	M102910, M102919	BX469928	BX107048
	190E	10.82 - 08.93	2.0	M102961, M102962	BX489325	BX107048
	190E	09.83 - 08.88	2.3	M102985	BX489325	BX107048
	190E	04.84 - 12.88	2.3	M102983	BX489328	BX107048
	190E	09.85 - 08.93	2.3	M102983, M102985	BX489325	BX107048
	190E	09.88 - 08.93	2.3	M102990	BX489325	BX107048
	190E	09.86 - 08.93	2.6	M103942	BX489328	BX110112
	190E 2.5 16 Evolution	03.89 - 04.90	2.5	M102991	0 120 489 323	BX107048
	190E 2.5 16 Evolution	05.90 - 08.93	2.5	M102992	BX489325	-
	190TD 2.5	12.86 - 08.93	2.5	OM602961	BX489325	BX218165
200 Series	200	01.68 - 08.80	2.0	M115923, M115926	-	BX314018
	200	06.80 - 08.80	2.0	M102	-	BX314027
	200	09.81 - 11.85	2.0	M102	BX489469	BX314027
	200	12.84 -	2.0	M102922	BX489325	BX107048
	200CE Coupe {124}	09.89 - 06.93	2.0	M102963	BX489325	BX107048
	200CE Coupe {124}	09.92 - 06.93	2.0	M111940	BX335002	BX107403
	200D	02.76 - 09.80	2.0	OM615	-	BX362300

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
MERCEDES BENZ cont.						
200 Series	200D	10.80 - 11.85	2.0	OM615	BX489469	BX362300
	200D {124}	12.84 - 06.93	2.0	OM601912	BX489325	BX218165
	200E {124}	06.85 - 08.92	2.0	M102963	BX489325	BX107048
	200E {124}	09.92 - 06.93	2.0	M111940	BX335002	BX107403
	200T	11.80 - 08.81	2.0	M102	-	BX314027
	200T	09.81 - 11.85	2.0	M102	BX489469	BX314027
	200T {124}	09.85 - 05.90	2.0	M102922	BX489325	BX107048
	200TD {124}	09.85 - 08.91	2.0	OM601912	BX489325	BX218165
	200TE	09.88 - 10.92	2.0	M102963	BX489325	BX107048
	200TE {124}	09.92 - 06.93	2.0	M111940	BX335002	BX107403
207 Series	207D	08.77 - 02.82	2.0	OM615944	-	BX362600
	207D	03.82 - 10.85	2.0	OM615944	BX489469	BX362600
208 Series	208	05.97 - 08.82	2.3	M115955, M115972	BX489469	BX314018
	208D	10.88 - 06.95	2.3	OM601940	BX335003	0 001 218 110
	208D Sprinter	02.95 -	2.3	OM601943	BX335003	BX218162
209 Series	209D	09.82 - 01.89	3.0	OM617913	BX489469	BX362600
210 Series	210	08.82 - 06.95	2.3	M102942	BX489325	BX107048
	210	10.87 - 06.95	2.3	M102945	BX489325	BX107048
	210	10.88 - 06.95	2.9	OM602940	BX335003	0 001 218 110
212 Series	212D Sprinter	02.95 -	2.9	OM602980DELA	BX335003	BX218162
220 Series	220CE {124 Coupe}	09.92 - 06.93	2.2	M111960	BX335002	BX107403
	220E {124}	09.92 - 06.93	2.2	M111960	BX335002	BX107403
	220TE {124}	09.92 - 06.93	2.2	M111960	BX335002	BX107403
230 Series	230CE	04.80 - 08.81	2.3	M102	-	BX314027
	230CE	09.81 - 12.85	2.3	M102	BX489469	BX314027
	230CE {124}	03.87 - 08.92	2.3	M102982	BX489325	BX107048
	230E	04.80 - 08.81	2.3	M102	-	BX314027
	230E	09.81 - 12.85	2.3	M102	BX489469	BX314027
	230E {124}	12.84 - 06.93	2.3	M102982	BX489325	BX107048
	230TE	04.80 - 08.81	2.3	M102	-	BX314027
	230TE	09.81 - 12.85	2.3	M102	BX489469	BX314027
	230TE {124}	09.85 - 08.92	2.3	M102982	BX489325	BX107048
250 Series	250	07.72 - 11.76	2.8	M130923	-	BX314018
	250C	07.72 - 06.73	2.8	M130923	-	BX314018
	250C	07.73 - 11.76	2.8	M130923	0 120 489 506	BX314018
	250D {124}	04.85 - 06.93	2.5	OM602912	BX489325	BX218165
	250T	02.76 - 08.81	2.5	M123	-	BX314018
	250T	09.81 - 07.85	2.5	M123	BX489469	BX314018
	250TD {124}	09.85 - 06.93	2.5	OM602912, OM602962	BX489325	BX218165
260 Series	260E {124}	09.85 - 08.92	2.6	M103940	BX489328	BX110112
	260E {124} Auto	09.86 - 08.92	2.6	M103943	BX489328	BX110112
280 Series	280	06.72 - 08.81	2.8	M110921	-	BX314018
	280C	06.72 - 03.80	2.8	M110921	-	BX314018
	280CE	06.72 - 08.81	2.8	M110981, M110984, M110988	-	BX314018
	280CE	09.81 - 11.85	2.8	M110984, M110988	BX489469	BX314018
	280E	06.72 - 11.76	2.8	M110981	-	BX314018
	280E {124}	09.92 - 06.93	2.8	M104942	BX335002	BX110112

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
MERCEDES BENZ cont.						
280 Series	280S	01.76 - 07.80	2.8	M110922	-	BX314018
	280SE	08.76 - 07.80	2.8	M110985	-	BX314018
	280SEL	08.76 - 07.80	2.8	M110985	-	BX314018
	280SL	06.76 - 07.85	2.8	M110982, M110986, M110990	BX489935	BX314018
	280SLC	06.76 - 09.81	2.8	M110982,M110986	-	BX314018
	280TE	02.76 - 08.81	2.8	M110	-	BX314018
	280TE	09.81 - 11.85	2.8	M110	BX489469	BX314018
	280TE {124}	09.92 - 06.93	2.8	M104942	BX335002	BX110112
300 Series	300CE {124 Coupe}	03.87 - 08.92	3.0	M103983	BX489328	BX110112
	300CE-24{124 Cabrio}	04.92 - 06.93	3.0	M104980	BX469928	BX110112
	300CE-24{124 Coupe}	09.89 - 08.92	3.0	M104980	BX469928	BX110112
	300CE-24 {124}	09.89 - 08.92	3.0	M104980	BX469928	BX110112
	300D {124}	01.85 - 06.93	3.0	OM603912	BX489325	BX218165
	300D {124} Auto	09.86 - 08.92	3.0	OM603913	BX489325	BX218165
	300E {124}	06.85 - 08.85	3.0	M103980	BX489328	BX107048
	300E {124}	01.85 - 08.92	3.0	M103980, M103983	BX489328	BX110112
	300E {124} Auto	09.86 - 06.93	3.0	M103985	BX489328	BX110112
	300SL {124}	09.85 - 08.89	3.0	M103982	BX489328	BX110112
	300TD	10.80 - 08.81	3.0	OM617	-	BX362600
	300TD	09.81 - 11.85	3.0	OM617	BX489469	BX362600
	300TD [124}	09.86 - 06.93	3.0	OM603912, OM603960	BX489325	BX218165
	300TD {124} Auto	01.88 - 06.93	3.0	OM603963	BX489325	BX218165
	300TE {124}	01.86 - 08.92	3.0	M103983	BX489328	BX110112
	300TE {124}	09.92 - 06.93	3.0	M104992	BX335002	BX110112
	300TE {124} Auto	09.86 - 06.93	3.0	M103985	BX489328	BX110112
307 Series	307D	08.77 - 10.85	2.0	OM615944	BX489469	BX362600
	307D	05.77 - 01.89	2.4	OM616934, ...616937, ...616939	BX489469	BX362600
308 Series	308	05.97 - 08.82	2.3	M115972	BX489469	BX314018
	308D	10.88 - 06.95	2.3	OM601940	BX335003	0 001 218 110
	308D Sprinter	02.95 -	2.3	OM601943	BX335003	BX218162
	308D Sprinter James	02.95 -	2.3	OM601943	BX335003	BX218162
309 Series	309D	09.82 - 01.89	3.0	OM617913	BX489469	BX362600
310 Series	310	08.82 - 06.95	2.3	M102942, M102945	BX489325	BX107048
	310D	10.88 - 06.95	2.3	OM602940	BX335003	0 001 218 110
312 Series	312D Sprinter	02.95 -	2.9	OM602980DELA	BX335003	BX218162
	312D Sprinter James	02.95 -	2.9	OM602980DELA	BX335003	BX218162
314 Series	314 Sprinter	02.95 -	2.3	M111979E23	BX335002	BX107403
	314 Sprinter James	02.95 -	2.3	M111979E23	BX335002	BX107403
320 Series	320CE {124 Coupe}	09.92 - 06.93	3.2	M104992	BX335002	BX110112
	320E {124}	09.92 - 06.93	3.2	M104992	BX335002	BX110112
	320TE {124}	09.92 - 06.93	3.2	M104992	BX335002	BX110112
350 Series	350SE	03.76 - 03.80	3.5	M116985	-	BX314018
	350SEL	03.76 - 03.80	3.5	M116985	-	BX314018
	350SL	03.76 - 02.80	3.5	M116982,M116984	-	BX314018
	350SLC	03.76 - 02.80	3.5	M116982, M116984	-	BX314018
380 Series	380SL	07.80 - 06.81	3.8	M116960, M116962	-	BX314018
	380SL	07.81 - 08.85	3.8	M116960, M116962	BX489025	BX314018

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
MERCEDES BENZ cont.						
380 Series	380SLC	07.80 - 08.81	3.8	M116960	BX489025	BX314018
407 Series	407D	07.81 - 01.89	2.4	OM616913, OM616939	BX489469	BX362600
408 Series	408D	11.88 - 06.95	2.3	OM601940	BX335003	0 001 218 110
	408D Sprinter	02.95 -	2.3	OM601943	BX335003	BX218162
409 Series	409D	04.82 - 01.89	3.0	OM617913	BX489469	BX362600
410 Series	410	08.82 - 06.95	2.3	M102942, M102945	BX489325	BX107048
	410D	11.88 - 06.95	2.9	OM602940	BX335003	0 001 218 110
412 Series	412D Sprinter	02.95 -	2.9	OM602980DELA	BX335003	BX218162
420 Series	420SL	01.86 - 08.89	4.2	M116964	BX489025	BX314018
450 Series	450SE	12.75 - 04.80	4.5	M117986	-	BX314018
	450SEL	12.75 - 04.80	4.5	M117986	-	BX314018
	450SLC	12.75 - 09.80	4.5	M117982, M117985	-	BX314018
	450SLC {5.0}	06.78 - 02.80	5.0	M117960	-	BX314018
507 Series	507D	04.86 - 04.89	2.4	OM616914	BX489469	BX362600
510 Series	510	04.86 - 02.01	2.3	M102946	BX489325	BX314027
560 Series	560SL	09.85 - 08.89	5.6	M117967	BX469588	BX314018
C Series	C200D	03.93 - 08.95	2.0	OM601913	BX335003	-
	C200D	02.94 - 06.99	2.0	OM601913, OM604915	BX335003	BX109036
	C220	03.93 - 09.96	2.2	M111961	BX335002	BX107403
	C220D	08.93 - 01.94	2.2	OM604910	BX335003	-
	C220D	02.94 - 06.99	2.2	OM604910	BX335003	BX109036
	C250D	07.93 - 06.95	2.5	OM605911	BX335003	BX109036
	C250D	05.93 - 08.95	2.5	OM605910	0 123 320 045	BX218162
	C250TD	09.95 - 04.00	2.5	OM605960	0 123 320 045	BX218162
	C280 {202}	05.93 - 05.97	2.8	M104941	0 123 510 040	BX110112
	C36 AMG {202}	01.94 - 05.97	3.6	M104941	0 123 510 040	BX110112
	CL420 {140 Coupe}	09.96 - 08.99	4.2	M119981	0 123 510 018	BX110113
	CL500 {140 Coupe}	09.96 - 08.99	5.0	M119980	0 123 510 018	BX110113
E Series	E200 [124}	07.93 - 06.95	2.0	M111940	BX335002	BX107403
	E200 {124 Cabrio}	07.93 - 06.98	2.0	M111940	BX335002	BX107403
	E200 {124 Coupe}	07.93 - 06.96	2.0	M111940	BX335002	BX107403
	E200 {210}	06.95 -	2.0	M111942	BX335002	BX107403
	E200T {124}	07.93 - 05.96	2.0	M111940	BX335002	BX107403
	E220 {124 Cabrio}	07.93 - 06.98	2.2	M111960	BX335002	BX107403
	E220 {124 Coupe}	07.93 -	2.2	M111960	BX335002	BX107403
	E220 {124}	07.93 - 06.95	2.2	M111960	BX335002	BX107403
	E220D {124}	06.95 - 06.99	2.2	OM604912	0 123 320 045	BX218162
	E230 {210}	06.95 - 08.97	2.3	M111970	BX335002	BX107403
	E250D {124}	07.93 - 06.95	2.5	OM605911	BX335003	-
	E250D {124}	07.93 - 05.96	2.5	OM605911	BX335003	BX218162
	E250D {210}	06.95 - 06.99	2.5	OM605912	0 123 320 045	BX218162
	E280 {124}	07.93 - 05.96	2.8	M104942	BX335002	BX110112
	E280 {210}	01.96 - 02.97	2.8	M104945	0 123 510 040	BX110112
	E300 {124} Auto	07.93 - 06.95	3.0	M103985	BX469945	BX110112
	E300D {124}	07.93 - 05.96	3.0	OM606910	BX335003	BX218162

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
MERCEDES BENZ cont.						
E Class	E300D {210}	06.95 - 02.97	3.0	OM606912	0 123 320 045	BX218162
	E300T {124} Auto	07.93 - 06.95	3.0	M103985	BX335002	BX110112
	E300TD {124}	07.93 - 05.96	3.0	OM603960	BX335003	BX218165
	E300TD {210}	03.97 - 06.99	3.0	OM606962	0 123 320 046	BX218162
	E320 {124 Coupe}	09.92 - 06.98	3.2	M104992	BX335002	BX110112
	E320 {124}	07.93 - 06.95	3.2	M104992	BX335002	BX110112
	E320 {210}	06.95 - 02.97	3.2	M104995	0 123 510 040	BX110112
	E320T {124}	07.93 - 05.96	3.2	M104992	BX335002	BX110112
	E36AMG {124 Cabrio}	03.94 - 06.98	3.2	M104992	BX335002	BX110112
	E36AMG {124 Coupe}	03.94 - 06.96	3.2	M104992	BX335002	BX110112
	E36AMG {124}	03.94 - 05.96	3.2	M104992	BX335002	BX110112
S Class	260SE	09.85 - 06.91	2.6	M103941	BX469947	BX110112
	300SDL Turbo	11.85 - 12.87	3.0	OM603961	BX489325	BX218165
	300SE	09.85 - 06.91	3.0	M103981	BX469947	BX110112
	300SEL	09.85 - 06.91	3.0	M103981	BX469947	BX110112
	350SDL Turbo	03.90 - 06.91	3.5	OM603970	BX469811	BX218165
	380SE	12.79 - 08.85	3.8	M116961, M116963	-	BX314018
	380SEC	10.81 - 07.82	3.8	M116963	-	BX314018
	380SEC	08.82 - 07.85	3.8	M116963	BX489025	BX314018
	380SEL	12.79 - 08.85	3.8	M116961, M116963	-	BX314018
	420SE	09.85 - 06.91	4.2	M116965	BX469945	BX314018
	420SEC	10.85 - 06.91	4.2	M116965	BX469945	BX314018
	420SEL	09.85 - 06.91	4.2	M116965	BX469945	BX314018
	500SE	12.79 - 08.85	5.0	M117961, M117963	-	BX314018
	500SE	09.85 - 06.91	5.0	M117965	BX469945	BX314018
	500SEC	09.83 - 08.85	5.0	M117963	BX469588	BX314018
	500SEL	12.79 - 08.85	5.0	M117961, M117963	-	BX314018
	500SEL	09.85 - 06.91	5.0	M117965	BX469945	BX314018
	500SL	05.80 - 06.81	5.0	M117960, M117962	-	BX314018
	500SL	07.81 - 12.85	5.0	M117960, M117962	BX489025	BX314018
	500SLC	03.80 - 09.81	5.0	M117960	BX489025	BX314018
	560SEC	10.85 - 06.91	5.6	M117968	BX469945	BX314018
	560SEL	10.85 - 06.91	5.6	M117968	BX469945	BX314018
	S300TD {140}	06.96 - 09.98	3.0	OM606961	0 123 510 049	BX218162
	S350D	06.93 - 06.96	3.5	OM603917	-	BX218162
SLK	SLK200	09.96 - 01.00	2.0	M111946	BX335002	BX107403
MITSUBISHI						
Galant	GB		1.4, 1.6		BXC1233	-
	GC		1.4, 1.6		BXC1233	-
	GD		1.4, 1.6		BXC1233	-
Lancer	LA		1.4, 1.6		BXC1233	-
	LB		1.4, 1.6		BXC1233	-
	LC		1.4, 1.6		BXC1233	-
Magna	TN - Carb	00.87 - 00.89	2.6		BXM1231	BXM133
	TN - Efi	00.87 - 00.89	2.6		BXM1232	BXM133
	TP	00.89 - 00.91	2.6		BXM1232	BXM133
	TR	00.91 - 00.96	2.6		BXM1233	BXM132
	TR - Manual	00.91 - 00.94	3.0		BXM1236	BXM134
	TR - Automatic	00.91 - 00.94	3.0		BXM1236	-
	TS	00.91 - 00.96	2.6		BXM1233	BXM132
	TS - Manual	00.94 - 00.96	3.0		BXM1236	BXM134
	TS - Automatic	00.94 - 00.96	3.0		BXM1236	-

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
MITSUBISHI cont.						
Magna	TE	00.96 - 01.97	3.0		BXM1237	BXM135
	TF	02.97 03.99	3.0, 3.5		BXM1237	BXM135
	TH	04.99- 02.00	3.0, 3.5	Pulley 65mm	BXM1237	BXM135
	TH	02.00 - 07.00	3.0, 3.5	Pulley 60mm	BXM1348	BXM134
	TJ	08.00 -	3.0, 3.5		BXM1348	BXM135
Sigma	GH	00.83 - 00.83			BXC1233	-
	GJ	00.83 - 00.83			BXC1233	-
	GK	01.84 - 12.85			BXC1233	-
	GN	01.85 - 12.87			BXC1233	-
Verada	KS Auto	00.94 - 00.96	3.0		BXM1236	-
	KS Manual	00.94 - 00.96	3.0		BXM1236	BXM134
	KE	10.96 - 05.97	3.0, 3.5		BXM1237	BXM135
	KF	06.97 - 03.99	3.0, 3.5		BXM1237	BXM135
	KH	04.99 - 02.00	3.5	Pulley 65mm	BXM1237	BXM135
	KH	02.00 - 07.00	3.5	Pulley 60mm	BXM1348	BXM135
	KJ	08.00 -	3.5	V6 SOHC 24V	BXM1348	BXM135
NISSAN						
1000		00.67 - 00.74	1.0	A10	BXD1242	-
1200		00.67 - 00.74	1.2	A12	BXD1242	-
2000		00.66 - 00.70	2.0		BXD1242	-
2300		00.66 - 00.70	2.3		BXD1242	-
120Y		00.74 - 00.78	1.2	A12	BXD1242	-
180B		00.72 - 00.77	1.8	L18	BXD1242	-
200B		00.77 - 00.80	2.0	L20B	BXD1242	-
240C		00.71 - 00.77	2.4	L24	BXD1242	-
240K		00.71 - 00.77	2.4	L24	BXD1242	-
240Z		00.71 - 00.77	2.4	L24	BXD1242	-
260C		00.73 - 00.78	2.6	L26, L26T	BXD1242	-
280C		00.80 - 00.84	2.8	L28	BXD1242	-
280ZX		00.80 - 00.84	2.8	L28E	BXD1242	-
Bluebird	Widetrack	00.84 - 00.89	1.6	CA16	BXN1235	-
	Series 1	00.81 - 00.85	2.0	L20B	BXD1242	-
	Series 2	00.81 - 00.85	2.0	L20B	BXD1242	-
Micra	1.0i	08.92 -	1.0	CG10DE DOHC	BX110008	BX112017
	1.3i	08.92 - 07.00	1.3	CG13DE DOHC	BX110008	BX112017
P510	1.6	00.68 - 00.72	1.6	L16	BXD1242	-
Patrol	520	00.65 - 00.79			BXD1242	-
	521	00.65 - 00.79			BXD1242	-

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
NISSAN cont.						
Patrol	620	00.65 - 00.79			BXD1242	-
Pulsar	1.5	00.81 - 00.87	1.5	E15	BXD1242	-
	1.6	00.81 - 00.87	1.6	E16	BXD1242	-
	Van	00.83 - 00.86			BXD1242	-
Santana	2.0i	08.85 - 01.87	2.0		BX469555	BX108026
Skyline	2.4	00.83 - 00.86	2.4		BXD1242	-
	R31	00.86 - 00.90	3.0	RB30E	BXN1231	-
Stanza	1.6	00.78 - 00.83	1.6		BXD1242	-
Sunny	B310	00.79 - 00.81			BXD1242	-
Terrano II	Turbo Diesel	02.93 - 05.96	2.7	TD27T OHV	BX334632	-
	Turbo Diesel	05.96 -	2.7	TD27Ti OHV	BX310051	-
PORSCHE						
911	2.7	09.75 - 06.77	2.7		-	BX212208
	3.0 Turbo	01.75 - 09.77	3.0		-	BX212208
	3.3 Turbo	08.82 - 08.88	3.3	930.66	-	BX312110
	3.6 Tanga	09.95 - 08.97	3.6	64.21/22	0 120 468 125	BX110059
	3.6 Tanga IV	09.95 - 08.97	3.6	64.21	0 120 468 125	BX110059
	3.6 Turbo	09.94 - 08.97	3.6	64.6	0 120 468 125	BX110059
	Carrera	08.84 - 07.88	3.2	930.26	-	BX312110
	Carrera	09.93 - 08.95	3.6	64.05/06	0 120 468 125	BX110059
	Carrera	09.95 - 08.97	3.6	64.21/22	-	BX110059
	Carrera 3.0	09.75 - 06.77	3.0		-	BX212208
	Carrera 3.8 RS	09.94 - 08.97	3.8	64.2	0 120 468 125	BX110059
	Carrera II	08.89 - 08.93	3.6	64.01/02	0 120 468 125	BX110059
	Carrera II RS	08.91 - 08.93	3.6	64.03	0 120 468 125	BX110059
	Carrera IV	09.88 - 08.93	3.6	64.01	0 120 468 125	BX110059
	Carrera IV	09.94 - 08.97	3.6	64.05, 64.21	0 120 468 125	BX110059
	Carrera IV S	09.95 - 08.97	3.6	64.21	0 120 468 125	BX110059
928	5.0 CS	08.87 - 07.89	5.0	M28.41	0 120 469 845	BX312111
	5.0 CS S4	08.86 - 07.91	5.0	M28.41/42	0 120 468 005	BX312111
	5.0 GT	01.89 - 07.91	5.0	M28.47	0 120 468 005	BX312111
	5.4 GTS	08.91 - 11.95	5.4	M28.49/50	0 120 468 005	BX312111
959	2.8	05.86 - 07.88	2.8	959.5	-	BX312110
ROVER						
Land Rover	2.5 D	09.83 - 07.90	2.5		-	BX218168
	2.5 T	09.86 - 07.90	2.5		-	BX218168
	2.5 T	07.89 - 07.90	2.5	200TDI	-	BX218168
	Defender	08.90 - 09.00	2.5	Gemini-TCI DI	-	BX218168
	Defender	08.90 - 09.00	3.5	V8	-	BX109040
	Defender	09.95 -	3.9	V8	-	BX109040
	Discovery	09.89 - 09.94	2.5	200 Gemini 2	-	BX218168
	Discovery	10.93 - 12.99	2.5	300 Gemini	-	BX218168
	Discovery	09.89 - 12.99	3.5	V8	-	BX109040
	Discovery	10.93 - 12.99	3.9	V8	-	BX109040
	Discovery	10.98 -	4.0	V8 OHC	0 123 510 073	BX109040

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
ROVER cont.						
Range Rover	2.5 Tdi	10.92 - 09.94	2.5	200TDI	-	BX218168
	2.5 Tdi	10.94 - 04.96	2.5	300TDI	-	BX218168
	3.9i	11.88 - 04.96	3.9	V8 Efi Cat	-	BX109040
	4.0i V8	09.94 -	4.0		0 123 520 022	BX109040
	4.2	09.92 - 04.96	4.2	V8 Efi Cat	-	BX109040
	4.6i V8	09.94 -	4.6		0 123 520 022	BX109040
SAAB						
9-3	2.0i 16V	01.98 -	2.0	B204L/R DOHC, B205L/R DOHC	BX320057	BX108151
	2.3i 16V	03.98 -	2.3	B234 I DOHC	BX320057	BX108151
	2.3i 16V T	01.99 -	2.3	B235 R DOHC	BX320057	-
	2.3i 16V T	09.99 -	2.3	B234 I DOHC	BX320057	BX108151
90	2.0	08.84 - 08.87	2.0	B201 C	-	BX108091
900	2.0	09.83 - 08.84	2.0	B201 C	BX469682	-
	2.0	09.84 - 08.90	2.0	B201 C	BX469682	BX108091
	2.0 T	09.83 - 08.84	2.0	B201 S	BX489310	-
	2.0 T	09.84 - 07.85	2.0	B201 S	BX489310	BX108091
	2.0 T	09.85 - 08.90	2.0	B201 S	BX469682	BX108091
	2.0 T 16V	02.84 - 08.93	2.0	B202 L, B202 L Cat	BX469682	BX108091
	2.0i	09.83 - 08.84	2.0	B201 I	BX469682	-
	2.0i	09.84 - 08.90	2.0	B201 I	BX469682	BX108091
900 II	2.0i S	09.94 - 08.98	2.0	B204 I Cat	BX320057	BX108151
	2.0i S Coupe	09.94 - 08.98	2.0	B204 I Cat	BX320057	BX108151
9000	2.0 T 16V	09.84 -	2.0	B202 L, B202L Cat	BX469684	BX108091
	2.0i 16V	12.85 - 08.93	2.0	B202 I, B202 I Cat	BX469684	BX108091
	2.3 16V T	09.90 - 08.93	2.3	B234 L Cat	BX469682	BX108092
	2.3i 16V	09.89 - 08.93	2.3	B234 I, B234 I Cat	BX469682	BX108092
	CD 2.0 16V	09.89 - 08.93	2.0	B202 I Cat	BX469684	BX108091
	CD 2.0 T	05.88 - 08.93	2.0	B202 L, B202 L Cat	BX469684	BX108091
	CD 2.3 16V	09.89 - 08.93	2.3	B234 I, B234 I Cat	BX469682	BX108092
	CD 2.3 T	09.90 - 08.93	2.3	B234 L Cat	BX469682	BX108092
	CD 2.3 T 16V	09.93 - 12.98	2.3	B234 I Cat	BX469682	BX108151
	CD 2.3 TE	09.93 - 12.98	2.3	B234 E Cat	BX469682	BX108151
	CD 2.3 TS	09.90 - 08.93	2.3	B234 L Cat	BX469682	BX108092
	CD 3.0	09.94 - 12.98	3.0	B308 I Cat	BX320039	BX108170
	CDE 2.3 T	09.93 - 12.98	2.3	B234 L Cat	BX469682	BX108151
	CDE 2.3 TE	09.94 - 12.98	2.3	B234 E Cat	BX320039	BX108151
	CS 2.0	09.93 - 12.98	2.0	B204 I Cat	BX469682	BX108151
	CS 2.0 T	09.94 - 12.98	2.0	B204 L Cat	BX320039	BX108151
	CS 2.3 16V	09.91 - 08.93	2.3	B234 I Cat	BX469682	BX108092
	CS 2.3 16V	09.93 - 12.98	2.3	B234 I Cat	BX469682	BX108151
	CS 2.3 T	09.91 - 08.93	2.3	B234 L Cat	BX469682	BX108092
	CS 2.3 TE	09.93 - 12.98	2.3	B234 E Cat	BX469682	BX108151
	CS 2.3 TS	09.91 - 08.93	2.3	B234 L Cat	BX469682	BX108092
	CS Aero 2.3 T	09.92 - 12.98	2.3	B234 R Cat	BX469682	BX108151
	CSE 2.3 T	09.93 - 12.98	2.3	B234 L Cat	BX469682	BX108151
SSANGYONG						
Family	2.3 D	10.86 - 06.96	2.3	OM661D23	BX335003	BX218165
Korando	3.2i 24V	07.96 -	3.2	M162E32	-	BX110112

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
SSANGYONG						
Musso	2.3 D	07.93 -	2.3	OM661D23	BX335003	BX218165
	2.9 D	07.93 -	2.9	OM662D29	BX335003	BX218165
	3.2i 24V	01.96 - 06.96	3.2	M162E32	-	BX110112
	3.2i 24V	07.96 -	3.2	M162E32	0 123 510 023	BX110112
SUZUKI						
Samurai	1.3	11.84 - 12.94	1.3	G13A	-	BX112032
	1.3	11.91 -	1.3	G13BA	-	BX112032
Vitara	1.6 SE	09.88 - 12.98	1.6	G16A	-	BX112032
TOYOTA						
Camry	SV11	03.83 - 10.96	2.0	2S-E	BXT1250	-
	SV21	07.89 - 11.92	2.0	3S-FC	BXT1250	BXT133
	SV21	07.89 - 11.92	2.0	3S-FE	BXT1250	BXT133
	SV22	07.89 - 11.92	2.0	3S-FC	BXT1250	BXT133
	SV22	07.89 - 11.92	2.0	3S-FE	BXT1250	BXT133
	SDV10	11.92 - 03.95	2.2	5S-FE	BXT1250	BXT133
	SDV10	04.95 - 00.97	2.2	5S-FE	BXT1346	BXT133
	SXV20R	00.97 -	2.2	5S-FE	BXT1346	BXT133
Corona		00.79 - 00.83	1.9	1X-N	BXH1236	-
VOLKSWAGEN						
1600	1.6	10.92 -	1.6	ACD	BX302111	-
Caddy	1.4	11.95 -	1.4	AEX	BX320001	BX107025
	1.4	11.97 -	1.4	AKV	BX320001	BX112027
	1.6	11.95 -	1.6	1F	BX320001	0 001 112 038
	1.6	06.97 -	1.6	AEE	BX320001	BX107025
	1.6	08.83 - 07.92	1.6	EW	BX489195	BX212400
	1.8	08.85 - 07.92	1.8	JH	BX489362	BX212400
	1.6 P/Up	06.96 -	1.6	AEE	BX320001	-
	1.9 D	11.95 -	1.9	1Y	BX320001	0 001 125 005
	1.9 SDI	11.95 -	1.9	AEY	BX320001	0 001 125 005
Caravelle	1.9 D	10.90 -	1.9	1X, ABL	BX320006	BX125001
	2	09.90 -	2.0	AAC	BX320006	BX107007
	2.5	11.90 - 12.93	2.5	AAF	BX320001	BX125001
	2.5	07.94 - 10.96	2.5	ACU	BX320001	BX125001
Corrado	2.0	10.94 - 07.95	2.0	ADY	BX320006	BX107020
	2.0	04.93 - 09.94	2.0	2E	BX320006	BX107022
	1.8 16V	09.88 - 07.92	1.8	KR	BX489361	BX107020
	1.8 G60	09.88 - 09.93	1.8	PG	BX469864	BX107020
	2.0 16V	08.91 - 07.95	2.0	9A	BX469908	BX107020
	2.8 VR6	08.91 - 07.95	2.8	AAA	BX320005	BX110086
	2.9 VR6	08.91 - 07.95	2.9	ABV	BX510005	BX110086
Golf I	2.8 VR6	10.92 -	2.8	AAA	BX510005	BX110086
Golf II	1.8	11.83 - 10.91	1.8	GU	BX489195	BX212400
	1.8	01.84 - 05.88	1.8	GX	BX489195	BX212400
	1.8	01.84 - 07.87	1.8	EV	BX489195	1208047
	1.8	08.85 - 10.87	1.8	RD	BX489362	BX212400
	1.8	01.87 - 10.91	1.8	PF	BX489362	BX107007

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
VOLKSWAGEN cont.						
Golf II	1.8	01.87 - 10.91	1.8	PB	BX489362	BX107007
	1.8	11.87 - 10.91	1.8	RP	BX489362	BX212400
	1.8 16V	02.86 - 10.91	1.8	KR, PL	BX489361	BX107007
	1.8 G60	04.90 - 07.91	1.8	PG	BX469864	-
	1.8 Rallye	04.89 - 07.91	1.8	1H, PG	BX469864	-
	1.8 Syncro G	08.90 - 07.91	1.8	PG	BX469864	-
Golf III	1.4	11.91 - 07.95	1.4	ABD	BX320006	BX112027
	1.4	07.95 - 12.97	1.4	AEX	BX320006	BX320006
	1.6	09.92 - 09.94	1.6	ABU	BX320006	BX107025
	1.6	10.94 - 12.97	1.6	AEA, AEK	BX320006	BX107020
	1.6	12.95 - 12.97	1.6	AFT, AKS	BX320006	0 001 112 038
	1.8	11.91 - 12.97	1.8	AAM, ABS, ADZ	BX320006	BX107027
	2.0	11.91 - 12.97	2.0	2E, ADY, AGG, AKR	BX320006	BX107020
	2.0	07.95 - 10.95	2.0	AGG	BX320006	-
	2.0	10.95 - 12.97	2.0	AGG {1HT065001}	BX320006	BX107022
	1.4 Variant	07.93 - 07.95	1.4	ABD	BX320006	BX112027
	1.6 Variant	10.94 - 12.95	1.6	AEK	BX320006	BX107020
	1.8 Syncro	01.93 - 12.97	1.8	ABS, ADZ	BX320006	BX107022
	1.9 Diesel	11.91 - 12.97	1.9	1Y, AAZ	BX320001	-
	2.0 16V	08.92 - 12.97	2.0	ABF	BX310019	BX107020
	2.0 Syncro	07.95 - 12.97	2.0	AGG	BX320006	BX107022
	2.8 VR6	01.92 - 03.94	2.8	AAA	BX510005	-
	2.8 VR6	03.94 - 12.97	2.8	AAA	BX510005	0 001 125 005
	2.9 Syncro	07.95 - 12.97	2.9	ABV	BX510053	0 001 108 086
	2.9 Syncro	07.95 - 12.97	2.9	ABV	BX510053	BX110086
	2.9 VR6 Syncro	01.94 - 12.97	2.9	ABV	BX510005	BX110086
	Cabriolet	09.93 - 04.98	1.8	AAM, ABS	BX320001	BX107020
	Cabriolet	08.95 - 01.96	1.9	1Z {<1ET012000}	BX310019	-
	Cabriolet	01.96 - 07.96	1.9	1Z {>1ET012001}	BX310019	0 001 125 005
	Cabriolet	08.96 - 04.98	1.9	AHU {>1ET012001}	BX310019	0 001 125 005
	Cabriolet	09.96 - 04.98	1.9	AFN {>1ET012001}	BX310019	0 001 125 005
	Cabriolet	09.93 - 09.94	2.0	2E	BX320001	BX107020
Golf IV	1.8	10.97 - 04.98	1.8	AGN, AGU {<1JW200000}	123320034	BX107022
	1.8	05.98 -	1.8	AGN, AGU {>1JX000001}	124315003	BX107022
Jetta	1.6	01.84 - 07.91	1.6	EZ, EZA	BX489195	BX212400
	1.8	01.84 - 07.87	1.8	EV	BX489195	0 001 208 047
	1.8	01.84 - 10.91	1.8	GU	BX489195	BX107007
	1.8	08.84 - 10.87	1.8	GX	BX489195	BX212400
	1.8	08.85 - 10.87	1.8	RD	BX489362	BX212400
	1.8	02.87 - 07.92	1.8	PB, PF	BX489362	BX107007
	1.8	11.87 - 10.91	1.8	RP	0 120 489 369	BX107007
	1.8	10.92 -	1.8	ACC	BX310019	BX107020
	2.0	10.92 -	2.0	ABA	BX310019	BX107020
	1.8 16V	08.86 - 10.91	1.8	PL, KR	BX489361	BX107007
	1.8 Syncro	08.87 - 10.91	1.8	GU	0 120 489 369	BX107007
	1.8 Syncro	08.88 - 07.92	1.8	1P	BX489362	BX107007
	2.8 VR6	10.92 -	2.8	AAA	BX510005	BX110086
Multivan	1.9 D	09.90 -	1.9	1X, ABL	BX320006	BX125001
	2.0	09.90 -	2.0	AAC	BX320001	BX107007
	2.5	11.90 - 12.93	2.5	AAF	BX320001	BX125001
	2.5	07.94 - 10.96	2.5	ACU	BX320001	BX125001
Passat	1.6	08.80 - 07.83	1.6	WV, WVA, YN, YP, YY	BX469555	BX208711

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
VOLKSWAGEN cont.						
Passat	1.6	04.88 - 09.91	1.6	EZ	0 120 489 369	BX107022
	1.6	09.91 - 07.92	1.6	ABN {>31N400000}	0 120 489 369	BX107022
	1.6	10.94 - 12.95	1.6	AEK	BX310019	BX107020
	1.6	12.95 - 03.97	1.6	AFT	BX320001	BX107020
	1.6	10.96 - 05.98	1.6	ADP, AHL {<3BX030000}	BX310022	BX107068
	1.6	05.98 -	1.6	ADP, AHL {>3BX030001}	BX310022	0 001 107 074
	1.6 D	08.82 - 03.88	1.6	JK	BX489367	BX110007
	1.6 TD	04.82 - 03.88	1.6	CY	BX489367	BX110007
	1.6 Variant	01.97 - 05.98	1.6	ADP, AHL {<3BX030000}	BX310022	BX107068
	1.6 Variant	05.98 -	1.6	ADP, AHL {>3BX030001}	BX310022	0 001 107 073
	1.8	01.83 - 03.88	1.8	DS, JN	BX489195	BX208711
	1.8	12.83 - 07.84	1.8	DZ	BX469555	BX208711
	1.8	04.88 - 07.91	1.8	RP, RP Cat	0120 489 369	BX107007
	1.8	08.90 - 12.91	1.8	AAM, ABS {>31N200000}	0 120 489 369	BX107020
	1.8	08.90 - 03.97	1.8	ADZ	BX510006	BX107020
	1.8	12.91 - 03.97	1.8	AAM, ABS {>31P200001}	BX510006	BX107020
	1.8	10.96 - 05.98	1.8	ADR {<3BX030000}	BX310022	BX107068
	1.8	05.98 -	1.8	ADR {>3BX030001}	BX310022	0 001 107 073
	1.8 16V	04.88 - 07.92	1.8	KR	BX489361	BX107020
	1.8 Syncro	06.97 - 05.98	1.8	ADR {<3BX030000}	BX310022	BX107068
	1.8 Syncro	05.98 -	1.8	ADR {>3BX030001}	BX310022	0 001 107 073
	1.8 Syncro G6	09.89 - 07.93	1.8	PG	BX469864	-
	1.8 Syncro Variant	05.97 - 05.98	1.8	ADR {<3BX030000}	BX310022	BX107068
	1.8 Syncro Variant	05.98 -	1.8	ADR {>3BX030001}	BX310022	0 001 107 073
	1.8 T	05.97 - 05.98	1.8	AEB {<3BX030000}	BX310022	0 001 107 073
	1.8 T	05.98 -	1.8	AEB {>3BX030001}	BX310022	BX107068
	1.8 T Variant	05.97 - 05.98	1.8	AEB {<3BX030000}	BX310022	BX107068
	1.8 T Variant	05.98 -	1.8	AEB {>3BX030001}	BX310022	0 001 107 073
	1.8 Variant	05.97 - 05.98	1.8	ADR {<3BX030000}	BX310022	BX107068
	1.8 Variant	05.98 -	1.8	ADR {>3BX030001}	BX310022	0 001 107 073
	1.9	01.81 - 07.83	1.9	WN	BX469555	0 001 108 101
	1.9 TDI	10.93 - 03.97	1.9	1Z, AHU	BX320001	-
	1.9 TDI	03.96 - 03.97	1.9	AFN	BX320001	0 001 125 012
	2.0	08.83 - 07.84	2.0	JS	BX489195	0 001 108 101
	2.0	08.84 - 03.88	2.0	JS	BX489195	BX108026
	2.0	03.90 - 09.94	2.0	2E	0 120 489 369	BX107020
	2.0	10.94 - 03.97	2.0	ADY, AEP	BX310019	BX107020
	2.0	07.95 - 03.97	2.0	AGG	BX320001	BX107020
	2.0 16V	08.88 - 09.93	2.0	9A	BX489361	BX107020
	2.0 16V	01.94 - 03.97	2.0	ABF	BX320001	BX107020
	2.0 Syncro	08.84 - 07.85	2.0	JS	BX489195	BX108026
	2.0 Syncro	08.85 - 03.88	2.0	HP	BX469555	BX108026
	2.0 Syncro	10.90 - 09.94	2.0	2E	0 120 489 369	BX107022
	2.0 Syncro	10.94 - 12.95	2.0	ADY	BX310019	BX107022
	2.0 Syncro	07.95 - 03.97	2.0	AGG	BX320001	BX107022
	2.2	01.85 - 03.88	2.2	KV	BX469555	BX108026
	2.2 Syncro	08.85 - 03.88	2.2	JT	BX469555	BX108026
	2.8 V6	01.97 - 04.97	2.8	ACK {<3BV120000}	BX510061	BX108113
	2.8 V6	05.97 - 04.97	2.8	ACK {>3BW000001}	BX510061	0 001 108 174
	2.8 V6 Syncro	01.97 - 05.97	2.8	ACK, ALG {<3BV120000}	BX510061	BX108113
	2.8 V6 Syncro	05.97 -	2.8	ACK, ALG {>3BW000001}	BX510061	0 001 108 174
	2.8 V6 Variant	01.97 -	2.8	ACK {>3BW000001}	BX510061	0 001 108 174
	2.8 VR6	06.91 - 12.94	2.8	AAA {<3AS110001}	BX320005	BX110086
	2.8 VR6	12.94 - 03.97	2.8	AAA {>3AS110001}	BX510053	BX110086
	2.9 VR6 Syncro	01.94 - 03.97	2.9	ABV	BX510005	BX110086
Polo	1.0	03.96 - 12.99	1.0	AER, ALL	BX320006	-

B

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
VOLKSWAGEN cont.						
Polo	1.0	07.98 -	1.0	ALD, AUC	0 124 315 008	BX112027
	1.1	10.94 - 12.99	1.1	AEV	BX320006	BX112027
	1.3	10.94 - 07.95	1.3	ADX	BX320006	BX112027
	1.3	07.96 - 12.99	1.3	ADX	BX320006	-
	1.4 16V	04.96 - 12.99	1.4	AFH	BX320001	BX107025
	1.4 16V	09.98 -	1.4	AFK, AHW, AUA, AUB	0 124 315 008	BX107025
	1.4	07.95 - 12.99	1.4	AEX	BX320006	0 001 121 001
	1.4	05.97 - 12.99	1.4	AKV, ANX, APQ	BX320006	-
	1.4	01.98 - 12.99	1.4	ANX	BX320006	-
	1.4	11.97 - 12.99	1.4	APQ	BX320006	-
	1.6	10.94 - 12.99	1.6	AEA, AEE	BX320001	BX107025
	1.6	04.98 - 12.99	1.6	AJV	BX320001	BX107025
	1.6 16V	11.99 -	1.6	ARC	0 124 315 008	BX107025
Polo Classic	1.4 16V	10.99 -	1.4	APE	0 124 315 008	BX107025
	1.4	12.95 -	1.4	AEX, AKV, APQ	BX320001	BX107025
	1.4	10.99 -	1.4	AKK, ANW	0 124 315 008	BX107025
	1.6	11.95 -	1.6	1F	BX320001	BX107020
	1.6	12.95 - 04.98	1.6	AFT	BX320001	BX107020
	1.6	04.97 -	1.6	AEE, ALM	BX320001	BX107025
	1.6	05.98 -	1.6	AFT	BX320001	0 001 112 038
	1.9 SDI	12.95 -	1.9	AEY	BX320001	0 001 125 005
Santana	1.3	08.83 - 12.84	1.3	EP	BX489195	BX208711
	1.6	08.81 - 12.84	1.6	DT, WV, WVA, YP	BX469555	BX208711
	1.8	01.83 - 03.88	1.8	DS, JN	BX489195	BX208711
	1.9	08.81 - 07.83	1.9	WN	BX469555	BX108026
	2.0	08.83 - 03.88	2.0	JS	BX489195	BX108026
	1.6 D	06.85 - 03.88	1.6	JK	BX489367	BX110007
	1.6 TD	06.85 - 03.88	1.6	CY	BX489367	BX110007
Transporter	1.9 D	09.90 - 04.97	1.9	1X	BX320006	BX125001
	1.9 D	10.92 -	1.9	ABL	BX320001	BX125001
	2.0	09.90 - 10.91	2.0	AAC {<70N000001}	BX320001	BX107007
	2.0	10.91 -	2.0	AAC {>70N000001}	BX320001	BX107007
	2.5	11.90 - 10.96	2.5	AAF, ACU	BX320001	BX125001
Vento	1.6	09.92 - 09.94	1.6	ABU	BX310019	BX107025
	1.6	10.94 - 12.95	1.6	AEA, AEK	BX320006	BX107020
	1.8	11.91 - 12.97	1.8	AAM, ABS	BX320001	BX107020
	1.8	10.94 - 12.97	1.8	ADZ	BX310019	BX107020
	2.0	11.91 - 09.94	2.0	2E	BX320001	BX107020
	2.0	10.94 - 05.96	2.0	ADY	BX310019	BX107020
	2.0	07.95 - 12.97	2.0	AGG	BX510006	BX107020
	2.8 VR6	01.92 - 12.94	2.8	AAA {<1HS350000}	BX510005	BX110086
	2.8 VR6	01.95 - 12.97	2.8	AAA {>1HS350000}	BX510053	BX110086
VOLVO						
240	1.8	11.78 - 07.88	1.8	B17A	BX469567	BX108088
	2.0	09.76 - 07.84	2.0	B19A, B19K	BX469567	BX108088
	2.0	08.84 - 07.86	2.0	B200K	BX489065	BX108088
	2.0	08.86 - 07.89	2.0	B200K	0 120 469 788	BX108088
	2.0 D	08.79 - 09.81	2.0	D20	BX469567	-
	2.0i	09.76 - 07.84	2.0	B19E	BX469567	BX108088
	2.0i	08.84 - 07.92	2.0	B200E, B200F Cat	BX469992	BX108088
	2.0iT	08.81 - 07.84	2.0	B19ET	BX469567	BX108088
	2.1	08.74 - 07.84	2.1	B21A	BX469567	BX108088

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
VOLVO cont						
240	2.1i	08.74 - 07.82	2.1	B21E	BX469567	BX108088
	2.1iT	08.80 - 07.86	2.1	B21ET	BX469567	BX108088
	2.3	08.80 - 07.84	2.3	B23A	BX469567	BX108088
	2.3	08.84 - 07.86	2.3	B230K	BX489065	BX108088
	2.3	08.86 - 07.90	2.3	B230K	0 120 469 788	BX108088
	2.3i	03.79 - 07.84	2.3	B23E	BX469567	BX108088
	2.3i	08.84 - 07.88	2.3	B230F Cat	BX469567	BX108088
	2.3i	08.92 - 08.93	2.3	B230FD	BX469992	BX108088
	2.3i	08.84 - 07.92	2.3	B230E	BX469992	BX108088
	2.4 D	04.79 - 07.81	2.4	D24	BX469567	-
	2.4 D	08.81 - 08.93	2.4	D24	BX469567	0 001 218 130
	2.8i	08.80 - 07.84	2.8	B28E	BX469563	0 001 108 089
260	2.3	08.81 - 07.82	2.3	B23A	BX469567	BX108088
	2.8	08.79 - 07.82	2.8	B28A	BX469567	0 001 108 089
	2.8 Coupe	08.79 - 07.82	2.8	B28A	BX469567	0 001 108 089
	2.8i	08.80 - 07.84	2.8	B28E	BX469567	0 001 108 089
340	2.0	08.80 - 07.84	2.0	B19A	BX489065	BX108088
	2.0 Sport	10.81 - 07.84	2.0	B19A	BX489065	BX108088
345	2.0	08.79 - 07.84	2.0	B19A	BX489065	BX108088
360	2.0	08.84 - 07.86	2.0	B200K	BX489065	BX108088
	2.0	08.86 - 07.90	2.0	B200K	0 120 469 788	BX108088
	2.0i	08.82 - 07.86	2.0	B19E, B200E, B200F Cat	BX489065	BX108088
	2.0i	08.86 - 07.90	2.0	B200E, B200F Cat	0 120 469 788	BX108088
740	2.0	08.84 - 07.89	2.0	B200K	BX489065	BX108088
	2.3	08.84 - 07.86	2.3	B230K	BX489065	BX108088
	2.3	08.86 -	2.3	B230K	0 120 469 788	BX108088
	2.0i	08.83 - 07.84	2.0	B19E	BX469567	BX108088
	2.0i	08.84 - 07.86	2.0	B200E	-	BX108088
	2.0i	08.86 - 07.91	2.0	B200E, B200F Cat	0 120 469 788	BX108088
	2.0i	08.91 - 07.93	2.0	B200F Cat	-	BX108088
	2.0i	08.91 - 08.94	2.0	B200F Cat, B200G	-	BX108088
	2.0i 16V	08.89 - 07.90	2.0	B204FT Cat	BX469915	BX108088
	2.0iT	04.84 - 07.86	2.0	B19ET, B200ET	BX469567	BX108088
	2.0iT	08.86 - 07.89	2.0	B200ET	0 120 469 788	BX108088
	2.0iT	08.90 - 07.91	2.0	B200FT Cat	-	BX108088
	2.0iT	08.91 - 07.92	2.0	B200FT Cat	BX500005	BX108088
	2.3i	08.83 -	2.3	B23E	BX469567	BX108088
	2.3i	08.84 - 07.92	2.3	B230F Cat	BX469992	BX108088
	2.3i	08.84 - 07.86	2.3	B230E	BX489065	BX108088
	2.3i	08.86 - 07.90	2.3	B230E	0 120 469 788	BX108088
	2.3i	08.90 - 07.91	2.3	B230E	0 120 489 369	BX108088
	2.3i	08.90 - 07.92	2.3	B230F Cat	BX469992	BX108088
	2.3i 16V	04.88 - 07.90	2.3	B234F Cat	BX469915	BX108088
	2.3iT	04.83 - 07.84	2.3	B23ET	BX469567	BX108088
	2.3iT	08.84 - 07.91	2.3	B230ET, B230ET Cat	-	BX108088
760	2.0iT	08.84 - 07.89	2.0	B200ET	BX489065	BX108088
	2.3iT	08.84 - 07.92	2.3	B230ET, B230FT Cat	-	BX108088
	2.8i	02.82 - 07.86	2.8	B28A, B28E, B28F Cat	BX469563	0 001 108 089
780	2.0i 16V	08.89 - 07.90	2.0	B204GT	BX469915	BX108088
	2.0iT	01.86 - 07.89	2.0	B200ET	0 120 469 788	BX108088

B

Make / Model	Series	From - To	Litre	Engine code	Alternator Part No.	Starter Motor Part No.
VOLVO cont.						
850	2.0	09.91 - 12.96	2.0	B5202S Cat, B5204S Cat	BX505014	0 001 108 167
	2.0 GLT	01.96 - 08.97	2.0	B5204T2 Cat	BX505014	BX108166
	2.0 T	01.95 - 08.97	2.0	B5204T Cat	BX505014	BX108166
	2.5 AWD	09.96 - 08.97	2.5	B5254T Cat	0 123 315 016	BX108166
	2.5 GLE	09.92 - 08.97	2.5	B5252S Cat	BX505014	BX108166
	2.5 GLT	09.91 - 08.97	2.5	B5254S Cat	BX505014	BX108166
	2.5 T	09.96 - 08.97	2.5	B5254T Cat	BX505014	BX108166
	R	08.95 - 07.97	2.5	B5234T4 Cat	BX505014	BX108166
	T-5	09.93 - 08.96	2.3	B5234FT Cat	BX505014	0 001 108 167
	T-RS	09.94 - 08.97	2.3	B5234T Cat	BX505014	BX108166
940	2.0	09.90 - 08.91	2.0	B200E	0 120 469 788	BX108088
	2.0	09.91 - 08.95	2.0	B200G	BX469992	BX108088
	2.0	01.92 - 08.95	2.0	B200F Cat	BX469992	BX108088
	2.3	09.92 - 08.95	2.3.	B230FB Cat	-	BX108088
	2.3	09.92 - 08.95	2.3	B230FD, B230F Cat	BX469992	BX108088
	2.0 T Intercharge	09.91 - 08.97	2.0	B200FT Cat	BX469992	BX108088
	2.3 T	09.94 - 08.97	2.3	B230FK Cat	BX469992	BX108088
	2.3 T Intercharge	09.90 - 08.97	2.3	B230FT Cat	BX469992	BX108088
960	2.0 16V T Intercharge	09.93 - 08.94	2.0	B204FT Cat	BX500005	BX108088
	2.0 T Intercharge	09.92 - 08.97	2.0	B200FT Cat	BX469992	BX108088
C Series	202	01.97 - 12.91	2.0	B20A	-	BX108088
	303	10.74 - 12.91	3.0	B30A	-	BX108088
	304	10.74 - 12.91	3.0	B30A	-	BX108088
	306	10.74 - 12.91	3.0	B30A	-	BX108088
C70	2.0 T Cabriolet	08.98 - 07.00	2.0	B5204T2, B5204T3	-	BX108166
	2.0 T Coupe	01.97 - 07.00	2.0	B5204T2, B5204T3	BX505014	BX108166
	2.5 LPT Coupe	01.98 - 07.99	2.5	B5254T	BX505014	BX108166
	2.5 T Cabriolet	08.98 - 07.99	2.5	B5254T	-	BX108166
	T5 Coupe	09.97 -	2.3	B5234T3	BX505014	BX108166
S40	1.6 16V	01.97 - 07.99	1.6	B4164S	0 123 315 021	BX108166
	1.8 16V	09.95 - 07.00	1.8	B4184S	0 123 315 021	BX108166
	2.0 16V	09.95 - 07.99	2.0	B4204S	0 123 315 021	BX108166
	2.0 16V T	04.98 - 07.99	2.0	B4204T	-	BX108166
	T4	05.97 - 07.99	1.9	B4194T	-	BX108166
S70	2.0	01.97 -	2.0	B5202S, 5204S	BX505014	BX108166
	2.5	01.97 - 07.99	2.5	B5252S	BX505014	BX108166
	2.0 T	01.97 -	2.0	B5204T, 5204T2, 5204T3	BX505014	BX108166
	2.5 20V	01.97 - 07.99	2.5	B5254S	BX505014	BX108166
	2.5 Dual Fuel	08.98 -	2.5	B5252S	BX505014	BX108166
	R	01.97 - 07.98	2.3	B5234T4	BX505014	BX108166
	R AWD	08.97 -	2.3	B5234T6	BX505014	BX108166
V40	2.0	01.96 - 07.99	2.0	B4204S	0 123 315 021	BX108166
	1.6 16V	01.97 - 07.99	1.6	B4164S	0 123 315 021	BX108166
	1.8 16V	01.95 - 07.99	1.8	B4184S	0 123 315 021	BX108166
	2.0 16V T	04.98 - 07.99	2.0	B4204T	-	BX108166
	T4	05.97 - 07.99	1.9	B4194T	-	BX108166
V70	2.0	01.97 - 03.00	2.0	B5202FS, B5204S	BX505014	BX108166
	2.5	01.97 - 03.00	2.5	B5252S	BX505014	BX108166
	2.0 T	01.97 - 03.00	2.0	B5204T, 5204T2, 5204T3	BX505014	BX108166

Make / Model	Series	From - To	Litre	Engine Code	Alternator Part No.	Starter Motor Part No.
VOLVO cont.						
V70	2.5 Dual Fuel	08.97 - 08.99	2.5	GB5252S	-	BX108166
	2.5 T AWD	01.97 - 03.00	2.5	B5254T	BX505014	BX108166
	2.5 T Cross Country	08.98 - 03.00	2.5	B5254T	BX505014	BX108166
	R	01.97 - 08.98	2.3	B5234T4	BX505014	BX108166
	R AWD	08.97 - 08.98	2.3	B5234T6	BX505014	BX108166
	T-5	01.97 - 03.00	2.3	B5234T3	BX505014	BX108166
	XC AWD	09.97 - 08.99	2.5	B5254T	BX505014	BX108166