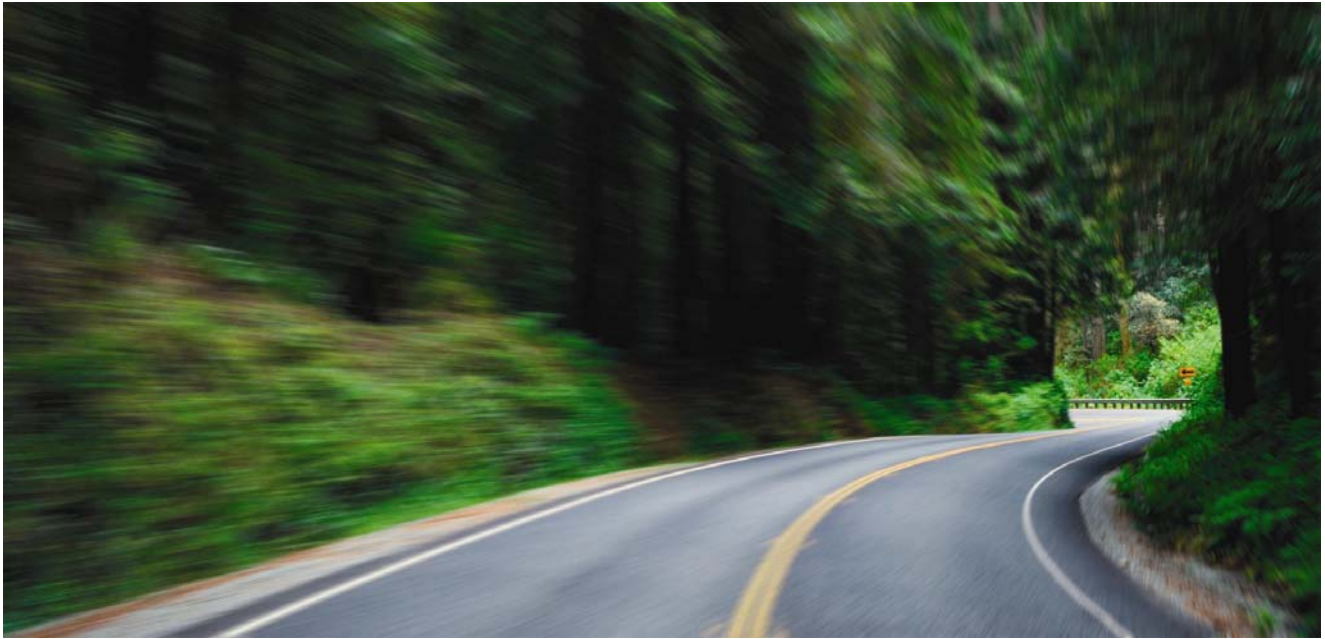


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Digital Adrenaline For Your...
Mazda 323 Astina SP20 2.0



Powerchip technology enhances your Mazda to its ultimate level, delivering faster, smoother acceleration in all driving conditions. Whether you enjoy a leisurely weekend cruise or a hard racetrack drive – there is no easier and more effective way to release the potential from your 323 Astina SP20 2.0 .

The following information is an overview of the performance the Powerchip will deliver. If you have any questions, your Power Consultant will assist you as best as possible. We look forward to giving you the best performance possible from your Mazda.



Make	Mazda
Model	323 Astina SP20 2.0
Engine	
Year	Jun 02 to Dec 03
Powerchip Code	MAZ0058

Power

In standard form the Mazda 323 Astina SP20 2.0 produces 98 kw at the flywheel, and Powerchip improves the engine power to 111 kw.

Power (kw)			
Standard	Bronze/ Silver	Gold	Gold 98
98	N/A	108	111

The extra performance achieved by the Powerchip allows your vehicle to respond much better than stock 323 Astina SP20 2.0 s. You will notice an effortless push back into the driver’s seat, to give you a much more enjoyable and at times safer driving experience. The Powerchip will tap into your Mazda’s ‘hidden reserves’, to give you an immediately noticeable improvement from your vehicle – we guarantee it!

Torque

Torque is a measurement of your engine's pulling power, and it is torque that pulls you up hills, allowing your engine a more linear and aggressive acceleration curve. With the Powerchip, you notice the increase in torque right throughout the rev range, which gives you far greater flexibility at low engine revolutions. Towing will become less demanding, and you will no longer feel the need to take the engine to the redline in each gear to get the performance you demand... It's always there for you, when you really need it most!

Torque (Nm)			
Standard	Bronze/ Silver	Gold	Gold 98
174	N/A	189	194



Acceleration

Increased Power and Torque results in faster acceleration. And it is not just standing start acceleration that is improved, your in-gear acceleration is as well.

If overtaking is important to you, you will feel safe knowing that you spend less time on the "wrong side of the road", improving the safety of your car, for you and your family or passengers.

Perhaps you feel that you need that extra bit of power when you are lined up at the "traffic light grand prix" against another car with similar (or more) power? If you want to have the unfair advantage that will give you more 'GO' away from the lights, you need a Powerchip performance software upgrade for your 323 Astina SP20 2.0 .

Fitting Details

Your car uses a soldered chip. Fitting takes about 1 hour and can be performed by a Powerchip Authorised Fitter in your local area. The Powerchip includes the modification and de-soldering of the computer board so that the chip will have a plug-in socket installed. This means that changing chips for the future is simple and can be done at any time.

On Road Development

Where Powerchip really shines out over its competitors is the emphasis and time spent refining the program for drivability and enjoyment. Much more a 'real world' gain than full throttle horse power runs on a dyno, part throttle refinement is a gain everyone uses every time they drive the vehicle. Flat spots and poor off the line performance are smoothed out in this process, and transient throttle conditions are made razor sharp for the ultimate in response. Real time changes to tables like throttle response and power enrichment are done on road to fine tune the driving experience of the vehicle, with acceleration timing equipment used to ensure consistent and measurable gains in part throttle drivability.



Drivability

Powerchip technicians do not spend their whole research and development focus tuning the full throttle performance of each vehicle. A significant emphasis is placed on the part throttle performance. We understand that driving in everyday conditions is more than just flat out acceleration, with your foot flat to the floor.

With Powerchip performance software, your car will perform to its potential, even when you are not demanding the peak performance. You no longer need to mash the throttle to take off briskly, and in-gear overtaking can be performed without needing to change down gears.

One of the main benefits of choosing to enhance your vehicle with the Powerchip is the improvement you will feel in all driving situations, no matter what your driving style is...



Manufacturers Tolerances

Mazda unfortunately leaves large tolerances in the performance characteristics of its entire fleet to allow for drivers that are negligent on maintenance, and who are non-enthusiasts. The 323 Astina SP20 2.0 is 'de-tuned' to be able to run on the poorest grade of fuel that the car is likely to encounter anywhere in the world, and also to allow for the small percentage of owners who put their cars reliability to the test due to their lack of mechanical understanding. In most cases, our clients are enthusiasts who place more emphasis on the performance characteristics of their vehicle, and therefore the Powerchip does not need to be programmed as conservatively as the stock software.

Detectability

The dealer tool is able to detect upgraded software, if they were to 'go looking' for it, however it does not interrupt the operation of the scan tool

Modified Spark Advance

In the old days the ignition distributor controlled the engine spark timing. Changes to the position in the distributor will result in changed ignition settings, and is a good method of 'tune-up' for older vehicles. Modern engine ignition is controlled by a series of tables or maps. These maps give the engine any instructions required to operate, under ALL load and rev per minute access points.

Similar to the old systems, advancing the point of ignition within a cylinder results in increased power and torque. It is important not to advance the timing beyond the capabilities of the fuel used, or else detonation can occur. Peak kilowatts are achieved when ignition timing is set as close to the point of detonation as possible, without exceeding it. This is the primary purpose for asking the octane rating each client uses most frequently, so that the software is set to the correct level of ignition advance for the fuel used.



The end result of ignition advance changes is increased power and torque, resulting in better acceleration and various other driving benefits.

Octane ratings

The Powerchip is designed to get the best from your engine, and to do this it is recommended that you use a high performance fuel. When ordering your Powerchip upgrade, your Power Consultant will ask you for the octane rating you would like your program to run. The advantage of using better fuels can be explained in further detail by your consultant.

Powerchip Gold is designed to run on fuel with an octane rating of 95 (Premium Unleaded, Caltex Vortex, Ampol Gold). Powerchip Gold 98 is designed to run on fuel with an octane rating of 98 or higher (Shell Optimax, BP Ultimate, Mobil Synergy 8000). We highly recommend that you use the highest-octane fuel available to you.



Our Satisfaction Guarantee

Every Powerchip sold in Singapore comes with an unconditional 14-day money back guarantee*. This ensures that the Powerchip will live up to your expectations, not ours! If for any reason you are unsatisfied with the Powerchip, you may return the Powerchip to your place of purchase for a full refund of the purchase price (not including shipping and handling, installation and removal etc.).

Our satisfaction guarantee* offers you total peace of mind, and makes the purchase of the Powerchip risk free. By purchasing a Powerchip you have nothing to lose – and everything to gain!

Warranty

All Powerchip upgrades come with a three-year, unlimited kilometer warranty, which means that if anything occurs to the Powerchip in that time, we will replace it without charge to you. An optional extended Powerchip warranty is also available at an additional \$190 at the time of ordering. This extends the warranty period on any Powerchip to six years.

If your car is covered by a new or dealer warranty, the dealer may not 'void' a warranty simply because you have fitted an aftermarket product. The fitment of the Powerchip will not have a detrimental effect on your vehicle performance or engine longevity, and therefore does not interfere with the manufacturers warranty in any way.



The terms and conditions of the Powerchip warranties can be viewed in detail on our web site at

<http://www.powerchipgroup.com/products/warranty.asp>

Value for a Lifetime

The investment you make in the Powerchip will last for as long as you keep your car, and for most of our customers, that is normally for 3 or 4 years. So when you consider the benefits of the chip over a number of years, it is not a lot to pay for extra performance you will probably use nearly every day. As a percentage of the total cost of your car, the Powerchip works out to be very cost effective. Also, with the Powerchip, you can expect your car to command a higher price when it comes time to sell!

Cost Effectiveness

As we all know, modifying late model vehicles is not a cheap exercise, however, when you look at it on a kw per dollar basis, the Powerchip comes in ahead of any other modification you could make to your Mazda. Have a look at just how well the Powerchip stacks up:



Price	\$1490
kw Gain	13 kw
Price/kw	\$114.62

The Powerchip is designed to offer excellent value for money compared with other modifications you might be planning in the future.

Cost AUD(\$)				
	Bronze	Silver	Gold	Gold98
Price (Inc GST, freight additional)	N/A	N/A	\$1490	\$1490

Ask the Experts

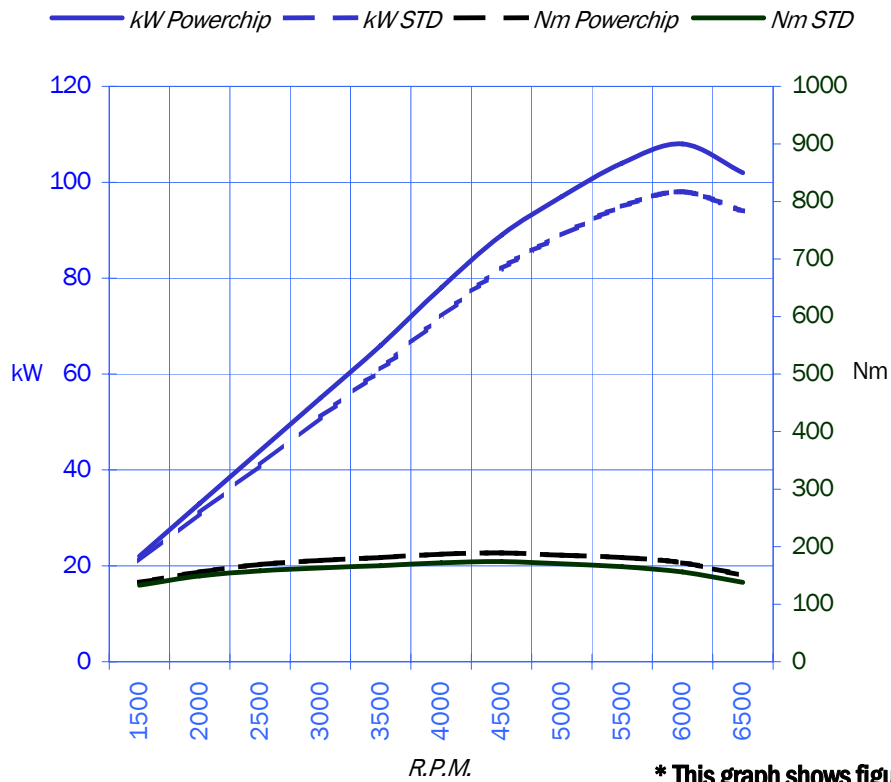
Your Powerchip Power Consultant is trained to provide you with the best information about getting more performance for your car. We have a specific Power Consultant who is responsible for the Mazda range, and he is an expert at answering all of your technical questions, especially about the 323 Astina SP20 2.0 . If you would like to speak with your Power Consultant about any aspect of the upgrade, please telephone our Singapore headquarters on (65) 9339 3939 or email your Mazda Power Consultant directly at adrianloh@Powerchipgroup.com.

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Gold Performance Data for your...

Mazda 323 Astina SP20 2.0 *

R.P.M.	KW STD	KW Powerchip	KW Gain	Nm STD	Nm Powerchip	Nm Gain
1500	21	22	1	133	138	5
2000	31	33	2	149	156	7
2500	41	44	3	158	169	11
3000	51	55	4	163	176	13
3500	61	66	5	167	181	14
4000	72	78	6	172	187	15
4500	82	89	7	174	189	15
5000	89	97	8	170	185	15
5500	95	104	9	165	181	16
6000	98	108	10	156	172	16
6500	94	102	8	138	150	12



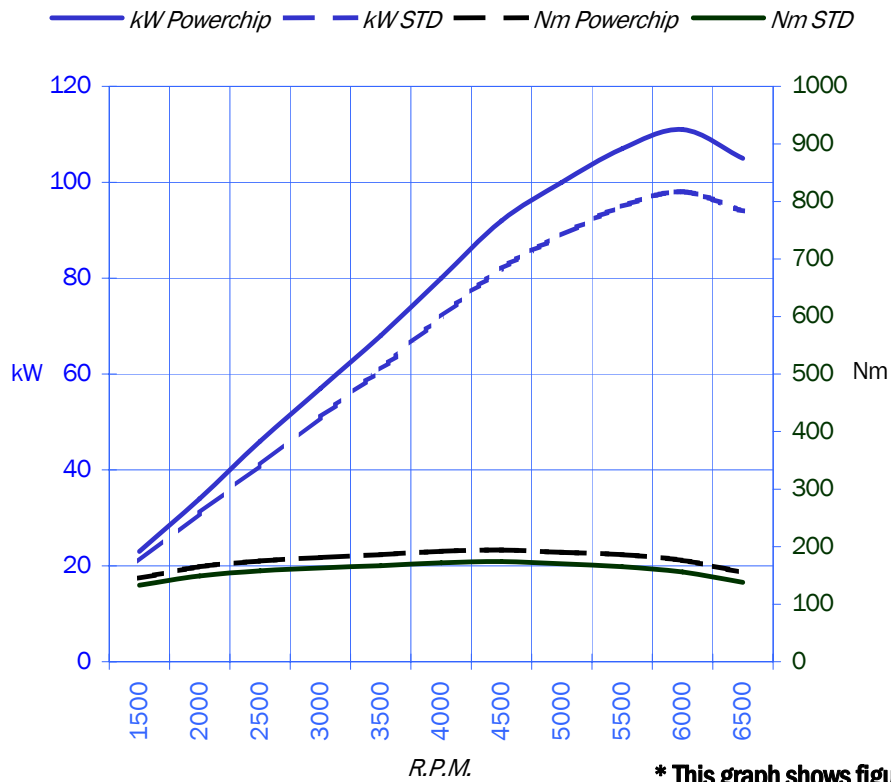
* This graph shows figures
Powerchip Gold

MODEL	ENGINE	VERSION	CAPACITY	Max kW	Max Nm	0-100 Auto	0-100 Man
323 Astina SP20 2.0		Standard	1991cc	98	174	N/A	N/A
323 Astina SP20 2.0		Gold	1991cc	108	189	N/A	N/A

Gold 98 Performance Data for your...

Mazda 323 Astina SP20 2.0 *

R.P.M.	KW STD	KW Powerchip	KW Gain	Nm STD	Nm Powerchip	Nm Gain
1500	21	23	2	133	145	12
2000	31	34	3	149	165	16
2500	41	46	5	158	175	17
3000	51	57	6	163	181	18
3500	61	68	7	167	186	19
4000	72	80	8	172	192	20
4500	82	92	10	174	194	20
5000	89	100	11	170	190	20
5500	95	107	12	165	186	21
6000	98	111	13	156	176	20
6500	94	105	11	138	155	17



* This graph shows figures Powerchip Gold 98

MODEL	ENGINE	VERSION	CAPACITY	Max kW	Max Nm	0-100 Auto	0-100 Man
323 Astina SP20 2.0		Standard	1991cc	98	174	N/A	N/A
323 Astina SP20 2.0		Gold 98	1991cc	111	194	N/A	N/A

