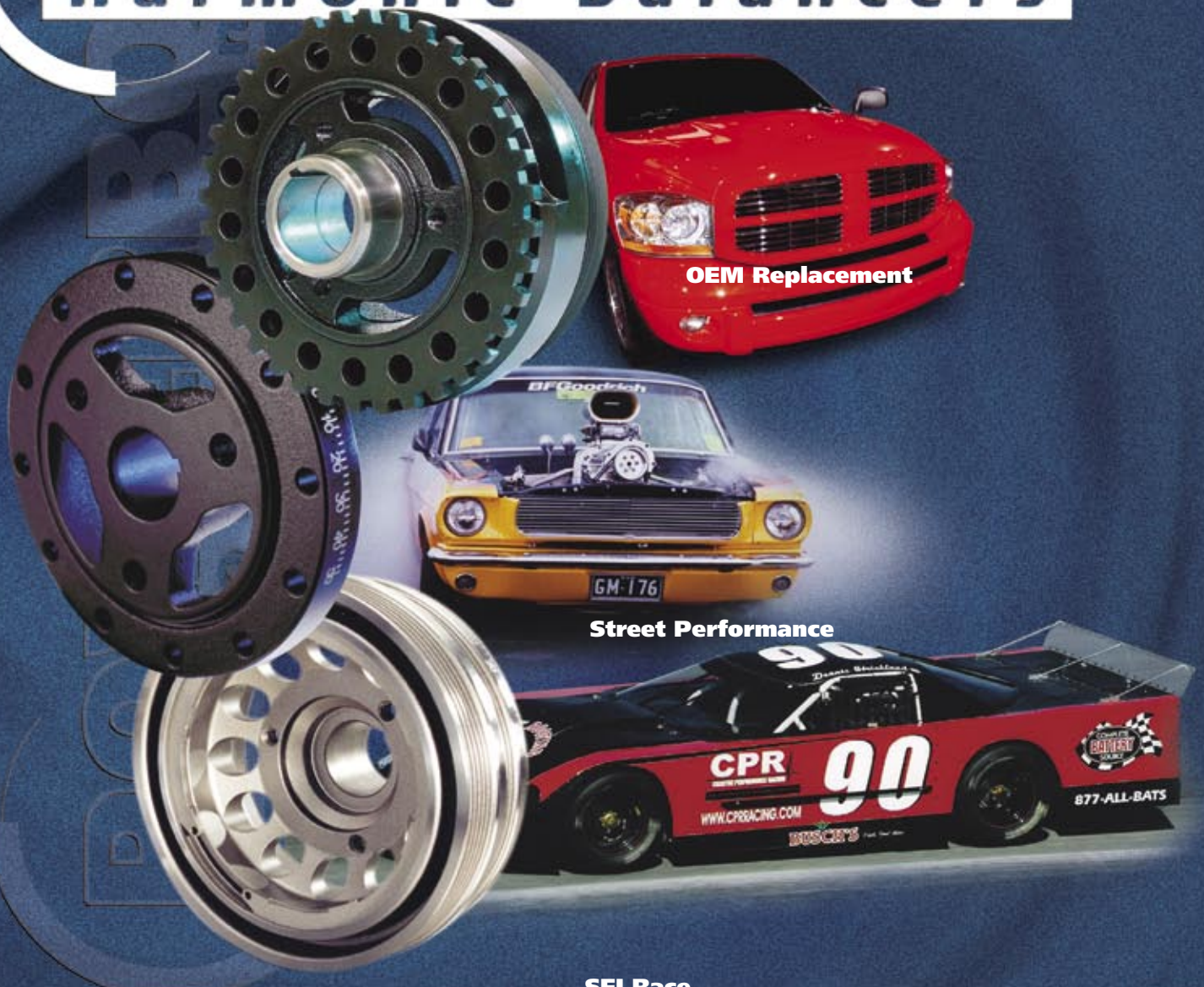
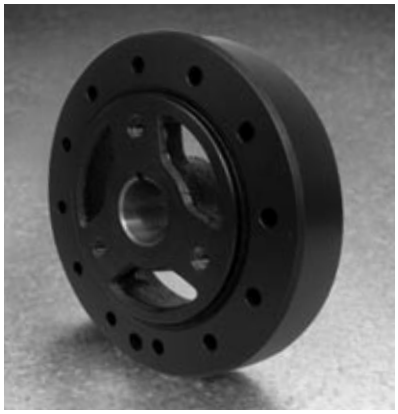
POWERBOND
Harmonic Balancers



2008 APPLICATION GUIDE

POWERBOND RANGE

OEM REPLACEMENT



Powerbond OEM replacement balancers feature the strength and durability of bonded dampening rubber at a price point attractive to all automotive repairers and stock engine builders.

The Powerbond OEM Replacement range listed in this catalogue cover over 450 engine types to suit all popular U.S., Japanese, Korean and selected European passenger cars, SUV and light commercial vehicles.

Unlike cheap Asian sourced OEM replacement balancers that use weak grey iron castings that are prone to cracking, all Powerbond OEM balancers feature strong SG Iron cast hubs for maximum strength.

Virtually all OEM replacement balancers use press inserted dampening rubber which is prone to spinning and dislocation in hi torque and serpentine belt applications. The bonded dampening rubber in Powerbond OEM sets the range apart. In push apart and torque tests the Powerbond OEM design has up to 4 times the strength of inserted balancers on the US market.

To ensure smooth operation all Powerbond OEM replacement balancers are dynamically balanced at the factory.

With a unique combination of high strength castings, bonded dampening rubber and dynamic balance, the Powerbond OEM range is not only the ultimate standard replacement balancer but also perfect for budget "Claimer Motor" circle track racing.

STREET PERFORMANCE

The POWERBOND Street Series brings bonded balancer technology within the budget of every performance street engine builder from mild to wild. They also make a great heavy duty standard replacement balancer.

POWERBOND Street Balancers are also perfect for limited spec race classes such as late model stock that require an OEM style balancer.

The bonded dampening rubber in every POWERBOND Street Series balancer eliminates spinning and component separation giving reliable performance in engines used to 6500rpm.

POWERBOND Street Series combine new high strength SG (Nodular) Iron balancer centres with new inertia rings, bonded then balanced to extremely tight tolerances.

All POWERBOND Street balancers feature easy to read permanently etched timing marks on the outer ring.

SFI RACE

The POWERBOND Race Series brings the advantages of bonded balancers to high revving race and street/race applications where an SFI approved balancer is required.

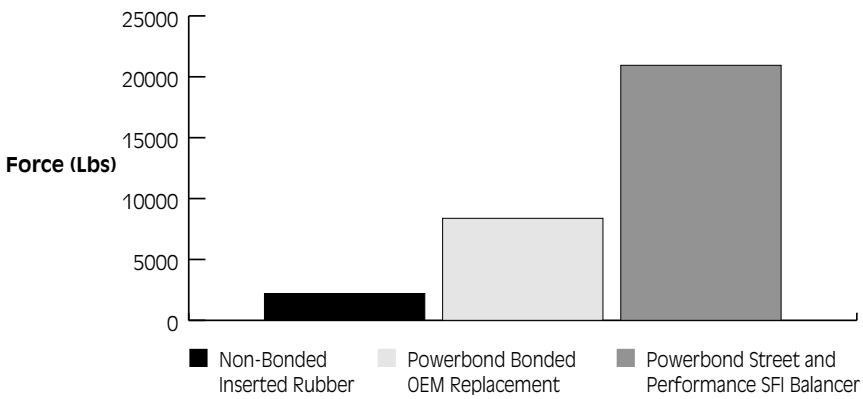
Every Race Series POWERBOND balancer features a precision CNC machined AUSI 1045 forged steel hub bonded to an equally strong steel inertia ring. Advanced design means that Race Series balancers are very light for an all steel product. In most cases they are only marginally heavier than the original cast iron balancer and generally much lighter than other all steel balancers on the market.

The steel inertia ring of the Race Series models is positively protected against forward and backward movement and has the assurance of bonded rubber to eliminate spinning.

Every model has easy to read computer etched timing marks.

All POWERBOND Race series balancers meet SFI specification 18.1.

Push apart force comparison



HARMONIC BALANCER CONSTRUCTION

METALLURGY

STREET PERFORMANCE

OEM Style balancers are usually manufactured from cast iron. Not all cast iron is created equal and to save cost some aftermarket balancers use regular "grey" cast iron which has limited strength and is prone to cracking.

All POWERBOND STREET series balancers are manufactured exclusively from high strength S.G. iron (also known as nodular iron) which is the same material used in most crankshafts. This high-grade iron has much greater resistance to cracking than the cheaper grey iron.

SFI RACE - NEW POWER FORGED HUBS

POWERBOND RACE balancers now feature forged steel hubs and rings for greater strength without extra weight. Steel is stronger and more wear resistant than aluminium alloy used in some products. Wear resistance is critical in the oil seal and crank nose areas.

Whilst alloy is a lighter base material careful design of the balancer can minimize the weight variance when using the stronger steel base material.

DAMPENING MATERIAL

All POWERBOND balancers use a rubber formula that has been developed over 23 years in the balancer business. The formula is exceptionally resistant to ageing and gives excellent control of elasticity in the pressure bonding process employed.

ASSEMBLY

RUBBER INSERTION – In most balancers, pre extruded strip or o-rings are used as the dampening material, which is assembled using various methods that resist inertia ring dislocation with varying degrees of success. Common assembly methods include:

- Straight press insertion with or without metal knurling to assist rubber to metal grip
- "Cold bonding" IE glueing the rubber in.
- "Post press vulcanisation" is sometimes used to accelerate curing of the adhesive. Similar to cooking the rubber and adhesive in an oven, this process can drastically alter the rubbers' working life.

These methods generally have limited bond strength and resistance to spinning under high torque forces. The action of the inertia ring can also degrade the rubber metal contact particularly when the metal surfaces are knurled.

PRESSURE BONDING – The most time consuming and secure method of balancer assembly used by prestige and performance carmakers such as Mercedes Benz, BMW and Porsche. Balancer components are chemically primed and assembled in highly accurate pre-heated steel press dies. Specifically formulated rubber is injected into purpose built 100 ton bonding presses and cured in the mould until optimum strength is achieved. This method gives unrivalled rubber to metal bonding strength, resistance to ring dislocation and control of rubber duro or elasticity. All POWERBOND balancers are assembled using state of the art pressure bonding methods.

BALANCE

Assembly of balancers can result in severe run out conditions and eccentricity of rings and centres. One crude method of correcting this problem is to machine the balancer all over after assembly but this only disguises any misalignment in the rubber and ring.

POWERBOND balancers are assembled with extremely accurate tooling, making post press machining unnecessary and every balancer is dynamically balanced at the factory for total peace of mind.

All counterweighted POWERBOND RACE balancers have milled counterweights as close to factory balance specifications as possible. Integral counterweights are more secure than bolt in alternatives used by some manufacturers.

NEW EXTREME SERIES DESIGNS

With race engine builders using higher compression ratios and higher RPMs to maximize power, the effectiveness of lightweight harmonic balancers can be severely compromised.

POWERBOND engineers have developed the new EXTREME SERIES balancers for popular race applications. The new designs have substantially increased inertia mass without increasing overall weight.

A new rubber compound with extremely high temperature resistance is used in the bonding process to provide long term optimum dampening performance in the most severe race applications.

PB EXTREME

POWERBOND SPORT COMPACT RACE BALANCERS

The POWERBOND range of underdrive serpentine SFI Race Balancers has now been expanded to include a range of popular Sport Compact engines. All POWERBOND Sport Compact Race Balancers listed below are precision CNC machined from billet steel and comply with SFI standard 18.1 for use in all forms of competition.

Every model features the dampening performance and durability of the POWERBOND rubber bonding process engine builders worldwide have come to rely on. Every unit has CNC etched timing marks and is dynamically balanced to extremely tight tolerances

To assist in maximising engine performance by reducing parasitic losses through the serpentine accessory drives, every POWERBOND Sport Compact Balancer is underdriven by either 20% or 25% as marked.

APPLICATION				RACE PART NUMBER	
OUTSIDE DIAMETER (INCHES)	OVERALL DEPTH	RING WIDTH	BALANCE	WEIGHT (lbs)	
FORD					
Focus 25% Underdrive				**PBU1155-SS25**	
4.06	1.42	.98	NEUTRAL	2.43	
					
HONDA					
B16, B18, B18A 20% Underdrive					**PBU1170-SS20**
5.00	2.48	2.20	NEUTRAL	5.92	
					
MITSUBISHI					
Lancer EVO 4G63 25% Underdrive				**PBU1262-SS20**	
5.65	1.77	1.61	NEUTRAL	4.68	
					
NISSAN					
200 SX 94-on SR20 DET 25% Underdrive				**PBU1104-SS25**	
5.16	2.56	2.28	NEUTRAL	6.68	
					
Skyline GTR Skyline GTR 2.6L RB25 25% Underdrive				**PBU1171-SS25**	
6.57	3.13	2.81	NEUTRAL	9.08	
					
2.6L 91, 93 RB26 25% Underdrive				**PBU1158-SS25**	
6.57	3.13	2.81	NEUTRAL	9.08	
					
SUBARU					
WRX EJ20T 25% Underdrive				**PBU1164-SS25**	
4.02	1.93	1.48	NEUTRAL	3.37	
					

APPLICATION				STREET PART NUMBER WEIGHT (lbs)	RACE PART NUMBER WEIGHT (lbs)
OUTSIDE DIAMETER (INCHES)	OVERALL DEPTH	RING WIDTH	BALANCE		

CHEVROLET

283, 307 CUBIC INCH 6 1/4" Street stock speedway light weight				**PB1012-ST**	**PB1012-SS**
6.1	2.32	1.34	NEUTRAL	4.55	5.8
283, 307 CUBIC INCH 6 1/4" light weight to suit big block crank snout					**PB1160-SS**
6.1	2.36	1.34	NEUTRAL		8.5
283 - 350 Small Block V8 7"				**PB2221-ST**	**PB2221-SS**
6.75	2.36	1.32	NEUTRAL	7.1	8.1
NEW **283 - 350 Small Block V8 7" Extreme Series**				PB EXTREME	**PB2221-SX**
6.75	2.36	1.32	NEUTRAL		8.1
283 - 350 Small Block V8 7" to suit big block crank snout					**PB1161-SS**
6.75	2.36	1.32	NEUTRAL		8.1
NEW **283 - 350 Small Block V8 7" Extreme Series to suit big block crank snout**				PB EXTREME	**PB1161-SX**
6.75	2.36	1.32	NEUTRAL		8.1
283 - 350 Small Block V8 8"				**PB1046-ST**	**PB1046-SS**
8.0	2.33	1.6	NEUTRAL	10.4	11.2
400 Small Block V8 8"				**PB1050-ST**	**PB1050-SS**
8.0	2.33	1.6	C/W RING	7.9	10.7
400 Small Block V8 7" light weight					**PB1118-SS**
7.0	2.33	1.6	C/W RING		7.8
427 Big Block V8 8"				**PB1211-ST**	**PB1211-SS**
8.0	2.68	1.95	NEUTRAL	13.2	15.4
454 Big Block V8 8"				**PB1018-ST**	**PB1018-SS**
8.0	2.68	1.95	C/W HUB	15.1	16.8
454 Big Block light weight Neutral Balance 7" Diameter				**PB1019-ST**	**PB1019-SS**
7.1	2.68	1.42	NEUTRAL	8.9	9.7
NEW **454 Big Block light weight Neutral Balance 7" Diameter Extreme Series**				PB EXTREME	**PB1019-SX**
7.1	2.68	1.42	NEUTRAL		9.7
350 (5.7L) Small Block LT1 1993 - 1997 (Crank flange mount) Serpentine Belt				**PB1481-ST**	**PB1481-SS**
7.5	N/A	1.28	NEUTRAL	8.89	9.25
350 (5.7L) LT1 Small Block 10% Under Drive 6.750" OD Serpentine Belt					**PBU1481-SS10**
6.75	N/A	1.28	NEUTRAL		8.37
350 (5.7L) LT1 Small Block 8 Rib Serpentine Belt Suit Supercharger Conversions					**PB81481-SS**
7.5	N/A	1.34	NEUTRAL		6.4
350 LT1 Steel Crank Flange (short style) suit F Body 96-97 & Corvette 1996					**FHXS1481-SS**
Replaces OEM No. 12550097 Length 3.417 use with PB1481-SS, PBU1481-SS and PB81481-SS					
350 LT1 Steel Crank Flange (short style) suit F Body 93-95 & Corvette 92-95					**FHS1481-SS**
Replaces OEM No. 12553250 Length 3.516 use with PB1481-SS, PBU1481-SS and PB81481-SS					
350 LT1 Steel Crank Flange (long style) suit Caprice & Impala 93-95					**FHL1481-SS**
Replaces OEM No. 10168570 Length 4.09 use with PB1481-SS, PBU1481-SS and PB81481-SS					

APPLICATION				STREET PART NUMBER WEIGHT (lbs)	RACE PART NUMBER WEIGHT (lbs)
OUTSIDE DIAMETER (INCHES)	OVERALL DEPTH	RING WIDTH	BALANCE		

CHEVROLET cont.

LS1 Generation III All Alloy 5.7L V8 (Camaro & Firebird) Serpentine Belt				**PB1480-ST**	**PB1480-SS**
7.5	3.66	2.22	NEUTRAL	10.5	11.2
LS1 5.7L V8 Serpentine Belt 10% Under Drive 6.81" OD					**PBU1480-SS10**
6.81	3.66	2.20	NEUTRAL		10.9
LS1 5.7L V8 Serpentine Belt 25% Under Drive 6.220" OD					**PBU1480-SS25**
6.22	3.86	2.48	NEUTRAL		10.7
LS1 5.7L V8 8 Rib Serpentine Belt Suit Supercharger Conversions					**PB81480-SS**
7.5	3.88	2.46	NEUTRAL		11.4
NEW **LS1 5.7L V8 10 Rib Serpentine Belt Suit Supercharger Conversions**					**PB101480-SS**
7.5	3.88	2.46	NEUTRAL		11.4
LS6 5.7L, LS2 6.0L V8 Serpentine Belt Corvette, SSR					**PB1117-SS**
7.5	2.83	2.42	NEUTRAL		8.55
LS6 5.7L, LS2 6.0L V8 Serpentine Belt Corvette, SSR 10% Underdrive					**PBU1117-SS10**
6.75	2.83	2.42	NEUTRAL		7.61
LS6 5.7L, LS2 6.0L V8 Serpentine Belt Corvette, SSR 25% Underdrive					**PBU1117-SS25**
6.22	2.83	2.42	NEUTRAL		7.4
NEW **LS6 5.7L, LS2 6.0L V8 Serpentine Belt Corvette, SSR 8 Rib Suit Supercharger conversions**					**PB81117-SS**
7.5	2.83	2.42	NEUTRAL		8.55

CHRYSLER

245 - 265 Hemi 6 Cylinder				**PB1003-ST**	**PB1003-SS**
6.85	1.7	1.41	NEUTRAL	8.4	8.79
Chrysler 318 340 Small Block				**PB1004-ST**	**PB1004-SS**
7.11	2.56	1.2	NEUTRAL	7.7	9.4
360 V8 CW				**PB1108-ST**	**PB1108-SS**
7.26	2.56	1.2	C/W RING	7.7	9.4
392 Big Block Hemi				**PB1115-ST**	**PB1115-SS**
7.08	2.49	1.1	NEUTRAL	7.7	9.1
440 Big Block V8				**PB1112-ST**	**PB1112-SS**
7.24	2.56	1.2	NEUTRAL	7.7	9.4

FORD 6 CYLINDER (AUSTRALIA)

200 - 250 CI 6 Cylinder				**PB1007-ST**	
6.87	2.56	1.28	NEUTRAL	5.8	
250 CI 6 Cylinder EFI 4 Bolt				**PB1021-ST**	
6.87	2.55	1.28	NEUTRAL	6.3	
3.9L OHC 6 Cylinder EA to 8/89				**PB1057-ST**	
6.36	3.54	2.36	NEUTRAL	9.6	
3.9 / 4L OHC 6 Cylinder EA - ED 9/89 - On				**PB1073-ST**	
6.36	3.54	2.36	NEUTRAL	9.7	
NEW **4L OHC 6 Cylinder EF**				**PB1283-ST**	
6.85	2.91	1.48	NEUTRAL	9.7	
4L OHC 6 Cylinder AU With Factory Crank Trigger			**PB1462-ST**		
6.85	2.91	1.48	NEUTRAL	9.7	
NEW **4L OHC 6 Cylinder BA DOHC inc XR6 Turbo 20% underdrive**					**PBU1157-SS20**
6.85	2.91	1.48	NEUTRAL		9.7

APPLICATION				STREET PART NUMBER WEIGHT (lbs)	RACE PART NUMBER WEIGHT (lbs)
OUTSIDE DIAMETER (INCHES)	OVERALL DEPTH	RING WIDTH	BALANCE		

FORD V8

302, 351 Cleveland V8				**PB1082-ST**	**PB1082-SS**
6.5	3.5	1.39	C/W HUB	9.3	10.9
289, 302 Windsor 3 Bolt (Countersunk pulley location)				**PB1008-ST**	
6.33	3.0	0.77	C/W HUB	6.6	
289, 302 Windsor 3 Bolt (Raised pulley location)				**PB1202-ST**	
6.33	3.45	0.77	C/W HUB	6.7	
302, 351 Windsor V8 3 Bolt (Raised pulley location) 28 oz. in.				**PB1203-ST**	**PB1203-SS**
6.5	3.18	1.39	C/W HUB	9.2	10.9
302, 351 Windsor V8 3 Bolt (Countersunk pulley location) 28 oz. in.				**PB1009-ST**	**PB1009-SS**
6.5	3.18	1.39	C/W HUB	9.1	10.9
302, 351 Windsor 4 Bolt (Raised Pulley Location) 28 oz. in.				**PB1060-ST**	**PB1060-SS**
6.5	4.09	1.25	C/W HUB	10.1	11.4
302 Windsor EFI V8 4 Bolt 50 oz. in.				**PB1084-ST**	**PB1084-SS**
6.4	4.13	1.57	C/W RING	9.1	10.9
302 Windsor 4 Bolt Hub Counter Weight Ring				**PB1070-ST**	
6.4	4.13	1.57	C/W RING	9.1	
5.8L EFI Windsor V8 4 Bolt				**PB1214-ST**	
6.4	4.08	1.20	C/W RING	9.2	
5L EFI Windsor With Factory Crank Trigger (AU Falcon)				**PB1463-ST**	
6.38	4.05	1.48	C/W RING	9.6	
Windsor Small Block 6" Stock Speedway Lightweight 3 Bolt				**PB1479-ST**	**PB1479-SS**
5.9	3.1	1.26	NEUTRAL	6.6	5.9
302, 351 Windsor Neutral Balance Light Weight 4 Bolt					**PB1086-SS**
6.37	4.13	1.57	NEUTRAL		8.0
NEW **302, 351 Windsor Neutral Balance Light Weight 4 Bolt Extreme Series**				PB EXTREME	**PB1086-SX**
6.37	4.13	1.57	NEUTRAL		8.0
390 Big Block FE V8 Internal Balance				**PB1111-ST**	**PB1111-SS**
7.0	1.574	1.102	NEUTRAL	7.7	8.9
460 Big Block V8 Internal Balance				**PB1210-ST**	**PB1210-SS**
6.62	1.62	1.37	NEUTRAL	8.32	9.60
PB1210-SS Can be used on externally balanced 460 with factory winged counterweight					
4.6L V8 (Mustang, Crown Victoria)				**PB1478-ST**	**PB1478-SS**
6.75	1.75	1.25	NEUTRAL	6.8	7.8
4.6L V8 (Mustang, Crown Victoria) 8 Rib Belt Suit Supercharger Conversions					**PB81478-SS**
6.75	1.75	1.25	NEUTRAL		7.8
5.4L V8 Modular (Mustang, Falcon BA) Serpentine Belt				**PB1116-ST**	**PBU1116-SS10**
7.05*	2.32	1.83	NEUTRAL	9.03	9.1
5.4L V8 Modular (Mustang, Falcon BA) 25% underdrive Race Balancer & Water Pump Pulley Kit					**PBK1116-SS25**
7.05	2.32	1.83	NEUTRAL	9.03	9.1

* Race balancer is 6.35 inch diameter for 10% underdrive

APPLICATION				STREET PART NUMBER WEIGHT (lbs)	RACE PART NUMBER WEIGHT (lbs)
OUTSIDE DIAMETER (INCHES)	OVERALL DEPTH	RING WIDTH	BALANCE		
GENERAL MOTORS 3800 V6					
NEW **3.8L V6 Series 1 & 2 suit normally aspirated & 8 rib Supercharger conversion**					**PBO81083-SS5**
7.28	3.45	2.26	C/W HUB		10.38
NEW **3.8L V6 Series 3 suit normally aspirated & 8 rib Supercharger conversion**					**PBO81207-SS5**
7.28	3.45	2.26	C/W HUB		10.38
NEW **3.8L V6 L36 & L67 Supercharged 5% overdrive on S/C pulley 8 rib**					**PBO81461-SS5**
7.28	3.45	2.26	C/W HUB		11.83
NEW **3.8L V6 L36 & L67 Supercharged STD diameter on S/C pulley 8 rib**					**PB81461-SS**
6.94	3.45	2.26	C/W HUB		10.5
NEW **3.8L V6 L36 & L67 Supercharged STD diameter on S/C pulley 8 rib neutral balance**					**PBO81197-SS5**
7.28	3.45	2.26	NEUTRAL		9.75
HOLDEN (GM AUSTRALIA)					
149 - 202 Red 6 Cylinder				**PB17A-ST**	**PB17A-SS**
6.01	1.2	0.75	NEUTRAL	3.6	4.0
2.8 & 3.3L Blue and Black 6 Cylinder				**PB9752-ST**	**PB9752-SS**
6.01	1.2	0.73	NEUTRAL	3.6	4.0
3.0L VL RB30 6 Cylinder inc Turbo 25% Underdrive					**PBU1085-SS25**
5.08	2.62	2.30	NEUTRAL		7.21
253, 308, 4.9L EFI V8				**PB1081-ST**	**PB1081-SS**
6.55	2.93	1.14	NEUTRAL	7.3	8.3
5.7L LS1, 6.0L LS2 V8 Serpentine Belt				**PB1480-ST**	**PB1480-SS**
7.5	3.66	2.22	NEUTRAL	10.5	11.2
5.7L LS1, 6.0L LS2 10% Underdrive					**PBU1480-SS10**
6.75	3.66	2.2	NEUTRAL		10.9
5.7L LS1, 6.0L LS2 25% Underdrive					**PBU1480-SS25**
6.22	3.86	2.48	NEUTRAL		10.7
5.7L LS1, 6.0L LS2 V8 8 Rib Serpentine Belt Suit Supercharger Conversions					**PB81480-SS**
7.5	3.88	2.46	NEUTRAL		11.4
NEW **L98 6.0L V8 Serpentine Belt VE Commodore**					**PB1117-SS**
7.5	2.83	2.42	NEUTRAL		8.55
NEW **L98 6.0L V8 Serpentine Belt 10% Underdrive VE Commodore**					**PBU1117-SS10**
6.75	2.83	2.42	NEUTRAL		7.61
NEW **L98 6.0L V8 Serpentine Belt 25% Underdrive VE Commodore**					**PBU1117-SS25**
6.22	2.83	2.42	NEUTRAL		7.4
NEW **L98 6.0L V8 Serpentine Belt 8 Rib Suit Supercharger conversions VE Commodore**					**PB81117-SS**
7.5	2.83	2.42	NEUTRAL		8.55
PONTIAC					
287 TO 455 CI V8				**PB1056-ST**	**PB1056-SS**
6.79	3.24	1.26	NEUTRAL	6.8	10.4
GTO 5.7L LS1, 6.0L LS2 V8 Serpentine Belt				**PB1480-ST**	**PB1480-SS**
7.5	2.25	1.37	NEUTRAL	10.5	11.2
GTO 5.7L LS1, 6.0L LS2 10% Underdrive					**PBU1480-SS10**
6.75	2.25	1.37	NEUTRAL		9.9
GTO 5.7L LS1, 6.0L LS2 25% Underdrive					**PBU1480-SS25**
6.22	2.13	1.37	NEUTRAL		9.9