



# RACE SERIES

**PERFORMANCE ENGINE BEARINGS**



## **CHEVROLET LS APPLICATION GUIDE 2023**



**MOTORSPORT - IT IS IN OUR DNA.**



**RACE**  
SERIES

PERFORMANCE ENGINE BEARINGS

**IF YOU PLACE  
DEMANDS ON  
YOUR ENGINE...**

***DEMAND  
THE  
BEST.***

ACL has a proud and rich history in Motorsport - it's in our DNA. There is no better proving ground than the racetrack whatever its configuration. In the heat of competition proven technology always comes through.

The ACL RACE Series performance engine bearing range of today has a strong pedigree in motorsport and traces its roots back to the 1960's with the manufacture of engine bearings for use in the world conquering Brabham Formula 1.

Further experience in the Australian Supercars Championship and numerous other race codes has culminated in the current ACL RACE Series technology platform. The unique combination of design, metallurgy, engineering and precision quality control come together to deliver what engine builders expect from performance engine bearings.

Whatever your application we have you covered - if you are looking for the best - demand the best.

***NO RISK  
NO COMPROMISE  
TOTAL PERFORMANCE***



PERFORMANCE ENGINE BEARINGS

# YOUR #1 LS SOLUTION

The Chevrolet LS V8 has, without doubt, become one of the most popular performance engine platforms ever produced. Chevrolet used all their experience in producing the Small Block Chev V8 and applied that to their new generation of LS V8's released in 1997.

The LS is a common performance conversion, thanks to its compact size, relative affordability and availability of performance parts, and can be found in almost any type of vehicle and many different forms of motor racing.

ACL offers a comprehensive range of ACL RACE Series Performance engine bearings for the LS Gen III and IV, and the newer LT Gen V. For your next LS build, whether it's a mild performance street vehicle or a high end racing engine, ACL RACE Series has the range of performance engine bearings to cover your needs.



*Bennett Motorsports, Pontiac GXP, 427 LS, Twin-turbo. Fastest LS powered vehicle in the Southern Hemisphere*

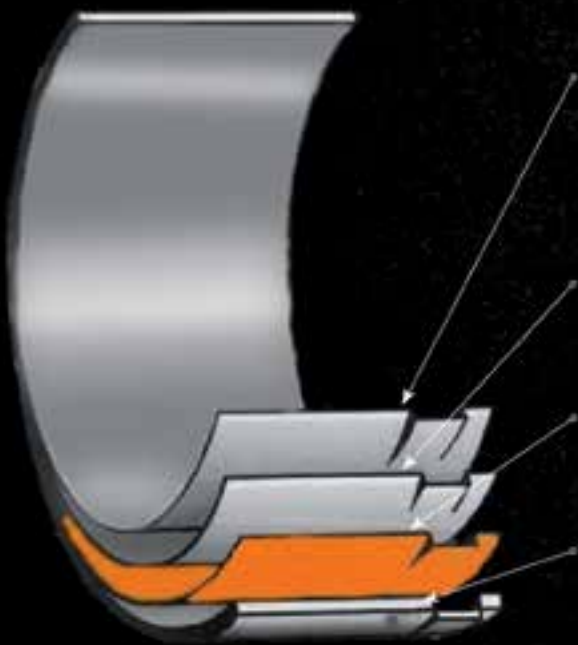
ACL Race Series performance engine bearings are identified from the standard range by the following suffixes:

H	ACL Race Series
HX	ACL Race Series with 0.025mm (.001") extra clearance.
HD	ACL Race Series with location dowel holes.*
HXD	ACL Race Series with 0.025mm (.001") extra clearance and location dowel holes.*
HN	ACL RACE Series, shells are narrowed
HXN	ACL RACE Series with 0.025mm / .001" extra clearance and shells are narrowed
HC	ACL RACE Series, Calico Coated
HXC	ACL RACE Series with 0.025mm / .001" extra clearance, Calico Coated
HDC	ACL RACE Series with location dowel hole *, Calico Coated
HXDC	ACL RACE Series with 0.025mm / .001" extra clearance and location dowel hole *, Calico Coated
HNC	ACL RACE Series, shells are narrowed, Calico Coated
HXNC	ACL RACE Series with 0.025mm / .001" extra clearance and shells are narrowed, Calico Coated
* Connecting rod bearing applications only.	

## BEARING MATERIAL ENHANCEMENTS

A blend of characteristics to provide high strength and excellent seizure resistance.

No flash plating is applied to further improve bearing retention and maximize heat transfer.



<b>LAYER</b>	Alloy
<b>OVERLAY</b>	Lead - Tin - Copper
Thickness (Typical) 0.013* - 0.018mm / 0.0005" - 0.0007"	
*Connecting Rod Bearings Only - Reduced for increased fatigue resistance	
<b>Seizure Resistant - Low friction and deformable</b>	
<b>BARRIER</b>	Nickel
Thickness (Typical) 0.001mm / 0.00004"	
<b>Separation Layer</b>	
<b>LINING</b>	Copper - Lead - Tin
Thickness (Typical) 0.3mm / 0.012"	
<b>Fatigue Strength - Strong yet deformable</b>	
<b>STEEL</b>	SAE1010 (High tensile)
Thickness (Typical) Remainder	
<b>High Strength - Supports bearing lining</b>	



# LS GEN III AND GEN IV RANGE

## CONROD ENGINE BEARINGS SETS



### 8B663H

Our traditional and most popular conrod bearing set. This set has standard width shells with enlarged chamfers to provide clearance for most aftermarket crankshaft fillet radii.



### 8B663HD

As for 8B663H but with a dowel hole in the lower shell to suit Aluminum conrods.

### 8B663HN (no photo available)

This set contains narrowed shells, suitable for aftermarket crankshafts with extra large fillet radii. The shell width has been reduced to a maximum of 20.1mm or 0.791".

# LS GEN III AND GEN IV RANGE

## MAIN ENGINE BEARINGS SETS



### 5M7298H

The most popular main bearing set. 5M7298H has extended grooving – a full 180° groove in the upper half, with a matching partial groove in the lower. This provides improved oil supply to the conrod. The tapered runout of the lower partial groove smooths big end supply cut-off avoiding pressure pulsing and cavitation.



### 5M7299H

This set is the same as 5M7298H in all aspects except for the grooving. The shells in this set feature shortened grooving, with a plain lower half and a shorter upper half groove of approximately 120°. This set is an option for engine builders looking to moderate oil flows and/or balance supply between the rod and main bearings.



### Calico Coated

ACL also offers all of the above parts in our Calico Coated range, these are coated by Calico with their premier CT-1 dry film lubricant. Part numbers that are Calico Coated are designated by a C suffix in addition to the usual suffixes of the base set, ie 8B663HC-STD.

# LS GEN III AND GEN IV RANGE

## PART NUMBERS

Application	Rod Bearing Set	Sizes	Main Bearing Set	Sizes
4.8L LR4, LY2 Vortec	8B663H	Std,001,009,010,011,020	5M7298H	Std,001,010,020
5.3L Vortec	8B663HC	Std,001,009,010,011,020	5M7298HC	Std,001,010,020
5.7L LS1, LS6	8B663HX	Std	5M7298HX	Std
6.0L LFA, LZ1, LS2, Vortec	8B663HXC	Std	5M7298HXC	Std
6.2L L99, LS3, Vortec	8B663HD	Std,001,010	5M7298HXX	Std
	8B663HDC	Std,001,010	5M7299H	Std,001,010,020
	8B663HXD	Std	5M7299HC	Std,001,010,020
	8B663HXDC	Std	5M7299HX	Std
	8B663HN	Std,001,010,020	5M7299HXC	Std
	8B663HNC	Std,001,010,020		
	8B663HXN	Std		
	8B663HXNC	Std		
6.2L LSA, LS9	8B663H	Std,001,009,010,011,020		
7.0L LS7	8B663HC	Std,001,009,010,011,020		
	8B663HX	Std		
	8B663HXC	Std		
	8B663HD	Std,001,010		
	8B663HDC	Std		
	8B663HXD	Std		
	8B663HXDC	Std		
	8B663HN	Std,001,010,020		
	8B663HNC	Std,001,010,020		
	8B663HXN	Std		
	8B663HXNC	Std		

Cam Bearing Sets	Sizes
5C1000S (1st design 1997-2003)	Std
5C1001S (2nd design 2003-09)	Std
5C1002S (.775" wide 2006-13)	Std



PERFORMANCE ENGINE BEARINGS



# LT GEN V RANGE



## 8B7281H

The conrod set for the LT range of engines is at the same width as the OEM conrod bearing set. However the ACL RACE Series set has large chamfers on both sides of each bearing for larger fillet radii clearance.



## 5M7292H

The ACL RACE Series main set for the LT range is supplied with a spare shell, which will enable the engine builder to fit the engine bearings with either a 180° thrust or a full 360° thrust. The leftover shell can be discarded. The OEM set for the LT engine only has a 180° thrust, so the ACL set provides a good option for the performance builder.

## PART NUMBERS

Application	Rod Bearing Set	Sizes	Main Bearing Set	Sizes
6.2 L LT1, LT4, L86	8B7281H 8B7281HX	Std,001,010,020 Std	5M7292H 5M7292HX	Std,001,010,020 Std



PERFORMANCE ENGINE BEARINGS

# TECHNICAL DATA

*NOTE: Specs for the Calico coated sets are not listed, as all specs will be the same except for the extra thickness of the wall. The wall size will be 0.00025" – 0.00030" (6 to 7.5 microns) thicker than the corresponding non coated set.*

## CONROD BEARINGS


Set	Shell	Tunnel Min		Tunnel Max		Min Shaft		Max Shaft		Max Wall		Max Width	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
8B663H	2376H	56.507	2.2247	56.520	2.2252	53.315	2.0990	53.340	2.1000	1.572	0.0619	21.25	0.8370
8B663HD	2376H, 2376HD	56.507	2.2247	56.520	2.2252	53.315	2.0990	53.340	2.1000	1.572	0.0619	21.25	0.8370
8B663HN	2376HN	56.507	2.2247	56.520	2.2252	53.315	2.0990	53.340	2.1000	1.572	0.0619	20.10	0.7913
8B663HX	2376HX	56.507	2.2247	56.520	2.2252	53.315	2.0990	53.340	2.1000	1.559	0.0614	21.25	0.8370
8B663HXD	2376HX, 2376HDX	56.507	2.2247	56.520	2.2252	53.315	2.0990	53.340	2.1000	1.559	0.0614	21.25	0.8370
8B663HXX	2376HXX	56.507	2.2247	56.520	2.2252	53.315	2.0990	53.340	2.1000	1.559	0.0614	20.10	0.7913
8B7281H	7281H	56.490	2.2240	56.515	2.2250	53.320	2.0992	53.335	2.0998	1.572	0.0619	21.25	0.8370
8B7281HX	7281HX	56.490	2.2240	56.515	2.2250	53.320	2.0992	53.335	2.0998	1.559	0.0614	21.25	0.8370


## MAIN BEARINGS


Set	Shell	Tunnel Min		Tunnel Max		Min Shaft		Max Shaft		Max Wall		Max Width	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
5M7298H	7298H	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	20.45	0.8050
5M7298H	7299H(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	26.10	1.0280
5M7298HX	7298HX	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	20.45	0.8050
5M7298HX	7299HX(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	26.10	1.0280
5M7298HXX	7298HXX	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.404	0.0946	20.45	0.8050
5M7298HXX	7299HXX(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.404	0.0946	26.10	1.0280
5M7299H	7291H	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	20.45	0.8050
5M7299H	7299H(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	26.10	1.0280
5M7299H	7292H(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	26.10	1.0280
5M7299HX	7291HX	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	20.45	0.8050
5M7299HX	7292HX(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	26.10	1.0280
5M7299HX	7299HX(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	26.10	1.0280
5M7292H	7291H	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	20.45	0.8050
5M7292H	7292H(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.430	0.0957	26.10	1.0280
5M7292HX	7291HX	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	20.45	0.8050
5M7292HX	7292HX(F)	69.873	2.7509	69.887	2.7515	64.993	2.5588	65.007	2.5593	2.417	0.0952	26.10	1.0280


# BEARING SET FEATURES


## CONROD BEARING SET

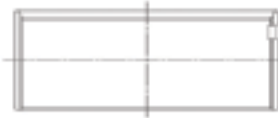
Part No.	Shell Part No.
8B663H	2376H-L
	


Part No.	Shell Part No.
8B663H	2376H-U
	

Part No.	Shell Part No.
8B663HN	2376HN-L
	


Part No.	Shell Part No.
8B663HN	2376HN-U
	


Part No.	Shell Part No.
8B663HD	2376HD-L
	

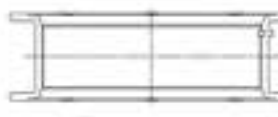
Part No.	Shell Part No.
8B663HD	2376H-U
	

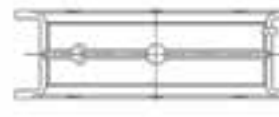
Part No.	Shell Part No.
8B7281H	7281H
	


## MAIN BEARING SET


Part No.	Shell Part No.	Position
5M7292H	7291H-L	1,2,4,5
		

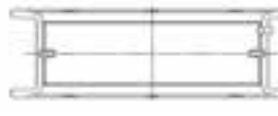
Part No.	Shell Part No.	Position
5M7292H	7291H-U	1,2,4,5
		

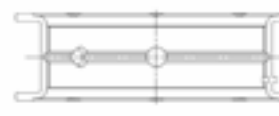
Part No.	Shell Part No.	Position
5M7292H	7292H-L	3
		


Part No.	Shell Part No.	Position
5M7292H	7292H-U	3
		

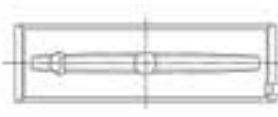
Part No.	Shell Part No.	Position
5M7298H	7298H-L	1,2,4,5
		

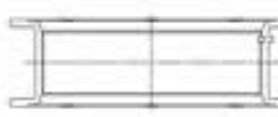
Part No.	Shell Part No.	Position
5M7298H	7298H-U	1,2,4,5
		

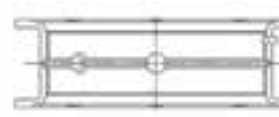
Part No.	Shell Part No.	Position
5M7298H	7299H-L	3
		

Part No.	Shell Part No.	Position
5M7298H	7299H-U	3
		

Part No.	Shell Part No.	Position
5M7299H	7291H-L	1,2,4,5
		

Part No.	Shell Part No.	Position
5M7299H	7291H-U	1,2,4,5
		

Part No.	Shell Part No.	Position
5M7299H	7292H-L	3
		

Part No.	Shell Part No.	Position
5M7299H	7299H-U	3
		



# Australian Engineering Excellence



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