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## 2011 Rotating Assembly Guide



Featuring



**Cranks & Rods**



## How to determine your rotating assembly

Have your machine shop verify the following before ordering your rotating assembly:

- Fitment
- Deck/ block height
- Bore size
- Main bearing size (327, 350, 400)
- Combustion chamber volume
- Minimum head clearance
- Compression ratio
- Desired stroke
- Desired rod length

Search the catalog for your combination.

## If you don't find the exact combination you want:

- Consider a different rod length
- Consider a different rod bearing combination
- Consider decking the block or combustion chambers to tweak compression ratio
- Call Wiseco for a custom piston

If in doubt, please contact our automotive sales team at 440-951-6600

## Wiseco/K1 Technologies Rotating Assemblies contain:

*Pistons, rings (optional on certain applications), pins, locks, connecting rod set, and crankshaft. Bearings are an optional accessory. Please note crankshaft balancing is an additional cost.*

*Do NOT assemble an engine without proper dial bore gauges and other tooling necessary to ensure proper fitment.*

*Due to the large selection of aftermarket cylinder heads, always verify the compatibility of different pistons in our catalog (AB12), or call Wiseco Tech Support to verify. All measurement, fitment and compatibility are the responsibility of the engine builder and machinist. The purchaser is responsible for determining if a lightweight assembly is warranted for a given application, or if a heavier (stronger) rod or piston is more suitable.*

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*Wiseco Piston Company, Inc. is not responsible for typographical errors printed within this literature. Specifications may be changed or updated at any time without notice.*



## Chevy 350 • Small Block

Standard weight crank, rods & pistons

C.I.	Rotating Assembly	Bore	Stroke	Rod	Dome Vol.	58cc	64cc	76cc
<b>3.480" Stroke</b>								
355	R-PT10101	4.030	3.480	5.700	-20	9.2	8.7	7.8
350	R-PT10102	4.000						
355	R-PT10103	4.030			-5.4 FT	10.8	10.1	8.9
357	R-PT10104	4.040						
360	R-PT10105	4.060						
355	R-PT10106	4.030	3.480	6.000	-20	9.2	8.7	7.8
355	R-PT10107	4.030	3.480	6.000	-5.4	10.8	10.1	8.9
357	R-PT10108	4.040						
360	R-PT10109	4.060						
355	R-PT10110	4.030	3.480	6.000	8+	13	12	10.3
357	R-PT10111	4.040						
360	R-PT10112	4.060	3.480	6.000	11+	13.8	12.6	10.7
<b>3.750" Stroke</b>								
383	R-PT10113	4.030	3.750	5.700	-20	9.9	9.3	8.4
388	R-PT10114	4.060						
383	R-PT10115	4.030	3.750	5.700	-5.4	11.6	10.8	9.5
385	R-PT10116	4.040						
388	R-PT10117	4.060						
383	R-PT10118	4.030	3.750	5.700	8+	14	12.8	11
383	R-PT10119	4.030	3.750	6.000	-28	9.1	8.7	7.9
388	R-PT10120	4.040						
383	R-PT10121	4.030	3.750	6.000	-20	9.9	9.3	8.4
388	R-PT10122	4.060						
383	R-PT10123	4.030	3.750	6.000	-13	10.6	10	8.9
385	R-PT10124	4.040						
383	R-PT10125	4.030	3.750	6.000	-5.4	11.6	10.8	9.5
385	R-PT10126	4.040						
388	R-PT10127	4.060						
383	R-PT10128	4.030	3.750	6.000	8+	14	12.8	11
385	R-PT10129	4.040						
388	R-PT10130	4.060						
<b>3.875" Stroke</b>								
395	R-PT10131	4.030	3.875	6.000	-29	9.3	8.8	8
395	R-PT10132	4.030						
397	R-PT10133	4.040	3.875	6.000	-9	11.5	10.7	9.5
<b>4.000" Stroke</b>								
408	R-PT10134	4.030	4.000	6.000	-5.4	12.3	11.4	10.1
410	R-PT10135	4.040						
414	R-PT10136	4.060						

Crank Part Number	Rod Part Number	Piston #	Rings	Optional Rod Bearings	Optional Main Bearings
350-3480BB6F-57	CH5700ALLB8-A	PT002H3	included	CB-663HN	MS-909H
350-3480BB6F-57	CH5700ALLB8-A	PT003HS	included	CB-663HN	MS-909H
		PT003H3			
		PT003H4			
		PT003H6			
350-3480BB6F-60	CH6000ALLB8-A	PT007H3	included	CB-663HN	MS-909H
350-3480BB6F-60	CH6000ALLB8-A	PT008H3	included	CB-663HN	MS-909H
		PT008H4			
		PT008H6			
350-3480BB6F-60	CH6000ALLB8-A	PT006H3	included	CB-663HN	MS-909H
350-3480BB6F-60	CH6000ALLB8-A	PT006H4			
350-3480BB6F-60	CH6000ALLB8-A	PT058H6	included	CB-663HN	MS-909H
350-3750BB6F-57	CH5700ALLB8-A	PT004H3	included	CB-663HN	MS-909H
		PT004H6			
350-3750BB6F-57	CH5700ALLB8-A	PT025H3	included	CB-663HN	MS-909H
		PT025H4			
		PT025H6			
350-3750BB6F-57	CH5700ALLB8-A	PT026H3	included	CB-663HN	MS-909H
350-3750BB6F-57	CH6000ALLB8-A	PT097H3	included	CB-663HN	MS-909H
		PT097H4			
350-3750BB6F-60	CH6000ALLB8-A	PT009H3	included	CB-663HN	MS-909H
		PT009H6			
350-3750BB6F-60	CH6000ALLB8-A	PT095H3	included	CB-663HN	MS-909H
		PT095H4			
350-3750BB6F-60	CH6000ALLB8-A	PT017H3	included	CB-663HN	MS-909H
		PT017H4			
		PT017H6			
350-3750BB6F-60	CH6000ALLB8-A	PT027H3	included	CB-663HN	MS-909H
		PT027H4			
		PT027H6			
350-3875BB6F-60	CH6000ALLB-ST8-A	PT104H3	included	CB-663HN	MS-909H
350-3875BB6F-60	CH6000ALLB-ST8-A	PT106H3	included	CB-663HN	MS-909H
		PT106H4			
350-4000BB6F-60	CH6000ALLB-ST8-A	PT110H3	included	CB-663HN	MS-909H
		PT110H4			
		PT110H6			

Chevy  
Small Block

Chevy  
LS

Chevy  
Big Block

Chrysler

Ford

Honda

Hyundai

Mitsubishi

Nissan

Subaru

Charts &  
Diagrams

**NOTE:** Kits that do NOT include rings have a ring part number listed.



## Chevy 350 Small Block L98/LT1 • 1 Piece Rear Main

**NOTE: O.E. LT engines are int. balance front and ext. balance rear -K1 internal**

C.I.	Rotating Assembly	Bore	Stroke	Rod	Dome Vol.	58cc	64cc		
383	R-PT10137	4.030	3.750	6.000	-20	9.9	9.3		
388	R-PT10138	4.060							
383	R-PT10139	4.030	3.750	6.000	-13	10.6	10		
385	R-PT10140	4.040							
383	R-PT10141	4.030	3.750	6.000	-5.4	11.6	10.8		
385	R-PT10142	4.040							
388	R-PT10143	4.060							

## Chevy 400 Small Block • w/350 mains & 2.100 rod journal

**Standard weight crank, rods & pistons**

C.I.	Rotating Assembly	Bore	Stroke	Rod	Dome Vol.	58cc	64cc	76cc	
<b>3.480" Stroke</b>									
377	R-PT10144	4.155	3.480	6.000	-5.4	11.4	10.6	9.3	
377	R-PT10145	4.155	3.480	6.000	8+	13.6	12.5	10.8	
377	R-KD20101	4.155	3.480	6.000	10+	14	12.8	11	
<b>3.750" Stroke</b>									
407	R-PT10146	4.155	3.750	5.700	-20	10.3	9.7	8.7	
407	R-PT10147	4.155	3.750	5.700	-5.4	12.2	11.3	10	
409	R-PT10148	4.165							
400	R-KD20102	4.125	3.750	5.700	10+	15	13.8	11.8	
407	R-PT10149	4.155	3.750	5.700	8+	14.6	13.4	11.5	
400	R-PT10150	4.125	3.750	6.000	-28	9.6	9.1	8.3	
407	R-PT10151	4.155							
407	R-PT10152	4.155	3.750	6.000	-20	10.3	9.7	8.8	
400	R-PT10153	4.125	3.750	6.000	-13	11.1	10.4	9.3	
407	R-PT10154	4.155							
407	R-PT10155	4.155	3.750	6.000	-5.4	12.2	11.3	10	
409	R-PT10156	4.165							
407	R-PT10157	4.155	3.750	6.000	4+	13.8	12.7	11	
409	R-PT10158	4.165							
400	R-PT10159	4.125	3.750	6.000	8+	14.6	13.4	11.5	
407	R-PT10160	4.155							
409	R-PT10161	4.165							
407	R-KD20103	4.155	3.750	6.000	10+	15	11.8	11.8	
<b>3.875" Stroke</b>									
414	R-PT10162	4.125	3.875	6.000	-9	12	11.2	10	
420	R-PT10163	4.155							
420	R-PT10164	4.155	3.875	6.000	-29	9.8	9.3	8.4	
421	R-KD20104	4.155	3.875	6.000	10+	15.5	14.2	12.1	
<b>4.000" Stroke</b>									
428	R-PT10165	4.125	4.000	6.000	-15	11.5	10.8	9.7	
434	R-PT10166	4.155							
428	R-PT10167	4.125	4.000	6.000	-5.4	12.9	12	10.6	
434	R-PT10168	4.155							
436	R-PT10169	4.165							
434	R-KD20105	4.155	4.000	6.000	10+	16	14.6	12.5	

Crank Part Number	Rod Part Number	Piston #	Rings	Optional Rod Bearings	Optional Main Bearings		
350-3750BB6F-OPS	CH6000ALLB8-A	PT009H3	included	CB-663HN	MS-909H	Chevy Small Block	
		PT009H6					
350-3750BB6F-OPS	CH6000ALLB8-A	PT095H3	included	CB-663HN	MS-909H		
		PT095H4					
350-3750BB6F-OPS	CH6000ALLB8-A	PT017H3	included	CB-663HN	MS-909H		
		PT017H4					
		PT017H6					
Chevy Big Block							
Chrysler							
Crank Part Number	Rod Part Number	Piston #	Rings	Optional Rod Bearings	Optional Main Bearings		
350-3480BB6F-60	CH6000ALLB8-A	PT061H3	included	CB-663HN	MS-909H	Ford	
		PT029H3	included	CB-663HN	MS-909H		
		K407A3	W100F8-4155-5	CB-663HN	MS-909H		
Honda							
350-3750BB6F-57	CH5700ALLB8-A	PT015H3	included	CB-663HN	MS-909H	Hyundai	
		PT016H3	included	CB-663HN	MS-909H		
PT016H4							
350-3750BB6F-57	CH5700ALLB8-A	K408AS	W100F8-4155-5	CB-663HN	MS-909H		
350-3750BB6F-57	CH5700ALLB8-A	PT005H3	included	CB-663HN	MS-909H		
350-3750BB6F-60	CH6000ALLB8-A	PT098HS	included	CB-663HN	MS-909H		
		PT098H3					
350-3750BB6F-60	CH6000ALLB8-A	PT019H3	included	CB-663HN	MS-909H		
350-3750BB6F-60	CH6000ALLB8-A	PT096HS	included	CB-663HN	MS-909H		
		PT096H3					
350-3750BB6F-60	CH6000ALLB8-A	PT020H3	included	CB-663HN	MS-909H		
		PT020H4					
350-3750BB6F-60	CH6000ALLB8-A	PT059H3	included	CB-663HN	MS-909H		
		PT059H4					
350-3750BB6F-60	CH6000ALLB8-A	PT018HS	included	CB-663HN	MS-909H		
		PT018H3					
		PT018H4					
350-3750BB6F-60	CH6000ALLB8-A	K406A3	W100F8-4155-5	CB-663HN	MS-909H		
Mitsubishi							
Nissan							
Subaru							
Charts & Diagrams							
350-3875BB6F-60	CH6000ALLB-ST8-A	PT107HS	included	CB-663HN	MS-909H		
		PT107H3					
350-3875BB6F-60	CH6000ALLB-ST8-A	PT105H3	included	CB-663HN	MS-909H		
350-3875BB6F-60	CH6000ALLB-ST8-A	K405A3	W100F8-4155-5	CB-663HN	MS-909H		
Mitsubishi							
350-4000BB6F-60	CH6000ALLB-ST8-A	PT093HS	included	CB-663HN	MS-909H		
		PT093H3					
350-4000BB6F-60	CH6000ALLB-ST8-A	PT079HS	included	CB-663HN	MS-909H		
		PT079H3					
350-4000BB6F-60	CH6000ALLB-ST8-A	PT079H4	W100F8-4155-5	CB-663HN	MS-909H		

NOTE: Kits that do NOT include rings have a ring part number listed.



## Chevy 400 Small Block • w/400 mains & 2.100 rod journal

Standard weight crank, rods & pistons

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	58cc	64cc	76cc
<b>3.480" Stroke</b>								
377	R-PT10170	4.155	3.480	6.000	-5.4	11.4	10.6	9.4
377	R-PT10171	4.155	3.480	6.000	8+	13.7	12.6	10.8
377	R-KD20106	4.155	3.480	6.000	10+	14.1	12.9	11.1
<b>3.750" Stroke</b>								
407	R-PT10172	4.155	3.750	5.700	-20	10.3	9.7	8.7
407	R-PT10173	4.155	3.750	5.700	-5.4	12.2	11.3	10
409	R-PT10174	4.165						
400	R-KD20107	4.125	3.750	5.700	10+	15	13.8	11.8
407	R-PT10175	4.155	3.750	5.700	8+	14.6	13.4	11.5
400	R-PT10176	4.125	3.750	6.000	-28	9.6	9.1	8.3
407	R-PT10177	4.155						
407	R-PT10178	4.155	3.750	6.000	-20	10.3	9.7	8.8
400	R-PT10179	4.125	3.750	6.000	-13	11.1	10.4	9.3
407	R-PT10180	4.155						
407	R-PT10181	4.155	3.750	6.000	-5.4	12.2	11.3	10
409	R-PT10182	4.165						
407	R-PT10183	4.155	3.750	6.000	4+	13.8	12.7	11
409	R-PT10184	4.165						
400	R-PT10185	4.125	3.750	6.000	8+	14.6	13.4	11.5
407	R-PT10186	4.155						
409	R-PT10187	4.165	3.750	6.000	10+	15	11.8	11.8
407	R-KD20108	4.155						
<b>3.875" Stroke</b>								
414	R-PT10188	4.125	3.875	6.000	-9	12	11.2	10
420	R-PT10189	4.155						
420	R-PT10190	4.155	3.875	6.000	-29	9.8	9.3	8.4
421	R-KD20109	4.155	3.875	6.000	10+	15.5	14.2	12.1
<b>4.000" Stroke</b>								
428	R-PT10191	4.125	4.000	6.000	-15	11.5	10.8	9.7
434	R-PT10192	4.155						
428	R-PT10193	4.125	4.000	6.000	-5.4	12.9	12	10.6
434	R-PT10194	4.155						
436	R-PT10195	4.165	4.000	6.000	10+	16	14.6	12.5
434	R-KD20110	4.155						

	<b>Crank</b>	<b>Rod</b>	<b>Piston</b>	<b>Rings</b>	<b>Optional Rod Bearings</b>	<b>Optional Main Bearings</b>	
	400-3500CB6F-60	CH6000ALLB8-A	PT061H3	included	CB-663HN	MS-1038H	Chevy Small Block
	400-3500CB6F-60	CH6000ALLB8-A	PT029H3	included	CB-663HN	MS-1038H	
	400-3500CB6F-60	CH6000ALLB8-A	K407A3	W100F8-4155-5	CB-663HN	MS-1038H	
	400-3750CB6F-57	CH5700ALLB8-A	PT015H3	included	CB-663HN	MS-1038H	Chevy LS
	400-3750CB6F-57	CH5700ALLB8-A	PT016H3 PT016H4	included	CB-663HN	MS-1038H	Chevy Big Block
	400-3750CB6F-57	CH5700ALLB8-A	K408AS	W100F8-4155-5	CB-663HN	MS-1038H	
	400-3750CB6F-57	CH5700ALLB8-A	PT005H3	included	CB-663HN	MS-1038H	Chrysler
	400-3750CB6F-60	CH6000ALLB8-A	PT098HS PT098H3	included	CB-663HN	MS-1038H	
	400-3750CB6F-60	CH6000ALLB8-A	PT019H3	included	CB-663HN	MS-1038H	Ford
	400-3750CB6F-60	CH6000ALLB8-A	PT096HS PT096H3	included	CB-663HN	MS-1038H	
	400-3750CB6F-60	CH6000ALLB8-A	PT020H3 PT020H4	included	CB-663HN	MS-1038H	Honda
	400-3750CB6F-60	CH6000ALLB8-A	PT059H3 PT059H4	included	CB-663HN	MS-1038H	
	400-3750CB6F-60	CH6000ALLB8-A	PT018HS PT018H3 PT018H4	included	CB-663HN	MS-1038H	Mitsubishi
	400-3750CB6F-60	CH6000ALLB8-A	K406A3	W100F8-4155-5	CB-663HN	MS-1038H	
	400-3875CB6F-60	CH6000ALLB-ST8-A	PT107HS PT107H3	included	CB-663HN	MS-909H	Nissan
	400-3875CB6F-60	CH6000ALLB-ST8-A	PT105H3	included	CB-663HN	MS-909H	
	400-3875CB6F-60	CH6000ALLB-ST8-A	K405A3	W100F8-4155-5	CB-663HN	MS-909H	
	400-4000CB6F-60	CH6000ALLB-ST8-A	PT093HS PT093H3	included	CB-663HN	MS-909H	Subaru
	400-4000CB6F-60	CH6000ALLB-ST8-A	PT079HS PT079H3 PT079H4	included	CB-663HN	MS-909H	
	400-4000CB6F-60	CH6000ALLB-ST8-A	K404A3	W100F8-4155-5	CB-663HN	MS-909H	

NOTE: Kits that do NOT include rings have a ring part number listed.

## Chevy LS • 5.3L

4.000 stroke fits O.E., LS1, LS2, LS6

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	58cc	61cc
359	R-KD20111 *	3.780	4.000	6.125	-7	11.	10.5
364	R-KD20112 *	3.800					

## Chevy LS • 4.000" Stroke

Fits LS1, LS2, LS3, LS6, L92

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	72cc
383	R-KD20113 *	3.903	4.000	6.125	-32	8.8	8.6	8.4
403	R-KD20115 *	4.005						
408	R-KD20116 *	4.030						
416	R-KD20117 *	4.070						
402	R-KD20118 *	4.000	4.000	6.125	-20	9.9	9.6	9.3
403	R-KD20119 *	4.005						
408	R-KD20120 *	4.030						
416	R-KD20121 *	4.070						
383	R-KD20122 *	3.903	4.000	6.125	-15	10.4	10.1	9.7
402	R-KD20123 *	4.000						
403	R-KD20124 *	4.005						
408	R-KD20125 *	4.030						
416	R-KD20126 *	4.070						
383	R-KD20127 *	3.903	4.000	6.125	-8	11.2	10.9	10.4
383	R-KD20128 *	3.905						
403	R-KD20130 *	4.005						
408	R-KD20131 *	4.030						
383	R-KD20132 *	3.903	4.000	6.125	-3	11.9	11.5	11
408	R-KD20134 *	4.005						
408	R-KD20135 *	4.030						
415	R-KD20136 *	4.065						
417	R-KD20137 *	4.070						

\* Add -24 or -58 to Rotating Assembly part # to indicate number of teeth on reluctor wheel.



Crank	Rod	Piston	Optional Rings	Optional Rod Bearings	Optional Main Bearings
346-4000RB6F	CH6125ALLB-LS8-A	K473M96	3785HF	CB-663HN	MS-2199H
		K473M965	3805HF		

Chevy  
Small Block

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
346-4000RB6F	CH6125ALLB-LS8-A	K396X3903	included	CB-663HN	MS-2199H
		K396X05			
		K396X3			
		K396X7			
346-4000RB6F	CH6125ALLB-LS8-A	K456XS	included	CB-663HN	MS-2199H
		K456X05			
		K456X3			
		K456X7			
346-4000RB6F	CH6125ALLB-LS8-A	K445X3903	included	CB-663HN	MS-2199H
		K445XS			
		K445X05			
		K445X3			
346-4000RB6F	CH6125ALLB-LS8-A	K445X7	included	CB-663HN	MS-2199H
		K394X3903			
		K394X3905			
		K394X05			
346-4000RB6F	CH6125ALLB-LS8-A	K394X3	included	CB-663HN	MS-2199H
		K464X3903			
		K464X05			
		K464X3			
346-4000RB6F	CH6125ALLB-LS8-A	K464X65	included	CB-663HN	MS-2199H
		K464X7			

Chevy  
LS

Chevy  
Big Block

Chrysler

Ford

Honda

Hyundai

Mitsubishi

Nissan

Subaru

Charts &  
Diagrams

- NOTES:** • Kits that do NOT include rings have a ring part number listed.  
• Specify 24 or 58 tooth reluctor wheel on all LS kit orders.





## Chevy LS Big Bore • 4.000" Stroke

Fits LS1, LS2, LS3, LS6, LS7, L92

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	72cc
427	R-KD20138 *	4.125	4.000	6.098	-23	10.2	9.7	9.3
434	R-KD20139 *	4.155						
443	R-KD20140 *	4.200						
427	R-KD20141 *	4.125	4.000	6.125	-32	9.3	9.0	8.7
427	R-KD20142 *	4.125						
434	R-KD20143 *	4.155						
436	R-KD20144 *	4.165	4.000	6.125	-20	10.5	10.2	9.8
427	R-KD20145 *	4.125						
434	R-KD20146 *	4.155						
427	R-KD20147 *	4.125	4.000	6.125	-8	11.7	11.3	10.8
427	R-KD20148 *	4.125						
434	R-KD20150 *	4.155						
440	R-KD20151 *	4.185	4.000	6.125	-3	12.4	11.9	11.4
443	R-KD20152 *	4.200						

## Chevy LS • 4.125" Stroke

Fits LS1, LS2, LS3, LS6, L92

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	72cc
416	R-KD20155 *	4.005	4.125	6.125	-30	9.3	9.1	8.8
421	R-KD20156 *	4.030						
429	R-KD20157 *	4.070						
416	R-KD20160 *	4.005	4.125	6.125	-14	10.8	10.5	10.1
421	R-KD20161 *	4.030						
429	R-KD20162 *	4.070						
416	R-KD20165 *	4.005	4.125	6.125	-11	11.2	10.8	10.4
421	R-KD20166 *	4.030						
429	R-KD20167 *	4.070						
421	R-KD20171 *	4.030	4.125	6.125	+3	13.2	12.7	12.1
429	R-KD20172 *	4.070						

## Chevy LS Big Bore • 4.125" Stroke

Fits LS1, LS2, LS3, LS6, LS7, L92

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	72cc
441	R-KD20173 *	4.125	4.125	6.125	-22	10.5	10.2	9.9
447	R-KD20174 *	4.155						
441	R-KD20175 *	4.125	4.125	6.125	-3	12.9	12.4	11.9
447	R-KD20176 *	4.155						
454	R-KD20177 *	4.185						

\* Add -24 or -58 to Rotating Assembly part # to indicate number of teeth on reluctor wheel.

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
346-4000RB6F	CH6098ALLB-LS8-A	K443X125	included	CB-663HN	MS-2199H
		K443X155			
		K443X200			
346-4000RB6F	CH6125ALLB-LS8-A	K397X125	included	CB-663HN	MS-2199H
346-4000RB6F	CH6125ALLB-LS8-A	K452X125	included	CB-663HN	MS-2199H
		K452X155			
		K452X165			
346-4000RB6F	CH6125ALLB-LS8-A	K446X125	included	CB-663HN	MS-2199H
		K446X155			
346-4000RB6F	CH6125ALLB-LS8-A	K395X125	included	CB-663HN	MS-2199H
346-4000RB6F	CH6125ALLB-LS8-A	K463X125	included	CB-663HN	MS-2199H
		K463X155			
		K463X185			
		K463X200			

Chevy  
Small Block

Chevy  
LS

Chevy  
Big Block

Chrysler

Ford

Honda

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
346-4125RB6F	CH6125ALLB-LS8-A	K449X05	included	CB-663HN	MS-2199H
		K449X3			
		K449X7			
346-4125RB6F	CH6125ALLB-LS8-A	K454X05	included	CB-663HN	MS-2199H
		K454X3			
		K454X7			
346-4125RB6F	CH6125ALLB-LS8-A	K450X05	included	CB-663HN	MS-2199H
		K450X3			
		K450X7			
346-4125RB6F	CH6125ALLB-LS8-A	K451X3	included	CB-663HN	MS-2199H
		K451X7			

Hyundai

Mitsubishi

Nissan

Subaru

Charts &  
Diagrams

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
346-4125RB6F	CH6125ALLB-LS8-A	K455X125	included	CB-663HN	MS-2199H
		K455X155			
346-4125RB6F	CH6125ALLB-LS8-A	K462X125	included	CB-663HN	MS-2199H
		K462X155			
		K462X185			

NOTES: • Kits that do NOT include rings have a ring part number listed.  
• Specify 24 or 58 tooth reluctor wheel on all LS kit orders.



## Chevy LS • 9.700" Deck • 4.250" Stroke

Fits LS1, LS2, LS3, LS6, LS7, L92

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	72cc
454	R-KD20179 *	4.125	4.250	6.450	-32	9.6	9.4	9.1
454	R-KD20180 *	4.125		6.450	-23	10.5	10.2	9.9
461	R-KD20181 *	4.155	4.250	6.450	-20	10.8	10.5	10.1
454	R-KD20183 *	4.125						
461	R-KD20184 *	4.155						
471	R-KD20185 *	4.165	4.250	6.450	-18	11.	10.7	10.3
454	R-KD20186 *	4.125						
461	R-KD20187 *	4.155	4.250	6.450	-8	12.2	11.8	11.3
454	R-KD20188 *	4.125						
454	R-KD20189 *	4.125						
461	R-KD20190 *	4.155						
468	R-KD20191 *	4.185						
471	R-KD20192 *	4.200			-3	12.9	12.4	11.9

\* Add -24 or -58 to Rotating Assembly part # to indicate number of teeth on reluctor wheel.

## Chevy BB 454 • Std. Deck

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	107cc	114cc	119cc
489	R-PT10196	4.280	4.250	6.385	21+	11.3	10.6	10.2
496	R-PT10197	4.310						
498	R-PT10198	4.320						
489	R-PT10199	4.280	4.250	6.385	45+	X	13.5	12.7
496	R-PT10200	4.310						
498	R-PT10201	4.320						
489	R-KD20193	4.280	4.250	6.385	48.4+	X	14.3	13.2
496	R-KD20194	4.310						

## Chevy BB 454 • Tall Deck

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	107cc	114cc	119cc
4.250" Stroke								
489	R-PT10202	4.280	4.250	6.800	21+	11.3	10.6	10.2
496	R-PT10203	4.310						
498	R-PT10204	4.320						
489	R-PT10205	4.280	4.250	6.800	45+	X	13.5	12.7
496	R-PT10206	4.310						
498	R-PT10207	4.320						
489	R-KD20196	4.280	4.250	6.800	48.4+	X	14.3	13.2
496	R-KD20197	4.310						

- NOTES:
- Every 2.76g of material = 1cc volume.
  - Domes 21cc and smaller fit open and closed chambers (can be milled flat if needed).
  - 36cc domes are also compatible with open or closed chambers.
  - 38cc domes or larger are NOT compatible with closed, GM Semi-open, or Edelbrock heads.
  - 47cc domes are NOT compatible with Dart Pro 1.

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
346-4250RB6F	CH6450ALLBLS-ST8-A	K397X125	included	CB-663HN	MS-2199H	
346-4250RB6F	CH6450ALLBLS-ST8-A	K443X125 K443X155	included	CB-663HN	MS-2199H	Chevy Small Block
346-4250RB6F	CH6450ALLBLS-ST8-A	K452X125 K452X155 K452X165	included	CB-663HN	MS-2199H	Chevy LS
346-4250RB6F	CH6450ALLBLS-ST8-A	K446X125 K446X155	included	CB-663HN	MS-2199H	Chevy Big Block
346-4250RB6F	CH6450ALLBLS-ST8-A	K395X125	included	CB-663HN	MS-2199H	
346-4250RB6F	CH6450ALLBLS-ST8-A	K463X125 K463X155 K463X185 K463X200	included	CB-663HN	MS-2199H	Chrysler Ford

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
454-4250DC6F-6385	CH6385APRB8-A	PT118H3 PT118H6 PT118H7	included	CB-743HN	MS-829H	Honda Hyundai
454-4250DC6F-6385	CH6385APRB8-A	PT119H3 PT119H6 PT119H7	included	CB-743HN	MS-829H	Mitsubishi Nissan
454-4250DC6F-6385	CH6385APRB8-A	K238A3 K238A6	W100F8-4280-5 W100F8-4310-5	CB-743HN	MS-829H	Subaru

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
454-4250DC6F-6385	CH6800APRB8-A	PT118H3 PT118H6 PT118H7	included	CB-743HN	MS-829H	Charts & Diagrams
454-4250DC6F-6385	CH6800APRB8-A	PT119H3 PT119H6 PT119H7	included	CB-743HN	MS-829H	
454-4250DC6F-6385	CH6800APRB8-A	K238A3 K238A6	W100F8-4280-5 W100F8-4310-5	CB-743HN	MS-829H	

NOTES: • Kits that do NOT include rings have a ring part number listed.  
• Specify 24 or 58 tooth reluctor wheel on all LS kit orders.

## Chevy BB 502 • Std. Deck

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	107cc	114cc	119cc
<b>4.250" Stroke</b>								
540	R-PT10208	4.500	4.250	6.535	15+	11.8	11.1	10.6
548	R-PT10209	4.530						
555	R-PT10210	4.560						
565	R-PT10211	4.600						
540	R-KD20199	4.500	4.250	6.535	42.4+	X	14.3	13.6
548	R-KD20200	4.530						
555	R-KD20201	4.560	4.250	6.535	42.4+	X	14.3	13.6
565	R-KD20202	4.600						
567	R-KD20203	4.610						
571	R-KD20204	4.625						
<b>4.375" Stroke</b>								
572	R-KD20205	4.560	4.375	6.385	40+	15.7	14.6	13.8
582	R-KD20206	4.600						
584	R-KD20207	4.610						
588	R-KD20208	4.625						
557	R-PT10212	4.500	4.375	6.480	15+	12	11.4	10.9
564	R-PT10213	4.530						
572	R-PT10214	4.560						
582	R-PT10215	4.600						
557	R-KD20213	4.500	4.375	6.480	42.4+	X	14.5	13.8
564	R-KD20214	4.530						
572	R-KD20215	4.560	4.375	6.480	42.4+	X	14.9	14.2
582	R-KD20216	4.600						
584	R-KD20217	4.610						
588	R-KD20218	4.625						
572	R-KD20219	4.560	4.375	6.535	40+	15.7	14.6	13.8
582	R-KD20220	4.600						
584	R-KD20221	4.610						
588	R-KD20222	4.625						

- NOTES:**
- Every 2.76g of material = 1cc volume.
  - Domes 21cc and smaller fit open and closed chambers (can be milled flat if needed).
  - 36cc domes are also compatible with open or closed chambers.
  - 38cc domes or larger are NOT compatible with closed, GM Semi-open, or Edelbrock heads.
  - 47cc domes are NOT compatible with Dart Pro 1.



Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
454-4250DC6F-6385	CH6535APRB8-A	PT103HS	included	CB-743HN	MS-829H	Chevy Small Block
		PT103H3				
		PT103H6				
		PT103H100				
454-4250DC6F-6385	CH6535APRB8-A	K243AS	W100F8-4500-5	CB-743HN	MS-829H	Chevy LS
		K243A3	W100F8-4530-5			
454-4250DC6F-6385	CH6535APRB8-A	K478B6	W860H8-4560-5	CB-743HN	MS-829H	Chevy Big Block
		K478B100	W860L8-4600-5			
		K478B110	W860H8-4610-5			
		K478B125	W860F8-4625-5			
Chrysler						
454-4375DC8F-6385	CH6385APRB8-A	K479B6	W860H8-4560-5	CB-743HN	MS-829H	Ford
		K479B100	W860L8-4600-5			
		K479B110	W860H8-4610-5			
		K479B125	W860F8-4625-5			
454-4375DC8F-6385	CH6480APRB8-A	PT103HS	included	CB-743HN	MS-829H	Honda
		PT103H3				
		PT103H6				
		PT103H100				
454-4375DC8F-6385	CH6480APRB8-A	K243AS	W100F8-4500-5	CB-743HN	MS-829H	Mitsubishi
		K243A3	W100F8-4530-5			
454-4375DC8F-6385	CH6480APRB8-A	K478B6	W860H8-4560-5	CB-743HN	MS-829H	Nissan
		K478B100	W860L8-4600-5			
		K478B110	W860H8-4610-5			
		K478B125	W860F8-4625-5			
454-4375DC8F-6535	CH6535APBR8-A	K477B6	W77008-4560-5	CB-743HN	MS-829H	Subaru
		K477B100	W77008-4600-5			
		K477B110	W77008-4610-5			
		K477B125	W77008-4625-5			
Charts & Diagrams						

**NOTE:** Kits that do NOT include rings have a ring part number listed.



## Chevy BB 502 • Tall Deck

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	107cc	114cc	119cc	
<b>4.500" Stroke</b>									
572	R-PT10216	4.500	4.500	6.535	21+	12.9	12.1	11.6	
580	R-PT10217	4.530							
572	R-PT10218	4.500	4.500	6.800	15+	12.4	11.7	11.2	
580	R-PT10219	4.530							
588	R-PT10220	4.560							
598	R-PT10221	4.600							
572	R-KD20227	4.500	4.500	6.800	42.4+	X	15.3	14.5	
580	R-KD20228	4.530							
588	R-KD20229	4.560	4.500	6.800	42.4+	X	15.3	14.5	
598	R-KD20230	4.600							
605	R-KD20231	4.625							
<b>4.750" Stroke</b>									
604	R-PT10222	4.500	4.750	6.700	15+	13	12.3	11.8	
612	R-PT10223	4.530							
621	R-PT10224	4.560							
631	R-PT10225	4.600							
621	R-KD20232	4.560	4.750	6.700	42+	X	15.7	14.9	
631	R-KD20233	4.600							
634	R-KD20234	4.610							
638	R-KD20235	4.625							

- NOTES:**
- Every 2.76g of material = 1cc volume.
  - Domes 21cc and smaller fit open and closed chambers (can be milled flat if needed).
  - 36cc domes are also compatible with open or closed chambers.
  - 38cc domes or larger are NOT compatible with closed, GM Semi-open, or Edelbrock heads.
  - 47cc domes are NOT compatible with Dart Pro 1.



Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
454-4500DC8F	CH6535APBR8-A	PT092HS PT092H3	included	CB-743HN	MS-829H
454-4500DC8F	CH6800APRB8-A	PT103HS PT103H3 PT103H6 PT103H100	included	CB-743HN	MS-829H
454-4500DC8F	CH6800APRB8-A	K243AS K243A3	W100F8-4500-5 W100F8-4530-5	CB-743HN	MS-829H
454-4500DC8F	CH6800APRB8-A	K478B6 K478B100 K478B125	W860H8-4560-5 W860L8-4600-5 W860F8-4625-5	CB-743HN	MS-829H
454-4750DC8F	CH6700APRB8-A	PT103HS PT103H3 PT103H6 PT103H100	included	CB-743HN	MS-829H
454-4750DC8F	CH6700APRB8-A	K478B6 K478B100 K478B110 K478B125	W860H8-4560-5 W860L8-4600-5 W860H8-4610-5 W860F8-4625-5	CB-743HN	MS-829H

Chevy  
Small Block

Chevy  
LS

Chevy  
Big Block

Chrysler

Ford

Honda

Hyundai

Mitsubishi

Nissan

Subaru

Charts &  
Diagrams

**NOTE:** Kits that do NOT include rings have a ring part number listed.



**Chrysler SB 340 • Stroker**

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	Pin Dia.
414	R-PT10226	4.060	4.000	6.123	-20	9.9	9.5	.984
416	R-PT10227	4.070						
410	R-PT10228	4.040	4.000	6.123	-5	11.4	11	.984
414	R-PT10229	4.060						
416	R-PT10230	4.070						
410	R-KD20236	4.040	4.000	6.123	8+	13.7	13.2	.984
414	R-KD20237	4.060				13.8	13.3	
418	R-KD20238	4.080				14	13.4	
422	R-KD20239	4.100				14.1	13.5	

**Chrysler SB 360 • Stroker**

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc	68cc	Pin Dia.
408	R-PT10231	4.030	4.000	6.123	-20	9.8	9.5	.984
414	R-PT10232	4.060				9.9	9.6	
416	R-PT10233	4.070				10	9.7	
408	R-PT10234	4.030	4.000	6.123	-5	11.5	11	.984
410	R-PT10235	4.040				11.5	11.1	
414	R-PT10236	4.060				11.6	11.2	
416	R-PT10237	4.070				11.6	11.3	
408	R-KD20240	4.030	4.000	6.123	8+	13.6	13.1	.984
410	R-KD20241	4.040				13.7	13.2	
414	R-KD20242	4.060				13.8	13.3	
418	R-KD20243	4.080				14	13.4	
422	R-KD20244	4.100				14.1	13.5	

**Chrysler 5.7 • Hemi**

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc 2009+ 5.7 Head	85cc Pre 2008
392	R-KD20245	3.917	4.080	6.125	-8	11:1	9:1
397	R-KD20246	3.937					
392	R-KD20247	3.917	4.080	6.125	12+	X	11:1
397	R-KD20248	3.937					

**Chrysler 6.1 • Hemi**

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	65cc 2009+ 5.7 Head	73cc
423	R-KD20249	4.060	4.080	6.125	-28	9.5:1	9:1
426	R-KD20250	4.080					
423	R-KD20251	4.060	4.080	6.125	-6.5	11.8:1	11:1
426	R-KD20252	4.080					

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
340-4000EF6F	DH6123ANPB8-A	PT036H6	included	CB-481HN	MS-540H
		PT036H7			
340-4000EF6F	DH6123ANPB8-A	PT060H4	included	CB-481HN	MS-540H
		PT060H6			
		PT060H7			
340-4000EF6F	DH6123ANPB8-A	K0011B4	W70008-4040-5	CB-481HN	MS-540H
		K0011B6	W70008-4060-5		
		K0011B8	W70008-4080-5		
		K0011B100	TBA		

Chevy  
Small Block  
  
Chevy  
LS  
  
Chevy  
Big Block

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
360-4000FF6F	DH6123ANPB8-A	PT036H3	included	CB-481HN	MS1051P
		PT036H6			
		PT036H7			
360-4000FF6F	DH6123ANPB8-A	PT060H3	included	CB-481HN	MS1051P
		PT060H4			
		PT060H6			
		PT060H7			
360-4000FF6F	DH6123ANPB8-A	K0011B3	W70008-4030-5	CB-481HN	MS1051P
		K0011B4	W70008-4040-5		
		K0011B6	W70008-4060-5		
		K0011B8	W70008-4080-5		
		K0011B100	TBA		

Chrysler  
  
Ford  
  
Honda  
  
Hyundai  
  
Mitsubishi  
  
Nissan

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
345-4080SA6F *	DH6125AHGB8-A	K465XS	included	CB-745HN	MS-2220H
		K465X2			
345-4080SA6F *	DH6125AHGB8-A	K468XS	included	CB-745HN	MS-2220H
		K468X2			

\* Crank requires a 4-bolt reluctor ring (part # TR-32) when used on the 5.7L.

Subaru  
  
Charts &  
Diagrams

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
345-4080SA6F	DH6125AHGB8-A	K470X05	included	CB-745HN	MS-2220H
		K470X25			
345-4080SA6F	DH6125AHGB8-A	K469X05	included	CB-745HN	MS-2220H
		K469X25			

NOTE: Kits that do NOT include rings have a ring part number listed.

### Chrysler 440 BB • 6 bolt crank 2.200 rod journal

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	78cc	88cc	Pin Dia.
493	R-PT10238	4.350	4.150	6.800	-6.3	11.5	10.5	.990
499	R-PT10239	4.375						

### Chrysler 440 BB • 6 bolt crank 440 rod journal

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	78cc	88cc	Pin Dia.
493	R-PT10240	4.350	4.150	6.760	-6.3	11.5	10.5	.990
499	R-PT10241	4.375						

### Ford 302W

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	58cc	64cc	Pin Dia.
331	R-PT10242	4.030	3.250	5.400	-5	10.5	9.8	.927
347	R-PT10243	4.030	3.400	5.400	-13	9.7	9.1	.927
347	R-PT10244	4.030	3.400	5.400	-5	10.7	10.0	.927
349	R-PT10245	4.040						

### Ford 351W

C.I.	Rotating Assembly	Bore	Stroke	Rod	Vol.	58cc	64cc	Pin Dia.
408	R-PT10246	4.030	4.000	6.200	-24	10.1	9.9	.927
410	R-PT10247	4.040						
434	R-PT10248	4.155	4.000	6.200	-25	10.5	10.3	.927
436	R-PT10249	4.165						
440	R-PT10250	4.185						



Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
440-4150JC6F	CH6800APRB8-A	PT091H3	included	CB-743HN	MS-877P
		PT091H55			
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
440-4150JE6F	DH6760AURB8-A	PT091H3	included	CB-1512M	MS-877P
		PT091H55			
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
302-3250GB6F	FH5400ALLB8-A	PT070H3	included	CB-663H	MS-590H
		PT045H3			
		PT044H3			
302-3400GB6F	FH5400ALLB8-A	PT044H4	included	CB-663H	MS-590H
		PT044H4			
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
351-4000KB6F	FH6200ALLB8-A	PT094H3	included	CB-663H	MS-1432H
		PT094H4			
		PT090H3			
		PT090H4			
351-4000KB6F	FH6200ALLB8-A	PT090H6	included	CB-663H	MS-1432H
		PT090H6			

Chevy  
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LS

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Big Block

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Ford

Honda

Hyundai

Mitsubishi

Nissan

Subaru

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**NOTE:** Kits that do NOT include rings have a ring part number listed.



**Honda K20 • 92mm Stroke • 1400 HD Series**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	50.5cc	Pin Dia.
2.2	New 2012	86.50	3.622 92		-3.5 FT	10.5:1	.748 19
		87.00					
		87.50					
		88.00					
		89.00					

**Honda K20 • 92mm Stroke**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	50.5cc	Pin Dia.
2.2	New 2012	86.50	3.622 92		+10.5	13.0:1	.748 19
		87.00					
		87.50					
		88.00					
		89.00					

**Honda K24 • 103mm Stroke • 1400 HD Series**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	50.5cc	Pin Dia.
2.5	New 2012	87.00	4.055 103	5.985 152	-3.5 FT	11.5:1	.748 19
		87.50					
		88.00					
		89.00					
		90.00					

**Honda K24 • 103mm Stroke**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	50.5cc	Pin Dia.
2.5	New 2012	87.00	4.055 103	5.985 152	+10.5	14.3:1	.748 19
		87.50					
		88.00					
		89.00					
		90.00					

**Hyundai Genesis 2.0 4B11 • 98mm Stroke**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	Pin Dia.
2.3	New 2012	86.50	3.858 98	5.658 143.7		.9055 23
		87.00				
		88.00				

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
H920K24S <i>Crank features a modified B.E.</i>			included			Chevy Small Block
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
H920K24S <i>Crank features a modified B.E.</i>			included			Chevy LS Chevy Big Block Chrysler
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
H1030K24S <i>Crank features a modified B.E.</i>			included			Ford Honda Hyundai
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
H1030K24S <i>Crank features a modified B.E.</i>			included			Mitsubishi Nissan Subaru
Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings	
HY9804B11S	MH5658AJJB4-A		included			Charts & Diagrams

**NOTE:** Kits that do NOT include rings have a ring part number listed.

**Mitsubishi 4G63 7-Bolt & Evo 8/9  
100mm Stroke • Standard Series**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	43cc	47cc	Pin Dia.
2.3	R-KS30100	85.00	3.937 100	5.906 150	-21	9.0:1	8.7:1	.866 22
	R-KS30101	85.50						
	R-KS30102	86.00						

**Mitsubishi 4G64 7-Bolt & Evo 8/9  
100mm Stroke • 1400 HD Series**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	43cc	47cc	Pin Dia.
2.3	R-KS30103	85.00	3.937 100	5.906 150	-21	9.0:1	8.7:1	.866 22
	R-KS30104	85.50						
	R-KS30105	86.00						

**Mitsubishi Evo 10 2008+ 4B11T  
98mm Stroke**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	49cc	Pin Dia.
2.3	New 2012	86.00	3.858 98	5.658 143.7			.9055 23
		86.50					
		87.00					
		88.00					

**Nissan SR20DET • 92mm Stroke**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	45cc	Pin Dia.
2.1	R-KS30106	86.00	3.622 92	5.364 136.25	-17	9.0:1	.866 22
	R-KS30107	86.50					
	R-KS30108	87.00					
	R-KS30109	89.00					

**Subaru EJ20 WRX • 75mm Stroke • Oct. 1998 & older**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	49cc	Pin Dia.
2.0	R-KS30110	92.50	2.952 75	5.137 130.5	-17.8	7.8:1	.9055 23
	R-KS30111	93.00					

**Subaru EJ20 WRX • 75mm Stroke • Oct. 1998 & newer**

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	48cc	Pin Dia.
2.0	R-KS30112	92.00	2.952 75	5.137 130.5	-9	8.35:1	.9055 23
	R-KS30113	92.50					
	R-KS30114	93.00					

Crank		Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
M10004G63	MH5906ACGB4-A	K596M85	included	CB-1643P	MS-2039P	
		K596M855				
		K596M86				
Crank		Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
M10004G63	MH5906ACGB4-A	K627M85	included	CB-1643P	MS-2039P	
		K627M855				
		K627M86				
Crank		Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
M9804B11S	MH5658AJJB4-A		included			
Crank		Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
N920SR20	NH5364AEGB4-A	K655M86	included	CB-1629P	MS-2015P	
		K655M865				
		K655M87				
		K655M89				
Crank		Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
S750EJ20D	SH5137AJJB4-A	K576M925	included	CB-1657AL	MS-2062AL	
		K576M93				
Crank		Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
S750EJ20D	SH5137AJJB4-A	K588M92	included	CB-1657AL	MS-2062AL	
		K588M925				
		K588M93				

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NOTE: Kits that do NOT include rings have a ring part number listed.



## Subaru EJ20 WRX • 79mm Stroke • Oct. 1998 & older

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	49cc	Pin Dia.
2.1	R-KS30115	92.50	3.110 79	5.180 131.6	-17.8	8.5:1	.9055 23
	R-KS30116	93.00					

## Subaru EJ22 Legacy • 75mm Stroke • Oct. 1991-94

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	46.6cc	Pin Dia.
2.2	R-KS30117	97.50	2.952 75	5.137 130.5	-20	8.5:1	.9055 23
	R-KS30118	98.00					

## Subaru EJ22 Hybrid • 79mm Stroke

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	46.6cc	Pin Dia.
2.4	R-KS30119	97.50	3.110 79	5.180 131.6	-24	8.5:1	.9055 23
	R-KS30120	98.00					

## Subaru EJ25 SOHC • 79mm Stroke

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	50cc	Pin Dia.
2.5	R-KS30121	99.5	3.110 79	5.180 131.6	-18	8.5:1	.9055 23
	R-KS30122	100					

## Subaru EJ25 DOHC • 79mm Stroke

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	46.6cc	Pin Dia.
2.5	R-KS30123	99.5	3.110 79	5.180 131.6	-23	8.5:1	.9055 23
	R-KS30124	100					

## Subaru EJ257 WRX STI • 79mm Stroke • '04 & newer

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	51cc	Pin Dia.
2.5	R-KS30125	99.5	3.110 79	5.137 130.5	-19	8.9:1	.9055 23
	R-KS30126	100					

## Subaru EJ257 WRX STI • 83mm Stroke • '04 & newer

Disp.	Rotating Assembly	Bore	Stroke	Rod	Vol.	51cc	Pin Dia.
2.6	New 2012	99.5	3.110 79	5.137 130.5			.9055 23
		100					

Crank	Rod	Piston	Rings	Optional Rod Bearings	Optional Main Bearings
S790EJ25D	SH5180AJJB4-A	K579M925	included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>
		K579M93			
S750EJ20D	SH5137AJJB4-A	K601M975	included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>
		K601M98			
S790EJ25D	SH5180AJJB4-A	K602M975	included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>
		K602M98			
S790EJ25D	SH5180AJJB4-A	K600M995	included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>
		K600M100			
S790EJ25D	SH5180AJJB4-A	K599M995	included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>
		K599M100			
S790EJ25D	SH5137AJJB4-A	K598M995	included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>
		K598M100			
S830EJ25D	SH5137AJJB4-A		included	CB-1657AL	MS-2062AL <i>(Rear Thrust - MS-2258AL)</i>

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NOTE: Kits that do NOT include rings have a ring part number listed.

The relationship between K1 and Wiseco is an industry first. For the first time, rotating assembly components are being designed around each other from their inception. This enhances strength and eliminates mass.

The professional engine builder will note that the assembly balances well and fitment is exceptional. Power and longevity are increased through a reduction in mass, friction, and windage.

### **WISECO** Pistons

Performance Products

Wiseco Pistons are forged and machined in-house and receive a full compliment of power enhancing features. Light weight forgings, millimeter ring packs, extra-strength forgings, gas ports, skirt coatings, offset pins, and a variety of other features are available to insure each engine exceeds our customer's expectations. Skirt profiles minimize rock and provide long skirt life in stroker applications. All machining is done on the newest CNC equipment to insure the tightest tolerances in the industry.

### **PRO TRU** Pistons

Pro Tru pistons are forged and machined in-house and are designed to make excellent power with a long life and the best value. Dedicated forgings require minimal machining and insure a strong, lightweight piston at minimal cost. Design work is very detailed to insure the latest piston skirt profiles for minimal rock, tight clearances, and long skirt life. Pro Tru pistons INCLUDE a high quality plasma moly ring pack. All machining is done on the newest CNC equipment, insuring excellent machining at tight tolerances. Alloys are not limited to just 4032. Big block pistons and certain small blocks designed for nitrous or boost receive the stronger 2618 alloy.

### **K1** Crankshafts

TECHNOLOGIES

- True 4340 forging.
- Core hardened, tempered to reduce stress and optimize tensile strength. Nitriding process for hardening rather than induction heat treated (which leaves the area between the journals soft and subject to post-running deformation from internal stresses being relieved).
- Magnetic particle inspection.
- Straight oiling to journals insures constant flow rather than stalling at intersection as seen with cross drilled cranks
- Wide pin-end widths designed to support the wrist pin (which reduces pin flex and associated problems).
- Exception Journal finish.
- Excellent journal dimensional tolerance (roundness, taper, bell mouth, and barrel) .0002 maximum.
- Counterweights placed for optimal load reduction and ease of balancing.
- Stress relieved.
- Internally balanced.

### **K1** Connecting Rods

TECHNOLOGIES

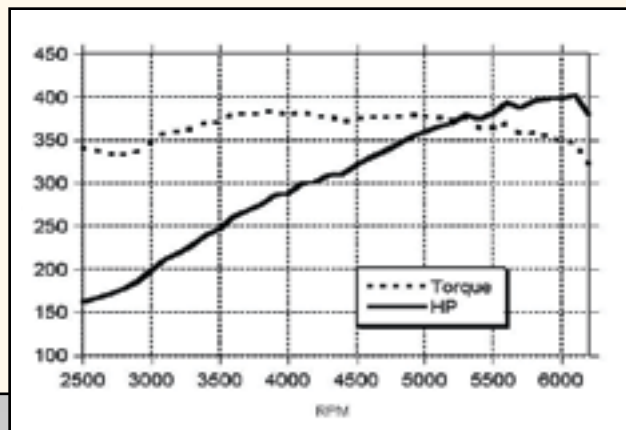
- 4340 steel forgings.
- Special bushing material for optimum friction reduction.
- Proprietary bolts produced by ARP to K1 specification with asymmetrical threads to equally load each thread when under tension.
- Pin oiling.
- Heavy radii.
- Thicker blades.
- Double bridged caps reduce housing bore distortion.
- No ridge between the blades to act as a stress riser.
- Rod offset is designed to center small end to bore center.
- Big end housing bore is held to +/- .000050" (50 millionths).
- Center to center less than .001".

## Horsepower Ratings

It's nearly impossible to put a power rating on a connecting rod. Power is produced from the expanding gasses in the combustion chamber pushing down on the piston which in turn pushes down on the connecting rods. While there are certain situations that could lead to failed rods due to compressive loads, rods generally do not fail due to power loads. If they did, they would experience severe bending to the point of permanent deformation prior to breaking.

When you see a broken connecting rod where there is no seizure of the bearing or failure of the piston/pin/cylinder wall, look closely and you will see that the rod was actually pulled in two. This high tension pulling load on the rod takes place at TDC on the exhaust stroke and is caused by the piston trying to continue up the cylinder walls and through the cylinder head, and the crankshaft trying to pull it back down. The heavier the piston, longer the stroke and the higher the RPM, the more pulling load is placed on the rod.

When you look at a Dyno sheet, you will see that as the RPM is taken past peak power the power falls off. However, most of us have seen engines that have had rods break when over revved. If power broke rods, they would never break due to being over revved.



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### Compression Ratio Calculation

#### Formula to determine Compression Ratio

.7854 x the number of cylinders x stroke x bore x bore = Total Cubic Inches  
 (Total Cu. In.) \_\_\_\_\_ ÷ # cyl. = \_\_\_\_\_ (Cu. In. per cyl.)  
 (Cu. In. per cyl.) \_\_\_\_\_ x 16.387 = \_\_\_\_\_ (cc per cyl.)

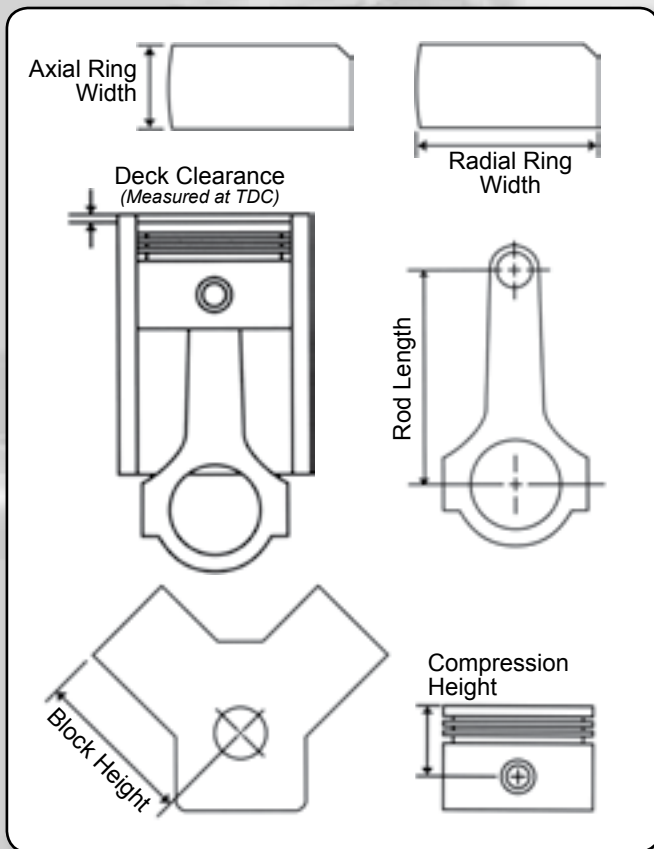
\_\_\_\_\_ Gasket thickness  
 + \_\_\_\_\_ Deck thickness  
 = \_\_\_\_\_ Total

.7854 x the number of cylinders x stroke (gasket + deck total) x bore x bore = Total Cubic Inches  
 (Total Cu. In.) \_\_\_\_\_ ÷ the number of cylinders = (Cu. In. per cyl.)  
 (Cu. In. per cyl.) \_\_\_\_\_ x 16.387 = (cc per cyl.)

\_\_\_\_\_ cc of gasket + deck  
 \_\_\_\_\_ cc of combustion chamber  
 - \_\_\_\_\_ cc of dome  
 + \_\_\_\_\_ cc of valve reliefs or reverse dome  
 \_\_\_\_\_ Total assembly volume  
 \_\_\_\_\_ Assembly volume  
 \_\_\_\_\_ Cyl. volume  
 \_\_\_\_\_ Total

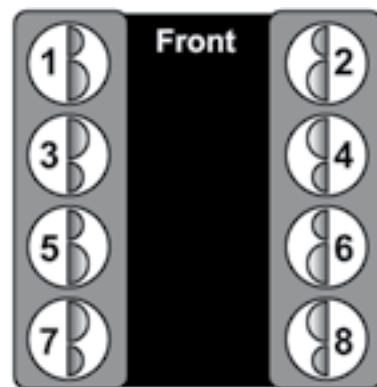
**Assembly volume, plus cylinder volume, divided by assembly volume = Compression ratio**

### Important Dimensions



### Piston Orientation

#### Replacement pistons for 8-cylinder Chevy & Chrysler motors



- Cylinders 1, 4, 5 & 8 are right pistons and have intake Valve Pockets on right side.
- Cylinders 2, 3, 6 & 7 are left pistons and have intake Valve Pockets on left side.
- 90° V-6 Chevy motors require 2 left and 4 right pistons.

**You've spent a lot of time and money building an engine...  
don't risk damage by failing to take a few minutes to put it together correctly.**



It's important to note that a fastener is like a very stiff spring and it must be stretched a specific amount. The material's ability to "rebound" like a spring is what provides the clamping force to keep the rod bolted together. If you do not stretch the bolt enough there may not be enough clamp load to keep the rod cap in place, which could result in broken bolts or spun bearings. If you stretch the bolt too much, you can exceed the yield strength of the fastener which will weaken it and cause it to fail. Either of these two conditions can result in catastrophic damage to your engine. Always follow the manufacturer's instructions to prevent damage to your engine.

**Methods used for tightening Rod Bolts**

**Stretch Method:** Measuring bolt stretch is the most accurate method for tightening rod bolts and insures the correct pre-load. Simply measure the free length of the bolt before tightening, lube the bolt threads and rod spotface. Install the bolt into the rod and tighten until the bolt is stretched the proper amount. K1 Technologies offers an economical bolt stretch gauge for this purpose.

**Torque & Angle Method:** Do not confuse this with the "Torque to Yield" method. Torque to Yield stretches the bolt to a point where it will no longer return to the original length when loosened and requires the bolt to be replaced after each use. When using the Torque & Angle method, you lube the bolt threads and rod spotface, tighten the bolt to a low torque value (as prescribed on the instruction sheet) then, using an angle gauge, turn the bolt a prescribed number of degrees to properly stretch the bolt. This method uses the highly accurate pitch of the bolt thread to control the amount of stretch.

**Torque Method:** Torque does not measure clamp load and only measures the amount of friction that must be overcome to turn the bolt. The friction of the mating surfaces of the threads, rod spotface and bolt flange change with each tightening. When you consider the fact that different amounts and types of lubes also change the friction, using the torque method is like trying to hit a moving target that you cannot see. K1 Technologies does not recommend the use of or provide torque values for tightening bolts.

*Not only do connecting rod bolts see the same tension loads that try to pull a connecting rod apart, the total weight of the tower portion of the rod is trying to follow the piston up through the cylinder head. **Connecting rod bolts are the most highly stressed fastener in the engine!** They need to be properly tightened.*

*Setting a torque wrench at a given number and tightening until this set amount of torque is reached is easy, but it can be highly inaccurate. A torque wrench only measures the amount of resistance it takes to turn the bolts. The amount and type of lube that is used will affect the actual clamp load provided by the bolts. Also, each time a bolt is tightened, the mating surfaces of the threads, the spotface on the rod and flange of the bolt get smoother, which changes the amount of torque that is required to properly tighten the fastener.*

*A bolt is simply a very stiff spring and it must be stretched a predetermined amount to keep the rod cap on and the bearing from spinning.*

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**Charts & diagrams**

**Bolt Materials Guide**

<u>Part #</u>	<u>Size</u>	<u>Material</u>
BT61501-2.....	3/8" x 1.500"	.....ARP 2000
BT61601-2.....	3/8" x 1.600"	.....ARP 2000
BT71401-2.....	7/16" x 1.400"	.....ARP 2000
BT71601-1.....	7/16" x 1.600"	.....8740
BT71601-2.....	7/16" x 1.600"	.....ARP 2000
BT71801-1.....	7/16" x 1.800"	.....8740
BT71801-2.....	7/16" x 1.800"	.....ARP 2000

**WISECO TERMS AND CONDITIONS OF SALE**

**1. Parties.** [Wiseco Performance Products], will be referred to as "Seller," and the company purchasing as indicated on the front hereof will be referred to as "Purchaser". All materials, goods, or work described on the front hereof, regardless of type, will be referred to as "Products".

**2. Terms and Conditions.** Seller's assent to contract is expressly conditional on Purchaser's acceptance of these Terms and Conditions. Notice is hereby given of Seller's objection to any Terms and Conditions in addition to or different from those herein, including without limitation any terms or conditions contained within any written acceptance, order confirmation, purchase order or similar document related to this transaction that may be issued by Purchaser. In the event Purchaser issues a purchase order or orders covering the items contained in this Agreement, such purchase order will operate as Purchaser's acceptance of this offer, but the parties hereby agree that any terms and conditions attached to such purchase order or orders shall have no legal effect, nor shall they be binding upon Seller. Deviation from these Terms and Conditions, including terms and conditions in addition to or different than those contained herein, can only take place by written instrument signed by one of Seller's officers.

**3. Price Adjustments; Payments.** The prices stated herein do not include any sales, use, or other taxes unless so stated specifically. Such taxes will be added to invoice prices in those instances in which Seller is required to collect them from Purchaser; provided, however, that if Seller does not collect any such taxes and is later asked by or required to pay the same to any taxing authority, Purchaser will make such payment to Seller or, if requested by Seller, directly to the taxing authority. At Seller's option, prices may be adjusted to reflect any increase in Seller's costs resulting from state, federal or local legislation, price increases from Seller's suppliers, or any change in the rate, charge, or classification of any carrier.

Unless otherwise specified by Seller, all prices are F.O.B. Seller's facility in Mentor, Ohio (Seller's Facility), and payment will be net/cash 30 days from date of invoice. Invoices unpaid and past due may be subject to a service charge on the unpaid balance at an interest rate equal to the lesser of 18% per annum or the maximum allowable interest rate under applicable law, and Purchaser shall be responsible and liable for all expenses incurred by Seller in collection, including reasonable attorneys' fees.

**4. Delivery Dates; Title and Risk; Shipment.** All delivery dates are approximate, and Seller shall not be responsible for any damages of any kind resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage thereto shall pass to Purchaser upon tender to the carrier at Seller's Facility, except in those instances in which delivery may be made by Seller's vehicles. Unless otherwise stated herein, Purchaser may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Purchaser's request beyond the respective dates indicated will be made except on terms that will indemnify, defend and save Seller harmless against all loss and additional expense, including, but not limited to demurrage, handling, storage and insurance charges.

**5. Warranty.** WISECO PISTON COMPANY, INC., LIMITED PISTON WARRANTY. WISECO warrants this product will be free from defects in material and workmanship for thirty (30) days following date of original purchase. If the product is found by WISECO to be defective, such products will, at WISECO's option, be replaced or repaired at cost to WISECO. All products alleged by Purchaser to be defective must be returned to WISECO, postage prepaid, within thirty (30) days warranty period.

This limited warranty does not cover labor or other costs or expenses incidental to the repair and/or replacement of products or parts.

This limited warranty does not apply to any product which has been used in a hi-performance application, or racing, or is subject to misuse, mishandling, misapplication, neglect (including but not limited to improper maintenance), accident, improper installation, modification (including but not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than WISECO.

The parties hereto expressly agree that the purchaser's sole and exclusive remedy against WISECO shall be for the repair or replacement of the defective product as provided in this limited warranty. This exclusive remedy shall not be deemed to have failed its essential purpose so long as WISECO is willing and able to repair or replace defective goods.

**THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOT EXPRESSLY SET FORTH HEREIN. ANY PRODUCT WHICH MAY BE SOLD BY WISECO BUT WHICH IS NOT MANUFACTURED BY WISECO IS NOT WARRANTED BY WISECO, BUT IS SOLD ONLY WITH THE WARRANTIES, IF ANY, OF THE MANUFACTURERS THEREOF.**

WISECO's liability (whether under the theories of breach of contract or warranty, negligence or strict liability) for its products shall be limited to repairing or replacing parts found by WISECO to be defective, or at WISECO's option, to refund the purchase price of such product. In no event shall WISECO be liable for incidental or consequential damages arising out of or in connection with the product. Consequential damages shall include, without limitation, loss of use, income or profit, or losses sustained as the result of injury (including death) to any person, or loss of or damage to property.

Any claim by purchaser regarding this product shall be deemed waived by the purchaser unless submitted in writing to WISECO within the earlier of (i) fifteen (15) days following the date Purchaser discovered, or by reasonable inspection should have discovered, any claimed breach of this limited warranty, or (ii) thirty (30) days following the date of original purchase. Any cause of action for breach of this limited warranty shall be brought within six months from the date the alleged breach was discovered or should have been discovered, whichever occurs first.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Return any defective Wiseco product directly to Wiseco for warranty consideration. All defective claims to Wiseco Piston, Inc. should include the following information:**

1. Call Wiseco for RMA (Return Materials Authorization) number at 800-321-1364 or 440-951-6600.
2. The possible defective product being returned should be labeled with the Wiseco part number.
3. Include a copy of invoice, name, and address of supplier for proof of purchase.
4. A brief description of product issue.
5. Wiseco reserves the right to request additional engine related products in order to evaluate a claim.

If the product issue is found to be valid by Wiseco, the Wiseco Customer Service department will advise the distributor as to the amount of responsibility for the claim and will settle all claims directly with the distributor.

SHIP RETURNS "PRE PAID" TO (Include RMA# on the box & packing list):  
- Wiseco Piston Company, Inc. • 7201 Industrial Park Blvd. • Mentor, Ohio 44060-5396  
- In Canada: Wiseco Piston Canada, Inc. • 948 Keyes Drive, PO Box 1513 • Woodstock, ONT. N4S 0A7

**6. Claims; Commencement of Actions.** Purchaser shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless such shortages are reported to Seller within 10 days after delivery. No other claims against Seller will be allowed unless asserted in writing within 60 days after delivery or, in the case of an alleged breach of warranty, within 60 days after the date within the warranty period on which the defect is or should have been discovered by Purchaser.

Any action based upon breach of this contract or upon any other claim arising out of this sale (other than an action by Seller for any amount due to Seller by Purchaser) must be commenced within one year from the date of the tender of delivery by Seller or, in the case of a cause of action based upon an alleged breach of warranty, within one year from the date within the warranty period on which the defect is or should have been discovered by Purchaser. Seller and Purchaser agree to submit any dispute arising from the performance or failure to perform under this Agreement to binding arbitration under the commercial arbitration rules of the American Arbitration Association. The arbitrator shall have the power to award damages but shall not in any case award exemplary or punitive damages. The decision of the arbitrator may be entered into judgment in any court of competent jurisdiction.

**7. LIMITATION OF LIABILITY.** IN NO EVENT SHALL SELLER BE LIABLE TO PURCHASER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN THOUGH SELLER HAS BEEN NEGLIGENT. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY PURCHASER EXCEED THE PURCHASE PRICE OF THE PRODUCTS IN RESPECT OF WHICH DAMAGES ARE CLAIMED.

**8. Contingencies.** Seller shall not be liable for any default or delay in performance if caused, directly or indirectly, by acts of God; war; force of arms; fire; the elements; riot; labor disputes; picketing or other labor controversies; sabotage; civil commotion; accidents; any governmental action, prohibition or regulation; delay in transportation facilities; shortages or breakdown of or inability to obtain or non-arrival of any labor, material or equipment used in the manufacture of the Products; failure of any party to perform any contract with Seller relative to the production of the Products; or from any cause whatsoever beyond Seller's control, whether or not such cause be similar to dissimilar to those enumerated. Seller shall promptly notify Purchaser of the happening of any such contingency and of the contemplated effect thereof on the manufacture and delivery of the Products.

**9. Loss to Purchaser; Property, Patent, Trademark, or Copyright Infringement.** Seller shall not be liable for, and shall have no duty to provide insurance against, any damage or loss to any goods or materials of Purchaser that are used by Seller in connection with this order. Where any Product is manufactured from patterns, plans, drawings, or specifications furnished by Purchaser, Purchaser shall indemnify, defend and save Seller harmless from all loss, damage, and expense arising out of any suit or claim against Seller for infringement of any patent, trademark, or copyright because of Seller's manufacture of such Product or because of the use or sale of such Product by any person. Upon Seller's request, Purchaser shall appear in and assume the defense of the litigation.

**10. Sellers' Specifications, Technical Data, Etc.** Any specifications, drawings, plans, notes, instructions, engineering notices, technical data or other documents disclosed and/or furnished to Purchaser by Seller shall be deemed to be incorporated herein by reference the same as if fully set forth. Seller shall at all times retain title to all such documents. Purchaser shall hold such documents in confidence and not disclose them to any party other than Seller or a party duly authorized by Seller. Upon Seller's request, Purchaser shall promptly return to Seller all such documents and copies thereof.

**11. Purchaser's Obligation; Rights of Seller.** To secure payment of all sums due hereunder or otherwise, Seller shall retain a security interest in the goods delivered hereunder and this contract shall be deemed a Security Agreement under the Uniform Commercial Code. Purchaser authorizes Seller as its attorney to execute and file on Purchaser's behalf all documents Seller deems necessary to perfect such security interest. If Seller shall at any time doubt Purchaser's financial responsibility, Seller may demand adequate assurance of due performance or decline to make any further shipments except upon receipt of cash payment in advance of security. If Seller demands adequate assurance of due performance and the same is not forthcoming within 10 days after the date of Seller's demand, Seller may, at its option, (i) continue to defer further shipments under this order and/or any other order from Purchaser that has been accepted by Seller until adequate assurance is received, or (ii) cancel this order and/or any other orders from Purchaser that have been accepted by Seller and recover damages. If Purchaser fails in any way to fulfill the terms and conditions on the front or the back hereof, Seller may defer further shipments until such default is corrected or cancel this order and recover damages. Seller shall have a security interest in, and lien upon, any property of Purchaser in Seller's possession as security for the payment of any amounts owing to Seller by Purchaser. In the event Seller institutes a legal proceeding against Purchaser to collect any monies due Seller hereunder, or if Seller successfully defends any lawsuit instituted by Purchaser, whether based on contract, tort or any other legal theory of recovery, then Seller shall be entitled to recover its costs and expenses, including reasonable attorney's fees, from Purchaser.

**12. Liability or Responsibility.** Seller assumes no liability or responsibility for any acts, misuse of product, advertising, violations of any local, state or federal regulations or laws violated by Purchaser. Purchaser assumes all responsibility for its acts and is responsible for researching local, state or federal regulations relating to the sale or use of Seller's products.

**13. Improper Use and Indemnity.** Purchaser shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including reasonable attorney's fees), whether for personal injury, property damage or other, brought by or incurred by Purchaser, Purchaser's employees, or any other person, arising out of improper selection, improper application or other misuse of products purchased by Purchaser from Seller.

**14. Cancellations.** After acceptance by Seller, orders shall not be subject to cancellation by Purchaser except with Seller's prior written consent and upon terms that will indemnify, defend and save Seller harmless against all direct, incidental and consequential loss or damage.

**15. Limitation on Assignment.** Purchaser may not assign its rights or obligations under this Agreement without the prior written consent of Seller. Any purported assignment of such rights or obligations without such consent shall be void.

**16. Export.** If the Products are to be exported, this order is subject to Seller's ability to obtain export licenses and other necessary papers within a reasonable period. Purchaser will furnish all Consular and Custom declarations and will accept and bear all responsibility or penalties resulting from errors and omissions thereon. Purchaser shall not re-export the Products or any goods or items that incorporate the Products if the re-export would violate United States export laws.

**17. Equal Opportunity Clause.** This clause applies only in the event that the Products are to be used in whole or in part for the performance of government contracts and where dollar value of said Products exceeds, or may in any one year exceed \$10,000:

"In connection with the performance of work under this contract, the contractor (subcontractor) agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor (subcontractor) agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause."

"The provisions of the Equal Opportunity Clause, as promulgated by Executive Order 11246 dated "September 24, 1965, as amended, are incorporated herein by reference."

**18. Other Rights or Remedies.** Except as otherwise provided herein, any rights or remedies granted hereunder to Seller shall be in addition to, and not in lieu of, any other rights or remedies at law or in equity.

**19. Entire Agreement.** This Agreement contains the entire agreement between Purchaser and Seller and constitutes the final, complete and exclusive expression of the terms of the agreement. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged. No acknowledgment by Seller of, or reference by Seller to, or performance by Seller under, an order of Purchaser shall be deemed to be an acceptance by Seller of any such additional or contrary terms or conditions.

**20. Waiver and Severability.** No waiver of any breach of any provision of this order shall constitute a waiver of any prior, concurrent or subsequent breach of the same or any other provision. In the event that any provision hereof shall violate any applicable statute, ordinance, or rule of law, such provision shall be ineffective to the extent of such violation without invalidating any other provision hereof.

**21. Governing Law.** This Agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to its conflicts of laws principles. Any claim arising from this Agreement shall be exclusively venued in, Lake County, Ohio.

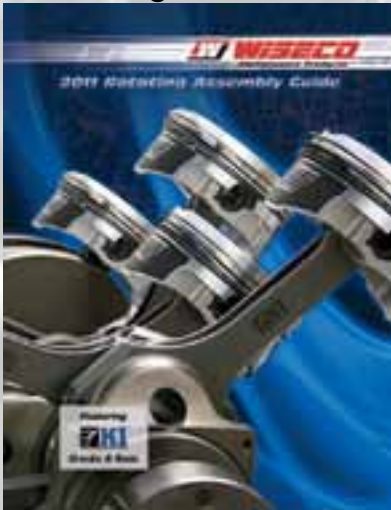
**22. Product Return Policy.** Wiseco allows customer returns of "shelf stock" products for up to 30 days from date of purchase for full refund excluding the cost of shipping. (Custom and "Build to Order" products do not apply). Returned products and packaging must be in "new" condition in order to be eligible for a refund and subject to Wiseco's final approval.

**All product returns to Wiseco Performance Products should include the following information:**

1. Call Wiseco for RMA (Return Materials Authorization) number at 800-321-1364 or 440-951-6600.
2. Include a copy of invoice, name, and address.
3. Brief description for why product is being returned.

SHIP RETURNS "PRE PAID" TO (Include RMA# on the box & packing list):  
- Wiseco Piston Company, Inc. • 7201 Industrial Park Blvd. • Mentor, Ohio 44060-5396  
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Rotating Assemblies



Automotive



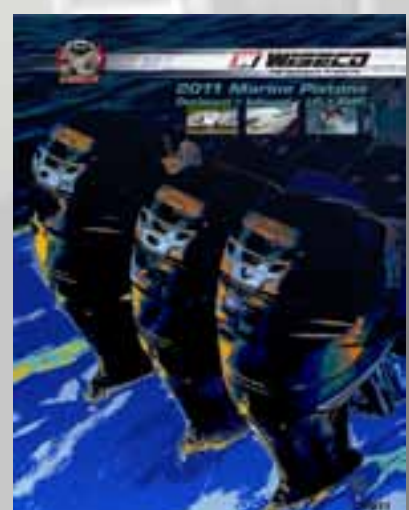
K1 Cranks & Rods



V-Twin & Metric Cruiser



Outboard Marine



"A LEGACY OF PERFORMANCE"

*For 70 years  
Wiseco has maintained  
its reputation for  
"second-to-none"  
quality.*

Snowmobile



European Auto



PowerSports

