All flat tappet cams require careful run-in procedure to give the best chance of a long life.

***We recommend the following step by step procedure is followed as a minimum requirement:***

| No | Task to complete | Checked |
|---|---|---|
| **1** | Thoroughly clean the camshaft and check for any damage due to transport or manufacturing. Cast iron cams straightness can change during transport. | |
| **2** | Carefully inspect the cam for correct part number against your order and that the layout of lobes is correct for your engine model. Compare against the old cam if you have it. Check lubrication grooves are correct if relevant. | |
| **3** | Fit any end plugs supplied with the cam to control oil passages. | |
| **4** | Do you have the correct valve springs to suit the cam?<br>Do not run standard springs if you have a performance cam with bigger lift unless you have checked it is suitable with our technical department.<br>This can cause damage if the spring coil binds or is not the correct rate.<br>Double springs should have the inner spring removed for run in.<br>Ideal run in pressure would be around 100lb on the seat and 250-270 lb open max. | |
| **5** | Check the lifters are all in good condition and rotate freely in the lifter bores.<br>If you are using lube face lifters check the EDM hole is clear in every lifter. | |
| **6** | Hold the faces of the lifters together and hold up to a light; they should touch in the middle and be able to rock side to side.<br>If lifters appear to be flat contact our technical department before fitting. | |
| **7** | Lubricate the camshaft with engine oil and check how it fits in the block.<br>***Do not apply the supplied moly grease yet.*** Leave the cam in the block. | |
| **8** | Insert the first lifter and manually rotate the camshaft and check that the lifter is rotating slowly in the bore. You may need to push lightly on the lifter with a pushrod at this point.<br>Go through each lifter in turn checking rotation is good.<br>If any lifter does not rotate **do not** go any further until the cause of the problem is found.<br>Contact our technical department if you are unsure. | |
| **9** | At this point it is a good time to check cam timing and rocker geometry. Assemble the cam and timing set and check the position of the cam is dialled in correctly. You can also check valve tip geometry and lifter preload at this point. | |
| **10** | Once the dial in is done, mark the gear position so you can reassemble it in the same position. | |
| **11** | Remove the cam and liberally coat it with the supplied moly grease | |
| **12** | Assemble the cam and lifters and go ahead and assemble the rest of the engine.<br>Lifter preload should be set correctly at this point. At least .030“ to .040” for cast iron head, cast iron block engines. .050” to .060” for alloy heads. | |
| **13** | Set the distributor to normal position with standard cam for startup. | |
| **14** | Add a bottle of **Crow Cams ZDDP regardless of the oil you are using for run in. Make sure the oil is low detergent and good quality mineral oil.** | |
| **15** | Ensure the fuel system is ready to go. | |
| **16** | The engine should fire up and go up to about 1800 to 2500 rpm.<br>Do not keep cranking the engine over if it does not start as you will be wiping the assembly grease off the lobe and risk causing lobe failure. | |
| **17** | Keep the engine at between 1800 and 2500rpm for about 10minutes, constantly checking for any leaks or abnormal noises. You should not have to keep adjusting preload during run in. | |
| **18** | After 10 minutes stop the engine and have a good look for any sign of problems with oil, water or pushrod clearance. | |
| **19** | If all good then repeat the above procedure for another 10 minutes and you will have completed the run in procedure | |
| **20** | Change the oil after about 500km.<br>Add zinc additive **ZDDP** with the new oil and remember to use a good quality mineral oil only. | |
| **21** | After run in the cam and lifters should be fine. If you hear any abnormal ticking please do not continue to run the engine until it is looked at by a qualified person. | |

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# CAMSHAFT SPECIFICATIONS

**Part number:** 5689-6 **Cam Type:** Hydraulic flat tappet

| | | | | | |
|---|---|---|---|---|---|
| Adv ground on Cam: | 2° | LSA: | 106° | ICL: | 104° |
| Inlet Lobe lift at TDC: | 0.072" | | | ECL: | 108° |

| | | | | | | |
|---|---|---|---|---|---|---|
| Valve Timing | In opens: | 8 BTDC | Ex opens: | 43 BBDC | Duration: | 222° |
| @ .050" | In closes: | 34 ABDC | Ex closes: | 6 ATDC | Duration: | 229° |
| Adv Valve Timing | In opens: | 32 BTDC | Ex opens: | 68 BBDC | Duration: | 282° |
| @ .006" | In closes: | 69 ABDC | Ex closes: | 40 ATDC | Duration: | 288° |

| | | | | |
|---|---|---|---|---|
| In Lobe Lift: | .298" | Ex Lobe Lift: | .299" | Rocker Ratio: 1.65" |
| In Valve lift: | .491" | Ex Valve lift: | .493" | |

**These high performance components should be checked for suitability by the person installing them as engines of the same group can vary in valve length, spring installed height and collet grooves.**
**IT IS THE SOLE RESPONSIBILITY OF THE INSTALLER TO CHECK SUITABILITY.**

## Warning: ( for any flat tappet cam installations )

Flat tappet cams require a careful run in procedure to reduce the risk of a failure during this critical time. Please read and follow the procedures on the back of this cam card and if unsure contact our technical department.

We do not guarantee pushrod lengths for any engine combination. This must be measured and the correct length pushrod fitted to suit your build. Failure to correctly set pre-load can cause failure of the cam and lifters and also result in noisy operation.

We also recommend you use our zinc additive ZDDP with your run in oil regardless of the brand oil you use. Please also add another bottle of zinc in with your first oil change.

Take special care that you have fitted a spring suitable for your specific application. Installed heights for springs vary greatly from standard spec especially as most older engines have had work done on them over their life. Many aftermarket heads do not have the correct spring fitted to suit a flat tappet cam. Please check this as it is a common cause of failure.

Do not run a flat tappet cam in with dual springs. Remove the inner spring to reduce the pressure and the risk of failure.