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REF: Engine Mechanicals - Sub-01F

Cam Overview - Advice

[Installing XL Cams - From Hammer Performance](#)

(Look around this site - Lots of great tutorials & advice)

[Cam Basics - From Mikuni Carburetors](#)

[Valve Timing Tutorial - From Comp Cams](#)

Cam Comparisons

XL Stock & Screamin' Eagle Camshaft Specs					
Description	Part Number	Lift @ Valve Intake/Exhaust	Duration @.053 Intake/Exhaust	Timing @.053 Lift Open/Close	TDC Lift @ Valve Int/Exh
Stock 'D'	'91-'06 XL models	.458"/.458"	223°/223°	Intake: 2° BTDC/41° ABDC Exhaust: 41° BBDC/2° ATDC	
* Stock 'W'	'98-'17 XL models	.480"/.481"	215°/230°	Intake: 10° BTDC/25° ABDC Exhaust: 38° BBDC/12° ATDC	.133°/.138°
Performance II '14-later	25400125	.585"/.585"	236°/261°	Intake: 11° BTDC/45° ABDC Exhaust: 60° BBDC/21° ATDC	
High Output '04-later	25740-05	.575"/.575"	260°/266°	Intake: 28° BTDC/52° ABDC Exhaust: 57° BBDC/29° ATDC	.228°/.221°
Performance '04-later	25197-04	.551"/.551"	249°/249°	Intake: 25° BTDC/44° ABDC Exhaust: 59° BBDC/10° ATDC	.197°/.122°
** Bolt-In (5 speed) '91-'99	25648-91	.497"/.497"	256°/256°	Intake: 28° BTDC/48° ABDC Exhaust: 52° BBDC/24° ATDC	.211°/.191°
** Bolt-In (5 speed) '00-'03	25648-01	.497"/.497"	256°/256°	Intake: 28° BTDC/48° ABDC Exhaust: 52° BBDC/24° ATDC	.211°/.191°
High-Performance (5 speed) '00-later	25649-01A	.536"/.536"	256°/256°	Intake: 26° BTDC/50° ABDC Exhaust: 55° BBDC/30° ATDC	.209°/.236°

Theoretical, based on rocker arm ratio of 1.65. Valve train components, operation temperature and tolerance stack-up will affect actual lifts.

* - 'W' Cams were first stock on the '98-'03 XL Sport only.
Then stock on the '04-'06 1200cc models only - Then stock on all models '07-later.
Although cam specs are the same, fitting variations introduce compatibility issues.

** - The Screamin' Eagle .497 cams are equivalent to the Andrews N4 cams.

1)

W Cams - '04-later version used in '91-'03 Engines

'W' Cams were stock on the 1998-2003 Sport model only. They were also stock on the 1200 engine models from 2004-2006 (not the 883s). Then they became stock on all models from 2007-later.

Thanks to Aaron Wilson of Hammer Performance for the many contributions to the XLForum.net.



The #2 cam on the left is machined for the timing cup and therefore will work in 91-03 bikes. The #2 cam on the right can only be used in 04+ (crank trigger) bikes, unless someone does the machining.

Even though they went to crank trigger in '04, they continued to ship the bikes with cams that were machined for the timing cup, for awhile. So there are W cams from 04+ bikes floating around out there that can be used in 91-03 models. Always check to be sure. ³⁾

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Chart Annotated by IXL2Relax

²⁾

Pic from Aaron Wilson at

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/169567-opinions-on-w-grind-cam?t=1819937>

³⁾

Above info quoted from Aaron Wilson at

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