

Harley-Davidson Camshaft Specifications

(TC, EVO, Shovelhead, XL EVO, Iron Head, XR)

Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
TC	HD Carbureted	A	Y	-02	38	36	04	216	220	02	110	106	108.0	0.473	0.473	0.072	0.110				62
TC	HD Injected	2006	Y	-04	40	41	-02	217	220	-05	112	111	111.5	0.474	0.474	0.087	0.110				62
TC	HD Injected	B	Y	02	34	36	04	216	220	06	106	106	106.0	0.473	0.473	0.087	0.110				62
TC	HD Injected	06 Dyna	Y	02	34	36	04	216	220	06	106	106	106.0	0.473	0.473	0.087	0.110				
TC	HD Injected	07-08	Y	-12	30	38	04	198	222	-08	111	107	109.0	0.484	0.484	0.041	0.102				
TC	HD Injected	2007	Y	-09	25	39	01	196	220	-08	107	109	108.0	0.471	0.474	0.048	0.100				
TC	Andrews	TW12HG	Y	02	34	36	04	216	220	06	106	106	106.0	0.474	0.474	0.087	0.110	1700	4800		
TC	Andrews	TW21	Y	10	30	40	08	220	228	18	100	106	103.0	0.498	0.498	0.134	0.121	1700	4800		
TC	Andrews	TW21G	Y	10	30	40	08	220	228	18	100	106	103.0	0.498	0.498	0.134	0.121	1700	4800		
TC	Andrews	TW26	Y	09	37	43	07	226	230	16	104	108	106.0	0.490	0.490	0.129	0.112	1800	5500		
TC	Andrews	TW26A	Y	11	35	41	09	226	230	20	102	106	104.0	0.490	0.490	0.129	0.112	1800	5500		
TC	Andrews	TW26G	Y	11	35	41	09	226	230	20	102	106	104.0	0.490	0.490	0.129	0.112	1800	5500		
TC	Andrews	TW31S	Y	10	46	52	08	236	240	18	108	112	110.0	0.510	0.510	0.151	0.140	2000	5800		Turbo
TC	Andrews	TW32HG	-	10	46	52	08	236	240	18	108	112	110.0	0.570	0.570	0.151	0.120	2000	5800		
TC	Andrews	TW37	Y	12	42	48	12	234	240	24	105	108	106.5	0.510	0.510	0.151	0.140	2200	5800		
TC	Andrews	TW37B	Y	14	42	48	12	236	240	26	104	108	106.0	0.510	0.510	0.151	0.140	2200	5800		80+
TC	Andrews	TW37G	Y	14	42	48	12	236	240	26	104	108	106.0	0.510	0.510	0.151	0.140	2200	5800		80
TC	Andrews	TW44	Y	21	41	49	17	242	246	38	100	106	103.0	0.495	0.495	0.182	0.158	2400	6000		
TC	Andrews	TW44G	Y	21	41	49	17	242	246	38	100	106	103.0	0.495	0.495	0.182	0.158	2400	6000		
TC	Andrews	TW50	-	20	48	54	18	248	252	38	104	108	106.0	0.510	0.510	0.184	0.168	2600	6000	95	
TC	Andrews	TW50G	-	20	48	54	18	248	252	38	104	108	106.0	0.510	0.510	0.184	0.168	2600	6000	95	
TC	Andrews	TW54H	-	16	42	43	15	238	238	31	103	104	103.5	0.555	0.555	0.165	0.158				
TC	Andrews	TW55	-	22	46	52	20	248	252	42	102	106	104.0	0.550	0.550	0.197	0.181	2600	6200	95	105
TC	Andrews	TW55G	-	22	46	52	20	248	252	42	102	106	104.0	0.550	0.550	0.197	0.181	2600	6200	95	105
TC	Andrews	TW59G	-	29	57	63	27	266	270	56	104	108	106.0	0.590	0.590	0.238	0.218	2700	6500	95	
TC	Andrews	TW60	-	24	56	58	22	260	260	46	106	108	107.0	0.560	0.560	0.205	0.205	2700	6500	95	100
TC	Andrews	TW60G	-	24	56	58	22	260	260	46	106	108	107.0	0.560	0.560	0.205	0.205	2700	6500	95	100
TC	Andrews	TW64G	-	30	62	68	32	272	280	62	106	108	107.0	0.640	0.640	0.262	0.232	3000	6500	95	
TC	Andrews	TW67G	-	24	48	58	22	252	260	46	102	108	105.0	0.570	0.570	0.209	0.187	2600	6400	95	110
TC	Black Widow	BW39	Y	09	39	44	14	228	238	23	105	105	105.0	0.495	0.500						
TC	Black Widow	BW48	-	20	48	52	16	248	248	36	104	108	106.0	0.540	0.540						
TC	Black Widow	BW52	-	18	50	55	23	248	258	41	106	106	106.0	0.540	0.565						
TC	Black Widow	BW58	-	25	53	57	21	258	258	46	104	108	106.0	0.565	0.565						
TC	Carl's Speed Shop	CM510	Y					242	239					0.510	0.510	0.209	0.157				
TC	Carl's Speed Shop	CM512	Y					242	239					0.512	0.512	0.166	0.138				
TC	Carl's Speed Shop	CM575												0.575	0.575						102
TC	Carl's Speed Shop	CM582						242	239					0.583	0.583	0.175	0.146				
TC	Carl's Speed Shop	CM600G						256	256					0.600	0.600	0.232	0.218				
TC	Crane	HTC-290-2	-	18	42	46	22	240	248	40	102	102	102.0	0.570	0.570	0.173	0.198	1800	5800		
TC	Crane	HTC-296-2	-	20	46	52	22	246	254	42	103	105	104.0	0.600	0.600	0.188	0.193	2000	6000		
TC	Crane	HTC-296-2	-	20	46	52	22	246	254	42	103	105	104.0	0.619	0.619			2000	6000		
TC	Crane	HTC-300-2	Y	13	33	42	14	226	236	27	100	104	102.0	0.505	0.505	0.147	0.152	1200	5000	95	100
TC	Crane	HTC-304-2	-	25	49	56	24	254	260	49	102	106	104.0	0.600	0.600	0.211	0.206	2000	6200		
TC	Crane	HTC-310-2	Y	20	36	47	15	236	242	35	98	106	102.0	0.505	0.505	0.185	0.157	1500	5500		
TC	Crane	HTC-316-2	Y	19	43	48	24	242	252	43	102	102	102.0	0.505	0.505	0.178	0.205	1800	5500		

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TC	CycleRama	CR500	Y	19	45	51	13	244	244	32	103	109	106.0	0.500	0.500			2500	6200		
TC	CycleRama	CR550		16	36	44	08	232	232	24	100	108	104.0	0.550	0.550				6200		
TC	CycleRama	CR595		20	42	50	12	242	242	32	101	109	105.0	0.595	0.595						120
TC	CycleRama	CR630		23	51	61.5	18	254	259	41	104	112	108.0	0.630	0.647			2000			
TC	CycleRama	CR660		26	60	68.5	26	266	274	52	107	112	109.3	0.660	0.670						
TC	CycleRama	CR715		34	66	76	28	280	284	62	106	114	110.0	0.715	0.694			3000	6500		170
TC	CycleRama	CR728		26	58	66	22	264	268	48	106	112	109.0	0.728	0.628						
TC	CycleRama	CR731		31	67	79	27	278	286	58	108	116	112.0	0.731	0.689						
TC	Dave Mackie	TC510	Y	22	38	52	12	240	244	34	98	110	104.0	0.510	0.510	0.194	0.138				
TC	Dave Mackie	TC510G	Y	22	38	52	12	240	244	34	98	110	104.0	0.510	0.510	0.194	0.138				
TC	Dave Mackie	TC590	-	26	42	56	12	248	248	38	98	112	105.0	0.590	0.590	0.231	0.143				
TC	Dave Mackie	TC590G	-	26	42	56	12	248	248	38	98	112	105.0	0.590	0.590	0.231	0.143				
TC	Dave Mackie	TC598G	-	24	50	56	20	254	256	44	103	108	105.5	0.598	0.598	0.213	0.179				
TC	Dave Mackie	TC630G	-	24	58	60	22	262	262	46	107	109	108.0	0.630	0.630	0.217	0.198				
TC	Edlebrock	1735	-	20	46	52	22	246	254	42	103	105	104.0	0.619	0.619	0.188	0.193				
TC	Edlebrock	1748	-	20	46	52	22	246	254	42	103	105	104.0	0.600	0.600	0.188	0.193				
TC	Edlebrock	1749	-	27	58	58	27	265	265	54	106	106	105.5	0.650	0.650	0.210	0.210				
TC	Flo Headworks	550FH	-	23	46	50	22	249	252	45	102	104	102.8	0.525	0.550	0.218	0.175				
TC	Flo Headworks	575FH	-	22	50	54	22	252	256	44	104	106	105.0	0.550	0.575	0.218	0.176				
TC	Flo Headworks	600FH	-	22	54	58	22	256	260	44	106	108	107.0	0.575	0.600	0.218	0.176				
TC	Head Quarters	HQ-0033	-	19	47	52	24	246	256	43	104	104	104.0	0.600	0.530						
TC	Head Quarters	HQ-0033	-	19	47	52	24	246	256	43	104	104	104.0	0.600	0.600						
TC	Head Quarters	HQ-0033-G	-	19	47	52	24	246	256	43	104	104	104.0	0.600	0.530						
TC	Head Quarters	HQ-0033-G	-	19	47	52	24	246	256	43	104	104	104.0	0.600	0.600						
TC	Head Quarters	HQ-0034	Y	20	36	51	19	236	250	39	98	106	102.0	0.500	0.500						88
TC	Head Quarters	HQ-0034-G	Y	20	36	51	19	236	250	39	98	106	102.0	0.500	0.500						88
TC	Head Quarters	HQ-0036	-	20	54	53	22	254	255	42	107	106	106.3	0.600	0.530						
TC	Head Quarters	HQ-0036-G	-	20	54	53	22	254	255	42	107	106	106.3	0.600	0.530						
TC	Head Quarters	HQ-0037-G	-	26	60	70	24	266	274	50	107	113	110.0	0.650	0.575						
TC	Head Quarters	HQ-0038	-	23	63	52	24	266	256	47	110	104	107.0	0.600	0.530						
TC	Head Quarters	HQ-0038-G	-	23	63	52	24	266	256	47	110	104	107.0	0.600	0.530						
TC	Head Quarters	HQ-0039	-	20	38	52	20	238	252	40	99	106	102.5	0.580	0.530						
TC	Head Quarters	HQ-0039-G	-	20	38	52	20	238	252	40	99	106	102.5	0.580	0.530						
TC	Kuryakn Wild Thing	TC-1	Y	15	41	40	08	236	228	23	103	106	104.5	0.510	0.498	0.158	0.121				85
TC	Kuryakn Wild Thing	TC-1G	Y	15	41	40	08	236	228	23	103	106	104.5	0.510	0.498	0.158	0.121				85
TC	Kuryakn Wild Thing	TC-26G	-	18	50	48	14	248	242	32	106	107	106.5	0.575	0.495	0.175	0.145			95	123
TC	Kuryakn Wild Thing	TC-2G	-	18	50	48	14	248	242	32	106	107	106.5	0.510	0.495	0.169	0.145				92
TC	Kuryakn Wild Thing	TC-46G	-	26	54	52	20	260	252	46	104	106	105.0	0.625	0.575	0.230	0.182			95	121
TC	Kuryakn Wild Thing	TC-4G	-	26	54	52	20	260	252	46	104	106	105.0	0.560	0.550	0.217	0.151				
TC	Kuryakn Wild Thing	TC-546G	-	27	59	52	20	266	252	47	106	106	106.0	0.630	0.575	0.234	0.182			103	131
TC	Kuryakn Wild Thing	TC-5G	-	27	59	58	22	266	260	49	106	108	107.0	0.590	0.560	0.225	0.169				
TC	Leineweber	RE-T3S	Y	17	41	51	11	238	242	28	102	110	106.0	0.510	0.510						
TC	Leineweber	RE-T5S	-	24	40	56	12	244	248	36	98	112	105.0	0.560	0.560						
TC	Leineweber	RE-T7S	-	23	51	59	19	254	258	42	104	110	107.0	0.603	0.603					95	
TC	Leineweber	RE-T9S	-	52	82	83	39	314	302	91	105	112	108.5	0.660	0.640					124	

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Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
TC	Red Shift	557TC	Y	16	46	48	14	242	242	30	105	107	106.0	0.557	0.557	0.161	0.146			95	
TC	Red Shift	575TC	-	24	40	48	16	244	244	40	98	106	102.0	0.575	0.575	0.194	0.152			95	90
TC	Red Shift	577TC	-	25	46	53	22	251	255	47	101	106	103.0	0.577	0.577	0.217	0.198				110
TC	Red Shift	627TC	-	29	54	58	28	263	266	57	103	105	103.8	0.627	0.627	0.245	0.211			95	
TC	Red Shift	647TC	-	26	58	58	26	264	264	52	106	106	106.0	0.647	0.647	0.211	0.211			107	
TC	Red Shift	657TC	-	21	52	58	16	253	254	37	106	111	108.3	0.657	0.657	0.180	0.162			100	120
TC	Red Shift	727TC	-	36	65	69	33	281	282	69	105	108	106.3	0.729	0.729	0.293	0.261				
TC	RevTech	601985	Y	10	30	40	08	220	228	18	100	106	103.0	0.498	0.498	0.134	0.121				
TC	RevTech	601986	Y	11	35	41	09	226	230	20	102	106	104.0	0.490	0.490	0.129	0.112				
TC	RevTech	601987	-	22	46	52	20	248	252	42	102	106	104.0	0.550	0.550	0.197	0.181				
TC	RevTech	601988	Y	14	42	48	12	236	240	26	104	108	106.0	0.510	0.510	0.151	0.140				
TC	RevTech	601989	-	20	48	54	18	248	252	38	104	108	106.0	0.510	0.510	0.184	0.168				
TC	S&S	510C	Y	20	38	52	20	238	252	40	99	106	102.5	0.510	0.510	0.187	0.178				
TC	S&S	510G	Y	20	38	52	20	238	252	40	99	106	102.5	0.510	0.510	0.187	0.178				
TC	S&S	546G	-	05	55	52	05	240	237	10	115	114	114.3	0.546	0.546	0.126	0.106				
TC	S&S	570G	-	20	40	55	20	240	255	40	100	108	103.8	0.570	0.570	0.187	0.179				
TC	S&S	585G	-	20	45	60	20	245	260	40	103	110	106.3	0.585	0.585	0.186	0.179				
TC	S&S	625G	-	20	55	60	20	255	260	40	108	110	108.8	0.625	0.625	0.189	0.184				
TC	S&S	640G	-	25	60	65	25	265	270	50	108	110	108.8	0.640	0.640	0.228	0.214				
TC	S&S	675G	-	25	64	70	25	269	275	50	110	113	111.0	0.675	0.675	0.235	0.205			120	
TC	Screamin Eagle	SE-201	-	12	54	58	14	246	252	26	111	112	111.5	0.511	0.511	0.137	0.141	3500	6500		
TC	Screamin Eagle	SE-203	Y	18	36	42	17	234	239	35	99	103	100.8	0.510	0.510	0.178	0.152				
TC	Screamin Eagle	SE-204	Y	22	34	52	08	236	240	30	96	112	104.0	0.508	0.508	0.208	0.129		5800		
TC	Screamin Eagle	SE-211	-	23	45	59	17	248	256	40	101	111	106.0	0.508	0.508	0.203	0.170				
TC	Screamin Eagle	SE-251	-	18	46	56	14	244	250	32	104	111	107.5	0.579	0.579	0.178	0.158				110
TC	Screamin Eagle	SE-253	-	07	53	59	17	240	256	24	113	111	112.0	0.538	0.538	0.119	0.158			95	86
TC	Screamin Eagle	SE-255	-	06	25	48	07	211	235	13	100	111	105.0	0.550	0.550	0.079	0.070		5500	110	80
TC	Screamin Eagle	SE-257	-	24	48	59	21	252	260	45	102	109	105.5	0.569	0.569	0.213	0.200				
TC	Screamin Eagle	SE-258	-	26	52	65	23	258	268	49	103	111	107.0	0.569	0.569	0.224	0.208			95	
TC	Screamin Eagle	SE-260	-	28	55	65	24	263	269	52	104	111	107.0	0.609	0.609	0.236	0.213			95	
TC	Screamin Eagle	SE-264	-	24	60	60	22	264	262	46	108	109	108.5	0.635	0.635	0.219	0.211			95	
TC	Tman	TR590	-	22	44	48	20	246	248	42	101	104	102.5	0.590	0.590						
TC	Tman	TR600	-	21	39	43	19	240	242	40	99	102	100.5	0.600	0.600						
TC	Tman	TR650	-	26	52	56	24	258	260	50	103	106	104.5	0.650	0.650						
TC	Tman	TR715	-	32	60	64	28	272	272	60	104	108	106.0	0.715	0.715						
TC	Woods	TW10FG	-	24	52	54	22	256	256	46	104	106	105.0	0.750	0.750	0.225	0.202				
TC	Woods	TW400G	-	22	42	44	20	244	244	42	100	102	101.0	0.652	0.652	0.210	0.190	2000		103	
TC	Woods	TW408G	-	24	44	46	22	248	248	46	100	102	101.0	0.650	0.650	0.218	0.200			95	
TC	Woods	TW5G	-	17	37	39	15	234	234	32	100	102	101.0	0.575	0.575	0.174	0.160				
TC	Woods	TW62G	-	31	51	53	29	262	262	60	100	102	101.0	0.652	0.652	0.249	0.248				
TC	Woods	TW68G	-	30	58	62	26	268	268	56	104	108	106.0	0.678	0.678	0.260	0.226				
TC	Woods	TW6G	Y	20	40	42	18	240	240	38	100	102	101.0	0.510	0.510	0.191	0.173		5500		
TC	Woods	TW6HG	-	20	40	42	18	240	240	38	100	102	101.0	0.590	0.590	0.194	0.176				
TC	Woods	TW72G	-	34	54	56	32	268	268	66	100	102	101.0	0.720	0.720	0.286	0.265				
TC	Woods	TW75	-	34	62	66	30	276	276	64	104	108	106.0	0.750	0.750	0.285	0.282				

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TC	Woods	TW-7H	-	20	40	42	18	240	240	38	100	102	101.0	0.575	0.575	0.194	0.176			96	
TC	Woods	TW8G	-	19	47	49	17	246	246	36	104	106	105.0	0.590	0.590	0.183	0.176				
TC	Woods	TW9BG	-	22	50	52	20	252	252	42	104	106	105.0	0.630	0.630	0.208	0.191				
TC	Woods	TW9FG	-	24	52	54	22	256	256	46	104	106	105.0	0.650	0.650	0.220	0.201				
TC	Woods	TW9G	-	22	50	52	20	252	252	42	104	106	105.0	0.580	0.580	0.205	0.187				
EVO	HD Stock	81-91 (L)	Y	01	37	53	-01	218	232	00	108	117	112.5	0.495	0.495	0.091	0.083				
EVO	HD Stock	84-87	Y	-06	38	25	-03	212	202	-09	112	104	108.0	0.472	0.472						
EVO	HD Stock	84-93 CA	Y	Data not available										0.416	0.416						
EVO	HD Stock	88-91	Y	03	39	54	02	222	236	05	108	116	112.0	0.495	0.495						75
EVO	HD Stock	92-98 (N)	Y	-02	30	31	-09	208	202	-11	106	110	108.0	0.472	0.472	0.070	0.049				65
EVO	3Sun	Aries EB11A	-	25	55	59	21	260	260	46	105	109	107.0	0.555	0.555	0.226	0.197				
EVO	3Sun	Electra EB11A	-	27	61	64	24	268	268	51	107	110	108.5	0.560	0.560	0.238	0.216				
EVO	3Sun	Mars EB112A	-	26	46	51	21	252	252	47	100	105	102.5	0.550	0.550	0.230	0.196	2500	6000		95
EVO	3Sun	Mars EB2112A	-	27	51	58	22	258	260	49	102	108	105.0	0.560	0.560	0.240	0.203			89	
EVO	3Sun	Mars EB2231A	-	27	53	62	22	260	264	49	103	110	106.5	0.580	0.580	0.243	0.203			93	
EVO	3Sun	Triton EB11A	Y	21	43	49	15	244	244	36	101	107	104.0	0.500	0.500	0.198	0.160				
EVO	3Sun	Triton EB11B	Y	15	36	43	13	231	236	28	101	105	102.8	0.495	0.495	0.170	0.148				
EVO	Andrews	EV1	Y	12	34	34	12	226	226	24	101	101	101.0	0.485	0.485						
EVO	Andrews	EV13	Y	15	31	45	13	226	238	28	98	106	102.0	0.485	0.495	0.161	0.148				
EVO	Andrews	EV23	Y	10	30	40	08	220	228	18	100	106	103.0	0.498	0.498	0.134	0.121	1500	6000		75
EVO	Andrews	EV27	Y	20	36	44	16	236	240	36	98	104	101.0	0.495	0.495	0.182	0.166	1500	6000		75
EVO	Andrews	EV3	Y	21	37	43	15	238	238	36	98	104	101.0	0.495	0.495	0.197	0.159		6000		
EVO	Andrews	EV31	Y	10	46	52	08	236	240	18	108	112	110.0	0.495	0.495	0.133	0.122				
EVO	Andrews	EV35	Y	21	37	52	20	238	252	41	98	106	102.0	0.495	0.500	0.197	0.182		6500		
EVO	Andrews	EV38	Y	21	37	52	20	238	252	41	98	106	102.0	0.495	0.500	0.197	0.182				
EVO	Andrews	EV46	Y	25	41	49	17	246	246	42	98	106	102.0	0.495	0.495	0.207	0.163	2200	6000		82
EVO	Andrews	EV5	-	28	44	52	20	252	252	48	98	106	102.0	0.530	0.530	0.240	0.190	2500	6500		
EVO	Andrews	EV51	-	28	44	54	22	252	256	50	98	106	102.0	0.510	0.510	0.233	0.195	3000	6500		
EVO	Andrews	EV57	-	26	46	59	27	252	266	53	100	106	103.0	0.530	0.560						
EVO	Andrews	EV59	-	28	48	56	24	256	260	52	100	106	103.0	0.560	0.560	0.236	0.208		6000		
EVO	Andrews	EV7	-	31	56	59	27	267	266	58	103	106	104.3	0.560	0.560			3000	6500	92	
EVO	Andrews	EV72	-	30	54	60	28	264	268	58	102	106	104.0	0.560	0.560	0.246	0.230	2800	6000	92	
EVO	Andrews	EV79	-	31	55	64	32	266	276	63	102	106	104.0	0.560	0.550				6500	92	
EVO	Andrews	EV81	-	32	60	66	30	272	276	62	104	108	106.0	0.610	0.610	0.262	0.244		6500		
EVO	Andrews	EV84	-	32	64	70	30	276	280	62	106	110	108.0	0.640	0.640	0.269	0.246		6500	90	
EVO	Andrews	EV88	-	34	70	76	32	284	288	66	108	112	110.0	0.680	0.680	0.288	0.264		6500	100	
EVO	Andrews	EV9	-	36	60	64	32	276	276	68	102	106	104.0	0.550	0.550				6500	92	
EVO	Andrews	EVSC	Y	10	46	52	08	236	240	18	108	112	110.0	0.495	0.495	0.133	0.122	1500	6000		75
EVO	Bartels'	BP20	Y	18	36	45	13	234	238	31	99	106	102.5	0.490	0.495						
EVO	Bartels'	BP40	Y	21	37	48	20	238	248	41	98	104	101.0	0.495	0.495						
EVO	Black Widow	8442	-					254	254					0.590	0.590						
EVO	Black Widow	8445	-					246	246					0.543	0.543						
EVO	Black Widow	8447	-	14	44	47	10	238	237	24	105	109	106.8	0.513	0.513						
EVO	Black Widow	8460	-					247	247					0.576	0.576						
EVO	Black Widow	8460F	-					251	251					0.576	0.576						
EVO	Black Widow	PP8823-2	-	22	50	55	17	252	252	39	104	109	106.5	0.584	0.568						
EVO	Black Widow	PP8832-2	-	26	54	61	23	260	264	49	104	109	106.5	0.586	0.602						

Harley-Davidson Camshaft Specifications

(TC, EVO, Shovelhead, XL EVO, Iron Head, XR)

Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
EVO	Black Widow	PP8833-2	-	29	55	62	25	264	267	54	103	109	105.8	0.600	0.602						
EVO	Black Widow	PP8826-2	-	27	61	63	29	268	272	56	107	107	107.0	0.602	0.602						
EVO	Black Widow	PP8817-2	-					254	254					0.590	0.590						
EVO	Carl's Speed Shop	CM4	-	28	44	52	20	252	252	48	98	106	102.0	0.495	0.495						
EVO	Carl's Speed Shop	CM495F	Y	19	47	50	16	246	246	35	104	107	105.5	0.495	0.495	0.179	0.168				
EVO	Carl's Speed Shop	CM580	-	19	47	50	16	246	246	35	104	107	105.5	0.580	0.580	0.194	0.163				
EVO	Carl's Speed Shop	CM612	-	36	60	68	28	276	276	64	102	110	106.0	0.612	0.612	0.277	0.235			88	
EVO	Carl's Speed Shop	CM660	-	38	62	68	28	280	276	66	102	110	106.0	0.660	0.660	0.314	0.277			90	
EVO	Carl's Speed Shop	CM774	-					284	284					0.784	0.784	0.277	0.236				
EVO	Carl's Speed Shop	CM780F	-	34	70	74	30	284	284	64	108	112	110.0	0.774	0.774					103	
EVO	Crane	EVR0020	-	31	64.5	77	23	275	280	54	107	117	112.0	0.608	0.589					88	
EVO	Crane	Fireball 2000	Y	-12	22	20	-10	190	190	-22	107	105	106.0	0.490	0.490	0.026	0.032				
EVO	Crane	Fireball 300	Y	12	34	41	15	226	236	27	101	103	102.0	0.490	0.490				4000		
EVO	Crane	Fireball 310	Y	16	40	43	19	236	242	35	102	102	102.0	0.490	0.490			1500	4500		75
EVO	Crane	Fireball 316	Y	19	43	48	24	242	252	43	102	102	102.0	0.490	0.490			2000	5000		80
EVO	Crane	Fireball 326	-	24	48	57	25	252	262	49	102	106	104.0	0.490	0.500			2500	5500		
EVO	Crane	H286	Y	19	43	48	24	242	252	43	102	102	102.0	0.490	0.490			2000	5000		80
EVO	Crane	H290	-	17	43	45	23	240	248	40	103	101	102.0	0.581	0.581			1800	5200		
EVO	Crane	H296	-	24	48	57	25	252	262	49	102	106	104.0	0.490	0.500			2500	5500		
EVO	Crane	H304	-	24	50	55	25	254	260	49	103	105	104.0	0.600	0.600			2500	5800		
EVO	Crane	H306	-	28	54	69	23	262	272	51	103	113	108.0	0.500	0.510	0.224	0.195	3000	6000		
EVO	Crane	H310	-	23	63	68	28	266	276	51	110	110	110.0	0.550	0.550	0.229	0.229	3000	6500	88	
EVO	Crane	H314	-	26	54	65	21	260	266	47	104	112	108.0	0.600	0.600			2800	6000		
EVO	Crane	HEV0042	-	27	59	71	23	266	274	50	106	114	110.0	0.600	0.576	0.226	0.194	3000	6000	100	116
EVO	Crane	HEV0067	-	24	50	56	24	254	260	48	103	106	104.5	0.600	0.530	0.128	0.113				
EVO	Crane	HEV0098	-	36	62	72	34	278	286	70	103	109	106.0	0.650	0.650	0.171	0.156			96	
EVO	CycleRama	CR-E550	-	24	52	53	23	256	256	47	104	105	104.5	0.550	0.530						
EVO	CycleRama	CR-E581	-	22	46	53	23	248	256	45	102	105	103.5	0.581	0.550						
EVO	CycleRama	CR-E600A	-	24	50	56	24	254	260	48	103	106	104.5	0.600	0.530						
EVO	CycleRama	CR-E600B	-	23	51	54	22	254	256	45	104	106	105.0	0.600	0.550						
EVO	CycleRama	CR-E617	-	22	50	50	22	252	252	44	104	104	104.0	0.617	0.617						
EVO	CycleRama	CR-E630	-	18	60	63	13	258	256	31	111	115	113.0	0.630	0.630						
EVO	CycleRama	CR-E660	-	27	59	71	23	266	274	50	106	114	110.0	0.660	0.660			3500	6500		140
EVO	Dave Mackie	DM500	Y	22	38	52	12	240	244	34	98	110	104.0	0.500	0.500	0.189	0.138				
EVO	Dave Mackie	DM500X	Y	25	40	55	20	245	255	45	98	108	102.5	0.500	0.500	0.208	0.178				
EVO	Dave Mackie	DM530	-	28	42	55	15	250	250	43	97	110	103.5	0.530	0.530	0.221	0.141				
EVO	Dave Mackie	DM580	-	26	42	56	12	248	248	38	98	112	105.0	0.580	0.580	0.227	0.144				113
EVO	Dave Mackie	DM581	-	26	42	56	12	248	248	38	98	112	105.0	0.580	0.580	0.227	0.144				
EVO	Dave Mackie	DM595	-	21	49	57	14	250	251	35	104	112	107.8	0.595	0.595	0.192	0.150				
EVO	Dave Mackie	DM635	-	20	56	59	18	256	257	38	108	111	109.3	0.635	0.635	0.194	0.176				
EVO	Edlebrock	1740	Y	19	43	48	24	242	252	43	102	102	102.0	0.490	0.490	0.176	0.203				
EVO	Edlebrock	1741	-	20	46	52	22	246	254	42	103	105	104.0	0.600	0.600	0.183	0.187				
EVO	Head Quarters	HQ-23	-	19	47	52	24	246	256	43	104	104	104.0	0.600	0.530						
EVO	Head Quarters	HQ-24	Y	20	36	52	19	236	251	39	98	107	102.3	0.500	0.500						
EVO	Head Quarters	HQ-25	-	18	38	42	14	236	236	32	100	104	102.0	0.550	0.550						
EVO	Head Quarters	HQ-26	-	20	54	53	22	254	255	42	107	106	106.3	0.600	0.530					89	
EVO	Head Quarters	HQ-27	-	26	60	70	24	266	274	50	107	113	110.0	0.650	0.575					103	

Harley-Davidson Camshaft Specifications

(TC, EVO, Shovelhead, XL EVO, Iron Head, XR)

Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP	
EVO	Head Quarters	HQ-28	-	23	63	52	24	266	256	47	110	104	107.0	0.600	0.530					93		
EVO	Head Quarters	HQ-29	-	20	36	51	19	236	250	39	98	106	102.0	0.580	0.500							
EVO	JIMS	1361	-	16	38	50	14	234	244	30	101	108	104.5	0.500	0.500			2000	6000			
EVO	JIMS	1362	-	24	50	56	22	254	258	46	103	107	105.0	0.565	0.565			3000	6000	89		
EVO	JIMS	1363	-	28	56	68	24	264	272	52	104	112	108.0	0.600	0.600			2800	6000+	93		
EVO	JIMS	1364	-	31	59	72	24	270	276	55	104	114	109.0	0.660	0.660			3000	6500+			
EVO	Kuryakn Wild Thing	ER-2	-	26	50	52	20	256	252	46	102	106	104.0	0.560	0.510							
EVO	Kuryakn Wild Thing	ER-46	-	24	56	56	16	260	252	40	106	110	108.0	0.625	0.575					96		
EVO	Leineweber	E-2	-	43	62	67.5	37	285	285	80	100	105	102.4	0.470	0.470	0.214	0.185		5800			
EVO	Leineweber	E-3	-	46	70	76	40	296	296	86	102	108	105.0	0.500	0.500							
EVO	Leineweber	E-31	-	43	67	73	37	290	290	80	102	108	105.0	0.500	0.500	0.238	0.191					
EVO	Leineweber	E-3B	-	40	66	77	33	286	290	73	103	112	107.5	0.500	0.500	0.200	0.163					SuperCharge
EVO	Leineweber	E3-S	-	44	62	70	36	286	286	80	99	107	103.0	0.502	0.502	0.222	0.162					
EVO	Leineweber	E-4	-	49	74	76	39	303	295	88	103	109	105.5	0.560	0.545							
EVO	Leineweber	E-4	-	48	76	75	38	304	293	86	104	109	106.3	0.562	0.549	0.291	0.194	3000	7000	88		
EVO	Leineweber	E-4S	-	49	74	76	39	303	295	88	103	109	105.5	0.560	0.545							
EVO	Leineweber	E-4S	-	45	58	72	30	283	282	75	97	111	103.8	0.528	0.528	0.228	0.138					
EVO	Leineweber	E-5	-	46	70	74	41	296	295	87	102	107	104.4	0.540	0.540							
EVO	Leineweber	E-5	-	44	69	74	38	293	292	82	103	108	105.3	0.550	0.550	0.267	0.211					
EVO	Leineweber	E-51	-	47	58	74	29	285	283	76	96	113	104.0	0.544	0.544	0.278	0.144					
EVO	Leineweber	E-5B	-	34	59	70	27	273	277	61	103	112	107.0	0.543	0.545	0.197	0.131					SuperCharge
EVO	Leineweber	E-5S	-	39	56	69	26	275	275	65	99	112	105.0	0.544	0.544							
EVO	Leineweber	E-5T	-	29	64	74	23	273	277	52	108	116	111.5	0.544	0.544	0.168	0.131					
EVO	Leineweber	E-6	-	47	77	82	42	304	304	89	105	110	107.5	0.562	0.562	0.280	0.220					
EVO	Leineweber	E-6	-	47	73	79	40	300	299	87	103	110	106.3	0.560	0.560							
EVO	Leineweber	E-6S	-	47	65	75	34	292	289	81	99	111	104.8	0.560	0.560	0.270	0.172					
EVO	Leineweber	E-7	-	43.5	73.5	77	40	297	297	84	105	109	106.8	0.585	0.585	0.275	0.195			90		
EVO	Leineweber	E-7	-	44	73.5	77	40	297	297	84	105	109	106.8	0.580	0.580							
EVO	Leineweber	E-7S	-	41.5	66.5	71.5	35.5	288	287	77	103	108	105.3	0.577	0.577	0.253	0.195					
EVO	Leineweber	E-8	-	51	78	80	37	309	297	88	104	112	107.5	0.618	0.585	0.313	0.203			90		
EVO	Leineweber	E-8	-	50	79	80	37	309	297	87	105	112	108.0	0.615	0.580							
EVO	Leineweber	E-9	-	54	83	86	37	317	303	91	105	115	109.5	0.641	0.618	0.327	0.199			100		
EVO	Leineweber	E-9	-	53	81	86	38	314	304	91	104	114	109.0	0.640	0.615							
EVO	PatrickRacing	PR1	-					248	248					0.560	0.560							
EVO	PatrickRacing	PR2	-					254	254					0.565	0.565							
EVO	PatrickRacing	PR3	-					266	266					0.608	0.608							
EVO	Power House	Executioner 620	-	32	64	72	24	276	276	56	106	114	110.0	0.620	0.620	0.262	0.205			88		
EVO	Power House	Extreme 595E	-	24	60	64	20	264	264	44	108	112	110.0	0.595	0.595	0.215	0.191		7000			
EVO	Power House	GT 530G	-	18	44	50	16	242	246	34	103	107	105.0	0.530	0.530	0.184	0.184					
EVO	Power House	Monster 620M	-	36	66	76	30	282	286	66	105	113	109.0	0.620	0.620	0.285	0.251	4500		115		
EVO	Power House	Performer 500I	Y	16	42	44	16	238	240	32	103	104	103.5	0.500	0.500	0.174	0.179		5600			
EVO	Power House	Viper 560V	-	18	50	54	18	248	252	36	106	108	107.0	0.560	0.560	0.182	0.182		6500			
EVO	Power House	per Plus 565V	-	24	54	58	20	258	258	44	105	109	107.0	0.565	0.565	0.209	0.189		6500			
EVO	Red Shift	535	-	12	42	57	04	234	241	16	105	117	110.8	0.535	0.560	0.138	0.098					
EVO	Red Shift	559	-	16	46	47	15	242	242	31	105	106	105.5	0.555	0.555	0.159	0.154					88
EVO	Red Shift	560	-	18	44	58	04	242	242	22	103	117	110.0	0.551	0.551	0.180	0.100					
EVO	Red Shift	575	-	25	54	63	18	259	261	43	105	113	108.5	0.575	0.575	0.225	0.162					

Harley-Davidson Camshaft Specifications

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Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
EVO	Red Shift	576	-	26	47	47	24	253	251	50	101	102	101.0	0.576	0.576	0.219	0.203				105
EVO	Red Shift	625	-	32	59	66	26	271	272	58	104	110	106.8	0.625	0.625	0.250	0.216				
EVO	Red Shift	626	-	29	54	56	26	263	262	55	103	105	103.8	0.626	0.600	0.243	0.206	2200	5500	93	
EVO	Red Shift	647	-	26	58	58	26	264	264	52	106	106	106.0	0.648	0.648	0.211	0.211			100	
EVO	Red Shift	653	-	21	52	58	16	253	254	37	106	111	108.3	0.653	0.653	0.180	0.162				
EVO	Red Shift	654	-	21	59	57	17	260	254	38	109	110	109.5	0.654	0.654	0.191	0.162				
EVO	Red Shift	655	-	21	65	70	17	266	267	38	112	117	114.3	0.655	0.655	0.195	0.162				
EVO	Red Shift	656	-	28	52	52	26	260	258	54	102	103	102.5	0.648	0.648	0.233	0.219			96	
EVO	Red Shift	715	-	31	71	80	22	282	282	53	110	119	114.5	0.725	0.725	0.252	0.200			96	
EVO	Red Shift	785	-	32	66	77	24	278	281	56	107	117	111.8	0.785	0.785	0.279	0.211			96	
EVO	Red Shift	790	-	36	66	66	36	282	282	72	105	105	105.0	0.791	0.791	0.282	0.280			120	
EVO	RevTech	5	Y	16	32	41	17	228	238	33	98	102	100.0	0.465	0.475						
EVO	RevTech	10	Y	21	37	50	18	238	248	39	98	106	102.0	0.475	0.480						
EVO	RevTech	20	-	22	46	59	19	248	258	41	102	110	106.0	0.480	0.490						
EVO	RevTech	30	-	21	37	52	20	238	252	41	98	106	102.0	0.495	0.530				5200		
EVO	RevTech	40	-	31	55	59	27	266	266	58	102	106	104.0	0.560	0.560				6000		
EVO	RevTech	50	-	09	45	45	09	234	234	18	108	108	108.0	0.520	0.520				6000		
EVO	Rivera	Spirit EV-100	-	27	43	59	24	250	263	51	98	108	102.8	0.467	0.467				6250		
EVO	Rivera	Thumper	-	29	48	63	27	257	270	56	100	108	103.8	0.500	0.540						
EVO	S&S	502	-	28	40	50	24	248	254	52	96	103	99.5	0.500	0.500	0.225	0.221		5000		
EVO	S&S	520	-	00	40	50	01	220	231	01	110	115	112.3	0.520	0.520	0.086	0.094				
EVO	S&S	546	-	05	55	52	05	240	237	10	115	114	114.3	0.546	0.546	0.126	0.106				
EVO	S&S	561	-	32	40	50	26	252	256	58	94	102	98.0	0.560	0.560	0.252	0.210				
EVO	S&S	562	-	34	55	60	29	269	269	63	101	106	103.0	0.560	0.560	0.260	0.220		6500		
EVO	S&S	563	-	32	67	65	29	279	274	61	108	108	107.8	0.560	0.560	0.250	0.230	4500		100	
EVO	S&S	600	-	20	55	60	20	255	260	40	108	110	108.8	0.585	0.585	0.186	0.180			96	
EVO	S&S	631	-	34	61	66	29	275	275	63	104	109	106.0	0.630	0.630	0.281	0.221	4500		100	
EVO	S&S	640	-	26	60	65	20	266	265	46	107	113	109.8	0.640	0.640	0.222	0.192	4500		100	
EVO	S&S	675	-	25	64	70	25	269	275	50	110	113	111.0	0.675	0.675	0.235	0.209	4500		120	
EVO	S&S	510V	-	20	38	52	20	238	252	40	99	106	102.5	0.510	0.510	0.187	0.178				
EVO	S&S	585V	-	20	45	60	20	245	260	40	103	110	106.3	0.585	0.585	0.186	0.180				
EVO	Screaming Eagle	400	-	27	50.5	55.5	32	257	267	58	102	102	102.0	0.500	0.500						
EVO	Screaming Eagle	406	Y	16	48	51	19	244	250	35	106	106	106.0	0.480	0.480						
EVO	Screaming Eagle	433	-	23	47	56	24	250	260	47	102	106	104.0	0.530	0.530						
EVO	Screaming Eagle	SE-1	Y	18	46.5	52.5	18	244	250	35	105	108	106.0	0.495	0.495	0.177	0.170	4000	6000		88
EVO	Screaming Eagle	SE-11	Y	18	47	56	14	245	250	32	105	111	107.8	0.508	0.508	0.181	0.153		6000		106
EVO	Screaming Eagle	SE-2	-	28	49	55	30	257	265	58	101	103	101.5	0.516	0.516	0.234	0.231		6200		
EVO	Screaming Eagle	SE-3	Y	20	36	44	16	236	240	36	98	104	101.0	0.503	0.503	0.185	0.169	2500	5000		80
EVO	Screaming Eagle	SE-4	Y	20	36	46	14	236	240	34	98	106	102.0	0.505	0.505	0.189	0.151		5500		97
EVO	Screaming Eagle	SE-54	-	22	48	55	25	250	260	47	103	105	104.0	0.546	0.546	0.186	0.196		6100		90
EVO	Screaming Eagle	SE-57	-	22	50	56	20	252	256	42	104	108	106.0	0.576	0.576	0.202	0.186	3000	6200		112
EVO	Screaming Eagle	SE-60	-	26	56	61	24	262	265	50	105	109	106.8	0.600	0.600	0.214	0.189		6500		101
EVO	Screaming Eagle	SE-C	Y	-12	22	20	10	190	210	-02	107	95	101.0	0.505	0.505	0.043	0.053				75
EVO	Sifton	140-EV	-	30	42	55	27	252	262	57	96	104	100.0	0.450	0.450	0.222	0.178		6000		
EVO	Sifton	141-EV	-	29	41	58.5	26	250	265	55	96	106	101.1	0.480	0.480	0.232	0.184		6250		
EVO	Sifton	142-EV	-	32	52	60	30	264	270	62	100	105	102.5	0.540	0.540	0.235	0.226	3500	6500	93	
EVO	Sifton	143-EV	Y	20	35	46	14	235	240	34	98	106	101.8	0.500	0.500	0.184	0.160	2000	5700		

Harley-Davidson Camshaft Specifications

(TC, EVO, Shovelhead, XL EVO, Iron Head, XR)

Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
EVO	Sifton	144-EV	-	27	46	56	22	253	258	49	100	107	103.3	0.490	0.490	0.216	0.166				
EVO	Sifton	145-EV	Y	28	42	50	20	250	250	48	97	105	101.0	0.460	0.460	0.200	0.176	2700	5700		
EVO	Sifton	146-EV	-	30	45	56	24	255	260	54	98	106	101.8	0.500	0.500	0.232	0.200				
EVO	Sifton	147-EV	-	24	64	66	28	268	274	52	110	109	109.5	0.640	0.640	0.210	0.240	3000	6500		
EVO	Tman	TR590		22	44	48	20	246	248	42	101	104	102.5	0.590	0.590						
EVO	Tman	TR715		32	60	64	28	272	272	60	104	108	106.0	0.715	0.715						
EVO	V-Thunder	EVL-2000	Y	02	38	35	01	220	216	03	108	107	107.5	0.480	0.456	0.059	0.049		4800		
EVO	V-Thunder	EVL-2015	Y	14	22	49	05	216	234	19	94	112	103.0	0.500	0.500	0.147	0.110				
EVO	V-Thunder	EVL-3000	Y	10	34	34	10	224	224	20	102	102	102.0	0.500	0.500	0.080	0.080		5500		
EVO	V-Thunder	EVL-3010	Y	15	39	39	15	234	234	30	102	102	102.0	0.500	0.500	0.156	0.156	1500	5800		
EVO	V-Thunder	EVL-3020	Y	18	42	42	18	240	240	36	102	102	102.0	0.500	0.500	0.173	0.173	1800	6000		
EVO	V-Thunder	EVL-3030	-	16	44	44	16	240	240	32	104	104	104.0	0.530	0.530	0.161	0.161	2500	6500		94
EVO	V-Thunder	EVL-3040	Y	17	45	50	22	242	252	39	104	104	104.0	0.510	0.510	0.164	0.191	2000	6500		
EVO	V-Thunder	EVL-3050	-	22	50	50	22	252	252	44	104	104	104.0	0.510	0.510	0.191	0.191		6500		
EVO	V-Thunder	EVL-3060	-	24	56	61	29	260	270	53	106	106	106.0	0.585	0.585	0.210	0.226		7000	88	
EVO	V-Thunder	EVL-3070	-	29	61	63	31	270	274	60	106	106	106.0	0.608	0.608	0.230	0.238		7500	88	
EVO	V-Thunder	EVL-5000	-	17	33	41	09	230	230	26	98	106	102.0	0.562	0.562	0.172	0.130		5300		
EVO	V-Thunder	EVL-5005	-	18	38	42	14	236	236	32	100	104	102.0	0.569	0.569	0.177	0.158	1500	5500		85
EVO	V-Thunder	EVL-5010	-	22	42	48	16	244	244	38	100	106	103.0	0.585	0.585	0.203	0.171	1800	5800		
EVO	V-Thunder	EVL-5015	-	26	46	52	20	252	252	46	100	106	103.0	0.585	0.585	0.228	0.182				
EVO	V-Thunder	EVL-5020	-	28	52	56	24	260	260	52	102	106	104.0	0.585	0.585	0.239	0.216		6500	88	
EVO	V-Thunder	EVL-5025	-	32	56	64	28	268	272	60	102	108	105.0	0.601	0.601	0.263	0.240			88	
EVO	Wood Automotive	W10F	-	24	52	54	22	256	256	46	104	106	105.0	0.750	0.750	0.225	0.202				140
EVO	Wood Automotive	W6	Y	20	40	42	18	240	240	38	100	102	101.0	0.510	0.510	0.189	0.178		5500		
EVO	Wood Automotive	W62	-	31	51	53	29	262	262	60	100	102	101.0	0.652	0.652	0.249	0.248				
EVO	Wood Automotive	W68	-	30	58	62	26	268	268	56	104	108	106.0	0.678	0.678	0.260	0.226				
EVO	Wood Automotive	W6HE	-	20	40	42	18	240	240	38	100	102	101.0	0.631	0.631	0.196	0.177				
EVO	Wood Automotive	W6HF	-	22	44	46	22	246	248	44	101	102	101.5	0.650	0.650	0.218	0.200				
EVO	Wood Automotive	W7	Y	22	46	48	20	248	248	42	102	104	103.0	0.500	0.500	0.196	0.184	2000	6000		
EVO	Wood Automotive	W72	-	34	54	56	32	268	268	66	100	102	101.0	0.720	0.720	0.286	0.265				
EVO	Wood Automotive	W8	-	19	47	49	17	246	246	36	104	106	105.0	0.590	0.590	0.183	0.176				90
EVO	Wood Automotive	W9	-	22	50	52	20	252	252	42	104	106	105.0	0.580	0.580	0.205	0.187				113
EVO	Wood Automotive	W9	-	24	52	54	22	256	256	46	104	106	105.0	0.650	0.650	0.220	0.201				
EVO	Wood Automotive	W9B	-	22	50	52	20	252	252	42	104	106	105.0	0.630	0.630	0.208	0.191				117
SHV	HD Stock	H (Front)	Y	-06	46	44	20	220	244	14	116	102	109.0	0.390	0.390						
SHV	HD Stock	H (Rear)	Y	14	38	44	20	232	244	34	102	102	102.0	0.390	0.390						
SHV	Andrews	1	Y	16	36	36	16	232	232	32	100	100	100.0	0.427	0.427	0.098	0.098				
SHV	Andrews	2	-	15	35	35	15	230	230	30	100	100	100.0	0.490	0.490	0.098	0.098				
SHV	Andrews	3	-	23	43	43	23	246	246	46	100	100	100.0	0.514	0.514	0.125	0.125			84	
SHV	Andrews	6	-	32	56	56	32	268	268	64	102	102	102.0	0.510	0.510	0.190	0.190	2500	6500	84	
SHV	Andrews	9	-	32	64	64	32	276	276	64	106	106	106.0	0.530	0.530	0.222	0.222			88	
SHV	Andrews	10	-	34	70	70	34	284	284	68	108	108	108.0	0.580	0.580	0.230	0.230		6500	92	
SHV	Andrews	A	Y	21	43	43	21	244	244	42	101	101	101.0	0.450	0.450	0.156	0.156				
SHV	Andrews	AB	Y	21	43	50	26	244	256	47	101	102	101.5	0.450	0.450	0.156	0.170				
SHV	Andrews	B	-	26	50	50	26	256	256	52	102	102	102.0	0.485	0.485	0.182	0.182				
SHV	Andrews	BH	-	24	52	52	24	256	256	48	104	104	104.0	0.450	0.450	0.156	0.156				
SHV	Andrews	C	-	37	61	61	37	278	278	74	102	102	102.0	0.525	0.525	0.234	0.234	2000	7000	84	

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SHV	Andrews	J	Y	21	41	41	21	242	242	42	100	100	100.0	0.405	0.405	0.154	0.154				
SHV	Andrews	M	-	28	56	56	28	264	264	56	104	104	104.0	0.590	0.590	0.210	0.210	3000	6500	88	
SHV	Andrews	S82	-	32	60	66	30	272	276	62	104	108	106.0	0.590	0.590	0.237	0.220		6500		
SHV	Andrews	S84	-	32	64	70	30	276	280	62	106	110	108.0	0.630	0.630	0.241	0.223		6500	84	
SHV	Andrews	S86	-	34	70	76	32	284	288	66	108	112	110.0	0.660	0.660	0.254	0.235		6500	100	
SHV	Crane	298B	Y	18	46	51	23	244	254	41	104	104	104.0	0.450	0.450						
SHV	Crane	304B	-	32	56	56	32	268	268	64	102	102	102.0	0.485	0.485						
SHV	Crane	310B	-	31	55	55	31	266	266	62	102	102	102.0	0.525	0.525						
SHV	Crane	320B	-	36	60	64	32	276	276	68	102	106	104.0	0.550	0.550						
SHV	Crane	330B	-	41	65	73	33	286	286	74	102	110	106.0	0.575	0.575						
SHV	Crane	H288 B	-	24	48	48	24	252	252	48	102	102	102.0	0.450	0.450						
SHV	Crane	H288-2B	Y	18	46	51	23	244	254	41	104	104	104.0	0.450	0.450						
SHV	Crane	H298-2B	-	25	49	62	22	254	264	47	102	110	106.0	0.450	0.450						
SHV	Dave Mackie	DMS500	-	24	42	54	16	246	250	40	99	109	104.0	0.500	0.500	0.185	0.139				
SHV	Dave Mackie	DMS530	-	26	42	56	12	248	248	38	98	112	105.0	0.530	0.530	0.199	0.123				
SHV	Red Shift	510S	-	24	53	63	18	257	261	42	105	113	108.5	0.510	0.510	0.185	0.142				
SHV	Red Shift	550S	-	32	58	66	26	270	272	58	103	110	106.5	0.550	0.550	0.227	0.185				
SHV	Red Shift	580S	-	23	51	59	15	254	254	38	104	112	108.0	0.580	0.580	0.190	0.170				
SHV	Red Shift	624S	-	26	58	62	22	264	264	48	106	110	108.0	0.625	0.625	0.198	0.170				
SHV	Red Shift	631S	-	33	68	75	27	281	282	60	108	114	110.8	0.631	0.631	0.230	0.190				
SHV	S&S	495	-	30	62	62	30	272	272	60	106	106	106.0	0.495	0.495	0.220	0.198	3500			
SHV	S&S	514	-	23	43	43	23	246	246	46	100	100	100.0	0.514	0.514	0.125	0.125	2500	5000		
SHV	Sifton	RE 104	-	30	67	55	28	277	263	58	109	104	106.0	0.445	0.445	0.190	0.210				
SHV	Sifton	RE 116	-	30	55	54	26	265	260	56	103	104	103.3	0.400	0.400	0.183	0.166				
SHV	Sifton	RE-101	Y	14	55	54	15	249	249	29	111	110	110.0	0.400	0.400	0.121	0.135				
SHV	Sifton	RE-102	-	32	56	53	28	268	261	60	102	103	102.3	0.390	0.390	0.200	0.185				
SHV	Sifton	RE-103	-	28	57	53	27	265	260	55	105	103	103.8	0.390	0.390	0.177	0.174				
SHV	Sifton	RE-105	-	25	60	63	23	265	266	48	108	110	108.8	0.475	0.475	0.180	0.175				
SHV	Sifton	RE-107	-	29	54	53	25	263	258	54	103	104	103.3	0.440	0.440	0.193	0.164				
SHV	Sifton	RE-108	-	34	65	66	33	279	279	67	106	107	106.0	0.485	0.485	0.214	0.240				
SHV	Sifton	RE-109	-	33	50	58.5	30	263	269	63	99	104	101.5	0.440	0.440	0.215	0.200				
SHV	Sifton	RE-110	-	33	49	57	23	262	260	56	98	107	102.5	0.450	0.450	0.168	0.123				
SHV	Sifton	RE-112	-	28	45	53	25	253	258	53	99	104	101.3	0.440	0.440	0.200	0.179	2500	5000		
SHV	Sifton	RE-117	-	32	58	56	39	270	275	71	103	99	100.8	0.485	0.485	0.212	0.204			84	
SHV	Sifton	RE-118	-	35	54	62	32	269	274	67	100	105	102.3	0.575	0.575	0.233	0.236				
SHV	V-Thunder	SHV-4000	Y	14	42	42	14	236	236	28	104	104	104.0	0.450	0.450	0.133	0.133				
SHV	V-Thunder	SHV-4010	-	14	42	42	14	236	236	28	104	104	104.0	0.485	0.485	0.133	0.133				
SHV	V-Thunder	SHV-4020	-	17	45	45	17	242	242	34	104	104	104.0	0.485	0.485	0.147	0.147				
SHV	V-Thunder	SHV-4030	-	22	50	50	22	252	252	44	104	104	104.0	0.485	0.485	0.171	0.171		6000		
SHV	V-Thunder	SHV-4040	-	17	45	50	22	242	252	39	104	104	104.0	0.485	0.485	0.147	0.171		5800		
SHV	V-Thunder	SHV-4050	-	24	56	61	29	260	270	53	106	106	106.0	0.550	0.550	0.182	0.207		7000	84	
VRD	.HD Stock	2002-2003	.040					248	234					0.430	0.415						
VRD	Megacycle	669-x1	.040	28	51			259			101.5			0.450		0.151					
VRD	Megacycle	669-x2	.040			48	18		246			105			0.415		0.098				
VRD	Megacycle	669-x3	.040					263						0.480							
VRD	Megacycle	669-x4	.040						259						0.450						
VRD	Megacycle	669-x5	.040					284						0.515							

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Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
VRD	Megacycle	669-x6	.040					264						0.465							
VRD	Red Shift	440/410	.040	18	50	46	18	248	244	36	106	104	105.0	0.440	0.410						
VRD	Red Shift	500/460	.040	24	56	53	25	260	258	49	106	104	105.0	0.500	0.460						
VRD	Screamin Eagle	Destroyer	.040											0.565	0.505						
VRD	Screamin Eagle	VRSC	.040	12	56			248						0.430		0.081	0.076				
VRD	Web Cams	142/590	.050					244	250					0.462	0.435						
VRD	Web Cams	791/677	.050					256	254					0.492	0.452						
XLE	HD Stock	D (88-91)	Y	02	41	41	02	223	223	04	110	110	109.5	0.458	0.458	0.094	0.094				
XLE	HD Stock	W (91-)	Y	08	36	36	14	224	230	22	104	101	102.5	0.470	0.470	0.122	0.122				
XLE	Andrews	BV / NV		35	59	59	35	274	274	70	102	102	102.0	0.590	0.590	0.260	0.260	2000	6000		
XLE	Andrews	N3	Y	17	33	43	11	230	234	28	98	106	102.0	0.465	0.482	0.111	0.082				
XLE	Andrews	V2 / N2	Y	22	38	46	18	240	244	40	98	104	101.0	0.465	0.440	0.180	0.155	2000	6000		
XLE	Andrews	V4 / N4	Y	30	46	52	24	256	256	54	98	104	101.0	0.490	0.490	0.216	0.189	2500	6500		
XLE	Andrews	V6 / N6		34	50	56	28	264	264	62	98	104	101.0	0.490	0.490	0.241	0.212	2500	6500		
XLE	Andrews	V8 / N8		32	44	55	28	256	263	60	96	104	99.8	0.490	0.490	0.226	0.212	2000	6000		
XLE	Andrews	V80 / N80		32	60	66	30	272	276	62	104	108	106.0	0.600	0.600	0.264	0.244		6500		
XLE	Andrews	V83 / N83		32	64	70	30	276	280	62	106	110	108.0	0.630	0.630	0.267	0.248		6500		
XLE	Andrews	V87 / N87		34	70	76	32	284	288	66	108	112	110.0	0.670	0.670	0.283	0.269		6500		
XLE	Andrews	V9 / N9		33	53	53	33	266	266	66	100	100	100.0	0.555	0.555	0.240	0.240		6000		
XLE	Carl's Speed Shop	CM5801	-					248	248					0.580	0.580	0.195	0.169				
XLE	Carl's Speed Shop	CM5806	-					248	248					0.580	0.580	0.195	0.169				
XLE	Carl's Speed Shop	CM774	-					284	284					0.784	0.784	0.277	0.236				
XLE	Edlebrock	1742 / 1743		18	42	46	22	240	248	40	102	102	102.0	0.590	0.590	0.166	0.192				
XLE	Red Shift	531V2		28	51	60	19	259	259	47	102	111	106.0	0.521	0.531	0.195	0.195				
XLE	Red Shift	567V2		23	48	53	18	251	251	41	103	108	105.0	0.575	0.575	0.204	0.162				
XLE	Red Shift	573V2		23	56	63	17	259	260	40	107	113	109.8	0.580	0.580	0.213	0.162				
XLE	Red Shift	585V2		21	58	66	13	259	259	34	109	117	112.5	0.580	0.580	0.190	0.140				
XLE	Red Shift	623V2		31	62	67	26	273	273	57	106	111	108.0	0.623	0.623	0.268	0.221				
XLE	Red Shift	625V2		32	58	62	29	270	271	61	103	107	104.8	0.625	0.625	0.250	0.228				
XLE	Red Shift	630V2		27	41	50	22	248	252	49	97	104	100.5	0.630	0.585	0.230	0.189				
XLE	Red Shift	643V2		27	61	70	18	268	268	45	107	116	111.5	0.645	0.645	0.224	0.165				
XLE	Red Shift	670V2		40	58	62	29	278	271	69	99	107	102.8	0.655	0.655	0.270	0.243				
XLE	Red Shift	723V2		38	62	74	24	280	278	62	102	115	108.5	0.715	0.715	0.320	0.210				
XLE	Red Shift	729V2		34	65	71	28	279	279	62	106	112	108.5	0.725	0.725	0.278	0.228				
XLE	Red Shift	785V2		27	71	77	19	278	276	46	112	119	115.5	0.785	0.785	0.240	0.180				
XLE	S&S	500		34	50	56	28	264	264	62	98	104	101.0	0.500	0.500	0.241	0.212				
XLE	S&S	555		33	53	53	33	266	266	66	100	100	100.0	0.555	0.555	0.241	0.241	3500	6500	79	
XLE	S&S	600		20	55	60	20	255	260	40	108	110	108.8	0.600	0.600	0.194	0.184	3500	6500	79	
XLE	Screaming Eagle	Bolt-In	Y	28	48	52	24	256	256	52	100	104	102.0	0.497	0.497	0.211	0.191	2500	6000		
XLE	Screaming Eagle	E	Y	25	44	59	10	249	249	35	100	115	107.0	0.551	0.551	0.192	0.122				
XLE	Screaming Eagle	SE 536		26	50	55	30	256	265	56	102	103	102.3	0.536	0.536	0.211	0.191	2000	6500		
XLE	Screaming Eagle	SE 575		28	52	57	29	260	266	57	102	104	103.0	0.575	0.575	0.228	0.221				
XLE	Sifton	Evader		28	44	50	22	252	252	50	98	104	101.0	0.515	0.515	0.200	0.180	3000	6500		
XLE	Sifton	Manta		30	48	50	28	258	258	58	99	101	100.0	0.540	0.540	0.250	0.250	3000	6500		
XLE	Sifton	Stingray	Y	28	42	50	20	250	250	48	97	105	101.0	0.480	0.480	0.190	0.180				
XLE	Wood Automotive	W68S	-	30	58	62	26	268	268	56	104	108	106.0	0.678	0.678	0.260	0.226				
XLE	Wood Automotive	W6S	-	20	40	42	18	240	240	38	100	102	101.0	0.510	0.510	0.189	0.178				

Harley-Davidson Camshaft Specifications

(TC, EVO, Shovelhead, XL EVO, Iron Head, XR)

Engine	Manufacturer	Cam Grind	Bolt in ?	Intake Open	Intake Close	Exhaust Open	Exhaust Close	Intake Duration	Exhaust Duration	Overlap	Intake Lobe Center	Exhaust Lobe Center	Lobe Sep. Angle	Intake Lift	Exhaust Lift	Intake Lift TDC	Exhaust Lift TDC	RPM Low	RPM High	Min. CID	Max Est HP
XLE	Wood Automotive	W8S	-	19	47	49	17	246	246	36	104	106	105.0	0.590	0.590	0.183	0.176				
XLE	Wood Automotive	W9BS	-	22	50	52	20	252	252	42	104	106	105.0	0.630	0.630	0.208	0.191				
XLI	HD Stock	Q (76-85)	Y	10	32	35	07	222	222	17	101	104	102.5	0.400	0.400	0.114	0.114				
XLI	Andrews	AX		29	57	57	29	266	266	58	104	104	104.0	0.550	0.550	0.197	0.197				
XLI	Andrews	BV		34	58	58	34	272	272	68	102	102	102.0	0.520	0.520	0.224	0.224	2000	6500		
XLI	Andrews	DX		38	66	66	38	284	284	76	104	104	104.0	0.550	0.550	0.241	0.241				
XLI	Andrews	PB+	Y	34	40	43	31	254	254	65	93	96	94.5	0.400	0.410	0.200	0.192		7000		
XLI	Andrews	R5	Y	33	41	43	31	254	254	64	94	96	95.0	0.445	0.445	0.209	0.200	2000	7500		
XLI	Andrews	V9		32	52	52	32	264	264	64	100	100	100.0	0.490	0.490	0.207	0.207	2500	7000		
XLI	Andrews	X		35	55	57	33	270	270	68	100	102	101.0	0.450	0.450	0.210	0.206				
XLI	Andrews	Y		35	47	53	29	262	262	64	96	102	99.0	0.425	0.425	0.206	0.182				
XLI	Sifton	Barracuda		32	56	57	31	268	268	63	102	103	102.5	0.480	0.480	0.225	0.210				
XLI	Sifton	Challenger		30	55	57	31	265	268	61	103	103	102.8	0.440	0.480	0.200	0.210				
XLI	Sifton	Pro Stock		36	58	58	34	274	272	70	101	102	101.5	0.555	0.555	0.232	0.232				
XLI	Sifton	Titan		33	55	52	25	268	257	58	101	104	102.3	0.436	0.436	0.220	0.194	4000	7000		
XR	Andrews	XR1000#1		46	58	66	38	284	284	84	96	104	100.0	0.560	0.560				8000		
XR	Andrews	XR1000#2	Y	32	44	52	24	256	256	56	96	104	100.0	0.486	0.486						