

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
TC	HD Carbureted	A	Y	-02	38	36	04	216	220	02	110	106	108.0	0.473	0.473	0.072	0.110
TC	HD Injected	B	Y	02	34	36	04	216	220	06	106	106	106.0	0.473	0.473	0.087	0.110
TC	Andrews	TW21	Y	10	30	40	08	220	228	18	100	106	103.0	0.498	0.498	0.134	0.121
TC	Andrews	TW21G	Y	10	30	40	08	220	228	18	100	106	103.0	0.498	0.498	0.134	0.121
TC	Andrews	TW26	Y	09	37	43	07	226	230	16	104	108	106.0	0.490	0.490	0.129	0.112
TC	Andrews	TW26A	Y	11	35	41	09	226	230	20	102	106	104.0	0.490	0.490	0.129	0.112
TC	Andrews	TW26G	Y	11	35	41	09	226	230	20	102	106	104.0	0.490	0.490	0.129	0.112
TC	Andrews	TW31S	Y	10	46	52	08	236	240	18	108	112	110.0	0.510	0.510	0.151	0.140
TC	Andrews	TW37	Y	12	42	48	12	234	240	24	105	108	106.5	0.510	0.510	0.151	0.140
TC	Andrews	TW37B	Y	14	42	48	12	236	240	26	104	108	106.0	0.510	0.510	0.151	0.140
TC	Andrews	TW37G	Y	14	42	48	12	236	240	26	104	108	106.0	0.510	0.510	0.151	0.140
TC	Andrews	TW44	Y	21	41	49	17	242	246	38	100	106	103.0	0.495	0.495	0.182	0.158
TC	Andrews	TW44G	Y	21	41	49	17	242	246	38	100	106	103.0	0.495	0.495	0.182	0.158
TC	Andrews	TW50	-	20	48	54	18	248	252	38	104	108	106.0	0.510	0.510	0.184	0.168
TC	Andrews	TW50G	-	20	48	54	18	248	252	38	104	108	106.0	0.510	0.510	0.184	0.168
TC	Andrews	TW55	-	22	46	52	20	248	252	42	102	106	104.0	0.550	0.550	0.197	0.181
TC	Andrews	TW55G	-	22	46	52	20	248	252	42	102	106	104.0	0.550	0.550	0.197	0.181
TC	Andrews	TW59G	-	29	57	63	27	266	270	56	104	108	106.0	0.590	0.590	0.238	0.218
TC	Andrews	TW60	-	24	56	58	22	260	260	46	106	108	107.0	0.560	0.560	0.205	0.205
TC	Andrews	TW60G	-	24	56	58	22	260	260	46	106	108	107.0	0.560	0.560	0.205	0.205
TC	Andrews	TW64G	-	30	62	68	32	272	280	62	106	108	107.0	0.640	0.640	0.262	0.232
TC	Andrews	TW67G	-	24	48	58	22	252	260	46	102	108	105.0	0.570	0.570	0.209	0.187
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		
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
TC	Crane	HTC-296-2	-	20	46	52	22	246	254	42	103	105	104.0	0.600	0.600	0.188	0.193
TC	Crane	HTC-296-2	-	20	46	52	22	246	254	42	103	105	104.0	0.619	0.619		
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
TC	Crane	HTC-304-2	-	25	49	56	24	254	260	49	102	106	104.0	0.600	0.600	0.211	0.206
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

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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
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
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		
TC	Head Quarters	HQ-0034-G	Y	20	36	51	19	236	250	39	98	106	102.0	0.500	0.500		
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
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
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
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
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
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
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	Red Shift	557TC	-	16	46	48	14	242	242	30	105	107	106.0	0.557	0.557	0.161	0.146

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TC	Red Shift	577TC	-	25	46	53	22	251	255	47	101	106	103.0	0.577	0.577	0.217	0.198
TC	Red Shift	627TC	-	29	54	58	28	263	266	57	103	105	103.8	0.627	0.627	0.245	0.211
TC	Red Shift	647TC	-	26	58	58	26	264	264	52	106	106	106.0	0.647	0.647	0.211	0.211
TC	Red Shift	657TC	-	21	52	58	16	253	254	37	106	111	108.3	0.657	0.657	0.180	0.162
TC	Red Shift	727TC	-	36	65	69	33	281	282	69	105	108	106.3	0.729	0.729	0.293	0.261
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
TC	Screamin Eagle	SE-201	-	12	54	58	14	246	252	26	111	112	111.5	0.511	0.511	0.137	0.141
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
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
TC	Screamin Eagle	SE-253	-	07	53	59	17	240	256	24	113	111	112.0	0.538	0.538	0.119	0.158
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
TC	Screamin Eagle	SE-260	-	28	55	65	24	263	269	52	104	111	107.0	0.609	0.609	0.236	0.213
TC	Screamin Eagle	SE-264	-	24	60	60	22	264	262	46	108	109	108.5	0.635	0.635	0.219	0.211
TC	Woods	TW-5G	-	17	37	39	15	234	234	32	100	102	101.0	0.575	0.575	0.174	0.160
TC	Woods	TW-62G	-	31	51	53	29	262	262	60	100	102	101.0	0.652	0.652	0.249	0.248
TC	Woods	TW-68G	-	30	58	62	26	268	268	56	104	108	106.0	0.678	0.678	0.260	0.226
TC	Woods	TW-6G	Y	20	40	42	18	240	240	38	100	102	101.0	0.510	0.510	0.189	0.178
TC	Woods	TW-6HG	-	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	TW-8G	-	19	47	49	17	246	246	36	104	106	105.0	0.590	0.590	0.183	0.176
TC	Woods	TW-9BG	-	22	50	52	20	252	252	42	104	106	105.0	0.630	0.630	0.208	0.191
TC	Woods	TW-9FG	-	24	52	54	22	256	256	46	104	106	105.0	0.650	0.650	0.220	0.201
TC	Woods	TW-9G	-	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		

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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
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
EVO	3Sun	Mars EB2112A	-	27	51	58	22	258	260	49	102	108	105.0	0.560	0.560	0.240	0.203
EVO	3Sun	Mars EB2231A	-	27	53	62	22	260	264	49	103	110	106.5	0.580	0.580	0.243	0.203
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
EVO	Andrews	EV27	Y	20	36	44	16	236	240	36	98	104	101.0	0.495	0.495	0.182	0.166
EVO	Andrews	EV3	Y	21	37	43	15	238	238	36	98	104	101.0	0.495	0.495	0.197	0.159
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
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
EVO	Andrews	EV5	-	28	44	52	20	252	252	48	98	106	102.0	0.530	0.530	0.240	0.190
EVO	Andrews	EV51	-	28	44	54	22	252	256	50	98	106	102.0	0.510	0.510	0.233	0.195
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
EVO	Andrews	EV7	-	31	56	59	27	267	266	58	103	106	104.3	0.560	0.560		
EVO	Andrews	EV72	-	30	54	60	28	264	268	58	102	106	104.0	0.560	0.560	0.246	0.230
EVO	Andrews	EV79	-	31	55	64	32	266	276	63	102	106	104.0	0.560	0.550		
EVO	Andrews	EV81	-	32	60	66	30	272	276	62	104	108	106.0	0.610	0.610	0.262	0.244
EVO	Andrews	EV84	-	32	64	70	30	276	280	62	106	110	108.0	0.640	0.640	0.269	0.246
EVO	Andrews	EV88	-	34	70	76	32	284	288	66	108	112	110.0	0.680	0.680	0.288	0.264
EVO	Andrews	EV9	-	36	60	64	32	276	276	68	102	106	104.0	0.550	0.550		
EVO	Andrews	EVSC	Y	10	46	52	08	236	240	18	108	112	110.0	0.495	0.495	0.133	0.122
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	-											0.590	0.590		
EVO	Black Widow	8445	-											0.543	0.543		
EVO	Black Widow	8447	-											0.513	0.513		
EVO	Black Widow	8460	-											0.576	0.576		
EVO	Black Widow	8460F	-											0.576	0.576		
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

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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
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
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		
EVO	Crane	EVR0020	-	31	64.5	77	23	275	280	54	107	117	112.0	0.608	0.589		
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		
EVO	Crane	Fireball 310	Y	16	40	43	19	236	242	35	102	102	102.0	0.490	0.490		
EVO	Crane	Fireball 316	Y	19	43	48	24	242	252	43	102	102	102.0	0.490	0.490		
EVO	Crane	Fireball 326	-	24	48	57	25	252	262	49	102	106	104.0	0.490	0.500		
EVO	Crane	H286	Y	19	43	48	24	242	252	43	102	102	102.0	0.490	0.490		
EVO	Crane	H290	-	17	43	45	23	240	248	40	103	101	102.0	0.581	0.581		
EVO	Crane	H296	-	24	48	57	25	252	262	49	102	106	104.0	0.490	0.500		
EVO	Crane	H304	-	24	50	55	25	254	260	49	103	105	104.0	0.600	0.600		
EVO	Crane	H306	-	28	54	69	23	262	272	51	103	113	108.0	0.500	0.510	0.224	0.195
EVO	Crane	H310	-	23	63	68	28	266	276	51	110	110	110.0	0.550	0.550	0.229	0.229
EVO	Crane	H314	-	26	54	65	21	260	266	47	104	112	108.0	0.600	0.600		
EVO	Crane	HEV0042	-	27	59	71	23	266	274	50	106	114	110.0	0.600	0.576	0.226	0.194
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
EVO	CycleRama	E617	-	22	50	50	22	252	252	44	104	104	104.0	0.617	0.617		
EVO	CycleRama	E630	-	18	60	63	13	258	256	31	111	115	113.0	0.630	0.630		
EVO	CycleRama	E660	-	27	59	71	23	266	274	50	106	114	110.0	0.660	0.660		
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	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
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		
EVO	Head Quarters	HQ-27	-	26	60	70	24	266	274	50	107	113	110.0	0.650	0.575		
EVO	Head Quarters	HQ-28	-	23	63	52	24	266	256	47	110	104	107.0	0.600	0.530		

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
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		
EVO	JIMS	1362	-	24	50	56	22	254	258	46	103	107	105.0	0.565	0.565		
EVO	JIMS	1363	-	28	56	68	24	264	272	52	104	112	108.0	0.600	0.600		
EVO	JIMS	1364	-	31	59	72	24	270	276	55	104	114	109.0	0.660	0.660		
EVO	Leineweber	E-2	-	43	62	67.5	37	285	285	80	100	105	102.4	0.470	0.470		
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		
EVO	Leineweber	E-3B	-	40	66	77	33	286	290	73	103	112	107.5	0.500	0.500		
EVO	Leineweber	E3-S	-	44	62	70	36	286	286	80	99	107	103.0	0.502	0.502		
EVO	Leineweber	E-4	-	49	74	76	39	303	295	88	103	109	105.5	0.560	0.545		
EVO	Leineweber	E-5	-	46	70	74	41	296	295	87	102	107	104.4	0.540	0.540		
EVO	Leineweber	E5-S	-	39	56	69	26	275	275	65	99	112	105.0	0.544	0.544		
EVO	Leineweber	E-6	-	47	73	79	40	300	299	87	103	110	106.3	0.560	0.560		
EVO	Leineweber	E-7	-	44	73.5	77	40	297	297	84	105	109	106.8	0.580	0.580		
EVO	Leineweber	E-8	-	50	79	80	37	309	297	87	105	112	108.0	0.615	0.580		
EVO	Leineweber	E-9	-	53	81	86	38	314	304	91	104	114	109.0	0.640	0.615		
EVO	Power House	Executioner 620	-	32	64	72	24	276	276	56	106	114	110.0	0.620	0.620	0.262	0.205
EVO	Power House	Extreme 595E	-	24	60	64	20	264	264	44	108	112	110.0	0.595	0.595	0.215	0.191
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
EVO	Power House	Performer 500F	Y	16	42	44	16	238	240	32	103	104	103.5	0.500	0.500	0.174	0.179
EVO	Power House	Viper 560V	-	18	50	54	18	248	252	36	106	108	107.0	0.560	0.560	0.182	0.182
EVO	Power House	Viper Plus 565V	-	24	54	58	20	258	258	44	105	109	107.0	0.565	0.565	0.209	0.189
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
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
EVO	Red Shift	576	-	26	47	47	24	253	251	50	101	102	101.0	0.576	0.576	0.219	0.203
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
EVO	Red Shift	647	-	26	58	58	26	264	264	52	106	106	106.0	0.648	0.648	0.211	0.211
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
EVO	Red Shift	715	-	31	71	80	22	282	282	53	110	119	114.5	0.725	0.725	0.252	0.200
EVO	Red Shift	785	-	32	66	77	24	278	281	56	107	117	111.8	0.785	0.785	0.279	0.211

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EVO	Red Shift	790	-	36	66	66	36	282	282	72	105	105	105.0	0.791	0.791	0.282	0.280
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		
EVO	RevTech	40	-	31	55	59	27	266	266	58	102	106	104.0	0.560	0.560		
EVO	RevTech	50	-	09	45	45	09	234	234	18	108	108	108.0	0.520	0.520		
EVO	Rivera	Spirit EV-100	-	27	43	59	24	250	263	51	98	108	102.8	0.467	0.467		
EVO	S&S	502	-	28	40	50	24	248	254	52	96	103	99.5	0.500	0.500	0.225	0.221
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	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
EVO	S&S	563	-	32	67	65	29	279	274	61	108	108	107.8	0.560	0.560	0.250	0.230
EVO	S&S	585	-	20	45	60	20	245	260	40	103	110	106.3	0.560	0.560	0.250	0.230
EVO	S&S	600	-	20	55	60	20	255	260	40	108	110	108.8	0.585	0.585	0.186	0.180
EVO	S&S	631	-	34	61	66	29	275	275	63	104	109	106.0	0.630	0.630	0.281	0.221
EVO	S&S	640	-	26	60	65	20	266	265	46	107	113	109.8	0.640	0.640	0.222	0.192
EVO	S&S	675	-	25	64	70	25	269	275	50	110	113	111.0	0.675	0.675	0.235	0.209
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
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
EVO	Screaming Eagle	SE-2	-	28	49	55	30	257	265	58	101	103	101.5	0.516	0.516	0.234	0.231
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
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
EVO	Screaming Eagle	SE-54	-	22	48	55	25	250	260	47	103	105	104.0	0.546	0.546	0.186	0.196
EVO	Screaming Eagle	SE-57	-	22	50	56	20	252	256	42	104	108	106.0	0.576	0.576	0.202	0.186
EVO	Screaming Eagle	SE-60	-	26	56	61	24	262	265	50	105	109	106.8	0.600	0.600	0.214	0.189
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
EVO	Sifton	140-EV	-	30	42	55	27	252	262	57	96	104	100.0	0.450	0.450	0.222	0.178
EVO	Sifton	141-EV	-	29	41	58.5	26	250	265	55	96	106	101.1	0.480	0.480	0.232	0.184
EVO	Sifton	142-EV	-	32	52	60	30	264	270	62	100	105	102.5	0.540	0.540	0.235	0.226
EVO	Sifton	143-EV	Y	20	35	46	14	235	240	34	98	106	101.8	0.500	0.500	0.184	0.160
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
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

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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
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
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
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
EVO	V-Thunder	EVL-3030	-	16	44	44	16	240	240	32	104	104	104.0	0.530	0.530	0.161	0.161
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
EVO	V-Thunder	EVL-3050	-	22	50	50	22	252	252	44	104	104	104.0	0.510	0.510	0.191	0.191
EVO	V-Thunder	EVL-3060	-	24	56	61	29	260	270	53	106	106	106.0	0.585	0.585	0.210	0.226
EVO	V-Thunder	EVL-3070	-	29	61	63	31	270	274	60	106	106	106.0	0.608	0.608	0.230	0.238
EVO	Wood Automotive	W10F	-	24	52	54	22	256	256	46	104	106	105.0	0.750	0.750	0.225	0.202
EVO	Wood Automotive	W6	Y	20	40	42	18	240	240	38	100	102	101.0	0.510	0.510	0.189	0.178
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	W7	Y	22	46	48	20	248	248	42	102	104	103.0	0.500	0.500	0.196	0.184
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
EVO	Wood Automotive	W9	-	22	50	52	20	252	252	42	104	106	105.0	0.580	0.580	0.205	0.187
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
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
SHV	Andrews	6	-	32	56	56	32	268	268	64	102	102	102.0	0.510	0.510	0.190	0.190
SHV	Andrews	9	-	32	64	64	32	276	276	64	106	106	106.0	0.530	0.530	0.222	0.222
SHV	Andrews	10	-	34	70	70	34	284	284	68	108	108	108.0	0.580	0.580	0.230	0.230
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
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
SHV	Andrews	S82	-	32	60	66	30	272	276	62	104	108	106.0	0.590	0.590	0.237	0.220
SHV	Andrews	S84	-	32	64	70	30	276	280	62	106	110	108.0	0.630	0.630	0.241	0.223
SHV	Andrews	S86	-	34	70	76	32	284	288	66	108	112	110.0	0.660	0.660	0.254	0.235

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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
SHV	S&S	514	-	23	43	43	23	246	246	46	100	100	100.0	0.514	0.514	0.125	0.125
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
SHV	Sifton	RE-117	-	32	58	56	39	270	275	71	103	99	100.8	0.485	0.485	0.212	0.204
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
SHV	V-Thunder	SHV-4040	-	17	45	50	22	242	252	39	104	104	104.0	0.485	0.485	0.147	0.171
SHV	V-Thunder	SHV-4050	-	24	56	61	29	260	270	53	106	106	106.0	0.550	0.550	0.182	0.207
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	Andrews	BV / NV		35	59	59	35	274	274	70	102	102	102.0	0.590	0.590	0.260	0.260

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
XLE	Andrews	V2 / N2	Y	22	38	46	18	240	244	40	98	104	101.0	0.465	0.440	0.180	0.155
XLE	Andrews	V4 / N4	Y	30	46	52	24	256	256	54	98	104	101.0	0.490	0.490	0.216	0.189
XLE	Andrews	V6 / N6		34	50	56	28	264	264	62	98	104	101.0	0.490	0.490	0.241	0.212
XLE	Andrews	V8 / N8		32	44	55	28	256	263	60	96	104	99.8	0.490	0.490	0.226	0.212
XLE	Andrews	V80 / N80		32	60	66	30	272	276	62	104	108	106.0	0.600	0.600	0.264	0.244
XLE	Andrews	V83 / N83		32	64	70	30	276	280	62	106	110	108.0	0.630	0.630	0.267	0.248
XLE	Andrews	V87 / N87		34	70	76	32	284	288	66	108	112	110.0	0.670	0.670	0.283	0.269
XLE	Andrews	V9 / N9		33	53	53	33	266	266	66	100	100	100.0	0.555	0.555	0.240	0.240
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	0.525	0.525	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	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
XLE	S&S	600		20	55	60	20	255	260	40	108	110	108.8	0.600	0.600	0.194	0.184
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
XLE	Screaming Eagle	Hi-Performance		26	50	55	30	256	265	56	102	103	102.3	0.536	0.536	0.211	0.191
XLE	Sifton	Evader		28	44	50	22	252	252	50	98	104	101.0	0.515	0.515	0.200	0.180
XLE	Sifton	Manta		30	48	50	28	258	258	58	99	101	100.0	0.540	0.540	0.250	0.250
XLE	Sifton	Stingray	Y	28	42	50	20	250	250	48	97	105	101.0	0.480	0.480	0.190	0.180
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
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
XLI	Andrews	R5	Y	33	41	43	31	254	254	64	94	96	95.0	0.445	0.445	0.209	0.200
XLI	Andrews	V9		32	52	52	32	264	264	64	100	100	100.0	0.490	0.490	0.207	0.207

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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
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
XR	Andrews	XR1000#1		46	58	66	38	284	284	84	96	104	100.0	0.560	0.560		
XR	Andrews	XR1000#2	Y	32	44	52	24	256	256	56	96	104	100.0	0.486	0.486		