

Sportster 27 thru 31 Tooth Pulley Installation

INTRODUCTION



Belt Guides: 1991 - 2003, to outboard



2004 - Up, to inboard



2004 - Up 31 & 32, No Guide

The belt does not need to be replaced for any of our pulleys. The 2004 & Up 31 & 32 tooth pulleys are wider with greater inboard offset than original Harley Davidson Pulleys. These pulleys do not have or require a belt guide.

Pulleys with more teeth than original will cause the speedometer to read slower than actual road speed. The later charts show calculated percentage change and mph at different rpm. The speedometer can be corrected with the use of "The Corrector" available from us. If your ignition module has not been upgraded you may purchase a high performance ignition module. Some offer speedometer correction.

REMOVAL: All Pulleys

- Do not loosen the axle nut until the pulley nut is loosened, LH.
- Remove the rear cylinder exhaust and Pulley Cover
- Remove lock plate screws and lock plate
- Remove left hand thread Pulley Nut. This usually requires a Pulley Holder and impact wrench, 1-7/8" socket.
- Loosen the axle nut, back-off the axle adjuster nuts
- Move the rear tire forward, you can press down on the belt to get the axle started moving. Remove the pulley.



INSTALLATION: All Pulleys

- Pulleys without a "boss" on the back have a 1/4" spacer to install before the pulley, except 1991-1994.
- Install new pulley and belt. After the shaft threads are revealed, put a line of Blue Locktite on the threads and install the nut with oil on the back of the nut. Nut is left hand thread.
- Torque pulley nut 50 Ft Lb, +30-45 degrees. Continue to tighten until holes for lock plate align with the mounting holes in the pulley. Do not loosen the nut to align screw holes. Lockplate slots will change position by rotating or turning over the Lockplate. **THE SCREWS MUST BE ON THE LEFT EDGE OF THE SLOT!** The pulley nut can loosen.
- Force the rear axle backwards, reinstall the adjuster nuts and adjust the belt tension/deflection:
883, 883R, 1200R = 3/8-7/16"; All Others = 1/4-5/16"
1991-1999, All = 9/16"-11/16"
- Axle must be straight; distance axle center to swing arm center must be equal.. Compare each side no specified distance.
- Install the pulley cover and exhaust.
- Test drive and then enjoy freeway cruising!



Sportster 27 thru 31 Tooth Pulley Installation

1991-2003 Speedometer Versus Road Speed & RPM (61 Tooth Rear)																	
883 Overdrive MPH					883 Overdrive RPM					1200 Overdrive MPH				Overdrive RPM			
883	7.4%	11.1%	14.8%	18.5%	883	Overdrive Pulley				1200	3.4%	6.9%	10.3%	1200	Overdrive		
27	29	30	31	32	27	29	30	31	32	29	30	31	32	29	30	31	32
20	21.5	22.2	23.0	23.7	964	897	867	839	813	20	20.7	21.4	22.1	897	867	897	813
25	26.9	27.8	28.7	29.6	1205	1122	1084	1049	1017	25	25.9	26.7	27.6	1122	1084	1122	1017
30	32.2	33.3	34.4	35.6	1446	1346	1301	1259	1220	30	31.0	32.1	33.1	1346	1301	1346	1220
35	37.6	38.9	40.2	41.5	1687	1570	1518	1469	1423	35	36.2	37.4	38.6	1570	1518	1570	1423
40	43.0	44.4	45.9	47.4	1928	1795	1735	1679	1627	40	41.4	42.8	44.1	1795	1735	1795	1627
45	48.3	50.0	51.7	53.3	2169	2019	1952	1889	1830	45	46.6	48.1	49.7	2019	1952	2019	1830
50	53.7	55.6	57.4	59.3	2410	2243	2169	2099	2033	50	51.7	53.4	55.2	2243	2169	2243	2033
55	59.1	61.1	63.1	65.2	2651	2468	2386	2309	2236	55	56.9	58.8	60.7	2468	2386	2468	2236
60	64.4	66.7	68.9	71.1	2892	2692	2602	2518	2440	60	62.1	64.1	66.2	2692	2602	2692	2440
65	69.8	72.2	74.6	77.0	3133	2916	2819	2728	2643	65	67.2	69.5	71.7	2916	2819	2916	2643
70	75.2	77.8	80.4	83.0	3373	3141	3036	2938	2846	70	72.4	74.8	77.2	3141	3036	3141	2846
75	80.6	83.3	86.1	88.9	3614	3365	3253	3148	3050	75	77.6	80.2	82.8	3365	3253	3365	3050
80	85.9	88.9	91.9	94.8	3855	3590	3470	3358	3253	80	82.8	85.5	88.3	3590	3470	3590	3253
85	91.3	94.4	97.6	100.7	4096	3814	3687	3568	3456	85	87.9	90.9	93.8	3814	3687	3814	3456
90	96.7	100.0	103.3	106.7	4337	4038	3904	3778	3660	90	93.1	96.2	99.3	4038	3904	4038	3660
95	102.0	105.6	109.1	112.6	4578	4263	4120	3988	3863	95	98.3	101.6	104.8	4263	4120	4263	3863
100	107.4	111.1	114.8	118.5	4819	4487	4337	4197	4066	100	103.4	106.9	110.3	4487	4337	4487	4066
105	112.8	116.7	120.6	124.4	5060	4711	4554	4407	4270	105	108.6	112.2	115.9	4711	4554	4711	4270
110	118.1	122.2	126.3	130.4	5301	4936	4771	4617	4473	110	113.8	117.6	121.4	4936	4771	4936	4473
115	123.5	127.8	132.0	136.3	5542	5160	4988	4827	4676	115	119.0	122.9	126.9	5160	4988	5160	4676
120	128.9	133.3	137.8	142.2	5783	5384	5205	5037	4880	120	124.1	128.3	132.4	5384	5205	5384	4880

2004+ Speedometer Versus Road Speed and RPM (68 Tooth Rear)																				
Road Speed					68	Engine RPM					68	Road Speed				68	Engine RPM			68
883	3.6%	7.1%	10.7%	14.3%		28	29	30	31	32		1200	3.4%	6.7%	10.3%		29	30	31	32
20	20.7	21.4	22.1	22.9	1078	1041	1006	973	943	20	20.7	21.4	22.1	929	898	869	842			
25	25.9	26.8	27.7	28.6	1347	1301	1257	1217	1179	25	25.9	26.8	27.6	1161	1123	1086	1053			
30	31.1	32.1	33.2	34.3	1617	1561	1509	1460	1415	30	31.0	32.1	33.1	1394	1347	1304	1263			
35	36.3	37.5	38.8	40.0	1886	1821	1760	1704	1650	35	36.2	37.5	38.6	1626	1572	1521	1474			
40	41.4	42.9	44.3	45.7	2156	2081	2012	1947	1886	40	41.4	42.8	44.1	1858	1796	1738	1684			
45	46.6	48.2	49.8	51.4	2425	2341	2263	2190	2122	45	46.6	48.2	49.7	2091	2021	1956	1895			
50	51.8	53.6	55.4	57.1	2694	2602	2515	2434	2358	50	51.7	53.5	55.2	2323	2245	2173	2105			
55	57.0	58.9	60.9	62.9	2964	2862	2766	2677	2593	55	56.9	58.9	60.7	2555	2470	2390	2316			
60	62.1	64.3	66.4	68.6	3233	3122	3018	2920	2829	60	62.1	64.2	66.2	2787	2694	2608	2526			
65	67.3	69.6	72.0	74.3	3503	3382	3269	3164	3065	65	67.2	69.6	71.7	3020	2919	2825	2737			
70	72.5	75.0	77.5	80.0	3772	3642	3521	3407	3301	70	72.4	74.9	77.2	3252	3144	3042	2947			
75	77.7	80.4	83.0	85.7	4042	3902	3772	3651	3537	75	77.6	80.3	82.8	3484	3368	3259	3158			
80	82.9	85.7	88.6	91.4	4311	4163	4024	3894	3772	80	82.8	85.6	88.3	3717	3593	3477	3368			
85	88.0	91.1	94.1	97.1	4581	4423	4275	4137	4008	85	87.9	91.0	93.8	3949	3817	3694	3579			
90	93.2	96.4	99.6	102.9	4850	4683	4527	4381	4244	90	93.1	96.3	99.3	4181	4042	3911	3789			
95	98.4	101.8	105.2	108.6	5120	4943	4778	4624	4480	95	98.3	101.7	104.8	4413	4266	4129	4000			
100	103.6	107.1	110.7	114.3	5389	5203	5030	4867	4715	100	103.4	107.0	110.3	4646	4491	4346	4210			
105	108.8	112.5	116.3	120.0	5658	5463	5281	5111	4951	105	108.6	112.4	115.9	4878	4715	4563	4421			
110	113.9	117.9	121.8	125.7	5928	5723	5533	5354	5187	110	113.8	117.7	121.4	5110	4940	4781	4631			
115	119.1	123.2	127.3	131.4	6197	5984	5784	5598	5423	115	119.0	123.1	126.9	5343	5164	4998	4842			
120	124.3	128.6	132.9	137.1	6467	6244	6036	5841	5658	120	124.1	128.4	132.4	5575	5389	5215	5052			

2004+ Speedometer Versus Road Speed and RPM (66 Tooth Rear)																				
Road Speed					66	Engine RPM					66	Road Speed				66	Engine RPM			66
883	3.6%	7.1%	10.7%	14.3%	Stock	28	29	30	31	32		1200	3.4%	6.7%	10.3%		29	30	31	32
20	20.7	21.4	22.1	22.9	1046	1010	976	945	915	20	20.7	21.4	22.1	902	872	844	817			
25	25.9	26.8	27.7	28.6	1308	1263	1220	1181	1144	25	25.9	26.8	27.6	1127	1090	1055	1022			
30	31.1	32.1	33.2	34.3	1569	1515	1465	1417	1373	30	31.0	32.1	33.1	1353	1308	1265	1226			
35	36.3	37.5	38.8	40.0	1831	1768	1709	1654	1602	35	36.2	37.5	38.6	1578	1526	1476	1430			
40	41.4	42.9	44.3	45.7	2092	2020	1953	1890	1831	40	41.4	42.8	44.1	1804	1743	1687	1635			
45	46.6	48.2	49.8	51.4	2354	2273	2197	2126	2059	45	46.6	48.2	49.7	2029	1961	1898	1839			
50	51.8	53.6	55.4	57.1	2615	2525	2441	2362	2288	50	51.7	53.5	55.2	2255	2179	2109	2043			
55	57.0	58.9	60.9	62.9	2877	2778	2685	2598	2517	55	56.9	58.9	60.7	2480	2397	2320	2247			
60	62.1	64.3	66.4	68.6	3138	3030	2929	2835	2746	60	62.1	64.2	66.2	2705	2615	2531	2452			
65	67.3	69.6	72.0	74.3	3400	3283	3173	3071	2975	65	67.2	69.6	71.7	2931	2833	2742	2656			
70	72.5	75.0	77.5	80.0	3661	3535	3417	3307	3204	70	72.4	74.9	77.2	3156	3051	2953	2860			
75	77.7	80.4	83.0	85.7	3923	3788	3661	3543	3432	75	77.6	80.3	82.8	3382	3269	3164	3065			
80	82.9	85.7	88.6	91.4	4184	4040	3905	3779	3661	80	82.8	85.6	88.3	3607	3487	3374	3269			
85	88.0	91.1	94.1	97.1	4446	4293	4150	4016	3890	85	87.9	91.0	93.8	3833	3705	3585	3473			
90	93.2	96.4	99.6	102.9	4707	4545	4394	4252	4119	90	93.1	96.3	99.3	4058	3923	3796	3678			
95	98.4	101.8	105.2	108.6	4969	4798	4638	4488	4348	95	98.3	101.7	104.8	4284	4141	4007	3882			
100	103.6	107.1	110.7	114.3	5230	5050	4882	4724	4577	100	103.4	107.0	110.3	4509	4359	4218	4086			
105	108.8	112.5	116.3	120.0	5492	5303	5126	4961	4805	105	108.6	112.4	115.9	4734	4577	4429	4291			
110	113.9	117.9	121.8	125.7	5754	5555	5370	5197	5034	110	113.8	117.7	121.4	4960	4795	4640	4495			
115	119.1	123.2	127.3	131.4	6015	5808	5614	5433	5263	115	119.0	123.1	126.9	5185	5013	4851	4699			
120	124.3	128.6	132.9	137.1	6277	6060	5858	5669	5492	120	124.1	128.4	132.4	5411	5230	5062	4904			

Sportster 27 thru 31 Tooth Pulley Installation

Final Gear Ratios for all pulleys

Calculated Drive Train Ratios											
Years	Engine	Primary	Engine	Clutch	Ratio	Trans	Wheel	Ratio	Final	Engine	Years
'91-'03	883	35/56	35	56	1.60	27	61	2.26	3.86	883	'91-'03
'91-'03	883	35/56	35	56	1.60	28	61	2.18	3.78	883	'91-'03
'91-'03	883	35/56	35	56	1.60	29	61	2.10	3.70	883	'91-'03
'91-'03	883	35/56	35	56	1.60	30	61	2.03	3.63	883	'91-'03
'91-'03	883	35/56	35	56	1.60	32	61	1.91	3.51	883	'91-'03
'91-'03	1200	35/56	35	56	1.60	29	55	1.90	3.50	1200	'91-'03
'91-'03	1200	35/56	35	56	1.60	29	61	2.10	3.70	1200	'91-'03
'91-'03	1200	35/56	35	56	1.60	30	61	2.03	3.63	1200	'91-'03
'91-'03	1200	35/56	35	56	1.60	32	61	1.91	3.51	1200	'91-'03
Years	Engine	Primary	Engine	Clutch	Ratio	Trans	Wheel	Ratio	Final	Engine	Years
2004+	883	34/57	34	57	1.68	28	66	2.36	4.03	883	2004+
2004+	883	34/57	34	57	1.68	29	66	2.28	3.95	883	2004+
2004+	883	34/57	34	57	1.68	30	66	2.20	3.88	883	2004+
2004+	883	34/57	34	57	1.68	31	66	2.13	3.81	883	2004+
2004+	883	34/57	34	57	1.68	32	66	2.06	3.74	883	2004+
2004+	883	34/57	34	57	1.68	28	68	2.43	4.11	883	2004+
2004+	883	34/57	34	57	1.68	29	68	2.34	4.02	883	2004+
2004+	883	34/57	34	57	1.68	30	68	2.27	3.94	883	2004+
2004+	883	34/57	34	57	1.68	31	68	2.19	3.87	883	2004+
2004+	883	34/57	34	57	1.68	32	68	2.13	3.80	883	2004+
2004+	1200	38/57	38	57	1.50	28	66	2.36	3.86	1200	2004+
2004+	1200	38/57	38	57	1.50	29	66	2.28	3.78	1200	2004+
2004+	1200	38/57	38	57	1.50	30	66	2.20	3.70	1200	2004+
2004+	1200	38/57	38	57	1.50	31	66	2.13	3.63	1200	2004+
2004+	1200	38/57	38	57	1.50	32	66	2.06	3.56	1200	2004+
2004+	1200	38/57	38	57	1.50	28	68	2.43	3.93	1200	2004+
2004+	1200	38/57	38	57	1.50	29	68	2.34	3.84	1200	2004+
2004+	1200	38/57	38	57	1.50	30	68	2.27	3.77	1200	2004+
2004+	1200	38/57	38	57	1.50	31	68	2.19	3.69	1200	2004+
2004+	1200	38/57	38	57	1.50	32	68	2.13	3.63	1200	2004+

Speedometer Sensor Location, VSS



Sportster 27 thru 31 Tooth Pulley Installation

Rear Pulley, 66 Tooth



Pulley Holder Kit



Speedometer Correctors



Interstate Handlebars



LED, Rear Lamp Replacement Kit



Air Cleaner, Chrome or Black



Heel & Toe Shifter



Oil Temperature Gauge

