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EVO: Wheels, Brakes & Tires

Brake System

Brake Fluid / Bleeding the System

Refer to these sections of the Sportsterpedia for recommendations, change intervals and bleeding advice:

- [Brake Fluid](#)
- [Bleeding the Brake Lines](#)

For more information:

Refer to these threads on the XLForum:

- 2005 Rear Master Cylinder Re-build
- -
<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/37937-my-rear-master-cylinder-re-build?t=75157>
- 2006 vs 2007 1200L Front Brake Caliper
- -
<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/192254-2007-1200l-front-brake-caliper-question-oddity?threadid=2057183>

Inspection

- Inspect the master cylinder and linkage for damage or leakage, failure to return fully when released, or sponginess when applying pressure.
 - Any problem with the master cylinder requires rebuilding or replacement.
- Brake Fluid Leakage:
 - Any fluid leakage in the brake system should be a signal for replacement of the particular component causing leakage.
 - On an older systems, pay special attention to hoses, looking for cracked or cut surfaces

which could develop leakage.

- Check the brake fluid for contamination and proper level.
 - The fluid change level should be 1/8" from top (with reservoir level).
- Perform a stationary test:
 - Squeeze the lever or depress the pedal as hard as possible to make sure the system will not leak or fail.

Make sure the system releases and the wheel turns freely.
- Linkage inspection: Check for damage and wear especially with non-stock parts.
- Some amount of freeplay must exist in most brake systems.

Master Cylinders

Front

Sub-Documents

* . . . [Front Master Cylinder Identification](#)

- 1981 and earlier front master cylinders should have some free play.
- 1982 and later do not. The internals are held in place by a seal ring.
- Prior to 2004, there were only two thread pitches for EVO / TC88 models. ¹⁾
They were 3/8"-24, commonly known as 10mm, and 7/16"-24, commonly known as 12mm. (12mm is symbolic only, actual bore size is 11.2mm)
With the introduction of the 2004 XLH (Sportster) models things changed.
XL883, XL883C, and XL1200C models use 10mm x 1.25thread on both the front and rear master cylinders and calipers.
The XL1200R uses a 12mm x 1.5 thread on the front master cylinder and 10mm x 1.25 on the rear master cylinder, and front and rear calipers.
Only 2004-2006 models use true metric bolts. All other models have not changed.

Front Master Cylinder part numbers and bore sizes. ^{2) 3) 4)}

Master Cylinder	Year	Model	Bore	Rebuild Kit(s)	Fluid	Banjo Size	Single / Dual Discs	Caliper Pistons \ Area

45019-85	L1985-1986	All Models	5/8"	45069-84 45072-87	DOT 5	3/8"x24	Single	1 Kelsey Hayes
	Note: OEM on 1986, 1989-1991 domestic models and 1987 HDI models. Replacement master for '87-'88 Sportsters. Rebuild kit 45069-84 includes body, kit 45072-87 comes without body.							
45025-87	1987	All Models	5/8"	45072-87	DOT 5	3/8"x24	Single	1 Kelsey Hayes
	1988	All Models	5/8"	45072-87	DOT 5	7/16"x24	Single	1 Kelsey Hayes
45019-85	1989-1991	All Models	5/8"	45072-87	DOT 5	7/16"x24	Single	1 Kelsey Hayes
45019-85A	1992	All Models	5/8"	45072-87	DOT 5	7/16"x24	Single	1 Kelsey Hayes
	This version is retro for 1984-1991 Models							
45019-93	1993-1995	883 883 Hugger 883 Deluxe 1200	5/8" ⁵⁾	45072-87	DOT 5	7/16"x24	Single	1 Kelsey Hayes
45013-96 45013-96D	1996-1999 2000	1200S	11/16"	45072-96 45072-96A 45072-96C	DOT 5	3/8"x24	Dual	2 x 39mm Kelsey Hayes 8 x 33mm
45019-96 45019-96D	1996-1999 2000	883 883 Hugger 883C 1200 1200C	9/16"	45006-96 45006-96A 45006-96C	DOT 5	7/16"x24	Single	1 Kelsey Hayes 4 x 33mm
45013-96A	2001-2002 2002	1200S 883R	11/16"	45072-96A	DOT 5	3/8"x24	Dual	8 x 33mm ⁶⁾ Kelsey Hayes
45019-96A	2002	883 883 Hugger 883C 883R 1200 1200C	9/16"	45006-96A	DOT 5	7/16"x24	Single	4 x 33mm ⁷⁾ Kelsey Hayes
45013-96B	2003	883R 1200S	11/16"	45072-96C	DOT 5	3/8"x24	Dual	8 Kelsey Hayes

45019-96B	2003	883 883 Hugger 883C 883R 1200 1200C	9/16"	45006-96C	DOT 5	7/16"x24	Single	4 Kelsey Hayes
45052-04	2004-2006 2005-2006	1200R 883R	14mm ⁸⁾ (.55")	42809-04 42809-04B	DOT 5	41737-04 7/16"x24 (11.1mm)	Dual	4 x 27mm Nissin
Parts catalog says the banjo bolt is 12mm but that's wrong. ⁹⁾								
45146-04	2004-2006 2005-2006	883/1200C/883C 883L	1/2" (12.7mm)	42803-04 42803-04B	DOT 5	M-10	Single	2 x 27mm ¹⁰⁾ Nissin
45052-07	2007	883R/1200R	1/2" ¹¹⁾ (12.7mm)	42809-07	DOT 4	M-12 x 1.25	Dual	4 Nissin
45146-07	2007 2007-2009 2007-2010 2007-2013 2007-2013 2007-2011 2011-2013 2013 2013 2013 2013	XL50 883 883C 1200C 883L 1200L 1200CP 1200C Anv 1200V 1200CA 1200CB	11mm	42803-07A	DOT 4	41736-04 M-10x1.25	Single	2 Nissin
42745-07 (black)	2007-2012 2009-2013 2011-2013	1200N 883N XL1200X	11mm	42803-07A	DOT 4	M-10	Single	2 Nissin
45052-07A	2008-2009 2008-2013	1200R 883R	1/2" ¹²⁾ (12.7mm)	42809-07A	DOT 4	M-12	Dual	4 Nissin
42941-08	2009	XR1200	5/8" ¹³⁾ (15.87mm)	42736-08	DOT 4	M12x1.5	Dual	8 Nissin
42941-10	2010 2010-2013	XR1200 XR1200X	5/8" ¹⁴⁾ (15.87mm)	42736-08	DOT 4	M-12	Dual	8 Nissin
41700003 (silver) (ABS)	2014-2017 2014-2016 2015-2017	883L 1200V 1200T	14mm ¹⁵⁾	41700084	DOT 4	M-10	Single	2 x 34mm Nissin
41700085 (silver) (non-ABS)	2014-2017 2014-2017 2014-2016 2014-2016 2014-2016 2014-2017 2015-2017	883L 1200C 1200V 1200CP 1200CA 1200CB 1200T	7/16"	41700087	DOT 4	M-10	Single	2 Nissin
41700086	2014-2015 2016-2017	883R 1200CX	1/2"	41700088	DOT 4	M-10	Dual	4 Nissin

41700099 (black (non ABS)	2014-2017	XL1200X 883N	7/16"	41700087	DOT 4	M-10	Single	2 Nissin
41700007 (black) (ABS)	2014-2017	XL1200X 883N	14mm	41700084	DOT 4	M-10	Single	2 Nissin

Rear

Sub-Documents

- [Rear Master Cylinder Identification](#)
- [Known issues with the 2004-2007 Style Rear Master Cylinder](#)
- 1982-E1987 master cylinders have aluminum bodies and require a minimum of 1/32" free play. They all had a 5/8" bore.
- L1987-2003 master cylinders have built-in free play and use replaceable cartridge type internals that rarely need replacing. They all came with a 3/4" bore. The replacement body (42472-87), one piece bore/bowl, is the same part number from L1987-2003.

Rear Master Cylinder part numbers and bore sizes. ¹⁶⁾							
Master Cylinder Assembly	Year	Model	Bore	Rebuild Kit(s)	Fluid	Brake Line Fitting / Threads	Caliper Pistons \ Area
42453-82	1982-1985	XL	5/8"	42374-82	DOT 5		1 Lucas Girling
42453-82A	1983-1985	XLS, XLX		42374-82A			
(polished)	1986-E1987	All		42374-82B			
42456-84	1986-E1987	All HDI	5/8"	42374-82A 42374-82B	DOT 5		1
42453-87	L1987-1990	All Models	3/4"	42382-87	DOT 5		1
42453-87A	1991			42382-87A			
42453-87B	1992						
42456-87A 42456-87B	1991 1992 1993-97 1999	All HDI All HDI All Domestic	3/4"	42382-87 42382-87A 42382-87B	DOT 5		1
	2000-2001	All Models		3/4"			
42456-87C	1998	All Models	3/4"	42382-87C	DOT 5		1
	2002-2003	All Models	3/4"		DOT 5		4
42521-04	2004-2007	All Models		42810-04 42810-04B			1
42521-07	2008-2013	All Models except XR1200/XR1200X		42810-07A			1

42945-08	2009-2010	XR1200		42738-08			1
	2010-2013	XR1200X					
41700025	2014-2019	All Models		41700097			2

Calipers

Front

Rear

Sub-Documents

* . . . [Rear Brake Caliper Identification](#)

2001 Front Style Caliper

Wrench Sizes & Torque Specs

Caution the use of 6-point sockets and vise-grips will round off the bolt corners. ¹⁷⁾

- **Changing pads:**
- Caliper to fork mounting bolts (2) (rectangles in pic below):
 - Wrench (10mm 12-point), Torque (28-38 ft/lbs / 38-51.5 Nm). ¹⁸⁾
- Brake Pad Slide Pins (2) (five sided box below):
 - The small bolts on the caliper need to be removed in order to change the pads. ¹⁹⁾
They will give an audible click when inserted into the housing. ²⁰⁾
 - Wrench (1/4" 12-point), Torque (180-200 in/lbs / 20.3-22.6 Nm). ²¹⁾
- Bleeder valve:
 - Torque (80-100 in/lbs / 9.0-11.3 Nm) ²²⁾
- Banjo bolt on caliper (six sided box below):
 - Wrench (3/8" 12-point)
- Banjo bolt at M/C:
 - Wrench (7/16 12-point)
- **Disassembling the caliper:**
- Bridge bolts (2) (rectangles in pic below):
- The 2 larger bolts to the right on the caliper.
These hold the caliper halves together and shouldn't need to be removed unless you are rebuilding the caliper. ²³⁾

- Wrench (10mm 12-point), Torque (28-38 ft/lbs / 38.0-51.5 Nm).²⁴⁾



Alternative Calipers:

The 2000 and newer bikes have a completely different mounting boss for the brakes. If you want to upgrade to Brembo calipers you're going to need the lowers from a 2000 and newer model. The stock aluminum style is the same price as the chrome version (at retail) so if you like chrome, it's definitely the way to go.²⁶⁾

2004 Rear Style Caliper

When removing the rear caliper pin bolt (44184-04) and raising the caliper, the brake pads will rotate and come out of the retention clip.²⁷⁾

During reassembly you must be certain to visually check that the brake pads are properly reinserted into the retention clip.

If the pads are not positioned properly you will cross thread the pin bolt in the aluminum caliper during reassembly.

A cross-threaded caliper pin bolt may permit the caliper to rock side to side on the bracket when the brake is applied causing drag and noise.

Brake Pads

87-late thru 1999 Brake Pads

Front

Rear



1994 Sportster
Rear Brake Mounting Bracket
Removed from swingarm while tire
being replaced. Notice the spring
snaps over the top of pads.



1994 Sportster - Rear Brake
Mounting Bracket On Swingarm
with New Brake Pads In Place.

Caliper held out of the way
using bungee cord.



1994 Sportster - Rear Brake - Mounting Bracket
Removed from swingarm while tire replaced.
Two Spring Insulated Straps for Brake Pads
to Slide back & forth. Insulated with Pads.

Keeper Spring passes from wheel side to
outside to snap over the outer pad.

Brake Disc (rotor)

Disc Part #	Material ²⁹⁾
40909-81A	Stainless Steel
40939-79A	Stainless Steel
40939-86	Cast Iron
41791-79	Stainless Steel
41806-72B	Stainless Steel
41807-74	Carbon Steel
41813-79	Stainless Steel
44136-84	Stainless Steel
44137-77A	Stainless Steel
44210-79	Stainless Steel

Rear

Rear Brake Rotor (41833-08) ³⁰⁾



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¹⁾

psycho69 of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/efi-sportster-motorcycle-talk-2007-and-up/97590-banjo-bolt-size-for-master-cylinder?t=824722>

²⁾

whittlebeast of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/31075-installing-a-dyna-caliper-on-a-single-disc-2007/page12#post1122959>

³⁾ ¹¹⁾ ¹²⁾ ¹³⁾ ¹⁴⁾

Screw Loose Dan of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/99136-1-2-bore-front-master-cylinder?t=847430>

4) 16)

1986-up Sportster Parts Catalogs

5)

fourteen of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/99872-front-brake-upgrade/page3?s=8aae2a12442e258eb794f3891014d30e&t=857371&page=3>

6) 7)

Randy_rots of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/169230-master-cylinder-size-w-4-piston-caliper?t=1815643>

8)

XLdaveR of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/94666-question-about-master-cylinders?t=786022>

9)

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/79722-frustrated-banjo-bolt-size-1200r-master-cylinder/page3?s=8aae2a12442e258eb794f3891014d30e&t=580402&page=3>

10)

goblin_dust of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/rubber-mount-sportster-motorcycle-talk-2004-2006/188307-front-caliper-pistons-06-vs-07?t=2006045>

15)

spacetiger of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/175266-single-front-brake-upgrade-2014-xl1200?t=1880028>

17) 19) 23)

Jheitt of the XLFORUM

<https://www.xlforum.net/forum/forum-functions/sportsterpedia-com-admin/191119-send-a-note-to-sportsterpedia-admin/page3#post4187744>

18)

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20) 21) 22) 24)

2000 HD XLH FSM pg 2-45

25)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/173094-what-tool-works-on-brake-caliper-mounting-screw?t=1857463>

26)

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27)

HD Tech Tip #58 dated 5-10-2004

28)

Pics & Annotation by IXL2Relax of the XLForum.net

29)

HD P&A Bulletin #288 dated April 25, 1986

30)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/efi-sportster-motorcycle-talk-2007-and-up/157717-my-2013-hd-forty-eight-build?t=1688133>

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