STREET PERFORMANCE FORK SPRING KITS AND FORK CARTRIDGES

## **PRODUCTS COVERED IN THIS MANUAL**

Kit PN	Description
890-27-100	Harley-Davidson, AM, Touring Standard, 49mm Fork Spring Kit
890-27-101	Harley-Davidson, AM, Dyna Standard, 49mm Fork Spring Kit
890-27-102	Harley-Davidson, AM, Touring Heavy Duty , 49mm Fork Spring Kit
890-27-103	Harley-Davidson, AM, Touring Low, 49mm Fork Spring Kit
890-27-104	Harley-Davidson, AM, Touring Standard, 41mm Fork Spring Kit
890-27-105	Harley-Davidson, AM, Touring Heavy Duty, 41mm Fork Spring Kit
890-27-106	Harley-Davidson, AM, Touring Low, 41mm Fork Spring Kit
890-27-001	Harley-Davidson, AM, Touring Standard, Fork Cartridge, 49mm
890-27-002	Harley-Davidson, AM, Touring Heavy Duty, Fork Cartridge, 49mm
890-27-003	Harley-Davidson, AM, Touring Low, Fork Cartridge, 49mm
890-27-004	Harley-Davidson, AM, Touring Standard, Fork Cartridge, 41mm
890-27-005	Harley-Davidson, AM, Touring Heavy Duty, Fork Cartridge, 41mm
890-27-006	Harley-Davidson, AM, Touring Low, Fork Cartridge, 41mm



Fork springs



49mm cartridge

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## **COMPATIBILITY CHART**

Year Diameter
2006 49MM
2017 49MM
2017 49MM
2017 49MM
2010 49MM
2014 49MM
2013 41MM
2005 41MM
2005 41MM
Cont. 49MM
Cont. 49MM
Cont. 49MM
Cont. 49MM
2013 41MM
2005 41MM
Cont. 49MM
Cont. 49MM
Cont. 49MM
2016 49MM
2008 41MM
2016 49MM
Cont. 49MM
2013 41MM
Cont. 49MM
Cont. 49MM

If you can not find your motorcycle listed above please contact FOX Service Center at 1.831.740.4619 or psservicemw@ridefox.com to check your fitment.

NOTICE

Cartridge kits with "\*" will require fitment kit 803-01-400 and additional disassembly steps found on pages 13 and 14 of the Product Manual.

#### 

Always use a calibrated torque wrench when tightening compenents. Failure to properly torque the parts can result in separation of the fork which could cause loss of control resulting in a crash, bodily injury, or death!

Always use the appropriate lift equipment and ensure the vehicle is securely supported so that it will not tip. Placing body parts beneath an unstable vehicle may lead to serious injury or death.

It is advisable to have a professional motorcycle mechanic install the fork spring kit or cartridge kit. In addition to these instructions, professional knowledge of disassembly/reassembly procedures and post installations checks must be known.

FOX recommends that you become completely familiar with the handing characteristics of your modified vehicle before operating it under rigorous conditions. This will help to avoid potential loss of control events that could lead to serious injury or death. FOX further recommends that you use appropriate protective equipment at all times when operating your vehicle.

Please read the instruction manual completely before attempting to install your spring or cartridge kit. When working on this product, always see the Vehicle Service Manual for vehicle specific procedures and important specifications. Be sure to clean the components you intend to modify to avoid contamination or damage during the installation process.

# THE SPRINGS ARE COATED WITH A CORROSION-RESISTANT OIL THAT REQUIRES EYE PROTECTION AND GLOVES FOR SAFE HANDLING. AVOID CONTACT WITH EYES AND SKIN. DO NOT INGEST AND AVOID REPEATED INHALATION OF VAPOR.

#### **FIRST-AID MEASURES:**

**INHALATION:** Move person to fresh air. If not breathing, give artificial respiration. If a problem develops or persists, seek medical attention.

**SKIN CONTACT:** Wash skin with warm water and mild soap. Remove contaminated clothing and wash before reuse. If a problem develops or persists, seek medical attention. Discard contaminated leather articles such as shoes and belt.

**EYE CONTACT:** Flush with water for at least 15 minutes. Remove contact lenses if easy to do. Hold eyelids apart to rinse properly. If a problem develops or persists, seek medical attention.

**INGESTION:** DO NOT INDUCE VOMITING! Never give anything by mouth if victim is unconscious or convulsing. If spontaneous vomiting occurs, keep head below hip level to prevent aspiration into the lungs. Seek medical attention or contact POISON CENTER immediately.

## **REQUIRED TOOLS SPECIFIC TO SPRING AND CARTRIDGE KIT ASSEMBLY:**

#### **Spring Kit**

- Gloves
- Safety glasses
- Vehicle service manual
- Torque wrench
- Fork vice
- Bench vice
- Loctite 565 (for kits 890-27-103 & 890-27-106)
- 1 quart Harley-Davidson Type E fork oil

#### Cartridge Kit

- Gloves
- Safety glasses
- Vehicle service manual
- 13mm socket and extensions
- 33mm socket
- Torque wrench
- Fork vice
- Bench vice
- Seal driver and pick (for forks with OE cartridge, see page 13)
- Loctite 565
- 1 quart FOX 5WT PTFE infused suspension fluid (included)

## FORK DISASSEMBLY

Remove the fork legs from your motorcycle according to your factory authorized service manual and secure them in a fork clamp. **Note:** All fork disassembly instructions are repeated for the second fork leg.

#### **WARNING**

Wear SAFETY GLASSES and RUBBER GLOVES when disassembling and reassembling fork legs as they are under spring tension and contain oil.

	STEPS	49MM	41MM
1	Clamp the fork in fork vice, then loosen the top cap with appropriately sized tool.		
2	Keep downward force on the top cap and tool while unthreading the cap.		
3	A WARNING Remove the top cap keeping your body and other objects out of the path of the cap. (Note: The top cap may come out with more force than you expect).		
4	Remove the stock preload spacer.		N/A
5	Remove the stock spring washer.		N/A
6	Remove the stock spring.		

## FORK DISASSEMBLY

For Touring and Dyna spring kits listed below, skip ahead to SPRING KIT - FORK REASSEMBLY (page 10)

890-27-100	890-27-101	890-27-102	890-27-104	890-27-105
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For Touring Low spring kits listed below, follow steps 7 through 9 below and then proceed to

#### TOURING LOWERING SPRING KIT 890-27-103 AND 890-27-106 FORK REASSEMBLY (Page 9 and 10)

For All Cartridge Kits (except those listed on page 13), follow steps 7 through 9 below and then proceed to

#### CARTRIDGE KIT - FORK REASSEMBLY (page 15)

890-27-001 890-27-002 890-27-003 890-27-004 890-27-005 890-27-006
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#### If fitting a cartridge kit to a motorcycle listed on page 13 then follow dissasembly instructions on page 13 and 14.

7	STEPS Fully compress the fork several times while holding upside down to drain oil into a clean container. Clamp the lower portion of the fork leg in a vise with access to lower screw. NOTICE Use care when clamping not to damage fork leg.	IMAGES
8	Remove the damping post retaining screw. It helps to apply pressure to the damping post with the main spring to keep the post from turning inside the leg.	
9	Compress the fork to hold the bottom-out cup in place. Turn the fork upside down to remove the damping post and negative spring.	
	NOTICE	
the po Th	rtain forks have a CARTRIDGE EMULATOR sitting below e main spring. This should be <b>retained</b> in the same sition during reassembly of the fork leg for <b>Spring Kits</b> . is part should be <b>discarded</b> during reassembly of the fork for <b>Cartridge Kits</b> .	

#### SPRING KIT - FORK ASSEMBLY (LOWERING SPRING KIT 890-27-103 AND 890-27-106)

IMPORTANT: For Touring lowering spring kit 890-27-103 and 890-27-106, follow steps below for both fork legs to add the additional negative spring provided with the kit.

	STEPS	IMAGES
1	Damping post with stock negative spring on post and supplied negative spring in hand.	
2	Add the supplied negative spring to the damping post with stock negative spring.	
3	Ensure bottom out cup is seated correctly. (If seated correctly you will see a circle of light through the hole in the bottom of the leg.)	
4	Drop the damping post and negative springs back into the lower leg and make sure they are seated correctly.	
5	Inspect the lower screw copper washer. Replace if necessary.	
6	Apply Loctite 565 thread sealant to the damping post retainer screw.	
7	Apply pressure to the fork spring to keep pressure on the damping post while threading in the damping post retainer screw. This will keep the post from turning inside the fork leg.	
8	Torque the retainer bolt to the manufacturer's specification.	

Follow steps in SPRING KIT - FORK REASSEMBLY on page 10 to complete final assembly.

## **SPRING KIT - FORK REASSEMBLY** (ALL KITS)

For maximum performance, it's recommended that the forks are thoroughly cleaned, inspected and refiled with **Harley-Davidson Type E fork oil** to the height the factory manual specifies. Fork oil height should be checked when the fork is fully compressed after the fork has been cycled 10 times and with the spring, spring washer, and preload spacer removed. **Note:** Fork reassembly instructions are repeated for second fork leg

	STEPS	49MM	41MM
1	Install the new fork spring. There is no top or bottom orientation. Then install OE spring washer into fork for 49mm fork kits and the supplied washer for 41mm fork kits.		
	Install the spacer supplied with kit.	1 211	200
	NOTICE		
2	If your kit contains two spacer lengths please refer to the chart on page 11 for correct spacer length.		
3	Install the top cap. Keep downward force on the top cap and tool while threading the top cap in place.		
4	Torque the top cap to the manufacturer's specification.		
5	Install the forks back into the triple clamps and according to your factory-authorized service m		notorcycle completely
6	It is normal to hear some spring rubbing noise inside of the fork, the noise will go away.	before the first mile of use. C	Duce the oil coats the

SPRING				3			E					П	-	П/			<b>.</b>					
Low Kit Spacer Length	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Long	Long	Short	Long	Short	Long	Short	Long
Low Kit Spring Part #	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103	890-27-103
Heavy Duty Kit Spacer Length	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Long	Long	Short	Long	Short	Long	Short	Long
Standard Kit Heavy Duty Spacer Kit Spring Length Part #	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102	890-27-102
Standard Kit Spacer Length	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Long	Long	Short	Long	Short	Long	Short	Long
Standard Kit Spring Part #	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100	890-27-100
Ending Year	Cont.	2016	Cont.	2016	Cont.	2016	Cont.	2016	Cont.	2016	Cont.	2016	Cont.	2016	2016	2016	Cont.	2016	Cont.	2016	Cont.	2016
Starting Year	2017	2014	2017	2014	2017	2014	2017	2015	2017	2015	2017	2016	2017	2015	2014	2014	2017	2014	2017	2015	2017	2014
Model Code	FLHTKSE	FLHTKSE	FLHTCU	FLHTCU	FLHTK	FLHTK	FLTRX	FLTRX	FLTRXS	FLTRXS	FLTRU	FLTRU	FLTRUSE	FLTRUSE	FLHR	FLHRC	FLHX	FLHX	FLHXSE	FLHXSE	FLHXS	FLHXS
Model Name	Electra Glide Limited CVO	Electra Glide Limited CVO	Electra Glide Ultra Classic	Harley-Davidson Electra Glide Ultra Classic	Electra Glide Ultra Limited	Electra Glide Ultra Limited	Road Glide	Road Glide	Road Glide Special	Road Glide Special	Road Glide Ultra	Road Glide Ultra	Road Glide Ultra CVO	Road Glide Ultra CVO	Road King	Road King Custom	Street Glide	Street Glide	Street Glide CVO	Street Glide CVO	Street Glide Special	Street Glide Special
Make	Harley-Davidson Electra GI	Harley-Davidson Electra GI	Harley-Davidson Electra GI	Harley-Davidson	Harley-Davidson Electra GI	Harley-Davidson Electra G	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson	Harley-Davidson

## **SPRING KIT – SPACER LENGTH CHARTS**

## **SPRING KIT**

#### (CALCULATING SPACER LENGTH FOR NON-STANDARD OR CUSTOM APPLICATIONS)

- **1.** If your vehicle is not listed on the preload spacer length chart, you will need to calculate your own preload spacer length.
- 2. Most motorcycles use between 0.75" and 1" of spring preload.
- **3.** To measure your preload, install the spring, spring washer, and preload spacer in a completely extended fork assembly and leave the cap off.





Distance A

Distance B

4. Measure the distance from the top of the preload spacer to the top of the fork tube.

#### Record this as Distance A:

- This will be a positive number if the top of the preload spacer is above the top of the fork tube.
- This will be a negative number if the top of the preload spacer is below the top of the fork tube.
- **5**. Measure the distance from the bottom of the top cap to the mating lip of the top cap.

Record this as Distance B: \_\_\_\_

6. Distance A + Distance B = Spring Preload:

#### **MEASURE THE FORK SAG**

- 1. Install a zip-tie around the upper fork tube.
- 2. Have the intended rider sit on the bike in normal riding position.
- 3. Have a friend stabilize the bike from the rear, so that the rider can place both feet on the pegs or floorboards.
- 4. Slide the zip-tie down to the fork lower tube.
- 5. Carefully get off the bike and put it back on the stand, with the front wheel off the ground.
- 6. Measure the distance from the bottom of the zip-tie to the top of the lower fork tube:
  - This is your sag measurement.
  - The target sag is between 0.9" and 1.2".
  - If the sag is too little, decrease the preload spacer length.
  - If the sag is too much, increase the preload spacer length.
  - PVC or Aluminum tubing can be used as spacer material if a longer spacer is required.
  - Do not exceed 0.5" of preload spacer length, additional to the preload spacer supplied in this kit.

## FORK DISASSEMBLY FOR FORKS WITH OE CARTRIDGE

The following Harley-Davidson models will need a FOX fitment negative spring and bottom out cup conversion kit 803-01-400 in addition to the FOX cartridge kit. Installation of this fitment kit is covered below and on page 14.

Harley-Davidson	FLHT	Electra Glide	2002	2005
Harley-Davidson	FLHTC	Electra Glide Classic	2002	2005
Harley-Davidson	FLHTCUI	Ulrtra Classic	2002	2005
Harley-Davidson	FLTR	Road Glide	2002	2005

#### **DISASSEMBLY FOR FORK LEFT LEG (CLUTCH SIDE)**

	STEPS	IMAGES
1	Clamp the fork in fork vice, then loosen the top cap with appropriately sized tool.	
2	Keep downward force on the top cap and tool while unthreading the cap.	
3	Hold the leg assembly upside down while compressing the fork leg to drain oil.	
	Clamp the lower portion of fork leg in a vise with access to lower screw.	
4	NOTICE	LUE LAND A LANDAR AND
	Use care when clamping not to damage fork leg.	
5	Remove the damping post retaining screw.	
6	Remove the OE cartridge assembly.	Sale of the second seco

#### FORK DISASSEMBLY FOR FORKS WITH OE CARTRIDGE

	STEPS	IMAGES
7	Clamp the lower fork leg in fork vice and remove the retaining clip from the lower fork leg.	
8	Slide the upper tube of the fork leg up repeatedly until the seal is dislodged and the upper tube assembly can be removed.	
9	Remove the stock bottom out cup and install the bottom out cup supplied with 803-01-400 fitment kit.	
10	Ensure bottom out cup is seated correctly. (If seated correctly you will see a circle of light through the hole in the bottom of the leg).	
11	Reinstall the upper tube assembly into the fork leg, seating the seal pack with a seal driver.	
12	Reinstall the retainer clip.	

## Follow steps in Cartridge Kit - Fork Reassembly: Left leg to complete final assembly (use negative spring supplied with fitment kit).

#### **CARTRIDGE KIT - FORK REASSEMBLY: LEFT LEG (CLUTCH SIDE)**

	STEPS	LEFT/SPRING
1	Ensure the bottom out cup is seated correctly (if seated correctly you will see a circle of light through the hole in the bottom of the leg).	
2	Put the negative spring on the extender post and slide both into the fork leg. ( <b>Note:</b> If your motorcycle is model year 2014-2016 use the negative spring supplied with your FOX cartridge kit. If your motorcycle is model year 2002-2005 use the negative spring supplied with the FOX fitment kit 803-01-400. All other years, reuse your stock negative spring)	
3	Inspect the lower screw copper washer. Replace if necessary.	
4	Apply Loctite 565 thread sealant to the screw.	
5	Hold extender post in place using a 13mm socket and extensions. Install damping post screw. Torque to the manufacturer's specification.	
6	Install the spring into the left fork leg and place the stock washer on top of the spring.	
	Note: 890-27-004 and 890-27-005 do not use washers.	
	For 49mm kits (890-27-001, 890-27-002, 890-27-003) add 450ml of the included FOX SWT PTFE infused suspension fluid.	
7	For 41mm kits (890-27-004, 890-27-005, 890-27-006) add <b>300ml</b> of the included FOX SWT PTFE infused suspension fluid. (included with kit)	
8	Install the supplied spacer onto the washer and the spring. <b>Note:</b> 890-27-004 and 890-27-005 do not use spacers.	

## CARTRIDGE KIT - FORK REASSEMBLY: LEFT LEG (CLUTCH SIDE)

	STEPS	LEFT/SPRING
9	Compress the assembly into the fork leg using the supplied top cap.	
10	Using 33mm socket and torque the top cap to the manufacturer's specifications.	

#### **CARTRIDGE KIT - FORK REASSEMBLY: RIGHT LEG (THROTTLE SIDE)**

	STEPS	RIGHT/CARTRIDGE
1	Ensure the bottom out cup is seated correctly (if seated correctly you will see a circle of light through the hole in the bottom of the leg)	
2	Put the negative spring on the extender post and slide both into the fork leg. (Note: if your motorcycle is model year 2014-2016 use the negative spring supplied with the Fox kit. All other years, reuse your stock negative spring).	
3	Install the cartridge assembly into right fork leg only.	and
4	Clamp the fork leg in fork vice.	
5	Compress the cartridge assembly and temporarily thread the top cap into the fork leg using a 33mm socket.	
6	Inspect the lower screw copper washer. Replace if necessary.	
7	Apply Loctite 565 thread sealant to the lower screw.	

#### **CARTRIDGE KIT - FORK REASSEMBLY: RIGHT LEG (THROTTLE SIDE)**

	STEPS	<b>RIGHT/CARTRIDGE</b>
8	Clamp the lower leg in a vice and install the lower screw and copper washer. Torque to the manufacturer's specification.	
9	Clamp the upper tube in the fork vice and unthread the top cap and slide the lower fork leg up to expose the spring and cartridge.	
	For 49mm kits (890-27-001, 890-27-002, 890-27-003) add 450ml of the included FOX SWT PTFE infused suspension fluid.	
10	For 41mm kits (890-27-004, 890-27-005, 890-27-006) add <b>300ml</b> of the included FOX SWT PTFE infused suspension fluid. (included with kit)	
11	Compress the cartridge assembly into the fork leg.	
12	Thread the cartridge into the leg using a 33mm socket and torque to the manufacturer's specifications.	
	Install the forks back into the triple clamps and reassemble the rest of the motorcycle completely according to your factory authorized service manual before riding.	
13	NOTE During reinstallation of your forks with FOX 41mm cartridges, it is normal for the left (non-cartridge) side fork to appear slightly longer due to preload force.	
14	It is normal to hear some spring rubbing noise before the first mile of use. inside of the fork, the noise will go away.	Once the oil coats the

#### MAINTENANCE:

SEE OIL CHANGE INTERVAL LISTED IN VEHICLE SERVICE MANUAL. PROPER INSPECTION AND MAINTENANCE IS ESSENTIAL TO MAINTAIN THE PERFORMANCE AND RELIABILITY OF YOUR FORK KIT.

It is important to keep the forks clean and free of dirt.

The service interval depends on how frequently and aggressively the motorcycle is ridden. Under normal usage, it is recommended to have the forks completely inspected and serviced annually.

#### WARRANTY:

All FOX products have a one-year warranty on defects in materials or workmanship. Please view the full warranty terms and conditions at www.ridefox.com Help Center/Powersports/Warranty or contact a representative at: 1.831.740.4619. A service RMA # will be issued and shipping instructions will be provided .

## SERVICE:

Contact FOX Service Center at 1.831.740.4619 or psservicemw@ridefox.com to receive a return authorization number and shipping address of your nearest service center.



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