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OE FRONT SHOCK SPRINGS WITH SLEEVES INSTALLATION

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NOTE: The installation of the Works Performance multi-rate springs requires the use of specific tools, some of which can be hazardous to the user if misused. If you do not have access to the proper tools and/or understand how to use them safely, do not attempt to install the springs. Take the shocks to a qualified shop or send them to Works Performance to be installed.

THE PARTS INCLUDED

Each of the kits is based on the rider weight, intended use (trail, MX etc.) and for stock or extended arms. As a result the parts will vary from kit to kit. In the kit is a diagram of the spring set. It will tell you which parts are included in the kit and their location. It will describe the short springs so that they can be identified after the part number tags are removed. Refer to the diagram while you read this guide and begin the installation.

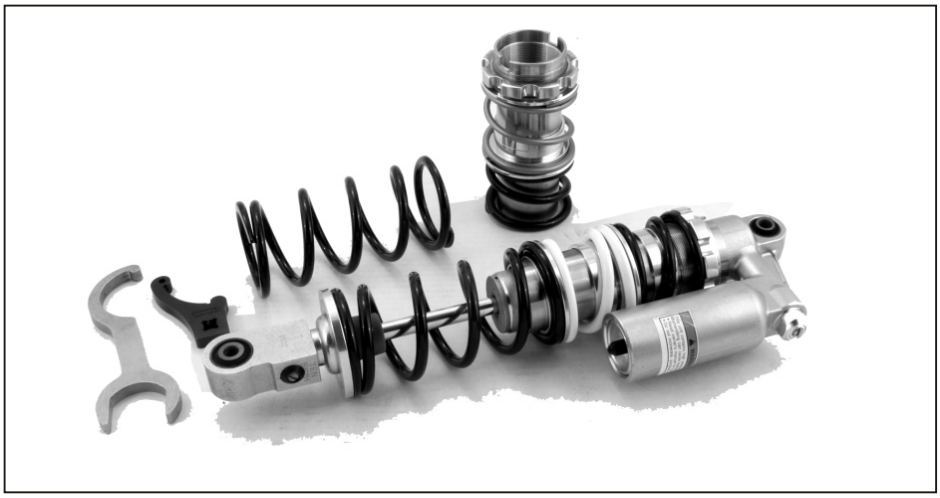
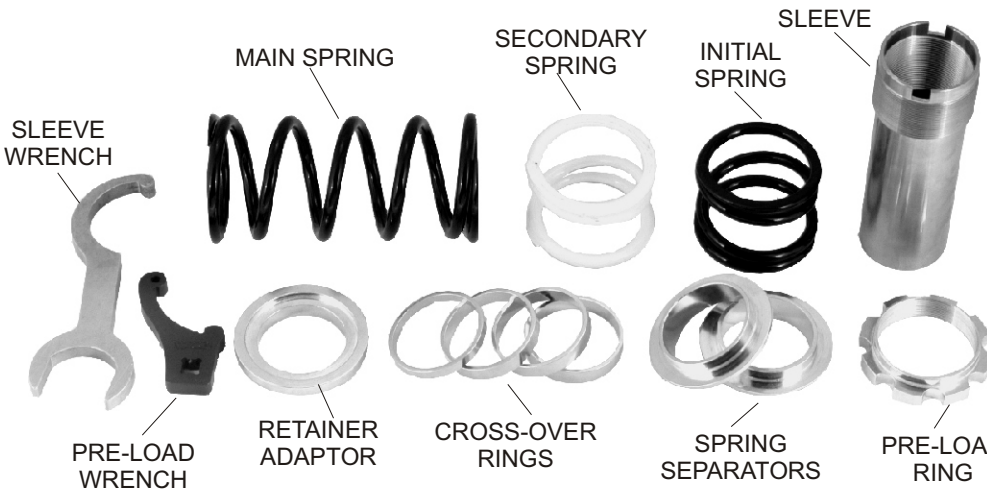


Fig. 1-- Works triple-rate springs kits with sleeves are designed for cast aluminum OEM shocks. The sleeves provide a surface for the springs and separators to slide on. Each kit is specific to your weight, riding type and arm configuration. They are available in motocross, cross-country, stadium and recreation configurations.

The kits will include: two initial short springs; two secondary short springs; two main springs; two retainers to fit the shock eye to the springs; two tubular threaded sleeves (to provide a durable surface for the separators to slide on); two pre-load nuts; four spring separators ("go-betweens"), and two adjustment wrenches. The kit can also include two or more rings ("cross-overs"). These rings are used to transition the set from three springs to two springs to one spring during the stroke of the shock. These are the three separate rates of a



TYPICAL KIT COMPONENTS

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triple-rate spring set. These crossovers should not be omitted or placed inside the wrong spring, as the correct function of the set will be compromised. Please refer to the diagram in the kit for how many crossovers you will need and where they go in the assembly. (There may also be two extra rings that can be used for tuning the spring set.)

INSTALLATION

1. Remove the stock shocks, and reduce the pre-load on the springs by unscrewing the pre-load rings at the top of the springs.

2. Place a bearing press on the lower end of the spring so that it is between the retainer and the spring. Make sure that the press has full purchase on the spring. (Fig. 2)

3. Put the shock in the hydraulic press with the shaft pointing down (Fig.3) Allow enough upward movement of the ram so that all of the pre-loaded spring can be accommodated.

Fig. 4– Remove the retainer. With the preload backed off the stock spring, it should be possible to remove the retainer by hand.

4. Slowly pump the ram down on top of the shock eye so that the eye on the shaft end will be pushed out of the retainer about one inch. Usually at this point the two keeper halves will fall out, but they may have to be pried. Use a screwdriver or other tool that will keep your fingers away from the area between the eye and the retainer.

5. With the split

Fig. 3-- It may be necessary to remove the springs using a hydraulic press and bearing press, depending on the application. Run the ram down on the end of the body eye to push the shaft end eye through the split retainers, allowing the retainers to be removed. Typical shocks and press set-up shown.

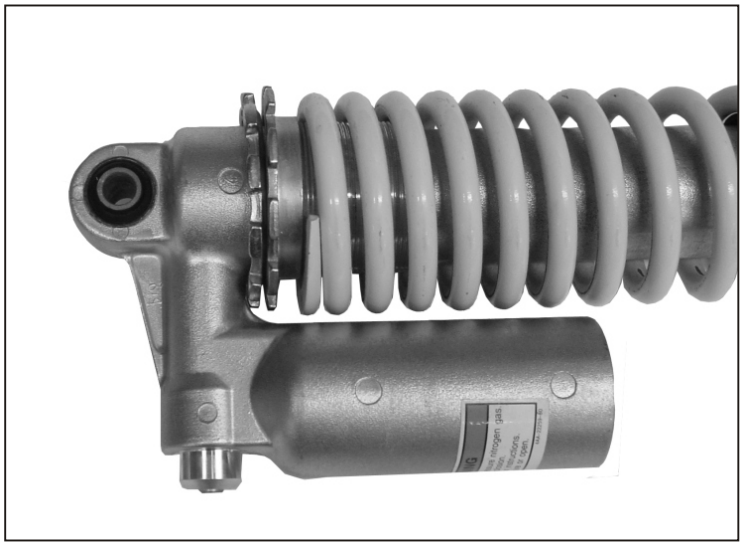

Fig. 2-- In some cases you can back the pre-load rings (arrows) off the end of the threaded portion of the shock body. This will allow the removal of the spring retainer at the other end of the shock.

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retainers out of the assembly, release the ram slowly to let the spring go to full extension. Make sure that the eye does not snag on the edge of the plastic sleeve or on the bearing press. Remove the shock and spring from the press.

6. Remove the metal retainer, plastic sleeve and spring from the shock. Break loose the pre-load nuts and remove them. (Fig. 4).

NOTE: The kits vary in the parts that are used based on the rider weight, intended use, extended or stock arms, etc. As a result not all kits will have all of the same parts shown here. Besides different rate springs, the parts that vary will be the rings that fit inside the small springs. In some cases there may be none in the assembly, or as many as six. Refer to the diagram in the kit for which parts go where and which parts are included with your kit.

7. Make sure that the threads on the shock body are completely clean and that there are no damaged threads. Some damage can be repaired with a small triangular file. Put some anti-seize compound on the body threads to aid in installation of the tubular threaded sleeves. Install the sleeves on to the shock body using the spanner supplied. Install the pre-load ring so that the smooth step is towards the reservoir end of the body. (Fig. 5)

8. Install the correct width cross-over ring (or rings) onto the sleeve. (Refer to the diagram for which cross-overs are used.) Follow the cross-over ring with the correct initial spring (see the diagram for identification).

9. Then install one of the go-betweens-- the aluminum spring separators.

10. Next comes one or more crossover rings as determined by the diagram for your particular kit. Follow that with the second short spring. (See the diagram). (Fig. 6).

11. Install the other spring separator followed by the main spring.

12. Depending on the kit and the springs involved, the retainer that goes between the eye and the spring can be installed in one of two ways:
A: If the spring set is light enough, and you have enough muscle , you can pull down on the set and have an assistant install the spring retainer. Make sure that the pre-load ring is backed off as far as possible.
or
B: Use the bearing press and install it in the reverse order of disassembly.

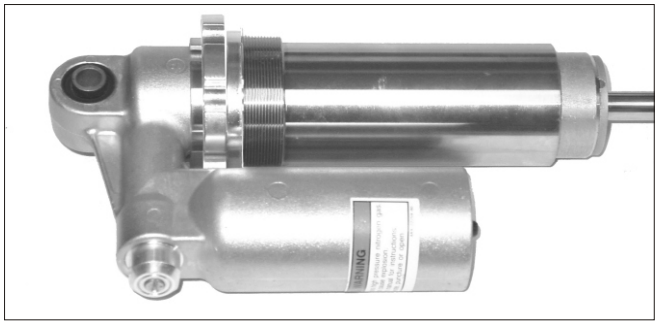

Fig. 5– Install sleeve with preload nut in place. Use the large spanner to screw the sleeve into position. Note that the step on the preload ring is at the left.

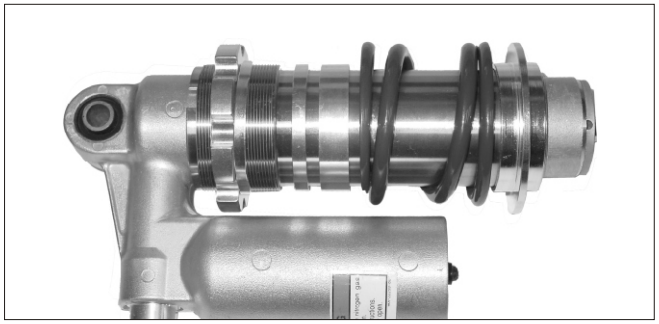

Fig. 6– Install cross-over rings in the size and quantity specified on the part number sheets with each kit. Follow this with the initial spring and the first spring separator.

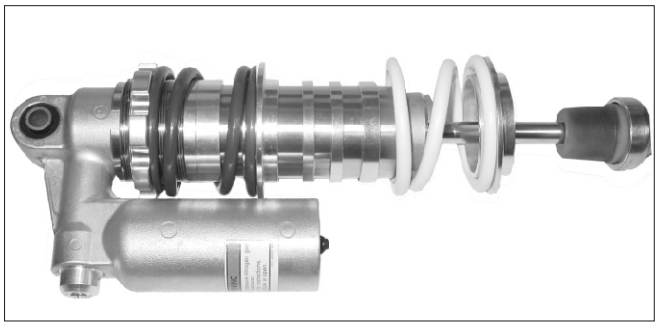

Fig. 7– Install the intermediate cross-over rings in the size and quantity specified on the part number sheets with each kit. Follow this with the secondary spring and the last spring separator.

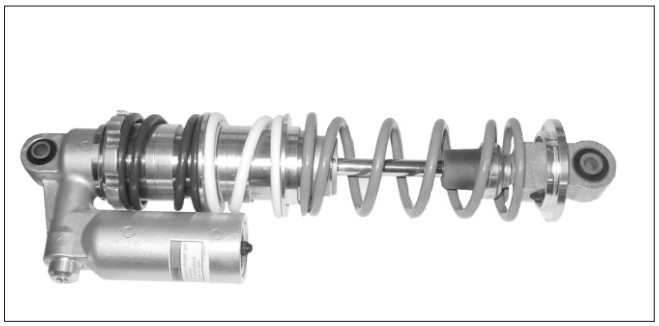

Fig. 8– Install the main spring and the retainer adaptor.

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CAUTION: Whether you are loading the springs by hand or with the press, if the retainer gets hung so that the spring doesn't fit into place DO NOT TRY TO SEAT THE SPRING WITH YOUR HANDS. IT CAN BITE YOU IN AN INSTANT! Simply, smack the spring with a dead-blow hammer or a rubber mallet and it will pop into place.

SPRING TUNING

The spring sets are designed for each individual application, and should not usually need any tuning. However, changes can be made with the the pre-load ring and by changing the selection of cross-over rings.

CROSS-OVERS

By adding or removing cross-overs, the tuner can change the transition points of the spring sets.

STIFFENING THE SET

To make the set stiffer to resist bottoming, add one quarter-inch cross over into each of the short springs. If you want to reduce body roll in corners add a quarter to the initial spring. If that doesn't give you the desired results, add a quarter-inch cross-over to the secondary spring. Usually, if you require more changes than that, then it is possible that the spring set is too soft for your needs.

Fig. 9--Install the retainer between the stock bumper cup and the adaptor ring.

SOFTENING THE SET

If you want to soften the set, remove one quarter-inch cross-over inside the initial spring or from each short spring. This will make the transitions to the next rate later and soften the overall feel of the set. Keep in mind that it will lower the resistance to bottoming. Under no circumstance should you remove all of the cross-overs from either or both of the short springs, as the springs can coil bind and damage themselves. If you need the springs substantially softer, then it is possible that the spring set is too stiff for your needs.