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MOUNTING INSTRUCTIONS FOR THE KTM SX50/SX50R

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Note: Because of the obvious differences in the physical sizes of the stock shock versus the Works Performance shock, mounting the shock correctly is very important.

One of the reasons that the Works Performance shock works much better than the stock shock is the much larger diameter damping piston inside the shock. This also makes the complete shock much larger and causes some fitting problems.

NOTE: Prior to the '96 model, the Works shock that was made for the SX50 was designed to mount shaft up--body down-- to enable the appropriate clearance at the two points. This required that some location modifications be made to the stock airbox to fit the shock. This shock was equipped with a floating piston to separate the nitrogen from the oil. If that shock was improperly mounted (shaft down and body up), contact with the shock mounting brackets and the cross bar (between the shock mount and the tire) would cause the shaft to eventually break at the threads where the shock eye is attached.

Since Mar. 26, 1996 the shocks that have been built or serviced have been designed to run with the shaft down. They also incorporate a spherical bearing and urethane bushing to accommodate the misalignment between the frame and the swingarm mounts. It fits *most* of the bikes so that the stock airbox can be used.

MOUNTING INSTRUCTIONS FOR 1993 THROUGH 1995 MODELS

Clearance around the spring at the swingarm pivot tube and around the shock body eye at the swingarm are the two main concerns. The shock must be carefully mounted and checked after installation to ensure that there is no interference that can damage the shock.

The shock mounts shaft down, body up. (See Fig. 1.)

On the early ('93-'95) models, it is very important to "index" the spring at the point where the coils make contact with the swingarm pivot. When the shock is fully extended (with no weight on the rear wheel) rotate the spring to an open space between the coils. If it doesn't touch when it is in that position, it should not normally hit, because the shock moves away from the pivot tube. It is a good idea to check this regularly. If the spring hits the swingarm pivot, it causes the shock to bind and makes the damping stiff and choppy. This will also lead to premature seal failure.

MOUNTING FOR THE 1996 MODEL

The shock mounts on the 1996 model were relocated slightly. As a result of this change, the interference between the swingarm pivot tube and the spring was eliminated. Possible interference with the cross bar on the swingarm can still be a problem. When the shock is fully bottomed (compressed well into the bumper) the spring retainer can hit this cross bar. The position of this cross bar varies from swingarm to swingarm. It is important to check the shock after the first hard rides to make sure that there is no contact. Look for chipped paint or a shiny spot on the spring or retainer.

The shock mounts shaft down, body up. (See Fig. 1)



Fig. 1. Shock mounting orientation. Shock body is up, shaft is down. ('96 model shown).

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CAUTION: Because the retainer and spring get closer to the cross bar as the shock collapses, it is important to not attempt to shorten the bumper to gain extra travel. This will cause the shock to collapse to the point where contact between the spring or retainer and the cross bar is possible. If the shock hits the cross bar it will eventually break the shock shaft. (See Fig. 2)

RIDE HEIGHT ADJUSTMENT

NOTE: On the shocks equipped with threaded collars, the spring preload can be adjusted to change the ride height of the bike and compensate for differing rider weights.

Correct ride height is important. If the ride height is too high, the vehicle will "top out" too easily and fail to allow enough travel for appropriate rebound from bumps. If the ride height is too low, the shock can bottom too easily, resulting in a harsh ride. The spring rates are set up for the full amount of travel. If the preload is too little, the combined rate is not enough to resist bottoming. Generally speaking, the vehicle should settle 1/4 to 1/3 of its wheel travel with the rider on board for off road use. The proper way to measure the ride height:

1. Support the vehicle on a frame stand or center stand with the rear wheel clear of the ground.
2. Have an assistant measure and record the vertical distance between the rear axle and a point directly above it (seat, fender, frame, muffler, etc.).
3. Take the motorcycle off the stand and sit on it in a normal riding posture, with one foot on the peg and the motorcycle balanced so as to have minimal weight on your other foot.
4. Have the assistant carefully measure from the same two points. Subtract the second measurement from the first. The difference is the amount of settling or "sag."

NITROGEN PRESSURES

CAUTION: The pressure in these shocks cannot successfully be checked. Concerns with the gauge volume and the gas volume in the shock body create a situation where you cannot accurately determine what pressure was in the shock. In addition, the gas is in a column on top of the oil, and when the pressure is lowered (i.e. checking the pressure) the gas will emulsify into the oil. This will cause the gas and some of the shock oil to escape into the gauge. It is possible to lose a large percentage of the shock oil by depressing the core of a charged shock to the atmosphere.

Please note that in order to check the pressure, some of the gas must escape and fill the gauge assembly. The volume of the gas pocket is about the size of your thumb, so a very small volume change results in a large pressure drop. Because the gauges' volumes vary, it is not possible to deduce the actual pressure in the shock prior to attaching the gauge. Therefore it is imperative that any attempt to check pressure be accompanied by the capability of refilling the shock. In other words: If you don't have a nitrogen source handy, don't check the pressure!

PRESSURIZING THE SHOCK AFTER SERVICE

The pressure setting for emulsion gas shocks is 250 p.s.i. To pressurize a shock with some residual pressure in it, bring the gauge manifold up to 250 p.s.i. and depress the core with the T-handle. This will either equalize the pressure or refill the shock without transferring oil from the shock into the gauge assembly.

The best gauges for this purpose screw on to the valve and incorporate a T-handled core depressor to isolate the shock from the gauge. This allows a leak-free separation once the desired pressure is reached. For simplified operation, an extra valve is provided for the filling apparatus, allowing pressure adjustment with the gauge in place. Works offers a suitable gauge for \$89.00. Most motorcycle shops that deal with dirt bikes can pressurize the shock.

SERVICE PARTS

Overhaul seal kit — #SL-S-KIT1
 Overhaul seal kit w/ piston ring — #SL-S-KIT1C
 Threaded collar assy — #1-TC
 Preload wrench — PL-S-SPANNER
 Seal holder wrench — SLH-S-SPANNER



Fig. 2. Make sure that when the shock is fully collapsed that the spring or retainer does not make contact with the cross bar (arrow).