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WORKS PERFORMANCE STREET TRACKER SHOCKS FOR BIG DOG MOTORCYCLES

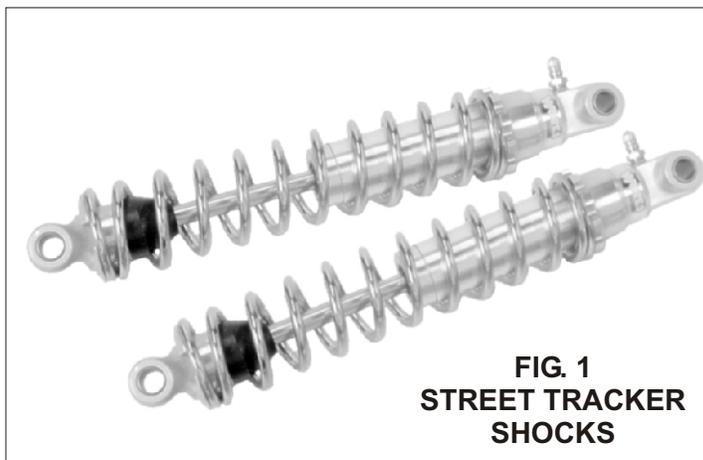
#BIGDOG-T-- 8/24/99

These instructions cover the specially-constructed shocks for the rear of Big Dog Motorcycles. In this instruction booklet, the shocks will be referred to as "Street Trackers."

STREET TRACKER SHOCKS

Note: These Works' shocks are a gas emulsion type. As a result, they are designed to run with the body up and shaft pointing down. This is opposite to most shocks. When the shock is run with the shaft pointing up, the performance is drastically decreased, because the shock is trying to operate in the nitrogen "bubble." In addition there may be some interference on the upper mount. If the shocks are ever removed, installing them correctly is very important. (See the diagram for spacer placement next page.)

CAUTION: These shocks are pressurized to 250 psi nitrogen. The pressure is not an adjustable feature of the shock. Unless there is a leak, the shock should not normally lose pressure. If the shock damping becomes soft or mushy (after an extended period of time or number of miles) the shock may need to be serviced which includes shock oil and a nitrogen charge. In this situation, re-pressurizing the shock alone may not improve the action of the shock. The shock should be returned to Works Performance Products, Inc., or to a qualified shop that has the appropriate tools, training and nitrogen handling equipment.



SHOCK REMOVAL AND INSTALLATION--

The shocks are fitted with special length spacers to maintain correct alignment between the frame and the swingarm. If the shocks are removed for service or repair, they must be installed in the correct position. Refer to the diagram on the next page for spacer positioning and layout. **NOTE:** Misalignment between the mounts on the frame and the mounts on the swingarm can cause binding between the shock shaft and shaft bushing. Misalignment of more than 1/4 inch can cause the shocks to bind up and not function properly. If this binding occurs, the shocks will feel overly stiff and harsh. Follow the procedures below to check for misalignment when installing the shocks.

NOTE: The shock bushings are designed to have a certain side-to-side "float" to keep them from binding. As a result, do not grind or file the inner or outer edges of the bushings to make them narrower. The amount of "float" in the bushing set is necessary to ensure smooth operation of the damper assembly. If the shock eyes are tightened metal-to-metal (the outer faces of the eyes to the flanges or washers), this will lead to a harsh, stiff or choppy ride and premature seal leakage or damage to the shafts.

MULTI-RATE SPRINGS

Depending on each application, single or dual-rate springs are available. Dual-rate springs are just that-- a spring set with two separate rates. This is done with a short spring stacked on a longer spring. As both springs compress they produce a soft, or initial, rate. The spring set will maintain this initial rate until the short spring stops compressing. At that point, the spring rate "crosses over" to the stiffer, or final, rate. This multi-rate system allows a soft initial rate for comfort on small bumps, but has the capability of soaking up the big pot-holes and other road hazards.

PRELOAD ADJUSTMENT—

On Works shocks, threaded preload is standard. (See Fig. 2.) This allows the adjustment of the ride height of the motorcycle. The preload is changed by turning a threaded nut down towards the spring (higher ride height) or up away from the spring (lower ride height). The nut is a right-hand thread. It is used primarily to set the ride height for solo riding, but can also be used when

adding a passenger or extra weight. The correct ride height, or amount of "sag" is a function of the wheel travel. It should only be between 1/4 and 1/3 of the total travel. If the ride height is too low, the shock will bottom often and hard resulting in a harsh ride. If the ride height is too high, the shock will "top out" too easily when rebounding from a bump or under hard deceleration.

CHECKING RIDE HEIGHT—

1. With the bike unloaded on the side stand and the shock fully extended, have an assistant measure from a point at the axle (center point) to a point on the frame, fender or bodywork directly above it. Record this measurement.
2. With the bike off the stand and the rider in the seat, bounce on the suspension and let the bike settle. Have the assistant measure from the same two points. Subtract the second measurement from the first.
3. The difference should be between 1 inch (minimum) and 1-1/2 inches (maximum).
4. If the difference is less than the minimum, reduce the spring preload. Measure the distance again starting with Step 2. Adjust again if necessary.
5. If the difference is more than the maximum, increase the spring preload. Measure the distance again starting with Step 2. Adjust again if necessary.

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 when the pressure is lowered (i.e. checking the pressure) the gas and some of the shock oil escapes into the gauge. It is possible to lose a large percentage of the shock oil by depressing the core of a charged shock.

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 half 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 gas shocks can pressurize the shock.

SERVICE PARTS FOR TWIN SHOCKS

- Overhaul seal kit — #SL-S-KIT2
- Overhaul seal kit w/ piston ring — #SL-S-KIT2C
- Preload wrench — #PL-S-SPANNER
- Seal holder wrench — #SLH-S-SPANNER

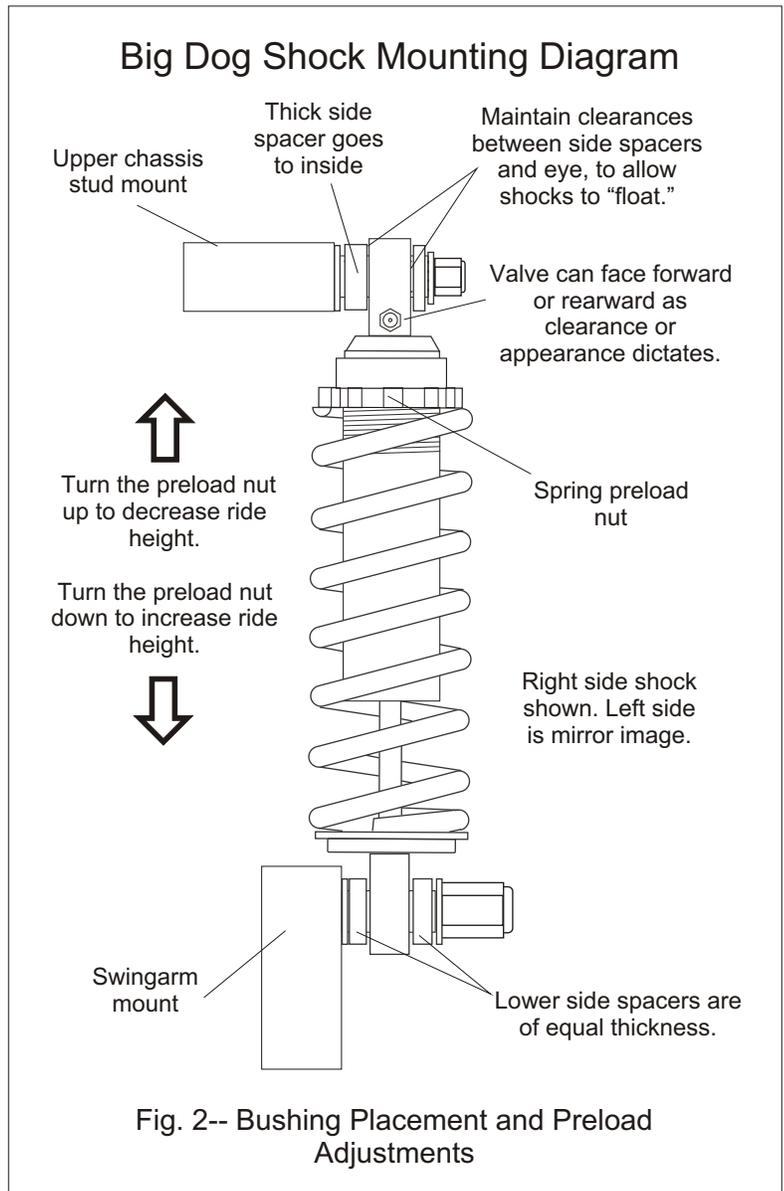


Fig. 2-- Bushing Placement and Preload Adjustments