DIEHL AERO-NAUTICAL Co
1855 North Elm Jenks, OK 74037 (918) 299-4445

NOSE GEAR INSTRUCTIONS

The nose gear assembly designed for the KR-2 utilizes a 4130 steel, heat treated strut, a 4130 firewall mount, and a nose fork assembly made from an aluminum casting. Shimmy dampening is obtained by properly torqueing from the pivot nut to compress the three bellville washers that provide enough friction to prevent shimmy.

The upper support is designed to bolt directly to the firewall through the lower motor mount support cross member. The 5/8" tube supports are made to bolt directly to the engine mount with the same bolt that holds on the lower engine attach points. This bracket is made to fit the most popular Rand/Robinson/ Great Plains engine mount. If you are using another VW conversion of another engine altogether, you MUST tie in the forward end of this tube bracket to the engine mount. If you do not, when a load is placed on the nose wheel, it will surely tear out your firewall!

Two 1/4" holes are drilled in this tube bracket. The nose strut needs to be fitted into the tube. Slide the nose strut into the tube socket. Align the strut with a level on the vertical forward portion of the strut, assuming you have leveled the main spar already. Use a 1/4" drill to drill through the strut and through the other side of the tube. Install two 1/4" bolts.

The length of the nose strut may need to be shortened at the bottom end to allow the A/C to sit in a level position.

At this point of assembly , refer to the fork mounting instruction. Also, consider fitting the nose pant and fairing. If there is not enough tension on the nut, wheel shimmy could result. Too much tension will make it hard to steer. Drill through the castelated nut and secure with a cotter pin. When landing, the pilot should make every effort to land on the mains and hold off the nose wheel. We have found that touching down on the nose at 70mph or above sometimes results in a split second shimmy.

The nose wheel pant, available from Rand Robinson, is installed by cutting a 1 1/2" hole in the top for the pivot to stick through. Two 3/16" bolts with large AN970 washers hold the sides of the pant to the fork. Obviously, the pivot must be removed from this strut to install the pant.

HAPPY LANDING!

NOSE WHEEL FORK MOUNTING

Due to the occasional problem of nose wheel shimmy due to a misaligned wheel at touchdown, we have installed a spring to straighten the wheel. Our ground and flight testing has shown that a out-of-balance wheel will cause the nose assembly to pull off to one side or the other, immediately after rotation. It is imperative that the nose wheel be balanced. Most all tire stores will have stick-on lead weights for Mag wheels. You can get your wheel and tire assembly spinning by blowing on the tread with an air hose. It may take several attempts to find the heavy and light side. I would recommend you hold the axle in your hands in order to " feel" the balance condition.

When installing the nose gear pivot, be sure the wheel is pointing straight ahead. We pulled our KR by hand down the taxiway in no wind to be sure it was tracking straight ahead. You may be able to devise a way to measure it. If it is not pointed straight ahead, then you will surely have a shimmy problem every time you land. The spring will pull the wheel and fork back to its straight ahead or neutral position, providing you do not over tighten the pivot adjusting nut!

Once you have everything aligned, you will need to drill completely through your strut and out the back side of the pivot assembly. The PVC spring locator tube will need to be drilled out with a 3/8" drill to accept the crush spacer. These must be installed to keep the tube from cracking where the bolt is tightened. Be sure to fit the fairing and wheel pant BEFORE you install the nose pivot.

To adjust the tension on the pivot nut, tighten it until the spring can no longer return the fork to neutral. Then loosen the nut one castelation. Be sure to install the cotter pin!