

CREATIVE ENGINEERING **WEED EATER** **II**

FRONT BEAM FITTING INSTRUCTIONS

Congratulations on purchasing our new Weedeater 2 front beam. Many years of development, design and testing have gone into this product to make what we believe is the best product of its kind in the world. Your new beam incorporates CAD, CAM and CNC laser technology to make each part fit and work perfectly. Our beams are welded by experienced professional welders to the highest standard to insure a perfect fit and maximum integrity. All parts are new.

We recommend the assembly of your front beam should only be carried out by a competent person preferably with automotive engineering experience. If in doubt, get the job done by a professional.

Creative Engineering accept no responsibility for the way axles are assembled, modified or used, nor for any injury caused during assembly, fitting and use. Original VW workshop manuals should be referred to at all times for in depth technical advise.

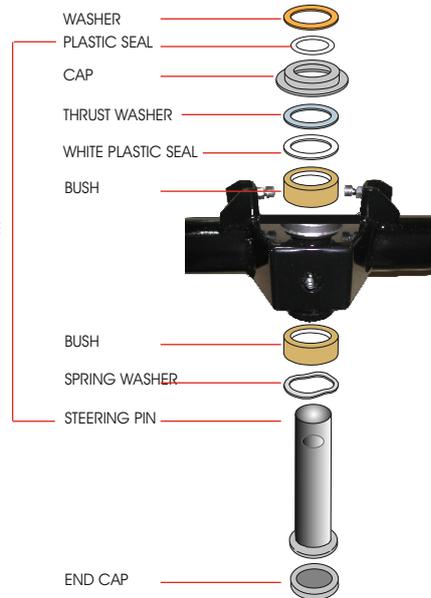
Please read and understand these fitting instructions, particularly the section on trailing arms and bearings.



IDLER ARM

We have installed a new steering pin kit into your axle. You need to complete the assembly by fitting your idler arm on top of the steering pin and lock it in position with the bolt and lock washer supplied. Use a G clamp to pull the idler arm down onto the pin so you can get alignment for the bolt to fit. *Be sure the bolt screws in without stripping its thread.*

FITTED BY CREATIVE



NOTE;

The pin kit we have used is a 68-80 bay window bus pin as it does not require reaming to fit and is easily available. This is used on both our King & Link pin beams as well as the ball joint beam.

STEERING ARM INSTALLATION

Your Weedeater beam has had a new steering pin and bush kit installed. You will need to fit your steering arm onto the new pin. Refer to a workshop manual and the chart above.

ABOUT YOUR SPRINGS.

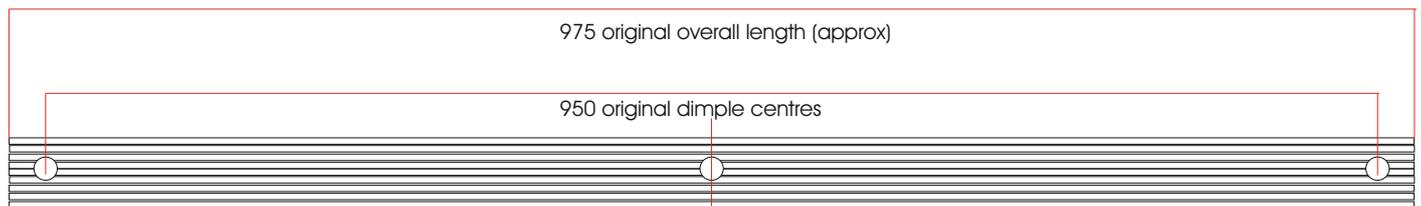
When new your nine leaf springs were welded together at both ends to aid insertion into the beam. Very often the welds will have broken over the years. If they have they will need to be re welded to make it easier to refit the springs. It is vital that they are aligned correctly prior to welding or you will not be able to get them in the central boss in the tubes or easily into the four trailing arms.

SHORTENING YOUR SPRINGS.

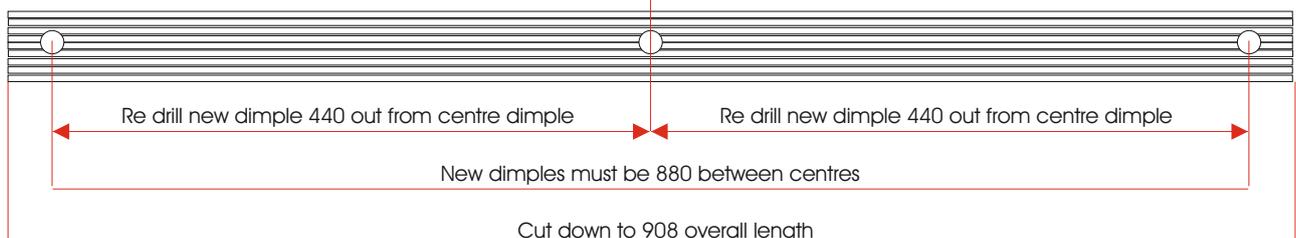
Do not shorten your springs until you have drilled the new dimples. When they are drilled you can cut the springs down with an angle grinder fitted with a thin cutting disc. You will then have to re weld the spring ends.

Your original springs were approx 975mm long and need to be shortened down to 908mm. Be sure to cut equal amounts of each end of the spring. You need to re drill new dimples at EXACTLY 880mm centred from the middle dimple. Do this by dot punching a mark first. When you are sure that your dot punches are correct, you can drill a pilot hole of 3mm to the depth of the original dimple. Follow up with a 6mm hole and then a 9mm. Work up to the 12mm hole size that the original had. It is CRITICAL that you replicate the original dimple as accurately as possible. Check that the 12mm drill has a point similar to the original dimple. If not sharpen the drill bit until it does match. Use oil to keep the drill tip cool. If it gets hot it will blunt quickly as the material is very hard. You will find it vital to use good quality, sharp drill bits to make this job easy. If you have a friend in a machine shop, let him do the job using a cobalt hardened drill with coolant. **This is critical as the only thing that holds your front end together are the four grub screws that fit into these dimples. If in doubt get an engineer to do the job. Creative Engineering accept no responsibility for incorrectly drilled dimples.**

ORIGINAL UNCUT SPRINGS



NEW SHORTENED SPRINGS



DO NOT INSTALL THE SPRINGS UNTIL YOU HAVE COMPLETED THE TRAILING ARM / BEARING INSTALLATION

This is so you can check all four swing arms swing perfectly on the bearings **without** the springs fitted. If they do, they will work perfectly after the springs are fitted.

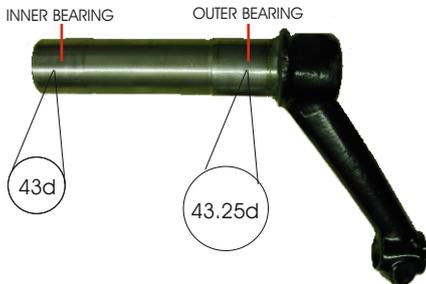
THIS PAGE IS FOR SPLITSCREEN / KING AND LINK PIN OWNERS ONLY.

BAY WINDOW OWNERS OR IF YOU ARE USING A BALL JOINT BEAM, SKIP THIS BOX AND READ THE NEXT SECTION

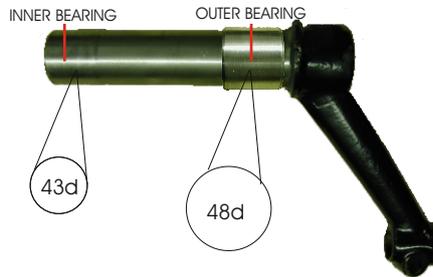
TRAILING ARMS

All VW buses built between 1949 and 1967 used King and Link pin spindles and matching trailing arms.
All trailing arms between 53-67 were manufactured from the same basic forging and all use the same inner bearing diameter of 43mm.
However there were two sizes of outer bearing used, they are 43.25 and 48mm.

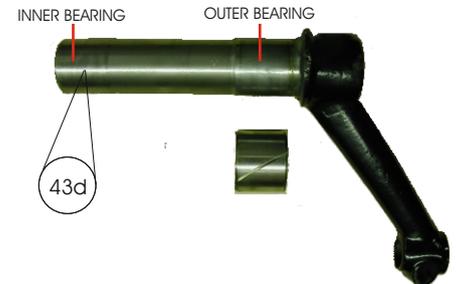
1953-64 TRAILING ARM WITH 43.25MM OUTER BEARING WITHOUT FACTORY BEARING SLEEVE



MID 1964-67 48MM OUTER BEARING ARM WITH FACTORY BEARING SLEEVE IN PLACE



MID 1964-67 48MM OUTER BOSS ARM WITH FACTORY BEARING SLEEVE REMOVED



WHATEVER YOUR TRAILING ARM OUTER BEARING DIAMETER, IT MUST BE FITTED WITH OUR NEW SUPPLIED BEARING SLEEVE. YOUR BEAM WILL NOT WORK WITHOUT OUR SLEEVE BEING FITTED.

If your trailing arms have an outer bearing diameter of 43.25mm they do not have a factory fitted bearing sleeve so you can go straight ahead and fit one of our supplied sleeves onto each of your trailing arms but read **NOTE** first.

If your trailing arms have an outside bearing diameter of 48mm (mid 64 -67), they already have a factory installed bearing sleeve fitted. You may find it hard to see and think that it is not there but it is! (Fig1) This **must** be removed and replaced with our new supplied 50mm bearing sleeve. Remove the old sleeve by carefully sanding through it with a medium sanding disc (fig 2). Look out for a split developing as you sand a way (fig 3). Be careful only to sand away the sleeve and not the arm. We do not recommend the use of heat to remove the sleeve as this will alter the molecular structure of the trailing arm. It is vital there is no damage on your trailing arms outer bearing area that will make it difficult to fit our new sleeve. If there is it should carefully be removed with a **very** fine file and Emery cloth.



Fig 1



Fig 2



Fig 3

READ THIS VERY CAREFULLY.

You are now ready to install our new Bearing sleeves.

The amount of wear on the outer bearing area will vary from bus to bus. To allow for this we have supplied you with two sets of sleeves. The two sets are different in that although their Outside Diameter is the same on both, the internal diameters are different. You can see the difference between them by looking at their ends.

The set with a radius at one end and a flat at the other has an internal diameter of 43.00 →



The set with a radius at each end has a Internal diameter of 43.20. →



TAKE ONE OF EACH TYPE OF SLEEVES. You now need to carry out some selective assembly. Try fitting each of them over a trailing arm and up to the outer bearing area. One will want to fit easier than the other but still need to be pressed on. That would be the one to use. If you force the tighter one on you risk its Outside diameter expanding and it will then not fit the ball bearing. If one of them falls on and is loose use the tighter one. If both are loose your trailing arm is useless and you will need to find better ones. Put some oil on the trailing arm to help press the sleeve on. Repeat on the other three arms. Normally you would use four of the same type of sleeve.

BAY WINDOW OWNERS OR IF YOU ARE USING A BALL JOINT BEAM.

Your trailing arms already have a 50mm outer bearing surface as standard and require no modification prior to installation. Grease both the trailing arm and spring to help installation.

ALL OWNERS....

You are now ready to insert the springs into your beam. If you have not already done so, it is a good idea to sand a small bevel all around the spring end to help ease insertion. 2 mm would be good. Slip the springs into the beam with the centre dimple facing towards the back of the beam so it can be locked into the adjuster. Try not to remove the grub screw in the adjuster completely or the centre boss will move out of position. Equally, the grub screw must be unscrewed enough for the springs to be able to pass through. Secure the springs with the grub screw just using just a hand held allen key and ordinary spanner. **DO NOT CROSS THREAD THE BOSS.** The grub screw should screw in without resistance. Do not use a socket set as this may over stress the grub screw. We suggest you set the adjuster about half way and set the bus up at the desired ride height after you have completely installed the beam. With the springs locked in the adjusters, you can now fit the trailing arms but before you do, **be sure to grease both bearing surfaces on all four arms and the Roller bearings in the beam.**

Slip on a single rubber O ring onto each of the trailing arms. This is to help keep dust out of the bearings and the grease in. Apply some grease onto the spring and trailing arm and slip the trailing arm onto the spring and tap on until the grub screw can be installed and lock it into place. **Tip** We recommend fitting the beam into the bus at this point before it gets too heavy to lift . Finish the spindle assembly and brakes on the bus.

WITH THE BEAM FITTED INTO THE BUS AND THE 4 TRAILING ARMS INSTALLED, PUMP THE BEAM FULL WITH GREASE UNTIL GREASE CAN BE SEEN SEEPING FROM THE OUTER BEARINGS. THIS IS VITAL FOR SMOOTH OPERATION OF THE BEAM & LONGEVITY OF THE BEARINGS.DO THE SAME WITH THE CENTRAL STEERING PIN AS WELL.

SHORTENING YOUR TIE RODS.

Your bus was originally fitted with two tie rods. One was crimped and non adjustable and the second was adjustable. You need to replace the fixed one with another adjustable tie rod.

The "we don't recommend" way. If you have automotive experience, you can shorten a standard tie rod but be careful not to run out of internal thread or have insufficient tie rod end inside the tube which could result in failure. The best method to shorten a rod yourself is to unscrew the swivel joints from the rods. Cut 15mm off both ends of both rods. Cut 10mm off the thread of the tie rods to allow them to screw into the remaining thread. You can now re screw the swivel joints. Be sure you have plenty of tie rod thread inside !

A far **safer way**, is to buy a pair of our specially designed shortened tie rods with 60mm of full internal thread which accepts unshortened tie rod ends. This allows full adjustment and maximum thread insertion. No worries ! We recommend the bus tracking is set parallel to the rear wheels. We never have any problems if this is done on either stock or especially on narrowed beams.

SHOCKS

Your top shocks mount uses a M12 x 100 hex bolt as standard and for the bottom use M12 Locknut.

There is no reason why a lowered bus cannot ride as well as a stock bus, it just needs a little care. However, the lower you go the more careful you have to be and potentially, the more work you will have to do. The correct shock purchase is **vital** if your to obtain a decent ride on your bus. Most bad rides on lowered buses are down to two things. Bump stops and the shock length being wrong. It is vital you buy your shocks **after** your bus has been lowered and settled at the ride height you require. This includes having the engine installed and preferably though not essential, your interior fitted. The idea is that the vehicle **will not settle down more** after you have fitted your shocks. If the bus has been on axle stands or jacked, be sure to settle it back on the torsion bars. When you are sure the bus is fully settled you can establish the top bolt to lower bolt measurement at both the front and the rear of your bus. When you have this measurement call us and we will advise you which shock you need. **Note;** If your bolt to bolt measurement is 350mm, you do **not** fit a 350mm shock absorber. You need a longer shock. We could never find just the right standard shock as either the lengths are wrong or the rubber bushes were incorrect. The answer was to ask SPAX to build us a range of shocks to our design especially for buses. We asked for special extra soft valving adjusters, correct bushes that fit the lower front shock mounts correctly as well as the upper rear shock mount. No hack sawing over size bushes with our shocks ! We stock them in 10 lengths so we can dial in a shock for you whatever your drop. Measure bolt to bolt & call us. See the chart below.

SHOCK LENGTH CHART

BOLT TO BOLT	PT NO	CLOSED	OPEN	STROKE	UP STROKE	DOWN STROKE
250	CE280	205	280	75	45	30
255	CE280	205	280	75	50	25
260	CE280	205	280	75	55	20
265	CE280	205	280	75	60	15
270	CE280	205	280	75	65	10
275	CE290	215	290	75	60	15
280	CE290	215	290	75	65	10
285	CE290	215	290	75	70	5
290	CE300	220	300	80	70	10
295	CE300	220	300	80	75	5
300	CE325	230	325	95	70	25
305	CE325	230	325	95	75	20
310	CE325	230	325	95	80	15
315	CE325	230	325	95	85	10
320	CE350	240	350	110	80	30
325	CE350	240	350	110	85	25
330	CE350	240	350	110	90	20
335	CE375	260	375	115	75	40
340	CE375	260	375	115	80	35
345	CE375	260	375	115	85	30
350	CE400	270	400	130	80	50
355	CE400	270	400	130	85	45
360	CE400	270	400	130	90	40
365	CE425	280	425	145	85	60
370	CE425	280	425	145	90	55
375	CE425	280	425	145	95	50
380	CE450	295	450	155	85	70
385	CE450	295	450	155	90	65
390	CE450	295	450	155	95	60
395	CE475	305	475	170	90	80
400	CE475	305	475	170	95	75
405	CE475	305	475	170	100	70
410	CE475	305	475	170	105	65
415	CE475	305	475	170	110	60
420	CE500	320	500	180	100	80
425	CE500	320	500	180	105	75
430	CE500	320	500	180	110	70
435	CE500	320	500	180	115	65
440	CE500	320	500	180	120	60
445	CE500	320	500	180	125	55
450	CE500	320	500	180	130	50



STEERING DAMPER

Occasionally and depending on the position your ratchets are set at, you may experience clearance issues with your steering damper. There are two ways round this. You can remove the outer cover of the damper exposing the chrome shaft. Do this by running a 36 grit sanding disc around the top edge of the cover leaving the rubber bush untouched and in place. This will gain significant clearance . Alternatively, we can supply a bracket as shown below. Please call us if you wish to.

