

SCA880AN Safety Steering Column Assembly

The column assembly is provided complete with all parts as shown in the assembly breakdown, with the upper shaft available with or without a Woodward QR spline. Any other QR spline can be machined to fit the plain swaged ID with minimal effort. Alternatively, the swaged part can be cut off. *Note, however, that the using the swaged diameter eliminates any need to grind the weld down to prevent interference with the needle bearing.*

To allow teams to tailor the installed length to fit individual drivers, the output end of the torque tube and its buttress ring are supplied as loose pieces and include a welding procedure guide, reproduced here as page 3.

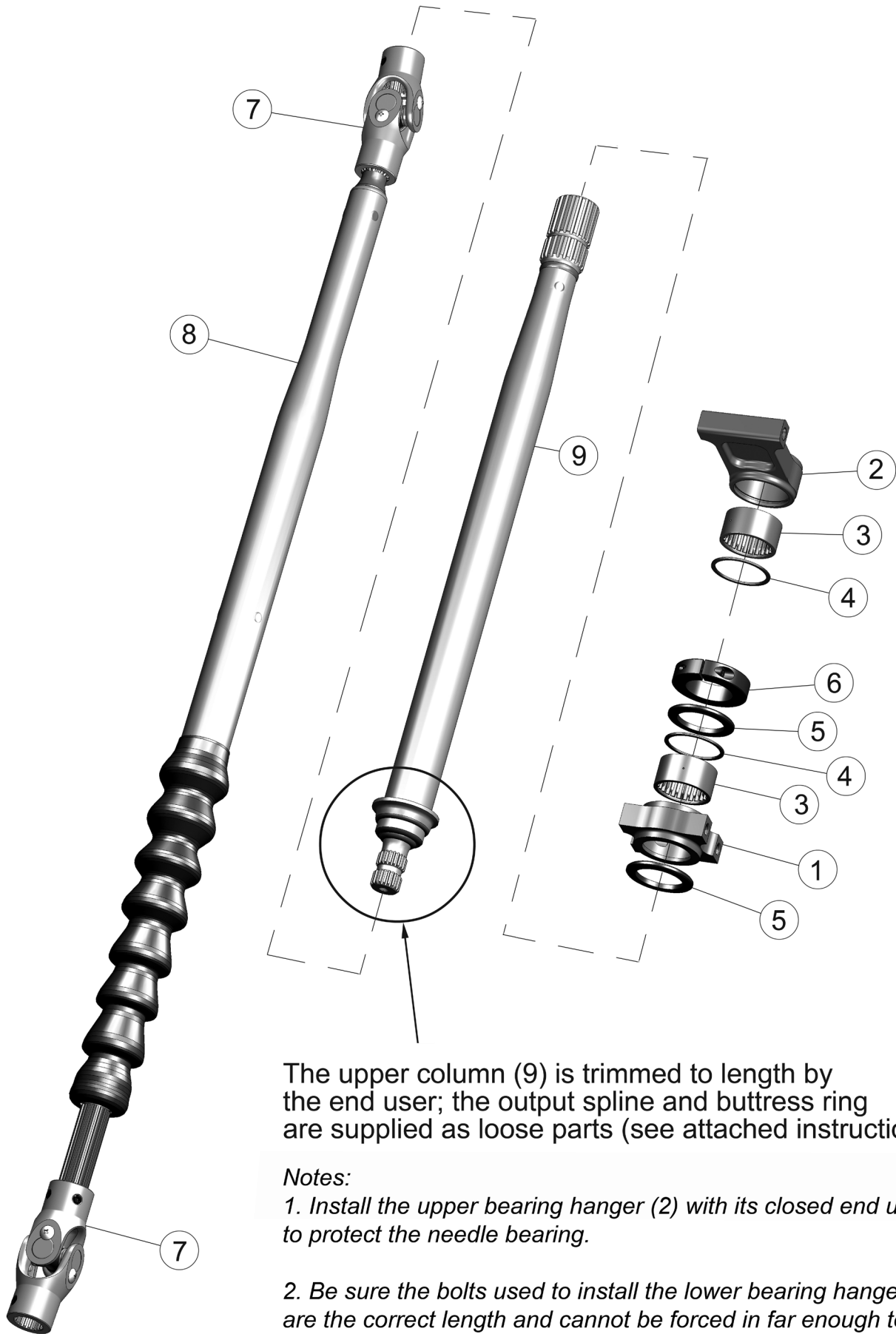
The lower collapsible section can be extended up to half an inch from its nominal installed length in order to allow for minor errors during fitup of the fixed upper section.

Rearward thrust in a crash (beyond that required to telescope the lower section) is resisted by the welded buttress ring, which bears against the lower bracket. Rotating friction is minimized through the use of Delrin® thrust washers on both sides of the bracket. Their running clearance can be easily adjusted and set with the clamp collar on the upper (unloaded) side.

Bill of Materials:

SCA880AN Complete assembly, with integral QR hub spline	1059.57
SCA880ANX Complete assembly with no hub spline	1029.82
Individual parts:	
SCA580N lower (collapsible) shaft (#8)	349.36
SCA880N upper (fixed) shaft w/ integral QR hub spline (#9)	233.99
SCA880X upper (fixed) shaft w/o QR hub spline (optional; not shown)	204.23
UA201201G universal joint (#7) (2 used)	79.30
SBC880-4 Lower bearing hanger (#1)	123.49
SBC880-1 Upper bearing hanger (#2)	137.47
SBK5 Caged needle roller bearing (#3) (2 used)	16.97
SBK6 Spirolox® retaining ring (#4) (2 used)	2.39
SBK2 Black Delrin® thrust washer (#5) (2 used)	9.82
SBK10 Clamp collar (#6)	<u>23.56</u>
<i>Total if purchased individually</i>	<i>1084.22</i>

SCA880AN Parts Breakdown



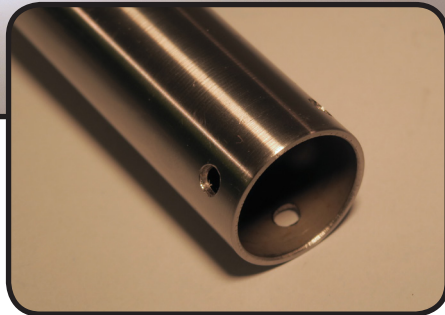
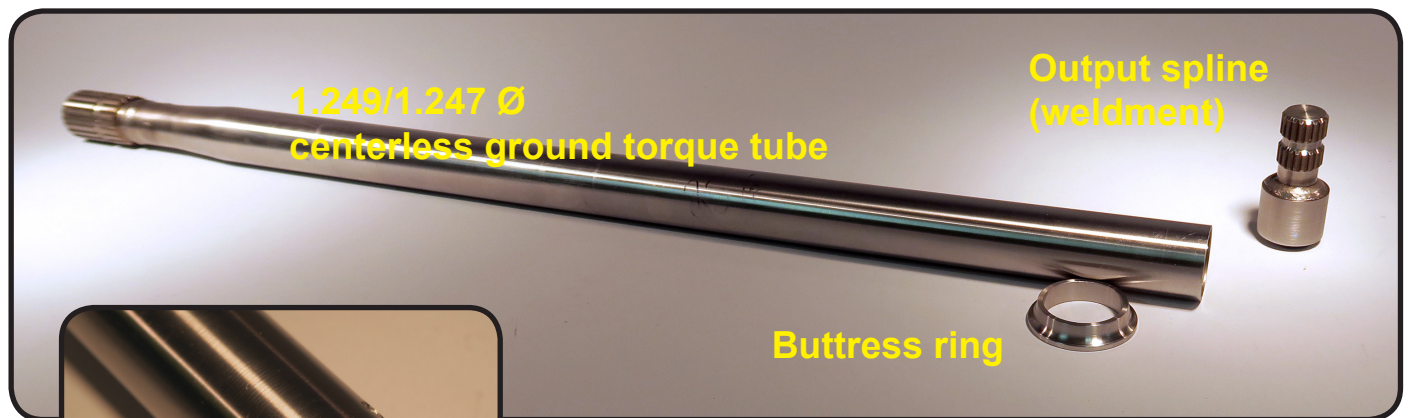
The upper column (9) is trimmed to length by the end user; the output spline and butress ring are supplied as loose parts (see attached instructions)

Notes:

1. Install the upper bearing hanger (2) with its closed end upward to protect the needle bearing.

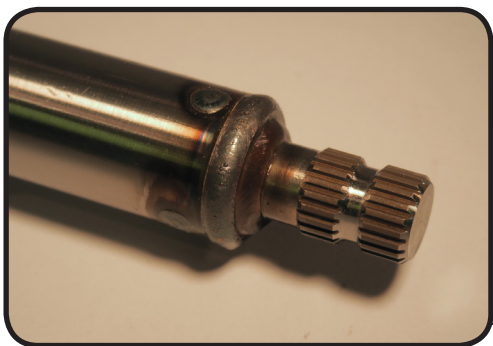
2. Be sure the bolts used to install the lower bearing hanger (1) are the correct length and cannot be forced in far enough to touch the bearing race.

SCA880 Upper (fixed) Steering Column Kit

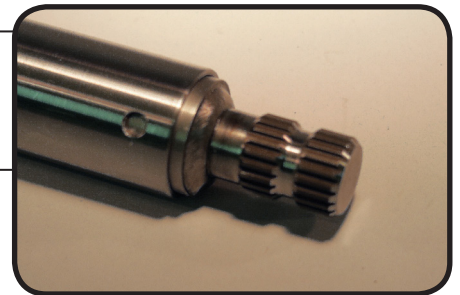


Fabrication Sequence

1. The torque tube is supplied overlength—about 26 inches OAL, if ordered with the integral quick release spline. After cutting the tube to length, drill 3 equally spaced 1/4" holes, 3/8" in from the end.

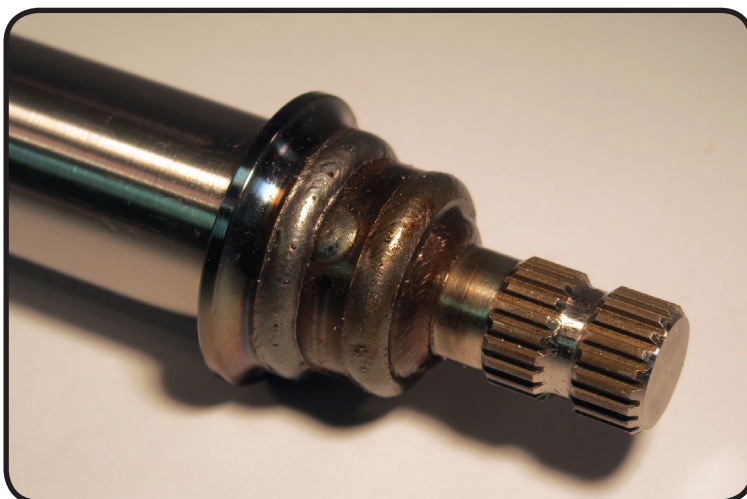
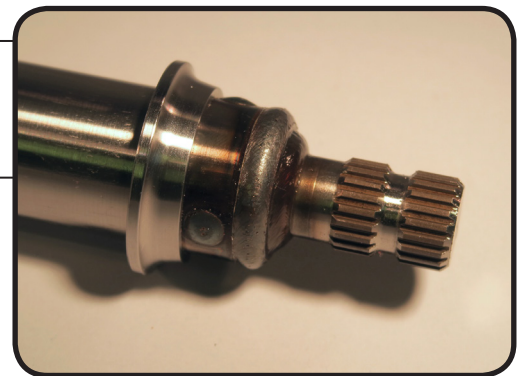


2. Insert the output spline, leaving about 1/8 inch for a circumferential fillet weld.



3. Weld through the 3 holes and around the end.

4. Slide the buttress ring over the swaged end of the torque tube, positioning its bearing surface 2-3/8" from the end of the splined shaft. Grind the plug welds if necessary.



5. Weld the buttress ring in place. Note that this item prevents rearward movement of the steering column in a crash; treat it as you would a roll-cage joint. The recommended welding procedure is MIG, using ER80S-D2 wire with 75%Ar25%CO₂ shielding gas.