



Guide to the KCNC Stem Range.

“the correct materials and engineering; balancing weight, ride quality and strength”

| | |
|-----|--------------------|
| ● | Recommended |
| ●● | Highly Recommended |
| ●●● | Exceptional |

Stem Suitability.

| | Road | | | | Mountain Biking | | | | | |
|--------------------|--------|------------|---------|-----------|-----------------|-------|--------------|----------|----------|--------------------|
| | Racing | Cyclocross | Touring | Triathlon | XC | Trail | All-mountain | Freeride | Downhill | |
| Bear Arm | ● | | | | ●● | ●●● | ●●● | ●● | ● | Bear Arm |
| Dark Side | ● | ●● | ●●● | ●●● | ●● | ● | | | | Dark Side |
| DH Pro | | | | | | | | ●● | ●●● | DH Pro |
| Fly Ride | ●● | ●● | ●●● | ●●● | ●● | ● | | | | Fly Ride |
| Free Ride | | | | | | | ● | ●●● | ●● | Free Ride |
| Road Pro | ●●● | ●● | ●●● | ●● | | | | | | Road Pro |
| SC wing < 100mm | ●●● | ●●● | ●● | ●● | ●●● | ●●● | ●●● | | | SC wing < 100mm |
| SC wing > 100mm | ●●● | ●●● | ●● | ●● | ●●● | ●●● | ● | | | SC wing > 100mm |
| ST-13-CNC | ●● | ●● | ●●● | ●●● | | | | | | ST-13-CNC |
| ST-63 | ●● | ●● | ●●● | ●●● | | | | | | ST-63 |
| Team Issue < 100mm | ●●● | ●●● | ●● | ●●● | ●●● | ●●● | ●●● | | | Team Issue < 100mm |
| Team Issue > 100mm | ●●● | ●●● | ●● | ●●● | ●●● | ●●● | ● | | | Team Issue > 100mm |
| Ti Pro 26.0mm | ●●● | ●●● | ●● | ●●● | | | | | | Ti Pro 26.0mm |
| Ti Pro 25.4mm | | | | | ●●● | ●●● | ●● | | | Ti Pro 25.4mm |

Notes:

Stems are judged suitable for purpose by taking into account; construction, materials used and the underlying engineering principles of leverage. Hence a scandium SC Wing stem highly rated for racing, would not be as highly recommended for all-mountain use over 100mm in length (it should be noted that most riders would be use an 80mm stem and 1 ½ inch metal risers which would we would approve as being safe and suitable). Likewise a more forgiving material would be more recommended for use in touring and triathlon events.

Available Lengths.

| | | Available Lengths (mm) | | | | | | | | | | | |
|--|------------|------------------------|----|----|----|----|----|-----|-----|-----|-----|------------|--|
| | | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | | |
| | Bear Arm | | ✓ | | ✓ | | | ✓ | | | | Bear Arm | |
| | Dark Side | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Dark Side | |
| | DH Pro | ✓ | ✓ | | | | | | | | | DH Pro | |
| | Fly Ride | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Fly Ride | |
| | Free Ride | | ✓ | ✓ | ✓ | | | ✓ | | | | Free Ride | |
| | Road Pro | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Road Pro | |
| | SC Wing | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | SC Wing | |
| | ST-13-CNC | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ST-13-CNC | |
| | ST-63 | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ST-63 | |
| | Team Issue | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Team Issue | |
| | Ti Pro | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Ti Pro | |

Rise, Steerer size, Stack Height & Clamp diameters.

| | Flip-flop Design | Rise | | | Steerer (inches) | | Clamp Size (mm) | | | Stack Height | |
|------------|------------------|------|----|-----|------------------|----------|-----------------|----|------|--------------|------------|
| | | 0° | 5° | 10° | 1" | 1 1/8th" | 25.4 | 26 | 31.8 | | |
| Bear Arm | | | ✓ | | | ✓ | | | ✓ | 38mm | Bear Arm |
| Dark Side | | | ✓ | | | ✓ | | ✓ | ✓ | 38mm | Dark Side |
| DH Pro | | | ✓ | | | ✓ | | ✓ | ✓ | 46mm | DH Pro |
| Fly Ride | | | ✓ | | | ✓ | | ✓ | ✓ | 38mm | Fly Ride |
| Free Ride | | | | ✓ | | ✓ | | ✓ | ✓ | 42mm | Free Ride |
| Road Pro | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | 38mm | Road Pro |
| SC Wing | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | 38mm | SC Wing |
| ST-13-CNC | | ✓ | | | ✓ | ✓ | | ✓ | | 38mm | ST-13-CNC |
| ST-63 | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | 38mm | ST-63 |
| Team Issue | ✓ | | ✓ | | | ✓ | | | ✓ | 38mm | Team Issue |
| Ti Pro | ✓ | | ✓ | | | ✓ | | ✓ | | 38mm | Ti Pro |

Technology

| | Materials | | | | |
|-------------------|----------------------|--------------------|--------------------------|-------------|-------------------|
| | Stem | Bolts | Fabrication | Weight | |
| Bear Arm | Aluminium 6061 T6 | Cromo Steel | 2-D forged/ CNC finished | 148g/ 50mm | Bear Arm |
| Dark Side | Aluminium 6061 T6 | Cromo Steel | CNC machined | 158g/ 110mm | Dark Side |
| DH Pro | Aluminium 6061 T6 | Cromo Steel | CNC machined | 330g/ 40mm | DH Pro |
| Fly Ride | Aluminium 7075 T7451 | Cromo Steel | CNC machined | 131g/ 110mm | Fly Ride |
| Free Ride | Aluminium 7075 T7451 | Oversized Scandium | CNC machined | 190g/ 100mm | Free Ride |
| Road Pro | Aluminium 7075 T7451 | Oversized Scandium | CNC machined | 115g/120mm | Road Pro |
| SC Wing | Scandium T7451 | Titanium | CNC machined | 100g/ 100mm | SC Wing |
| ST-13-CNC | Aluminium 6061 T6 | Cromo Steel | CNC machined | 135g/ 100mm | ST-13-CNC |
| ST-63 | Aluminium 6061 | Cromo Steel | 3-D forged | 152/ 100mm | ST-63 |
| Team Issue | Aluminium 7075 T7451 | Titanium | CNC machined | 124g/ 120mm | Team Issue |
| Ti Pro | Aluminium 7075 T7451 | Titanium | CNC machined | 113g/ 100mm | Ti Pro |

Notes:

With regard to aluminium alloys, 6061 has good corrosion resistance and strength near to mild steel, 7075 is more commonly referred to as “Aircraft grade aluminium”, due to its increased strength it is less flexible. Scandium is stronger still.

A T6 or T7 rating refers to “tempering”, the process of hardening the alloys this can be re-heating, cold-working (effectively hitting the metal to align the metal's grain structure to make it stronger) or ageing, which is a concept difficult to grasp, but inside a metal alloy such as aluminium and manganese if the metal is left (sometimes only for a matter of days), in a controlled temperature environment the particles inside the metal move to form a stronger alloy. T6 aluminium is heat treated and the artificially aged, T7451 is classified as heat treated, overaged and then strengthened.

7075 T7451 aluminium would therefore be made of a strong alloy and then undergo tempering to strengthen it further. 6061 T6 is a strong aluminium alloy but give a more forgiving ride quality as it absorbs shock better. KCNC choose their materials very carefully to ensure that the correct alloy is used for the correct stem.

Forging is making an object in a mould, this may be done with hot metal, it may be that the metal is stamped into shape. CNC stands for Computer Numerical Controlled, where a piece of metal is shaped to the hundredth or less, of a millimetre by a machine. If an object is entirely CNC'd then it has been taken from a solid block of metal (called a billet) and carved out. This is expensive in terms of materials (recyclable) and time but provides incredible accuracy and control. Conversely there would be no point in creating a more expensive CNC'd stem out of a 6061 if its primary purpose was to provide a more compliant ride.