

Cast and spoked wheels for K and Oilheads

Wheel swapping is limited by a few mechanical features which result in different wheel dimensions. The wheel configuration is affected by things like:

- Radial or bias (K11 only)
- ABS or not (5-spoke ABS2 only)
- Wheel-mounted or hub-mounted rear rotor
- Speedometer drive or not

I started this project trying to figure out which 5-spoke wheels I could fit to my R1100RS, and uncovered a large variety of wheel configurations. Find a wheel with the same features and geometry as the one you have, and you have a good candidate for a swap. Please note that there is a lot of information to be considered and some of this may be inaccurate. It is a good starting place if you're trying to find out what wheel works with what bike (like if you see some mystery wheel on eBay or at a flea market).

R1200C and "CAN-bus bike" wheels are skipped, as they are basically non-interchangeable with other BMWs. Fronts might be.

Note: *Cast ABS rings are for ABS2, and slotted stamped ABS rings are for iABS. I have successfully used a slotted ABS ring on my ABS2 front brake, and a friend has successfully used a cast ABS ring on his iABS rear brake. However, this should not be taken as a guarantee that they are compatible. Safety dictates that you should observe the wheel speed sensors with an oscilloscope and satisfy yourself that an adequate signal is being reliably sent to the ABS unit.*

If you find an error or have additional information, please let me know. However, please DON'T ask me what will or won't work. Anything I could tell you would come from the information here. You need to figure it out. If you can't, you shouldn't be messing with the wheels.

Fitting a 5-spoke wheel to your 3-spoke Oilhead:

- The fronts are basically interchangeable, but you will have to find the right brake rotors and ABS ring. You need:
 - 5-spoke rim with speedo sensor mounting (R1150, not Rockster).
 - 305mm 5-bolt brake rotors (Oilhead wire spoke wheels or pre-EVO K1200 or R1100S).
 - stamped ABS ring if the brake rotor mounting surfaces are 116.5mm apart, and cast ring if the mounts are about 111.5mm apart. I don't think the latter exists, but check.
 - R1150 speedometer drive unit.
 - R1100GS rotor mounting hardware kit. The parts are available as a kit for the GS, but only as individual parts for the R1150 bikes. The R1150 hardware is very expensive, possibly because the EVO brakes use a stronger grade of bolt.
- On the rear, you will probably want to use the 5" rim, as the 5.5" rim will be too hard to install and might rub the swingarm. With RS-style (teeth facing outwards) ABS rings, you will also need to remove the three bolts securing it because they will interfere with the rim. Although a wheel without the brake rotor would be simpler, the wheel with attached rotor might work properly for bikes with the floating caliper (RT and spoked Roadster). I haven't tried it.

Components

Front Brake Rotors:

- 4-bolt 4-spoke wheels and K75 3-spoke, for 2-valve K-bikes and Airheads, accept the fixed 285mm brake rotors with carriers which mount with 4 bolts near the axle.

- 3-spoke wheels (all radials plus K11LT) accept the 6-bolt 305mm floating rotors. The ABS ring mounts to the carrier with 6 small bolts.
- 5-spoke wheels accept semi-floating 5-bolt rotors. Older brakes use a 305mm rotor with a 40mm surface, and EVO brakes use a 320mm rotor.
 - **34 11 2 335 747/8** early R11S, unidirectional
 - **34 11 2 338 228** 320/33/5 EVO Tokico R1150RS/R/R11S/K12R/LT
 - **34 11 2 338 232** 320/37/4.5 EVO Brembo, R1150RT K12RS/GT
 - **34 32 7 674 535** R12RT/ST/S/F800 bidirectional
- Oilhead wire-spoke wheels all use 5-bolt 305mm diameter, 40mm wide rotors, even for EVO brakes. On R1100 wheels the ABS ring mounts with 5 small bolts to the hub, while it is mounted between the rotor and the wheel (using the rotor bolts) on the R1150 wheels.
 - **34 11 2 314 893/4** 305/40/4.5 left and right rotors. Unidirectional hole pattern. The only difference is the side that the words are stamped on
 - **34 11 7 676 550** 305/40/4.5 5-bolt rotor for R1200GS. Bidirectional hole pattern.

Rear brake rotors

- The R11xx 5-spoke and wire-spoke wheels have 275mm 5-bolt wheel-mounted rotors. 3-spoke, Y-spoke and K12 5-spoke wheels use hub-mounted rotors.

Speedo drives

- All R1100 except the R1100S, and all R1150 except the Rockster require front wheels to have a speedometer drive fitting on the left side. K-bikes, R1100S and R1150 Rockster do not require this.

Front ABS rings

- Cast 6-hole (small hole) ABS rings are used on 3-spoke front wheels. This is considered part of the brake rotor carrier.
- Cast 5-hole (small hole) ABS rings **34 51 2 314 784** are used on R1100 wire-spoked wheels.
- Cast 5-hole (large hole) ABS rings **34 51 2 330 672** are used on 5-spoke wheels with shorter mounting standoffs on the left (K12 and R11S up to '01)
- Stamped 5-hole (large hole) ABS rings are used on 5-spoke and spoked wheels with full-height mounting standoffs on the left (IABS brakes).

Rear ABS rings

- Only wheel-mounted ABS rings are significant here, and the ABS2 R1100S is the only bike that uses a different rear rim when ABS is present.

Axles

- K75/K100 have 25mm axles
- Oilheads and K12 have 20mm axles.

4-spoke (Y-spoke) alloys for Airheads and 2-valve K

Front

These are the same for K and Airheads, and accept fixed 285mm brake rotors which mount with 4 bolts near the center of the wheel. Bearings accept 25mm axles.

- Silver 2.5x18 **36 31 1 451 897**
- Black 2.5x18 **36 31 1 457 361**

Rear

- Silver disc 2.75x17, **36 31 1 451 243**
- Black disc 2.75x17, **36 31 1 457 364**
- Silver drum 2.75x18, **36 31 1 451 831** (some K75)
- Silver drum, 2.5x18, **36 31 1 452 252** (Airheads)

3-spoke alloys for old K and R1100

K75 and K1100LT used bias-ply tires and had different dimensions. The radial-tired K1100RS, K1, K100RS-4V and R1100 used rims of the same dimensions. In addition to silver, K11RS rims were available in gold, K100RS-4V were available in white, and all K1 rims were yellow.

Front

The Oilhead front rims have the speedo drive flange and the K fronts do not. For radials, the front ABS ring has 6 tabs and mounts to the left brake rotor carrier.

- 2.5x18, **36 31 2 312 809** for 305mm floating brake rotors (K1100LT)
- 2.5x18, **36 31 2 310 734** for 285mm fixed brake rotors (K75)
- 3.5x17, **36 31 2 311 272** (silver), **36 31 2 323 775** (gold), **36 31 2 310 708** (yellow), or **36 31 2 312 867** (white)
- 3.5x17 with speedo drive attachment, **36 31 2 311 220** (Original R1100)

Rear

The radial rear rim is dimensionally the same for Ks and Oilheads. The brake rotor and ABS ring mount to the hub, not the rim.

- 3.0x17, **36 31 2 311 149** (K1100LT)
- 3.0x17, **36 31 2 311 887** (K75, don't know the difference to above)
- 4.5x18, **36 31 2 311 275** (silver), **36 31 2 323 756** (gold), **36 31 2 310 711** (yellow), or **36 31 2 312 870** (white)

5-spoke alloys for K12 and new Oilheads

For Oilheads, especially the R1100S and the different R1150R variants, these rims are now available in many colors.

Front

Early 5-spoke wheels had shorter mounting standoffs on the left side for ABS versions, because the 5mm-thick cast ABS ring is mounted between the brake rotor and the standoff. These measure 111.5mm across the rotor mounting surfaces whereas the non-ABS measured 116.5mm. Later versions were all 116.5 because the stamped ABS rings had very thin mounting flanges. With the stamped ABS ring on the left and a washer on the right, the new rotors are actually 118mm apart. Most R1150 models have the speedo drive fitting (R11S, Rockster and K12 don't) and K1200LT front wheels have heavier flanges. All accept 20mm axles.

- No speedo, 111.5, **36 31 2 335 277** or **36 31 7 650 032** (K12 or R11S, cast ABS ring)
- No speedo, 116.5, **36 31 2 335 273** or **36 31 7 650 026** (K12, R11S, Rockster non-ABS or IABS)
- Speedo, 116.5, (R1150 non-ABS or IABS)
- No speedo, 111.5, heavy-duty **36 31 2 335 679** (K12LT)

- No speedo, 116.5, heavy-duty, (K12LT IABS)

Rear

R1100S and R1150 have standoffs for mounting the brake rotor to the wheel, and have a much greater offset (much thicker mounting flange). Early R1100S wheels are ABS-specific due to the mounting thickness of the ABS ring ("short" indicated below). K12 has the brake rotor mounted on the hub like the older R1100 bikes have. These are all available in 5" and 5.5" sizes.

- 5" without rotor **36 31 2 331 909** (K12)
- 5" with rotor, short **36 31 2 331 693** (Oilhead, cast ABS ring)
- 5" with rotor, tall **36 31 2 331 692** (Oilhead non-ABS or Evo)
- 5.5" without rotor **36 31 2 335 268** (K12)
- 5.5" with rotor, short **36 31 2 331 694** (Oilhead, cast ABS ring)
- 5.5" with rotor, tall **36 31 2 335 284** (Oilhead non-ABS or Evo)

Wheel Bearings

20x47x14 SKF 6204-2RS1

25x52x20.6 INA 3205-2RS F0712

25x47x12 FAG 6005

Front Wheel Chart

All are 3.5"x17" except where noted

| Description | Brake rotor mounting | ABS ring | Casting number | Wheel bearing | Part number 36 31 + | Notes |
|---|----------------------|------------------|-----------------|----------------------------|--|--------------|
| Airhead/K 4-spoke | Fixed, 4-bolt, 285mm | On brake rotor | | | 1 451 897 silver 1 457 361 black | 2.5"x18" |
| 2-valve K 3-spoke | Fixed, 4-bolt, 285mm | On brake rotor | 36 31 2 310 187 | 25x47x16 R 25x47x12 L | 2 310 734 silver | 2.5"x18" |
| K1100LT 3-spoke bias | floating 6-bolt | On rotor carrier | 36 31 2 312 810 | 25x47x16 R 25x47x12 L | 2 312 809 silver | 2.5x18" |
| R1100 3-spoke | floating 6-bolt | On rotor carrier | 36 31 2 312 282 | 20x47x14 R 25x52x20.6 L | 2 311 220 silver | Speedo drive |
| K11RS, K100RS 4V K1 3-spoke radial | floating 6-bolt | On rotor carrier | 36 31 2 310 252 | 25x52x20.6 R 25x47x12 L | 2 311 272 silver 2 323 775 gold 2 310 708 yellow | |
| 5-spoke K12LT ABS2 | 5-bolt 111.5mm | Cast | 2 335 667 | 20x47x14 R | 1 335 679 | Reinforced |
| 5-spoke K12LT IABS | 5-bolt 116.5mm | Stamped | | 20x47x14 R | 7 658 469 silver | |

| | | | | | | |
|--------------------------------|----------------|--------------|-----------|------------|---------------------|-----------------|
| K12RS/R11S Rockster | 5-bolt 111.5mm | Cast | 2 335 507 | 20x47x14 R | 7 650 032 Silver | |
| | 5-bolt 116.5mm | Stamped/none | 2 335 050 | 20x47x14 R | 7 650 026 Silver | |
| R1150RS/RT/R | 5-bolt 116.5mm | Stamped/none | 2 335 507 | 20x47x14 R | | Speedo drive |

Rear wheel chart

| Description | Brake rotor mounting | ABS ring | Size | Casting number | OA width | Mount depth | Bolt depth | Stub depth | Part number 36 31 + |
|--|-------------------------------------|---------------------|-------------|---------------------------|---------------------|------------------------|-----------------------|-----------------------|--|
| 4-spoke Airhead (drum) | none | none | 2.5x18" | | | | | | 1 452 252 silver |
| 4-spoke K75 (drum) | none | none | 2.75x18" | | | | | | 1 451 831 silver |
| 4-spoke K75 (disc) | none | none | 2.75x17" | | | | | | 1 451 243 silver 1 457 364 black |
| 3-spoke K75 | none | none | 3x17" | 36 31 2 310 188 | | | | | 2 311 887 silver |
| 3-spoke K100/1100 bias | none | none | 3x17" | 36 31 2 310 188 typ A | 96 | 20 | | 20 | 2 311 149 silver |
| 3-spoke R11/K radial | none | none | 4.5x18" | 36 31 2 310 255 | 114 | 29 | 17 | 20 | 2 311 275 silver 2 310 711 yellow |
| 5-spoke K12 | none | none | 5x17" | 2 331 468 | 127 | 35 | 14.5 | 22 | 2 331 909 silver |
| | | | 5.5x17" | | 127 | | | | 2 335 268 silver |
| 5-spoke Oilhead ABS2 | short | cast | 5x17" | 2 331 358? | | | | | 2 331 693 silver |
| | | | 5.5x17" | | | | | | 2 331 694 silver |
| 5-spoke Oilhead IABS or non-ABS | tall | stamped or none | 5x17" | 2 331 357 | | 23 | | | 2 331 692 silver |
| | | | 5.5x17" | 2 331 351 2 335 051 | | 23? | | | 2 335 284 silver |

All dimensions in millimeters unless specified.

Spoke wheels

| Application | Rim | Spoke | Offset | Note |
|----------------------|------------|--------------|---------------|-------------|
| R100R/GS rear | 2.5x17 | 153mm | | |
| R100R front | 2.5x18 | | | |

| | | | | |
|-----------------------|---------|-------|--|--------------------------------------|
| R100GS front | 1.85x21 | | | |
| R1100GS front | 2.5x19 | 198mm | | |
| R1100GS/R rear | 4x17 | 177mm | | |
| R1100R front | 2.5x18 | | | Different rim than R100R, same spoke |
| | | | | |