BMW R32

In 1919, BMW designed and manufactured the flat-twin M2B15 engine for Victoria Werke AG of Nuremberg. The engine was initially intended as a portable industrial engine, but found its main use in Victoria motorcycles. The engine was also used in the Helios motorcycle built by Bayerisch Flugzeug, which was later merged into BMW AG. Bayerisch Flugzeug also manufactured a small 2-stroke motorcycle, called the Flink, which was not successful.[2]

After the merger, General Director of BMW Franz Josef Popp asked Design Director Max Friz to assess the Helios motorcycle. Upon completing his assessment, Friz suggested to Popp that the best thing that could be done with the Helios would be to dump it in the nearest lake. More specifically, Friz condemned the Douglas-style transverse-crankshaft layout, which heavily restricted the cooling of the rear cylinder.[2]

Popp and Friz then agreed to a near-term solution of redesigning the Helios to make it more saleable and a long-term solution of an all new motorcycle design. This new design was designated the BMW R32 and began production in 1923, becoming the first motorcycle to be badged as a BMW.[2]

The M2B33 engine in the R32 had a displacement of 486 cc and had aluminium alloy cylinders and a light alloy cylinder head. The engine produced 8.5 hp (6.3 kW), which propelled the R32 to a top speed of 95 km/h (59 mph).[1] The engine and gear box formed a single unit. The new engine featured a recirculating wet sump oiling system at a time when most motorcycle manufacturers used a total-loss oiling system.[3] BMW used this type of recirculating oiling system until 1969.

To counter the cooling problems encountered with the Helios, Friz oriented the R32's M2B33 boxer engine with the cylinder heads projecting out on each side for cooling,[2] as used in the earlier British-manufactured ABC.[3] Unlike the ABC, however, the R32 used shaft final drive from a flexible coupling on the gearbox output shaft to a pinion driving a ring gear on the rear wheel hub.[2]

The R32 established the boxer-twin, shaft-drive powertrain layout that BMW would use until the present. BMW uses shaft drives in all of its motorcycles until the introduction of the F650 in 1994 and continues to use it on their boxer-twin motorcycles.