

Product Information:

Philosophy/Design

The wheels not only physically but also optically connect a car to the road. "That's why it's very important to have the right dimensions between the proportions of the rims to the bodywork," explains AC Schnitzer chief designer Michele Viandante. Rims that are too small quickly make a vehicle appear high-legged and unstable. The new Lightweight Forged Rims "AC4" from AC Schnitzer, on the other hand, are truly earthy.

- machined "GESCHMIEDET" logo on the front
- machined original "AC Schnitzer" logo
- open design in glossy Black, giving a clear view to the brakes

The AC4 Wheels are an absolute highlight in the AC Schnitzer wheel range. These Lightweight Forged Wheels - with painted surfaces in glossy Black - achieve what appears to be fundamentally contradictory: reduction in weight on the one hand and the largest possible wheel diameters and widths on the other. The AC Schnitzer engineers and designers implement this apparent contradiction with the AC4 Lightweight Forged Rim: the design is completely independent - although the relationship to the successful Type V rim is unmistakable.

AC Schnitzer already gave the one-piece Lightweight Forged Rims AC4 extremely sporty genes in their design and these manifest themselves in their outer appearance: the central element is the filigree yet massive spoke matrix with its five triangular struts. The strong concave centre, to which the spokes seem to rush, underlines the uncompromisingly dynamic impression.

The weight of the rim is only a sporty 12,8 kg.

- high quality lightweight forged wheels save approx. 25-35% weight, compared with conventional cast wheels
- perceptible reduction in unsprung mass and gyroscopic forces on the car, therefore
- significantly improved driving dynamics
- significantly improved acceleration and deceleration due to lower masses
- improved cornering handling
- high quality clear lacquer protects the wheel against corrosion, therefore
- long life

Material

About 97 percent of the melt consists of aluminium, but the remaining three percent of the wrought alloy also helps to influence the desired properties of the material for the ideal wheel. In addition to the main component aluminium, the alloy also contains

one percent magnesium and one percent titanium each (which ensures finer grain size). The precise composition of the material alloy has a decisive influence on the subsequent properties of the wheel.

Pure Aluminium

Approximately 97 percent of the alloy consists of pure aluminium. The remaining three percent of the wrought alloy is important for the properties of the material.

Chrome

The AlCr20 master alloy with the hard metal chromium improves recrystallisation resistance. Master alloy means a mixture of aluminium with other materials, in this case it is a maximum of 0.25% by weight of chromium, i.e. a very small amount.

Magnesium

Together with pure silicon, magnesium leads to a higher strength of the total alloy. The maximum proportion of these materials is 1.2 and 1.3 percent by weight, respectively.

Titanium

These glossy ingots are the master alloy AlTi5B1, which serves a finer grain structure of the total alloy. The proportion of the expensive raw material titanium is only 0.1 percent by weight.

Silicon

These irregularly shaped lumps are only added to the alloy together with magnesium. This increases the strength. The silicon content is between 0.7 and 1.3 percent by weight.

Manganese

The addition of 0.4 to 1.0 % manganese makes the alloy tougher. Manganese has a positive effect on recrystallisation behaviour.

Manufacture

Forging - an elaborate process that must offer maximum safety. In many steps the wheel is prepared for its important task for a long car life. The process control guarantees excellent material properties, which are the reason for the low weight of our forged wheels. Even in critical driving situations, forged wheels offer the occupants optimum safety.

Step 1: The nozzle

A cast block more than 6 m long manufactured by OTTO FUCHS is the starting material from which a socket, which is precisely matched to the later wheel, is sawn off.

Step 2: Pre-forging

In the first forging stage, the nozzle is pre-forged into a rotationally symmetrical blank with a force of 4,000 tons.

Step 3: Design forging

In the second forming stage, the styling is pressed into the pre-forged blank under a 7,000 ton press, which gives the wheel its later appearance to a large extent.

Step 4: Punching

In the last forging stage with 800 tons of pressing force, the later ventilation hole windows and the hub bore are punched out and the burr of excess material sheared off at the outer circumference.

Step 5: Flow pressing

The outer edge of the blank is heated. The entire rim area, from outer to inner horn, is rolled out.

Step 6: Finishing

The final step is finishing: turning, drilling and deburring. Painting rounds off the complex process.

Source: Material and Production: Otto Fuchs KG

Surface glossy Black

In this process, the wheel is first primed, then completely painted. Now the two-layer clear coat is then applied, consisting of a polyester primer and the acrylic clear coat.

Test Procedures / Safety

After their design, the first sample rims are manufactured under real production conditions. These must undergo a multitude of tests. Among other things, the strength is tested. The "rim life" is simulated in the bending circumferential test. Every AC Schnitzer rim must withstand this intact in order to be allowed to be produced and sold at all.

This is followed by vehicle-specific tests, including test installations with check of unobstructed movement and driving tests on public roads and on race tracks. Only after these procedures our rims receive their homologation, i.e. the approval to be used in road traffic.

Wheels are safety-relevant components. Therefore, they are checked and tested with the greatest care. This starts with the first chemical material tests and ends with hard testing machine endurance runs:

- § 30 StVZO wheel guideline
- ECE R124
- Bending-rotation tests
- 90° impact test
- unwinding tests

Scope of delivery:

- rim AC4 forged glossy Black
- Specific hub cover
- Quality tag
- homologation certificate
- Optional vehicle- and rim-specific mounting and fastening material
- Certificate of Authenticity
- 2 years manufacturer's warranty

Uniqueness of the lightweight forged rims AC4:

- Made in Germany
- Weight-optimized
- Developed exclusively for BMW vehicles
- With exclusive AC Schnitzer and forged lettering
- Compatible with standard RDC system
- also available as a complete wheel
- Warranty 2 years
- Production monitored according to ISO standard
- KDS mount for wheel alignment according to BMW specification is available
- Spacers/mounting package for the best possible position in the wheel arch (to be ordered separately)
- Assembly package vehicle specific