

A **socket head cap screw** (SHCS) is a specialized machine fastener featuring a cylindrical barrel head with an internal hexagonal drive. They are designed to be installed using an Allen wrench (hex key) or hex bit, allowing for use in confined spaces where traditional wrenches cannot fit. [

Key Characteristics & Uses

- **High Torque & Strength:** Because the hex socket allows force to be applied evenly to all sides of the recess, these screws can be tightened to higher torques while resisting stripping. [1]
- **Low Profile:** The cylindrical head has a smaller diameter than most standard bolts, allowing it to fit into counterbored holes and sit flush or sub-surface. [
- **Materials & Grades:** Common materials include high-tensile alloy steel (such as Grade 12.9) and stainless steel (such as A2 or A4). Finishes like black oxide or bright zinc plating are often used for corrosion resistance. [
- **Applications:** They are widely used in machinery, plastic injection molds, manufacturing equipment, and automotive assemblies