

Socket Head Cap Screws

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Fasteners & Hardware



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(INBUS_RIPP_Serrated_hex_soc_head_cap_screws_with_flange_by_Bauer_and_Schaurte_Karcher_GmbH_Neuss_Germany.jpg)

Socket head cap screws (Allen bolts) are high-strength fasteners driven by a hex key into a recessed socket head, handling high clamping loads in tight spots. They are the standard bolt of machines, robots and jigs.

Key Features

- Metric M3-M16 sizes
- Hex socket drive (Allen)
- 12.9 and 8.8 strength classes
- Zinc, black oxide, stainless finishes
- Dome heads for aesthetics

Typical Uses in the Workshop

- Clamp machine parts and frames
- Build robot and jig assemblies
- Reach recessed fasteners from the top
- High-strength bolted joints

Safe Operation

1. Select the size and strength class
2. Clean the thread and countersink
3. Start with a hex key fully seated
4. Tighten in a diagonal pattern for groups
5. Torque to the specification

SAFETY NOTES

- Use the exact hex key size - stripped heads cut
- Do not apply cheater bars beyond the rating
- Keep recesses clean of debris
- Check the socket and key condition
- Store screws sorted, away from children

Maintenance & Consumables

- Keep the hex keys with the screws
- Check the socket drive fits
- Replace worn or stripped screws
- Lubricate threads for consistent torque
- Audit the stock sizes

Specification & Buying Notes

12.9 grade socket cap screws in the common M3-M8 sizes with the matching hex keys cover robots and machines. Quality steel holds torque; cheap screws round the socket.