

COMMON FASTENERS

Screws

Cylindrical or conical pieces of metal threaded with a helical ridge; fastens things when turned.

DRIVE TYPES FOR SCREWS



Slot Head: for general low-torque applications; driver tip tends to slip off under stress



Phillips Head: greater contact area than slot head; designed for use with a mechanical driver



Socket Hex Head: less likely to strip than slot or Phillips heads, often used for flush surfaces



Torx Head: for high-torque applications and flush surfaces, greater drive grip than hex head



Robertson Head: greater drive grip than Phillips head, square head is for high-torque applications

SCREW HEAD TYPES



Flat Head: positioned in countersunk hole to keep fastener flush or below material surface



Oval Head: also used in countersunk hole but offers deeper slot for greater drive grip



Round Head: domed shape for general purpose, commonly used on machine screws



Truss Head: wider than round head, used on sheet metal; low profile discourages tampering



Fillister Head: very deep slot provides great driving grip, keeps screwdriver tip above work surface to prevent scratching



Pan Head: wider and with greater screwdriver grip than truss head, used for driving self-tapping screws into sheet metal

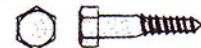


SELF-TAPPING SCREWS (bore into material)

Wood Screw: standard woodworking screw



Sheet Metal Screw: different thread patterns usable in different types of metal; available in thread-forming or thread-cutting configuration, with or without chip-clearing slot



Lag Screw: used for fastening wood to wood, other materials to wood, or (when combined with expansion shield anchor) objects to concrete



Bugle Head Phillips: helical ribs on shank allow screw to self-countersink; excellent for attaching wallboard to stud frames



Hanger or Table Screw: self-taps (after drilling) into wood; protruding end has machine thread that will accept bolts

MACHINE SCREWS (go into pre-threaded metal)



Hex Head Cap Screw: general purpose; same as a bolt, but screws into threaded metal instead of nut



Plow Screw: for recessed surfaces where fastener must be secured by square hole in metal



Thumb Screw: useful where screw must be loosened frequently for adjustments and where security is not important

SET SCREWS (prevents loosening from vibration)



Square Head: for high-torque applications with wrench driver; hole must be wider than untapered head size



Slotted Head: thread reaches the screw head; used on flush surfaces in low-torque applications



Socket Head: usually has a hex socket for rapid disassembly on flush surfaces; moderate torque

Nuts

Small blocks, usually metal, with threaded holes through their centers for tightening against bolts or screws.



Hex Nut: general purpose; available in heavy, regular and finished; a **lock nut** has a nylon insert



Flange Nut: provides greater bearing area for nut without using washer; raises nut above surface of material to prevent marring



Acorn (or Cap) Nut: covers end of bolt for better appearance or to seal threads from elements



Knurled Nut: for finger tightening in close locations or where lubricants may make other fasteners too slippery for easy removal



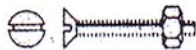
Coupling Nut: for connecting two rods or other threaded fasteners together



Wing Nut: standard finger-threaded nut; also available with nylon lock

Bolts

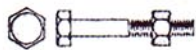
Threaded metal rods or pins for joining parts, having a head and usually used with a nut.



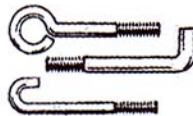
Stove Bolt: tapered head allows recessing in countersunk hole; usually fully threaded



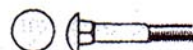
Roundhead Bumper Bolt: wide head gives large surface area for support against metal; square shank locks fastener in hole in metal



Machine Bolt: hexagonal head, general purpose; up to 6 inches long, thread length is usually twice the fastener's diameter plus a quarter inch; over 6 inches long, thread length is twice the diameter plus a half inch



Bent Bolts: for hanging or attaching other objects such as turnbuckles; also available as screws with self-tapping threads



Carriage Bolt: used for very strong joints in wood. Square neck prevents rotation

Washers

Flat rings used to make a seat for the head of a bolt or nut that distributes the downward pressure on a surface.



Flat Washer: standard washer; prevents marring of material's surface and provides secure fit



Spiral Split Washer: the most common lock washer; good security but should be used with flat washer to prevent gouging material



External Toothed Washer: used with large-head screws and bolts because of its wide surface area; will fracture in high-torque situations



Internal Toothed Washer: Same application as external toothed, but prevents snags and provides more attractive finished product



Conical Serrated Washer: prevents head of fastener from moving back and forth; not as secure for rotation as spiral split washer



Spring (or Wave) Washer: used where fastener is not fully tightened (such as taking up shaft end play on electric motor)



Cup Washer: prevents having to drill a countersunk hole when installing flat- or oval-head screw; looks attractive when used on highly visible locations such as on furniture and shelves

Anchors

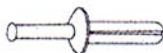
Devices that hold something else secure, such as screws or nails.



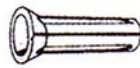
Machine Bolt Expansion Shield: for use in solid masonry; expands full length of anchor; also available for lag screws



Hammer Drive Screw Anchor: device is driven through hole in wall; tightening screw locks anchor into position



Hammer Hit Masonry Anchor: when central nail is driven in, device is securely locked into hole in any solid masonry wall



Plastic Anchor: for use with wood or sheet metal screws; fits in drilled hole and expands when fastener is threaded in; for light duty only



Hollow Wall Screw Anchor: most common fastener for wallboard and other soft materials; expands as screw is threaded in



Toggle Bolt: a secure fastener for hollow walls, concrete block, etc.; requires relatively large hole to pass anchor through