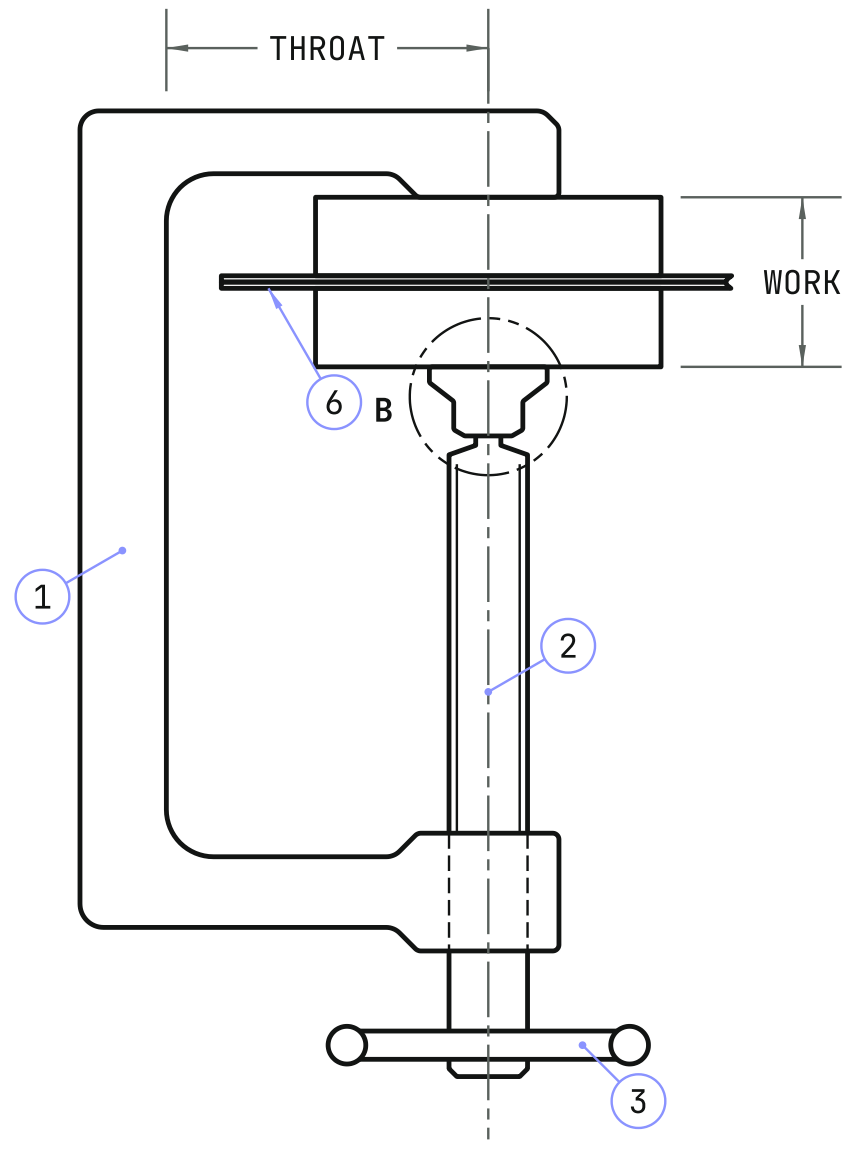
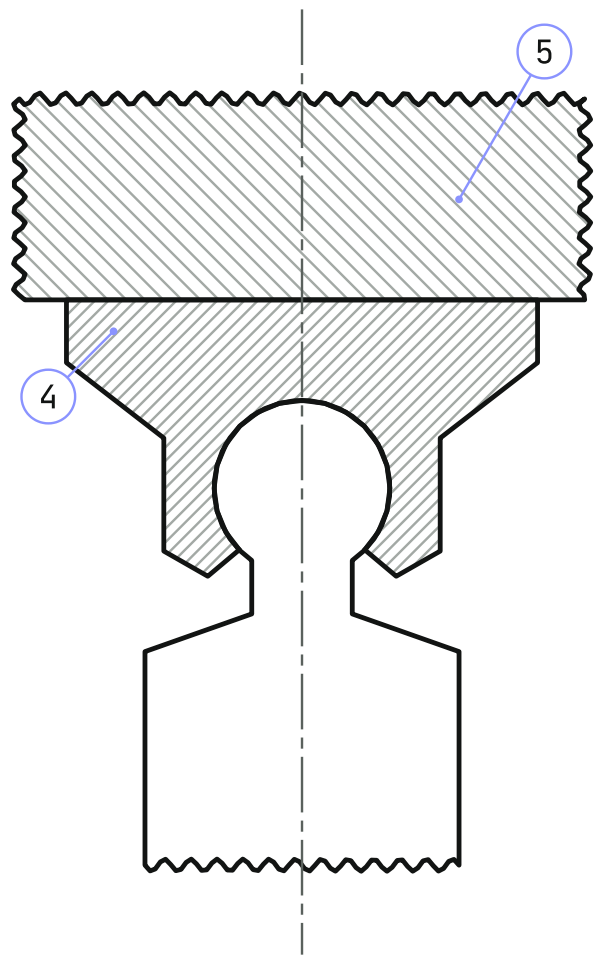
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Clamps and Vises: Side-Grip, C-Clamps, Locking Pliers and Soft Jaws

Clamps hold parts where a temporary fastener cannot go: before the holes are drilled, at an edge or a flange, and at the bench.



C-CLAMP, ELEVATION
SCALE 1:2

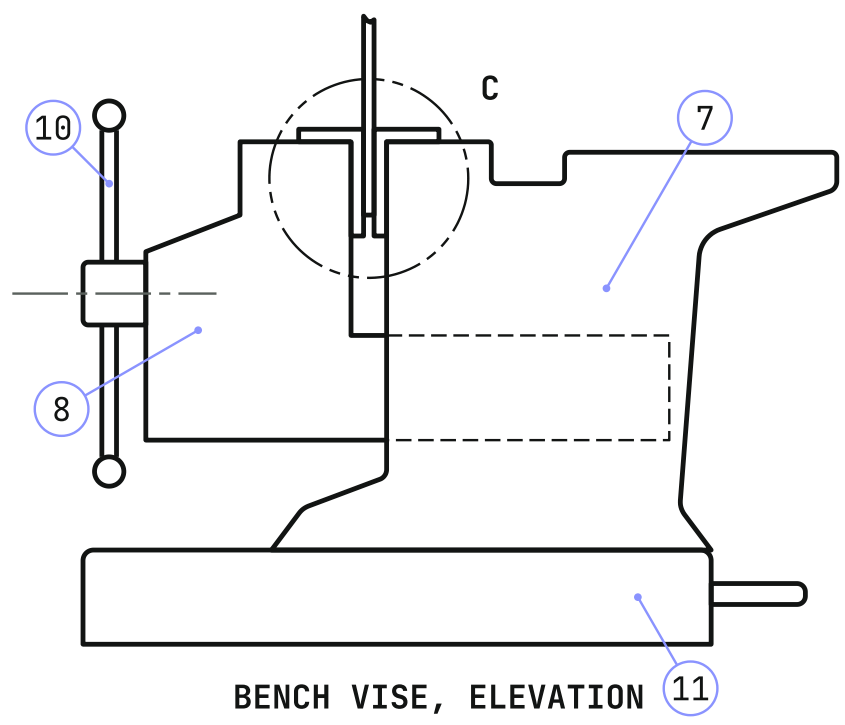


DETAIL B, SECTION
SCALE 2:1

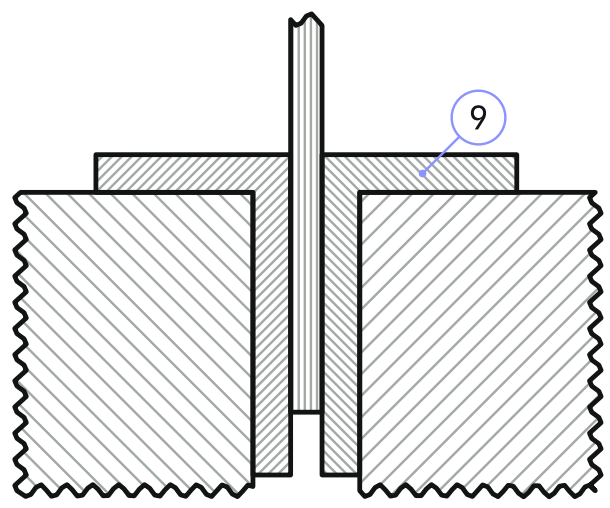
TOOL FOR THE WORK	
WORK	**TOOL**
EDGE, FLANGE	SIDE-GRIP CLAMP
LAP, LONG HOLD	C-CLAMP
BENCH WORK	VISE, SOFT CAPS
QUICK HOLD	LOCKING PLIERS

JAW PROTECTION	
SURFACE	**PAD**
SOFT METAL	BRASS, COPPER CAP
POLISHED	LEATHER, RAWHIDE
PAINTED, CLAD	PAD OR BLOCK

NOTES
1. TIGHTEN BY HAND ONLY: NO WRENCH OR BAR.
2. C-CLAMP OPENING 1 1/2 TO 2 IN (38 TO 51 MM) WIDER THAN THE WORK.
3. EVEN PRESSURE OVER THE WHOLE PAD.
4. NEVER OIL THE SWIVEL BASE.



BENCH VISE, ELEVATION
SCALE 1:3



DETAIL C, SECTION
SCALE 1:1

ITEM	DESCRIPTION
11	BASE, SWIVEL
10	HANDLE, VISE
9	CAP, SOFT JAW
8	JAW, MOVABLE
7	BODY, FIXED JAW
6	WORK (REF)
5	BLOCK, PROTECTIVE
4	PAD, SWIVEL
3	HANDLE, SLIDING
2	SCREW
1	FRAME

CLAMP, C, AND VISE, BENCH, SOFT JAWS	
SHEET 1 OF 1	
DWG TAP-TG-094	REV A
SCALE 1:1	

Types and sizes

Type	Size	Use
Side-grip clamp	By grip range	Holds an edge or a flange from the side, with no hole; fitted with the same pliers as temporary sheet fasteners.
C-clamp	By opening and throat depth	Laps, doublers and work that cannot go in a vise or must be held for a long time.
Locking pliers, C-clamp jaws	By length and jaw opening	A quick hold at an edge; swivel pads spread the load.
Locking pliers, wide flat jaws	By jaw width	Holding and bending a narrow flange or a short edge.
Bench vise	By jaw width and opening	Parts at the bench: filing, drilling, forming; always with soft jaw caps.
Soft jaw caps	By jaw width	Brass, copper or other soft caps over the vise jaws.
Hand screw clamp	By jaw length	Two wood or plastic jaws and two screws; blocks and forming dies.

What to check when buying

Check	What to look for
Opening	C-clamp opening 1 1/2 to 2 in (38 to 51 mm) wider than the work you hold most.
Throat depth	Deep enough to reach past the flange or the edge to where the pad must sit.
Pads	Swivel pads that tilt freely and take soft covers; non-marring pads on locking pliers.
Screw	Runs smooth over the full opening with no play at the swivel pad.
Frame	No cracks or bending; the frame must not spring when the screw is tight.
Vise	Jaw width and opening for your parts, a swivel base that locks, jaws that take soft caps.
Side-grip clamps	Grip range marked, a spring that holds, jaws that close parallel.

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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Accessories

Item	What it is for
Soft jaw caps	Brass or copper caps over vise jaws for soft metals.
Leather or rawhide pads	Highly polished surfaces.
Wood blocks and brass shims	Between the clamp pads and the work, to spread the load.
Pad covers	Plastic covers for the swivel pads of C-clamps and locking pliers.
Temporary fastener pliers	Fit side-grip clamps.

SCAN · OPEN THIS GUIDE
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