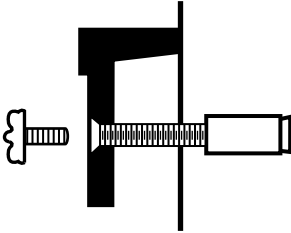# DIRECTIONS FOR MOUNTING OF PLAQUES

MACHINE SCREWS AND EXPANSION SLEEVES

Machine Screws and expansion sleeves are used to hold a plaque onto a brick or concrete surface. The metal expansion sleeve has a threaded interior to house a machine screw. The exterior has a smooth surface that expands when the screw is inserted.
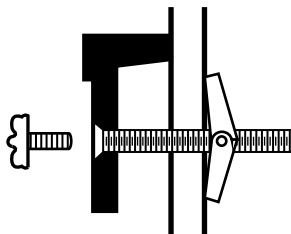
HOW TO INSTALL PLAQUE:
Place plaque in position on the wall or make paper or cardboard template, and mark wall for hole locations. Try to place the plaque so either the top or bottom screws will align with a mortar line, making it easier to drill the holes. Using a masonry bit, drill holes just large enough to accommodate the sleeves:

10x24 requires 3/8" dia. hole with a 5/8" min. depth – 1/4x20 requires 1/2" dia. hole with a 7/8" min. depth – 3/8x16 requires 3/4" dia. hole with a 1-1/4" min. depth

Drill hole deep enough so the tightened screw will not strike the back of the hole. In weak or soft masonry, drill a slightly deeper hole to countersink the expansion sleeve below the wall surface.

Insert expansion sleeve into hole, threaded cone first. Using a metal setting tool, strike tool with hammer to drive sleeve into the hole. Insert each machine screw through plaque and tighten screw into expansion sleeve with a screwdriver.

TOGGLE BOLTS

A toggle bolt is a screw about 4" to 6" long with two spring-loaded wings that fold up and pass through a hole drilled into the wall. After insertion, the wings spring open against the back side of any hollow wall, holding the bolt and the attached plaque in place.

HOW TO INSTALL PLAQUE:
Place plaque in position on the wall, or make a paper or cardboard template, and mark the wall for hole locations. Drill holes large enough to accommodate the folded wing assembly. Insert each bolt through the plaque and screw on each wing set. Fold wings and insert bolt through hole until wings spring open inside the hollow wall. Pull outward on screw assembly to hold the wings against the inside of the wall – this prevents the wings from spinning free while tightening the bolt, first by hand, and then with a screwdriver.

BOSSES & STUDS (Recommended for Concealed Mounting)
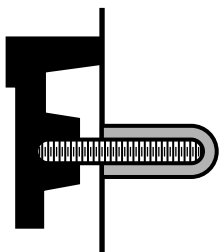
Threaded lugs, also called "studs", are screwed into the back of the cast plaque into raised pads, called "bosses". (Flat-backed plaques do not require bosses.) Bonding cement holds the studs into holes that have been drilled into a masonry wall.

HOW TO MAKE A PAPER TEMPLATE:
Lay a piece of kraft paper on a flat surface. Place plaque face up on paper and trace the entire plaque outline onto the paper. Mark the top and bottom centers, and the left and right centers on the paper. Insert the studs into the back of the plaque, and place plaque face up on paper once again. Trace around each stud to mark the exact locations of the mounting hardware.

HOW TO INSTALL PLAQUE
Tape kraft paper onto masonry wall, making sure position of plaque is level on the mounting surface. Punch each hole location with a punch and drill holes slightly smaller in diameter than the stud size. Measure the length of studs to determine the depth of the hole, drilling slightly deeper than the stud. Re-Drill each hole with a drill bit slightly larger than the stud, leaving enough of the smaller diameter hole at the back for the stud to come into contact with. After all holes are drilled, remove the template from the wall. Make sure that all dust is then removed from the holes.

Before using bonding cement, try to install plaque to ensure stud locations match all holes drilled. If all of the studs align with the holes, remove the plaque from the wall, and fill the holes with a bonding cement (Liquid Nails & Tuff-Bond are two popular brands). Insert all studs into back of plaque and coat all studs with cement. Press plaque into position, pounding the face with a padded block and mallet to drive the studs further into the holes. Be sure plaque is tight against the wall, and brace for an hour or two or as stated in the bonding cement instructions.