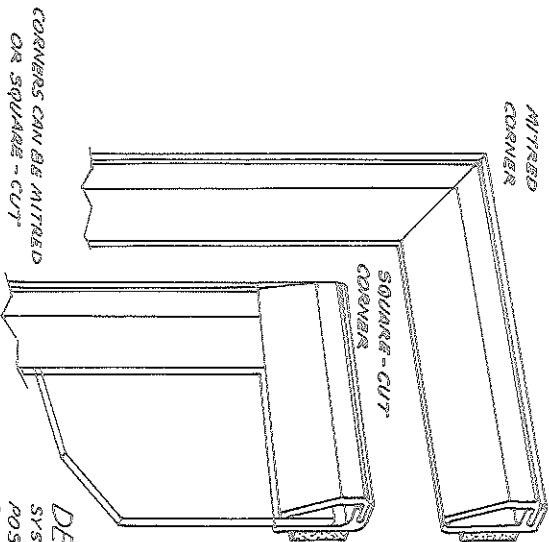


DEFENDER-2

STEP-BY-STEP

INSTALLATION GUIDE

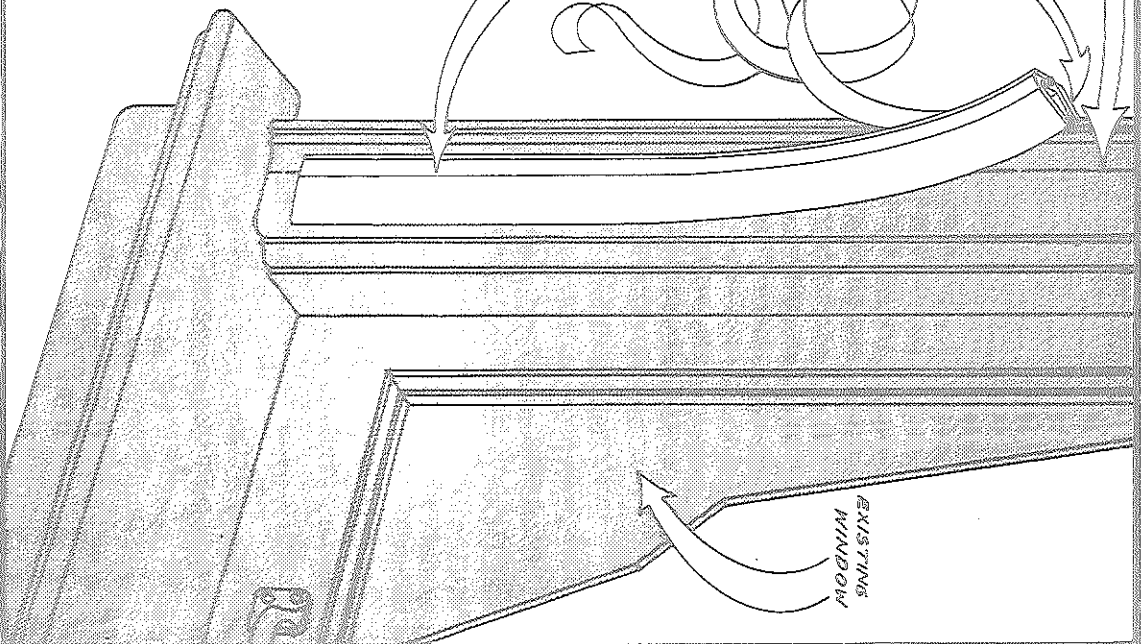


A LIGHT PENCIL LINE AROUND THE WINDOW FRAME ACTS AS A GUIDE AGAINST WHICH THE DEFENDER MOLDINGS ARE PLACED

SELF-ADHESIVE WEATHERSTRIP

REMOVABLE PLASTIC TAPS PROTECTS THE STICKY SURFACE OF THE SELF-ADHESIVE WEATHERSTRIPPING

DEFENDER-2 PUSH MOUNTSM SYSTEM BEING PRESSED INTO POSITION UP THE TRIM OF A DOUBLE-WING WINDOW



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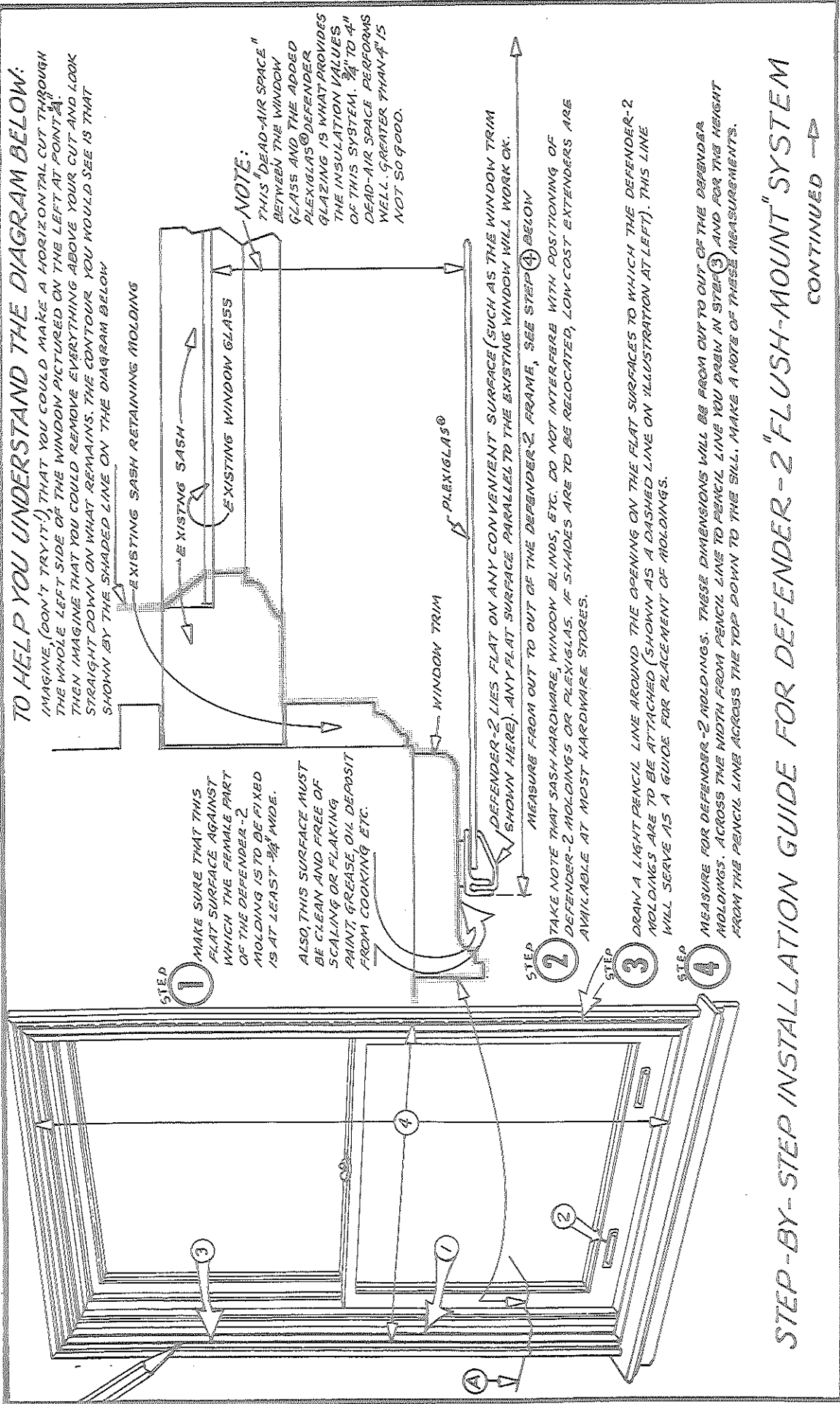
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TO HELP YOU UNDERSTAND THE DIAGRAM BELOW:

IMAGINE, (DON'T TRY IT!), THAT YOU COULD MAKE A HORIZONTAL CUT THROUGH THE WHOLE LEFT SIDE OF THE WINDOW PICTURED ON THE LEFT AT POINT A. THEN IMAGINE THAT YOU COULD REMOVE EVERYTHING ABOVE YOUR CUT AND LOOK STRAIGHT DOWN ON WHAT REMAINS. THE CONTOUR YOU WOULD SEE IS THAT SHOWN BY THE SHADED LINE ON THE DIAGRAM BELOW



- STEP 1** MAKE SURE THAT THIS FLAT SURFACE AGAINST WHICH THE FEMALE PART OF THE DEFENDER-2 MOLDING IS TO BE FIXED IS AT LEAST $\frac{3}{8}$ " WIDE.
- ALSO, THIS SURFACE MUST BE CLEAN AND FREE OF SCALING OR FLAKING PAINT, GREASE, OIL, DEPOSIT FROM COOKING ETC.

NOTE: THIS "DEAD-AIR SPACE" BETWEEN THE WINDOW GLASS AND THE ADDED PLEXIGLAS® DEFENDER GLAZING IS WHAT PROVIDES THE INSULATION VALUES OF THIS SYSTEM. $\frac{3}{8}$ " TO $\frac{1}{2}$ " WELL-GRAINER THAN $\frac{1}{4}$ " IS NOT SO GOOD.

- STEP 2** TAKE NOTE THAT SASH HARDWARE, WINDOW BLINDS, ETC. DO NOT INTERFERE WITH POSITIONING OF DEFENDER-2 MOLDINGS OR PLEXIGLAS. IF SHADES ARE TO BE RELOCATED, LOW-COST EXTENDERS ARE AVAILABLE AT MOST HARDWARE STORES.
- STEP 3** DRAW A LIGHT PENCIL LINE AROUND THE OPENING ON THE FLAT SURFACES TO WHICH THE DEFENDER-2 MOLDINGS ARE TO BE ATTACHED (SHOWN AS A DASHED LINE ON ILLUSTRATION AT LEFT). THIS LINE WILL SERVE AS A GUIDE FOR PLACEMENT OF MOLDINGS.
- STEP 4** MEASURE FOR DEFENDER-2 MOLDINGS. THESE DIMENSIONS WILL BE FROM OUT TO OUT OF THE DEFENDER MOLDINGS. ACROSS THE WIDTH FROM PENCIL LINE TO PENCIL LINE YOU DRAW IN STEP 3 AND FOR THE HEIGHT FROM THE PENCIL LINE ACROSS THE TOP DOWN TO THE SILL. MAKE A NOTE OF THESE MEASUREMENTS.

STEP-BY-STEP INSTALLATION GUIDE FOR DEFENDER-2 "FLUSH-MOUNT" SYSTEM

CONTINUED →

THESE ARE THE DIMENSIONS YOU TOOK IN STEP 4

WHEN JOINTS ARE BUTT-CUT, ALLOW HORIZONTAL FRAME MOLTINGS TO RUN FULL WIDTH AS SHOWN HERE. CUT VERTICALS TO FIT BETWEEN.

DEFENDER-2 HOLDING (SAME AS TOP AND SIDES) OR DEFENDER SILL - YOUR CHOICE

STEP 5 BUTT JOINT CORNERS

5

CUT DEFENDER-2 MOLTINGS TO SIZE. AS SHOWN ABOVE, DEFENDER-2 FRAME CAN BE CUT WITH SQUARE-CUT BUTT JOINTS OR MITRED JOINTS AT CORNERS. MOST USERS PREFER MITRED CORNERS. A HACKSAW IS STANDARD FOR CUTTING THE FRAME, HOWEVER, A RADIAL ARM SAW OR POWER MITRE SAW CAN BE USED FOR LARGE PROJECTS. THE HACKSAW SHOULD BE USED WITH A MITRE BOX FOR ACCURATE ANGLES AND SMOOTH BUTT (STRAIGHT) CUTS.

IMPORTANT: ALWAYS CUT DEFENDER FRAME MOLTINGS AS A SINGLE UNIT (MALE & FEMALE PARTS SNAPPED TOGETHER).

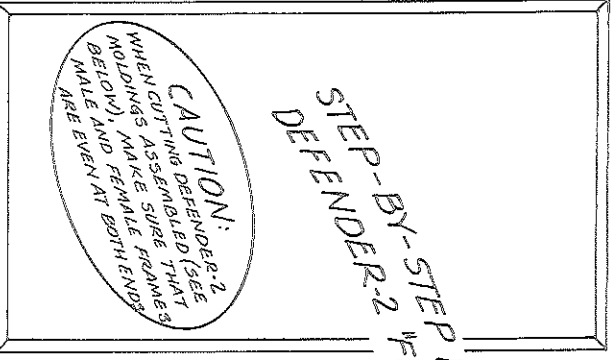
CHECK FOR PROPER FIT. THE FRAME SHOULD LAY INTO PLACE. DO NOT FORCE THE FRAME INTO POSITION. PLASTIC MOLTINGS EXPAND WITH HEAT. TIGHT FRAMES MAY EXPAND AND BUCKLE.

ABOUT THE DEFENDER SILL:

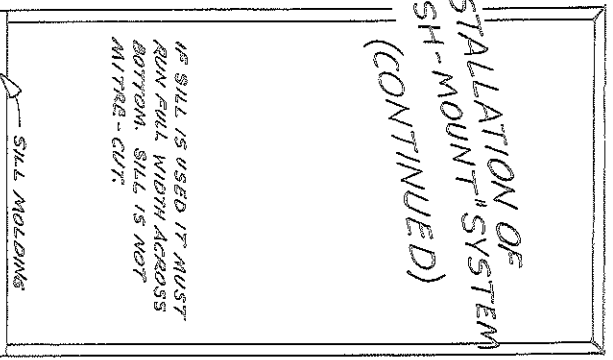
SHOWN AT RIGHT IS THE SILL MOLTING USED ON WINDOWS WHICH MIGHT BE OPENED. A ONE-PIECE MOLTING (OPTIONAL). NO ADHESIVE, IT SIMPLY CLIPS ON THE BOTTOM EDGE OF THE PLEXIGLAS®

MITRED CORNERS

MITRED TOP, SILL BOTTOM

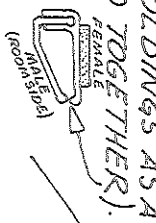


CAUTION:
WHEN CUTTING DEFENDER-2 MOLTINGS ASSEMBLED (SEE BELOW), AND FEMALE PARTS ARE EVEN AT BOTH ENDS



IF SILL IS USED IT MUST RUN FULL WIDTH ACROSS BOTTOM. SILL IS NOT MITRE-CUT.

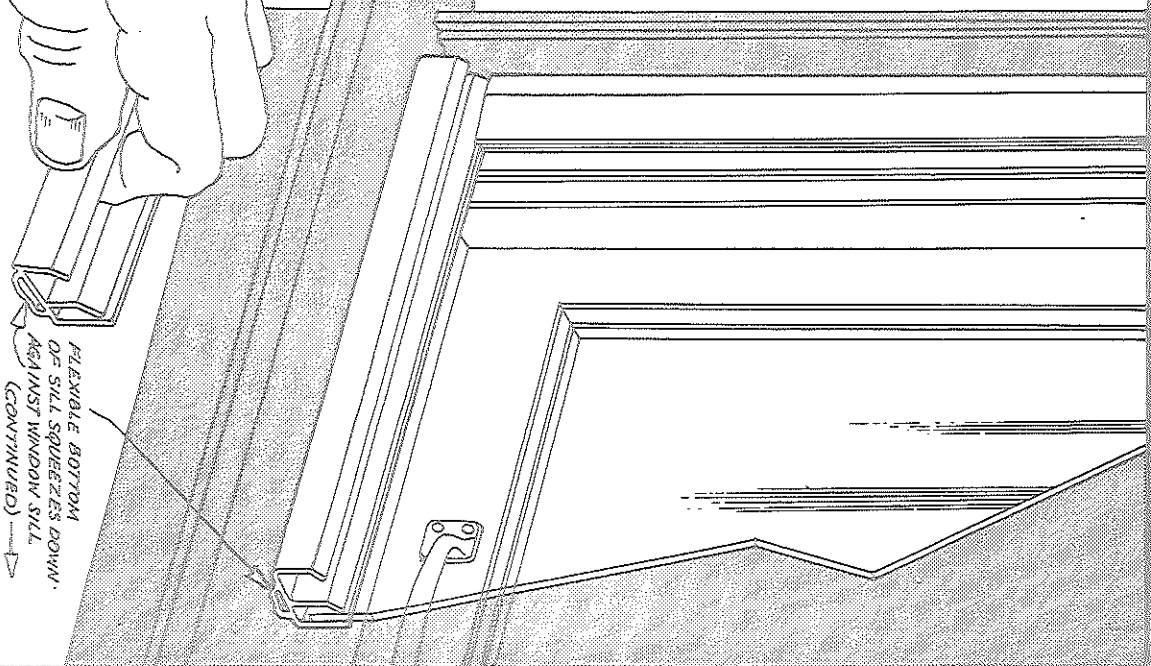
STEP-BY-STEP INSTALLATION OF DEFENDER-2 FLUSH-MOUNT SYSTEM (CONTINUED)



FEMALE (room side)

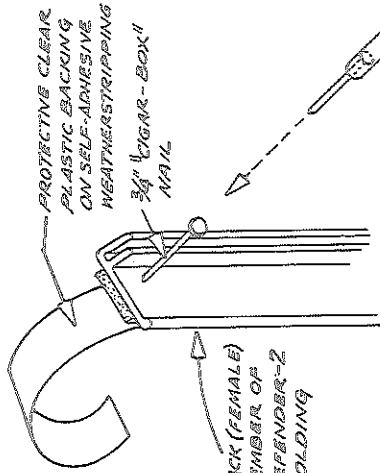
MALE (sid)

SILL HAS PROTRUDING LIP FOR FINGER GRIP ALLOWING DEFENDER GLAZING TO BE PULLED OUT TO ROOM SIDE



FLEXIBLE BOTTOM OF SILL SQUEEZES DOWN AGAINST WINDOW SILL (CONTINUED)

STEP-BY-STEP INSTALLATION GUIDE FOR DEFENDER-2 FLUSH-MOUNT SYSTEM (CONTINUED)



STEP 7

ESTABLISH FLEXIGLAS SIZES: THE GLAZING PANEL IS SIZED BY DEDUCTING $\frac{5}{8}$ " FROM THE WIDTH AND $\frac{1}{2}$ " FROM THE HEIGHT. (THE OUT-TO-OUT DIMENSIONS YOU TOOK IN STEP 4).

EXAMPLE:

IF YOUR DIMENSIONS FROM STEP 4 ARE $3\frac{1}{2}$ " WIDE AND 72" HIGH YOUR GLAZING PANEL SHOULD BE $3\frac{1}{8}$ " WIDE AND 71 $\frac{1}{2}$ " HIGH

(PANEL SIZE IS SAME WHETHER OR NOT DEFENDER SILL IS USED)

PANEL THICKNESS:

WINDOWS FROM 1 TO 20 SQUARE FEET - USE $\frac{1}{8}$ " THICK (A LITTLE OVER $\frac{1}{8}$ ")

WINDOWS FROM 21 TO 40 SQUARE FEET - USE $\frac{1}{4}$ " THICK (BETWEEN $\frac{1}{4}$ " AND $\frac{1}{2}$ ")

WINDOWS FROM 41 SQUARE FEET AND UP - USE $\frac{1}{2}$ " THICK OR $\frac{1}{2}$ " THICK DEFENDER - 2 WILL ACCEPT FLEXIGLAS FROM 80" THROUGH 107" ($\frac{3}{16}$ " THICK)

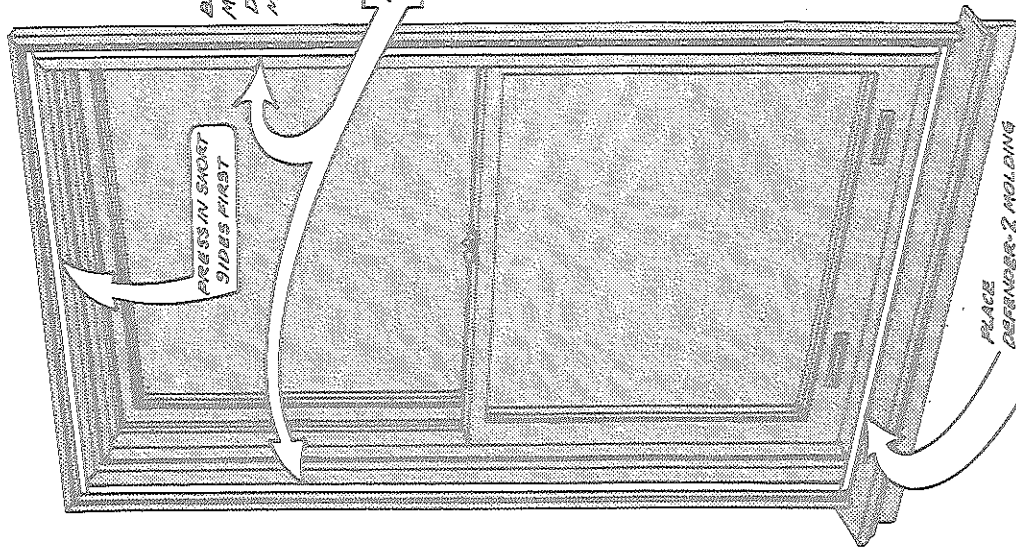
STEP 6

PRESS THE FRAME INTO PLACE BY PEELING BACK A FEW INCHES AT A TIME OF THE PROTECTIVE BACKING FROM THE SELF-ADHESIVE WEATHERSTRIPPING. (SEE ABOVE), BEGINNING AT ONE CORNER, APPLY FRAME ALONG YOUR PENCIL GUIDE-LINE, REMOVING MORE PROTECTIVE STRIP AS YOU PROCEED.

APPLY ADDITIONAL PRESSURE TO "SET" THE ADHESIVE AND MECHANICALLY FASTEN (ESPECIALLY AT CORNERS) WITH SMALL NAILS, SCREWS OR INDUSTRIAL STAPLES.

DEFENDER HAS FOR SALE A SPRING-LOADED "NAIL PUSHER" WITH A MAGNETIC PLUNGER WHICH HOLDS $\frac{3}{4}$ " CIGAR-BOX NAILS. ALL YOU DO IS DROP THE LITTLE NAILS DOWN THE BARREL AND PUSH.

CAUTION: IF DEFENDER IS TO BE APPLIED TO COLD (BELOW 50° F) WINDOW FRAMES, WARM UP THE WINDOW JAMBS WITH A HAIR DRYER OR OTHER DEVICE TO 50° F. ALL ADHESIVES REQUIRE A SETTING TIME (1 HOUR OR MORE) AT ROOM TEMPERATURE. IF YOU ARE WORKING UNDER COLD CONDITIONS, WARM UP THE JAMBS AND ALLOW A LONGER SETTING TIME BEFORE NEXT STEP.

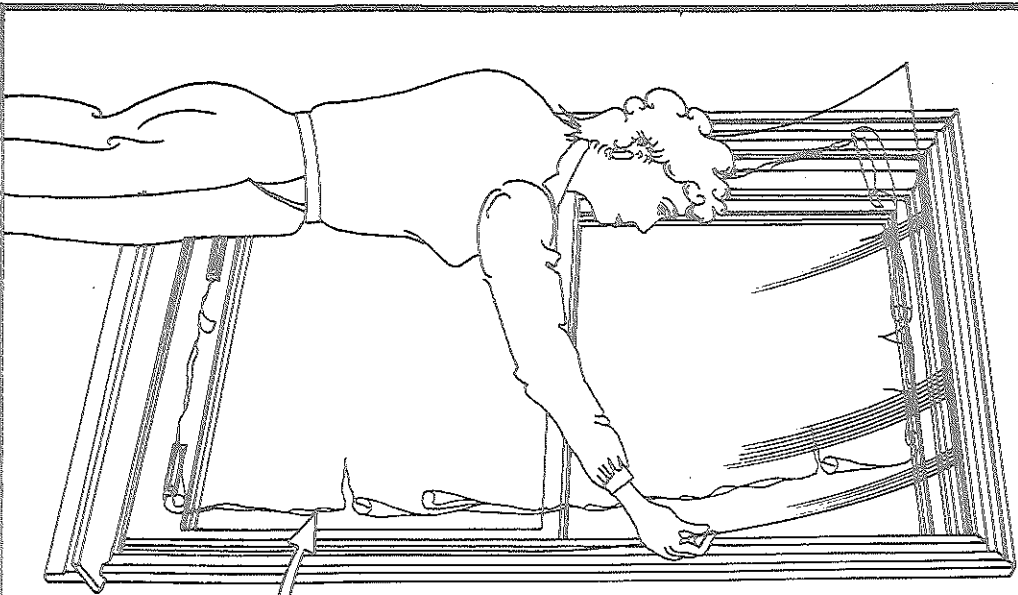


DEFENDER-2 CAN BE INSTALLED ON ALUMINUM FRAMES-

USE OF A DRILL WITH RIVETS OR SELF-TAPPING SCREWS IS RECOMMENDED. RIVETS ARE OBTAINABLE IN COLOURS TO MATCH THE FRAME.

LAST STEPS 8 TO 10 ON FOLLOWING SHEET →

STEP-BY-STEP INSTALLATION GUIDE FOR DEFENDER-2 "FLUSH-MOUNT" SYSTEM (CONCLUDED)



8 STEP

WITH DEFENDER-2 MOLDINGS IN PLACE ON ALL 4 SIDES (3 SIDES IF DEFENDER SILL IS USED), SNAP OFF THE MALE (ROOM-SIDE) RETAINING PARTS OF THE DEFENDER-2 MOLDINGS WITH A SCREWDRIVER. DO NOT MIX THE MALE RETAINERS, THEY SHOULD GO BACK INTO THE SAME FEMALE SECTIONS FROM WHICH THEY WERE REMOVED. A GOOD IDEA IS TO PUT PENCIL IDENTIFICATION MARKS ON THE BACK OF THE MALE RETAINERS, "L" FOR LEFT, "R" FOR RIGHT, "T" FOR TOP ETC. DO NOT USE A FELT MARKER.

9 STEP

PLEXIGLAS COMES WITH THIN PROTECTIVE SKINS OF POLYETHYLENE (USUALLY TINTED) ON BOTH SURFACES. AT TIME OF USE THESE PROTECTIVE FILMS ARE PEELLED OFF AND DISCARDED. BEFORE YOU REMOVE EITHER OF THESE FILMS (USUALLY CALLED "POLYMASKING") TRY THE GLAZING PANEL IN THE OPENING FOR WHICH IT HAS BEEN CUT TO MAKE SURE IT FITS. MAKE ANY ADJUSTMENTS NECESSARY TO ALLOW THE PLEXIGLAS 1/8" CLEARANCE ON ALL SIDES BETWEEN THE PLEXIGLAS AND THE "SHELF" ON THE FEMALE SECTION.



10 STEP

REMOVE THE POLYMASKING FROM ONE SIDE OF THE PLEXIGLAS. PEEL THE POLY AWAY GENTLY, DO NOT QUICKLY RIP IT OFF, THE RESULTING SURFACE SHOULD BE IMMACULATELY CLEAN. IF YOU DO GET SOME DIRT OR DUST ON IT, SEE * BELOW. PLACE THE SIDE WITH THE MASKING REMOVED FACING THE PRIME WINDOW. PEEL BACK A FEW INCHES OF THE ROOM-SIDE POLYMASKING ON ALL FOUR SIDES AND SNAP IN THE MALE RETAINER STRIPS BEGINNING WITH THE BOTTOM RETAINER. WHEN USING DEFENDER-2 ON ALL FOUR SIDES OF A WINDOW BE SURE TO SWAP IN THE BOTTOM RETAINER FIRST. SNAP RETAINERS INTO PLACE WITH A RUBBER Mallet OR THE HAMMER STRIKING AT THE CORNERS. IT IS HELPFUL TO SNAP ALL CORNERS INTO PLACE FIRST THEN WORK FROM CORNER TO CORNER. PEEL OFF THE REMAINING POLYMASKING AND YOU HAVE FINISHED!

* AS STATED ABOVE, IF POLYMASKING IS GENTLY REMOVED AND PLEXIGLAS IS HANDLED CAREFULLY MINIMUM (IF ANY) CLEANING SHOULD BE REQUIRED. IF FINGER MARKS OCCUR THEY CAN BE REMOVED WITH ANTI-STATIC WAX (AVAILABLE FROM DEFENDER-2). A COAT OF ANTI-STATIC WAX APPLIED AND POLISHED WITH CLEAN LINT-FREE CLOTHS IS A GOOD IDEA ANYWAY.

