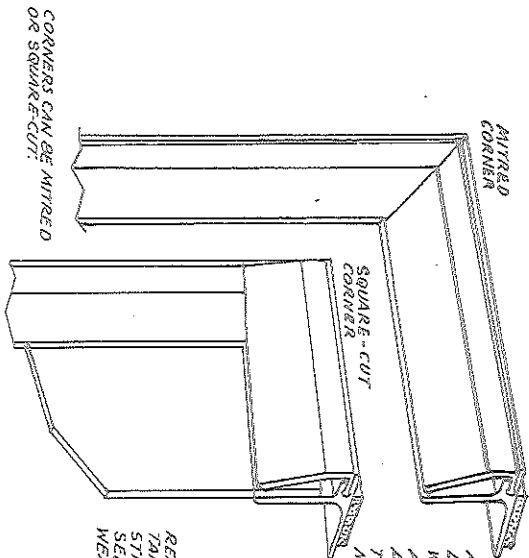


DEFENDER-1

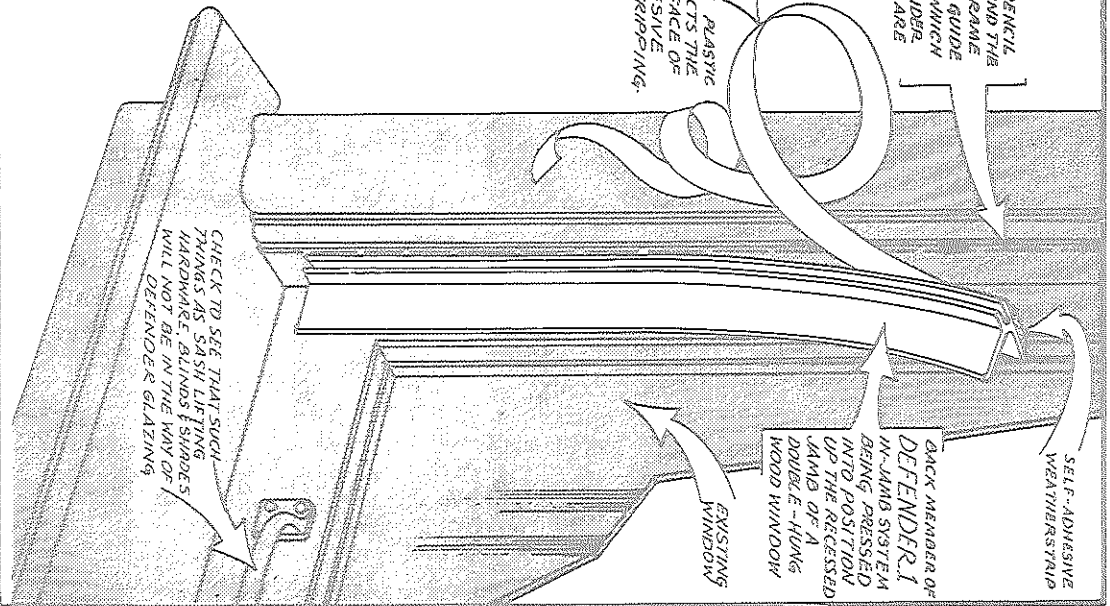
STEP-BY-STEP

INSTALLATION GUIDE



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

REMOVABLE PLASTIC TAPE PROTECTS THE STICKY SURFACE OF SELF-ADHESIVE WEATHER STRIPPING.



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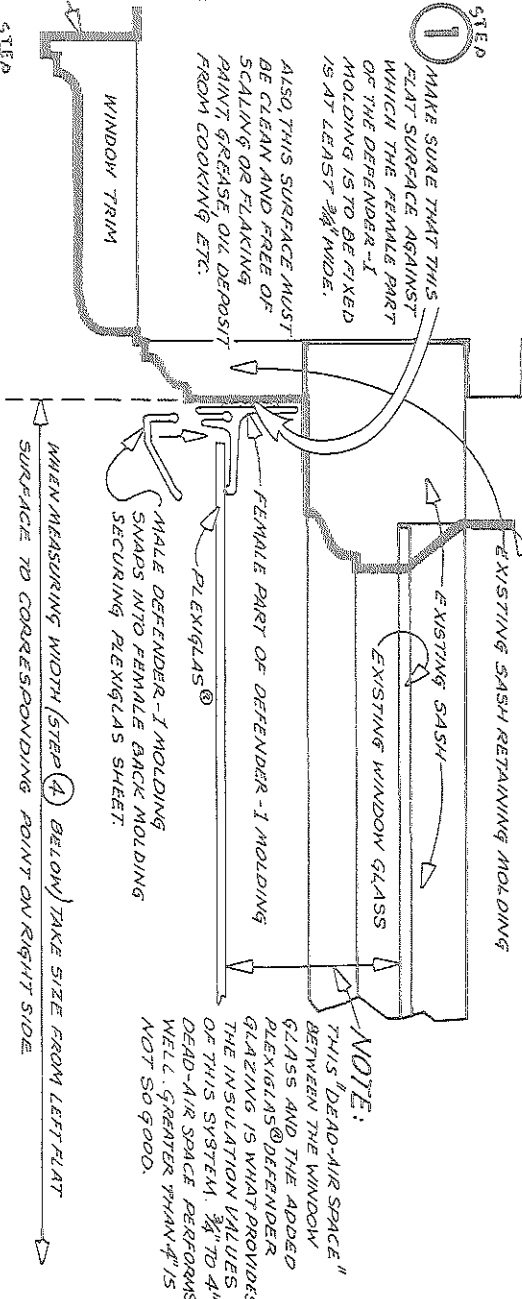
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TO HELP YOU UNDERSTAND THE DIAGRAM BELOW:
 IMAGINE (DON'T TRY IT!) THAT YOU COULD MAKE A HORIZONTAL CUT THROUGH THE WHOLE LEFT SIDE OF THE WINDOW PICTURED ON THE LEFT AT POINT 'A'. THEN IMAGINE THAT YOU COULD REMOVE EVERYTHING ABOVE YOUR CUT AND LOOK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

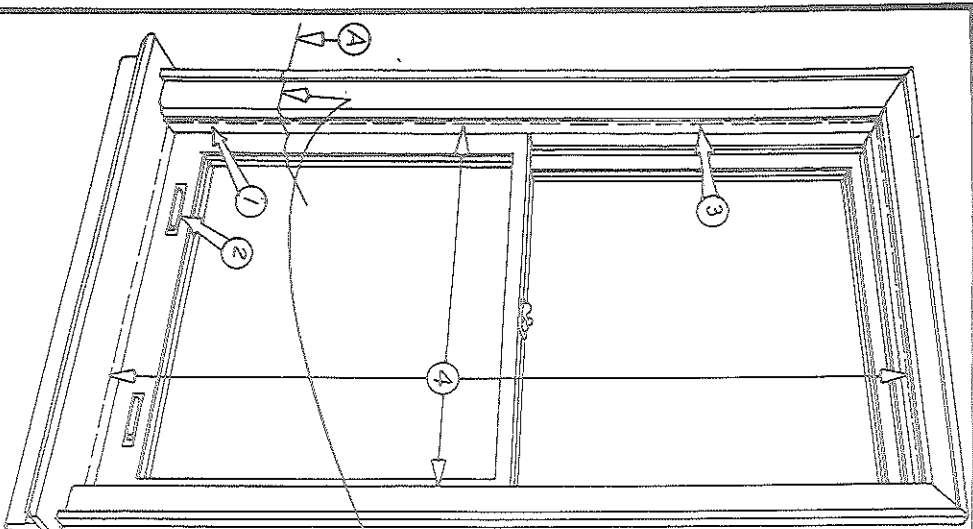


STEP 1
 MAKE SURE THAT THIS FLAT SURFACE AGAINST WHICH THE FEMALE PART OF THE DEFENDER-I MOLDING IS TO BE FIXED IS AT LEAST $\frac{3}{8}$ " WIDE.
 ALSO, THIS SURFACE MUST BE CLEAN AND FREE OF PAINT, GREASE, OIL, DEPOSIT FROM COOKING, ETC.

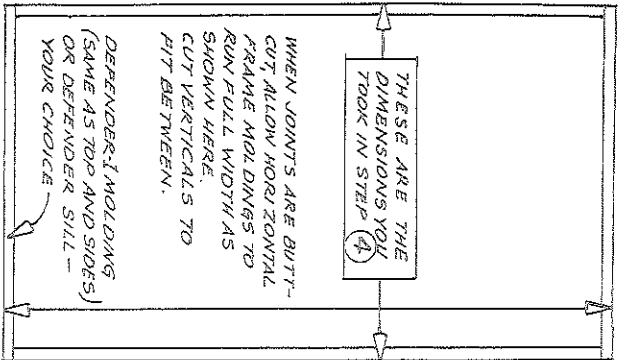
STEP 2
 TAKE NOTE THAT SASH HARDWARE, WINDOW BLINDS, ETC. DO NOT INTERFERE WITH POSITIONING OF DEFENDER-I MOLDINGS OR PLEXIGLAS. IF SASHES ARE TO BE RELOCATED, LOW-COST EXTENDERS ARE AVAILABLE AT MOST HARDWARE STORES.

STEP 3
 DRAW A LIGHT PENCIL LINE AROUND THE OPENING ON THE FLAT SURFACES TO WHICH THE DEFENDER-I 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-I MOLDINGS, WIDTH FROM FLAT TO FLAT SURFACES OF SASH RETAINING MOLDINGS AND HEIGHT FROM TOP OF SILL TO UNDERSIDE OF SASH MOLDING AT TOP OF WINDOW. MAKE A NOTE OF THESE MEASUREMENTS.



STEP-BY-STEP INSTALLATION GUIDE FOR DEFENDER-I IN - JAMB SYSTEM
 CONTINUED →



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

DEFENDER-I MOLDING (SAME AS TOP AND SIDES) OR DEFENDER SILL - YOUR CHOICE

STEP 5 BUTT JOINT CORNERS

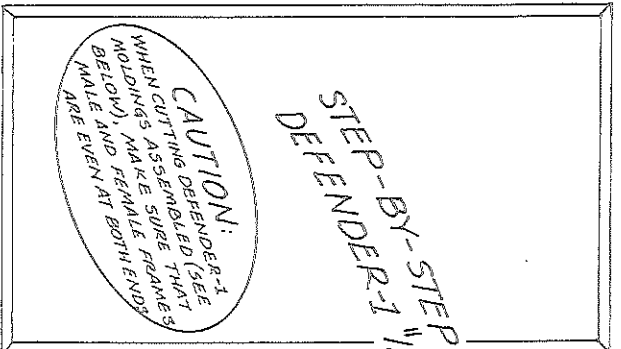
CUT DEFENDER-I MOLDINGS TO SIZE. AS SHOWN ABOVE, DEFENDER-I FRAME CAN BE CUT WITH SQUARE-CUT BUTT JOINTS OR MITRED JOINTS AT CORNERS. MOST USERS PREFER MITRED CORNERS. A HACKSAW IS STANDBY FOR CUTTING THE FRAME, HOWEVER, A RADIAL ARM SAW OR POWER MITRE SAW CAN BE USED FOR LARGE PROJECTS. THE HACKSAW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

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

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

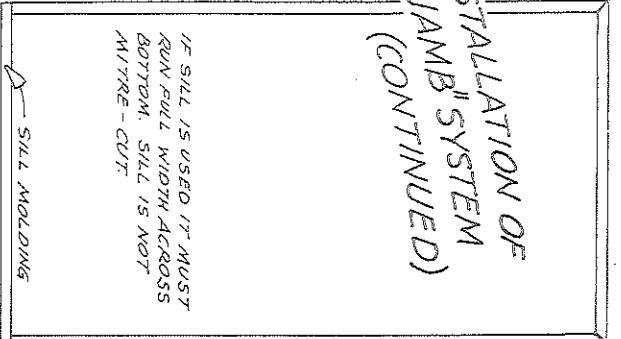
ABOUT THE DEFENDER SILL:

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

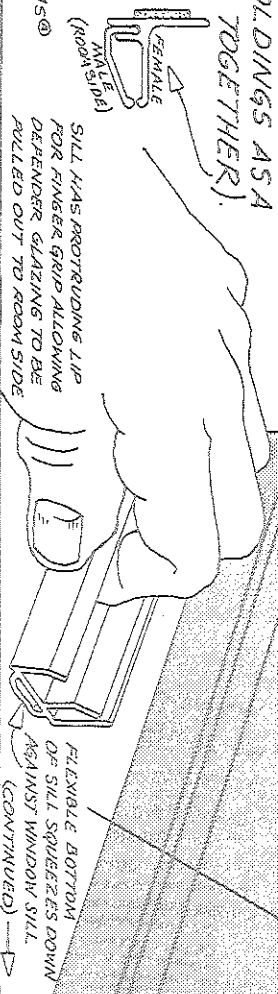


CAUTION: WHEN CUTTING DEFENDER-I MOLDINGS ASSEMBLED THATS (SEE BELOW), MAKE SURE FRAMES ARE EVEN AT BOTH ENDS

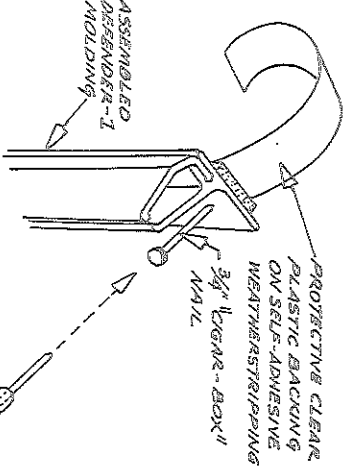
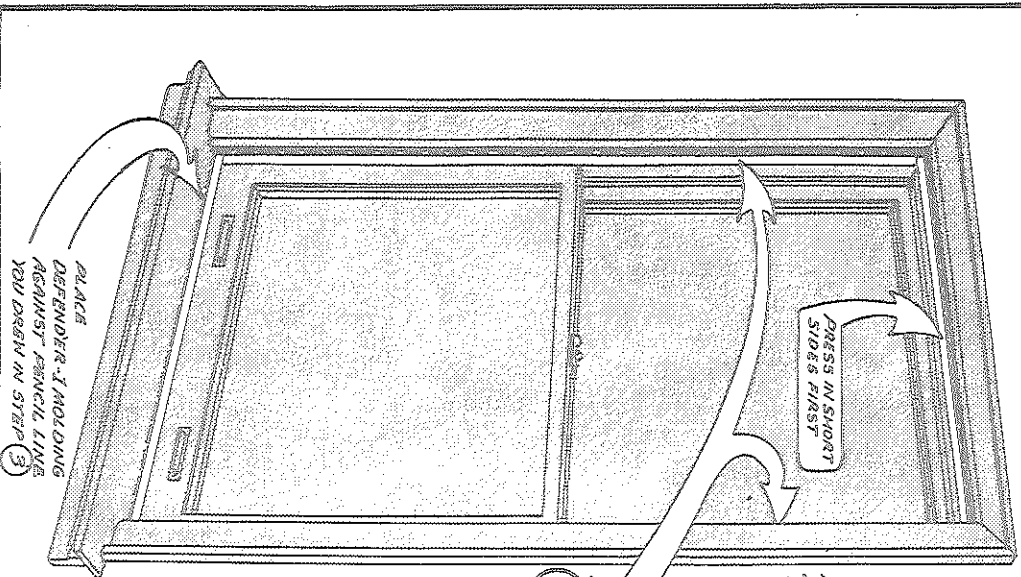
STEP-BY-STEP INSTALLATION OF DEFENDER-I "IN-JAMB" SYSTEM (CONTINUED)



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



STEP-BY-STEP INSTALLATION GUIDE FOR DEFENDER 1 "IN-JAMB" SYSTEM (CONTINUED)



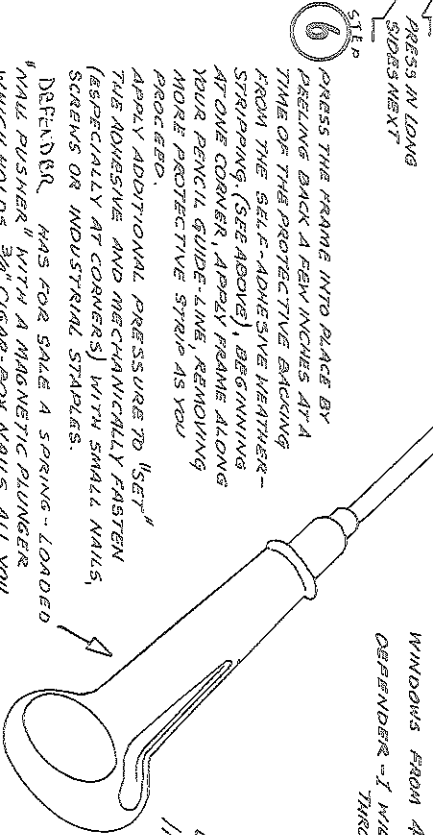
STEP 7

ESTABLISH GLAZING SIZES: THE GLAZING PANEL IS SIZED BY DEDUCTING $\frac{3}{8}$ " FROM THE WIDTH AND $\frac{1}{2}$ " FROM THE HEIGHT (THE IN-JAMB DIMENSIONS YOU TOOK IN STEP (4))

EXAMPLE: IF YOUR DIMENSIONS FROM STEP (4) ARE 36" WIDE AND 72" HIGH YOUR GLAZING PANEL WOULD BE 35 $\frac{3}{8}$ " WIDE AND 71 $\frac{1}{2}$ " HIGH

(PANEL SIZE IS SAME WHETHER OR NOT DEFENDER IS USED) PANEL THICKNESS:

- WINDOWS FROM 1 TO 20 SQUARE FEET - USE ONE $\frac{1}{8}$ " THICK (A LITTLE OVER $\frac{1}{8}$ ")
- WINDOWS FROM 20 TO 40 SQUARE FEET - USE .15" THICK (BETWEEN $\frac{1}{8}$ " AND $\frac{1}{8}$ ")
- WINDOWS FROM 40 SQUARE FEET AND UP - USE .125" THICK OR .187" ($\frac{1}{8}$ ") DEFENDER -1 WILL ACCEPT ALEXIGLAS FROM .80" THROUGH .187" ($\frac{3}{16}$ ") THICK



STEP 6

PRESS THE FRAME INTO PLACE BY PEEING BACK A FEW INCHES AT A TIME OF THE PROTECTIVE BACKING FROM THE SELF-ADHESIVE WEATHER-STRIPPING. (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 "MAGNETIC PLUNGER" 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.

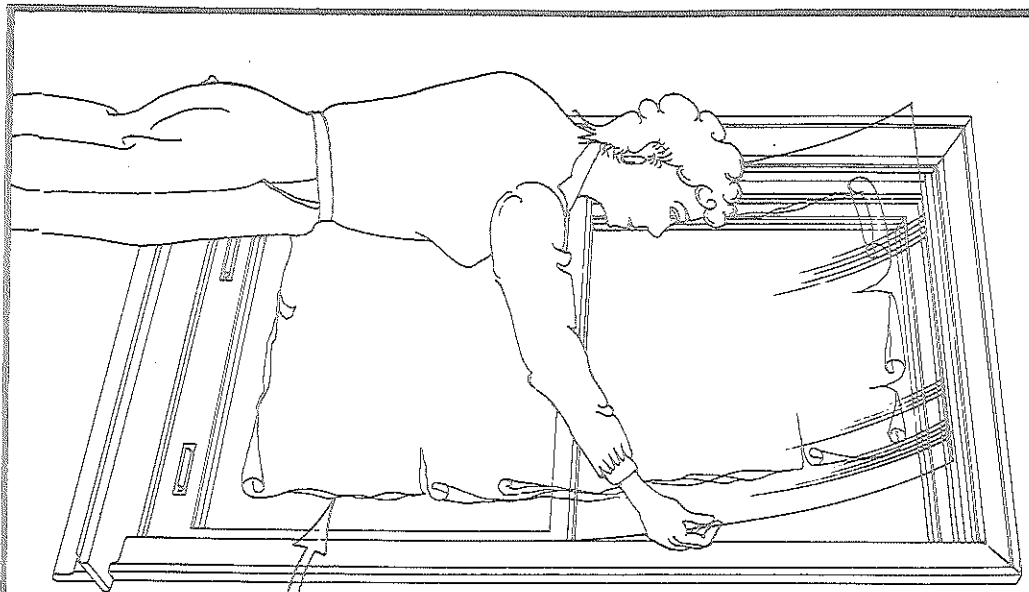
ALL ADHESIVES REQUIRE A SETTING TIME (1 HOUR OR MORE) AT ROOM TEMPERATURE. IF YOU ARE WORKING UNDER COOLD CONDITIONS, WARM UP THE JAMBS AND ALLOW A LONGER SETTING TIME BEFORE NEXT STEP.

DEFENDER-1 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 I "IN-JAMB" SYSTEM (CONCLUDED).

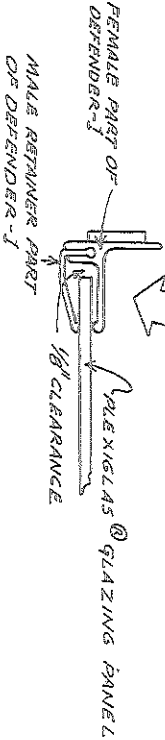


STEP 8

WITH DEFENDER-I MOLDINGS IN PLACE ON ALL 4 SIDES (3 SIDES IF DEFENDER STILL IS USED), SNAP OFF THE MALE (ROOM-SIDE) RETAINING PARTS OF THE DEFENDER-I 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.

STEP 9

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 "SNEEL" ON THE FEMALE SECTION.



STEP 10

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 IMMEDIATELY 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-I ON ALL FOUR SIDES OF A WINDOW BE SURE TO SNAP IN THE BOTTOM RETAINER FIRST. SNAP RETAINERS INTO PLACE WITH A RUBBER Mallet OR THE HAMMER SPECKS 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. A COAT OF ANTI-STATIC WAX APPLIED AND POLISHED WITH CLEAN, LINT-FREE CLOTHS IS A GOOD IDEA ANYWAY.

