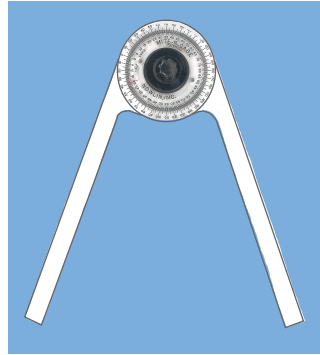
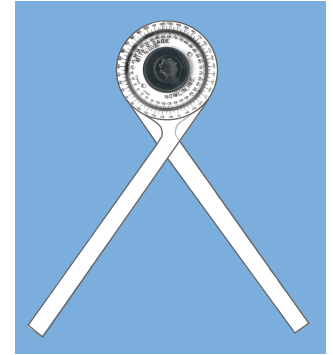


Designed for measuring and laying out all types of angles.
 Measurements are accurate to half of a degree.
 Ideal for measuring bay, corner and odd shaped windows.
 Made of Lexan® to resist breaking, cracking and warping.
 Excellent for laying out miter and bevel cuts.
 The locking dual dial displays the angle, the supplementary angle and their respective half angles in one easy step.

Measures Inside Angles



Measures Outside Angles



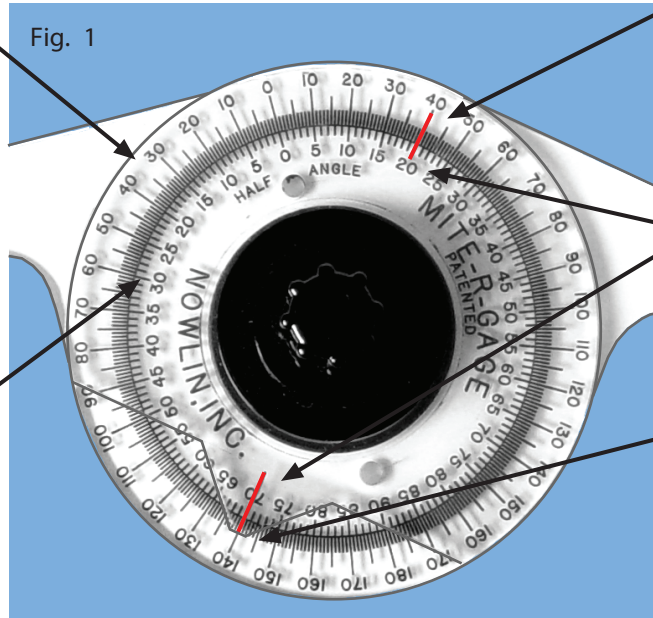
Outer Scale

The outer scale displays the angle and the supplementary angle of the surface you are measuring. (These two angles added together equal 180°). The outer scale is marked in 1° increments. The markings start at 0° and go to 180°, then descend around the other half of the scale from 180° to 0°. The numbers on the outer scale are written in 10° increments.

Inner Scale

The inner scale displays the half angle and half of the supplementary angle of the surface you are measuring. (These two angles added together equal 90°). The inner scale is marked in 1° increments. The markings start at 0° and go to 90°, then descend around the other half of the scale from 90° to 0°. The numbers on the inner scale are written in 5° increments.

Understanding the Dial



Secondary Pointer

The secondary pointer is the short red line opposite the primary pointer. It displays the supplementary angle.

Half Angle Pointers

The half angle pointers are extensions of the primary and secondary pointers.

Primary Pointer

The primary pointer is the red line along the pointed part of the dial. It indicates the angle of the surface you are measuring.

Fig. 1 - The primary pointer on the DYC12 Protractor reads 140°. Across the dial, the supplementary angle measurement is 40°, (140° + 40° = 180°). The half angle measurements are 70° and 20° respectively, (70° + 20° = 90°).

How to Measure Inside Angles

NOTE: To ensure accuracy, always measure the angle at the height where the window treatment will be installed. Do not measure the angle along the floor and assume it will be exactly the same at installation height.

Step 1: Measure the width of the wall at each bay section (AB, BC, & CD in Fig. 2) and record the measurements.

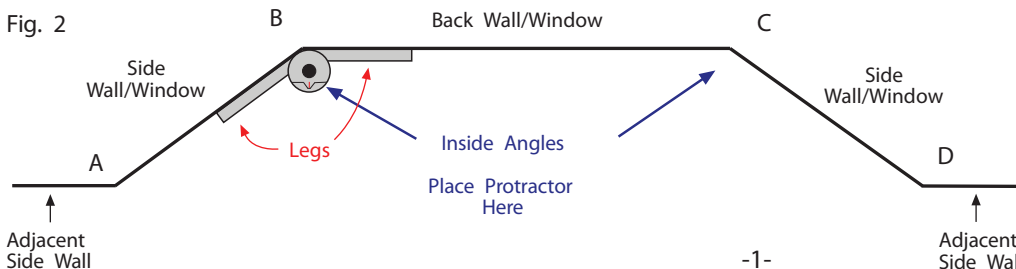
Step 2: Unlock the protractor by turning the black knob counterclockwise.

Step 3: Place the protractor into the angle and position the legs against the walls as shown in Fig. 2

Step 4: Hold the protractor firmly in place and lock it by turning the knob clockwise.

Step 5: Remove the protractor to read the measurement.

Step 6: Repeat Steps 3 - 5 for each inside angle of the window. Do not assume the angles are the same measurement.



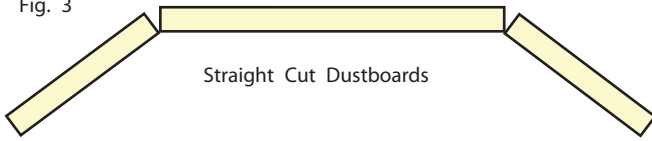
Note: The measurements shown in Fig. 1 will be used for our examples on the following pages. Fig. 1 shows the angle reading to be 140°. The supplementary angle is 40° and the half angles are 70° and 20° respectively.

Instructions for the Heavy Duty Protractor (DYC12)

Cutting the Dustboards

Dustboards for bay windows can be cut straight or mitered as shown in Fig. 3 & Fig. 4 below.

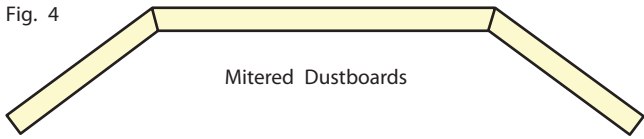
Fig. 3



Straight Cut Dustboards

Straight cut dustboards are cut shorter than the actual wall measurements. The amount to cut off is determined by the projection of the boards. If you are cutting the dustboards straight, refer to the chart on our Dustboard Hinge Plate Protractor (Stk # DYC5) for the proper board deductions.

Fig. 4

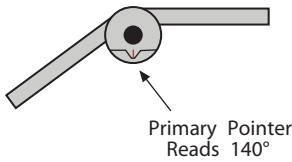


Mitered Dustboards

Mitered dustboards are cut longer at the back and shorter at the front. Miter cuts can be made with a miter saw, jigsaw or circular saw. However, a miter saw is the easiest to use. Before cutting the boards, the cutting lines are drawn on the dustboards using the DYC12 Protractor.

How to Miter Dustboards

Fig. 5



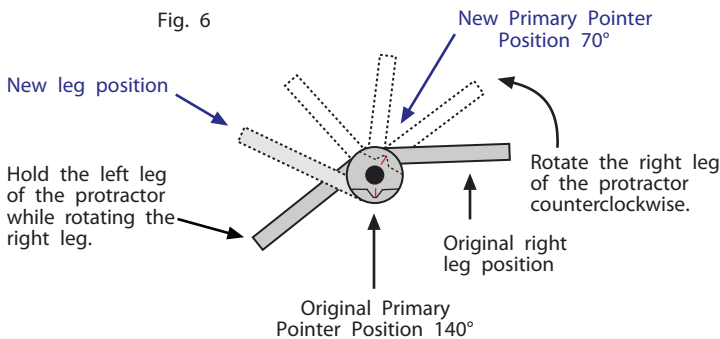
Primary Pointer Reads 140°

Step 1: Measure the walls and the angles as shown on page 1 in Fig. 2 (e.g., angle measurement is 140°, half angle is 70°). See Fig. 5.

Step 2: The miter layout lines are drawn by using the half angle measurement (e.g., 70°). To mark the lines, the protractor legs must be rotated so that the Primary Pointer is positioned at the half angle number on the outside scale. With the Primary Pointer facing you, loosen the black knob by turning it counterclockwise.

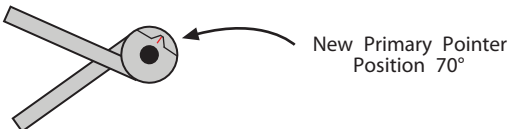
Step 3: Hold the left leg of the protractor securely in your left hand and rotate the right leg counterclockwise until the Primary Pointer reaches the first half angle number on the outside scale (e.g., 70°) See Fig. 6. **Note: There are two markings of each number on the scale. It is important to rotate the leg counterclockwise and stop the Primary Pointer at the first half angle number.**

Fig. 6



Step 4: After rotating the protractor, tighten the knob by turning it clockwise. The legs of the protractor will now create an outside angle measurement. The protractor is set to layout the miter cutting lines. See Fig. 7.

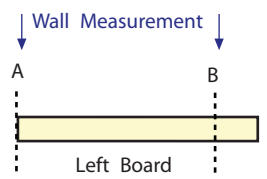
Fig. 7



New Primary Pointer Position 70°

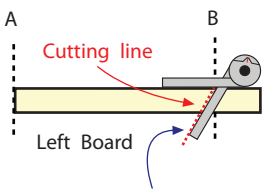
Step 5: To transfer the miter cutting lines to the dustboards, mark the wall measurements (AB, BC, CD) on each board. It is important to allow several extra inches of board length for mitering. See Fig. 8.

Fig. 8



Step 6: Place one leg of the protractor tight against the back of the left dustboard. The other leg will cross over the top of the board. The inside point where the legs cross should be lined up even with the wall measurement line as shown in Fig. 9.

Fig. 9



Mark the cutting line along this leg of the protractor.

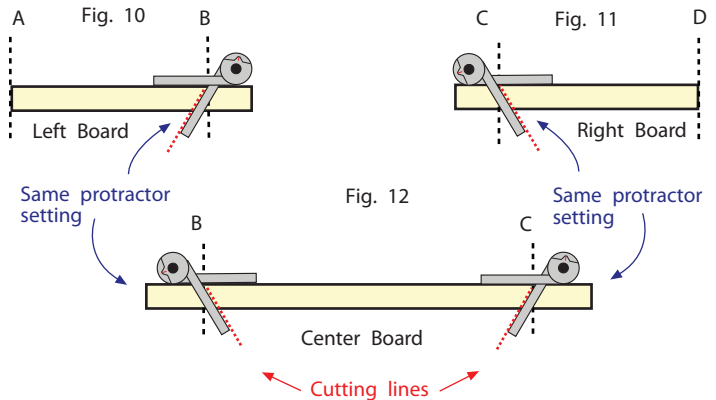
Step 7: Mark the cutting line along the leg that is lying across the top of the board as shown in Fig. 9.

Step 8: Mark the left side of the center dustboard without changing the protractor setting. **Note: The orientation of the protractor will change. See Figs. 10 & 12.**

Step 9: If the two inside angles have different measurements, repeat Steps 1 - 4 and reset the DYC12 Protractor for the other inside angle. If the angles are the same measurement, skip Step 9 and proceed to Step 10.

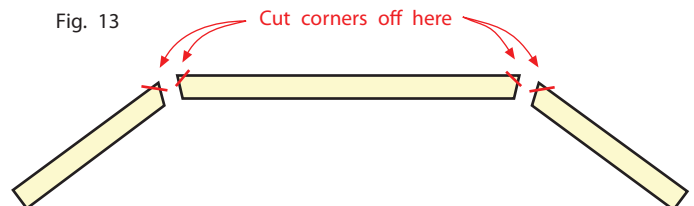
Step 10: Follow Steps 6 - 7 for the right dustboard.

Step 11: Mark the right side of the center dustboard without changing the protractor setting. **Note: The orientation of the protractor will change. See Figs. 11 & 12.**



Step 12: After cutting all the miters, we recommend cutting 1/4" off the back corner of each board. This allows the boards to sit into the corner of the wall without gouging it. See Fig. 13.

Fig. 13



Instructions for the Heavy Duty Protractor (DYC12)

Helpful Hints:

If the miters are cut to the exact angle, the dustboard will not have any extra room for adjustment. If you want to allow for a slight margin of error during installation, then cut the miter a few degrees less than indicated on the protractor. Example: If the half angle measurement is 70° , set the protractor at 68° before laying out the cutting lines. The boards will have more room for adjustment during installation.

Miter Saw Setting for Inside Angles

The DYC12 Protractor automatically displays the miter saw setting when you measure inside angles. The setting is half of the supplementary angle, not the actual angle measurement. **Note: Do not make the mistake of setting the saw at half of actual angle measurement (140° in Fig. 1).**

Fig. 1 shows an angle measurement of 140° and the supplementary angle measurement of 40° . The half angles are 70° and 20° as displayed along the inner scale. Note: The angle and supplementary angle will always add up to 180° and the half angles will always add up to 90° .

The miter saw will be set at 20° to get the exact miter cut. If you want to allow for a slight margin of error during installation, set the saw a few degrees more (e.g. 22°) than the exact miter cut setting.

How to Measure Outside Angles

The DYC12 Protractor also measures outside angles. Fig. 14 shows a bay window. The outside angles are where the adjacent side walls meet the side walls/windows. The outside angle must be measured if you plan to cut the side dustboards even with the adjacent side wall as shown in Fig. 16.

Step 1: Unlock the knob on the protractor by turning it counterclockwise.

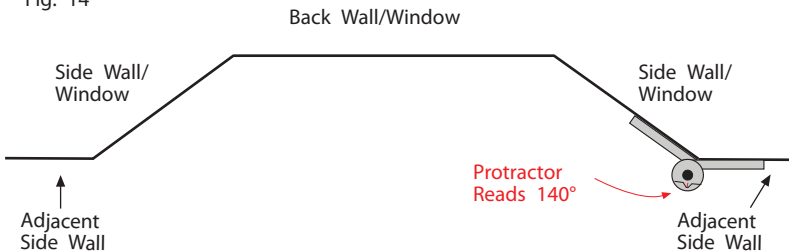
Step 2: Place the protractor around the angle and position the legs against the walls as shown in Fig. 14.

Step 3: Hold the protractor firmly in place and lock it by turning the knob clockwise.

Step 4: Remove the protractor to read the measurement as indicated by the Primary Pointer.

Step 5: Repeat Steps 1 - 4 for the other outside angle. Do not assume the angles are the same measurement.

Fig. 14



Cutting Dustboards Flush With Walls

Fig. 15 shows an example of how a dustboard fits into a bay window if there is limited wall space between the side windows and the adjacent walls. In this case, the dustboard protrudes beyond the walls as shown in Fig. 15. These corner ends can be cut off so that the dustboard ends are flush with the adjacent side wall as shown in Fig. 16.

Fig. 15

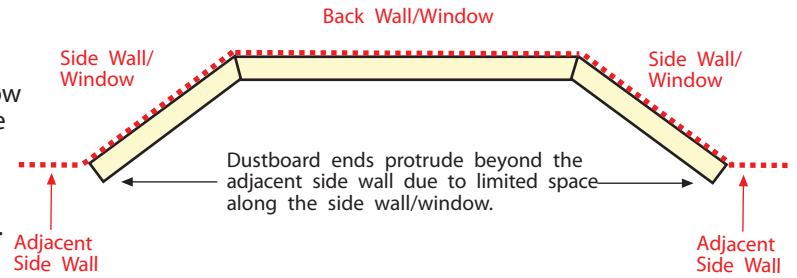
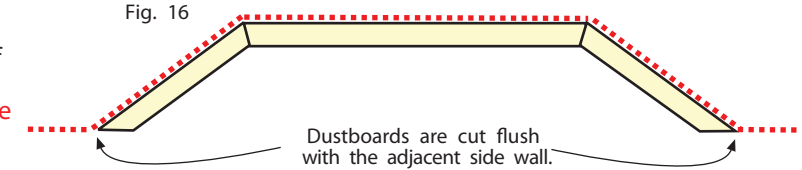


Fig. 16

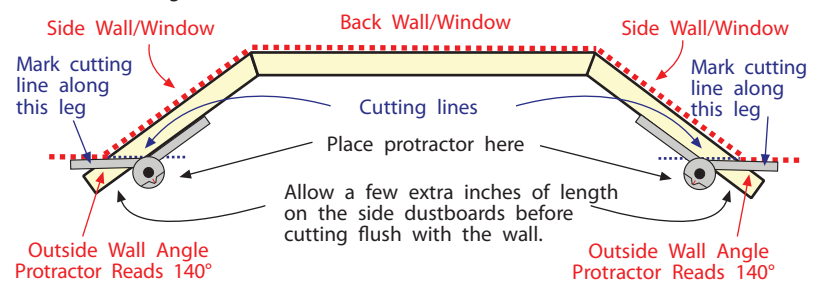


How to Cut Dustboards Flush with Walls

Step 1: Measure the outside angle of the adjacent side wall, following Steps 1 - 5 in "How to Measure Outside Angles". **It is important to allow several extra inches of board length before cutting the dustboard ends flush with the wall. See Fig. 17.** Keep the protractor in the locked position to transfer the cutting line to the dustboard. We will use the 140° wall angle shown in Fig. 14 for the angle measurement.

Step 2: To mark the cutting line, position the DYC12 Protractor as shown in Fig. 17. The inside of one leg will be tight against the front edge of the board and the other leg will cross over the top of the dustboard. **Note: The protractor reading for the outside wall angle is 140° (See Fig. 17). The angle of the cutting line on the dustboard is the same 140° reading on the protractor. (See Fig. 17).**

Fig. 17



Step 3: Mark the cutting line along the inside of the protractor leg as shown in Fig. 17. **Note: The length of the dustboard along the back side is the same as the wall measurement from outside corner to inside corner.**

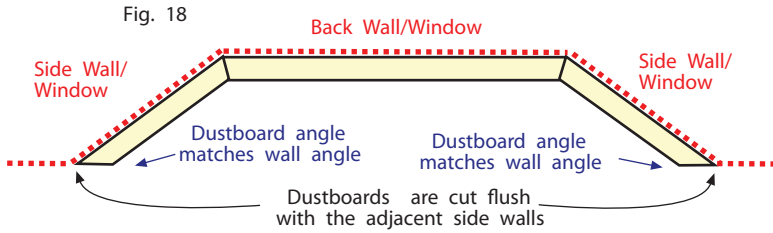
Step 4: Repeat Steps 1 - 3 for the other side of the dustboard. **Note: The orientation of the protractor will change from one side of the dustboard to the other. See Fig. 17.**

Note: The example in Fig. 17 shows both outside wall angles to be 140° on the protractor. Do not assume these angles are exactly the same. It is important to measure both outside angles before cutting the boards.

Step 5: Cut the dustboard along the cutting lines.

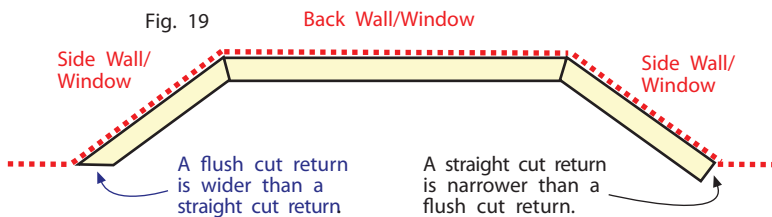
Instructions for the Heavy Duty Protractor (DYC12)

The dustboards will now be flush with the adjacent walls as shown in Fig. 18.

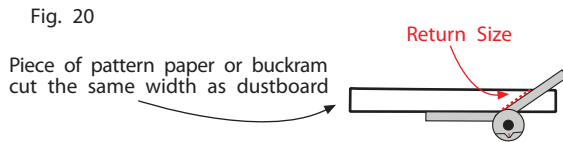


Important Notes Before Cutting Boards Flush:

Flush cut returns are always wider than straight cut returns as shown in Fig. 19.



Soft Treatment Note: If you plan to cut the dustboard returns flush, you must adjust the pattern pieces for the returns prior to cutting the fabric (e.g., jabots, etc.). To determine the new width of the return before cutting the boards, draw the end of the dustboard on a piece of pattern paper or buckram the same width of the dustboard. Lay out the cutting line with the protractor exactly as it will be on the dustboard. After marking the cutting line, measure the width of the cut.

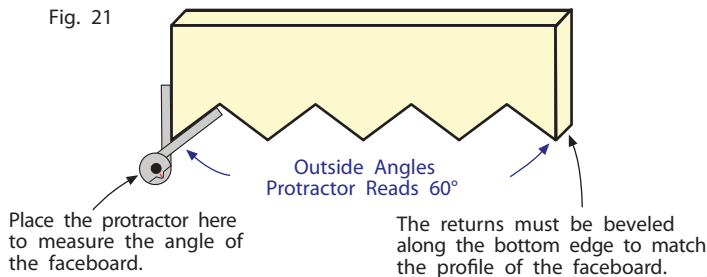


Miter Saw Setting for Flush Cut Returns

The miter saw setting is calculated by taking the protractor reading and subtracting 90°, (e.g. $140^\circ - 90^\circ = 50^\circ$). The miter saw setting for this example is 50°. **Note: Some miter saws are not capable of making cuts beyond 45°. If this is the case with your saw, the cuts have to be made with a different saw (e.g. circular saw, jigsaw, etc.).**

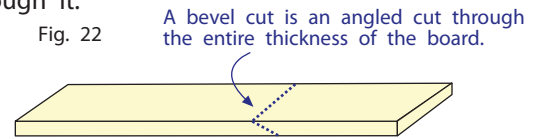
How to Measure Angles for Bevel Cutting

There are some window treatment applications that require bevel cutting. The cornice in Fig. 21 has a sharp corner along the bottom edge of the faceboard. The returns must be beveled along the bottom edge in order to match the corner of the face board. If the returns are not beveled, they would be visible from the front of the cornice and would not match the profile of the faceboard.



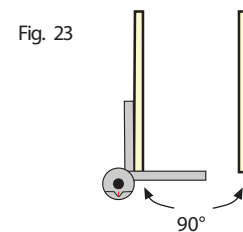
Bevel cuts differ from miter cuts. To make a bevel cut, the saw blade is tilted to the side. This creates an angled cut through the entire thickness of the material.

Fig. 22 shows an example of a 1x board laying flat with a bevel cut through it.



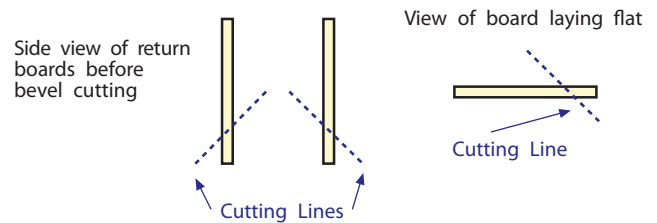
Step 1: Follow Steps 1-4 in "How to Measure Outside Angles". The example in Fig. 21 shows the protractor reading for the faceboard angle to be 60°.

Fig. 23 shows a side view of the returns before they are bevel cut. The bottom of the returns have a straight cut, which measures 90°.



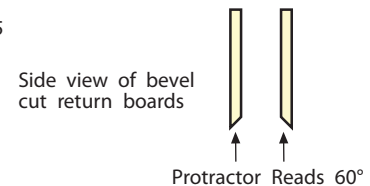
Step 2: Mark the cutting line on the returns as shown in Fig. 24. **Note: It is important to allow a few extra inches of board space for the bevel cut before cutting the boards. It is easier to cut the bevel first, then cut the board to the finished length.**

Fig. 24



Step 3: Cut the boards with a saw. **Note: Bevel cuts can be made with a miter saw, jigsaw or circular saw. However, a compound miter saw is the easiest to use.** Fig. 25 shows a side view of the return boards bevel cut to match the cornice faceboard. The protractor reading for the bevel cut is 60°, the same as the protractor reading for faceboard.

Fig. 25



Miter Saw Setting for Bevel Cuts

The miter saw setting is calculated by taking the original angle of the return (90°) and subtracting the faceboard angle measurement.

$90^\circ - 60^\circ \text{ Faceboard Angle} = 30^\circ \text{ miter saw bevel setting.}$

The saw setting for the returns in Fig. 21 would therefore be 30°.