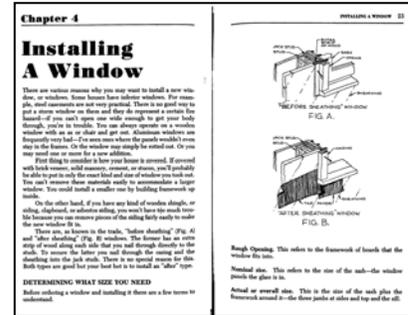


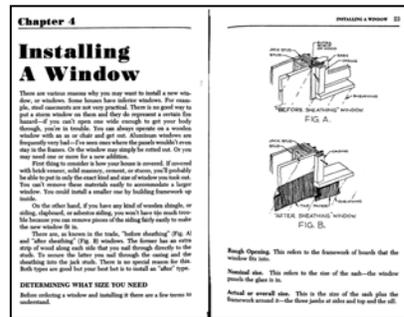
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Chapter 4, "Installing a Window"

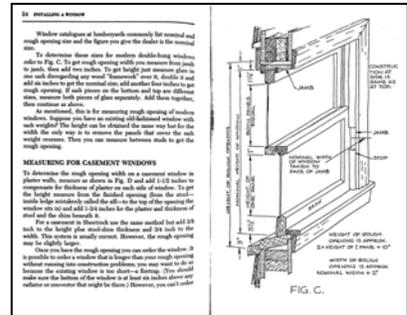
Philbin, Tom and Fritz Koelbel, The Nothing Left Out Home Improvement Book. Englewood Cliffs, N.J.: Prentice-Hall, 1976



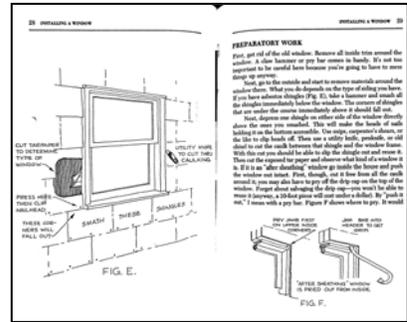
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<p>There are various reasons why you may want to install a new window, or windows. Some houses have inferior windows. For example, steel casements are not very practical. There is no good way to put a storm window on them and they do represent a certain fire hazard – if you can't open one wide enough to get your body through, you're in trouble. You can always operate on a wooden window with an ax or chair and get out. Aluminum windows are frequently very bad – I've seen ones where the panels wouldn't even stay in the frames. Or the window may simply be rotted out. Or you may need one or more for a new addition.</p> <p>First thing to consider is how your house is covered. If covered with brick veneer, solid masonry, cement, or stucco, you'll probably be able to put in only the exact kind and size of window you took out. You can't remove these materials easily to accommodate a larger window. You could install a smaller one by building framework up inside.</p> <p>On the other hand, if you have any kind of wooden shingle, or siding, clapboard, or asbestos siding, you won't have too much trouble because you can remove pieces of the siding fairly easily to make the new window fit in.</p>	<p>There are various reasons why you may want to install a new replace window, or windows. Some houses have inferior windows. For example, steel casements are not very practical. There is no good way to put a storm window on them and they do represent <u>can be a certain</u> fire hazard – if you can't open one wide enough to get your body through, you're in trouble. You can always operate on a wooden window with an ax or chair and get out. Aluminum windows are frequently very bad – I've seen ones where the panels wouldn't even stay in the frames. Or <u>The window may simply be rotted out. Or you may need one or more for a new addition. be installing windows in new construction.</u></p> <p>First <u>The first</u> thing to consider is how your house is covered. If it is covered with brick veneer, solid masonry, cement, or stucco, you'll probably be able to put in <u>install</u> only the exact kind and size of window you took out <u>removed</u>. You can't remove these materials easily to accommodate a larger window. However, <u>You</u> could install a smaller one by building <u>up the inside</u> framework up inside.</p> <p>On the other hand, if you have any kind of wooden shingle, or siding, or <u>clapboard, or asbestos siding,</u> you won't have too much trouble because you can remove pieces of the siding fairly easily to make the new window fit in.</p> <div style="text-align: center;">  <p><u>ASBESTOS WARNING!</u> <u>Some shingle-type siding, especially on houses built before 1980, contains asbestos. Do not attempt to remove, or disturb in any way, such siding yourself, because asbestos is a serious health hazard. State and federal laws require that asbestos be removed only by licensed contractors. For more information, go to</u> http://www.osha.gov/STLC/asbestos or http://www.epa.gov/asbestos.</p> </div>



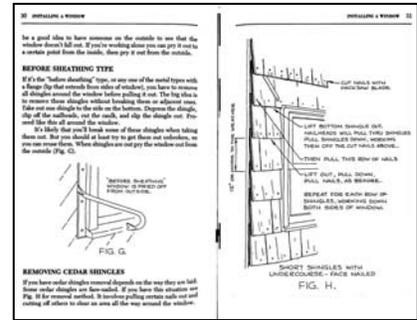
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<p>There are, as known in the trade, “before sheathing” (Fig. A) and “after sheathing” (Fig. B) windows. The former has an extra strip of wood along each side that you nail through directly to the studs. To secure the latter you nail through the casing and the sheathing into the jack studs. There is no special reason for this. Both types are good but your best bet is to install an “after” type.</p> <p>DETERMINING WHAT SIZE YOU NEED</p> <p>Before ordering a window and installing it there are a few terms to understand.</p> <p>Rough Opening. This refers to the framework of boards that the window fits into.</p> <p>Nominal size. This refers to the size of the sash – the window panels the glass is in.</p> <p>Actual or overall size. This is the size of the sash plus the framework around it – the three jambs at sides and top and the sill.</p> <p>Window catalogues at lumberyards commonly list nominal and rough opening size and the figure you give the dealer is the nominal size.</p> <p>To determine these sizes for modern double-hung windows refer to Fig. C. To get rough opening width you measure from jamb to jamb, then add two inches. To get height just measure glass in one sash disregarding any wood “framework” over it, double it and add six inches to get the nominal size; add another four inches to get rough opening. If sash pieces on the bottom and top are different sizes, measure both pieces of glass separately. Add them together, then continue as above. As mentioned, this is for measuring rough opening of modern windows. Suppose you have an existing old-fashioned window with sash weights? The height can be obtained the same way but for the width the only way is to remove the panels that cover the sash weight recesses. Then you can measure between studs to get the rough opening.</p>	<p>There are, as known in the trade, <u>two types of windows,</u> “before sheathing” (Fig. A) and “after sheathing” (Fig. B) <u>windows.</u> The former has an extra strip of wood along each side that you nail through, <u>and</u> directly <u>into</u> the studs. To secure the latter, you nail through the casing and the sheathing into the jack studs. <u>There is no special reason for this.</u> Both types are good but <u>your best bet is to install</u> an “after” type <u>is preferable.</u></p> <p>DETERMINING WHAT SIZE YOU NEED</p> <p>Before <u>ordering obtaining</u> a window and installing it there are a few terms to understand.</p> <ul style="list-style-type: none"> • Rough Opening. <u>This refers to t</u>he framework of boards <u>that in which</u> the window fits <u>into.</u> • Nominal size. <u>This refers to t</u>he size of the sash – the window panels the glass is in. • Actual or overall size. <u>This is t</u>he size of the sash plus the framework around it – the three jambs at sides and, top and the sill. <p>Window <u>catalogues at lumberyards specifications</u> commonly list nominal and rough opening size <u>and;</u> the figure you <u>give the dealer provide</u> is the nominal size.</p> <p>To determine these sizes for modern double-hung windows refer to Fig. C. To get <u>the</u> rough opening width, <u>you</u> measure from jamb to jamb, then add two inches. To get height, <u>just</u> measure <u>the</u> glass in one sash, disregarding any wood “framework” over it, double it and add six <u>6</u> inches to get the nominal size; add another four inches to get <u>the</u> rough opening. If sash pieces on the bottom and top are different sizes, measure both pieces of glass separately. Add them together, then continue as above</p> <p>As mentioned, this is for measuring the rough opening of modern windows. Suppose you have an existing old-fashioned window with sash weights? The height can be obtained <u>in</u> the same way, but for the width, <u>the only way is to you must</u> remove the panels that cover the sash-weight recesses. Then you can measure between studs to get the rough opening.</p>



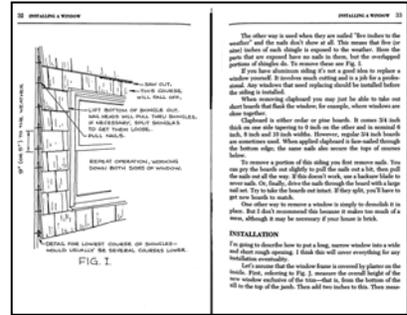
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<p>MEASURING FOR CASEMENT WINDOWS</p> <p>To determine the rough opening width on a casement window in plaster walls, measure as shown in Fig. D and add 1-1/2 inches to compensate for thickness of plaster on each side of window. To get the height measure from the finished opening (from the stool – inside ledge mistakenly called the sill – to the top of the opening the window sits in) and add 1-3/4 inches for the plaster and thickness of stool and the shim beneath it.</p> <p>For a casement in Sheetrock use the same method but add 3/8 inch to the height plus stool-shim thickness and 3/4 inch to the width. This system is usually correct. However, the rough opening may be slightly larger.</p> <p>Once you have the rough opening you can order the window. It is possible to order a window that is longer than your rough opening without running into construction problems; you may want to do so because the existing window is too short – a firetrap. (You should make sure the bottom of the window is at least six inches above any radiator or convector that might be there.) However, you can't order one larger in width than your rough opening without installing a new header, a 4 by 6 (two 2 by 6's nailed together) or larger, and this involves opening the walls up and rearranging the framing. It's a big job but if you want to do it see Chapter 3 for information.</p> <p>You can order any window whose rough opening width is narrower than on the house down to any small size you want because it just involves adding framing members inside the larger opening. An example of this might be when you want to put in a small bathroom window.</p>	<p>MEASURING FOR CASEMENT WINDOWS</p> <p>To determine the rough opening width on a casement window in plaster walls, measure as shown in Fig. D and add 1-1/2 inches to compensate for <u>the</u> thickness of plaster on each side of <u>the</u> window. To get the height measure from the finished opening (from the stool – the inside ledge mistakenly called the sill) – to the top of the opening the window sits in, and add 1-3/4 inches for the plaster, and thickness of the stool and the shim beneath it.</p> <p>For a casement in <u>Sheetrock-plasterboard</u>, use the same method but (a.) add 3/8 inch to the height plus <u>the</u> stool-shim thickness, and (b.) 3/4 inch to the width. <u>Although this system-method is usually correct, However,</u> the rough opening may <u>need to</u> be slightly larger.</p> <p>Once you have the rough opening you can <u>order obtain</u> the window.</p> <p>It is possible to order <u>You can use</u> a window that is longer than your rough opening – <u>for example, to enlarge a window that is too small to use for emergency escape – without running into construction problems much extra work; you may want to do so because the existing window is too short—a firetrap.</u> (You should make sure the bottom of the window is at least six inches above any radiator or convector that might be there.)</p> <p>However, you can't <u>order obtain</u> one larger in width than your rough opening without installing a new header, a <u>4-by-6 4X6</u> (two <u>2-by-6's 2X6 boards</u> nailed together) or larger, and this involves opening the walls up and rearranging the framing. It's a big job, but if you want to do it, see Chapter 3 <u>for information</u>.</p> <p>You can order <u>any a narrower or shorter</u> window <u>whose rough opening width is narrower than on the house down to any small size you want</u> because it just involves adding framing <u>members</u> inside the larger opening. An example <u>of this might be when you want to put in is</u> a small bathroom window.</p>



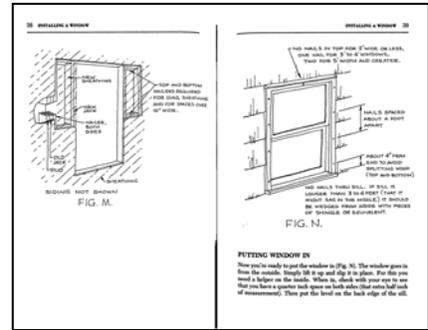
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<p>PREPARATORY WORK</p> <p>First, get rid of the old window. Remove all inside trim around the window. A claw hammer or pry bar comes in handy. It's not too important to be careful here because you're going to have to mess things up anyway.</p> <p>Next, go to the outside and start to remove materials around the window there. What you do depends on the type of siding you have. If you have asbestos shingles (Fig. E), take a hammer and smash all the shingles immediately below the window. The corners of shingles that are under the course immediately above it should fall out.</p> <p>Next, depress one shingle on either side of the window directly above the ones you smashed. This will make the heads of nails holding it on the bottom accessible. Use snips, carpenter's shears, or the like to clip heads off. Then use a utility knife, penknife, or old chisel to cut the caulk between that shingle and the window frame. With this cut you should be able to slip the shingle out and reuse it. Then cut the exposed tar paper and observe what kind of a window it is. If it is an "after sheathing" window go inside the house and push the window out intact. First, though, cut it free from all the caulk around it; you may also have to pry off the drip cap on the top of the window. Forget about salvaging the drip cap – you won't be able to reuse it (anyway, a 10-foot piece will cost under a dollar). By "push it out," I mean with a pry bar. Figure F shows where to pry. It would be a good idea to have someone on the outside to see that the window doesn't fall out. If you're working alone you can pry it out to a certain point from the inside, then pry it out from the outside.</p>	<p><u>PREPARATORY WORK PREPARATION</u></p> <p>First, <u>get rid of remove</u> the old window. <u>Remove Take off</u> all <u>inside</u> trim around the <u>window inside</u>. A claw hammer or pry bar <u>comes-in handy works well</u>. It's not too important to be careful here because you're going to have to mess things up anyway.</p> <p>Next, go <u>to-the</u> outside and start <u>to-remove removing surrounding</u> materials, <u>around-the window there</u>. What you do depends on the type of siding you have.</p> <p><u>If the shingles are brittle, they may be asbestos. Do not disturb asbestos shingles yourself, see the warning above.</u> If <u>they are non-asbestos, but brittle, you have asbestos shingles (Fig. E)</u>, take a hammer and smash all the shingles immediately below the window. <u>(Fig. E.)</u> The corners of shingles <u>that are under the course immediately above it immediately above the smashed course</u> should fall out.</p> <p>Next, depress one shingle on either side of the window directly above the ones you smashed. This will make the heads of <u>the</u> nails holding <u># this shingle at on</u> the bottom accessible. Use snips, carpenter's shears, or <u>the-like a hacksaw blade</u> to <u>clip remove the</u> heads <u>off</u>. Then use a <u>utility</u> knife, <u>penknife screwdriver,</u> or old chisel to <u>cut detach</u> the caulk between that shingle and the window frame. With this cut you should be able to slip the shingle out and <u>save it for reuse-it</u>.</p> <p><u>Then-Next</u>, cut the exposed tar paper and observe what kind of <u>a-window</u> it is. If it is an "after sheathing" window, <u>go inside the house and push the you will remove</u> window <u>out-intact</u>. First, <u>though, cut it free from detach</u> all the caulk around it; you may also have to pry off the drip cap on the top <u>of-the window</u>. Forget about salvaging the drip cap – you won't be able to reuse it, <u>and they are inexpensive. (anyway, a 10-foot piece will cost under a dollar).</u> By "push it out," I mean with <u>Use</u> a pry bar, <u>as shown in Figure Fig. F. shows where to pry.</u> <u>It would be a good idea to have someone Station a helper</u> on the outside to <u>see that prevent</u> the window <u>doesn't fall from falling</u> out. <u>Or, If</u> you're working alone, <u>you can</u> pry it out <u>to-a certain point partway</u> from the inside, then <u>pry it out finish</u> from the outside.</p>



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<p>BEFORE SHEATHING TYPE</p> <p>If it's the "before sheathing" type, or any one of the metal types with a flange (lip that extends from sides of window), you have to remove all shingles around the window before pulling it out. The big idea is to remove these shingles without breaking them or adjacent ones. Take out one shingle to the side on the bottom. Depress the shingle, clip off the nailheads, cut the caulk, and slip the shingle out. Proceed like this all around the window.</p> <p>It's likely that you'll break some of these shingles when taking them out. But you should at least try to get them out unbroken, so you can reuse them. When shingles are out pry the window out from the outside (Fig. G).</p> <p>REMOVING CEDAR SHINGLES</p> <p>If you have cedar shingles removal depends on the way they are laid. Some cedar shingles are face-nailed. If you have this situation see Fig. H for removal method. It involves pulling certain nails out and cutting off others to clear an area all the way around the window.</p> <p>The other way is used when they are nailed "five inches to the weather" and the nails don't show at all. This means that five (or nine) inches of each shingle is exposed to the weather. Here the parts that are exposed have no nails in them, but the overlapped portions of shingles do. To remove these see Fig. I.</p> <p>If you have aluminum siding it's not a good idea to replace a window yourself. It involves much cutting and is a job for a professional. Any windows that need replacing should be installed before the siding is installed.</p> <p>When removing clapboard you may just be able to take out short boards that flank the window; for example, where windows are close together .</p>	<p>BEFORE SHEATHING TYPE</p> <p>If it's <u>you have</u> the "before sheathing" type <u>of window</u>, or any <u>one of the</u> metal types with a <u>flange</u> (lip that extends from sides of window), you have to remove all <u>the</u> shingles around the window <u>must be removed</u> before <u>pulling removing</u> it <u>out</u>. The big idea is <u>Try</u> to remove these shingles without breaking them or adjacent ones. Take out one shingle to the side on the bottom. Depress the shingle, clip off the nailheads, cut the caulk, and slip the shingle out. Proceed like this all around the window.</p> <p>It's likely that you'll <u>probably</u> break some of these shingles when taking them out. But you should at least try to <u>get them out unbroken preserve as many as possible</u>, so you can reuse them. When <u>the</u> shingles are <u>out removed</u>, pry the window out from the outside (Fig. G).</p> <p>REMOVING CEDAR SHINGLES</p> <p>If you have cedar shingles, removal depends on the way they are laid. Some cedar shingles are face-nailed. If you have this situation, see Fig. H for <u>the</u> removal method. It involves pulling certain nails out and cutting off others to clear an area all the way around the window.</p> <p>The other way is used when they <u>If the shingles</u> are nailed "five inches to the weather," and the nails don't show at all. <u>(This means that five (or nine) inches of each shingle is exposed to the weather.)</u> Here, the parts that are exposed have no nails in them, but the overlapped portions of shingles do. To remove these see Fig. I.</p> <p>If you have aluminum siding it's not a good idea to replace a window yourself. It involves <u>much a lot of</u> cutting and is a job for a professional. <u>Any Ideally</u>, windows that need replacing should be installed before the siding is installed.</p> <p>When removing clapboard you may <u>just</u> be able to take out <u>only</u> short boards that flank the window; for example, where windows are close together .</p>



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<p>Clapboard is either cedar or pine boards. It comes 3/4 inch thick on one side tapering to 0 inch on the other and in nominal 6 inch, 8 inch and 10 inch widths. However, regular 3/4 inch boards are sometimes used. When applied clapboard is face-nailed through the bottom edge; the same nails also secure the tops of courses below.</p> <p>To remove a portion of this siding you first remove nails. You can pry the boards out slightly to pull the nails out a bit, then pull the nails out all the way. If this doesn't work, use a hacksaw blade to sever nails. Or, finally, drive the nails through the board with a large nail set. Try to take the boards out intact. If they split, you'll have to get new boards to match.</p> <p>One other way to remove a window is simply to demolish it in place. But I don't recommend this because it makes too much of a mess, although it may be necessary if your house is brick.</p> <p>INSTALLATION</p> <p>I'm going to describe how to put a long, narrow window into a wide and short rough opening. I think this will cover everything for any installation eventuality .</p> <p>Let's assume that the window frame is covered by plaster on the inside. First, referring to Fig. J, measure the overall height of the new window exclusive of the trim – that is, from the bottom of the sill to the top of the jamb. Then add two inches to this. Then measure this amount down from the bottom of the header and draw a level line on the wall the width of the old window. Make a mark and use a level to get this line. Then use a keyhole saw and hammer to break out the plaster to the jack studs; also cut away the sheathing.</p>	<p>Clapboards is <u>are</u> either cedar or pine boards. It comes <u>They are</u> 3/4 inch thick on one side tapering to 0 inch on the other and in nominal 6-6-inch, 8-8-inch and 10-10-inch widths. However, regular 3/4 inch boards are sometimes used. When applied, clapboards is <u>are</u> face-nailed through the bottom edge; the same nails also secure the tops of <u>lower</u> courses <u>below</u>.</p> <p>To remove a portion of this siding <u>you</u>, first remove <u>the</u> nails. You can pry the boards out slightly, <u>pulling to pull</u> the nails out a bit. <u>Then push the board back, leaving the nail heads up so you can grasp them and then pull the nails them</u> out all the way. If this doesn't work, use a hacksaw blade to sever nails cut off the heads. Or, finally, drive the nails through the board with a large nail set <u>or punch</u>. Try to take the boards out intact. If they split, you'll have to get new <u>matching</u> boards to match.</p> <p>One other <u>Another</u> way to remove a window is simply to demolish it in place. But I don't recommend this because it this makes too much of a <u>big</u> mess, although it may be necessary if your house is brick.</p> <p>INSTALLATION</p> <p>I'm going to <u>This example</u> describes how to put a long, narrow window into a wide and short rough opening, <u>which will encompass specifics for other types of installations</u>. I think this will cover everything for any installation eventuality.</p> <ol style="list-style-type: none"> Let's aAssume that the window frame is covered by plaster on the inside. First, rReferring to Fig. J, measure the overall height of the new window exclusive of the trim – that is, from the bottom of the sill to the top of the jamb. Then aAdd two inches to this. Then mMeasure this amount down from the bottom of the header and draw a level line on the wall the width of the old window. <u>Make a mark and use a level to get this line.</u> Then uUse a keyhole saw and hammer to break out the plaster to the jack studs; also cut away the sheathing.



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<p>Now go outside and fill in the sheathing. You may or may not have boards or a “nailer” to nail the sheathing to. If you don’t have one see Fig. M. Cover the sheathing with tar paper (15-pound felt), a strip down each side. Wherever you have sheathing you put felt. Use large-head galvanized nails to secure the tar paper .</p>	<p>Now go outside and fill in the sheathing. You may or may not have boards or a “nailer” to nail the sheathing to. If you don’t have one, see Fig. M. Cover the sheathing with tar paper (15-pound felt), a strip down each side. Wherever you have sheathing you put felt. Use large-head galvanized <u>roofing</u> nails to secure the tar paper .</p>
<p>PUTTING WINDOW IN</p>	<p>PUTTING <u>THE</u> WINDOW IN</p>
<p>Now you’re ready to put the window in (Fig. N). The window goes in from the outside. Simply lift it up and slip it in place. For this you need a helper on the inside. When in, check with your eye to see that you have a quarter inch space on both sides (that extra half inch of measurement). Then put the level on the back edge of the sill.</p>	<p>Now you’re ready to put the set the window in <u>place</u> (Fig. N). <u>For this you need a helper on the inside.</u> The window goes in is positioned from the outside.— <u>Simply lift it up and slip it in place. For this you need a helper on the inside. When in, c</u>Check with your eye to see that you have <u>a quarter 1/4</u> inch space on both sides (that extra <u>half 1/2</u> inch of measurement).</p>
<p>The sill slopes so you want to make certain that the level is parallel to the bottom of the window. You may need someone to help you level the window.</p>	<p><u>You may need someone to help you level the window. The sill slopes so you want to make certain that the level is parallel to the bottom of the window. Then</u></p>
<p>Look at the level. One side will likely be higher than the other. On the high side drive one tenpenny common nail through the casing 4 to 5 inches up from the sill and through the sheathing and into the jack studs. Don’t drive it in all the way – leave enough of the head out so you can remove the nail if necessary.</p>	<p><u>Put the level on the back edge of the sill. The sill slopes so you want to make certain that the level is parallel to the bottom of the window. You may need someone to help you level the window.</u></p>
<p>Put the level back on the sill, level the sill and drive a nail 4 to 5 inches up from sill through the casing on the other side. After this nail is in check again for plumb and level. If it is plumb and level drive the nails home. If it is not remove the nails and try again. When O.K., drive more nails, equally spaced as indicated in Fig. N. But before doing this be certain the sash works easily. It may be necessary to leave the window a little out-of-square to make the sash run smoothly or fit properly.</p>	<p>Look at the level. One side will likely be higher than the other. On the high side, drive one <u>tenpenny 10D common</u> nail through the casing 4 to 5 inches <u>up from above</u> the sill, <u>and</u> through the sheathing and into the jack studs. Don’t drive it <u>in all the way flush</u> – leave <u>enough of</u> the head out so you can remove the nail if necessary .</p>
	<p>Put the level back on the sill, level the sill and drive a nail 4 to 5 inches up from sill through the casing on the other side. <u>After this nail is in Then</u> check again for plumb and level. If it is <u>plumb and level aligned,</u> drive the nails <u>home flush. If it is not Otherwise,</u> remove the nails and try again. <u>Test to be certain the sash works easily. It may be necessary to leave the window a little out-of-square to make the sash run smoothly or fit properly.</u> When O.K., <u>drive secure the window with</u> more nails, equally spaced as indicated in Fig. N. <u>But before doing this be certain the sash works easily. It may be necessary to leave the window a little out of square to make the sash run smoothly or fit properly.</u></p>

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<p>The better the quality of the window the less probable it will be that the window is out-of-square.</p> <p>In some cases the window jamb will be too narrow to come flush with the inside wall surface. In this case, nail large enough strips of wood to the inside edge of the jamb to make up the difference. If the jamb projects beyond the wall, shim out behind the casing. For the complete story on trimming the inside of a window, see Chapter 14.</p>	<p>The better the quality of the window the less probable it will be that the window is out-of-square.</p> <p>In some cases the window jamb will be too narrow to come flush with the inside wall surface. In this case, nail large enough <u>furring</u> strips of wood to the inside edge of the jamb to make up the difference <u>correct</u>. If the jamb projects beyond the wall, shim out behind the casing. For the complete story on trimming the inside of a window, see Chapter 14.</p>

Colophon
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