

# INTEGRITY ALL ULTREX DOUBLE HUNG

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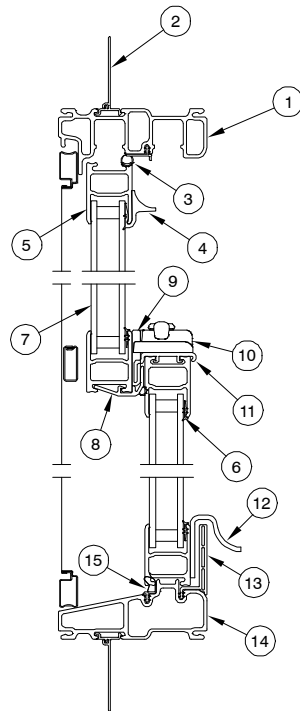
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### **ATTENTION:**

- Specification and technical data are subject to change without notice.
- Numbers listed in parentheses ( ) are metric equivalents in millimeters rounded to the nearest whole number.

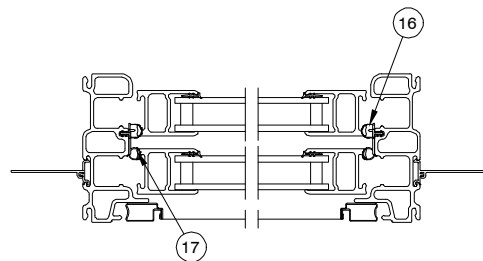
PRODUCED	UNIT TYPE	FEATURES OR CHANGES	DISCONTINUED
March 2007	Double Hung	Unit features 3/4" double strength insulating Low E II w/argon. GBGs are available in White, Pebble Gray and Bronze. 2" jambs with a 4 9/16" and 6 9/16" extensions. Available with factory applied sheet rock return and field applied J-channel. White interior only with white hardware. Pebble Gray, Stone White and Bronze Ultrex exteriors.	Present
November 2007	Double Hung	Evergreen exteriors added. V1143 and V1152 frame weather strip changed from gray to beige. V1472 leveling block changed to V1562.	Present
March 2008	Double Hung	Cashmere exteriors introduced March 17, 2008.	Present
October 2008	Double Hung	CN28 introduced.	Present
March 2009	Double Hung	Ebony exteriors introduced.	Present
May 2009	Double Hung	LoE <sup>3</sup> 366™ glass option introduced.	Present
February 2010	Double Hung	Introduced new hardware finishes: Oil Rubbed Bronze (ORBZ), Satin Nickel PVD (SN) and Brass PVD (BS)	Present
August 2011	Double Hung	Sill weather strip V1992 replaced with V2099.	Present
April 2012 Option	Double Hung	4/30/12 IFDH and IFSH are now available with the unequal sash option.	Present
October 2012	Double Hung	October 29, 2012: Introduced All Ultrex Expanded Sizes and Mulls.	Present
August 2013	Double Hung	August 26, 2013: Added new cam lock and keeper and forced entry clip.	Present
October 2013	Double Hung	October 28, 2013: Discontinued the optional vent stop option for limiting sash travel and venting. Added Window Opening Control Device (WOCD); offers sash limits and venting option. Bottom sash tilt latch was slightly modified and works on all units manufactured from 9-2006 to present.	Present

## DOUBLE HUNG OPERATOR



1. Frame
2. Nailing Fin
3. Head Jamb Weather Strip
4. Sash Pull
5. Sash
6. Vinyl Glazing Boot
7. Insulated Glass
8. Sash Cover – Top
9. Sash Keeper
10. Sash Lock
11. Sash Cover – Bottom
12. Sash Lift
13. Sill Liner
14. Sill
15. Sill Weather Strip
16. Bottom Jamb Weather Strip
17. Top Jamb Weather Strip

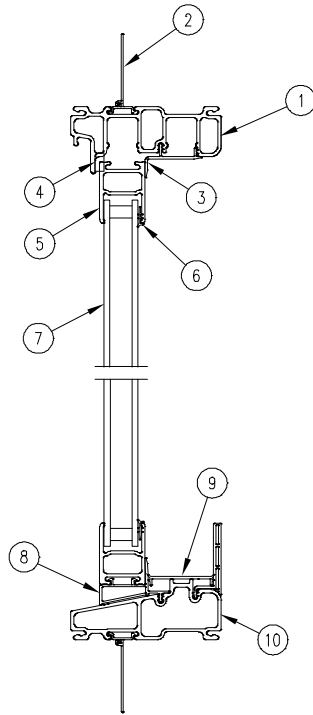
**Head Jamb  
and Sill Detail**



**Jamb Detail**

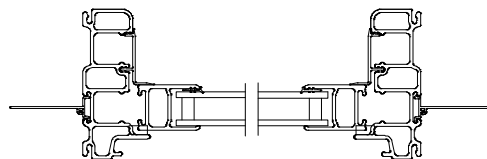
NOTE: Not to scale; specifications subject to change without notice.

**STATIONARY – PICTURE**



1. Frame
2. Nailing Fin
3. Head Jamb/Jamb Stop
4. Foam Tape
5. Sash
6. Vinyl Glazing Boot
7. Insulated Glass
8. Leveling Block
9. Sill Filler
10. Sill

**Head Jamb  
and Sill Detail**



**Jamb Detail**

NOTE: Not to scale; specifications subject to change without notice.

When ordering replacement Integrity Double Hung hardware specify:

1. Type of unit;
2. Part number;
3. Description

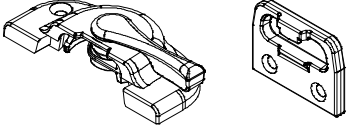
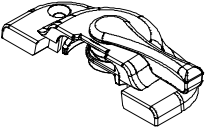
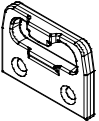
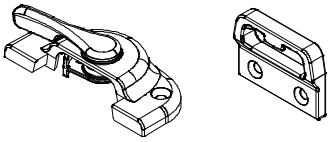
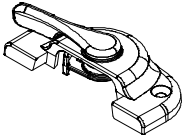
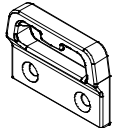

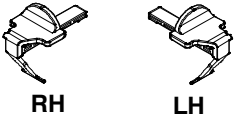
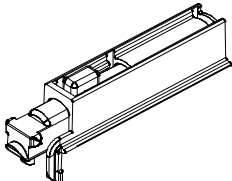
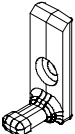
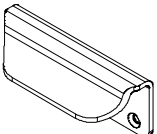
ILLUSTRATION NOT TO SCALE	DESCRIPTION	OPER./COLOR	PART NO.
	<p><b>Sash Lock and Keeper</b> Usage: August 26, 2013 – present includes: 1 – Lock 1 – Keeper 4 – #6 x 7/8" Phillips flat head screws</p>	<p>SW RH AF RH BS RH SN RH ORBZ RH</p>	<p>11800921 11800923 11800925 11800927 11800929</p>
	<p><b>Sash Lock</b> Usage: August 26, 2013 – present includes fasteners: 2 – #6 x 7/8" Phillips flat head screws</p>	<p>SW RH AF RH BS RH SN RH ORBZ RH</p>	<p>10824021 10824023 10824025 10824027 10824029</p>
	<p><b>Sash Keeper</b> Usage: August 26, 2013 – present includes fasteners: 2 – #6 x 7/8" Phillips flat head screws</p>	<p>SW AF BS SN ORBZ</p>	<p>10819040 10819080 10819050 10819060 10819070</p>
	<p><b>Sash Cam Lock and Keeper</b> Usage: November 2006 – August 26, 2013. includes: 1 – Cam lock 1 – Keeper 4 – #6 x 7/8" Phillips flat head screws</p>	<p>SW AF BS SN ORBZ</p>	<p>11850117 11850144 11850146 11850148 11850151</p>
	<p><b>Sash Cam Lock</b> Usage: November 2006 – August 26, 2013. includes: 1 – Cam lock 2 – #6 x 7/8" Phillips flat head screws</p>	<p>SW AF BS SN ORBZ</p>	<p>10814031 10814033 10814035 10814037 10814039</p>
	<p><b>Sash Keeper</b> Usage: November 2006 – August 26, 2013. includes: 1 – Keeper 2 – #6 x 7/8" Phillips flat head screws</p>	<p>SW AF BS SN ORBZ</p>	<p>10817050 10817065 10817066 10817067 10817068</p>
 <p data-bbox="250 1654 467 1682">NOTE: 1 kit per lock</p>	<p><b>Non-operable Cam Lock Kit</b> includes: 1 – Sash cam lock limiter 1 – #6 x 1 1/4" Torx pan head screws 1 – Warning label 1 – Instruction</p>	<p>SW AF BS SN ORBZ</p>	<p>11880480 11880481 11880482 11880483 11880484</p>

ILLUSTRATION NOT TO SCALE	DESCRIPTION	OPER./COLOR	PART NO.
 <p style="text-align: center;">RH      LH</p>	<p><b>Bottom Sash Tilt Latch</b> <i>Includes:</i> 1-Tilt latch</p>	<p>LH/WH RH/WH</p>	<p>11860077 11860076</p>
	<p><b>Top Sash Tilt Latch</b> <i>Includes:</i> 1-Tilt latch</p>	<p>WH</p>	<p>11860295</p>
	<p><b>Tilt Pin</b> <i>Includes:</i> 1 - Tilt pin 1 - #8 x 5/8" Phillips pan head screw</p>		<p>10815279</p>
	<p><b>Sash Lift</b> <i>Includes:</i> 1 - Lift 2 - #6 x 7/8" Phillips self-drilling flat head screws</p>	<p>WH</p>	<p>11867807</p>

When ordering replacement Integrity Double Hung parts specify:

1. Type of unit;
2. Part number;
3. Description.

ILLUSTRATION NOT TO SCALE	DESCRIPTION	OPER./COLOR	PART NO.
	<b>Check Rail Dust Block</b> 1/4" x 1 3/8" adhesive fabric backed	GY	1050049
	<b>Balance Tube Clutch</b>	Non-handed BG	105530
	<b>Top Sash Stop – Equal Sash Units</b> V1172	WH	161900
	<b>Top Sash Stop – Cottage Units</b> V1172	WH 84" (2134)	161894
	<b>Bottom Sash Stop</b> V2204 <i>Usage: August 26, 2013 to present</i>	WH	11802200
	<b>Bottom Sash Stop</b> <i>Usage: 4/2006 to August 26, 2013</i>	WH	11860800
	<b>Reverse Cottage Bottom Sash Stop</b> V2204  Lineal	WH 144" (3658)	11802204
	<b>Forced Entry Clip</b> <i>Usage: August 26, 2013 – present.</i>		11860289
	<b>Operating Sash Peg</b>	WH	11860294
	<b>Sash Limiter Kit</b> <i>includes:</i> 4 – Limiter 8 – #8-18 x 5/8" PH, FH, SS 2 – #6 x 1/2" Torx head screws 1 – Warning label 1 – Instruction	WH	11880180
	<b>Balance Tube Foam Plug</b> <i>Usage: August 26, 2013 to present</i> 3/4" x 3/4" x 1/2"	WH	10500104

When ordering replacement Integrity Double Hung weather strip and vinyl parts specify:

1. Description;
2. Standard or custom size;
3. Profile number;
4. Equal sash, cottage, or reverse cottage unit;
5. Part number;
6. Length of part.
7. Quantity.

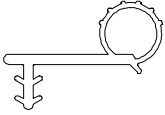
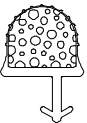
ILLUSTRATION <i>NOT TO SCALE</i>	DESCRIPTION	LENGTH	PART NO.
	<b>Frame Weather Strip – Head Jamb</b> V1573	<p style="text-align: center;"><b>SW</b></p> CN16 15 1/2" (394) CN20 21 1/2" (546) CN26 27 1/2" (698) CN28 29 1/2" (749) CN30 33 1/2" (851) CN36 39 1/2" (1003) CN40 45 1/2" (1156)	15900816 15900820 15900826 15900828 15900830 15900836 15900840
	<b>Frame Weather Strip – Top Jamb</b> V1573	<p style="text-align: center;"><b>Equal Sash</b></p> <p style="text-align: center;"><b>SW</b></p> CN20 11 5/32" (283) CN26 14 5/32" (360) CN30 17 5/32" (436) CN36 20 5/32" (512) CN40 23 5/32" (588) CN46 26 5/32" (664) CN50 29 5/32" (741) CN56 32 5/32" (817) CN60 35 5/32" (893) CN66 38 5/32" (969) Lineal 96" (2438)	15900511 15900514 15900517 15900520 15900523 15900526 15900529 15900532 15900535 15900538 15900596
	<b>Frame Weather Strip – Bottom Jamb</b> V1143  <i>Usage: BG used 11/2007 – present</i>	<p style="text-align: center;"><b>Equal Sash</b></p> <p style="text-align: center;"><b>BG</b></p> CN20 10 7/16" (265) CN26 13 7/16" (341) CN30 16 7/16" (418) CN36 19 7/16" (494) CN40 22 7/16" (570) CN46 25 7/16" (646) CN50 28 7/16" (722) CN56 31 7/16" (799) CN60 34 7/16" (875) CN66 37 7/16" (951) Lineal 96" (2438)	15906610 15906613 15906616 15906619 15906622 15906625 15906628 15906631 15906634 15906637 15906699



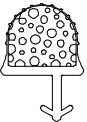



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 <p>Usage: GY (Obsolete) used 3/2007-11/2007</p>	<p><b>Frame Weather Strip – Bottom Jamb</b> V1143 <i>NOTE: GY used 3/2007-11/2007</i></p> <table data-bbox="885 468 1047 787"> <tr><td>CN20</td></tr> <tr><td>CN26</td></tr> <tr><td>CN30</td></tr> <tr><td>CN36</td></tr> <tr><td>CN40</td></tr> <tr><td>CN46</td></tr> <tr><td>CN50</td></tr> <tr><td>CN56</td></tr> <tr><td>CN60</td></tr> <tr><td>CN66/CN56C</td></tr> <tr><td>Lineal</td></tr> </table>	CN20	CN26	CN30	CN36	CN40	CN46	CN50	CN56	CN60	CN66/CN56C	Lineal	<p><b>GY</b></p> <table data-bbox="1112 468 1291 787"> <tr><td>10 7/16" (265)</td></tr> <tr><td>13 7/16" (341)</td></tr> <tr><td>16 7/16" (418)</td></tr> <tr><td>19 7/16" (494)</td></tr> <tr><td>22 7/16" (570)</td></tr> <tr><td>25 7/16" (646)</td></tr> <tr><td>28 7/16" (722)</td></tr> <tr><td>31 7/16" (799)</td></tr> <tr><td>34 7/16" (875)</td></tr> <tr><td>37 7/16" (951)</td></tr> <tr><td>96" (2438)</td></tr> </table>	10 7/16" (265)	13 7/16" (341)	16 7/16" (418)	19 7/16" (494)	22 7/16" (570)	25 7/16" (646)	28 7/16" (722)	31 7/16" (799)	34 7/16" (875)	37 7/16" (951)	96" (2438)	<table data-bbox="1360 468 1482 787"> <tr><td>15900610</td></tr> <tr><td>15900613</td></tr> <tr><td>15900616</td></tr> <tr><td>15900619</td></tr> <tr><td>15900622</td></tr> <tr><td>15900625</td></tr> <tr><td>15900628</td></tr> <tr><td>15900631</td></tr> <tr><td>15900634</td></tr> <tr><td>15900637</td></tr> <tr><td>15900699</td></tr> </table>	15900610	15900613	15900616	15900619	15900622	15900625	15900628	15900631	15900634	15900637	15900699												
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	<p><b>Frame Weather Strip – Sill</b> V1452 <i>Usage: BG used 11/2007 – 02/22/2010</i></p> <table data-bbox="974 1438 1047 1680"> <tr><td>CN16</td></tr> <tr><td>CN20</td></tr> <tr><td>CN26</td></tr> <tr><td>CN28</td></tr> <tr><td>CN30</td></tr> <tr><td>CN36</td></tr> <tr><td>CN40</td></tr> <tr><td>Lineal</td></tr> </table> <p><b>Frame Weather Strip – Sill</b> V1452 <i>NOTE: GY used 3/2007-11/2007</i></p> <table data-bbox="974 1795 1047 2005"> <tr><td>CN16</td></tr> <tr><td>CN20</td></tr> <tr><td>CN26</td></tr> <tr><td>CN30</td></tr> <tr><td>CN36</td></tr> <tr><td>CN40</td></tr> <tr><td>Lineal</td></tr> </table>	CN16	CN20	CN26	CN28	CN30	CN36	CN40	Lineal	CN16	CN20	CN26	CN30	CN36	CN40	Lineal	<p><b>BG</b></p> <table data-bbox="1112 1438 1291 1680"> <tr><td>15 1/4" (387)</td></tr> <tr><td>21 1/4" (540)</td></tr> <tr><td>27 1/4" (692)</td></tr> <tr><td>29 1/4" (743)</td></tr> <tr><td>33 1/4" (845)</td></tr> <tr><td>39 1/4" (997)</td></tr> <tr><td>45 1/4" (1149)</td></tr> <tr><td>96" (2438)</td></tr> </table> <p><b>GY</b></p> <table data-bbox="1112 1795 1291 2005"> <tr><td>15 1/4" (387)</td></tr> <tr><td>21 1/4" (540)</td></tr> <tr><td>27 1/4" (692)</td></tr> <tr><td>33 1/4" (845)</td></tr> <tr><td>39 1/4" (997)</td></tr> <tr><td>45 1/4" (1149)</td></tr> <tr><td>96" (2438)</td></tr> </table>	15 1/4" (387)	21 1/4" (540)	27 1/4" (692)	29 1/4" (743)	33 1/4" (845)	39 1/4" (997)	45 1/4" (1149)	96" (2438)	15 1/4" (387)	21 1/4" (540)	27 1/4" (692)	33 1/4" (845)	39 1/4" (997)	45 1/4" (1149)	96" (2438)	<table data-bbox="1360 1438 1482 1680"> <tr><td>17333318</td></tr> <tr><td>17333324</td></tr> <tr><td>17333330</td></tr> <tr><td>17333333</td></tr> <tr><td>17333336</td></tr> <tr><td>17333342</td></tr> <tr><td>17333348</td></tr> <tr><td>17333396</td></tr> </table> <table data-bbox="1360 1795 1482 2005"> <tr><td>17000318</td></tr> <tr><td>17000324</td></tr> <tr><td>17000330</td></tr> <tr><td>17000336</td></tr> <tr><td>17000342</td></tr> <tr><td>17000348</td></tr> <tr><td>17000396</td></tr> </table>	17333318	17333324	17333330	17333333	17333336	17333342	17333348	17333396	17000318	17000324	17000330	17000336	17000342	17000348	17000396
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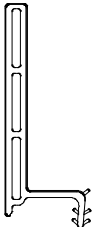
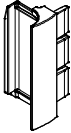
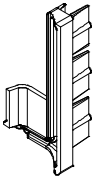
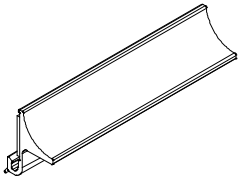
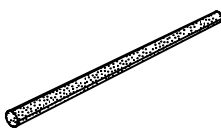
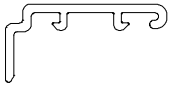
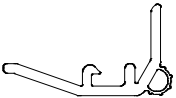
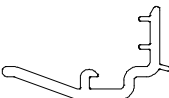
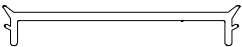
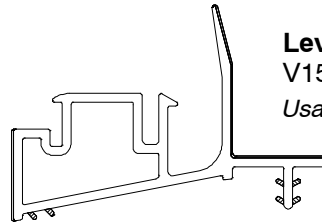
ILLUSTRATION NOT TO SCALE	DESCRIPTION	LENGTH	PART NO.																																	
	<p><b>Sill Liner</b> V1552</p> <p><i>NOTE: For units produced before 9/24/07 replace sill liner seal as well.</i></p> <p><i>Usage: 9/24/07 – present</i></p> <table data-bbox="974 483 1323 787"> <tr> <td></td> <td style="text-align: center;"><b>SW</b></td> <td></td> </tr> <tr> <td>CN16</td> <td>15 15/64" (387)</td> <td>31511216</td> </tr> <tr> <td>CN20</td> <td>21 15/64" (539)</td> <td>31511220</td> </tr> <tr> <td>CN26</td> <td>27 15/64" (692)</td> <td>31511226</td> </tr> <tr> <td>CN28</td> <td>29 15/64" (743)</td> <td>31511228</td> </tr> <tr> <td>CN30</td> <td>33 15/64" (844)</td> <td>31511230</td> </tr> <tr> <td>CN36</td> <td>39 15/64" (997)</td> <td>31511236</td> </tr> <tr> <td>CN40</td> <td>45 15/64" (1149)</td> <td>31511240</td> </tr> <tr> <td>CN50</td> <td>57 15/64" (1454)</td> <td>31511250</td> </tr> <tr> <td>CN60</td> <td>69 15/64" (1759)</td> <td>31511260</td> </tr> <tr> <td>Lineal</td> <td>96" (2438)</td> <td>31511296</td> </tr> </table>		<b>SW</b>		CN16	15 15/64" (387)	31511216	CN20	21 15/64" (539)	31511220	CN26	27 15/64" (692)	31511226	CN28	29 15/64" (743)	31511228	CN30	33 15/64" (844)	31511230	CN36	39 15/64" (997)	31511236	CN40	45 15/64" (1149)	31511240	CN50	57 15/64" (1454)	31511250	CN60	69 15/64" (1759)	31511260	Lineal	96" (2438)	31511296		
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Lineal	96" (2438)	31511296																																		
 <p><i>NOTE: RH Shown</i></p>	<p><b>Sill Liner Seal</b></p> <p><i>Usage: 9/24/07 – present</i></p>	<p>LH RH</p>	<p>10500291 10500290</p>																																	
 <p><i>NOTE: RH Shown</i></p>	<p><b>Sill Liner Seal</b></p> <p><i>NOTE: No longer available. Replace with current version. Will have to replace sill liner and/or sill filler.</i></p> <p><i>Usage: 4/2006–9/2007</i></p>	<p>LH RH</p>	<p>No Longer Available</p>																																	
	<p><b>Sash Pull</b></p> <p><i>Includes: 1 – Adhesive back tape</i></p> <table data-bbox="974 1344 1323 1564"> <tr> <td></td> <td style="text-align: center;"><b>SW</b></td> <td></td> </tr> <tr> <td>CN16</td> <td>12 5/8" (321)</td> <td>15900416</td> </tr> <tr> <td>CN20</td> <td>18 5/8" (473)</td> <td>15900420</td> </tr> <tr> <td>CN26</td> <td>24 5/8" (625)</td> <td>15900426</td> </tr> <tr> <td>CN28</td> <td>26 5/8" (676)</td> <td>15900428</td> </tr> <tr> <td>CN30</td> <td>30 5/8" (778)</td> <td>15900430</td> </tr> <tr> <td>CN36</td> <td>36 5/8" (930)</td> <td>15900436</td> </tr> <tr> <td>CN40</td> <td>42 5/8" (1083)</td> <td>15900440</td> </tr> </table>		<b>SW</b>		CN16	12 5/8" (321)	15900416	CN20	18 5/8" (473)	15900420	CN26	24 5/8" (625)	15900426	CN28	26 5/8" (676)	15900428	CN30	30 5/8" (778)	15900430	CN36	36 5/8" (930)	15900436	CN40	42 5/8" (1083)	15900440											
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CN40	42 5/8" (1083)	15900440																																		
	<p><b>Foam Rope</b> V1244 – 7/32" (6) diameter</p>	<p>50' (15240)</p>	<p>15910050</p>																																	

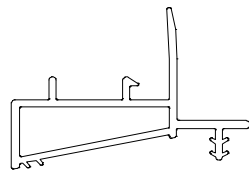
ILLUSTRATION NOT TO SCALE	DESCRIPTION	LENGTH	PART NO.
	<b>Sash Cover – Bottom Single Lock</b> V1509  CN16 CN20 CN26	<b>SW</b> 15 1/4" (387) 21 1/4" (540) 27 1/4" (692)	17043718 17043724 17043730
	<b>Sash Cover – Bottom Double Lock</b> V1509  CN28 CN30 CN36 CN40	<b>SW</b> 29 1/4" (743) 33 1/4" (845) 39 1/4" (997) 45 1/4" (1149)	17043833 17043836 17043842 17043848
	<b>Sash Cover – Top</b> V1749  CN16 CN20 CN26 CN28 CN30 CN36 CN40	<b>SW</b> 15 1/4" (387) 21 1/4" (540) 27 1/4" (692) 29 1/4" (743) 33 1/4" (845) 39 1/4" (997) 45 1/4" (1149)	17005916 17005920 17005926 17005928 17005930 17005936 17005940
	<b>Sash Cover – Top</b> V1510  <i>Usage: March 2007 to July 2008.</i>	Discontinued – Replace with V1749	
	<b>Sill Filler – Picture/Transom</b> V1557  CN16 CN20 CN26 CN28 CN30 CN36 CN40 CN50 CN60 Lineal	<b>SW</b> 15 7/16" (392) 21 7/16" (545) 27 7/16" (697) 29 7/16" (748) 33 7/16" (849) 39 7/16" (1002) 45 7/16" (1154) 57 7/16" (1459) 69 7/16" (1764) 144" (3658)	10007216 10007220 10007226 10007228 10007230 10007236 10007240 10007250 10007260 10007299

**ILLUSTRATION AND DESCRIPTION**  
*ILLUSTRATION NOT TO SCALE*



**Leveling Block**  
V1562  
*Usage: 10/2007 to present.*

Call Number	Length	Color / Part No.					
		SW/SW	PB/SW	BZ/SW	EG/SW	CS/SW	EB/SW
16	15 3/16" (386)	11004116	11005116	11006116	11003116	11007116	11008116
20	21 3/16" (538)	11004120	11005120	11006120	11003120	11007120	11008120
26	27 3/16" (691)	11004126	11005126	11006126	11003126	11007126	11008126
28	29 3/16" (742)	11004128	11005128	11006128	11003128	11007128	11008128
30	33 3/16" (843)	11004130	11005130	11006130	11003130	11007130	11008130
36	39 3/16" (985)	11004136	11005136	11006136	11003136	11007136	11008136
40	45 3/16" (1148)	11004140	11005140	11006140	11003140	11007140	11008140
50	57 3/16" (1453)	11004150	11005150	11006150	11003150	11007150	11008150
Lineal	96" (2438)	11004199	11005199	11006199	11003199	11007199	11008199



**Leveling Block**  
V1472  
*Usage: 4/2006 – 10/2007*

Call Number	Length	Color / Part No.		
		SW	PB	BZ
CN16	15 3/16" (386)	11007216	11007217	11007316
CN20	21 3/16" (538)	11007220	11007221	11007320
CN26	27 3/16" (691)	11007226	11007227	11007326
CN30	33 3/16" (843)	11007230	11007231	11007330
CN36	39 3/16" (985)	11007236	11007237	11007336
CN40	45 3/16" (1148)	11007240	11007241	11007340
CN50	57 3/16" (1453)	11007250	11007251	11007350
Lineal	96" (2438)	11007296	11007297	11007396

Sash ordering information provide:

1. Which sash is being replaced – top and bottom
2. Equal Sash, Cottage, or Reverse Cottage Units
3. Size – provide the corresponding call number, rough opening, frame size, or outside measurement
4. Glazing
5. Color – Hardware option and original order number if available  
 Whether or not the original sash was made before or after 3/26/07.
6. If unit has an opening control device, state this on the order.

Screen ordering information provide:

1. Size – provide the corresponding call number, rough opening, frame size, or outside measurement
2. Color
3. Half or full screen
4. Equal Sash, Cottage, or Reverse Cottage units and original order number if available

**NOTE:** Use the sash, frame and DLO charts to help determine sash and screen sizes.  
 Original order number can be found etched into corner of glass or on label adhered to side of sash frame.

**NOTE:** OM of screen includes corner keys.

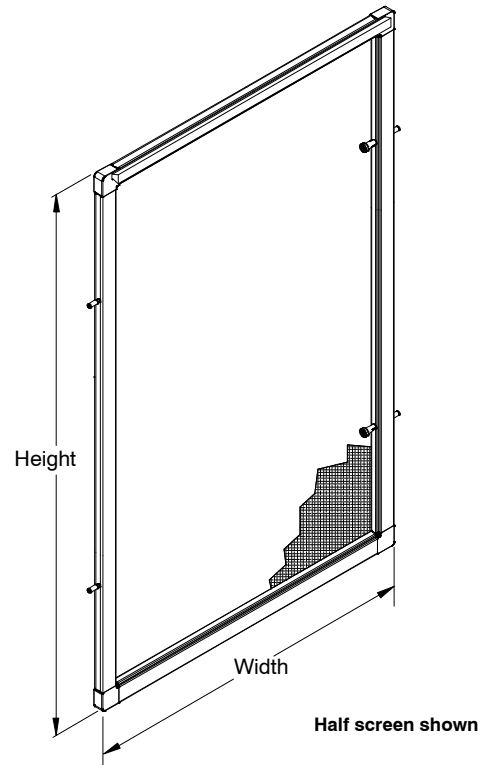
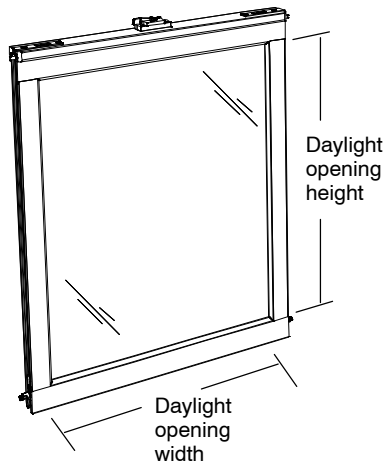
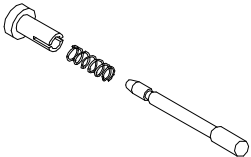


ILLUSTRATION NOT TO SCALE	DESCRIPTION	OPER./ COLOR	PART NO.
	<p><b>Plunger and Spring Assembly</b>                      M060                      Includes:                      1 - Plunger bolt                      1 - Plunger bolt cap                      1 - Plunger bolt spring</p>	<p>Clear Cap                      Off White Bolt</p>	<p>11900896</p>

### EQUAL SASH UNITS

Use this chart to determine sizes for replacement parts, sash and screen.

- Daylight Opening (DLO) is a measurement of the visible glass.
- Outside measurement = OM
- Sizes for Double Hung manufactured 3/26/2007 to present.

OPERATOR SASH - EQUAL SASH UNITS					
WIDTH					
Unit CN	Frame OM	Sash OM	1/2 Screen OM	Full Screen OM	DLO
16	17 1/2" (445)	15 1/4" (387)	15 23/32" (401)	15 23/32" (401)	12 9/16" (319)
20	23 1/2" (597)	21 1/4" (540)	21 23/32" (553)	21 23/32" (553)	18 9/16" (471)
26	29 1/2" (749)	27 1/4" (692)	27 23/32" (629)	27 23/32" (629)	24 9/16" (624)
28	31 1/2" (800)	29 1/4" (743)	29 23/32" (736)	29 23/32" (736)	26 9/16" (675)
30	35 1/2" (902)	33 1/4" (845)	33 23/32" (706)	33 23/32" (706)	30 9/16" (776)
36	41 1/2" (1054)	39 1/4" (997)	39 23/32" (1010)	39 23/32" (1010)	36 9/16" (929)
40	47 1/2" (1207)	45 1/4" (1149)	45 23/32" (1163)	45 23/32" (1163)	42 9/16" (1081)
HEIGHT					
Unit CN	Frame OM	Sash OM	1/2 Screen OM	Full Screen OM	DLO
20	23 1/2" (597)	11" (279)	11 1/8" (283)	21 15/16" (557)	8 5/16" (211)
26	29 1/2" (749)	14" (356)	14 1/8" (359)	27 15/16" (710)	11 5/16" (287)
30	35 1/2" (851)	17" (432)	17 1/8" (435)	33 15/16" (862)	14 5/16" (364)
36	41 1/2" (1054)	20" (508)	20 1/8" (511)	39 15/16" (1014)	17 5/16" (440)
40	47 1/2" (1207)	23" (584)	23 1/8" (587)	45 15/16" (1167)	20 5/16" (516)
46	53 1/2" (1359)	26" (660)	26 1/8" (664)	51 15/16" (1319)	23 5/16" (592)
50	59 1/2" (1511)	29" (737)	29 1/8" (740)	57 15/16" (1472)	26 5/16" (668)
56	65 1/2" (1664)	32" (813)	32 1/8" (816)	63 15/16" (1624)	29 5/16" (745)
60	71 1/2" (1816)	35" (889)	35 1/8" (892)	69 15/16" (1776)	32 5/16" (821)
66	77 1/2" (1969)	38" (965)	38 1/8" (994)	75 15/16" (1929)	35 5/16" (897)

PICTURE/TRANSOM SASH			
WIDTH			
Unit CN	Frame OM	Sash OM	DLO
16	17 1/2" (445)	15 1/4" (387)	12 9/16" (319)
20	23 1/2" (597)	21 1/4" (540)	18 9/16" (471)
26	29 1/2" (749)	27 1/4" (692)	24 9/16" (624)
28	31 1/2" (800)	29 1/4" (743)	26 9/16" (675)
30	35 1/2" (902)	33 1/4" (845)	30 9/16" (776)
36	41 1/2" (1054)	39 1/4" (997)	36 9/16" (929)
40	47 1/2" (1207)	45 1/4" (1149)	42 9/16" (1081)
50	59 1/2" (1511)	57 1/4" (1454)	54 9/16" (1386)
60	71 1/2" (1816)	69 1/4" (1759)	66 9/16" (1691)
HEIGHT			
Unit CN	Frame OM	Sash OM	DLO
10	11 1/2" (292)	9 1/4" (235)	6 9/16" (167)
16	17 1/2" (445)	15 1/4" (387)	12 9/16" (319)
20	23 1/2" (597)	21 1/4" (540)	18 9/16" (471)
26	29 1/2" (749)	27 1/4" (692)	24 9/16" (624)
30	35 1/2" (902)	33 1/4" (845)	30 9/16" (776)
36	41 1/2" (1054)	39 1/4" (997)	36 9/16" (929)
40	47 1/2" (1207)	45 1/4" (1149)	42 9/16" (1081)
46	53 1/2" (1359)	51 1/4" (1302)	48 9/16" (1233)
50	59 1/2" (1511)	57 1/4" (1454)	54 9/16" (1386)
56	65 1/2" (1664)	63 1/4" (1607)	60 9/16" (1538)
60	71 1/2" (1816)	69 1/4" (1759)	66 9/16" (1961)
66	77 1/2" (1969)	75 1/4" (1911)	72 9/16" (1843)

## BALANCE TUBES

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Top or bottom sash.
4. Sash ratio; (equal, cottage, or reverse cottage)  
(STC/OITC glass upgrade or not STC/OITC glass upgrade)

**NOTE:** Standard or special size units can reference the same supplier Ref ID part number. Additional tube sizes may be found on the special size chart found in AU DH chapter.

**NOTE:** The chart below was updated February 10, 2012. Please reference this information when ordering all replacement tubes. The Supplier Reference ID may differ from your original tube marking.

TOP SASH (Mill)			TOP SASH (Mill)			BOTTOM SASH (WH)			BOTTOM SASH (WH)		
Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number
1620	10A	107010	3020	10C	107210	1620	10A	106010	3020	10B	106010
1626	12A	107012	3026	12C	107212	1626	13A	106013	3026	13B	106113
1630	14A	107014	3030	14C	107214	1630	16A	106016	3030	16C	106216
1636	18A	107018	3036	19C	107219	1636	19A	106019	3036	19C	106219
1640	20A	107020	3040	20D	107320	1640	22A	106022	3040	22B	106122
1646	24A	107024	3046	24C	107224	1646	25A	106025	3046	25B	106125
1650	26B	107126	3050	26D	107326	1650	28A	106028	3050	28C	106228
1656	30A	107030	3056	30D	107330	1656	31A	106031	3056	31C	106231
1660	32A	107032	3060	32D	107332	1660	34A	106034	3060	34C	106234
1666	36A	107036	3066	36D	107336	1666	37A	106037	3066	37C	106237
2020	10B	107110	3620	10C	107210	2020	10A	106010	3620	10B	106010
2026	12B	107112	3626	12C	107212	2026	13A	106013	3626	13C	106213
2030	14B	107114	3630	14D	107314	2030	16B	106116	3630	16C	106216
2036	18B	107118	3636	18D	107318	2036	19A	106019	3636	19C	106219
2040	20B	107120	3640	20E	107420	2040	22A	106022	3640	22C	106222
2046	24B	107124	3646	24D	107324	2046	25A	106025	3646	25C	106225
2050	26B	107126	3650	26E	107426	2050	28A	106028	3650	28C	106228
2056	30B	107130	3656	30E	107430	2056	31A	106031	3656	31D	106331
2060	32B	107132	3660	32E	107432	2060	34A	106034	3660	34D	106334
2066	36B	107136	3666	36F	107536	2066	37A	106037	3666	37D	106337
2620	10B	107110	4020	10D	107310	2620	10B	106110	4020	10C	106210
2626	12C	107212	4026	12D	107312	2626	13B	106113	4026	13C	106213
2630	14C	107214	4030	14D	107314	2630	16B	106116	4030	16D	106316
2636	18C	107218	4036	18E	107418	2636	19B	106119	4036	19D	106319
2640	20C	107220	4040	20E	107420	2640	22B	106122	4040	22D	106322
2646	24C	107224	4046	24F	107524	2646	25B	106125	4046	25E	106425
2650	26C	107226	4050	26F	107526	2650	29B	106129	4050	28D	106328
2656	30C	107230	4056	30F	107530	2656	31B	106131	4056	31E	106431
2660	32C	107232	4060	32G	107632	2660	34B	106134	4060	34E	106434
2666	36C	107236	4066	36H	107736	2666	37B	106137	4066	37F	106537
2820	10B	107110				2820	10B	106110			
2826	12C	107212				2826	13B	106113			
2830	14C	107214				2830	16C	106216			
2836	18C	107218				2836	19B	106119			
2840	20C	107220				2840	22B	106122			
2846	24C	107224				2846	25B	106125			
2850	26C	107226				2850	28B	106128			
2856	30C	107230				2856	31B	106131			
2860	32C	107232				2860	34B	106134			
2866	36C	107236				2866	37C	106237			

**BALANCE TUBES**

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Sash ratio; (equal, cottage, or reverse cottage)
4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

NOTE: STC/OITC glass is made of 3.1 & 4.7 glass – all other glass is made of 3.1 glass on both panes

NOTE: Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number. Additional tube sizes may be found on the Special Size Chart found on the appropriate page.

TOP SASH		
Unit CN	Supplier Ref ID	Part Number
1620	10A	107010
1626	11B	106111
1630	14B	107114
1636	17B	106117
1640	20B	107120
1646	23B	106123
1650	26B	107126
1656	29B	106129
1660	32B	107132
1666	35B	106135
2020	10B	107110
2026	11B	106111
2030	14C	107214
2036	17C	106217
2040	20C	107220
2046	23C	106223
2050	26C	107226
2056	29C	106229
2060	32C	107232
2066	35C	106235
2620	10B	107110
2626	11C	106211
2630	14C	107214
2636	17D	106317
2640	20D	107320
2646	23D	106323
2650	26D	107326
2656	29D	106329
2660	32D	107332
2666	35D	106335
2820	10C	107210
2826	11C	106211
2830	14C	107214
2836	17D	106317
2840	20D	107320
2846	23D	106323
2850	26D	107326
2856	29D	106329
2860	32E	107432
2866	35E	106435

TOP SASH		
Unit CN	Supplier Ref ID	Part Number
3020	10C	106210
3026	11C	106211
3030	14D	107314
3036	17E	106417
3040	20E	107420
3046	23E	106423
3050	26E	107426
3056	29E	106429
3060	32E	107432
3066	35F	106535
3620	10D	106310
3626	11D	106311
3630	14E	107414
3636	17F	106517
3640	20F	107520
3646	23F	106523
3650	26F	107526
3656	29G	106629
3660	32G	107632
3666	35I	106835
4020	10D	106310
4026	11E U/L	106411
4030	14F	106514
4036	17G	106617
4040	20G	106620
4046	23H	106723
4050	26H	106726
4056	29H	106729
4060	32J U/L*	106932
4066	35K U/L*	108035

BOTTOM SASH		
Unit CN	Supplier Ref ID	Part Number
1620	10A	106010
1626	13A	106013
1630	16A	106016
1636	19A	106019
1640	22A	106022
1646	25A	106025
1650	28A	106028
1656	31A	106031
1660	34A	106034
1666	37A	106037
2020	10B	106110
2026	13B	106113
2030	16B	106116
2036	19B	106119
2040	22B	106122
2046	25B	106125
2050	28B	106128
2056	31B	106131
2060	34B	106134
2066	37B	106137
2620	10B	106110
2626	13B	106113
2630	16C	106216
2636	19C	106219
2640	22B	106122
2646	25B	106125
2650	28C	106228
2656	31C	106231
2660	34C	106234
2666	37C	106237
2820	10B	106110
2826	13C	106213
2830	16C	106216
2836	19C	106219
2840	22C	106222
2846	25C	106225
2850	28C	106228
2856	31C	106231
2860	34C	106234
2866	37C	106237

BOTTOM SASH		
Unit CN	Supplier Ref ID	Part Number
3020	10B	106110
3026	13C	106213
3030	16C	106216
3036	19C	106219
3040	22C	106222
3046	25C	106225
3050	28D	106328
3056	31D	106331
3060	34D	106334
3066	37D	106337
3620	10C	106210
3626	13C	106213
3630	16D	106316
3636	19D	106319
3640	22D	106322
3646	25E	106425
3650	28E	106428
3656	31E	106431
3660	34F	106534
3666	37G	106637
4020	10D	106310
4026	13D	106313
4030	16E	106416
4036	19E	106419
4040	22E	106422
4046	25G	106625
4050	28F	106528
4056	31G	106631
4060	34H	106734
4066	37I	106837

\* U/L designates a limited travel balance tube



## COTTAGE UNITS

Use this chart to determine sizes for replacement parts, sash and screen.

- Daylight Opening (DLO) is a measurement of the visible glass.
- Outside measurement = OM
- Sizes for Double Hung manufactured 3/26/2007 to present.

OPERATOR SASH – COTTAGE UNITS					
WIDTH					
Unit CN	Frame OM	Sash OM	1/2 Screen OM	Full Screen OM	DLO
16	17 1/2" (445)	15 1/4" (387)	15 23/32" (401)	15 23/32" (401)	12 9/16" (319)
20	23 1/2" (597)	21 1/4" (540)	21 23/32" (553)	21 23/32" (553)	18 9/16" (471)
26	29 1/2" (749)	27 1/4" (692)	27 23/32" (629)	27 23/32" (629)	24 9/16" (624)
28	31 1/2" (800)	29 1/4" (743)	29 23/32" (706)	29 23/32" (706)	26 9/16" (675)
30	35 1/2" (902)	33 1/4" (845)	33 23/32" (736)	33 23/32" (736)	30 9/16" (776)
36	41 1/2" (1054)	39 1/4" (997)	39 23/32" (1010)	39 23/32" (1010)	36 9/16" (929)
40	47 1/2" (1207)	45 1/4" (1149)	45 23/32" (1163)	45 23/32" (1163)	42 9/16" (1081)
HEIGHT					
Unit CN	Frame OM	Sash OM	1/2 Screen OM	Full Screen OM	DLO
26 (top)	29 1/2" (749)	11 17/32" (293)	-	27 15/16" (710)	8 13/16" (224)
26 (btm)	29 1/2" (749)	16 15/32" (419)	16 19/32" (422)	27 15/16" (710)	13 25/32" (350)
30 (top)	35 1/2" (851)	13 29/32" (354)	-	33 15/16" (862)	11 7/32" (285)
30 (btm)	35 1/2" (851)	20 3/32" (510)	20 7/32" (513)	33 15/16" (862)	17 13/32" (442)
36 (top)	41 1/2" (1054)	16 5/16" (415)	-	39 15/16" (1014)	13 5/8" (346)
36 (btm)	41 1/2" (1054)	23 11/16" (602)	23 13/16" (605)	39 15/16" (1014)	21" (533)
40 (top)	47 1/2" (1207)	18 23/32" (475)	-	45 15/16" (1167)	16 1/32" (407)
40 (btm)	47 1/2" (1207)	27 9/32" (693)	27 13/32" (696)	45 15/16" (1167)	24 19/32" (625)
46 (top)	53 1/2" (1359)	21 1/8" (536)	-	51 15/16" (1319)	18 7/16" (468)
46 (btm)	53 1/2" (1359)	30 7/8" (785)	31" (788)	51 15/16" (1319)	28 3/16" (716)
50 (top)	59 1/2" (1511)	23 17/32" (597)	-	57 15/16" (1472)	20 13/16" (529)
50 (btm)	59 1/2" (1511)	34 15/32" (876)	34 19/32" (879)	57 15/16" (1472)	31 25/32" (808)
56 (top)	65 1/2" (1664)	26" (660)	-	63 15/16" (1624)	23 5/16" (592)
56 (btm)	65 1/2" (1664)	38" (965)	38 1/8" (969)	63 15/16" (1624)	35 5/16" (897)

## BALANCE TUBES

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Top or bottom sash.
4. Sash ratio; (equal, cottage, or reverse cottage)
5. STC/OITC glass upgrade or not STC/OITC glass upgrade

**NOTE:** *Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number. Additional tube sizes may be found on the Special Size Chart found on the appropriate page.*

TOP SASH (Mill) – Cottage			TOP SASH (Mill) – Cottage			BOTTOM SASH (WH) – Cottage			BOTTOM SASH (WH) – Cottage		
Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number
1626	10A	107010	3026	10C	107210	1626	15A	106015	3026	15C	106215
1630	12A	107012	3030	12C	107212	1630	19A	106019	3030	19C	106219
1636	14B	107114	3036	14C	107214	1636	22A	106022	3036	22B	106122
1640	16B	107116	3040	16C	107216	1640	26A	106026	3040	26C	106226
1646	18A	107018	3046	18C	107218	1646	30A	106030	3046	30C	106230
1650	22A	107022	3050	22C	107222	1650	33A	106033	3050	33C	106233
1656	24A	107024	3056	24C	107224	1656	37A	106031	3056	37C	106237
2026	10B	107110	3626	10C	107210	2026	15A	106015	3626	15C	106215
2030	12B	107112	3630	12C	107212	2030	19A	106019	3630	19C	106219
2036	14B	107114	3636	14D	107214	2036	22A	106022	3636	22C	106222
2040	16C	107216	3640	16D	107316	2040	26A	106026	3640	26C	106226
2046	18B	107118	3646	18D	107318	2046	30A	106030	3646	30D	106330
2050	22B	107122	3650	22D	107322	2050	33A	106033	3650	33D	106333
2056	24B	107124	3656	24E	107424	2056	37A	106037	3656	37D	106337
2626	10B	107110	4026	10D	107310	2626	15B	106115	4026	15C	106215
2630	12C	107212	4030	12D	107312	2630	19B	106119	4030	19D	106319
2636	14C	107214	4036	14D	107314	2636	22B	106122	4036	22D	106322
2640	16C	107216	4040	16E	107416	2640	26B	106126	4040	26E	106426
2646	18C	107218	4046	18E	107418	2646	30B	106130	4046	30E	106430
2650	22C	107222	4050	22E	107422	2650	33B	106133	4050	33E	106433
2656	24C	107224	4056	24F	107524	2656	37B	106137	4056	37F	106537
2826	10B	107110				2826	15C	106215			
2830	12C	107212				2830	19B	106119			
2836	14C	107214				2836	22B	106122			
2840	16C	107216				2840	26B	106126			
2846	18C	107218				2846	30B	106130			
2850	22C	107222				2850	33B	106133			
2856	24C	107224				2856	37B	106137			

\* U/L designates a limited travel balance tube

**BALANCE TUBES**

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Sash ratio; (equal, cottage, or reverse cottage)
4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

NOTE: STC/OITC glass is made of 3.1 & 4.7 glass – all other glass is made of 3.1 glass on both panes

NOTE: Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number. Additional tube sizes may be found on the Special Size Chart found on the appropriate page.

TOP SASH – Cottage			TOP SASH – Cottage			BOTTOM SASH – Cottage			BOTTOM SASH – Cottage		
Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number
1626	10B	107110	3026	10C	107210	1626	15A	106015	3026	15C	106215
1630	11B	106111	3030	11C	106211	1630	19A	106019	3030	19C	106219
1636	14B	107114	3036	14D	107314	1636	22A	106022	3036	22C	106222
1640	16B	107116	3040	16D	107316	1640	26A	106026	3040	26D	106326
1646	18B	107118	3046	18E	107418	1646	30A	106030	3046	30D	106330
1650	21B	106121	3050	21E	106421	1650	33A	106033	3050	33D	106333
1656	23B	106123	3056	23E	106423	1656	37A	106037	3056	37D	106337
2026	10B	107110	3626	10D	107310	2026	15B	106115	3626	15D	106315
2030	11B	106111	3630	11D	106311	2030	19B	106119	3630	19D	106319
2036	14C	107214	3636	14E	107414	2036	22B	106122	3636	22D	106322
2040	16C	107216	3640	16F	107516	2040	26B	106126	3640	26E	106426
2046	18C	107218	3646	18F	107518	2046	30B	106130	3646	30E	106430
2050	21C	106221	3650	21F	106521	2050	33B	106133	3650	33F	106533
2056	23C	106223	3656	23F	106523	2056	37B	106137	3656	37G	106637
2626	10C	107210	4026	10E	106410	2626	15C	106215	4026	15E	106415
2630	11C	106211	4030	11E U/L*	106411	2630	19C	106219	4030	19E	106419
2636	14C	107214	4036	14F	106514	2636	22B	106122	4036	22E	106422
2640	16C	107216	4040	16G	106616	2640	26C	106226	4040	26F	106526
2646	18C	107218	4046	18G U/L*	106618	2646	30C	106230	4046	30F	106530
2650	21D	106321	4050	21G	106621	2650	33C	106233	4050	33H	106733
2656	23D	106323	4056	23H	106723	2656	37C	106237	4056	37I	106837
2826	10C	107210				2826	15C	106215			
2830	11C	106211				2830	19C	106219			
2836	14C	107214				2836	22C	106222			
2840	16D	107316				2840	26C	106226			
2846	18D	107318				2846	30C	106230			
2850	21D	106321				2850	33C	106233			
2856	23D	106323				2856	37C	106237			

\* U/L designates a limited travel balance tube

## REVERSE COTTAGE UNITS

Use this chart to determine sizes for replacement parts, sash and screen.

- Daylight Opening (DLO) is a measurement of the visible glass.
- Outside measurement = OM
- Sizes for Double Hung manufactured 3/26/2007 to present.

OPERATOR SASH - REVERSE COTTAGE UNITS					
WIDTH					
Unit CN	Frame OM	Sash OM	1/2 Screen OM	Full Screen OM	DLO
16	17 1/2" (445)	15 1/4" (387)	15 23/32" (401)	15 23/32" (401)	12 9/16" (319)
20	23 1/2" (597)	21 1/4" (540)	21 23/32" (553)	21 23/32" (553)	18 9/16" (471)
26	29 1/2" (749)	27 1/4" (692)	27 23/32" (629)	27 23/32" (629)	24 9/16" (624)
28	31 1/2" (800)	29 1/4" (743)	29 23/32" (706)	29 23/32" (706)	26 9/16" (675)
30	35 1/2" (902)	33 1/4" (845)	33 23/32" (736)	33 23/32" (736)	30 9/16" (776)
36	41 1/2" (1054)	39 1/4" (997)	39 23/32" (1010)	39 23/32" (1010)	36 9/16" (929)
40	47 1/2" (1207)	45 1/4" (1149)	45 23/32" (1163)	45 23/32" (1163)	42 9/16" (1081)
HEIGHT					
Unit CN	Frame OM	Sash OM	1/2 Screen OM	Full Screen OM	DLO
26 (top)	29 1/2" (749)	16 15/32" (419)	-	27 15/16" (710)	13 25/32" (350)
26 (btm)	29 1/2" (749)	11 17/32" (293)	11 21/32" (296)	27 15/16" (710)	8 13/16" (224)
30 (top)	35 1/2" (851)	20 3/32" (510)	-	33 15/16" (862)	17 13/32" (442)
30 (btm)	35 1/2" (851)	13 29/32" (354)	14 1/32" (357)	33 15/16" (862)	11 7/32" (285)
36 (top)	41 1/2" (1054)	23 11/16" (602)	-	39 15/16" (1014)	21" (533)
36 (btm)	41 1/2" (1054)	16 5/16" (415)	16 7/16" (418)	39 15/16" (1014)	13 5/8" (346)
40 (top)	47 1/2" (1207)	27 9/32" (693)	-	45 15/16" (1167)	24 19/32" (625)
40 (btm)	47 1/2" (1207)	18 23/32" (475)	18 27/32" (479)	45 15/16" (1167)	16 1/32" (407)
46 (top)	53 1/2" (1359)	30 7/8" (785)	-	51 15/16" (1319)	28 3/16" (716)
46 (btm)	53 1/2" (1359)	21 1/8" (536)	21 1/4" (540)	51 15/16" (1319)	18 7/16" (468)
50 (top)	59 1/2" (1511)	34 15/32" (876)	-	57 15/16" (1472)	31 25/32" (808)
50 (btm)	59 1/2" (1511)	23 17/32" (597)	23 21/32" (601)	57 15/16" (1472)	20 13/16" (529)
56 (top)	66 1/2" (1664)	38" (965)	-	63 15/16" (1624)	35 5/16" (897)
56 (btm)	65 1/2" (1664)	26" (660)	26 1/8" (664)	63 15/16" (1624)	23 15/16" (592)

**BALANCE TUBES**

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Sash ratio; (equal, cottage, or reverse cottage)
4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

NOTE: STC/OITC glass is made of 3.1 & 4.7 glass – all other glass is made of 3.1 glass on both panes

NOTE: Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number. Additional tube sizes may be found on the Special Size Chart found on the appropriate page.

TOP SASH (Mill) – Cottage			TOP SASH (Mill) – Cottage			BOTTOM SASH (WH) – Cottage			BOTTOM SASH (WH) – Cottage		
Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number
1626	14B	107114	3026	14C	107214	1626	15A	106015	3026	15B	106115
1630	18A	107018	3030	18C	107218	1630	19A	106019	3030	19B	106119
1636	22A	107022	3036	22C	107222	1636	22A	106022	3036	22B	106122
1640	26A	107026	3040	26D	107326	1640	26A	106026	3040	26B	106126
1646	28B	107128	3046	28D	107328	1646	30A	106030	3046	30B	106130
1650	32A	107032	3050	32D	107332	1650	33A	106033	3050	33B	106133
1656	36A	107036	3056	36D	107336	1656	37A	106037	3056	37B	106137
2026	14B	107114	3626	14D	107314	2026	15A	106015	3626	15C	106215
2030	18B	107118	3630	18D	107318	2030	19A	106019	3630	19B	106119
2036	22B	107122	3636	22D	107322	2036	22A	106022	3636	22B	106122
2040	26B	107126	3640	26E	107426	2040	26A	106026	3640	26B	106126
2046	28B	107128	3646	28E	107428	2046	30A	106030	3646	30B	106130
2050	32B	107132	3650	32E	107432	2050	33A	106033	3650	33B	106133
2056	36B	107136	3656	36F	107536	2056	37A	106037	3656	37B	106137
2626	14C	107214	4026	14D	107314	2626	15A	106015	4026	15C	106215
2630	18C	107218	4030	18E	107418	2630	19A	106019	4030	19C	106219
2636	22C	107222	4036	22E	107422	2636	22A	106022	4036	22B	106122
2640	26C	107226	4040	26E	107426	2640	26A	106026	4040	26C	106226
2646	28C	107228	4046	28F	107528	2646	30A	106030	4046	30C	106230
2650	32C	107232	4050	32G	107632	2650	33A	106033	4050	33C	106233
2656	36C	107236	4056	36H	107736	2656	37A	106037	4056	37C	106237
2826	14C	107214				2826	15B	106115			
2830	18C	107218				2830	19A	106019			
2836	22C	107222				2836	22A	106022			
2840	26C	107226				2840	26B	106126			
2846	28C	107228				2846	30A	106030			
2850	32C	107232				2850	33A	106033			
2856	36D	107336				2856	37A	106037			

**BALANCE TUBES**

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Sash ratio; (equal, cottage, or reverse cottage)
4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

*NOTE: STC/OITC glass is made of 3.1 & 4.7 glass – all other glass is made of 3.1 glass on both panes*

*NOTE: Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number. Additional tube sizes may be found on the Special Size Chart found on the appropriate page.*

TOP SASH – Cottage			TOP SASH – Cottage			BOTTOM SASH – Cottage			BOTTOM SASH – Cottage		
Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number	Unit CN	Supplier Ref ID	Part Number
1626	14B	107114	3026	14D	107314	1626	15A	106015	3026	15C	106215
1630	17B	106117	3030	17E	106417	1630	19A	106019	3030	19B	106119
1636	21B	106121	3036	21E	106421	1636	22A	106022	3036	22B	106122
1640	25B	106125	3040	25E	106425	1640	26A	106026	3040	26B	106126
1646	28B	107128	3046	28E	107428	1646	30A	106030	3046	30B	106130
1650	32B	107132	3050	32E	107432	1650	33A	106033	3050	33B	106133
1656	35B	106135	3056	35F	106535	1656	37A	106037	3056	37B	106137
2026	14C	107214	3626	14E	107414	2026	15A	106015	3626	15C	106215
2030	17C	106217	3630	17F	106517	2030	19A	106019	3630	19C	106219
2036	21C	106221	3636	21F	106521	2036	22A	106022	3636	22C	106222
2040	25C	106225	3640	25G	106625	2040	26A	106026	3640	26C	106226
2046	28C	107228	3646	28F	107528	2046	30A	106030	3646	30C	106230
2050	32C	107232	3650	32G	107632	2050	33A	106033	3650	33C	106233
2056	35C	106235	3656	35I	106835	2056	37A	106037	3656	37C	106237
2626	14C	107214	4026	14F	106514	2626	15B	106115	4026	15C	106215
2630	17D	106317	4030	17G	106617	2630	19B	106119	4030	19C	106219
2636	21D	106321	4036	21G	106621	2636	22B	106122	4036	22C	106222
2640	25D	106325	4040	25H	106725	2640	26B	106126	4040	26C	106226
2646	28D	107328	4046	28H	106728	2646	30B	106130	4046	30D	106330
2650	32D	107332	4050	32J U/L*	106932	2650	33B	106133	4050	33D	106333
2656	35D	106335	4056	35K U/L*	108035	2656	37B	106137	4056	37D	106337
2826	14C	107214				2826	15B	106115			
2830	17D	106317				2830	19B	106119			
2836	21D	106321				2836	22B	106122			
2840	25D	106325				2840	26B	106126			
2846	28D	107328				2846	30B	106130			
2850	32D	107332				2850	33B	106133			
2856	35E	106435				2856	37B	106137			

\* U/L designates a limited travel balance tube

## BALANCE TUBES

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Sash ratio; (equal, cottage, or reverse cottage)
4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

**NOTE:** *Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number.*

MILL		MILL		MILL		MILL		MILL	
Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number
10A	107010	16A	107016	22A	107022	28A	107028	34A	107034
10B	107110	16B	107116	22B	107122	28B	107128	34B	107134
10C	107210	16C	107216	22C	107222	28C	107228	34C	107234
10D	107310	16D	107316	22D	107322	28D	107328	34D	107334
12A	107012	16E	107416	22E	107422	28E	107428	34E	107434
12B	107112	16F	107516	22F	107522	28F	107528	34F	107534
12C	107212	18A	107018	24A	107024	30A	107030	34G	107634
12D	107312	18B	107118	24B	107124	30B	107130	34H	107734
14A	107014	18C	107218	24C	107224	30C	107230	36A	107036
14B	107114	18D	107318	24D	107324	30D	107330	36B	107136
14C	107214	18E	107418	24E	107424	30E	107430	36C	107236
14D	107314	18F	107518	24F	107524	30F	107530	36D	107336
14E	107414	20A	107020	24G	107624	30G	107630	36E	107436
		20B	107120	26A	107026	32A	107032	36F	107536
		20C	107220	26B	107126	32B	107132	36G	107636
		20D	107320	26C	107226	32C	107232	36H	107736
		20E	107420	26D	107326	32D	107332	36I	107836
		20F	107520	26E	107426	32E	107432		
				26F	107526	32F	107532		
						32G	107632		

## BALANCE TUBES

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
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4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

**NOTE:** *Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number.*

WHITE		WHITE		WHITE		WHITE		WHITE	
Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number
10A	106010	15A	106015	19A	106019	22A	106022	25A	106025
10B	106110	15B	106115	19B	106119	22B	106122	25B	106125
10C	106210	15C	106215	19C	106219	22C	106222	25C	106225
10D	106310	15D	106315	19D	106319	22D	106322	25D	106325
10E	106410	15E	106415	19E	106419	22E	106422	25E	106425
11A	106011	15F	106515	19F	106519	22F	106522	25F	106525
11B	106111	15G	106615	19G	106619	22G	106622	25G	106625
11C	106211	16A	106016	19H U/L*	106719	23A	106023	25H	106725
11D	106311	16B	106116	20A	106020	23B	106123	25I U/L*	106825
11E U/L*	106411	16C	106216	20B	106120	23C	106223	26A	106026
12A	106012	16D	106316	20C	106220	23D	106323	26B	106126
12B	106112	16E	106416	20D	106320	23E	106423	26C	106226
12C	106212	16F	106516	20E	106420	23F	106523	26D	106326
12D	106312	16G	106616	20F	106520	23G	106623	26E	106426
12E U/L*	106412	17A	106017	20G	106620	23H	106723	26F	106526
13A	106013	17B	106117	21A	106021	24A	106024	26G	106626
13B	106113	17C	106217	21B	106121	24B	106124	26H	106726
13C	106213	17D	106317	21C	106221	24C	106224	27A	106027
13D	106313	17E	106417	21D	106321	24D	106324	27B	106127
13E	106413	17F	106517	21E	106421	24E	106424	27C	106227
13F U/L*	106513	17G	106617	21F	106521	24F	106524	27D	106327
14A	106014	18A	106018	21G	106621	24G	106624	27E	106427
14B	106114	18B	106118			24H	106724	27F	106527
14C	106214	18C	106218					27G	106627
14D	106314	18D	106318					27H	106727
14E	106414	18E	106418						
14F	106514	18F	106518						
		18G U/L*	106618						

\* U/L designates a limited travel balance tube



## BALANCE TUBES

When ordering replacement parts specify:

1. Part number;
2. Quantity; (*Part numbers listed are for one balance tube only*)
3. Sash ratio; (equal, cottage, or reverse cottage)
4. STC/OITC glass upgrade or not STC/OITC glass upgrade.

**NOTE:** *Units with the STC/OITC glass upgrade could have white balance tubes for both top and bottom sash depending on the unit size. Please reference this information when ordering all replacement tubes. Standard or special size units can reference the same Supplier Ref ID and part number.*

WHITE		WHITE		WHITE		WHITE		WHITE	
Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number	Supplier Ref ID	Part Number
28A	106028	30A	106030	32A	106032	34A	106034	36A	106036
28B	106128	30B	106130	32B	106132	34B	106134	36B	106136
28C	106228	30C	106230	32C	106232	34C	106234	36C	106236
28D	106328	30D	106330	32D	106332	34D	106334	36D	106336
28E	106428	30E	106430	32E	106432	34E	106434	36E	106436
28F	106528	30F	106530	32F	106532	34F	106534	36F	106536
28G	106628	30G	106630	32G	106632	34G	106634	36G	106636
28H	106728	30H	106730	32H	106732	34H	106734	36H	106736
29A	106029	30I U/L*	106830	32I U/L*	106832	34I	106834	36I	106836
29B	106129	31A	106031	32J U/L*	106932	34J U/L*	106934	37A	106037
29C	106229	31B	106131	33A	106033	34K U/L*	109034	37B	106137
29D	106329	31C	106231	33B	106133	35A	106035	37C	106237
29E	106429	31D	106331	33C	106233	35B	106135	37D	106337
29F	106529	31E	106431	33D	106333	35C	106235	37E	106437
29G	106629	31F	106531	33E	106433	35D	106335	37F	106537
29H	106729	31G	106631	33F	106533	35E	106435	37G	106637
		31H	106731	33G	106633	35F	106535	37H	106737
		31I U/L*	106831	33H	106733	35G	106635	37I	106837
		31J U/L*	106931	33I	109833	35H	106735		
				33J U/L*	109933	35I	106835		
						35J U/L*	109935		
						35K U/L*	108035		

\* U/L designates a limited travel balance tube

**WARNING: Practice Safety! Always wear proper safety equipment, including safety glasses.**

**YOU WILL NEED TO SUPPLY**

- Safety glasses
- Rubber mallet
- Pry bar
- Balance tube remover
- Balance tube channel spreader
- Spreader
- Standard screwdriver
- Tape measure
- Pencil
- Locking pliers for clutch assembly replacement (not shown)



4. Place the spreader tool in the channel 1–2" (25–51) below affected balance tube clutch assembly (narrow sides of tool placed vertically in channel). See figure 3.



Figure 3

**Balance Tube Replacement**

1. Remove both sash.
2. Mark both clutch locations in the balance tube channels (only on the side where balance tube will be replaced) as shown in figure 1.



Figure 1

*NOTE: If clutch is disconnected, it will be necessary to measure the clutch height from the opposite jamb and transfer height measurement to affected jamb.*

3. Release clutches on both balance tubes. Using a standard screwdriver, rotate the balance clutch cam to the released position. Hold the tool firmly and slide the clutch assembly up to the bottom of the balance tube. See figure 2.

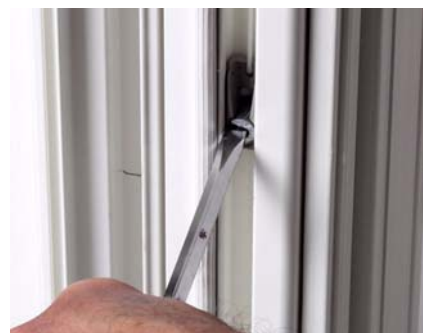


Figure 2

5. Turn the tool 90 degrees to spread the channel. With the channel spread, insert the hooked end of the remover tool behind the clutch assembly. Pull the assembly out from the channel. See figure 4. Slide the balance tube to release the balance tube hook from the jamb hole.



Figure 4

6. Work your way up the balance tube spreading the channel as you go and pulling the balance tube from the channel. See figure 5 and 6. Once the balance tube has been removed, discard but leave the channel spreader in place.



Figure 5



Figure 6

7. Keeping the top of the balance tube channel spread, place the new balance tube in the balance tube cavity, lining the hanger hook up with the jamb hole. See figures 7 and 8.



Figure 7



Figure 8

8. Working top to bottom, press the balance tube into the cavity, spreading the channel as you go until the entire balance tube is in place. See figures 9 and 10.



Figure 9



Figure 10

9. Once the balance tube is in place, press the clutch assembly into the channel as shown. See figure 11.

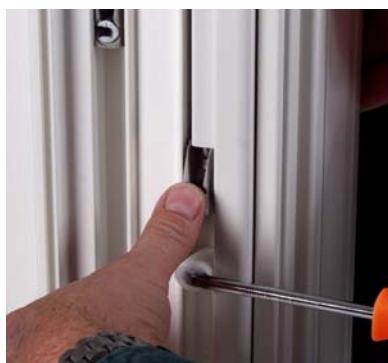


Figure 11

10. Push the balance tube up in the channel. Using the remover tool, pull down and push in on the balance tube to ensure that the hook has engaged properly in the jamb hole. See figure 12. Remove the spreader tool.



Figure 12

11. Replace the top balance tube plug.

12. Slide the weather strip carrier into position at the head jamb and snap into place. Then, push the sill end into place on top of sill foam gasket and work your way toward the middle. See figures 13 and 14.



Figure 13



Figure 14

13. Using a standard screwdriver, pull both clutches down to the mark made earlier, turning the cams 90 degrees to the locked position. See figures 15 and 16.



Figure 15



Figure 16

14. Replace the sash and check operation.

## Clutch Assembly Replacement

1. Follow steps 1–5 of the previous Balance Tube Replacement section.

*NOTE: It is not necessary to remove the top balance tube plug or the entire balance tube from cavity.*

2. With the clutch assembly removed from the balance tube channel, pull on the assembly until approximately 6" (152) of cord is showing. Using a locking pliers or similar tool, clamp off the cord at the bottom of the balance tube. Push the cord out toward the back of the clutch assembly to reveal knot. Untie the knot or cut the cord just above the knot if necessary and discard the damaged clutch assembly. See figure 17.



Figure 17

*NOTE: Before using the locking pliers or similar tool, it is advised to tape off or file down the teeth on the tool to avoid fraying the cord.*

**IMPORTANT: Untying the knot is a preferred method to remove the clutch assembly. However if this is not possible and cutting is necessary, be sure to melt the end of the cord to avoid fraying.**

3. Thread the balance tube cord through the front of the new clutch assembly and tie a knot on the back side. See figure 18. Pull the cord tight, keeping tension on the clutch assembly while carefully releasing the vise grip clamp from the cord. Ease the clutch into position to the bottom of the balance tube.

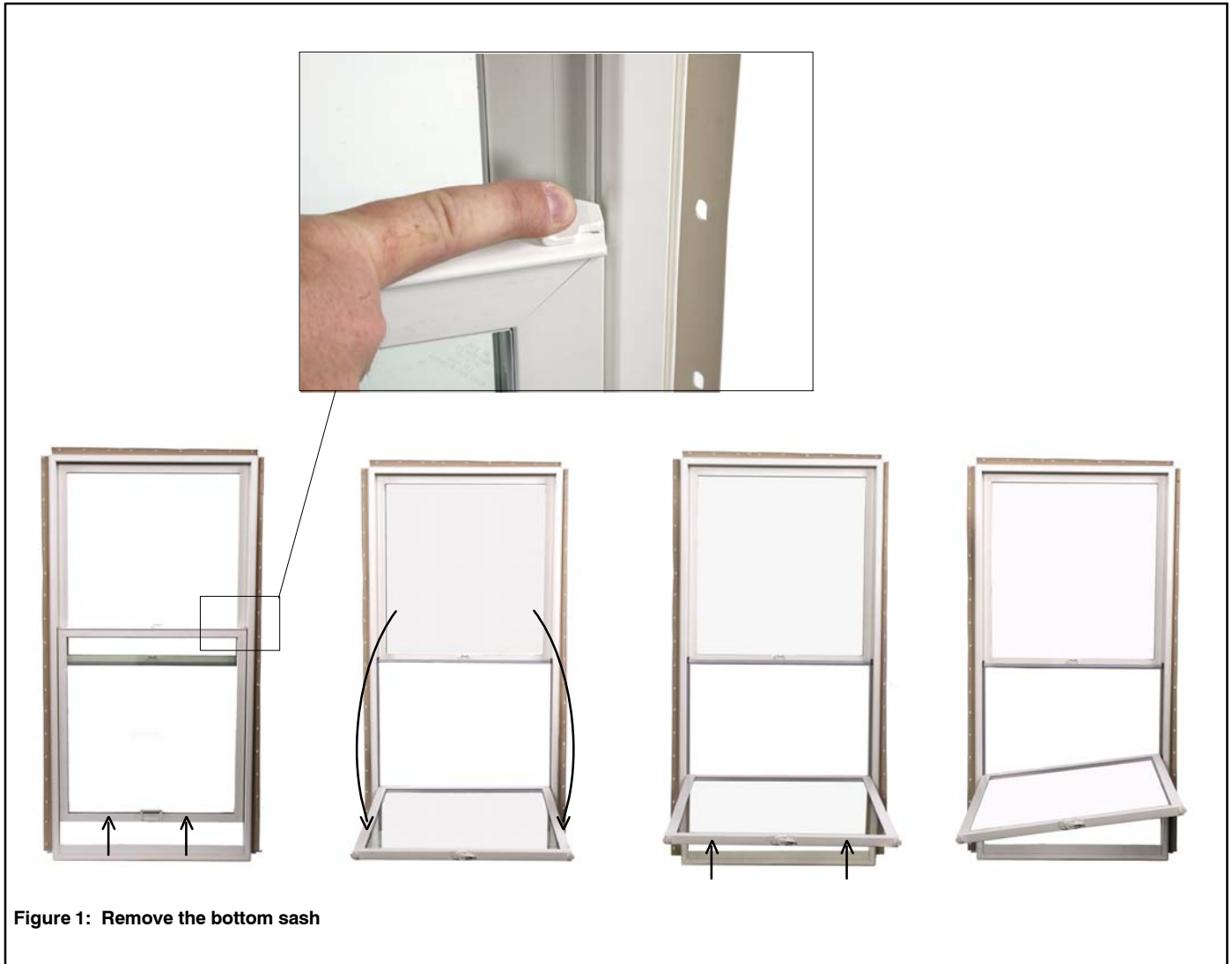


Figure 18

4. Follow steps 11 and 14–16 of the previous Balance Tube Replacement section.

**ABSTRACT:** The following service guide will demonstrate how to remove the operating sash from an All Ultrex Double Hung unit (IFDH).

- Lift the sash 2-3" (51-76), depress the tilt latches and tilt the sash to the interior until parallel.
- Lift the sash out of the clutches, rotate and remove from the frame. See figure 1.





The following instructions will demonstrate how to replace the original sill liner (V1532) with the new style liner (V1552). However these instructions will work when swapping out new liners should they need replacing.

**INCLUDED IN PACKAGE:**

- 1 – V1552 Sill Liner
- 2 – Sill Liner End Gaskets

1. Remove the existing sill liner by rolling the liner away from the window and lifting, releasing the barb from the sill kerf. See figure 1.



Figure 1: Remove existing sill liner.

2. Fit the sill liner end gaskets on the ends of the sill liner as shown in figure 2.



Figure 2: Install end gaskets.

**YOU WILL NEED:**

- Caulking Gun
- High Quality Sealant<sup>1</sup>
- Flexible Putty Knife

3. Place a drop of sealant in the corners of the sill kerf. See figure 3.



Figure 3: Add sealant to kerf corners.

4. Set new sill liner in place, pushing the barb on sill liner into the sill kerf. The end gasket should fit snugly against the jamb as shown in figure 4.



Figure 4: Set new liner in place.

<sup>1</sup>Sealant must be class NS 25 per ASTM C920

5. Seat the new liner using a block of wood and tapping with a hammer. Seat the liner the entire length of the sill, working from one corner to the other. See figure 5.



**Use caution when seating the sill liner. Too much force could damage the liner and/or the sill itself.**



**Figure 5: Seat the sill liner in the sill kerf.**

6. As a final step, slip a flexible putty knife between the jamb and sill liner gasket to make sure the lip on the gasket fits completely around the jamb. See figure 6.



**Figure 6: Use putty knife to make sure lip on gasket surrounds jamb.**