



DOOR PULL INSTALLATION

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"L" CONFIGURATION

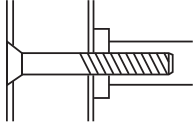
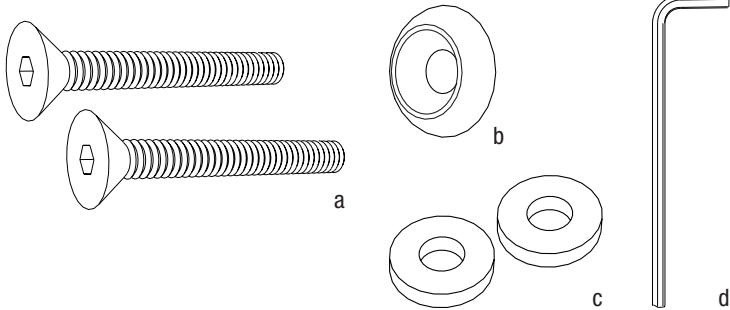
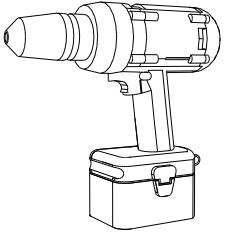
- Comprised of two door pulls: one end of each is mounted back-to-back; the remaining ends are single-mounted. 19

The following mounting instructions reflect a standard two-standoffs-per-pull configuration. Pulls requiring more than two standoffs will change quantities of mounting components accordingly.

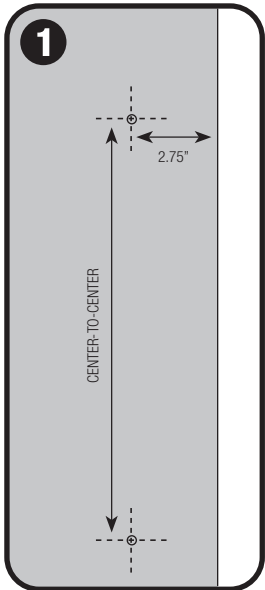
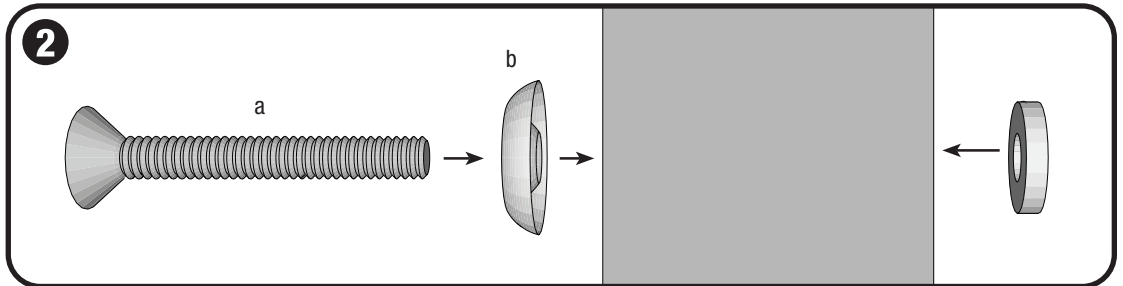
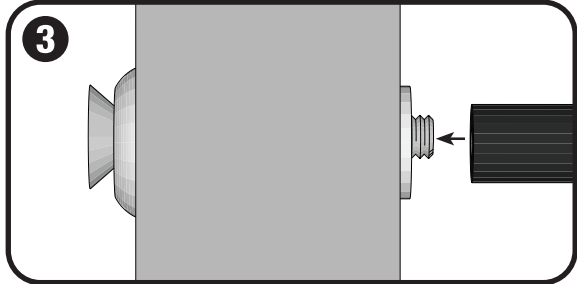
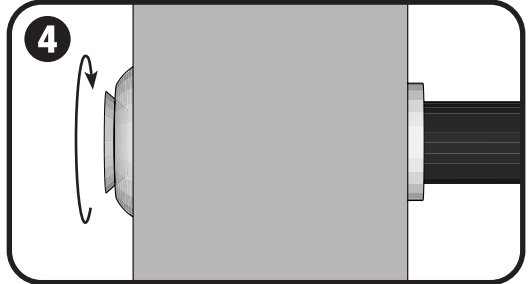


MOUNTING SYSTEM A1

INSTALLATION MANUAL

	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
<p>A1 Single mount Solid wood core or hollow metal door with through bolt.</p>		

STEP BY STEP

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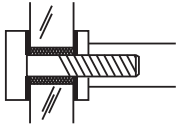
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
2. Insert bolt (a) through finish washer (b) then insert through the TOP hole in door. Place flat washer (c) over bolt on opposite side of door. Repeat with BOTTOM hole.
3. Place door pull onto bolts.
4. To secure door pull, use allen wrench (d) to tighten both TOP and BOTTOM bolts alternately in equal increments. Do not overtighten one without alternating and tightening the other.



MOUNTING SYSTEM A2

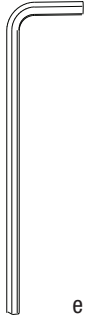
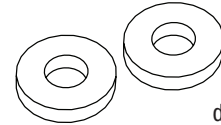
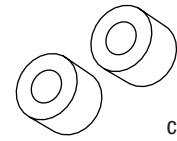
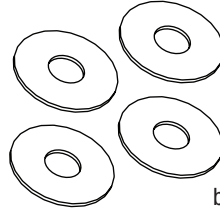
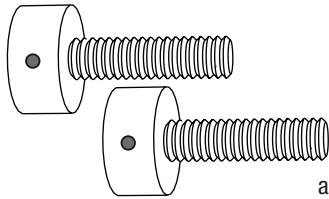
INSTALLATION MANUAL



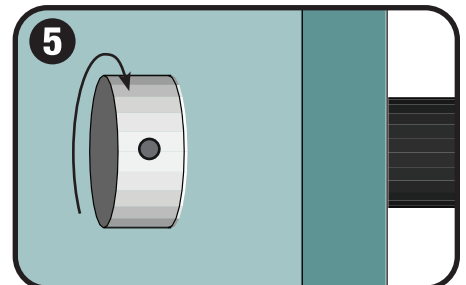
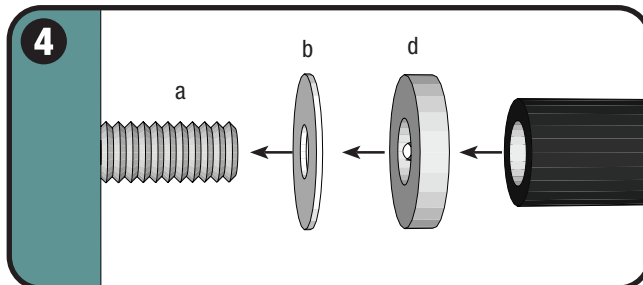
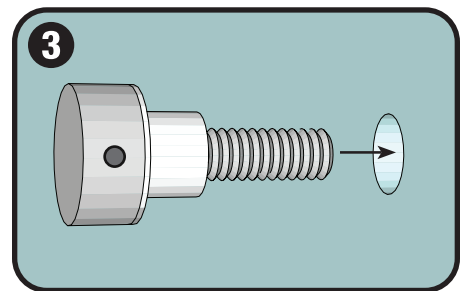
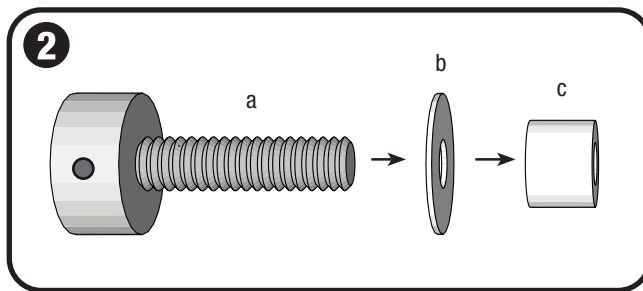
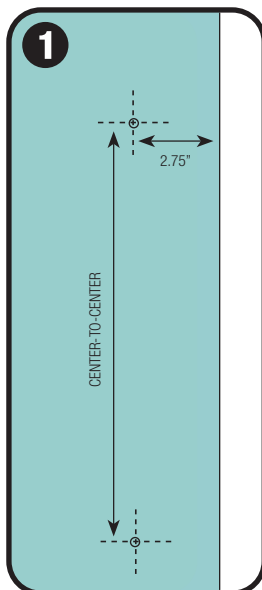
A2 Single mount

Tempered glass, solid wood core, or hollow metal door with end cap purchased separately.

HARDWARE INCLUDED



STEP BY STEP



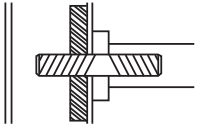
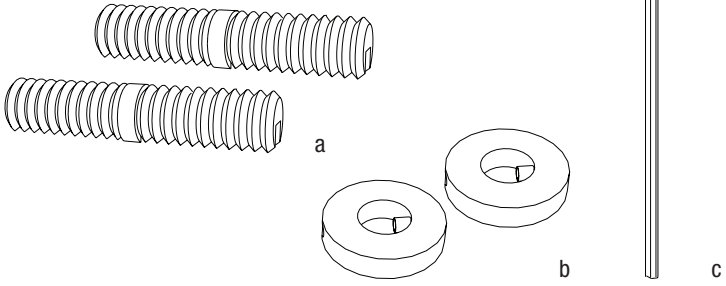
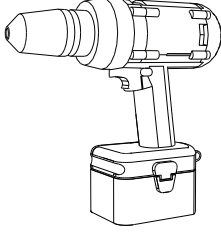
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Verify door pull's center-to-center measurement is the same as the center-to-center measurement of holes in door. Recommended backset is 2.75".
2. On inside of door, insert both bolts with end cap (a) through plastic washers (b) and plastic bushings (c).
3. Insert configured bolts through holes in door.
4. Over bolts on outside of door, place plastic washers (b) and escutcheon washers (d). Place door pull onto bolts.
5. To secure door pull use allen wrench (e) to tighten end cap (a) alternately, for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

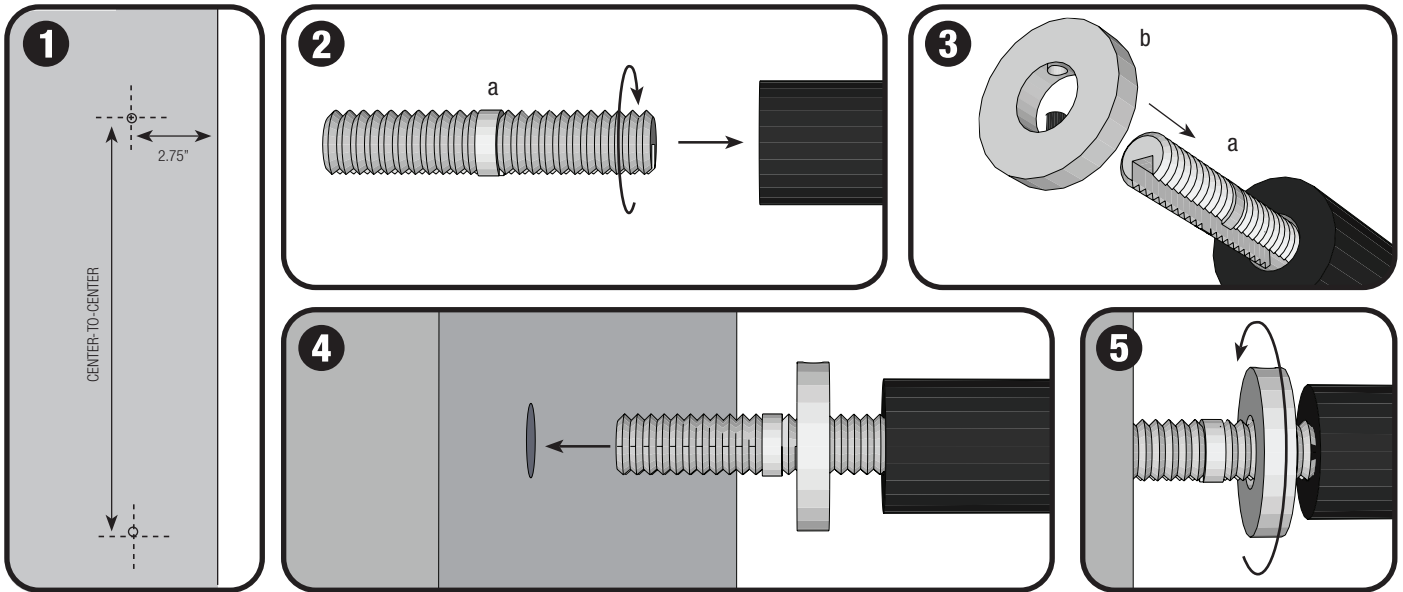


MOUNTING SYSTEM A3

INSTALLATION MANUAL

 <p>A3 Concealed single mount Hollow metal door with Rota-Lok and customer's reinforcement.</p>	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
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STEP BY STEP



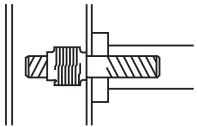
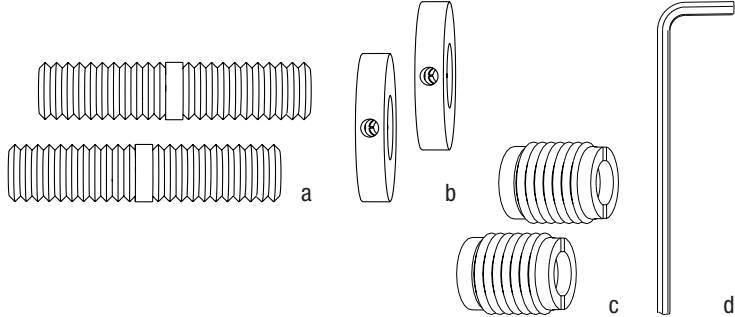
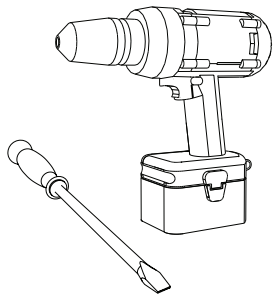
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- Insert left hand threaded side of bolt (a) into the TOP and BOTTOM holes of pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull.
- Align pin, located inside the turning washer (b), with the slot of bolt and slide onto bolt.
- Insert bolts (now attached to door pull) into holes in door.
- To secure door pull, use allen wrench (c) to rotate turning washers (b) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

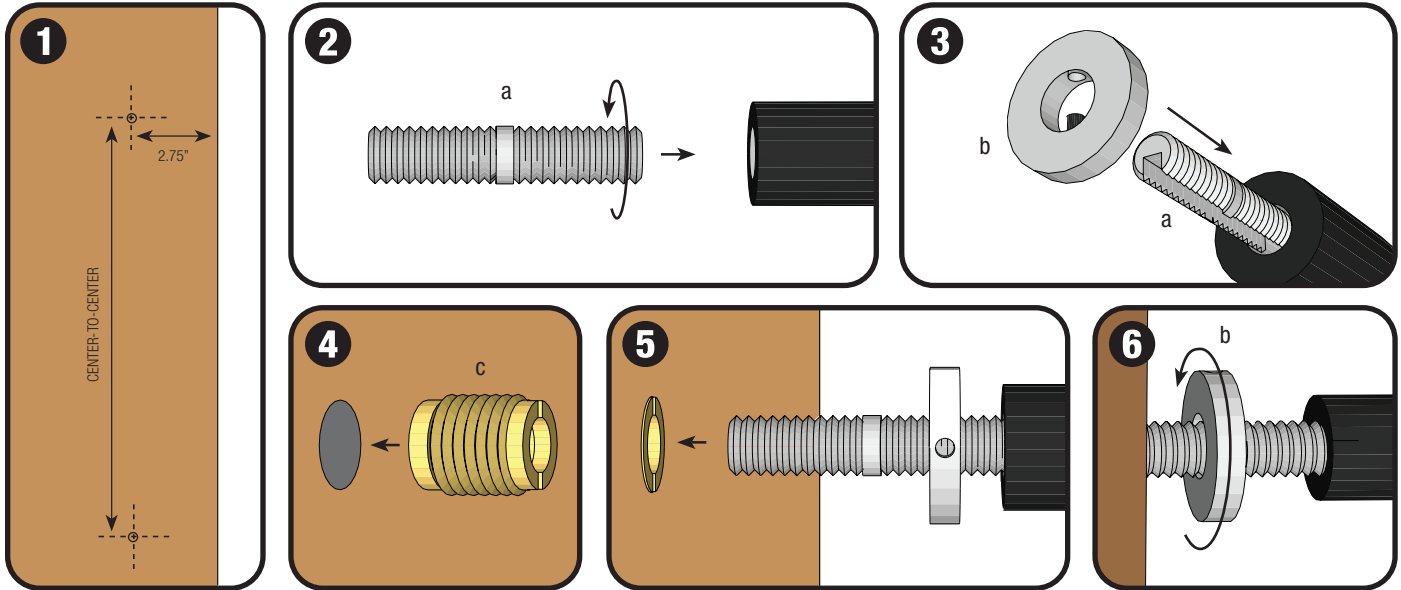


MOUNTING SYSTEM A4

INSTALLATION MANUAL

 <p>A4 Concealed single mount Solid wood core door with threaded insert and Rota-Lok.</p>	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
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STEP BY STEP



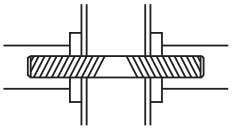
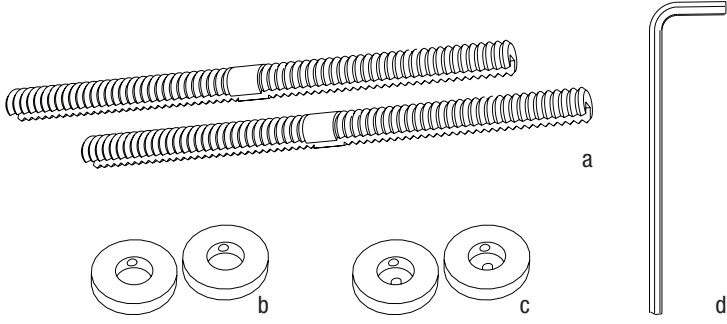
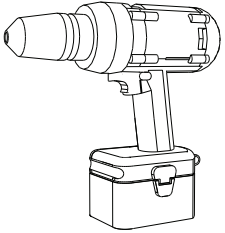
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure door pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- Insert left hand threaded side of bolt (a) into the TOP and BOTTOM holes of door pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull.
- Align pin, located inside the turning washer (b), with the slot of bolt and slide onto bolt.
- With slotted end facing out, screw threaded inserts (c) into holes in door using flat-head screwdriver
- Insert bolts (now attached to door pull) into holes in door.
- To secure door pull, use allen wrench (d) to rotate turning washers (b) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

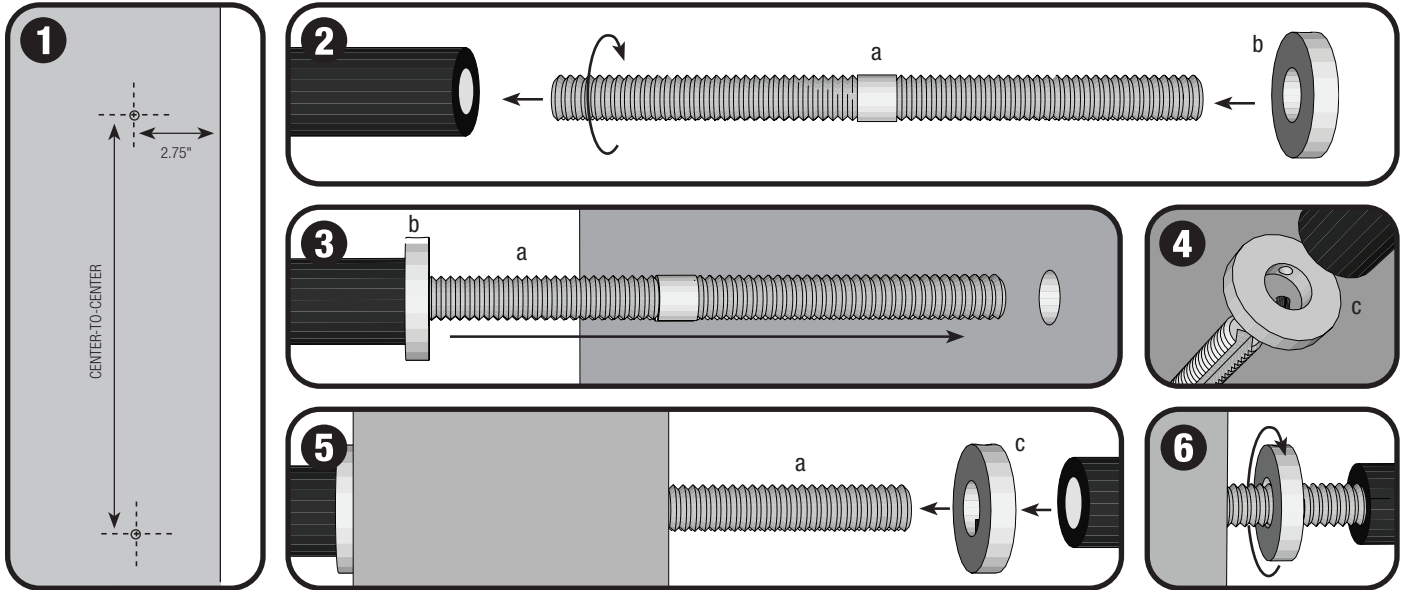


MOUNTING SYSTEM A5

INSTALLATION MANUAL

	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
<p>A5 Back-to-back mount Solid wood core or hollow metal door with Rota-Lok.</p>		

STEP BY STEP

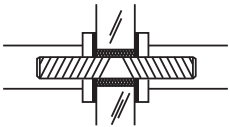


Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- Starting with the exterior door pull, partially thread bolts (a) into the TOP and BOTTOM holes of pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull. Slip washers (b) onto both bolts.
- Insert bolts (now attached to the exterior pull) through holes in door.
- On the interior side of door, align pin, located on the inside of the turning washer (c) with the slot of the bolt (a).
- Place turning washers (c) onto bolts (a) for both TOP and BOTTOM of pull. Place door pull onto bolts.
- To secure door pull, use allen wrench (d) to rotate turning washers (c) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

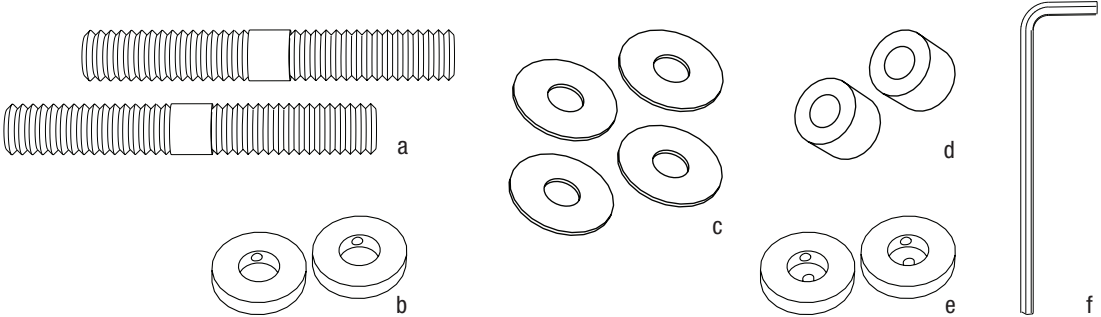


MOUNTING SYSTEM A6

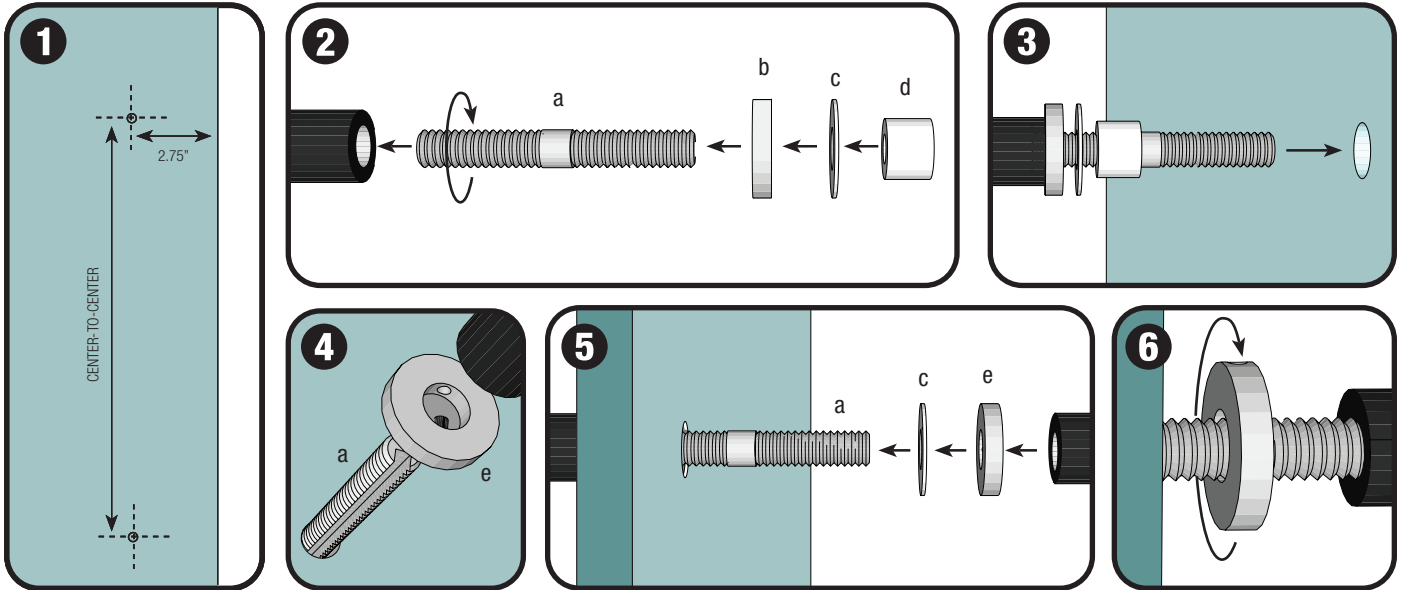


A6 Back-to-back mount
Tempered glass door with Rota-Lok.

INCLUDED HARDWARE



STEP BY STEP



Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Verify door pull's center-to-center measurement is the same as the center-to-center measurement of holes in door. Recommended backset is 2.75".
2. Starting with the exterior door pull, partially thread bolts (a) into the TOP and BOTTOM holes of pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull. Slip turning washers (b), plastic washers (c) and plastic bushings (d) onto both bolts.
3. Insert bolts (now attached to the exterior pull) through holes in door.
4. On the interior side of door, align pin, located on the inside of the turning washer (e) with the slot of the bolt (a).
5. Place plastic washers (c) and turning washers (e) onto bolts (a) for both TOP and BOTTOM of pull. Place door pull onto bolts.
6. To secure door pull, use allen wrench (f) to rotate turning washers (e) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.



MOUNTING SYSTEM B1

INSTALLATION MANUAL

	INCLUDED HARDWARE 	TOOLS NEEDED
B1 Single mount Solid wood core or hollow metal door with through bolt.		

STEP BY STEP

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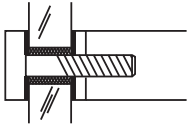
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
2. Insert bolts (a) through washers (b) then insert through the holes in door.
3. Place door pull onto bolts.
4. To secure door pull use allen wrench (c) to tighten bolts alternately, for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.



MOUNTING SYSTEM B2

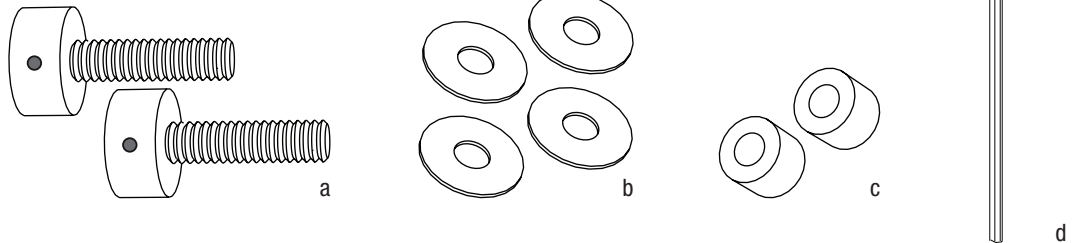
INSTALLATION MANUAL



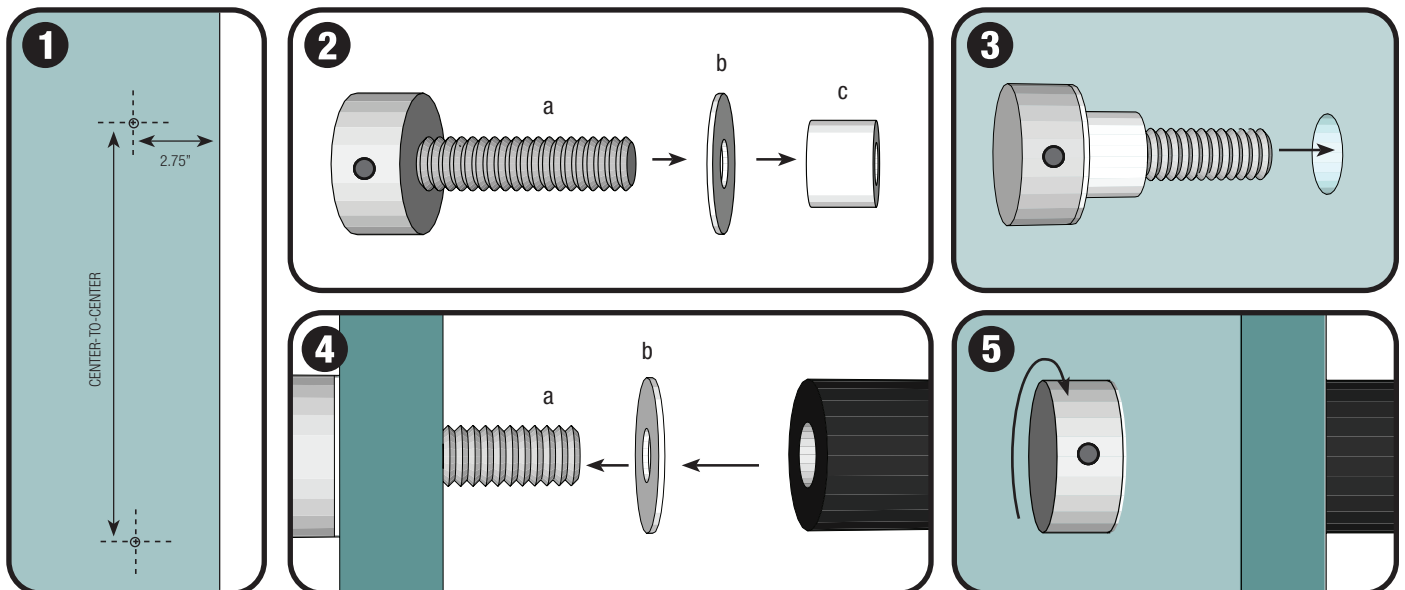
B2 Single mount

Tempered glass, solid wood core, or hollow metal door with end cap purchased separately.

INCLUDED HARDWARE



STEP BY STEP



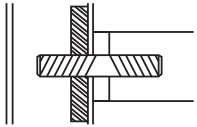
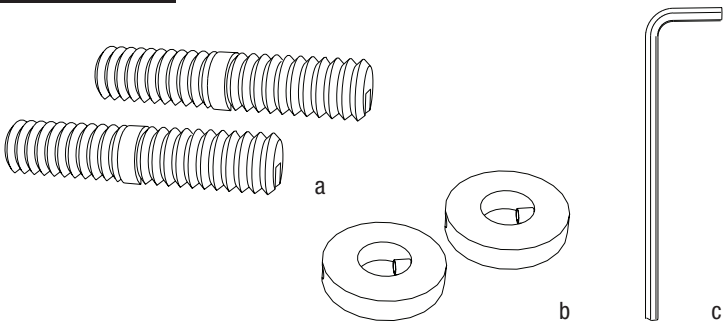
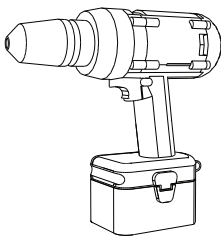
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Verify door pull's center-to-center measurement is the same as the center-to-center measurement of holes in door. Recommended backset is 2.75".
2. On inside of door, Insert both bolts with end cap (a) through plastic washers (b) and plastic bushings (c).
3. Insert configured bolts through holes in door.
4. On outside of door, place plastic washers (b) and door pull over bolts (a).
5. To secure door pull, use allen wrench (d) to rotate end cap (a) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

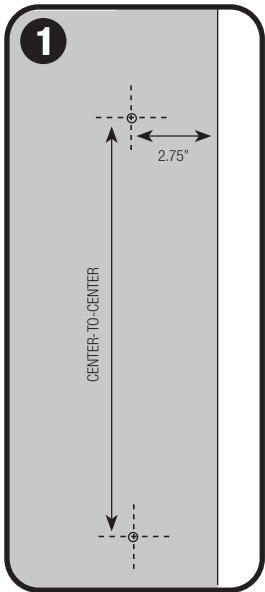
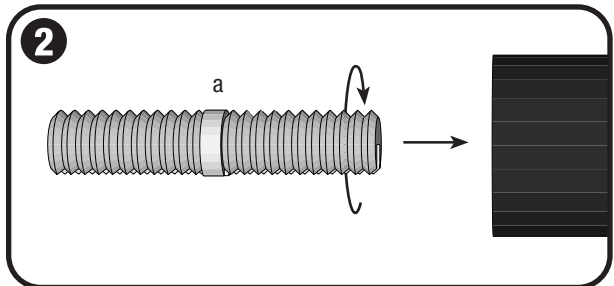
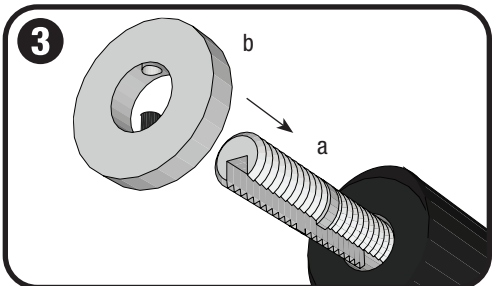
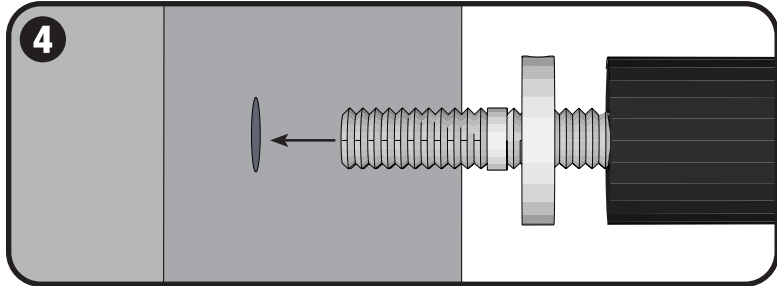
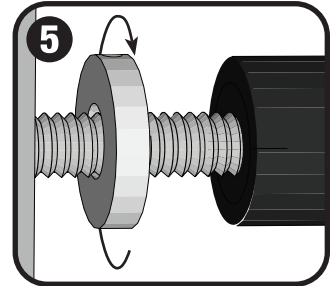


MOUNTING SYSTEM B3

INSTALLATION MANUAL

 <p>B3 Concealed single mount Hollow metal door with Rota-Lok and customer's reinforcement.</p>	<p>INCLUDED HARDWARE</p>  <p>TOOLS NEEDED</p> 
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STEP BY STEP

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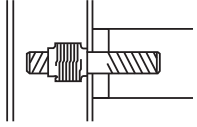
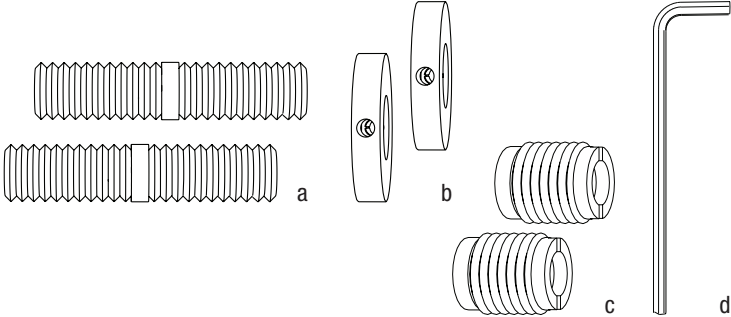
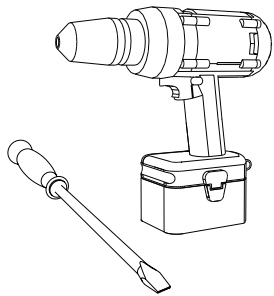
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- Partially thread left-hand threaded side of bolts (a) into the TOP and BOTTOM holes of pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull.
- Align pin, located inside the turning washer (b), with the slot of bolt and slide onto bolt.
- Insert bolts (now attached to door pull) into holes in door.
- To secure door pull, use allen wrench (c) to rotate turning washers (b) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

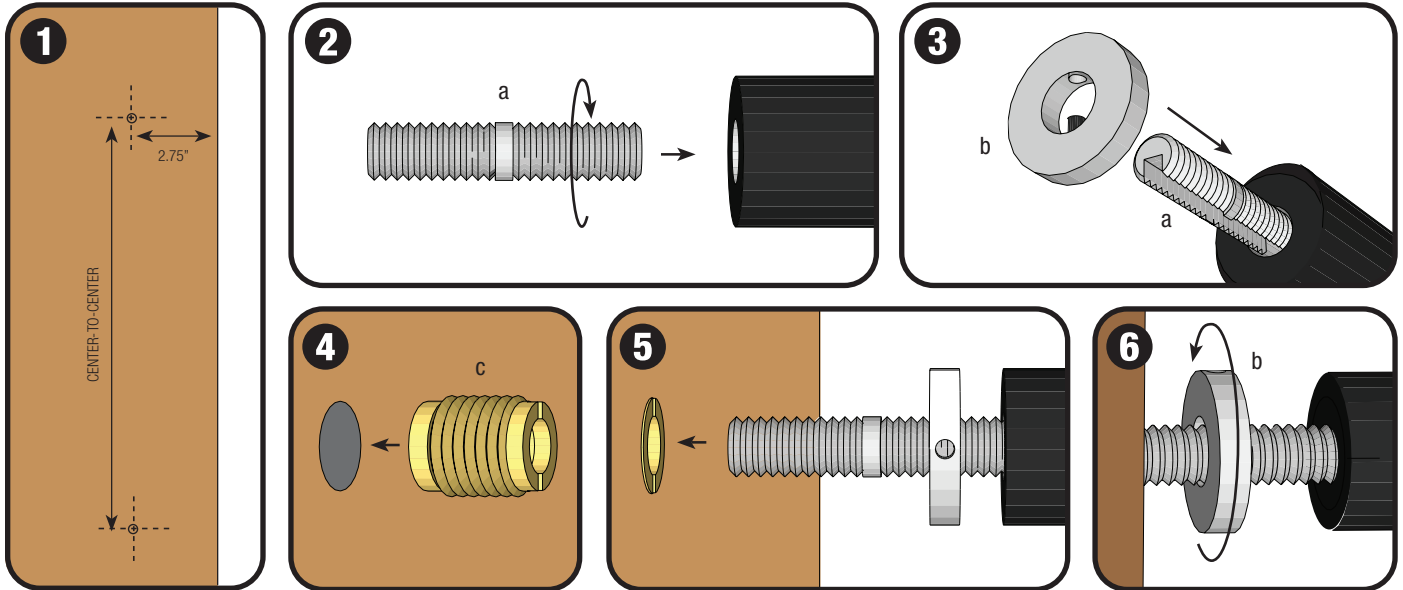


MOUNTING SYSTEM B4

INSTALLATION MANUAL

 <p>B4 Concealed single mount Solid wood core door with threaded insert and Rota-Lok.</p>	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
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STEP BY STEP



Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure door pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- Partially thread left-hand threaded side of bolts (a) into the TOP and BOTTOM holes of door pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull.
- Align pin, located inside the turning washer (b), with the slot of bolt and slide onto bolt.
- With slotted end facing out, screw threaded inserts (c) into holes in door using flat-head screwdriver
- Insert bolts (now attached to door pull) into holes in door.
- To secure door pull, use allen wrench (d) to rotate turning washers (b) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.

**Forms+Surfaces offers but does not recommend concealed mounting on wood doors. Frequent or heavy use can compromise the integrity of this mounting.*

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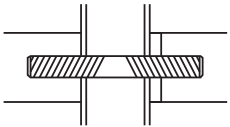
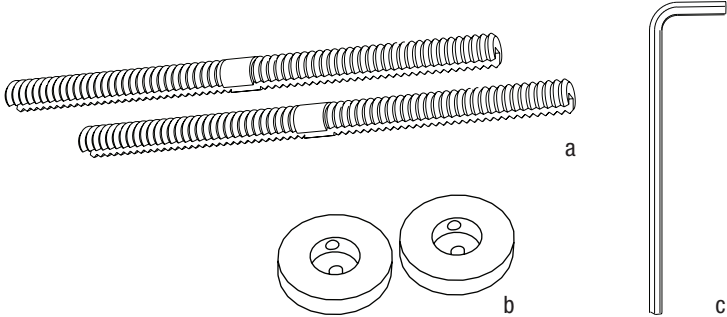
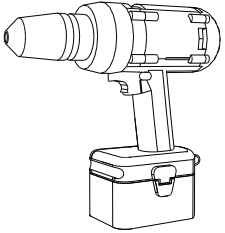
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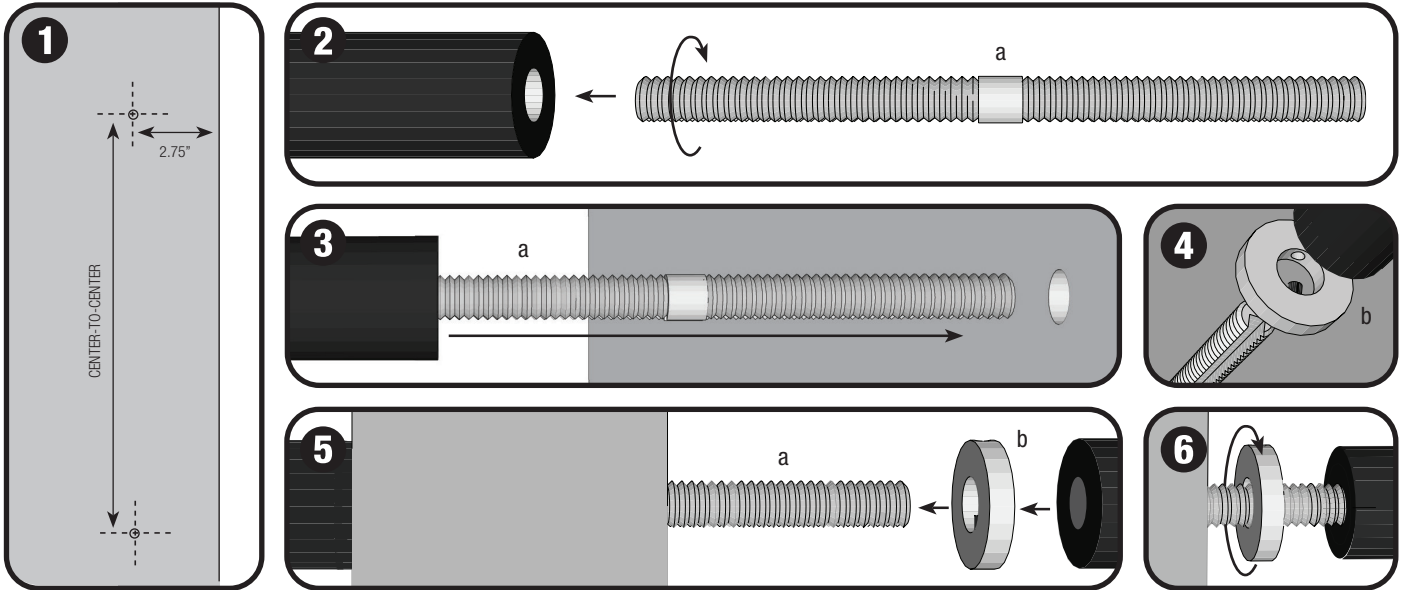


MOUNTING SYSTEM B5

INSTALLATION MANUAL

	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
<p>B5 Back-to-back mount Solid wood core or hollow metal door with Rota-Lok.</p>		

STEP BY STEP



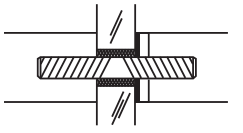
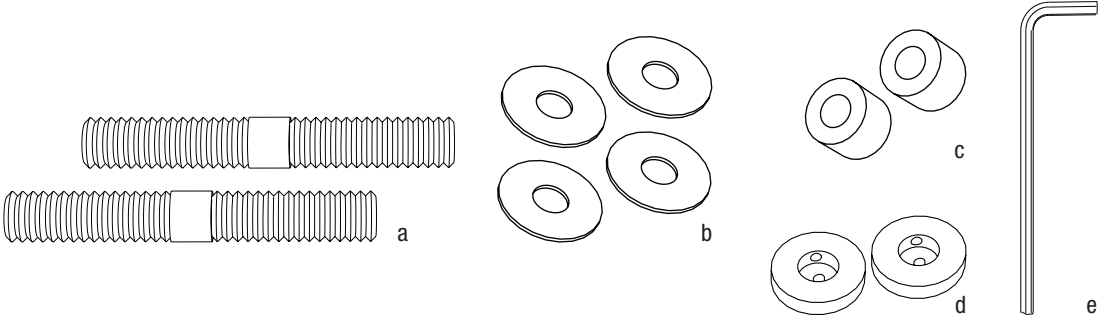
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- Starting with the exterior door pull, partially thread bolts (a) into the TOP and BOTTOM holes of pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull.
- Insert bolts (now attached to the exterior pull) through holes in door.
- On the interior side of door, align pin, located on the inside of the turning washer (b) with the slot of the bolt (a).
- Place turning washers (b) onto bolts (a) for both TOP and BOTTOM of pull. Place door pull onto bolts.
- To secure door pulls, use allen wrench (c) to rotate turning washers (b) alternately for both TOP and BOTTOM of pulls in equal increments. Do not overtighten one without alternating and tightening the other.

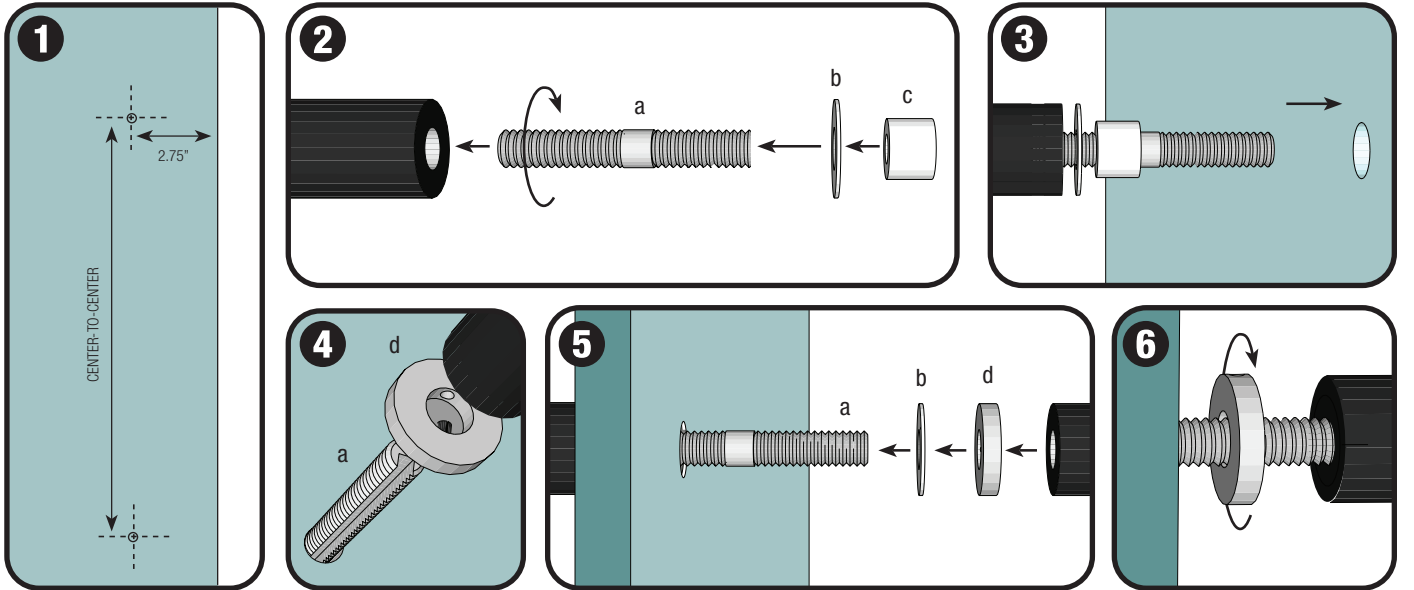


MOUNTING SYSTEM B6

INSTALLATION MANUAL

	<p>INCLUDED HARDWARE</p> 
<p>B6 Back-to-back mount Tempered glass door with Rota-Lok.</p>	

STEP BY STEP



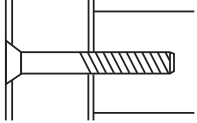
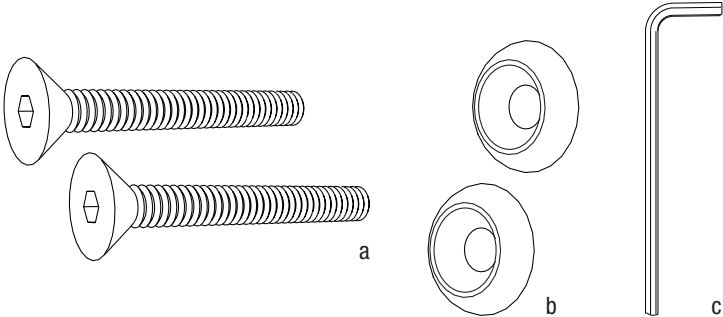
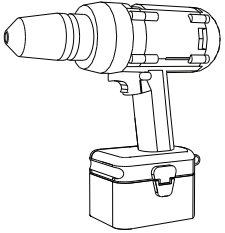
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

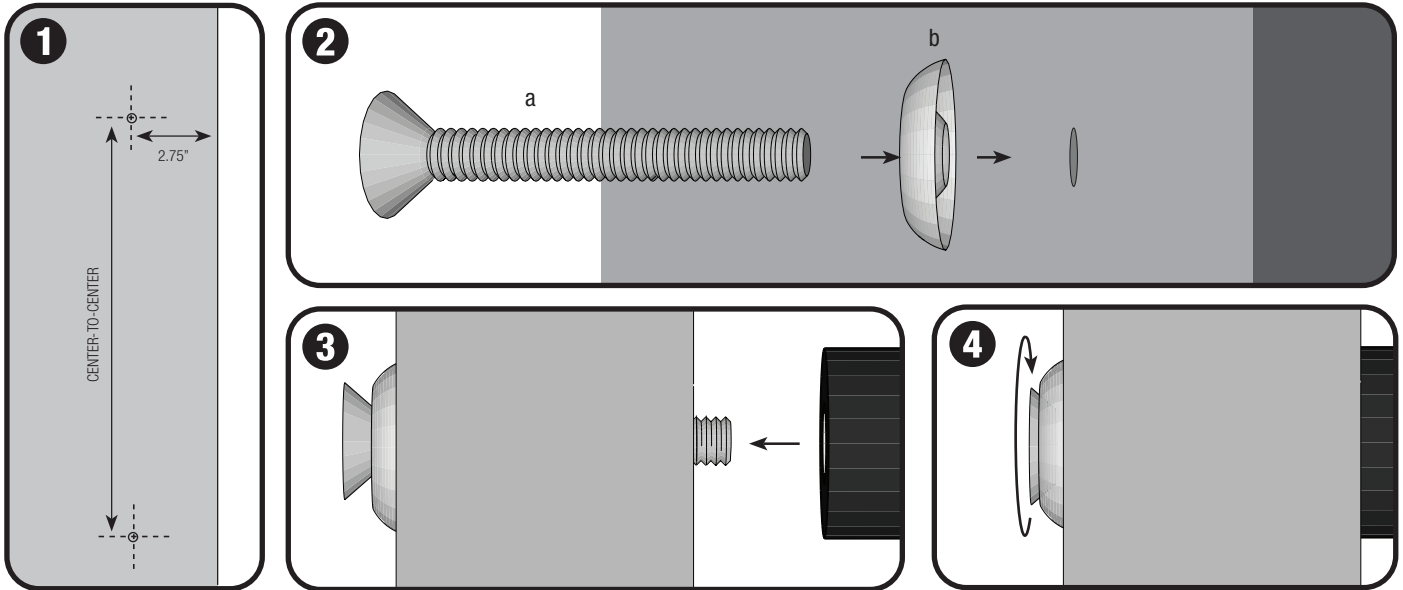
1. Verify door pull's center-to-center measurement is the same as the center-to-center measurement of holes in door. Recommended backset is 2.75".
2. Starting with the exterior door pull, partially thread bolts (a) into the TOP and BOTTOM holes of pull (approximately 3 turns). It is important to not "bottom out" bolt threads into exterior pull. Slip plastic washers (b) and plastic bushings (c) onto both bolts.
3. Insert bolts (now attached to the exterior pull) through holes in door.
4. On the interior side of door, align pin, located on the inside of the turning washer (d) with the slot of the bolt (a).
5. Place plastic washers (b) and turning washers (d) onto bolts (a) for both TOP and BOTTOM of pull. Place door pull onto bolts.
6. To secure door pull, use allen wrench (e) to rotate turning washers (d) alternately for both TOP and BOTTOM of pull in equal increments. Do not overtighten one without alternating and tightening the other.



MOUNTING SYSTEM C1

INSTALLATION MANUAL

	INCLUDED HARDWARE 	TOOLS NEEDED 
C1 Single mount Solid wood core or hollow metal door with through bolt.		

STEP BY STEP


Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
2. Insert bolts (a) through washers (b) then insert through the holes in door.
3. Place door pull onto bolts.
4. To secure door pull, use allen wrench (c) to tighten both TOP and BOTTOM bolts (a) alternately in equal increments. Do not overtighten one without alternating and tightening the other.



MOUNTING SYSTEM C2

INSTALLATION MANUAL

	INCLUDED HARDWARE 	TOOLS NEEDED
C2 Concealed single mount Hollow metal door with shoulder bolt and customer's reinforcement.		

STEP BY STEP

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Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

1. Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
2. On inside of door, Insert both bolts (a) into drilled holes.
3. Tighten bolts using a flat-head screwdriver.
4. Slide the door pull over bolt heads (a) and insert set-screws (b) into holes on the underside of the pull.
5. Tighten set-screws (b) with allen wrench (c).



MOUNTING SYSTEM C3

INSTALLATION MANUAL

	INCLUDED HARDWARE 	TOOLS NEEDED
C3 Concealed single mount Solid wood core door with shoulder bolt and threaded insert.		

STEP BY STEP

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Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

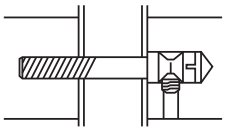
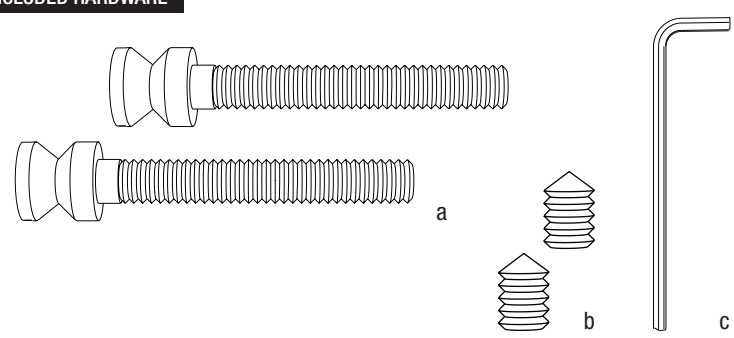
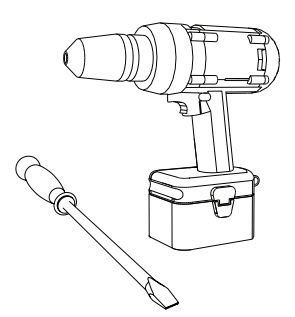
- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure door pull's center-to-center length and mark. Using a drill bit sized to threaded inserts (c), drill holes.
- With slotted end facing out, screw threaded inserts (a) into holes in door. Tighten with flat-head screwdriver.
- Insert bolts (b) into threaded inserts (a).
- Tighten bolts (b) using flat-head screwdriver.
- Slide the door pull over bolt heads (b) and insert set-screws (c) into holes on the underside of pull.
- Tighten set-screws (c) using allen wrench (d).

* Forms+Surfaces offers but does not recommend concealed mounting on wood doors. Frequent or heavy use can compromise the integrity of this mounting.

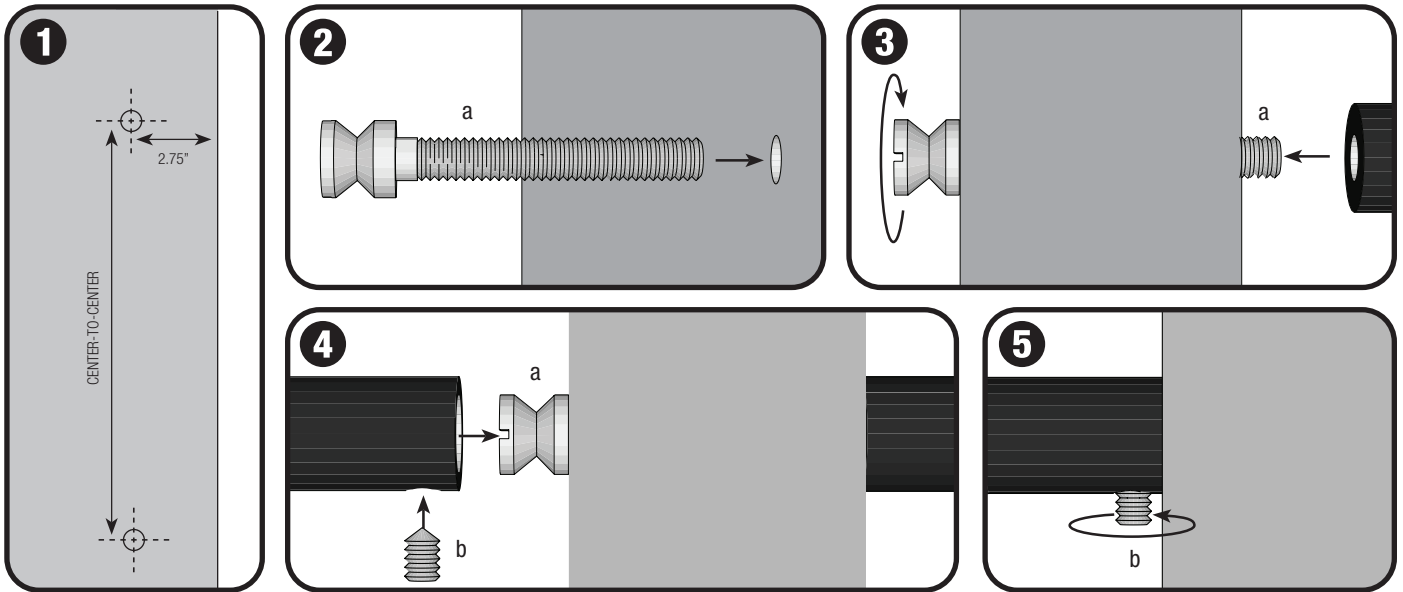


MOUNTING SYSTEM C4

INSTALLATION MANUAL

	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
<p>C4 Back-to-back mount Solid wood core or hollow metal door with shoulder bolt.</p>		

STEP BY STEP



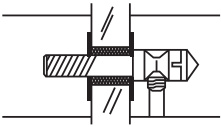
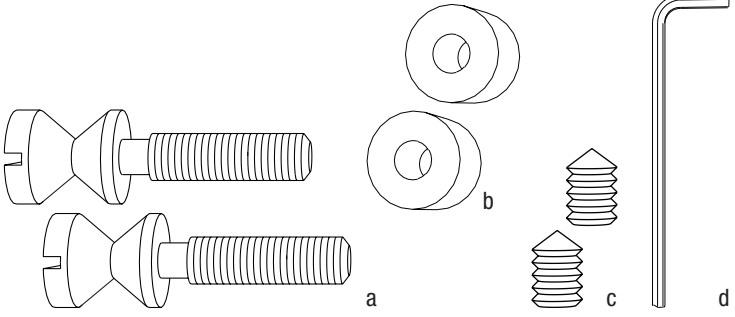
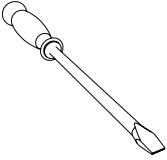
Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

- Using diagram above, mark holes on door. Recommended backset is 2.75". Measure pull's center-to-center length and mark. Using a drill bit sized to bolt, drill holes.
- On inside of door, Insert both bolts (a) through drilled holes.
- Place door pull, with smaller holes, onto bolts (a) on opposite side of door and hand tighten alternately by hand. Finish tightening with a flat-head screwdriver.
- Slide the interior door pull, with the larger holes, over bolt heads (a) and insert set-screws (b) into holes on the underside of the pull.
- Tighten set-screws (b) with allen wrench (c).

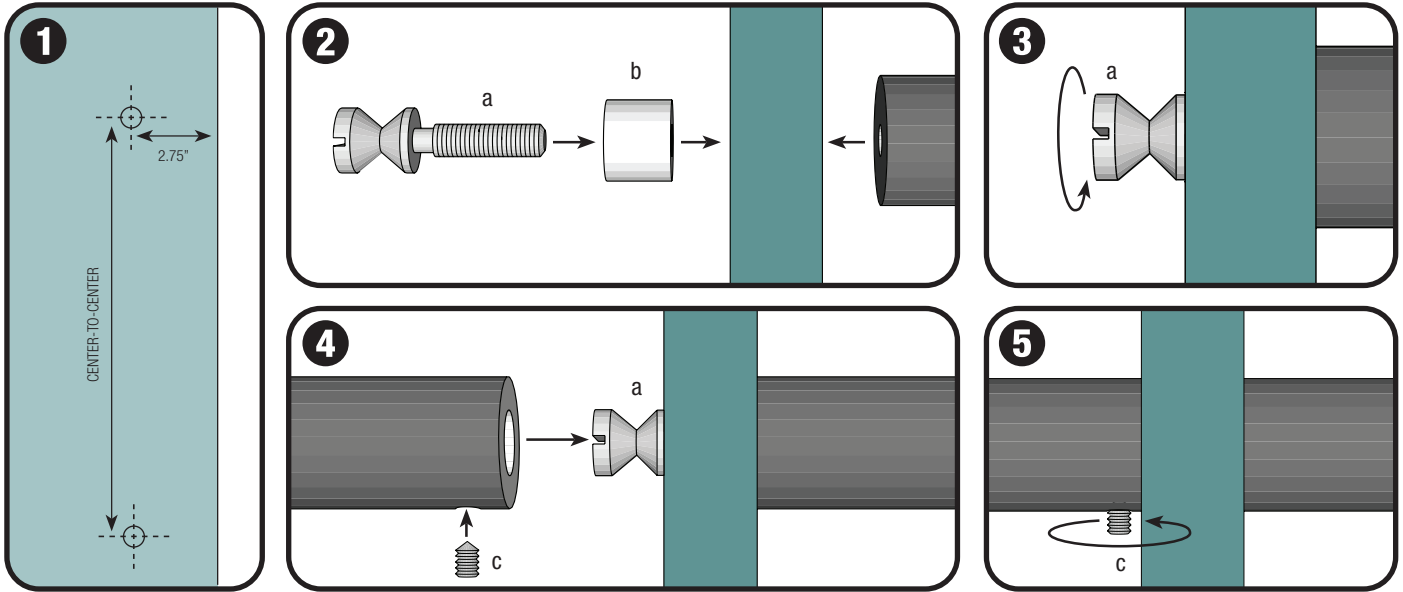


MOUNTING SYSTEM C5

INSTALLATION MANUAL

	<p>INCLUDED HARDWARE</p> 	<p>TOOLS NEEDED</p> 
<p>C5 Back-to-back mount Tempered glass door with shoulder bolt.</p>		

STEP BY STEP

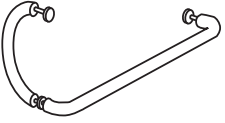
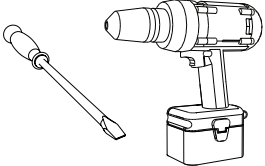


Note: F+S recommends the use of Loctite® #242 or #243 for all threaded connections. Follow Loctite manufacturers' instructions.

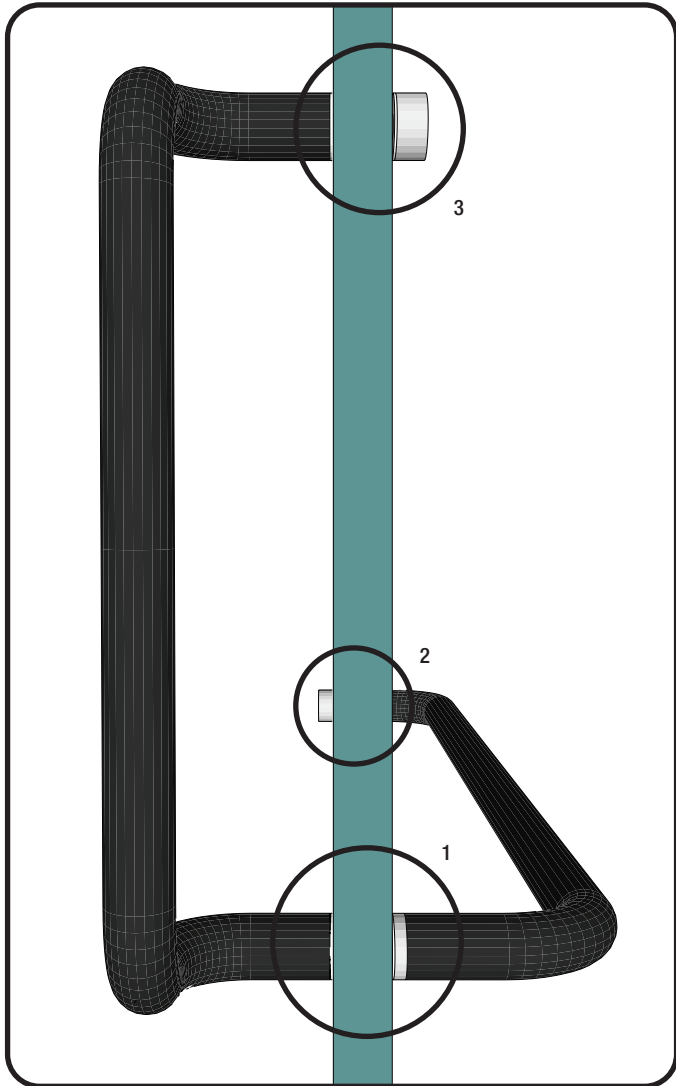
1. Verify door pull's center-to-center measurement is the same as the center-to-center measurement of holes in door. Recommended backset is 2.75".
2. On inside of door, insert bolts (a) into bushings (b) and place through holes in door. Place exterior door pull, with smaller holes, onto bolts on opposite side of door.
3. To secure exterior door pull, hand tighten both top and bottom bolts alternately by hand (a). Finish tightening with a flat-head screwdriver.
4. Slide the interior door pull, with the larger holes, over bolt heads (a) and insert set-screws (c) into holes on the underside of the pull.
5. Tighten set-screws (c) with allen wrench (d).



"L" CONFIGURATION

	<p>INCLUDED HARDWARE</p> <p>Included hardware will depend on the door type, door pull, and mounting systems used. Please refer to the appropriate step-by-step mounting instructions in this manual when performing the installation.</p>
<p>"L" Configuration</p> <p>Comprised of two door pulls: one end of each is mounted back-to-back; the remaining ends are single-mounted.</p>	<p>TOOLS NEEDED</p> <p>Recommended tools will depend on the door type and mounting system used.</p> 

EXAMPLE



The "L" Configuration can be used with many F+S door pull designs. Please refer to the "Mounting Options Matrix" on page 2 of the separate Door Pull Mounting Options guide for applicable door pulls and the mounting systems appropriate for each.

The example at left shows an "L" Configuration installation using two Round Tubular door pulls on a glass door, with mounting locations and types indicated:

- (1) joined ends – door pulls 1 & 2: back-to-back mounting system
- (2) horizontal end – door pull 1: single-mount mounting system
- (3) vertical end – door pull 2: single-mount mounting system

Note that location (1) will always use back-to-back mounting; locations (2) & (3) can use either a single-mount or a concealed single-mount* mounting system.

**Forms+Surfaces offers but does not recommend concealed mounting on wood doors. Frequent or heavy use can compromise the integrity of this mounting.*