

Ranger II® Casing Spacer Installation Instructions

Important Pre-Installation Factors:

- A) Always wear protective safety glasses, especially in low temperatures.
- B) Installation in Cold Climates: Keep Ranger II segments and Slide-Locks in a warm environment while awaiting installation in colder climates.
- C) Installation in Warm Climates: Under hot installation conditions, allow the product to age a couple of hours at ambient temperature prior to assembly.



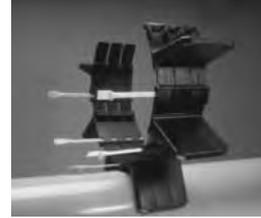
1. Size the Ranger II to make sure you have all the segments and Slide-Locks. Refer to the sizing chart in the instructions. (Over)



2. Take the segments and align the buckles. Insert the buckles 1/4 of the way into the slots. This will vary after your first installation.



3. Locate the directional arrows on the segment and insert Slide-Lock until the tip exits the end of the segment.



4. Continue the process from the previous step until all segments are put together. You're now ready to wrap the Ranger II around the pipe. Note: In tight installation areas you might need to break the belt into two parts and then wrap the R-II around the pipe.



5. Align the buckles and lock into place. Take the final Slide-Lock and slide completely into place.

Always Use Appropriate Protective Safety Wear and Glasses!



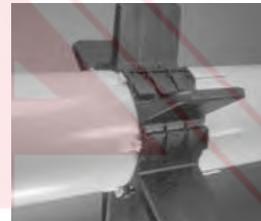
6. Insert all Slide-Locks as far as possible by hand. Complete tightening by tapping each Slide-Lock with a hammer, while holding the Slide-Lock against the pipe.



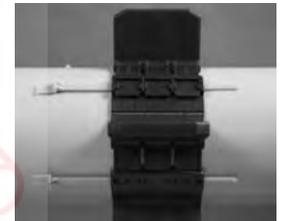
7A. To tighten Ranger II securely to carrier pipe, back Slide-Lock completely out of the slot. If needed, push segments together by hand. **Note:** You may have to release tension by loosening other Slide-Locks.



7B. Re-insert Slide-Locks completely into segments or until tight by driving Slide-Lock back into position while holding the Slide-Lock against the pipe.



7C. Repeat steps 7A and 7B until Ranger II is secure against the carrier pipe and unable to move.



Note: Slide-Locks do not have to be driven all the way for a tight fit, but drive as tight as possible.

Trouble Shooting Installation Procedure: Steps A-D



A) If a Slide-Lock should break during installation, remove and replace with a new Slide-Lock.



B) Remove Slide-Lock by backing it out, do not pull it through to remove broken piece. Tap broken piece back out.



C) Take a Slide-Lock and insert the opposite direction of the arrows. Push until you can grab the broken piece and remove.



D) If the Slide-Lock does not completely lock into place the following may have occurred. Two or more segments may have engaged completely. To rectify back Slide-Lock out and readjust segments by pulling them apart by hand. Re-insert Slide-Lock and adjust tightness of the spacer with another segment.

Slide-Lock will Not Insert Completely.

Ranger II® Casing Spacer Sizing Chart: Determine the number of segments for your Application

Carrier Pipe O.D. Range Inches (mm)	No. of Segments per Spacer	
0.83 to 1.14 (21 to 29)	3	Micro Segments Verify that Slide-Locks match segment size by checking to ensure the segment name (Mini) matches the name molded on the bottom of the Slide-Lock. Note: Micro & Mini segments both use the Mini Slide-Lock.
1.14 to 1.54 (29 to 39)	4	
1.54 to 1.85 (39 to 47)	5	
1.85 to 2.24 (47 to 57)	6	
2.24 to 2.48 (57 to 63)	7	
2.48 to 3.07 (63 to 78)	8	

Carrier Pipe O.D. Range Inches (mm)	No. of Segments per Spacer	
2.48 to 3.07 (63 to 78)	4	Mini Segments Verify that Slide-Locks match segment size by checking to ensure the segment name (Mini) matches the name molded on the bottom of the Slide-Lock. Note: Micro & Mini segments both use the Mini Slide-Lock.
3.07 to 3.86 (78 to 98)	5	
3.86 to 4.49 (98 to 114)	6	
4.49 to 5.51 (114 to 140)	7	

Carrier Pipe O.D. Range Inches (mm)	No. of Segments per Spacer	
5.51 to 6.89 (140 to 175)	4	Midi Segments Verify that Slide-Locks match segment size by checking to ensure the segment name (Midi) matches the name molded on the bottom of the Slide-Lock.
6.89 to 8.70 (175 to 221)	5	
8.70 to 10.31 (221 to 262)	6	
10.31 to 12.87 (262 to 327)	7	
12.87 to 14.41 (327 to 366)	8	
14.41 to 16.65 (366 to 423)	10	

Carrier Pipe O.D. Range Inches (mm)	No. of Segments per Spacer	
16.77 to 21.22 (426 to 539)	4	Medi Segments Verify that Slide-Locks match segment size by checking to ensure the segment name (Medi) matches the name molded on the bottom of the Slide-Lock.
21.22 to 25.98 (539 to 660)	5	

Carrier Pipe O.D. Range Inches (mm)	No. of Segments per Spacer	
25.98 to 30.79 (660 to 782)	6	Maxi Segments Verify that Slide-Locks match segment size by checking to ensure the segment name (Maxi) matches the name molded on the bottom of the Slide-Lock.
30.79 to 37.60 (782 to 955)	7	

