Pocket Instruction Guide

Flexco® SR™
Rivet Hinged™
Fastening
System

FLEXCO

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Safety Checklist

DANGER

Serious personal injury may result by failure to comply with the following:

Prior to any work on your conveyors, make certain that the power has been turned off and the belt is locked out, as per site procedures. Follow other safety precautions outlined in the operator's manual.

Be sure to wear all recommended safety equipment prior to engaging in any belt maintenance procedure.

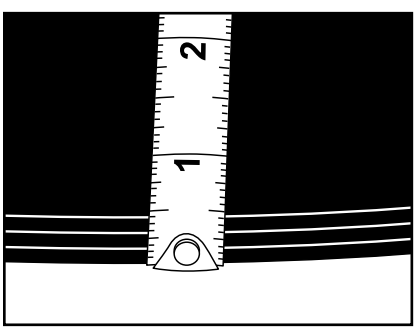
Proper Flexco® SR™ Selection Guidelines

Proper Selection for the Flexco® SR™ Rivet Hinged Fastening System

Flexco® SR Rivet Splice =
Fastener Strip + Rivet + Pin + Installation Tool

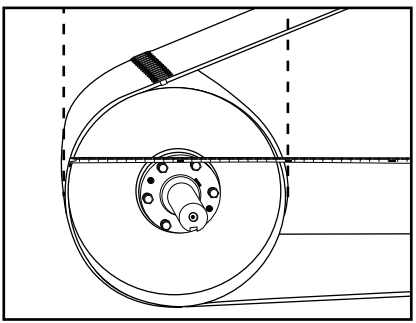
1. Determine Belt Tension.
Most conveyor belting has a mechanical fastener rating. Care should be taken not to operate the belting or fasteners beyond their recommended ratings.

2. Measure Belt Thickness.
Choose a fastener size which corresponds to belt thickness. If fasteners are to be countersunk, measure the belt thickness after skiving.



3. Measure the Diameter of the Smallest Pulley in your Drive.

For tail or take-up of the self-cleaning "wing type" pulley, 25% larger diameter dimensions are usually required. Only consider pulleys over which the belt makes at least a 90 degree wrap.



4. Choose the Fastener Size that is Appropriate for your Specification.

Flexco® Rivet Hinged Fastener Selection Chart

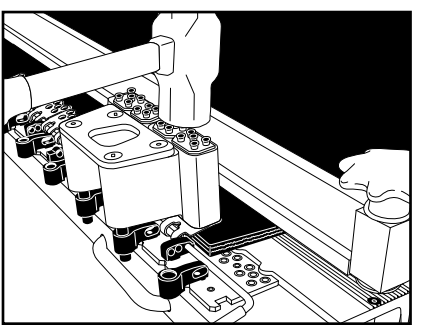
Fastener Size	For Belts With Mechanical Fastener Ratings Up To:	Belt Thickness Range	Recommended Min. Pulley Diameter	
			Operating Tension Under 100% of Belt Rating	Operating Tension Under 75% of Belt Rating
	kN/m	mm	mm	mm
R2	60	3-6	127	127
R5	79	6-11	230	175
R5-1/2	114	8-15	300	250
R6	140	10.5-17	450	400
R6LP	140	8-18	450	400
R8	263	10.5-17	450	400
R9	350	16-25.5	1050	1050

5. Select Material.
Choose the metal characteristics which best suit your application. Not all sizes are available in all metals.

Fastener Metals

Fastener Material	Abrasion Resistance	Chemical Resistance	Rust Resistance	Magnetic	Spark-Free	Available Sizes
Galvanized Steel	Good	Poor	Fair	Yes	No	R2, R5, R5½, R6
300 Series Stainless Steel	Good	Good to Excellent	Excellent	Yes	No	R2, R5, R9
MegAlloy®	Excellent	Poor	Poor	Yes	No	R2, R5, R5½
RustAlloy®	Good	Good	Good	Yes	No	R5, R5½, R6, R8

6. Select Installation Method.
Flexco® SR fasteners can be hammer applied or choose a power installation option to speed installation time.



7. Select Rivets.

Rivet Selection Chart

Belt Thickness Range mm	Rivet Size	Rapid Loader™ Collated Rivet Color Code
R2		
3-6	SRAA	N/A
4-8	SRA	
7-10	SRB	
R5		
6-8	SRA	Red
7-10	SRB	White
9-11	SRC	Blue
10.5-11	SRC/D	Orange
R5½ & R6LP		
8-9	SRB	White
8-10.5	SRC	Blue
10-12	SRC/D	Orange
11-13.5	SRD	Green
13-15	SRE	Purple
14-16.5	SRF*	Yellow
16-18	SRG*	Black
R6		
9-11	SRC/D	Orange
10.5-13	SRD	Green
12-14	SRE	Purple
13.5-16	SRF	Yellow
15-17	SRG	Black
R8		
10.5-11	SRC/D	Orange
10.5-13	SRD	Green
12-14	SRE	Purple
13.5-16	SRF	Yellow
15-17	SRG	Black
R9		
16-17	SRG	Black
16.5-19	SRH	Grey
18-21	SRI	Lt. Blue
20-22	SRJ**	Brown
21-24	SRK**	Tan
23-25	SRL**	Teal

* Applies to RAR6LP only.
** Use with 19 mm diameter hinge pin.

8. Select Hinge Pin.

AC – Bare Armored Cable: Heavy-duty, long-wearing pin popular in underground mining applications. Armor wrapping protects interior wires.

ACS – Bare Armored Stainless Steel Cable: The same advantages as bare armored cable plus corrosion resistance.

NAC – Nylon Covered Armored Cable: Combines a durable armored steel wrap with a nylon covering for smooth operation and long service life. Nylon covering helps reduce pin migration and prolong pin life. Not recommended in wet, abrasive applications.

NC – Nylon Covered Steel Cable: Nylon covering helps reduce pin migration and prolong pin life. Not recommended in wet, abrasive applications. For R2 and R5 only.

NCS – Nylon Covered Stainless Steel Cable: For greater corrosion resistance. Not recommended in wet, abrasive applications. For R2 and R5 only.

SC – Bare Steel Cable: Recommended for abrasive or gritty material conveyance.

SSC – Bare Stainless Steel Cable: For conditions where corrosion attacks steel pins. For R2 and R5 only.

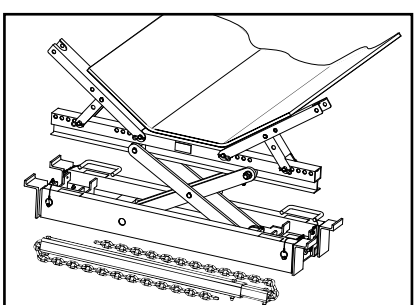
Proper Belt Preparation

Improve workplace safety and maximise belt conveyor performance by following proper belt preparation practices.

BELT LIFTING

A Safer Way to Lift a Belt
Lifting a conveyor belt out of the way to do belt repair and maintenance can be a difficult and hazardous job. To optimise worker safety when replacing worn idler rollers or to lift and flatten belt for a splicing station, avoid pry bars and manual lifting with a Flex-Lifter™ Belt Lifter.

- Highest safe lift rating available: 1810 kg (4,000 lbs.)
- Can safely lift a tensioned belt up to the stated ratings
- Works on all types of belt, including troughed, flat topside, or return side belts
- Easily transported to the job site

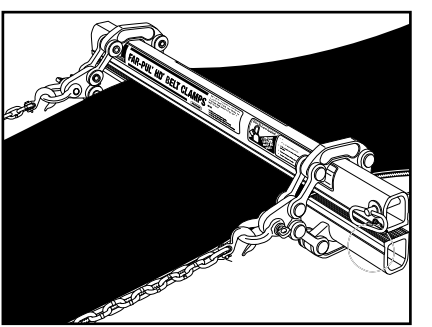


BELT CLAMPING

A Safer Way to Secure a Belt

Avoid the problems and potential dangers associated with homemade devices such as c-clamps or lumber and chains. The Far-Pul™ HD® Belt Clamp is specially designed to properly secure a belt and clamp it for safe belt conveyor maintenance.

- Built-in safety features allow a secure belt grip up to 25 mm (1 inch) thick
- Provides even clamping tension across entire belt width
- Load capacity up to 2.7 metric tons (3 tons) when used with two 1/4 metric ton (1-1/2 ton) come-a-longs



BELT SQUARING

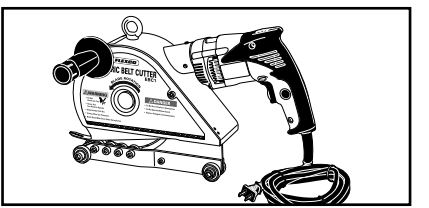
Accurate squaring of belt ends is essential to optimal positioning of the belt splice and provides for better fastener performance. Unevenly squared belts can lead to uneven belt tensions, belt mistracking, spillage issues, and ultimately to splice failure.

Belt Preparation

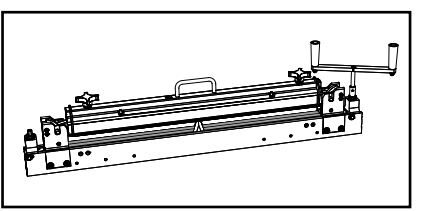
BELT CUTTING

A Safer Way to Cut a Belt

Utility knives can't provide the same level of safety, speed, and accuracy when cutting belts. And clean, square cut belt ends provide for optimal splice installation. To minimize the danger of accidental injury during the cutting process, choose a Flexco belt cutter.



Electric Belt Cutter – Power assisted belt cutting for rubber belts up to 50 mm (2") thick.



900 Series* Belt Cutter – Manually operated belt cutter for safe, accurate cuts up to 38 mm (1-1/2") thick.

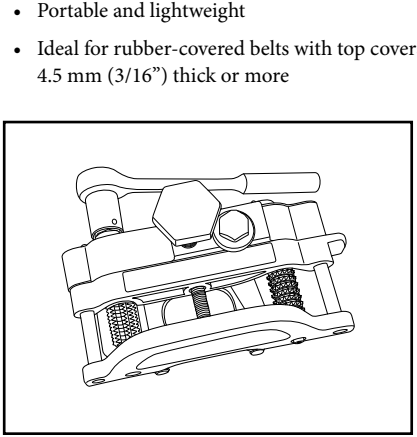
*Patent Numbers: US US8132489B2, International WIPO WO2009006619A1

BELT SKIVING

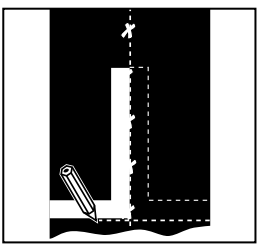
A Safer Way to Skive a Belt

Whenever possible, Flexco recommends skiving the belt in order to countersink mechanical fasteners. Skiving reduces the fastener profile on the belt, resulting in improved fastener/cleaner compatibility and increased fastener service life. The FSK™ Belt Skiver safely removes top cover for installation of recessed splices.

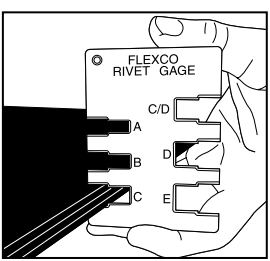
- Blade safely enclosed during skiving operations
- Portable and lightweight
- Ideal for rubber-covered belts with top covers 4.5 mm (3/16") thick or more



Hammer Installation:
Installing Flexco® R2, R5, R5½, R6 Fasteners with MSRT Installation Tool

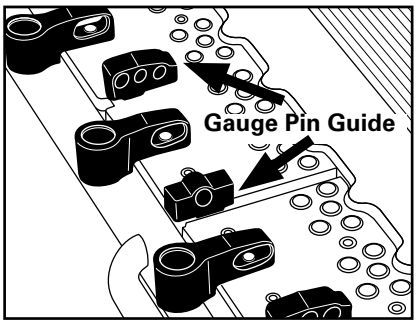


1. Square belt using centerline method. Cut belt at least 100 mm (4") behind old splice using a Flexco belt cutting tool. Skive belt when top cover permits.

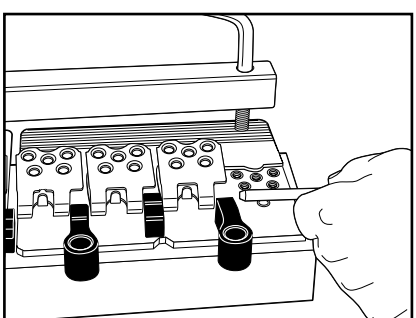


2. Measure belt thickness from cut edge using gauge or tape measure. If fasteners are to be countersunk, measure belt thickness after skiving. Select correct size SR rivets for your belt thickness.

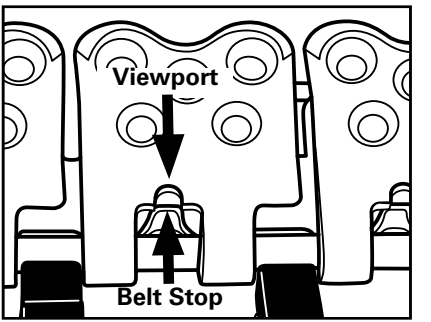
3. Place tool on wooden board, width of the conveyor framework, for support. Lift and turn gauge pin guide to correct fastener size.



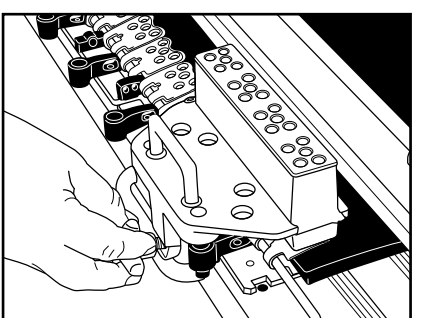
4. Center fastener strip(s) on tool, Flexco stamp facing up. Holes on fasteners and anvil plate must line up. Insert gauge pin through guides and fastener loops.



5. Center belt in fastener strip. Look through viewports, belt end should be tight against belt stops. Tighten hold down bar to secure belt.

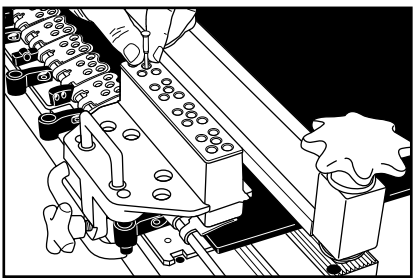


6. Set all fastener top plates with hammer blows. Place SR700 guide blocks at each end of the fastener strip and tighten clamping screws. Spray guide block with SL5 Silicone.



Individual Rivets.

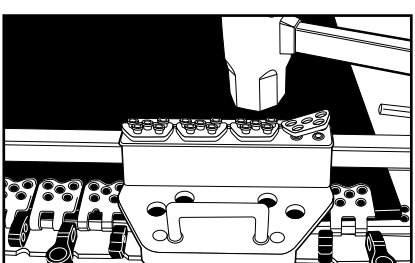
7A. Load guide block with individual rivets. Reduce installation time by adding guide blocks across tool.



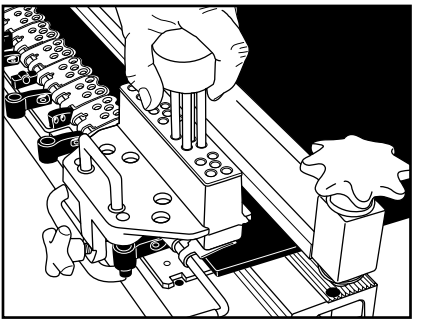
Rapid Loader™ Collated Rivets.

Reduce installation time using Rapid Loader™ Collated Rivet Strips.

7B. Insert pilot nails into guide block holes. Using a hammer, hit collated rivets to release rivets from plastic. Remove plastic from guide block. If a shorter strip is needed, break off extra plates by bending strip at checkpoints.



8. Using the Drive Rod, push rivets into guide block.



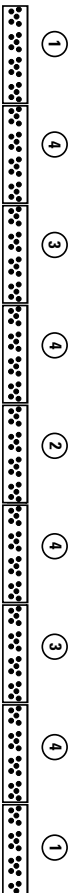
Guide Block Sequence for Single and Multiple Rivet Driving

① Drive one full block on both ends of fastener strip.

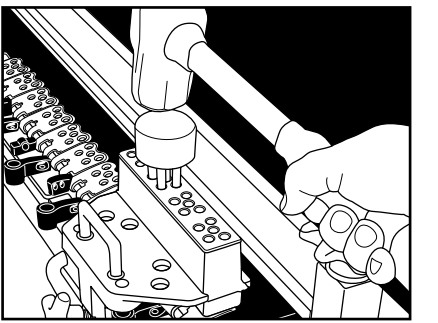
② Drive one full block in the center of the fastener strip.

③ On both sides, split the difference between the middle and end and drive one full block.

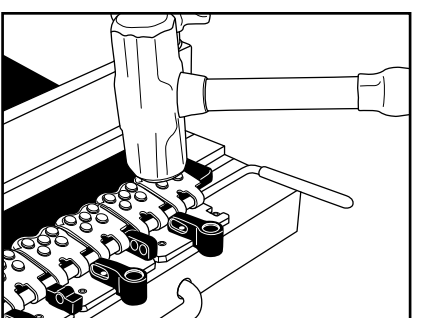
④ Drive remaining rivets.



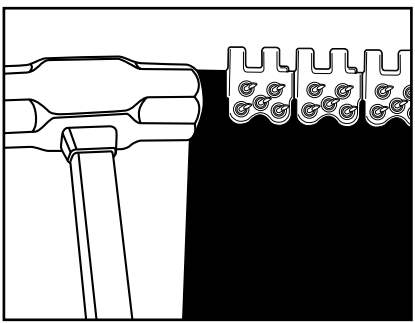
9. Drive rivets following sequencing on page 17.



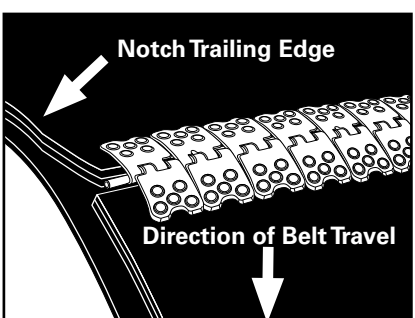
10. Remove guide blocks. Using a 1.8 kg (4 lb.) hammer, set all rivets. The belt should pucker around the edges of the fasteners.



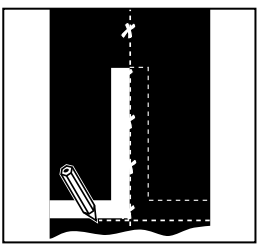
11. Remove gauge pin and belt clamp bar. Lift belt off tool and knock off any pilot nails still attached. Turn tool over and remove all nails.



12. Repeat steps 1-11 on other belt end. Bring belt ends together and insert hinge pin. Notch trailing edge of belt only. Splice is complete.



Hammer Installation:
Installing Flexco® R8 or R9 Fasteners with MSRT8 or MSRT9 Installation Tool



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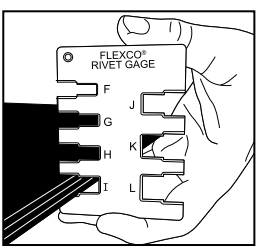
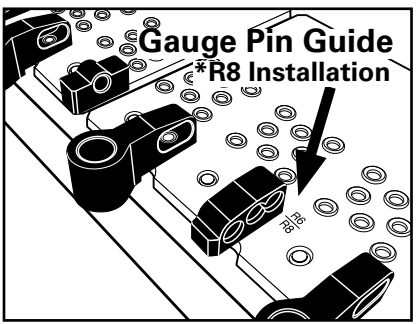
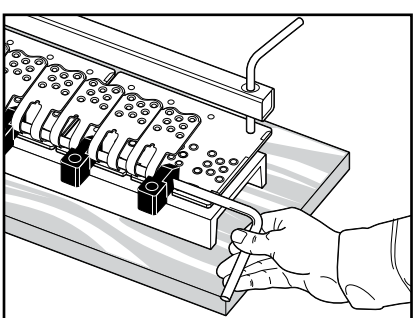


2. Measure belt thickness from cut edge using gauge or tape measure. If fasteners are to be countersunk, measure belt thickness after skiving. Select correct size SR rivets for your belt thickness.

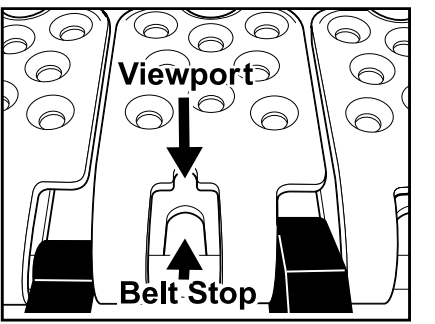
3. Place tool on wooden board, width of the conveyor framework, for support. Lift and turn gauge pin guide to correct fastener size. No adjustment necessary for R9. *For R8 installation, confirm gauge pin guide is set to R6/R8 mark.



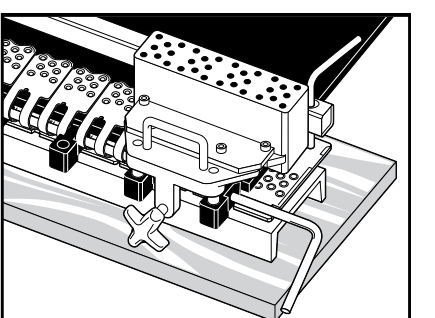
4. Center fastener strips on tool, Flexco stamp facing up. Holes on fasteners and anvil plate must line up. Insert gauge pin through guides and fastener loops.



5. Center belt in fastener strip. Look through viewports, belt end should be tight against belt stops on fastener or on tool. Tighten hold down bar to secure belt.

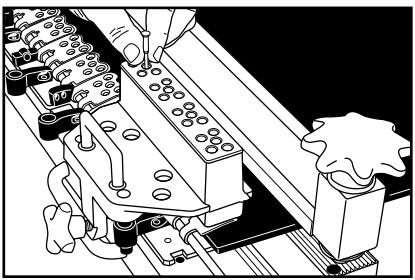


6. Set all fastener top plates with hammer blows. Place guide blocks at each end of the fastener strip and tighten clamping screws. Spray guide block with SL5 Silicone.



Individual Rivets.

7A. Load guide block with individual rivets. Reduce installation time by adding guide blocks across tool.



Rapid Loader™ Collated Rivets.

Reduce installation time using Rapid Loader™ Collated Rivet Strips.

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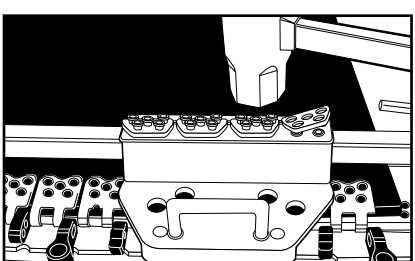

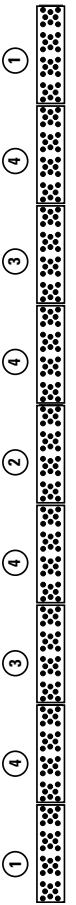

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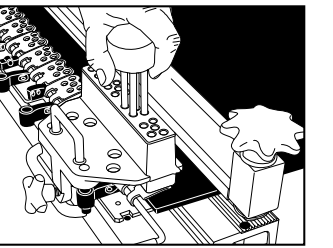


9B. Drive rivets following the Guide Block and Single Rivet or Multiple Rivet driving sequences.

Guide Block Sequence for Single and Multiple Rivet Driving

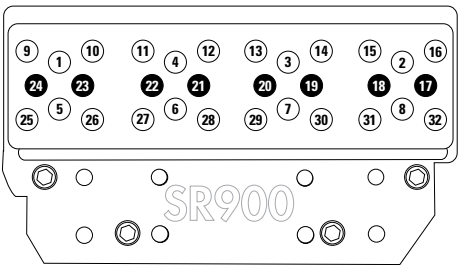
① Drive one full block on both ends of fastener strip.

② Drive one full block in the center of the fastener strip.

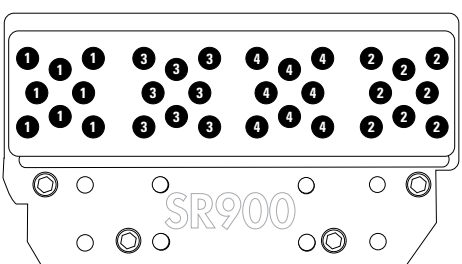
③ On both sides, split the difference between the middle and end and drive one full block.

④ Drive remaining rivets.

10A. For **Single Rivet** driving, follow number sequence as illustrated below for driving rivets.



10B. For **Multiple Rivet** driving, use a 2.7 kg (6 lb.) hammer and SR859 drive rod, follow number sequence as illustrated below for driving.



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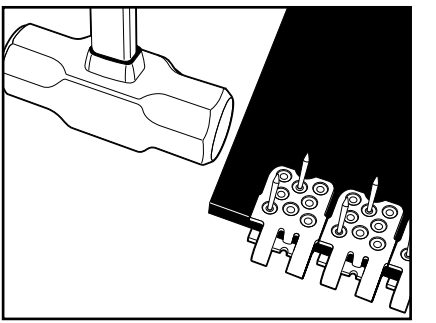

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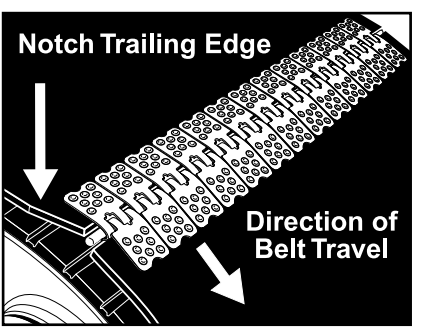
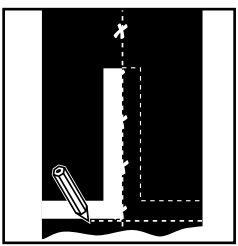


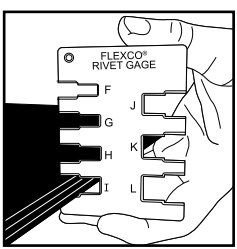
Powered Installation:
Power Source: Pneumatic– Flexco® SR™ Rivet Hinged Installation with the Pneumatic Single Rivet Driver

⚠ WARNING

Improper use of this tool can result in serious bodily injury! This manual contains important information about product function and safety. Please read and understand this manual BEFORE operating the tool. Please keep this manual available for other users and owners before they use the tool. This manual should be stored in a safe place.

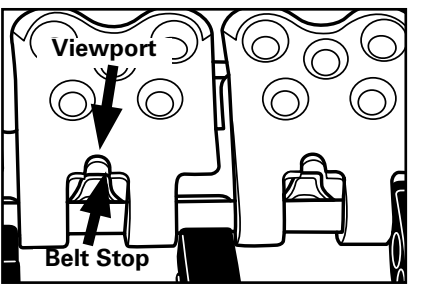


1. Square belt using centreline method. Cut belt at least 100 mm (4") behind old splice using Flexco 900 Cutter or Electric Belt Cutter. We also recommend skiving the belt with an FSK2 Skiver.



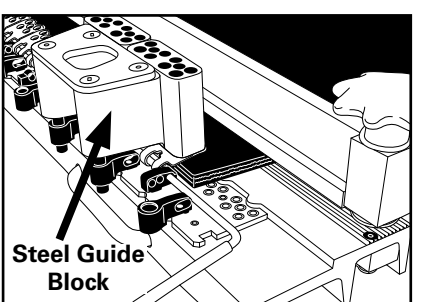
2. Measure belt thickness from cut edge using gauge or tape measure. Measure belt thickness after skiving. Use the rivet selection guide to the right to select the correct size SR/BR rivets with washers for your belt thickness.

3. Insert belt end into fastener strip; centre belt in strip. Look through viewports; belt ends should be tight against belt stops. Tighten clamp bar to secure belt. Set all fastener top plates hitting one fastener at a time on the front scalloped edge portion of fastener. Repeat to ensure fasteners are set firmly against top of belt.

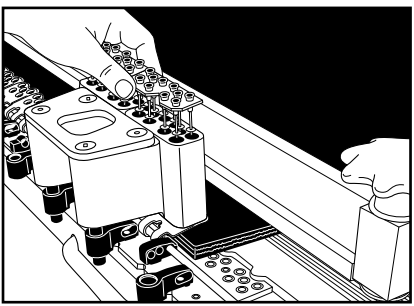


4. Use the steel guide blocks designed for use with this tool.

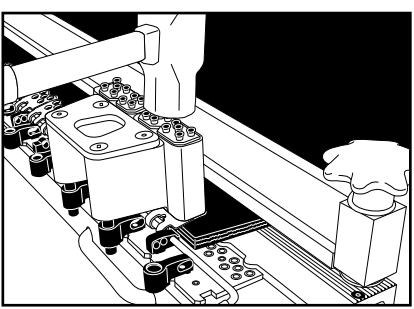
SR 5 rivet pattern: 42000 (35RD-GB5-4)
SR 8 rivet pattern: 41998 (35RD-GB8-4)



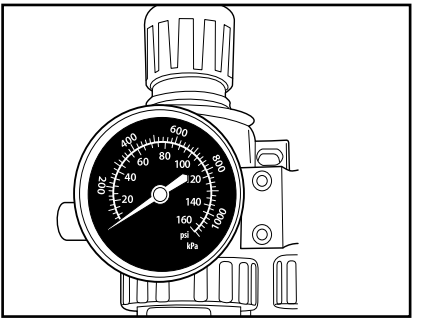
5. Load guide blocks with Rapid Loader™ Collated Rivets *with washers*. **WARNING: Without washers, misfires will occur.** If a shorter strip is needed, break off extra rivets by bending strip at checkpoint.



6. Using a hammer, hit the Rapid Loader™ Collated Rivets to release all rivets from plastic. Remove plastic from guide block and discard.

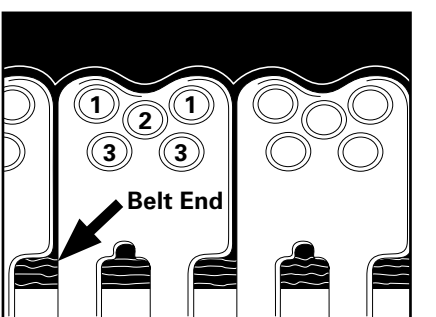


7. Adjust air settings according to the Power Setting Selection Chart (page31).



8. Drive rivets in the sequence below:

- **a.** Drive the row closest to the edge of the fastener
- **b.** Drive the middle row
- **c.** Drive the rivets closest to the belt end

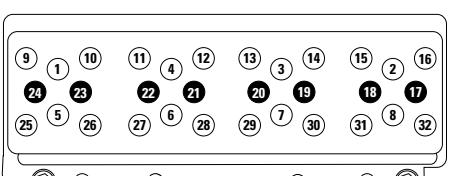


NOTE: These values are approximate and may change based on belt construction, temperature and environmental variables. Use a pressure that best meets your specific situation.

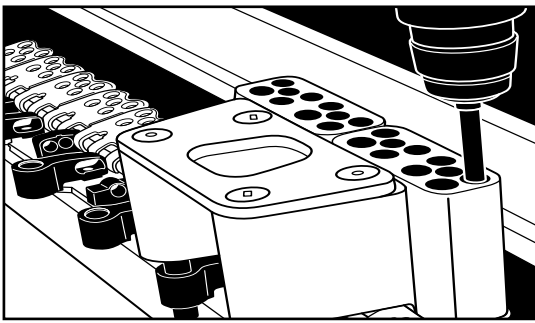
POWER SETTING SELECTION CHART		
RIVET SIZE	Pressure Setting (p.s.i.)	
	P.S.I.	Bar
A	40-45	2.8-3.1
B	45-50	3.1-3.4
C	45-55	3-4
C/D	50-60	3.5-4.5
D	55-65	3.5-4.5
E	60-70	4-5
F	65-75	4.5-5.5
G	70-80	4.5-5.5
H	75-85	5-6
I	75-85	5-6
J	80-90	5.5-6.5
K	80-90	5.5-6.5
L	85-95	5.5-6.5

Guide Block Sequence for Rivet Driving

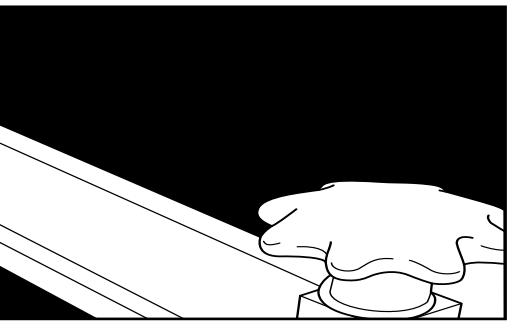
For Single Rivet driving, follow number sequence as illustrated below for driving rivets.



Fastener Installation



9. Drive one full block on both ends of fastener strip. Drive one full block in the centre of the fastener strip. On both sides, split the difference between the middle and end and drive one full block. Drive remaining rivets.

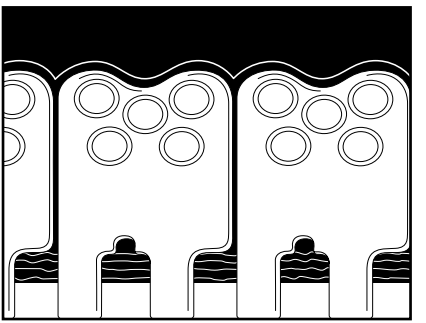


10. Insert the driver nose directly into the counter bore of the guide block. Press the tool firmly and completely into the guide block. Pull the trigger to drive the rivet.

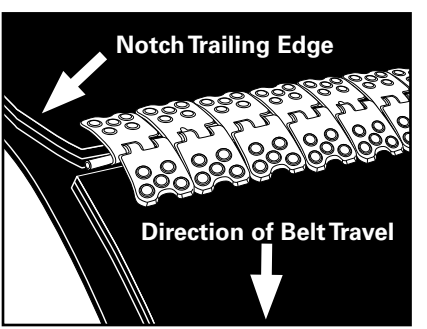
Start with the specified pressure. If rivet is not fully driven into fastener, use hammer to fully drive rivets. Increase pressure and repeat until the rivet is properly driven into fastener.

If fastener plate is distorted, reduce pressure until rivet is properly driven into fastener.

11. Remove guide block(s) and make sure rivets are completely set. Hammer any loose rivets into fasteners to properly set rivets. Hammer scalloped edges of fasteners to set edges into belt.



12. Repeat steps 1-11 on other belt end. Bring belt ends together and insert hinge pin. Notch trailing edge of belt only. Splice is complete.



Powered Installation:
Power Source: Pneumatic– Flexco® SR™ Rivet Hinged Installation with the Air Powered Rivet Driver

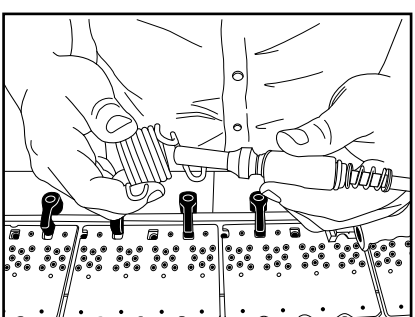
⚠ WARNING

Never actuate tool unless Drive Rod is inside Guide Block and contacting a Rivet, personal injury or damage to tool could occur.

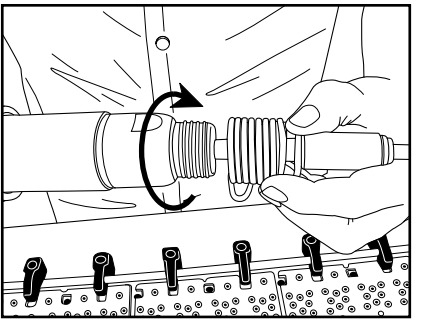
- Always use clean, dry, regulated compressed air.
- Do not operate tool with air pressure greater than 90 psi.
- Keep tool clean and dry.
- Lubricate tool with Air Tool Oil daily.

Assembly

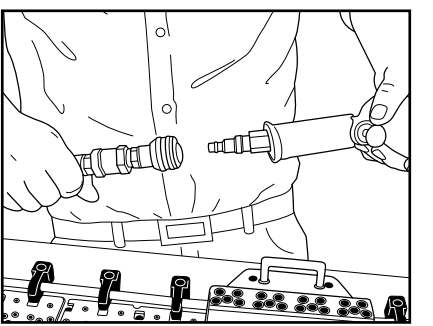
1. Insert Drive Rod into Retainer Spring.



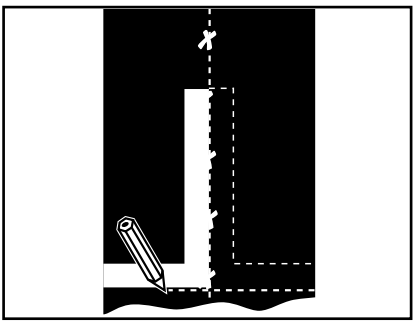
2. Thread Retainer Spring onto nose of Tool.



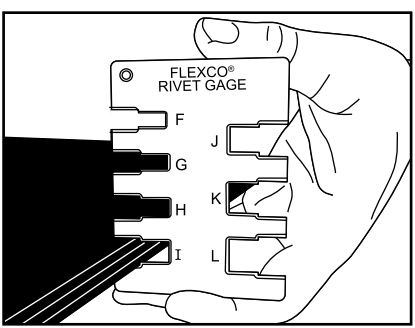
3. Connect Air Supply.



4. Square belt using centerline method. Cut belt at least 100 mm (4") behind old splice using a Flexco belt cutting tool. Skive belt when top cover permits.

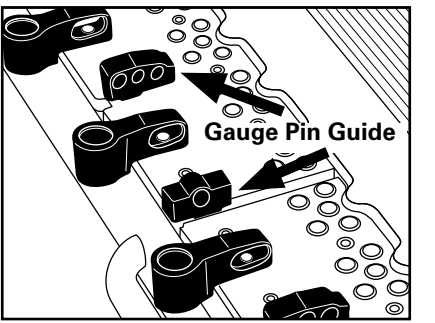


5. Measure belt thickness from cut edge using gauge or tape measure. If fasteners are to be countersunk, measure belt thickness after skiving. Select correct size SR rivet for your belt thickness.

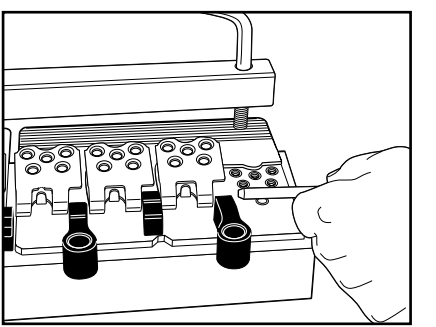


Operation

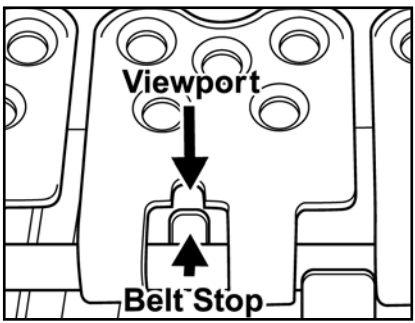
6. Place tool on wooden board, width of the conveyor framework, for support. Lift and turn gauge pin guide to correct fastener size.



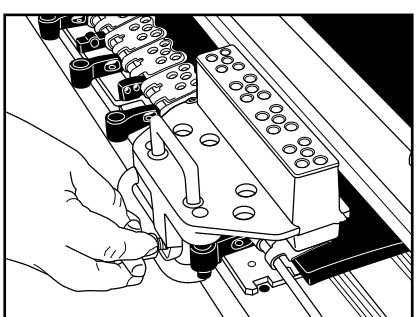
7. Center fastener strip on tool, Flexco stamp facing up. Holes on fasteners and anvil plate must line up. Insert gauge pin through guides and fastener loops.



8. Center belt in fastener strip. Look through viewports, belt end should be tight against belt stops. Tighten hold down bar to secure belt.

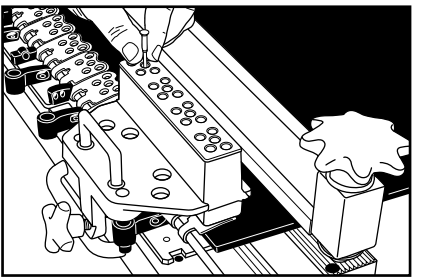


9. Set all fastener top plates with hammer blows. Place SR700 guide blocks at each end of the fastener strip and tighten clamping screws. **Note: Spray guide block with SL5 Silicone.**



Individual Rivets.

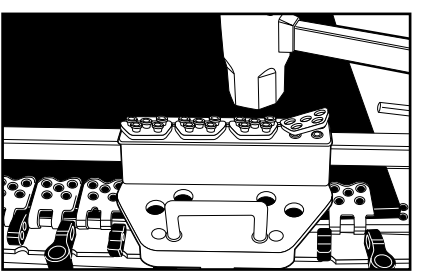
10A. Load guide block with individual rivets. Reduce installation time by adding guide blocks across tool.



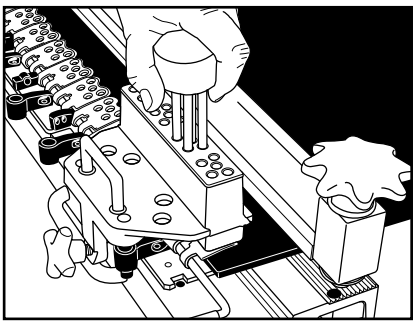
Rapid Loader™ Collated Rivets.

Reduce installation time using Rapid Loader™ Collated Rivet Strips.

10B. Insert pilot nails into guide block holes. Using a hammer, hit collated rivets to release rivets from plastic. Remove plastic from guide block. If a shorter strip is needed, break off extra plates by bending strip at checkpoints.



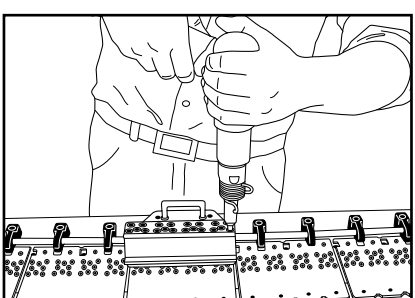
11. Using the Drive Rod, push rivets into guide block.



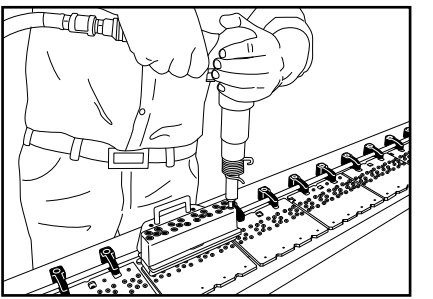
⚠ WARNING

Never actuate tool unless Drive Rod is inside Guide Block and contacting a Rivet, personal injury or damage to tool could occur.

12. Insert Drive Rod into Guide Block.

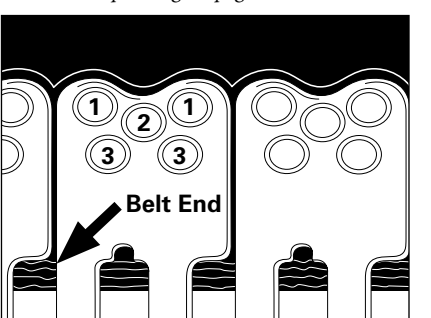


13. Actuate trigger on tool to drive rivet. Drive rivet into belt. Do not overdrive.

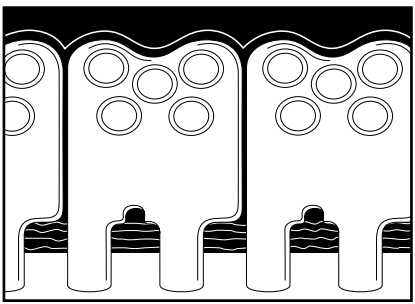


14. Drive rivets in the sequence below:

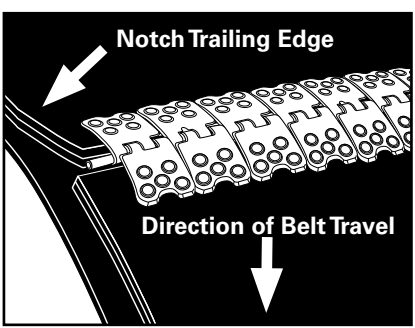
a. Drive the row closest to the edge of the fastener
b. Drive the middle row
c. Drive the rivets closest to the belt end
For R8/R9 sequencing see page 25.



15. Remove guide block(s) and make sure rivets are set completely. Drive remaining rivets following sequencing for 5-rivet pattern on page 17 or for 8-rivet pattern on page 24.



16. Repeat steps 1-15 on other belt end. Bring belt ends together and insert hinge pin. Notch trailing edge of belt only. Splice is complete.



Notes

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Notes

Notes

Flexco
Belt Cleaning Systems

MINELINE **MMP Medium Mine-Duty Precleaner**

MINELINE **MHS Heavy-Duty Secondary Cleaner**

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