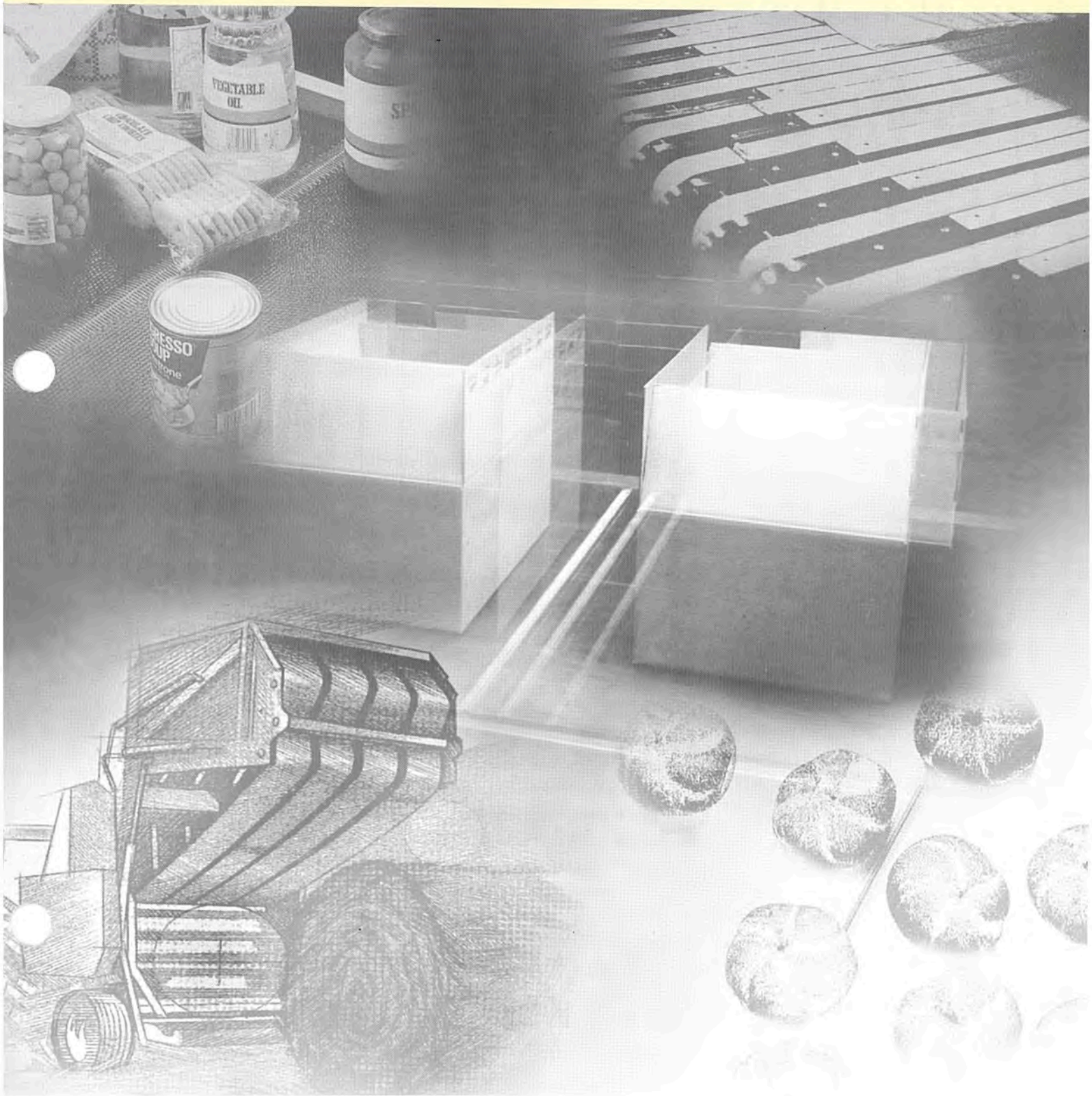
Troubleshooting Guide

and Lacing Tips for Clipper® Splices

Clipper

X1043

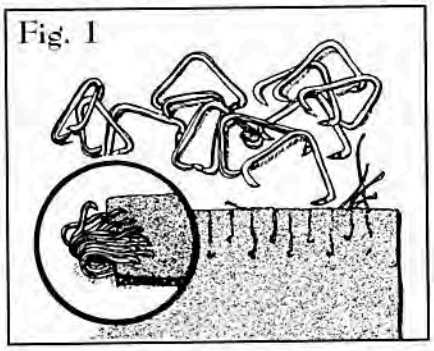


Troubleshooting Guide

The Clipper® Wire Hook System is a very reliable splicing system. But there may be instances when the splice is not performing to your expectations. Below is a list of problems that might occur and some typical causes, listed in order of probable occurrence. Reference these causes on Page 3. If you require additional assistance, please contact either your local distributor or call Flexco at 1-800-541-8028.

Possible Problems:

Fig. 1



1. Failed Splice - Hooks open up and release from belt end (Fig. 1). Possible causes: 1,2,9,7,16
2. Failed Splice - Hooks pull through end of belt without opening, remaining fully clinched (Fig. 2). Possible causes: 4,5,7,1, 6
3. Belt fractures directly behind fasteners (Fig. 3). Possible causes: 6,5,1
4. Steps in lacing (Fig. 4). Possible causes: 12,7,8
5. Hooks rust or corrode. Possible cause: 10
6. Connecting pin fractures prematurely. Possible causes: 11,16,13

Fig. 2

Fig. 3

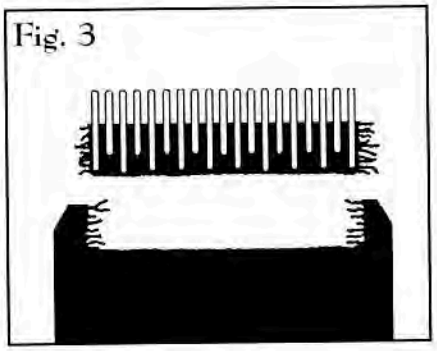


Fig. 4

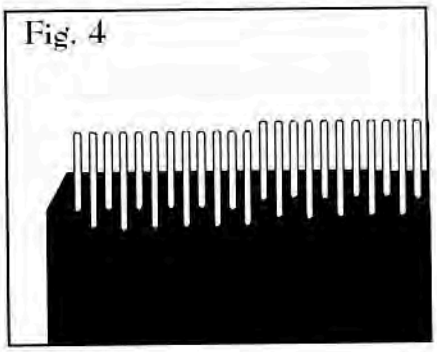
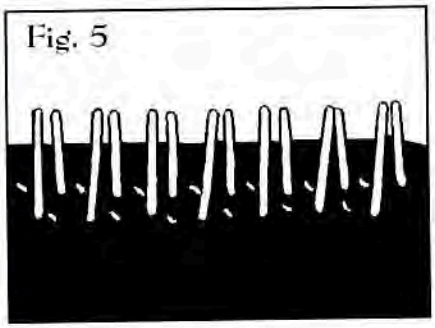
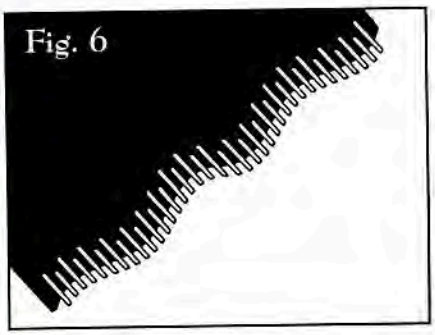


Fig. 5



7. Connecting pin wears out prematurely. Possible cause: 13
8. Difficulty inserting connecting pin into finished splice. Possible causes: 13,15,21,3
9. Connecting pin migrates out of splice. Possible causes: 7,16,13,22
10. Hook legs fracture prematurely. Possible causes: 6,8
11. A flat area is worn on hook legs prematurely. Possible causes: 9,10
12. Hooks wear out in the loop area prematurely. Possible cause: 13
13. Hook loops lean together in pairs (Fig. 5). Possible causes: 9,23
14. Hooks twist. Possible causes: 8,14
15. Splice trips magnetic dectector. Possible cause:17
16. Splice trips metallic detector. Possible cause:18
17. Hook points twist (lay over) instead of properly penetrating belt. Possible causes: 14,19
18. End hooks pull out or fall out of belt. Possible causes: 2,9,20,24
19. Belt wave/rippling (Fig. 6). Possible cause: 21

Fig. 6



Possible Causes:

1	Wrong hook size. Reference the hook selection chart on page 4.
2	Tension load too high for strength of hooks. Check if belt is being subjected to severe load tension on startup or at periodic intervals. Consider a high tensile hook or a hook made from a larger diameter wire for added strength.
3	Hooks improperly installed. Refer to "How to Achieve the Optimal Splice" on page 4.
4	Hooks not reaching back far enough into belt carcass to withstand tension load. Use hook with longer leg length to grab more fill yarns. (Caution: Do not use hook too big for recommended minimum pulley diameter.)
5	Belt may not be correct for the application. Check with your belt supplier.
6	Hook exceeds recommended minimum pulley diameter. Reference the hook selection chart on page 4.
7	Belt not cut square before lacing.
8	Hooks over-compressed when installed. Refer to "How to Achieve the Optimal Splice" on page 4.
9	Hooks under-compressed when installed. Refer to "How to Achieve the Optimal Splice" on page 4.
10	Wrong hook material selected for the application.
11	Connecting pin is too rigid for the application. Troughing applications or crowned pulleys must use a flexible pin such as Nylon Covered Stainless Cable, Duralink™ or Nylon Plus.
12	Refer to owner's manual for the lacer to review proper continuous lacing steps.
13	Wrong connecting pin used. Use proper connecting pin for hook size and application.
14	Hook point too long for belt thickness. Refer to the hook selection chart on page 4.
15	Connecting pin not rigid enough to insert into wide splice. Use a Clipper® leader assembly for easy insertion of flexible pins or switch to a rigid pin.
16	Conveyor is out of alignment causing belt to mistrack. Diagnose and correct.
17	Currently using hooks with magnetic properties. Switch to Bronze, Hastelloy or Inconel hooks. 316 Stainless Steel is only slightly magnetic.
18	Using metallic hooks. Switch to either the Alligator® Spiral or Alligator® Plastic Rivet non-metallic fasteners from Flexco.
19	Belt too hard for points to easily penetrate. Use stronger hook, i.e. hooks made of a high tensile wire or hooks made of a larger wire diameter.
20	Lacing too close to edge of belt. Leave 1/4" to 1/2" unlaced on both sides of the belt. Chamfer/notch the trailing edges of the splice (notch both ends if belt is bi-directional). Install one more hook on the leading end than the trailing end of the belt to protect the end hooks from catching on conveyor components when in operation.
21	Belt wave. When carded fasteners are installed into some belts the displaced material can cause the belt to ripple. Unibar® hooks have a welded common bar connecting each individual hook. This common bar keeps belt end flat, which eases meshing and pin insertion.
22	Consider using notched steel or stainless steel pins. If using a nylon coated solid core pin, such as Nylosteel, strip the last 1/2" off from the pin and bend back, forming a 'J' end. The 'J' end can then lock into the splice.
23	Consider using Unibar® hooks. Each hook leg is welded to a common bar, keeping the hook legs parallel during the installation process.
24	Pin is too short and has allowed the splice to snag on obstructions. Replace pin.

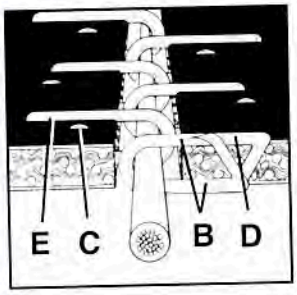
Clipper® Fastener Selection Chart

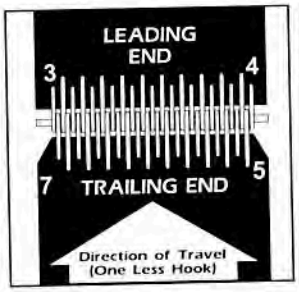
Belt Thickness →	Up to 3/64"	1/16"	3/32"	1/8"	5/32"	3/16"	7/32"	1/4"	9/32"	5/16"	11/32"	25/64"
↓ Min. Pulley	1.2 mm	1.6 mm	2.4 mm	3.2 mm	4.0 mm	4.8 mm	5.6 mm	6.4 mm	7.1 mm	7.9 mm	9.0 mm	10.0 mm
15/16" (24 mm)	UCM36SLXSP, 25											
		UCM36SLSP										
2" (51 mm)	UCM36XSP, 30											
		UCM36SP, 36SP, 1XSP										
			UX1SP									
			UCM36, 36, 1SP									
				1, UX1, U2SP								
				U2								
3" (76 mm)				2SP								
					2							
3-1/2" (89 mm)						3, U3						
4" (102 mm)							4					
								4-1/2				
5" (127 mm)							U4					
									5, U5			
6" (152 mm)										6, U6		
7" (175 mm)											7, U7	

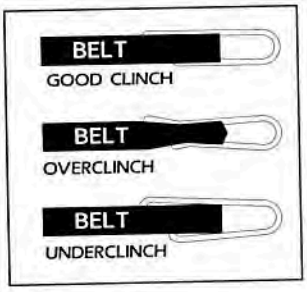
* Chart does not reflect all available hook sizes. Additional point lengths and leg lengths are available. Contact customer service if a special offering is required.

How to Achieve the Optimal Splice

1. Select the proper hook based on the belt thickness and pulley diameter (see hook selection chart above).
2. Hook is properly sized and clinched when:
   A. Hook legs are parallel. Loop should not have a light bulb shape.
   B. Hook points slightly penetrate opposite side of belt (.005"–.015").
   C. 1/3 – 1/2 of the wire diameter is embedded into the belt.
   D. When installed, the 'knuckles' of the hook should not be higher than the legs.
3. Leave 1/4" on each edge of belt unlaced. This guards against end hooks being pulled out.
4. Use one more hook on leading end than on trailing end.
5. Chamfer trailing edge.
6. Splice should be uniformly embedded across the entire width of the splice.
7. Edges of the belt should line up when the laced belt ends are connected.
8. Run fingernail across loops of splice; loops should not move.







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