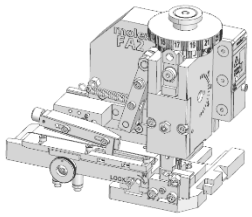
Order Number
213069-6800

molex®

Application Tooling Specification



FEATURES

- Applicator designed to industry-standard mounting and 135.80mm (5.346”) shut height.
- Quick setup time: plus, the crimp height, track, and feed adjustments can be set without removing the applicator from the press.
- Fine adjustment allows users to achieve the target with little effort by adjusting in increments of 0.015mm (.0006”) for conductor crimp height and 0.025mm (.001”) for insulation height.
- Independent adjustment rings allow users to quickly adjust the conductor or insulation crimp height without affecting each other.
- Directly adapts to most automatic wire processing machines.
- This tool is IPC/WHMA-A-620 compliant, as indicated below.

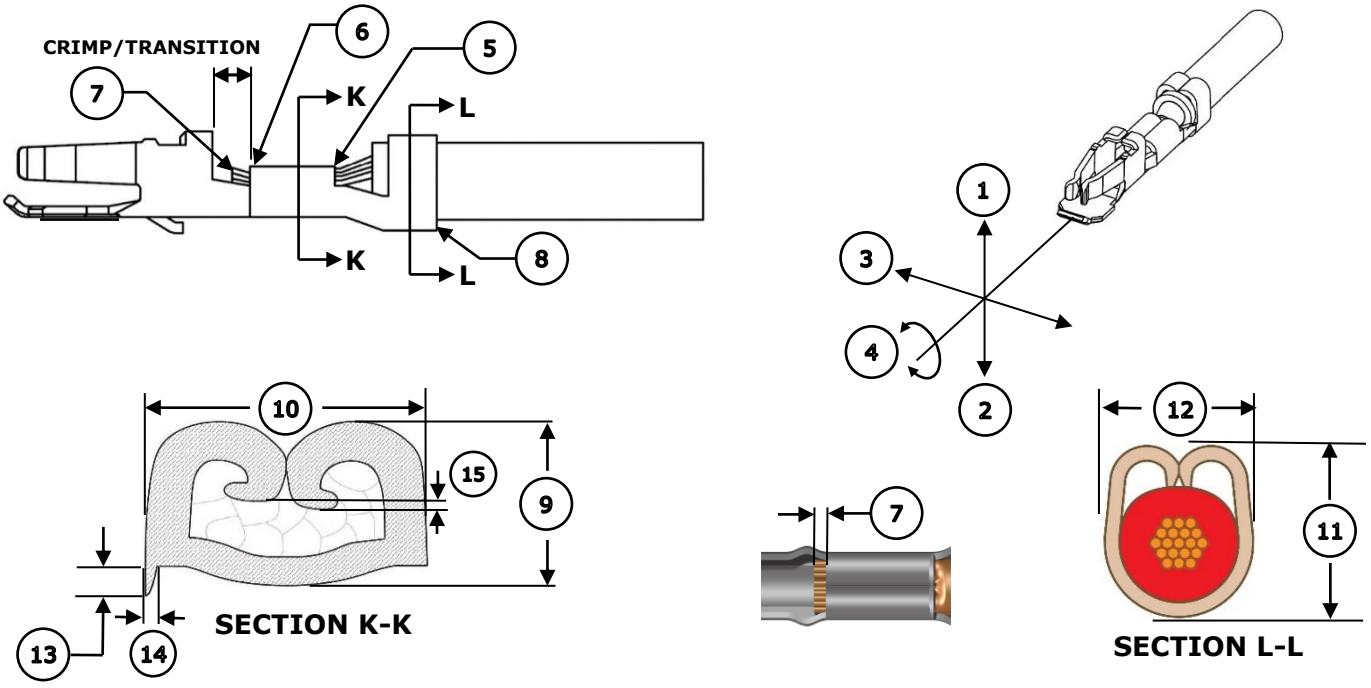
SCOPE

Products: Pico-Lock 3.0 Crimp Terminals, 18-20 AWG UL 1007 Wire.

Terminal Series No.	Terminal Order No.	Wire		Insulation Diameter				Strip Length	
				IPC/WHMA-A-620 (1)		Terminal (2)			
		Wire Type (3)	Wire Size	mm	In.	mm	In.	mm	In.
221113	221113-5100	UL1007	18 AWG	1.80-2.20	.070-.086	2.20	.086	2.95-3.15	.116-.124
		UL1007	20 AWG	1.65-2.00	.064-.078	1.76	.069	2.95-3.15	.116-.124

(1) To achieve optimum IPC/WHMA-A-620 insulation crimps, use this Insulation OD range.
(2) Overall insulation OD specification for the terminal.
(3) UL 1007 wire type used for qualification purpose.

DEFINITION OF TERMS



CRIMP SPECIFICATIONS

The following crimp specifications are based on document 2211130000 Revision A11:

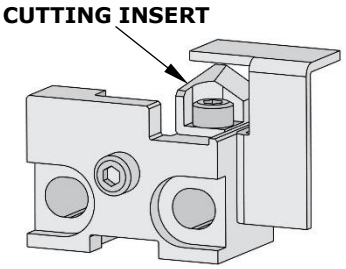
Feature	Requirement					
1. Bend Up	3° Max					
2. Bend Down	3° Max					
3. Twist	3° Max					
4. Roll	4° Max					
5. Bell Mouth Rear	0.10-0.50mm (.004-.019”)					
6. Bell Mouth Front	Not Applicable					
7. Conductor Brush	0.10-0.70mm (.004-.027”)					
8. Cut-Off Tab	0.20mm (.008”) Max					
Conductor Crimp	**Wire Type**	**Wire Size**	**9. Crimp Height**		**10. Crimp Width**	
	UL1007	18 AWG	1.08-1.18mm	.042-.046 in.	1.75-1.85mm	.068-.072 in.
	UL1007	20 AWG	0.97-1.07mm	.038-.042 in.	1.75-1.85mm	.068-.072 in.
Insulation Crimp	**Wire Type**	**Wire Size**	**11. Crimp Height**		**12. Crimp Width**	
	UL1007	18 AWG	2.45-2.60mm	.096-.102in.	2.36-2.46mm	.092-.096in.
	UL1007	20 AWG	2.35-2.45mm	.092-.096in.	2.35-2.45mm	.092-.096in.
Pull Force	**Wire Type**	**Wire Size**	**Minimum Force**			
	UL1007	18 AWG	90.0 N	20.23 lb.	To be measured with no influence from the insulation crimp.	
	UL1007	20 AWG	75.5 N	16.97 lb.		
13. Conductor Anvil Flash	0.12mm (.004”) Max					
14. Conductor Anvil Flash width	0.12mm (.004”) Max					
15. Wing dissymmetry	0.25mm (.010”) Max					

NOTES

General Notes

- Molex recommends maintaining an extra perishable tooling kit at your facility.
- Verify tooling alignment by hand-cycling the press and applicator before crimping under power. Check that all screws are tight.
- Slugs, terminals, dirt, and oil should be kept clear of the work area.
- Always wear safety glasses.
- For recommended maintenance, refer to the FA2 manual (TM-638080200).
- Molex recommends crimping stranded copper wire only.

Applicator Notes



- This applicator is for automatic wire processor use only.
- This applicator does not include a cutting insert.
- Installing a cutting insert will cause jamming in this applicator.

Specification Notes

- It is very important that the brush length is consistently within specification for this sealed connector system to work properly.
- This applicator should only be run in a properly set up wire processor to consistently achieve the brush length.

WARNINGS

CAUTION: This applicator must be installed in a press with a standard shut height of 135.80mm (5.346”). Tooling damage could result in a lower setting.

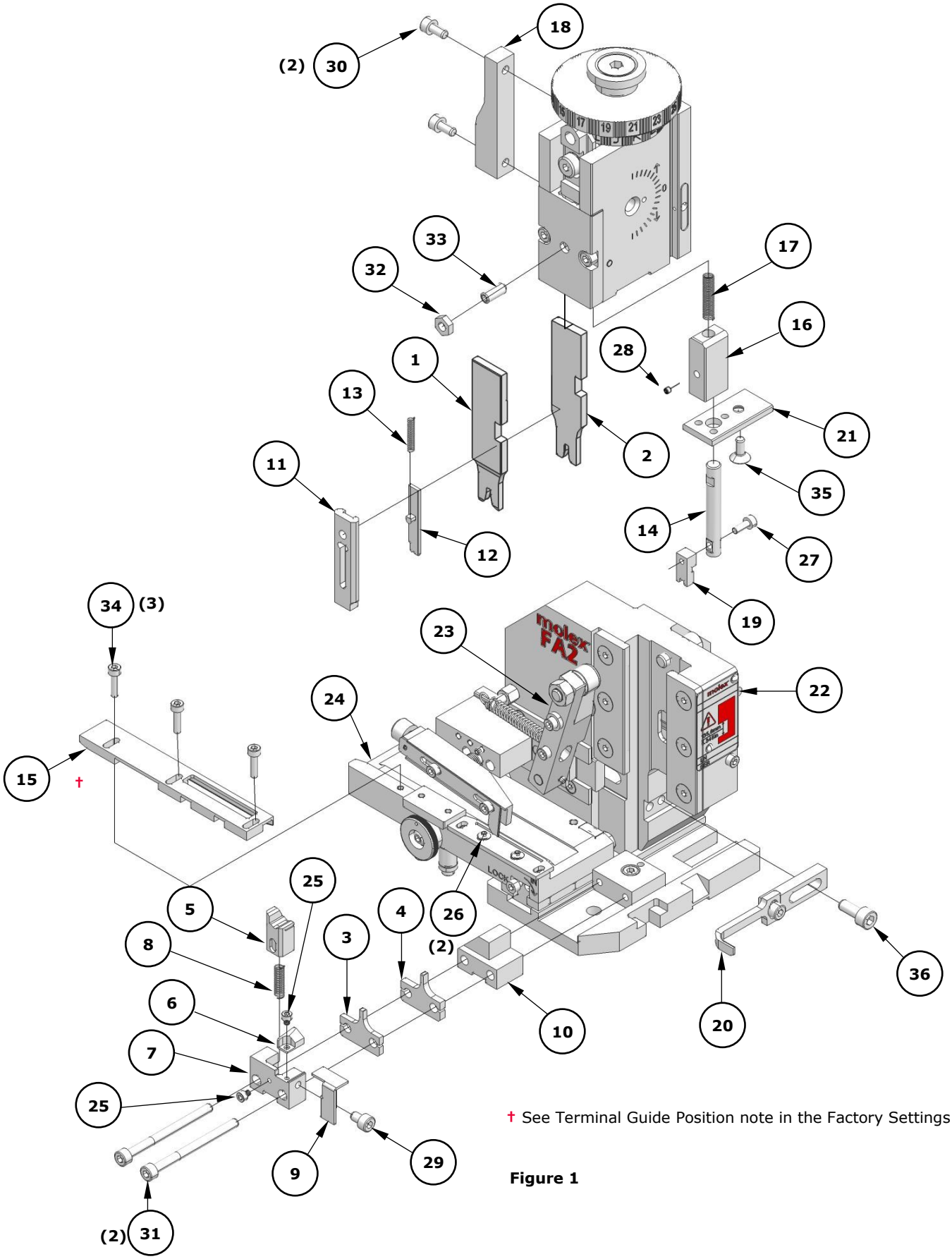
CAUTION: Never operate this applicator without the guards supplied with the press or wire-processing machine in place to prevent injury. Reference the press or wire processing manufacturer’s instruction manual.

CAUTION: Molex tooling crimp specifications are valid only when used with Molex terminals and tooling manufactured by Molex and sold by Molex or authorized distributors (“Molex Tooling”). When using tooling other than Molex Tooling with Molex-specific connector systems listed in our ATS documents, the Molex Tooling qualification does not apply, and the responsibility for the full qualification of the connector system is that of the customer. Molex accepts no liability for connector performance or tooling support where tooling other than Molex Tooling is used or where Molex Tooling is modified.

PARTS LIST

FA2 Applicator 213069-6800				
Item	**Order No.**	**Engineering No.**	**Description**	**Quantity**
Perishable Tooling				
	213069-6870	213069-6870	Tool Kit (All "Y" Items)	Ref
1	200220-2205	200220-2205	Insulation Punch	1 Y
2	200216-1701	200216-1701	Conductor Punch	1 Y
3	200221-2204	200221-2204	Insulation Anvil	1 Y
4	200217-1702	200217-1702	Conductor Anvil	1 Y
5	63443-0136	63443-0136	Cut-Off Plunger	1 Y
6	63443-0119	63443-0119	Cutting Insert	1 Y
Non-Perishable Components				
7	63443-0118	63443-0118	Front Plunger Retainer	1
8	11-24-1067	4996-4	Cut-Off Plunger Spring	1
9	63443-0117	63443-0117	Front Scrap Chute	1
10	200213-7600	200213-7600	Anvil Mount	1
11	63443-2805	63443-2805	Front Plunger Striker	1
12	63890-0140	63890-0140	Wire Hold Down Plunger	1
13	63600-0021	63600-0021	Wire Hold Down Spring	1
14	63808-0227	63808-0227	Nose Hold Down Shank	1
15	63443-4714	63443-4714	Terminal Guide	1
16	63808-0226	63808-0226	Hold Down Block	1
17	63600-5614	63600-5614	Hold Down Spring	1
18	63443-4404	63443-4404	Feed Cam	1
19	63443-7165	63443-7165	Terminal Hold Down	1
20	63443-0090	63443-0090	Wire Stop Assembly	1
21	63808-0224	63808-0224	Stop Plate	1
Frame				
22	63808-0200	63808-0200	Applicator Core	1
23	63808-0197	63808-0197	Mechanical Feed Assembly	1
24	63808-0191	63808-0191	Track Assembly	1
Hardware				
25	—	—	M2.5 x 3 SHCS	2*
26	—	—	M3 x 6 BHCS	2*
27	—	—	M3 x 8 SHCS	1*
28	—	—	M4 x 5 SSS	1*
29	—	—	M4 x 6 SHCS	1*
30	—	—	M4 x 8 SHCS	2*
31	—	—	M4 x 40 LG SHCS	2*
32	—	—	M5 x 0.8 JAM NUT	1*
33	—	—	M5 X 12 LG SET SCREW	1*
34	—	—	M3 x 12 SHCS	3*
35	—	—	M4 x 10 FHCS	1*
36	—	—	M5 x 12LG SHCS	1*
*Fastener parts can be purchased through most industrial suppliers by using the description in the table above.				

ASSEMBLY DRAWING



† See Terminal Guide Position note in the Factory Settings section.

Figure 1

FACTORY SETTINGS

Feed Pawl Assembly

The FA2 applicator number 213069-6800 ships with the following factory settings. See Figure 2:

- The feed pawl shaft and M3 screw that holds the feed pawl spring are in position 2.
- The pin is in position B.

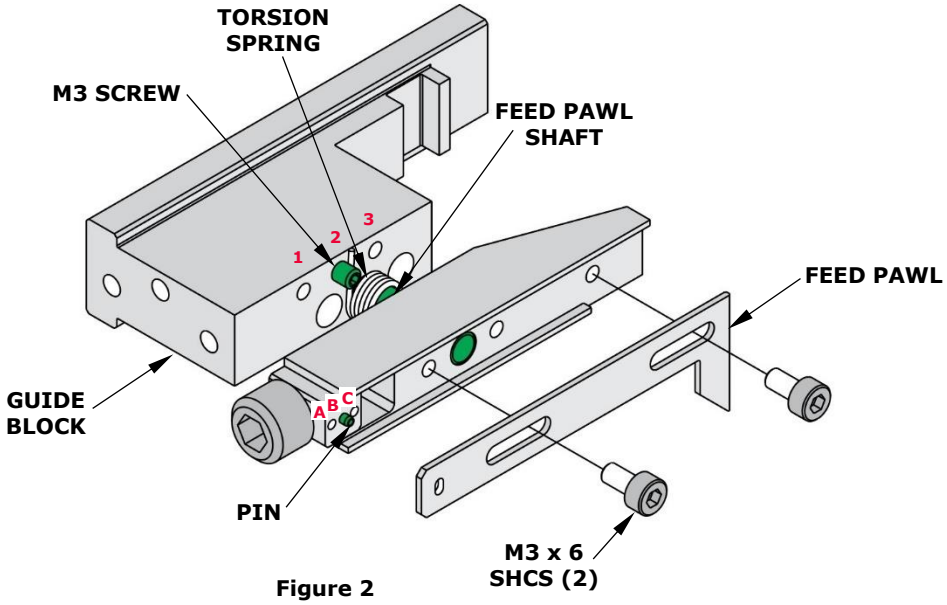


Figure 2

Note: Each applicator is configured and tested by Molex prior to shipping, and the above settings were used to produce the included sample crimps.

CAUTION: A tooling crash may occur if any of the following conditions exist:

- The press shut height is less than 135.80mm (5.346”)

Mounting Datum Location

This applicator was assembled and tested by Molex with the mounting datum in the location shown in Figure 3. Do not remove the mounting datum.

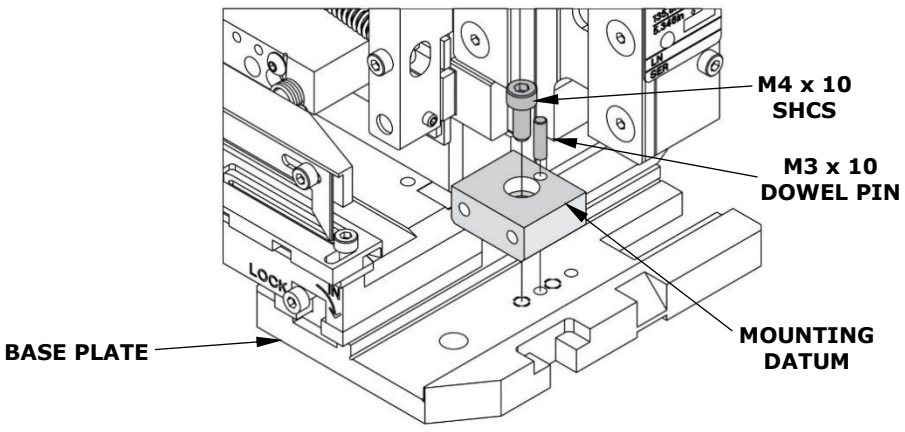


Figure 3

Terminal Guide Position†

The terminal guide on this applicator should be positioned so that it is in front of the terminal insulation grips, as shown in Figure 4.

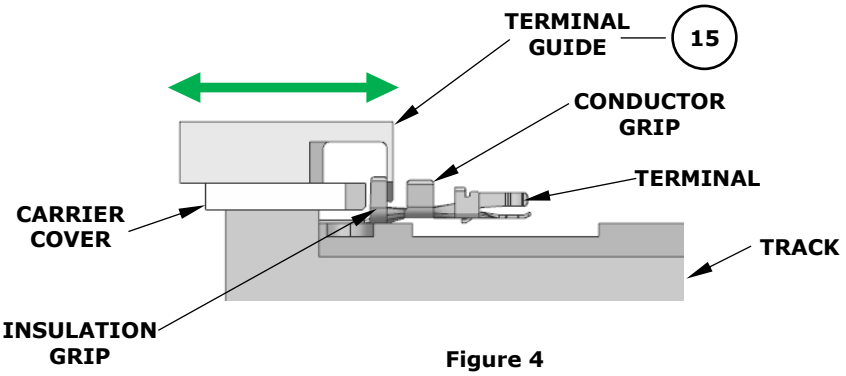


Figure 4

Component setup shown in this image is a generic representation. They are not intended to be an image of actual component of the scope, to be referred only for position of the terminal.

Application Tooling Support

E-Mail: ToolingSupport@molex.com
Website: www.molex.com/applicationtooling