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This handling manual describes points to check for proper crimping operation of non-insulated solderless terminal (referred to as terminals).

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1. Preliminary Check

Check that a terminal is applicable to a wire and the tool is applicable to the terminal.
Refer to Table-3, -4, -5, -6, -7 and -8.

Note₁: ① Never use tools with breakage, defects, and the like.
② The applicable wire is an annealed copper wire (solid wire and stranded wire).
When using special wires other than extra-fine wire conductors and annealed copper wires, contact JST.

2. Wire Strip Length

The wire strip length is decided depending on terminal barrel length (Dimension E).

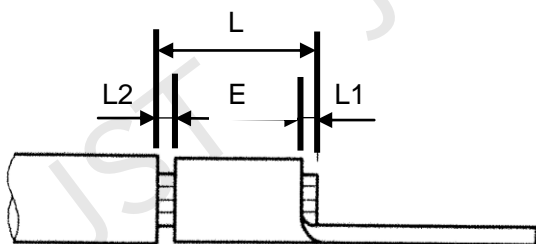


Table-1: Wire strip length (Ring tongue terminal & copper tubular terminal)

Unit: mm

Model No.	Terminal barrel dimension (Dimension E)		Wire protruding length (Dimension L1) (Ref. value)	Wire strip length (Dimension L) (Ref. value)	
	Non-insulated	Copper tubular		Terminal	Copper tubular
0.5- ()	4.0	-	0.5 ~ 1.0	5.0 ~ 5.5	-
1.25- ()	4.8	-	0.5 ~ 2.0	5.5 ~ 6.5	-
2- ()		7.0			7.5 ~ 8.5
3.5- ()		-			-
5.5- ()	6.8 Note ₂	8.5	1.0 ~ 2.0	7.5 ~ 8.5	9.0 ~ 10.0
8- ()	8.5 Note ₂	11.0		9.5 ~ 10.5	12.0 ~ 13.0
14- ()	10.5 Note ₂	14.0		12.0 ~ 13.0	15.0 ~ 16.0
22- ()	12.0	15.0		13.5 ~ 14.5	16.0 ~ 17.0
38- ()	14.0	18.0		15.5 ~ 16.5	19.0 ~ 20.0
60- ()	18.0	20.0	2.0 ~ 3.0	20.0 ~ 22.0	21.0 ~ 22.0
70- ()	19.0	22.0		21.0 ~ 23.0	23.0 ~ 24.0
80- ()	20.0	24.5		22.0 ~ 24.0	26.0 ~ 27.0
100- ()	21.0	25.5		23.0 ~ 25.0	27.0 ~ 28.0
150- ()	27.0	34.5	3.0 ~ 4.0	30.0 ~ 32.0	36.0 ~ 37.0
180- ()	28.5	36.5		31.5 ~ 33.5	37.0 ~ 38.0
200- ()	31.5	37.0		35.0 ~ 37.0	38.0 ~ 39.0
250- ()		-			-
325- ()	35.5	42.0		39.0 ~ 41.0	43.0 ~ 44.0

Note₂: A figure or a letter in () denotes the nominal of the applicable screw and the difference in dimension.

Note₃: Some terminals have difference in the barrel length. Refer to Table-2 for the wire strip length of the applicable terminal.

Note₄: Set the dimension L2 not to bite wire insulation at the crimping part.

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Table-2: Wire strip length (Variation of barrel length of non-insulated terminal)

Unit: mm

Model No.	Terminal barrel length (Dimension E) Variation of barrel length of non-insulated terminal	Protruding length (Dimension L1) Ref. value Non-insulated terminal	Wire insulation strip length (Dimension L) Reference value
RCT5.5-3	6.2	0.5 ~ 2.0	7.0 ~ 8.0
5.5-S3			
5.5-S3.3			
5.5-S4			
8-NK4	6.2	1.0 ~ 2.0	7.0 ~ 8.0
8-NK5			
14-NK5	9.2		11.0 ~ 12.0

Note₅: Use the applicable tool for wire stripping not to damage the wire conductors.Note₆: Strip a wire with care not to cause wire breakage, uneven strip length and incomplete insulation cutting.

Table-3: Applicability list of hand type and electrically operated type (battery type) hydraulic tool

*: Crimp terminal at the crimping position of 5.5. (Crimping mark: 5)

Nominal of terminal	Applicable wire range			Tool	
	Solid wire (mm)	Strands wire (mm ²)	Wire size	Hand tool	Electrically operated (battery type)
					BCT-0514L (Die)
0.5	0.35~0.7	0.2~0.5	AWG #26~#22	YHT-2622	BYHT-2622
1.25	0.57~1.44	0.25~1.65	AWG #22~#16	YHT-2210	BYHT-2210
2	1.14~1.82	1.04~2.63	AWG #16~#14	YHT-2210	BYHT-2210
3.5	-	3.5	AWG #12	* YHT-2210	* BYHT-2210
5.5	1.82~2.89	2.63~6.64	AWG #12~#10	YHT-2210	BYHT-2210
8	2.89~3.65	6.64~10.52	AWG #8	YHT-8S	BYHT-8
14	3.65~4.62	10.52~16.78	AWG #6	(YHT-14S)	BYHT-14

Table-4: Applicability list of pneumatic tape-on terminal crimping machine

Nominal of terminal	Applicable wire range			Tool
	Solid wire (mm)	Strands wire (mm ²)	Wire size	AP-F6
				(Die)
0.5	0.35 ~ 0.7	0.2 ~ 0.5	AWG #26 ~ #22	3H-2622
1.25	0.57 ~ 1.44	0.25 ~ 1.65	AWG #22 ~ #16	3H-2216
2	1.14 ~ 1.82	1.04 ~ 2.63	AWG #16 ~ #14	3H-1614
5.5	1.82 ~ 2.89	2.63 ~ 6.64	AWG #12 ~ #10	3H-1210N

Table-5: Applicability list of pneumatic tool

Nominal of terminal	Applicable wire range			Tool			
	Solid wire (mm)	Strands wire (mm ²)	Wire size	YA-1/1A	YA-2/2A	YA-4/4A	YA-5/5A
				(Dies)	(Dies)	(Dies)	(Dies)
0.5	0.35 ~ 0.7	0.2 ~ 0.5	AWG #26 ~ #22	AD-100	AD-500	-	-
1.25	0.57 ~ 1.44	0.25 ~ 1.65	AWG #22 ~ #16	AD-101	AD-501	AD-900	-
2	1.14 ~ 1.82	1.04 ~ 2.63	AWG #16 ~ #14				-
5.5	1.82 ~ 2.89	2.63 ~ 6.64	AWG #12 ~ #10				-
8	2.89 ~ 3.65	6.64 ~ 10.52	AWG #8	-	-	AD-901	AD-951
14	3.65 ~ 4.62	10.52 ~ 16.78	AWG #6	-	-	AD-902	AD-952
22	4.62 ~ 5.81	16.78 ~ 26.66	AWG #4	-	-	-	AD-953
38	5.81 ~ 7.34	26.66 ~ 42.42	AWG #2	-	-	-	AD-954
60	7.34 ~ 8.26	42.42 ~ 60.57	AWG 1/0	-	-	-	AD-955

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Table-6: Applicability list of hand type and electrically operated type (battery type) hydraulic tool

Nominal of terminal	Applicable wire range			Tool			
	Solid wire (mm)	Strands wire (mm ²)	Wire size	YPT-60-*		YPT-150-*	
				BCT-860L		BCT-8150L-B	
				Male die	Female die	Male die	Female die
8	2.89~3.65	6.64~10.52	AWG #8	TD-111	TD-121	TD-211	TD-221
14	3.65~4.62	10.52~16.78	AWG #6		TD-122		TD-222
22	4.62~5.81	16.78~26.66	AWG #4	TD-112	TD-123	TD-212	TD-223
38	5.81~7.34	26.66~42.42	AWG #2		TD-124		TD-224
60	7.34~8.26	42.42~60.57	AWG 1/0	TD-113	TD-125	TD-213	TD-225
70	8.26~9.27	60.57~76.28	AWG 2/0	-	-		TD-226
80	9.27~10.41	76.28~96.30	AWG 3/0	-	-	TD-214	TD-227
100	10.41~11.68	96.30~117.2	AWG 4/0	-	-		TD-228
150	11.68~13.8	117.2~152.05	250/300MCM	-	-	TD-215	TD-229

Table-7: Applicability list of foot operated type and electrically operated type hydraulic tool

Nominal of terminal	Applicable wire range			Tool			
	Solid wire (mm)	Strands wire (mm ²)	Wire size	YF-1/E-4/EP-1			
				Head: YET-60-*		Head: YET-150-*	
				Male die	Female die	Male die	Female die
8	2.89~3.65	6.64~10.52	AWG #8	TD-111	TD-121	TD-211	TD-221
14	3.65~4.62	10.52~16.78	AWG #6		TD-122		TD-222
22	4.62~5.81	16.78~26.66	AWG #4	TD-112	TD-123	TD-212	TD-223
38	5.81~7.34	26.66~42.42	AWG #2		TD-124		TD-224
60	7.34~8.26	42.42~60.57	AWG 1/0	TD-113	TD-125	TD-213	TD-225
70	8.26~9.27	60.57~76.28	AWG 2/0	-	-		TD-226
80	9.27~10.41	76.28~96.30	AWG 3/0	-	-	TD-214	TD-227
100	10.41~11.68	96.30~117.2	AWG 4/0	-	-		TD-228
150	11.68~13.8	117.2~152.05	250/300MCM	-	-	TD-215	TD-229

Table-8: Applicability list of foot operated type and electrically operated type hydraulic tool

Nominal of terminal	Applicable wire range			Tool			
	Solid wire (mm)	Strands wire (mm ²)	Wire size	YF-1/E-4			
				Head: YET-300-*		Head: YET-300N	
				Male die	Female die	Male die	Female die
60	7.34~8.26	42.4~60.57	AWG 1/0	TD-311	TD-321	TD-311N	TD-321N
70	8.26~9.27	60.57~76.28	AWG 2/0		TD-322		TD-322N
80	9.27~10.41	76.28~96.30	AWG 3/0	TD-312	TD-323	TD-312N	TD-323N
100	10.41~11.68	96.30~117.2	AWG 4/0		TD-324		TD-324N
150	11.68~13.8	117.2~152.05	250/300MCM	TD-313	TD-325	TD-313N	TD-325N
180	13.8~15.6	150.05~192.6	350MCM		TD-326		TD-326N
200	15.6~17.5	192.6~242.27	400MCM	TD-314	TD-327	TD-314N	TD-327N
250	-	250	-	TD-315	TD-329	TD-315N	-
325	17.5~20.3	242.27~325	600/650MCM		TD-328		TD-328N

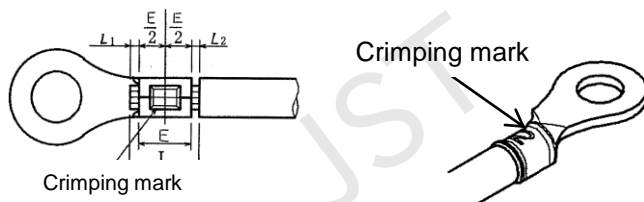
Note₁: When crimping operation is conducted by using other than the above JST tools, JST cannot guarantee the terminal performance.

Note₂: Refer to the product label for the applicable wire range of UL- and CSA-certified terminal.

3. Crimping Configuration Check

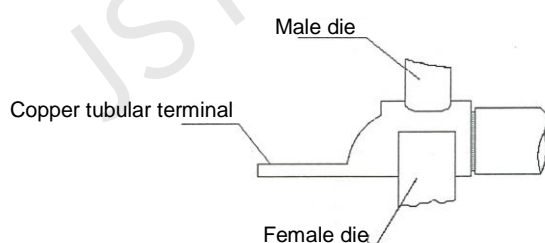
3-1 Proper crimping configuration

- A terminal shall be crimped parallel to a wire.
- No warpage and no large deformation on a terminal (Especially, on the tongue part)
- Crimping marks shall be located at the center of the barrel part and of the barrel brazing part.



Crimping marks are on the crimping surface.
Refer to Table-9.

3-2 Crimping position setting of copper tubular terminal



Terminal barrel has no brazing part.
Carefully set a terminal at both the male die side
and the female die side. (Refer to the left-hand figure.)

Tabel-9: List of crimping mark

Nominal of terminal	Crimping mark
0.5	None
1.25	1
2	2
3.5	5
5.5	5
8	8
14	14
22	22
38	38
60	60
70	70
80	80
100	100
150	150
180	180
200	200
250	250
325	325

As reference of crimping check, the list of
tensile strength at crimping part is shown
below.

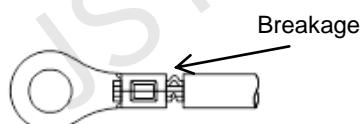
Wire size (mm ²)	Tensile strength (N)
0.13(AWG#26)	13
0.2(AWG#24)	22
0.3(AWG#22)	36
0.5(AWG#20)	58
0.75(AWG#18)	89
1.25	200
2.0	290
3.5	540
5.5	780
8	980
14	1,400
22	1,800
30	2,300
38	2,500
50	2,900
60	3,200
80	3,500
100	3,900
125	4,000
150	4,100
200	4,400
250	4,600
325	4,800

4. Precautions for Crimping

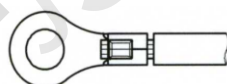
- (1) All the wire conductors shall be crimped.



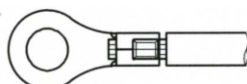
- (2) Wire conductors shall not give breakage.



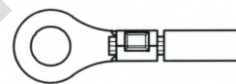
- (3) Crimping position shall not be off the center of the terminal tube.

**Crimping at the front end**

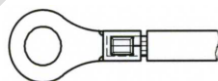
A wire comes off easily.

**Crimping at the rear end**

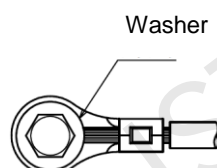
Wire conductors cut easily.

**Crimping lopsided**

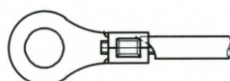
- (4) Wire insulation strip length shall be proper.



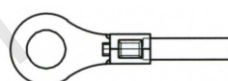
The front end of wire conductors does not come out towards tongue part side.



The tips of wire conductors are too long.



Wire barrel bites one portion of wire insulation.



Wire insulation is inserted in the terminal tube.

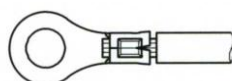
- (5) Crimping direction of a terminal shall be proper.



Crimping position is opposite to the brazing of the terminal tube.

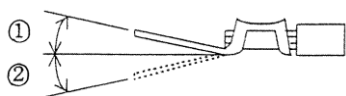
Notes: The terminal brazing part meets the center of female die

- (6) Brazing part shall not be peeled off.

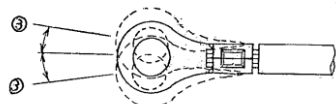


Brazing part is peeled off (cracked).

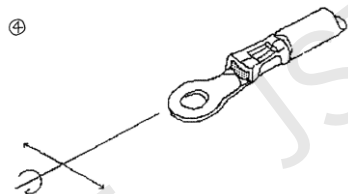
(7) Tongue part shall be free from large warpage and twisting.



- ① Bending up: Within 10° (Reference value)
- ② Bending down: Within 10° (Reference value)



- ③ Twisting: Within 3° (Reference value)



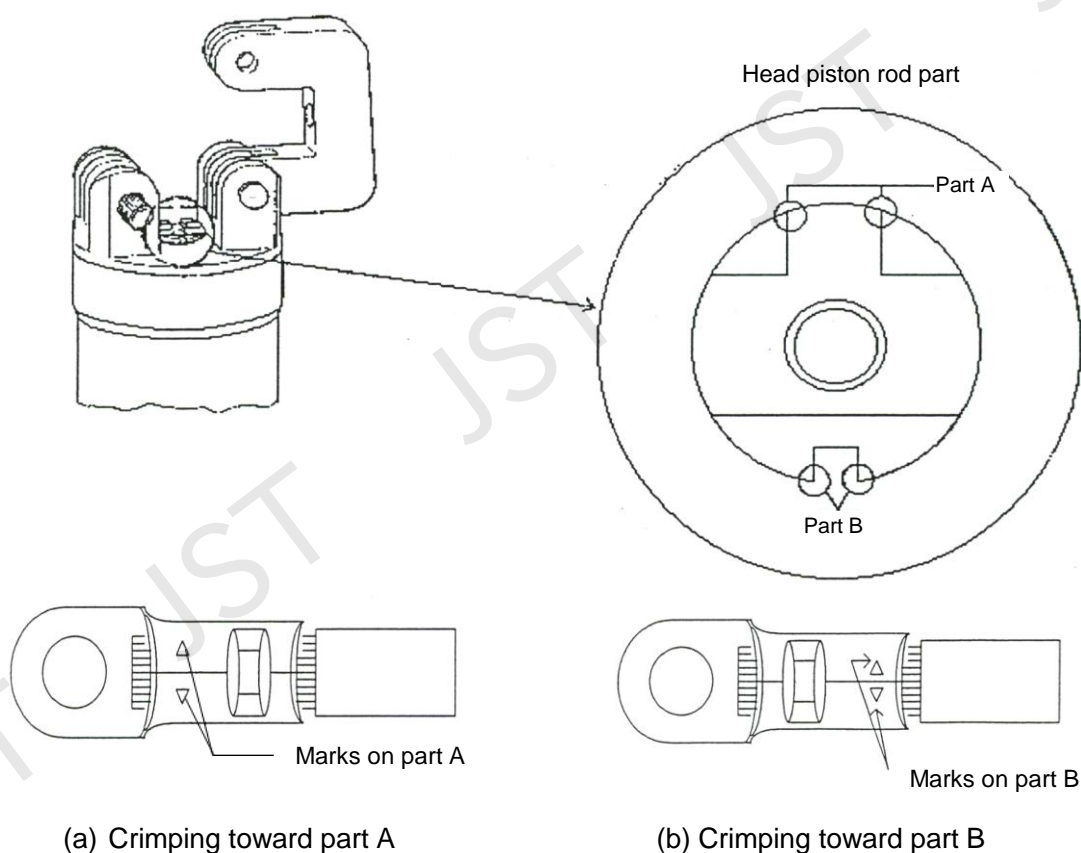
- ④ Rolling: Within 10° (Reference value)

(8) Crimping precautions when using hydraulic head and manually operated hydraulic tool (including electrically-operated type)

Crimping toward the front or the back touches the corner (part A or B) of the piston rod of the head, becoming easy to damage the terminal barrel part.

Crimp the center of the terminal barrel part with great care.

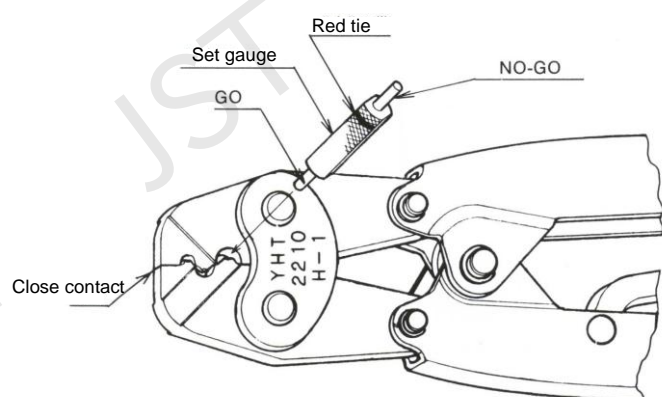
(Especially note when using YET-150-**-300-*, YPT-150-* and BCT-860L/-8150L-B.)



5. Clearance Dimension Between Crimping Dies

Nominal of terminal	Clearance dimension between crimping dies (mm)
0.5	0.75 - 1.00
1.25	1.35 - 1.75
2	1.65 - 2.05
5.5	2.35 - 2.85
8	3.00 - 3.80
14	3.90 - 4.90
22	4.80 - 5.80
38	6.00 - 7.00
60	6.80 - 7.90

Nominal of terminal	Clearance dimension between crimping dies (mm)
70	7.50 - 8.60
80	8.50 - 9.60
100	9.50 - 10.70
150	11.10 - 12.50
180	12.50 - 13.90
200	13.10 - 14.50
250	14.30 - 15.70
325	15.80 - 17.20



The left figure shows the case of YHT-2210, but the inspection way of the clearance dimension between the dies of other tools is same.

Grip the handle strongly to touch closely the front ends of the dies and inspect the clearance between the dies by using the specified limit pin gauge.

Note₁₀: In die inspection, check no foreign substances on the contact surface between dies and push the gage gently in the hole.

In case of crimping terminals, check that the gap dimension between the dies is within the specified range and the dies touch closely.

We don't specify the crimp height for solderless terminals unlike chained terminals (open barrel).

When the crimp height is measured for reference, measure it excluding crimping marks.

