

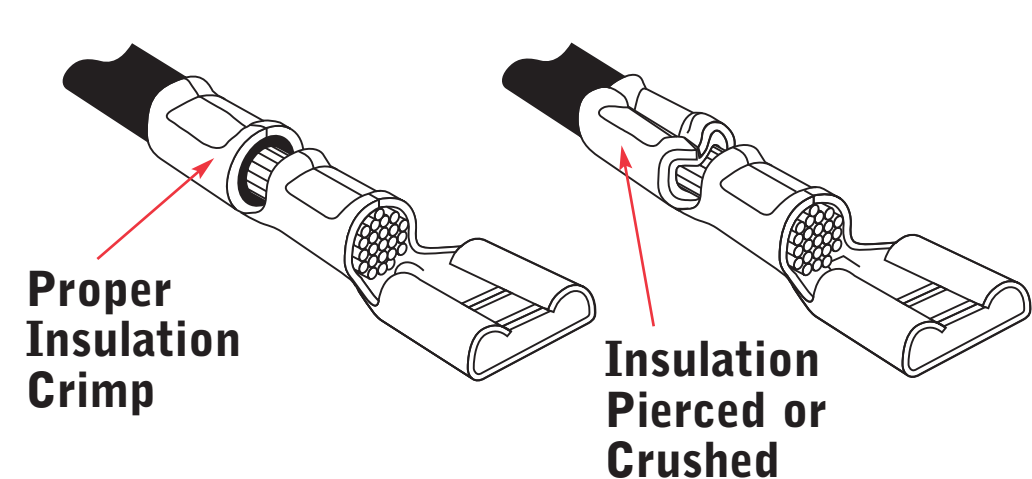
Visual Inspection of Crimped Terminals

INDUSTRIAL

Open Barrel Terminals

ACCEPT

REJECT

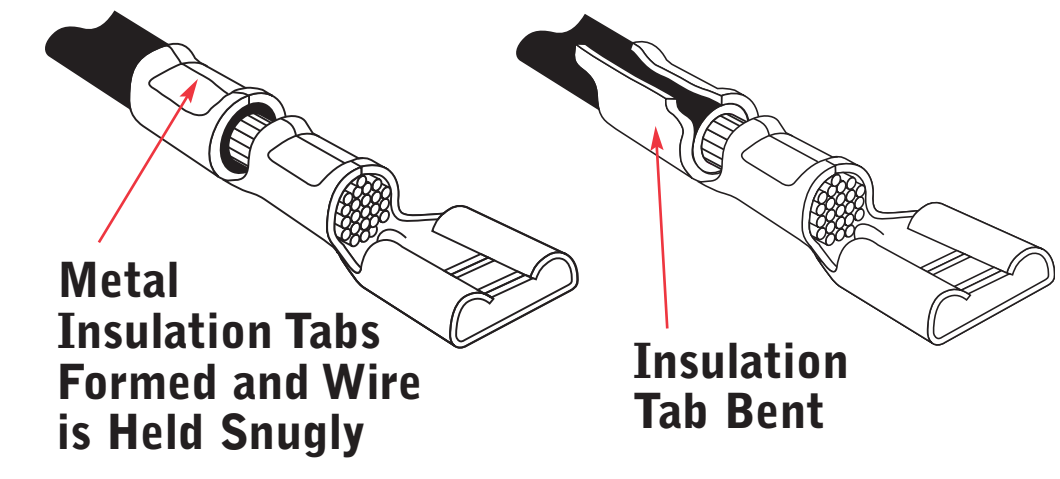


Proper Insulation Crimp

Insulation Pierced or Crushed

ACCEPT

REJECT

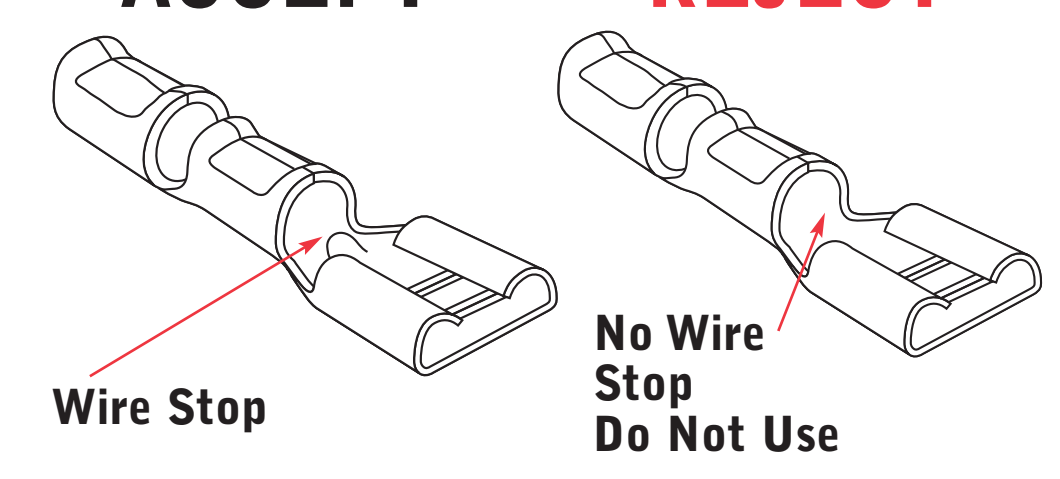


Metal Insulation Tabs Formed and Wire is Held Snugly

Insulation Tab Bent

ACCEPT

REJECT

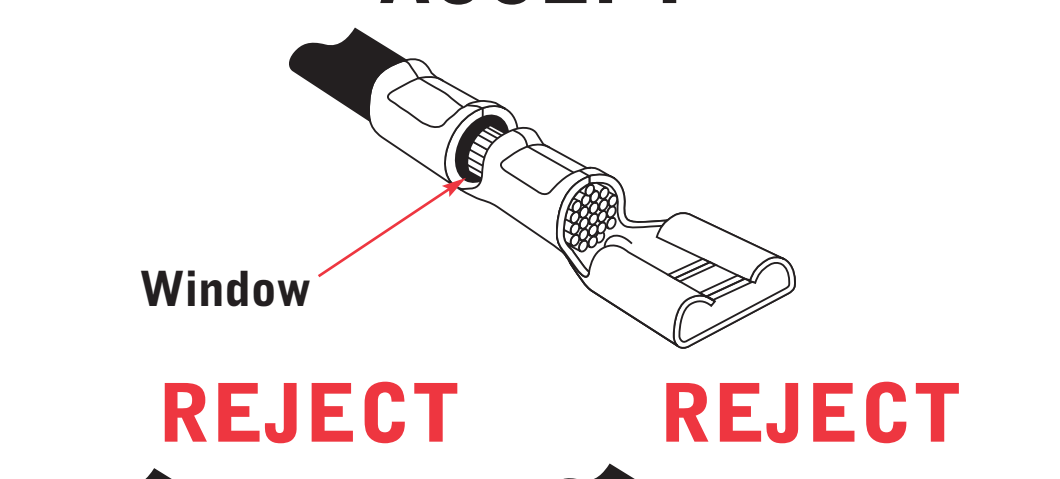


Wire Stop

No Wire Stop Do Not Use

ACCEPT

REJECT



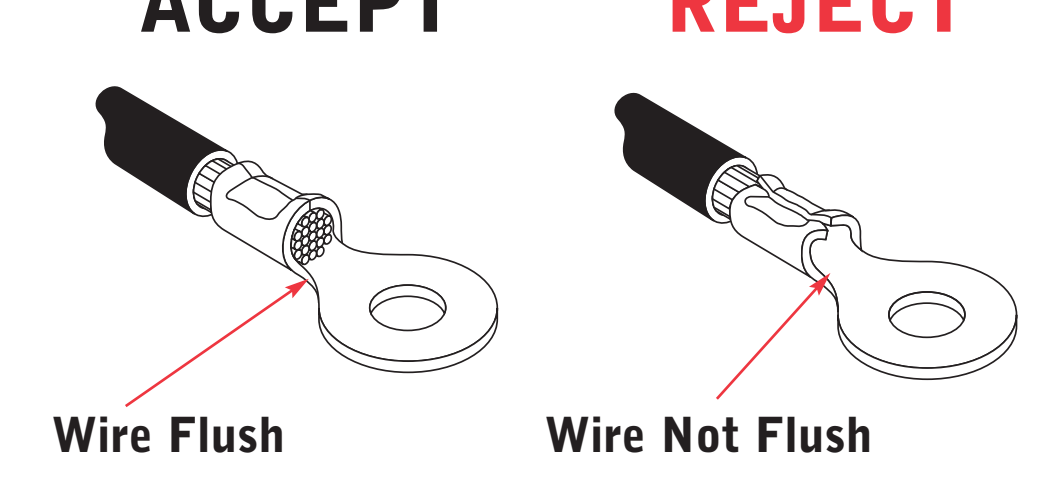
Window

Insulation Not Visible

Wire Not Visible

ACCEPT

REJECT

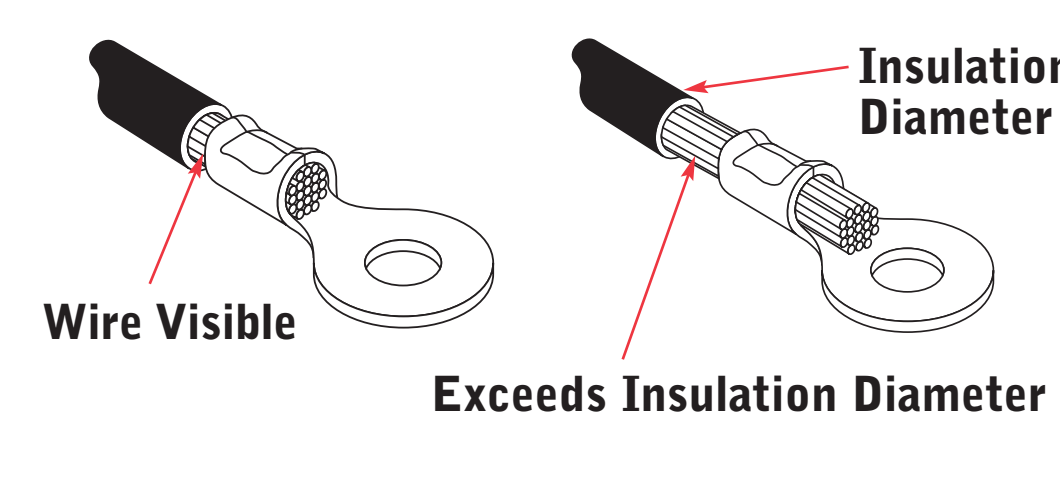


Wire Flush

Wire Not Flush

ACCEPT

REJECT

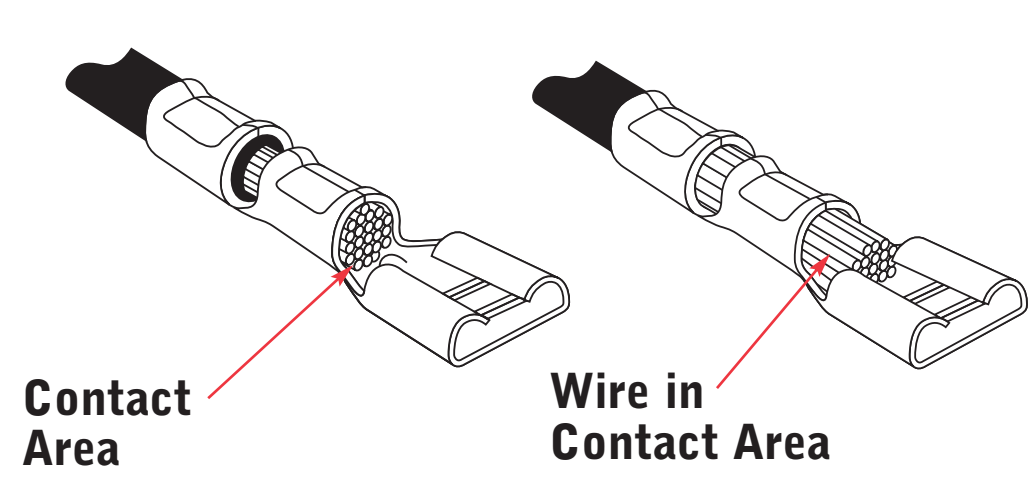


Wire Visible

Exceeds Insulation Diameter

ACCEPT

REJECT

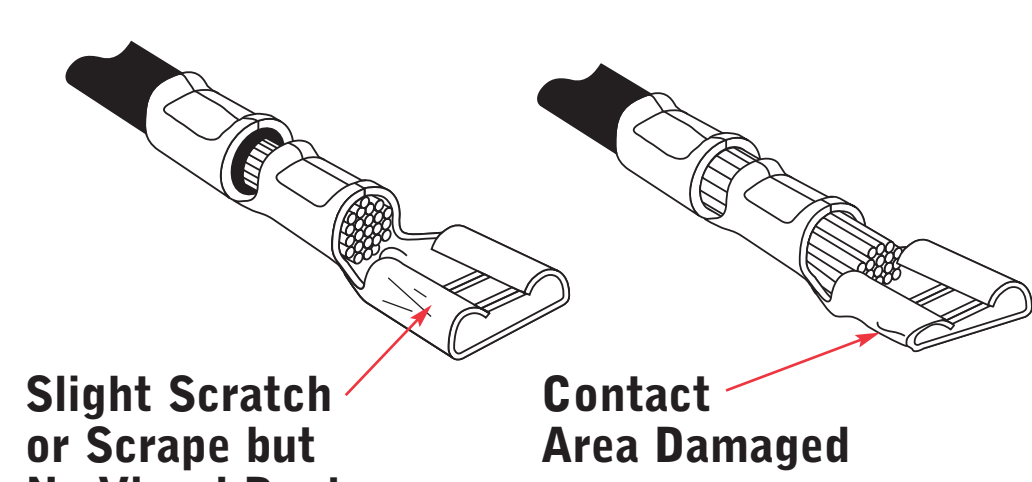


Contact Area

Wire in Contact Area

ACCEPT

REJECT

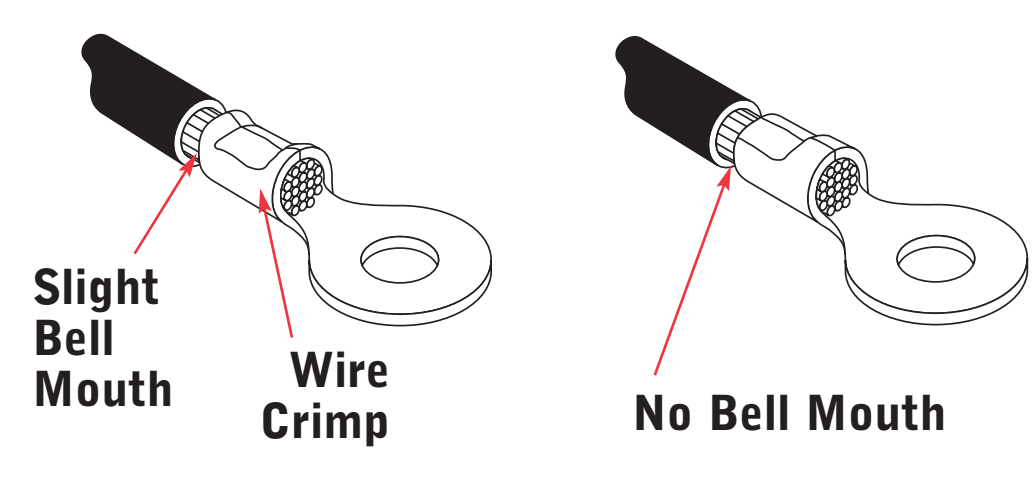


Slight Scratch or Scrape but No Visual Dents

Contact Area Damaged

ACCEPT

REJECT



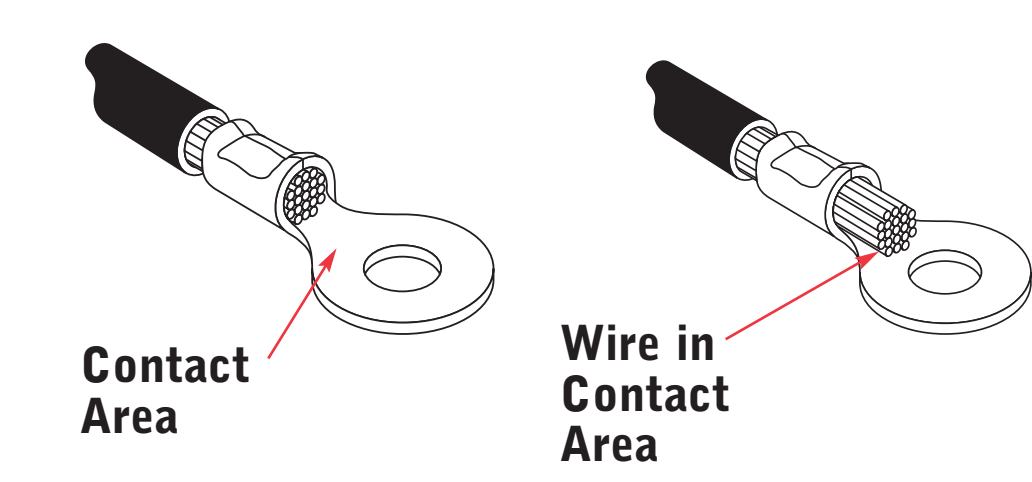
Slight Bell Mouth

Wire Crimp

No Bell Mouth

ACCEPT

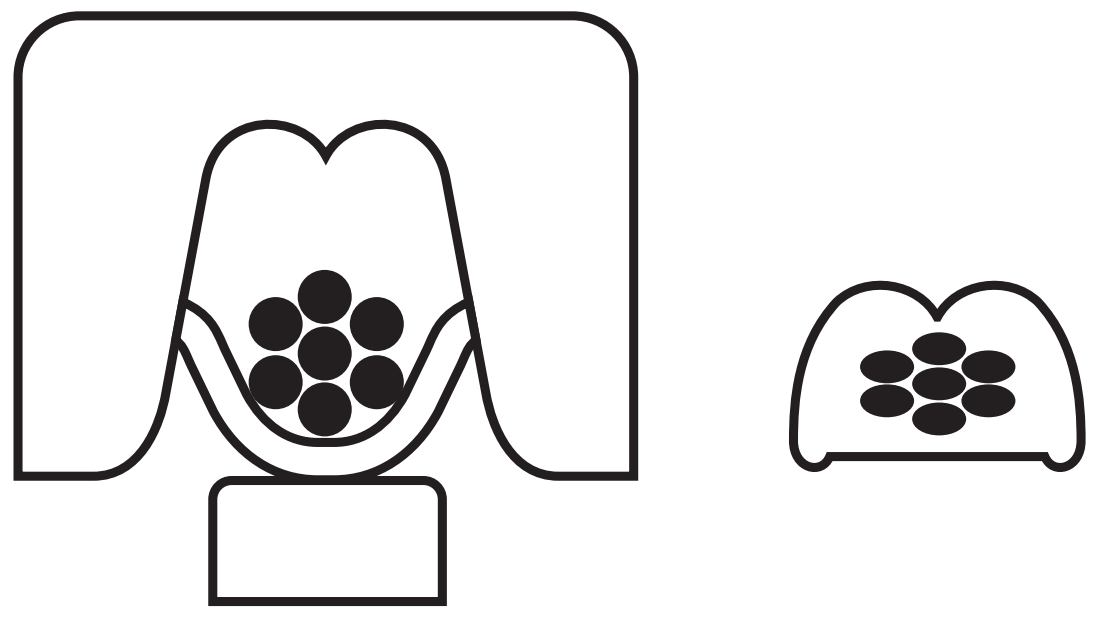
REJECT



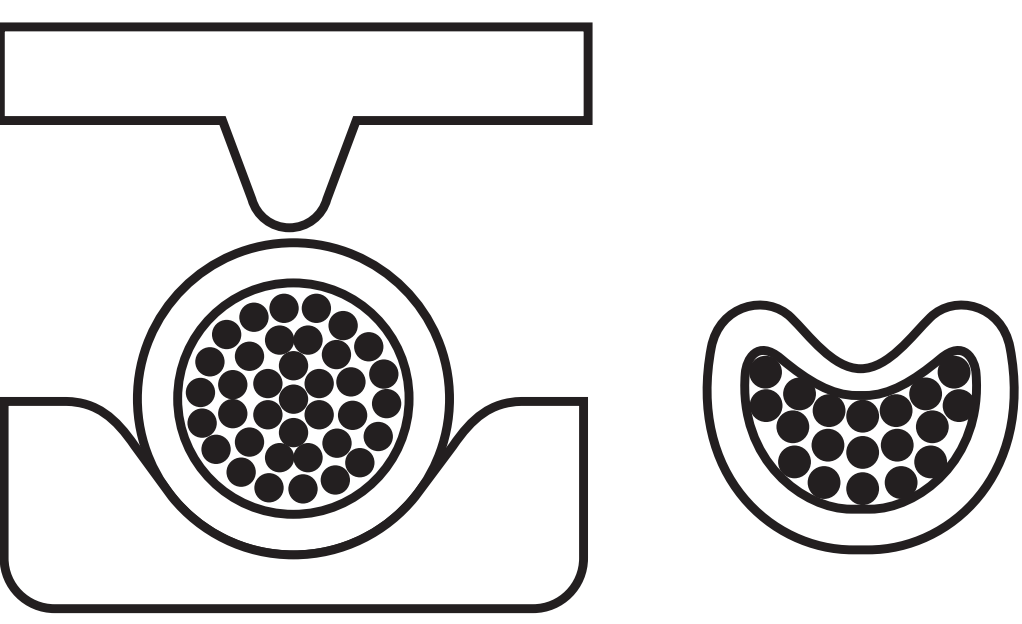
Contact Area

Wire in Contact Area

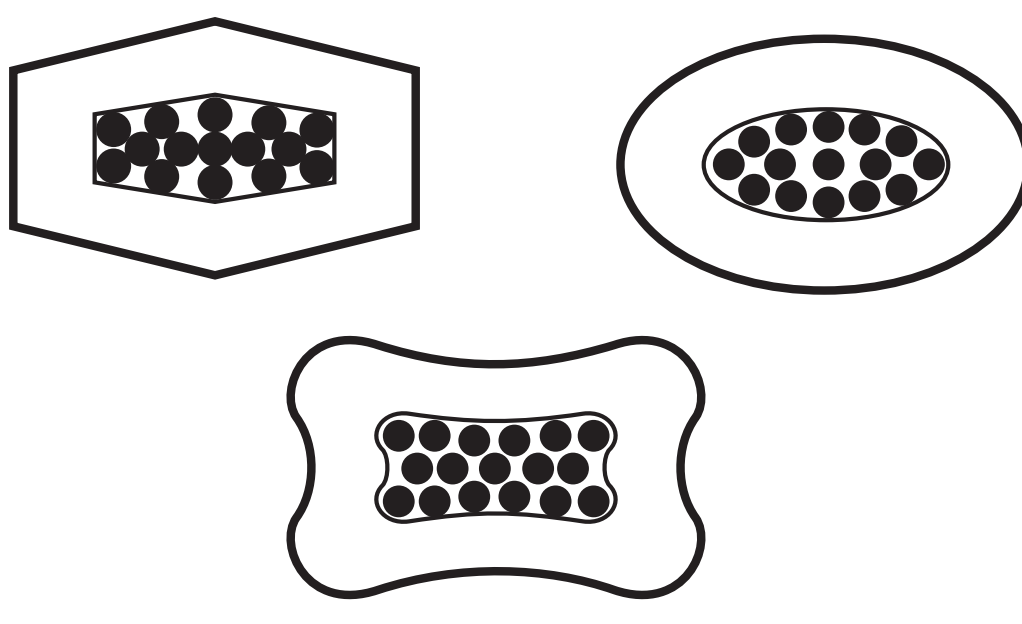
Crimp Types



F CRIMP FOR OPEN BARREL TERMINALS



INDENTOR CRIMP FOR CLOSED BARREL TERMINALS



CONFINED CRIMP FOR CLOSED BARREL TERMINALS

Tensile Strength in Pounds

Wire Size	*UL-486A	*UL-486-C	*UL-310	*Military Class 2
26	3	N/A	N/A	7
24	5	N/A	N/A	10
22	8	8	8	15
20	13	10	13	19
18	20	10	20	38
16	30	15	30	50
14	50	25	50	70
12	70	35	70	110
10	80	40	80	150
8	90	45	N/A	225
6	100	50	N/A	300
4	140	N/A	N/A	400
2	180	N/A	N/A	550
1	200	N/A	N/A	650
1/0	250	N/A	N/A	700
2/0	300	N/A	N/A	750
3/0	350	N/A	N/A	825
4/0	450	N/A	N/A	875
250 MCM	500	N/A	N/A	1000
300 MCM	550	N/A	N/A	1120
350 MCM	600	N/A	N/A	1125

AWG-CMA Table

Terminal Size	CMA Range
26-22	202 - 810
24-20	320 - 1,020
22-18	509 - 2,600
22-16	509 - 3,260
16-14	2,050 - 5,180
14-12	3,260 - 8,213
12-10	5,180 - 13,100
8	13,100 - 20,800
6	20,800 - 33,100
4	33,100 - 52,600
2	52,600 - 83,700
1/0	83,700 - 119,500
2/0	119,500 - 150,500
3/0	150,500 - 190,000
4/0	190,000 - 231,000

Technical Wire Information

CMA - Circular Mil Area is a unit of area equal to that of a circle whose diameter in one Mil.

MIL - One mil equals .001 inches.
.001 = 1 mil
.030 = 30 mils
.125 = 125 mils

* UL - 486 A - Terminals (Copper conductors only)

* UL - 486 C - Butt Splices, Parallel Splices, Closed End Connectors and Wire Nuts

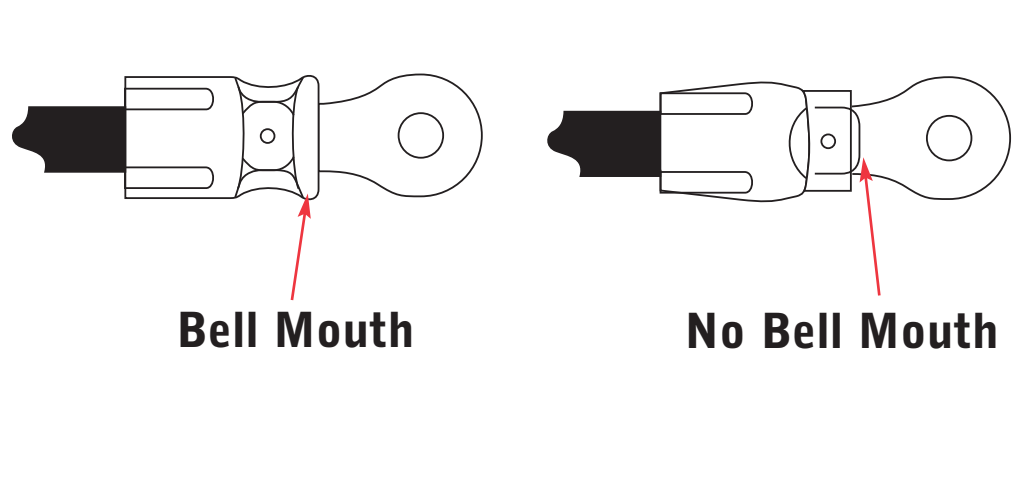
* UL - 310 - Quick Disconnects, Flag and Couplers

* Military Class 2 - Military Approved Terminals only as listed

Closed Barrel Terminals

ACCEPT

REJECT

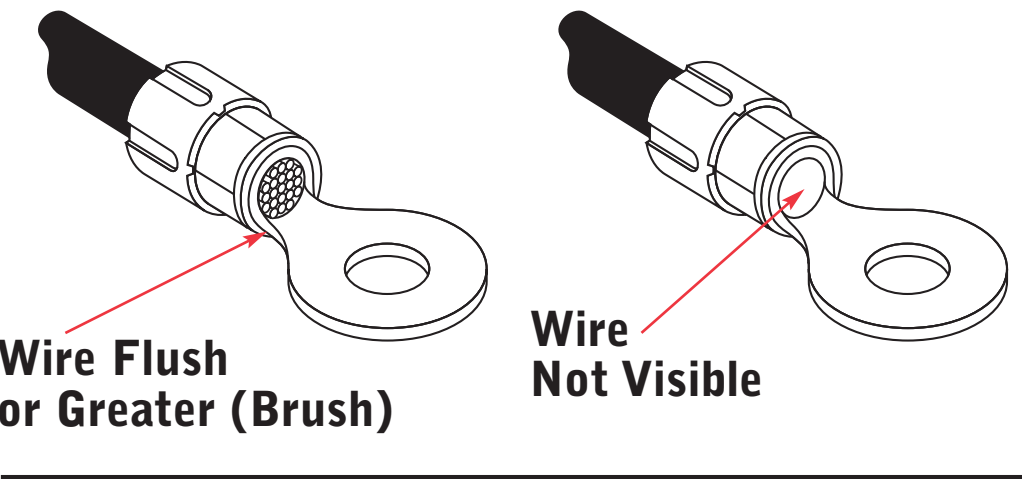


Bell Mouth

No Bell Mouth

ACCEPT

REJECT

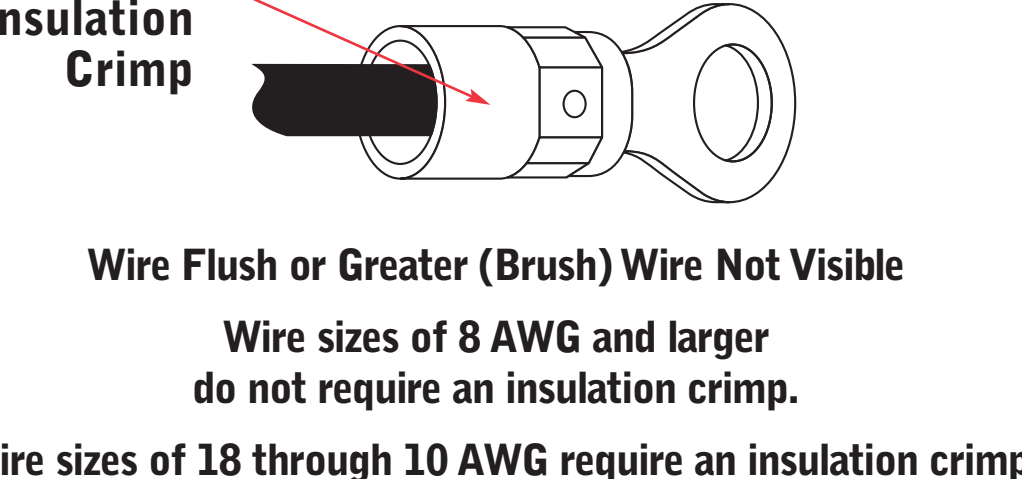


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



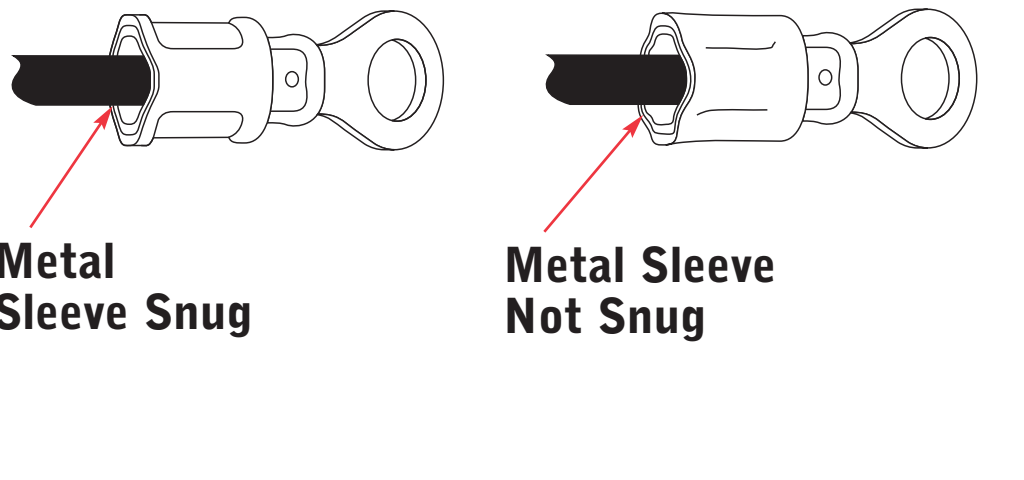
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT

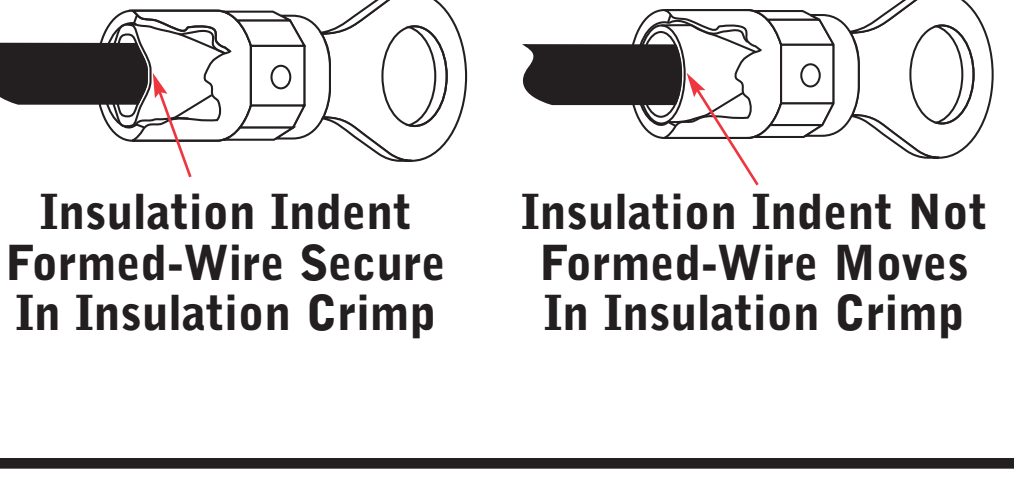


Metal Sleeve Snug

Metal Sleeve Not Snug

ACCEPT

REJECT



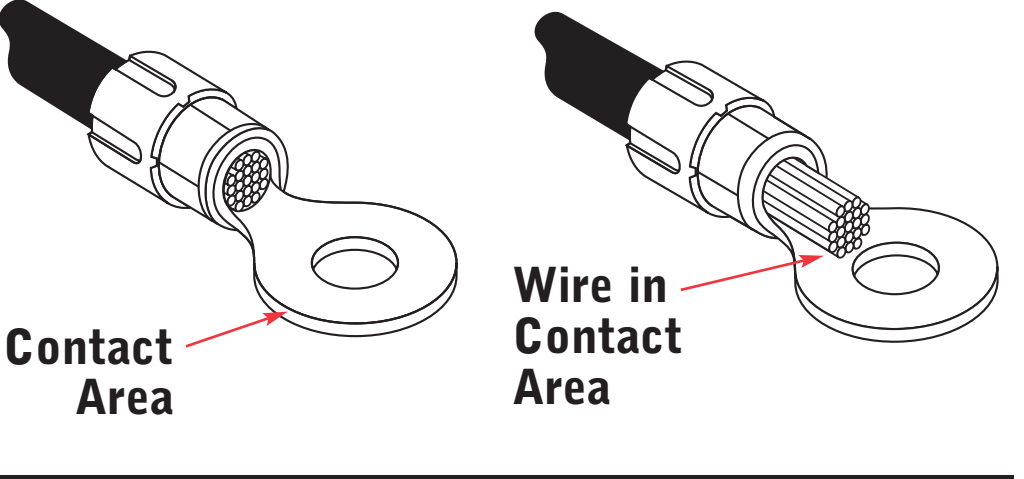
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

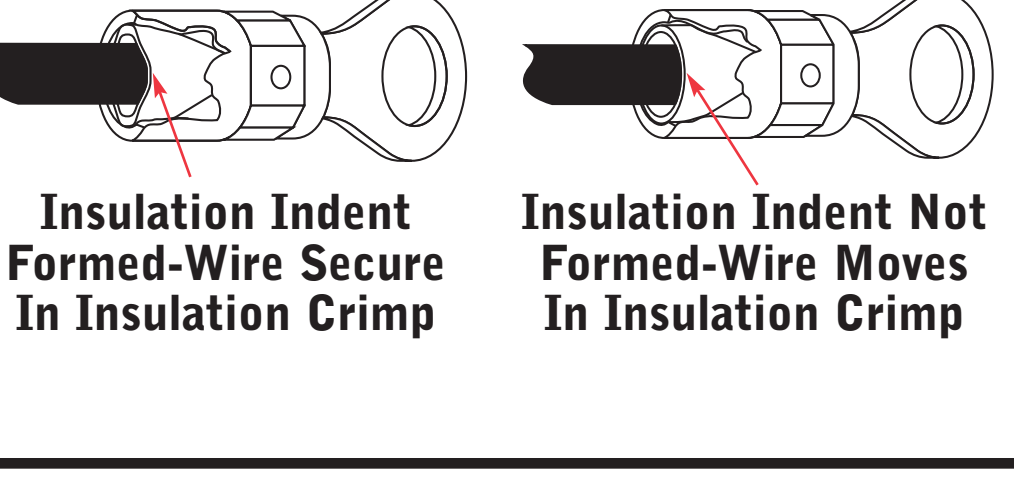


Wire in Contact Area

Contact Area

ACCEPT

REJECT

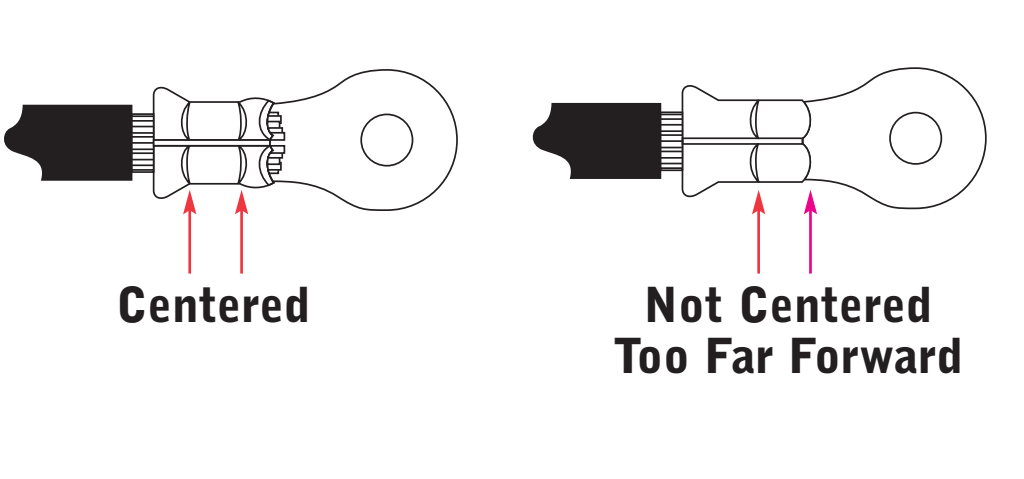


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

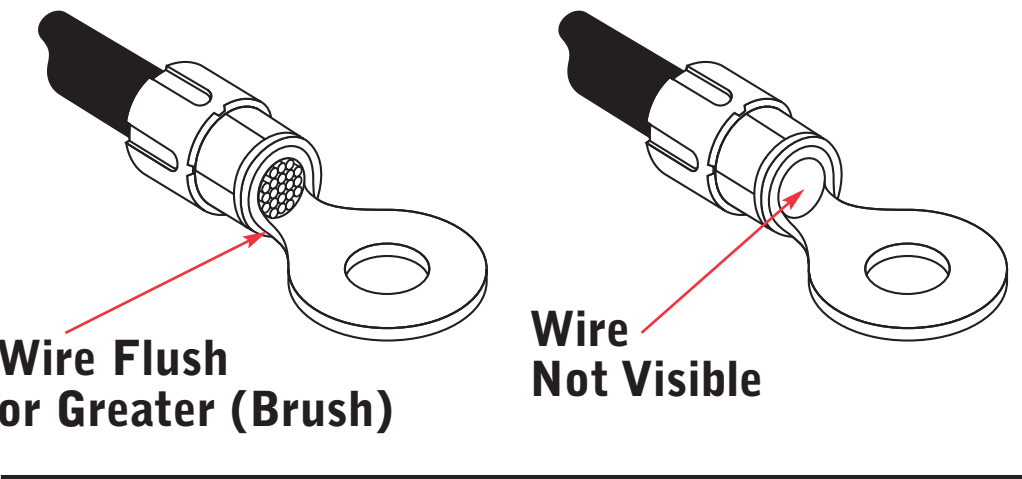


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

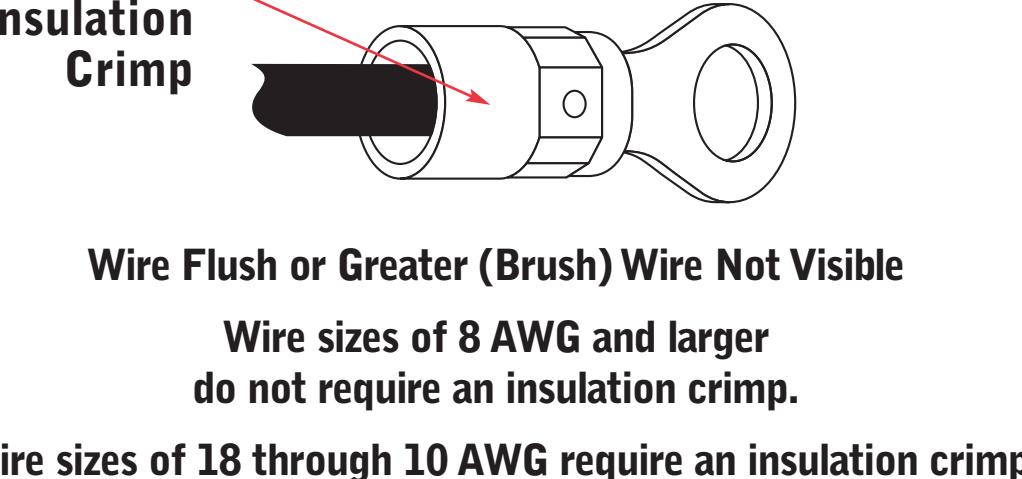


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



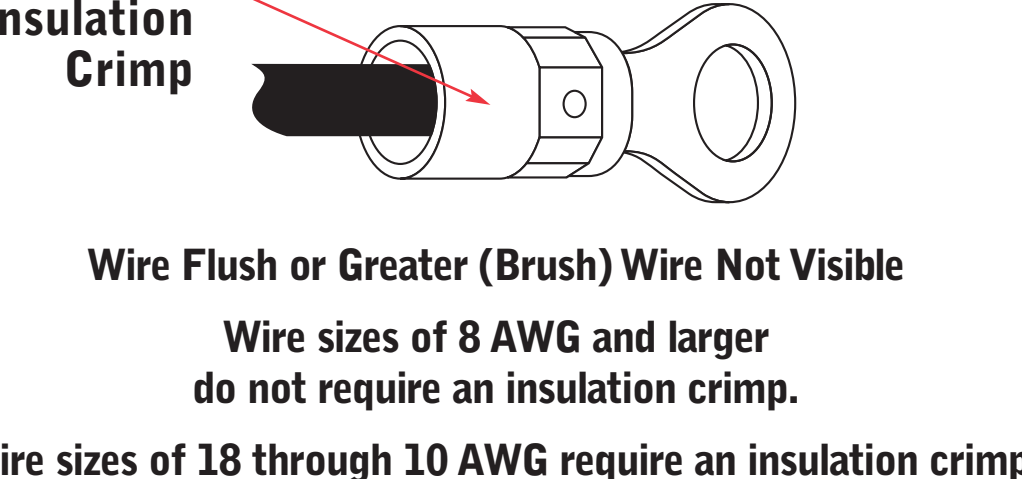
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



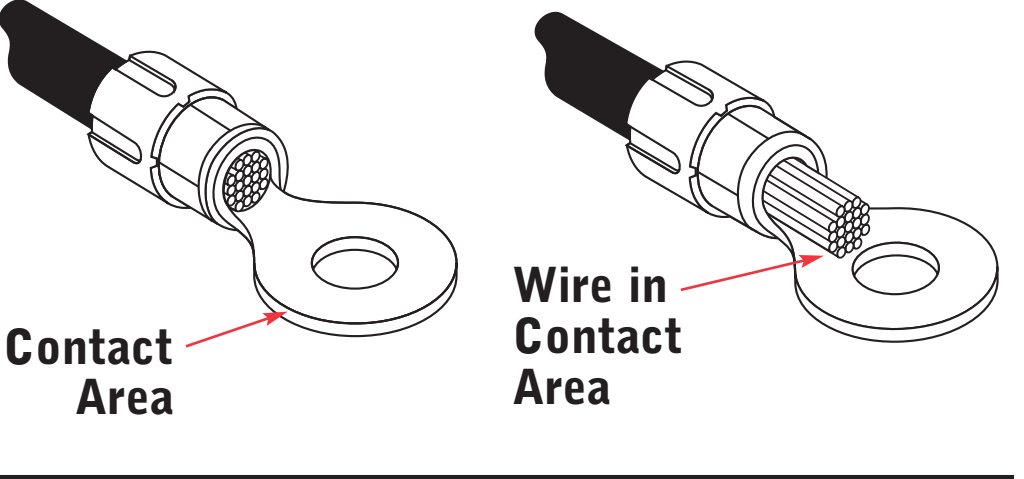
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

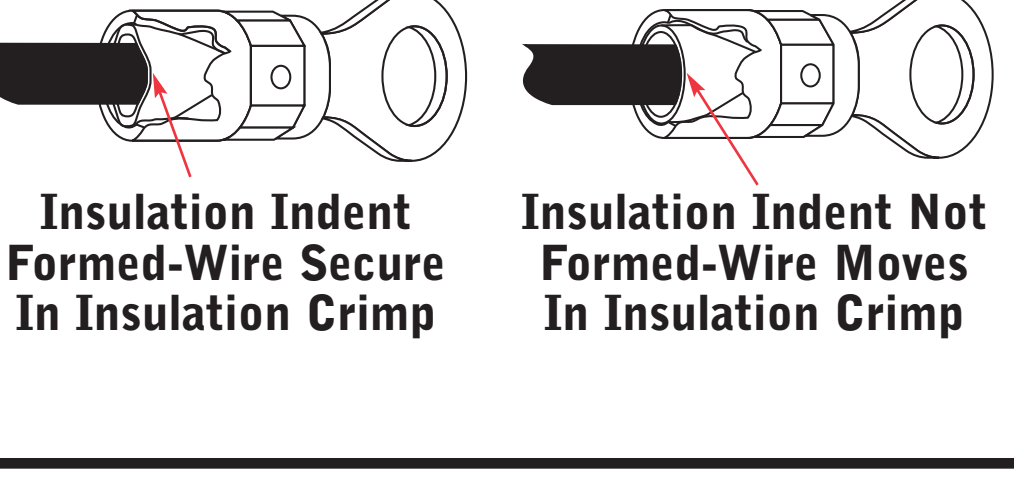


Wire in Contact Area

Contact Area

ACCEPT

REJECT

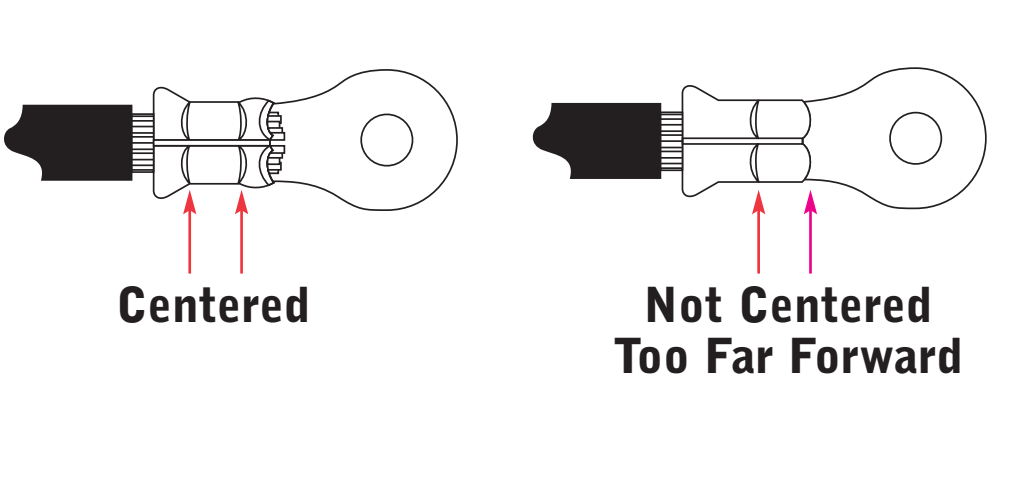


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

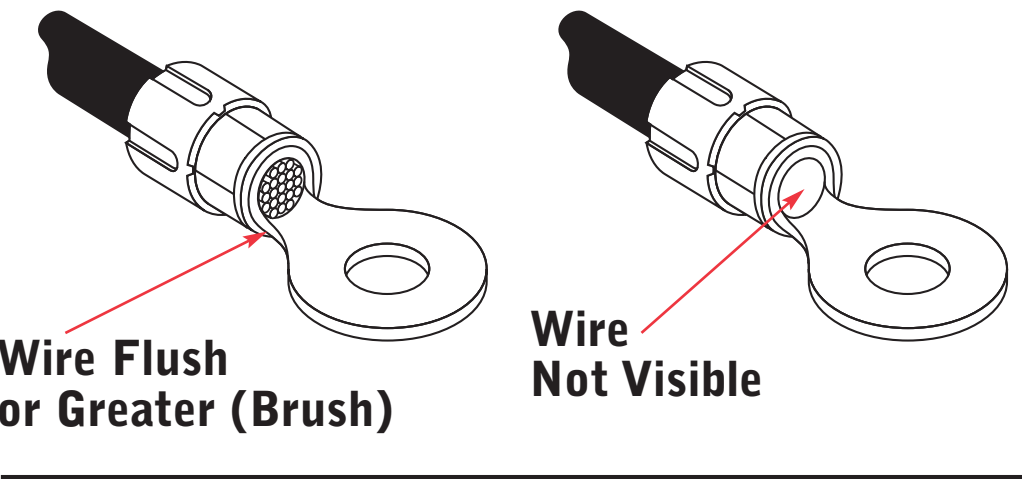


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

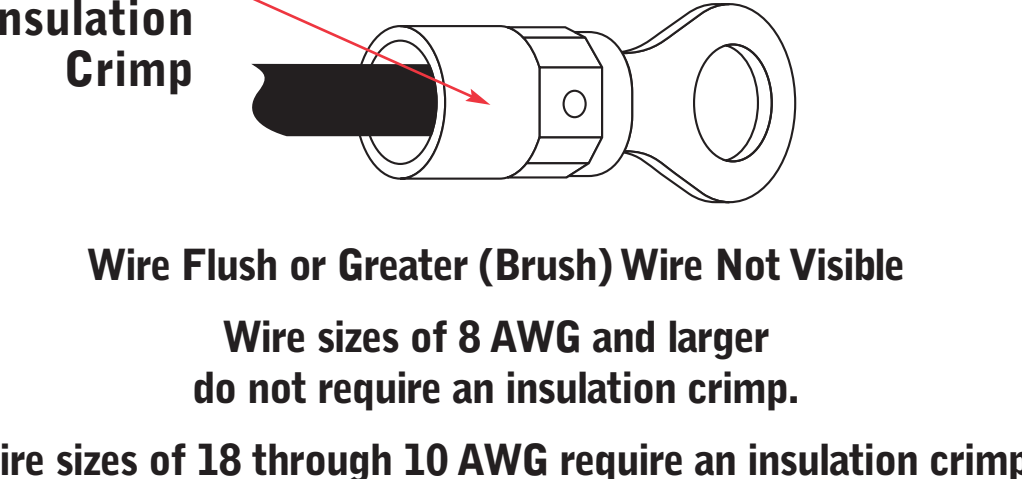


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



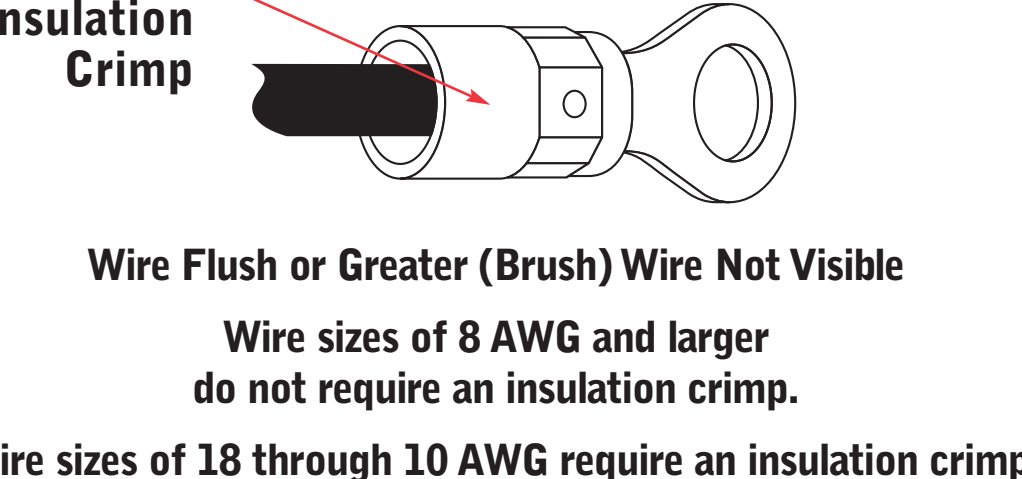
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



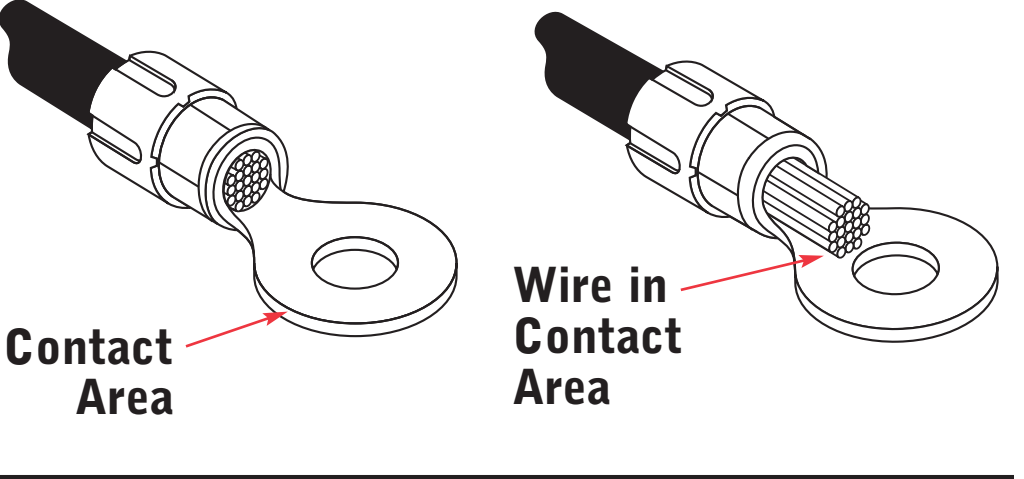
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

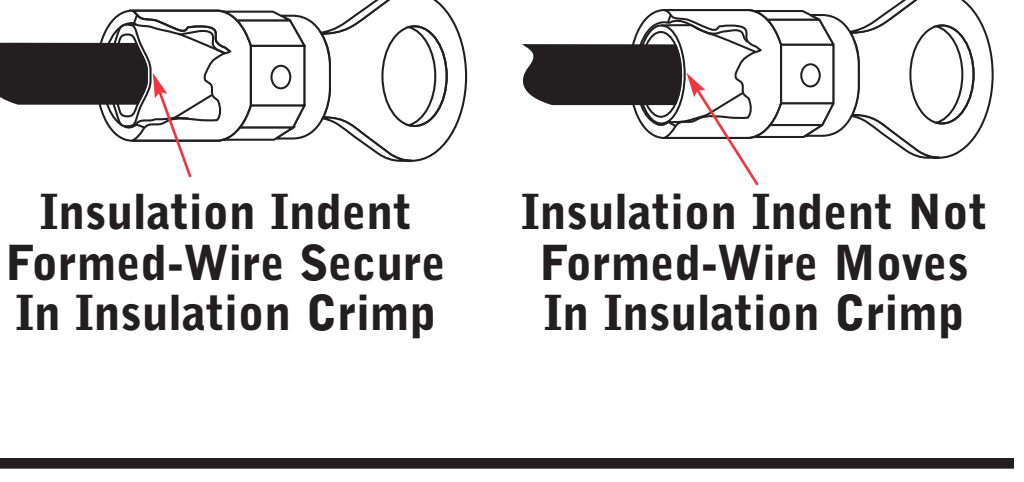


Wire in Contact Area

Contact Area

ACCEPT

REJECT

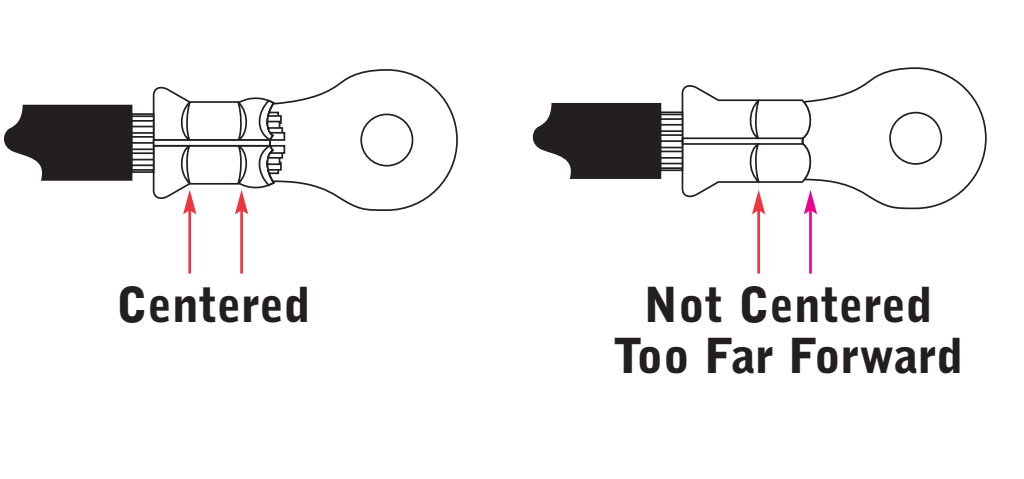


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

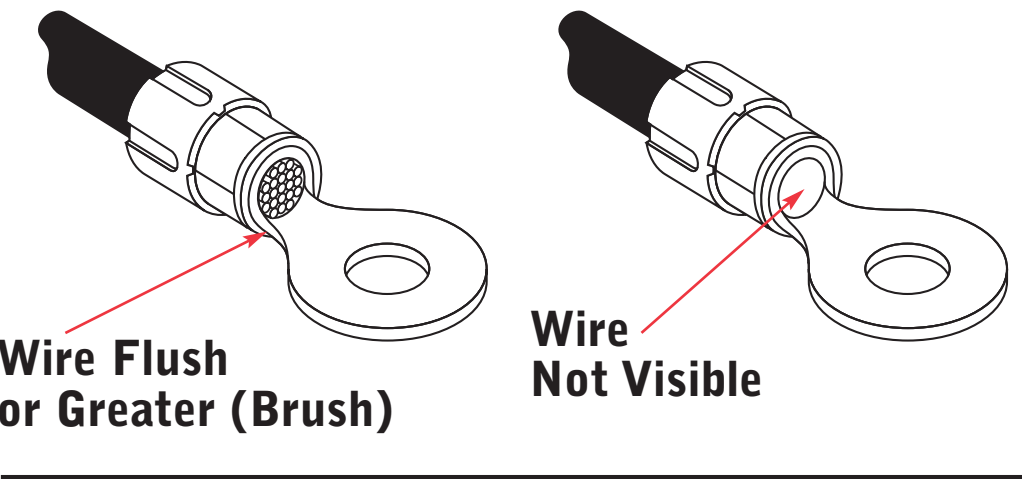


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

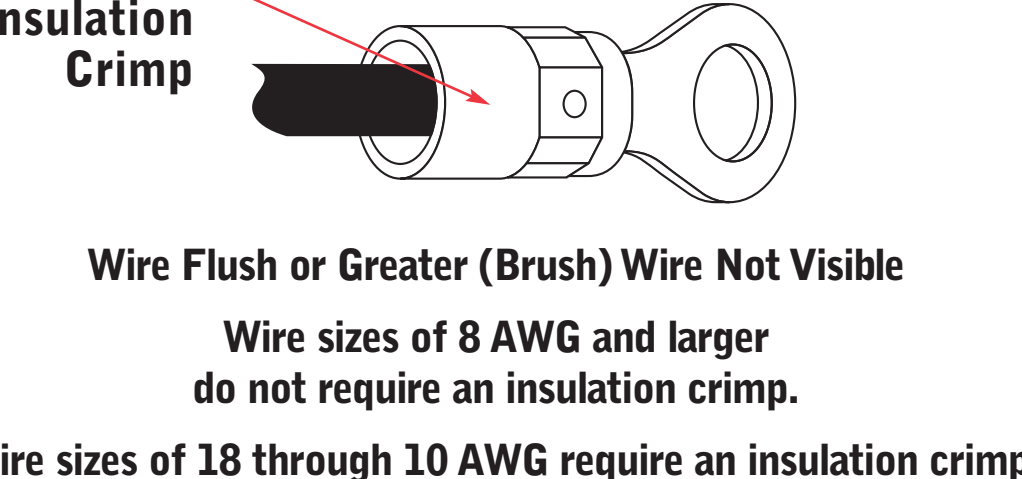


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



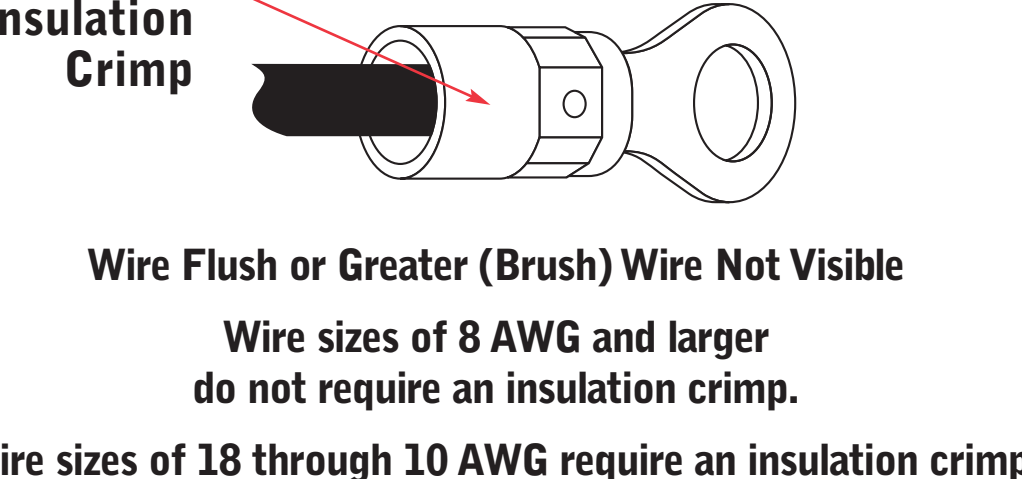
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



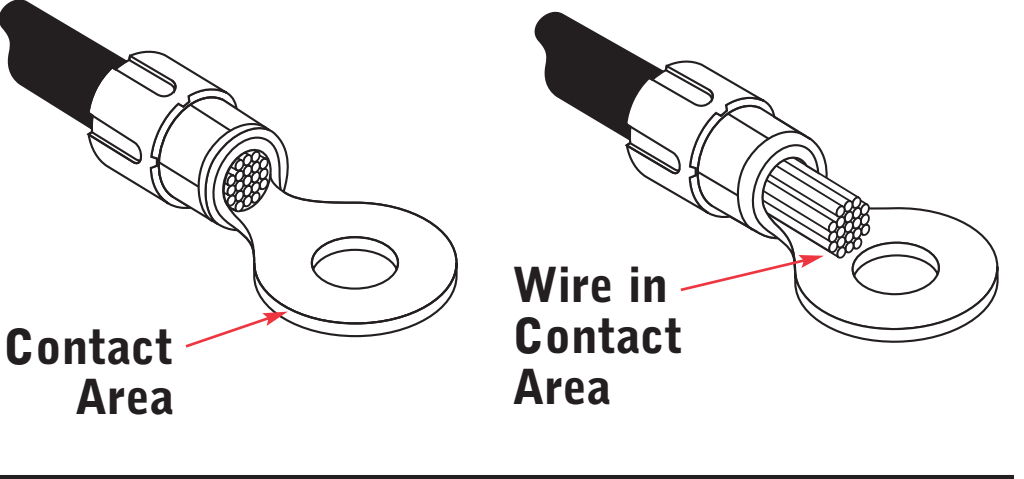
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

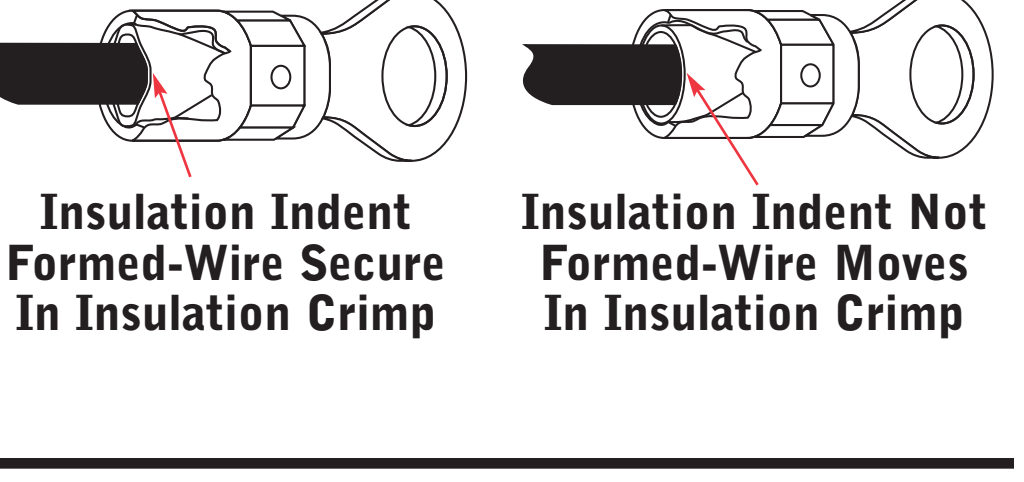


Wire in Contact Area

Contact Area

ACCEPT

REJECT

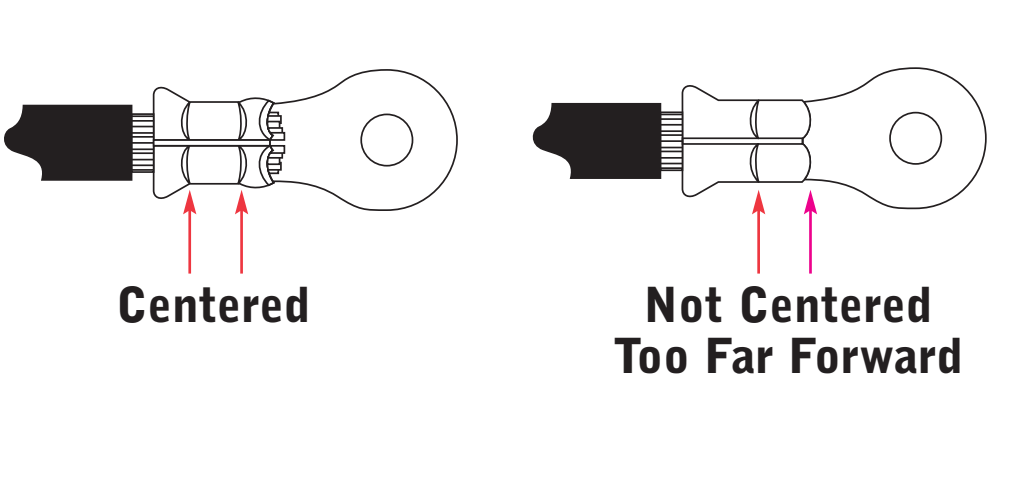


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

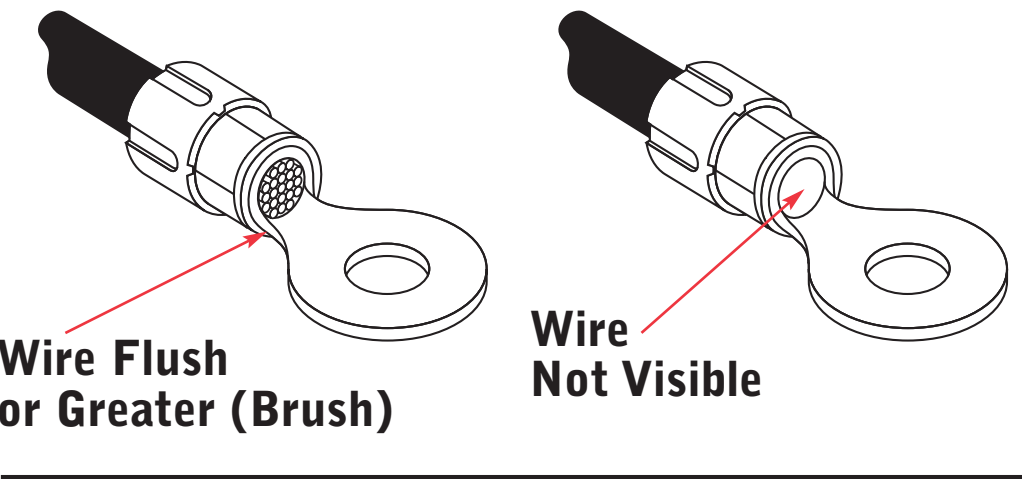


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

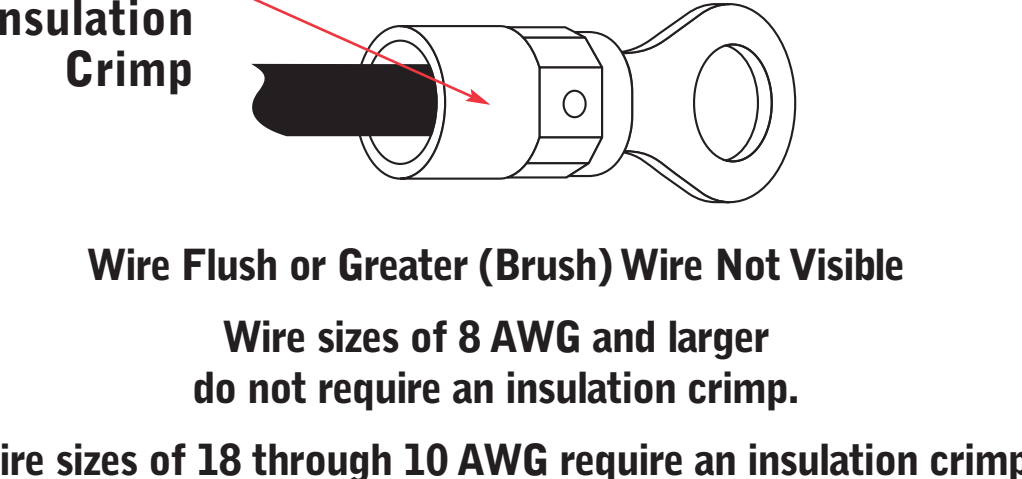


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



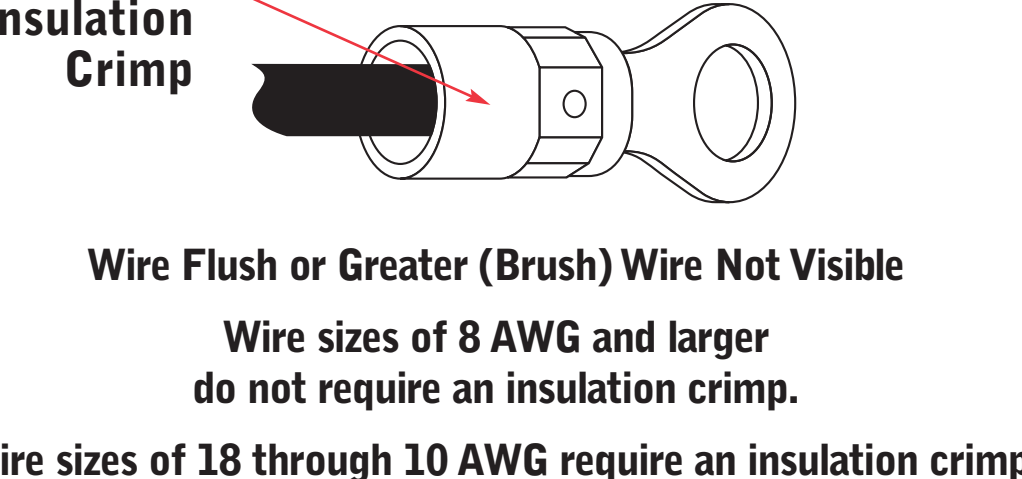
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



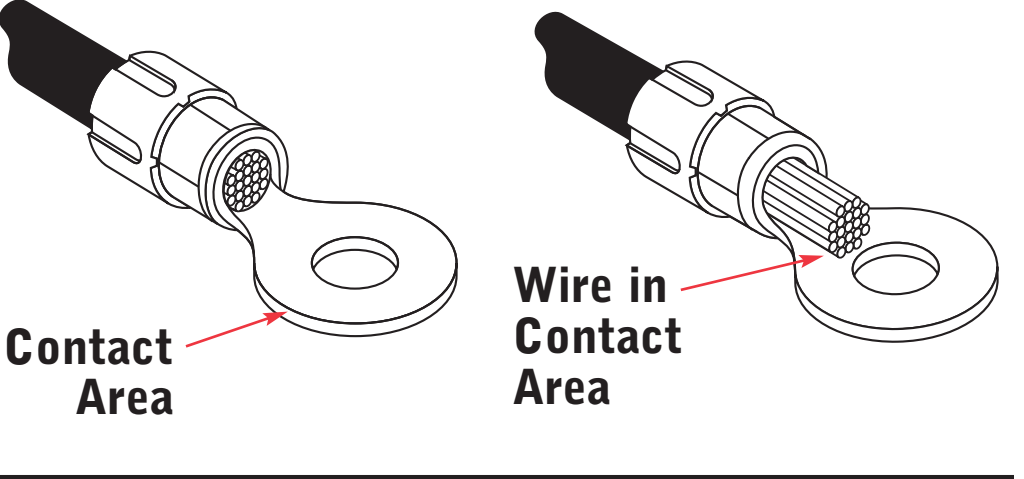
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

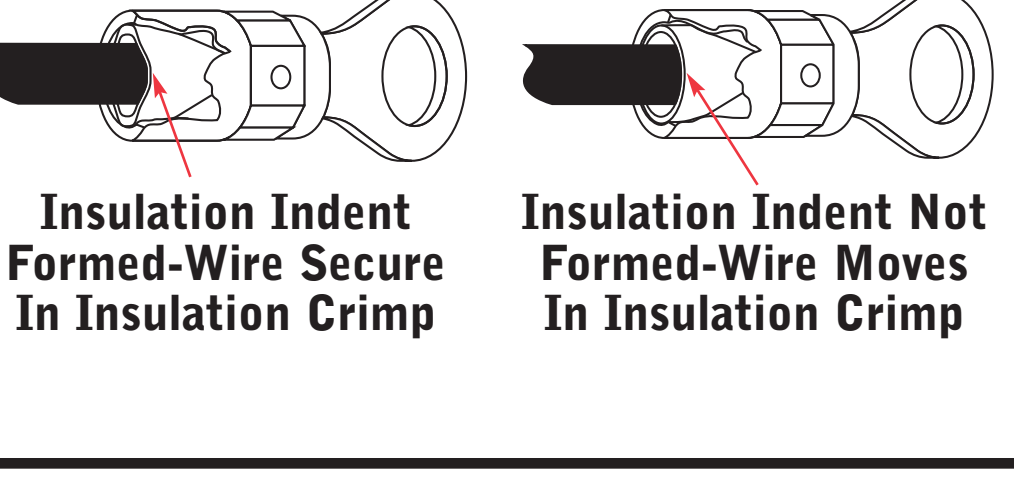


Wire in Contact Area

Contact Area

ACCEPT

REJECT

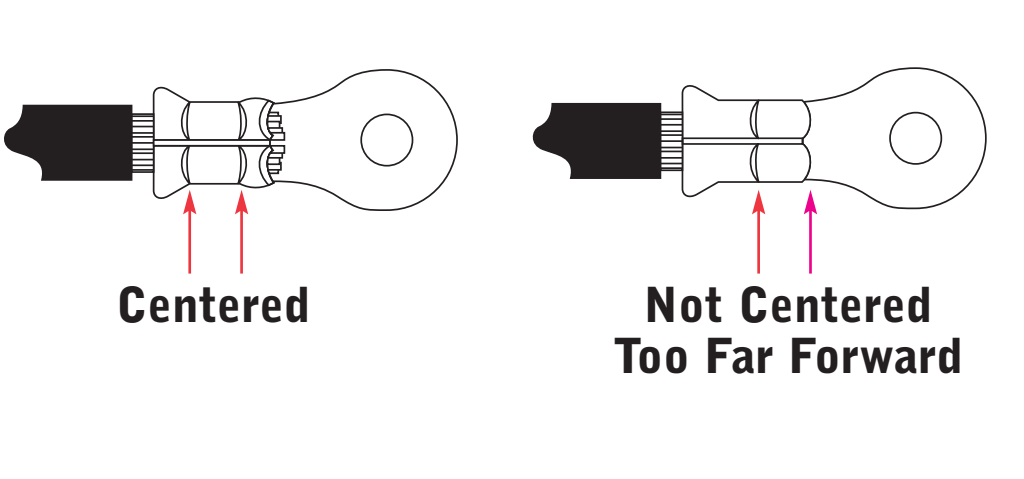


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

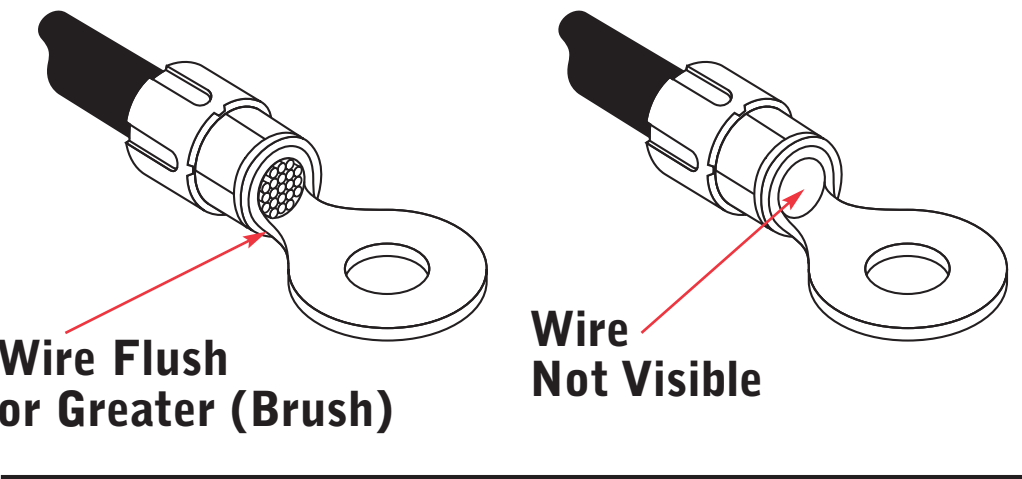


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

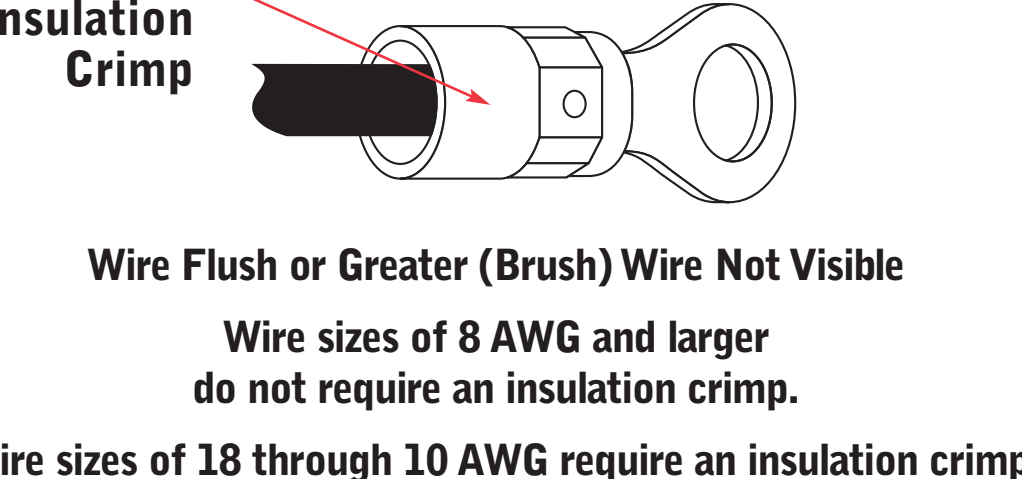


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



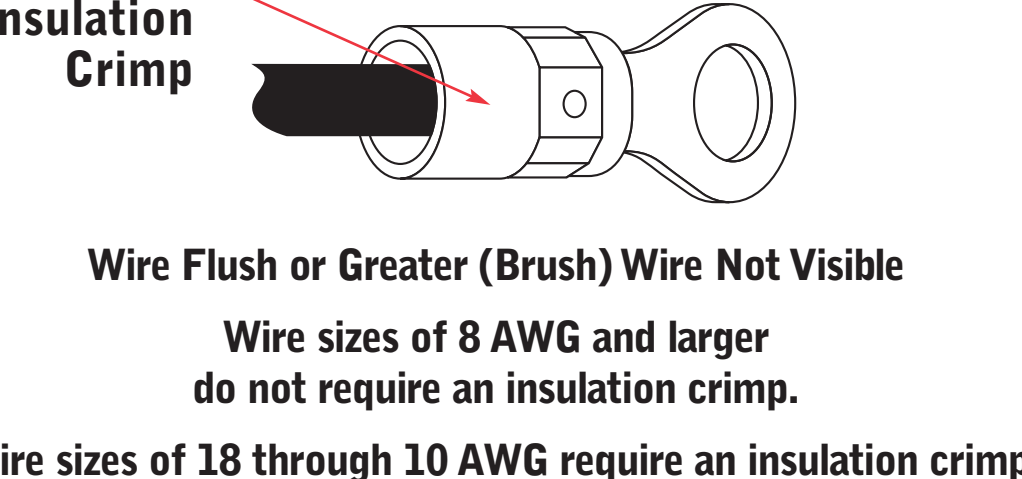
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



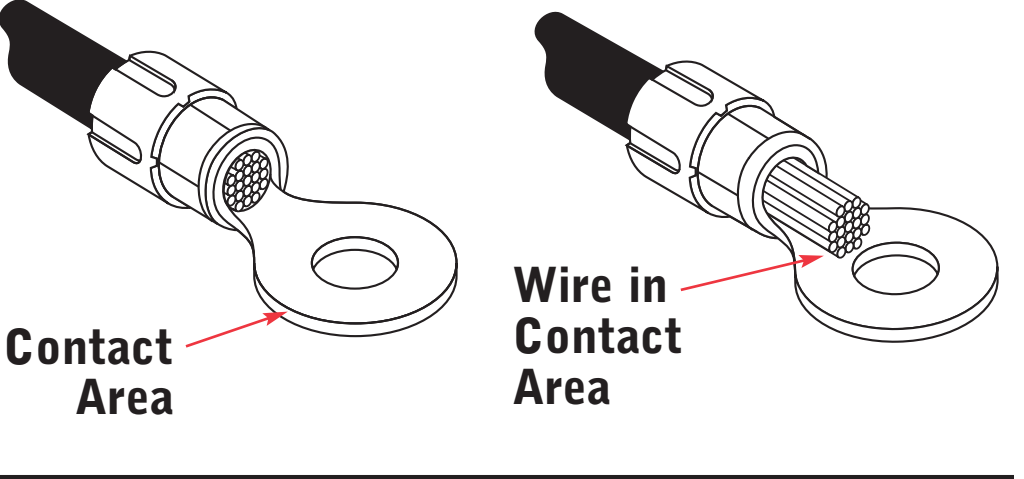
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

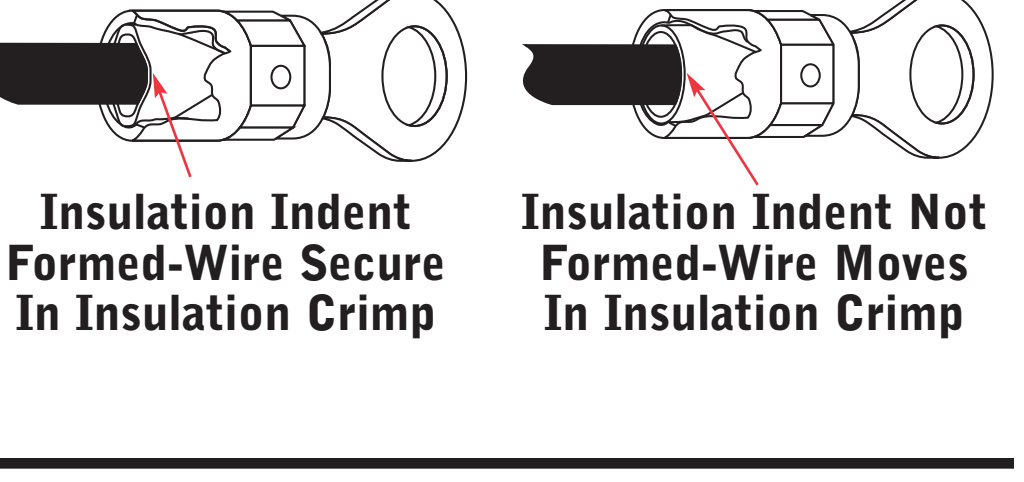


Wire in Contact Area

Contact Area

ACCEPT

REJECT

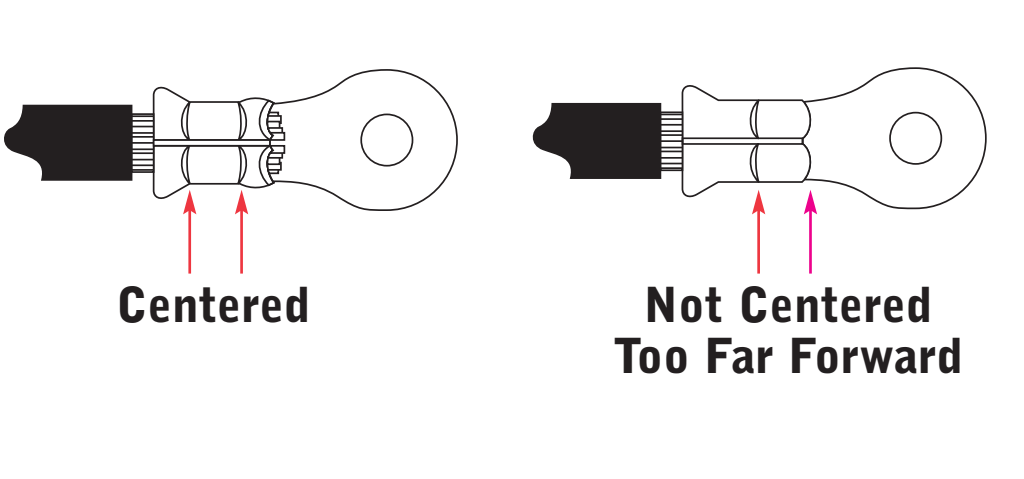


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

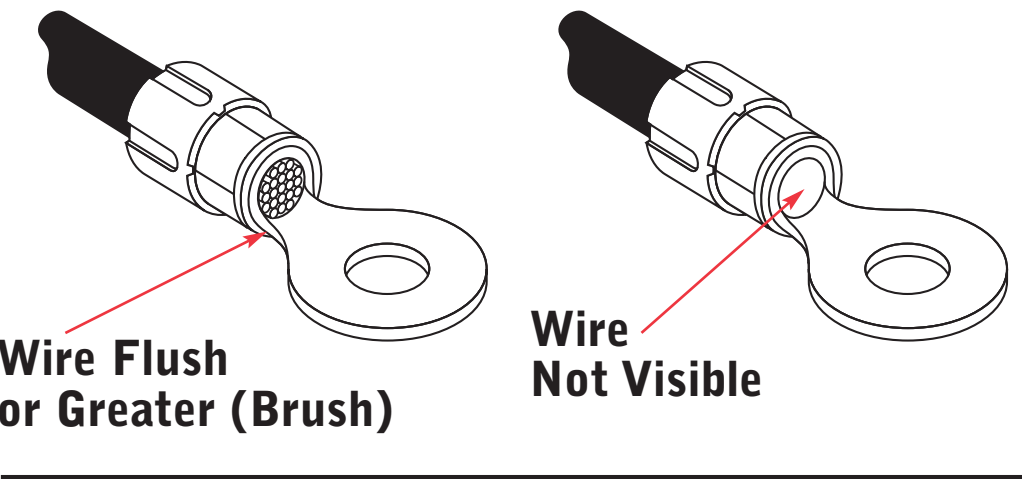


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

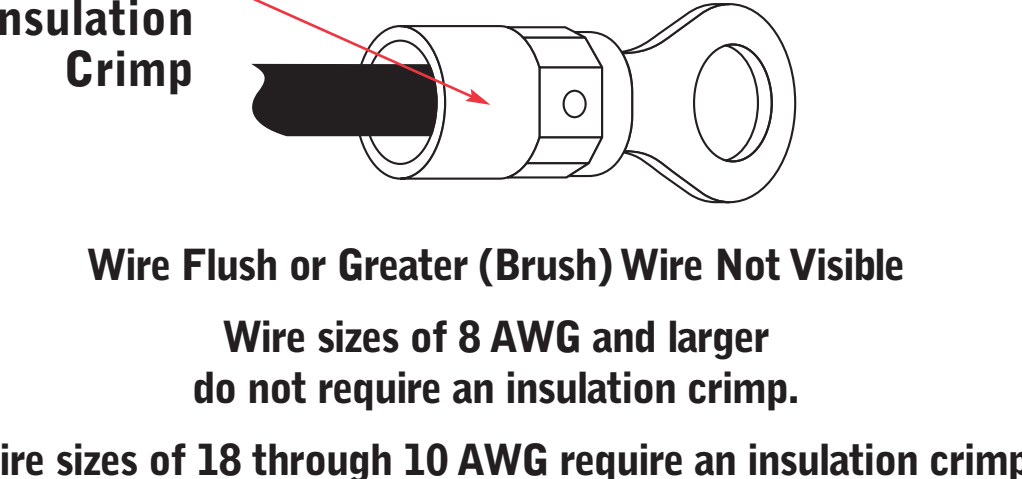


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



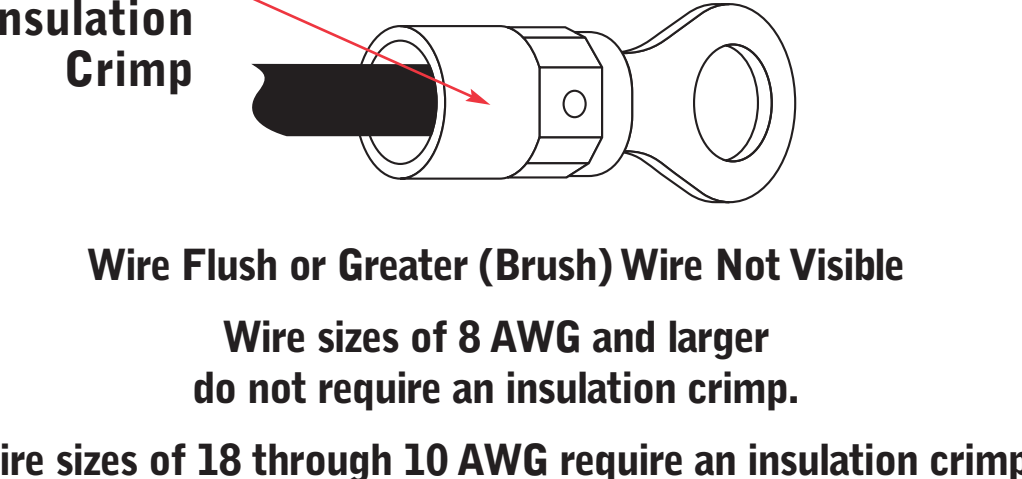
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



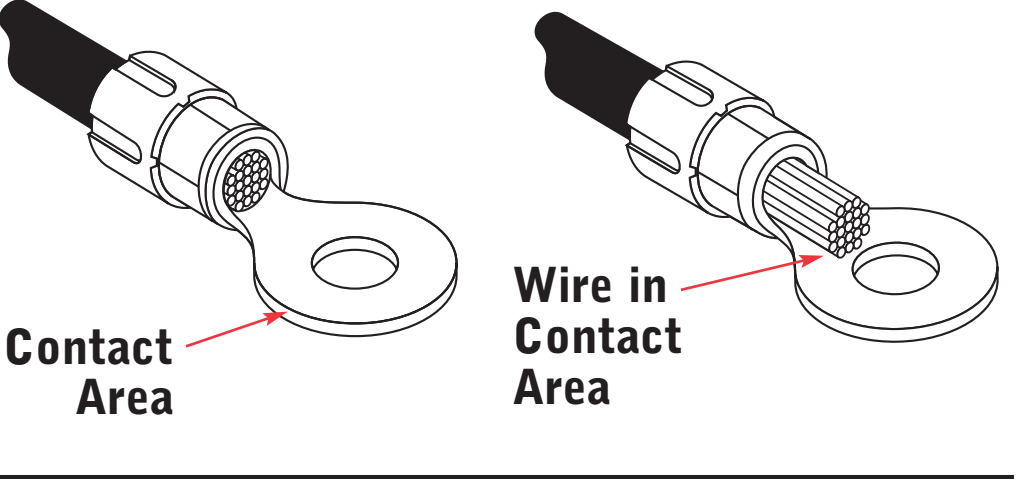
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

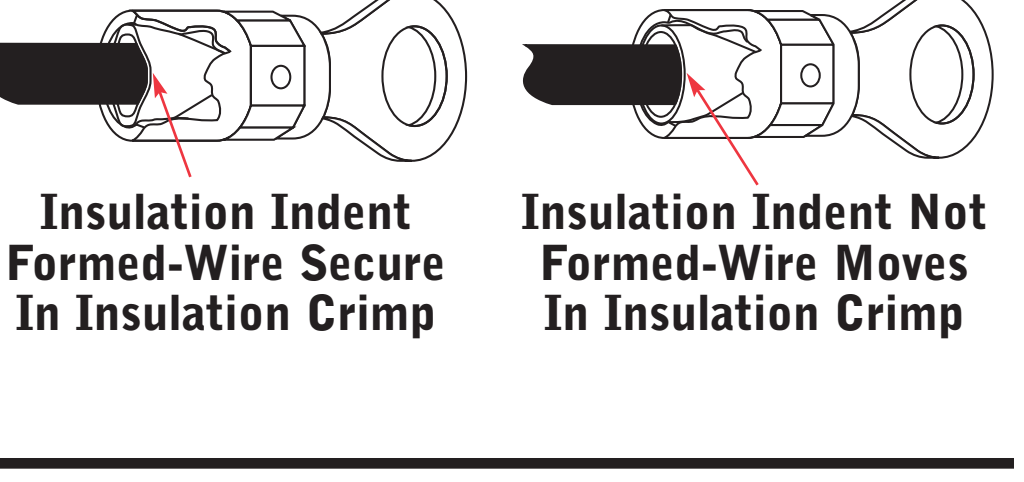


Wire in Contact Area

Contact Area

ACCEPT

REJECT

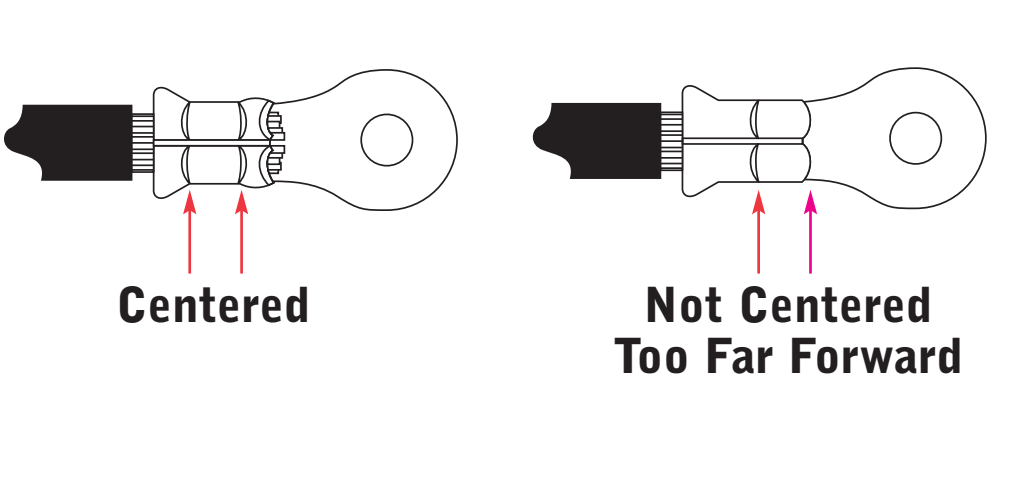


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

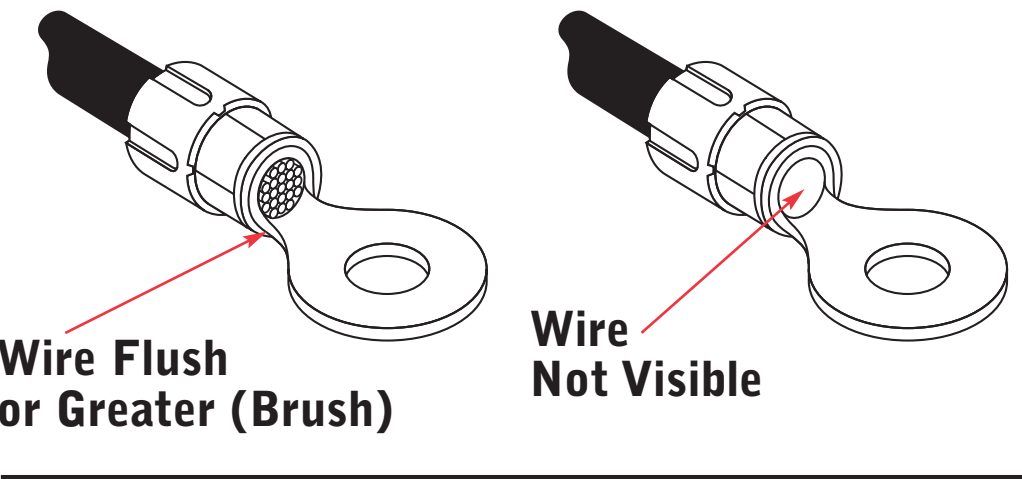


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

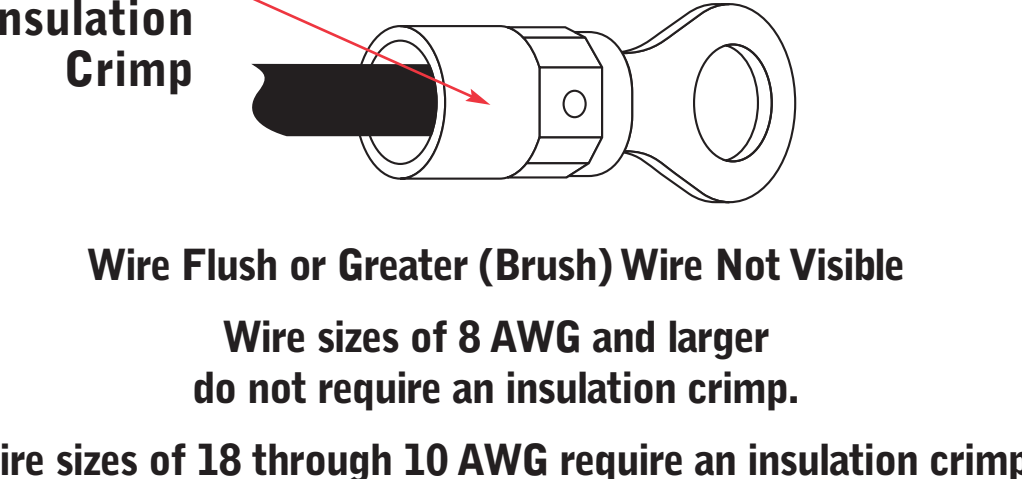


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



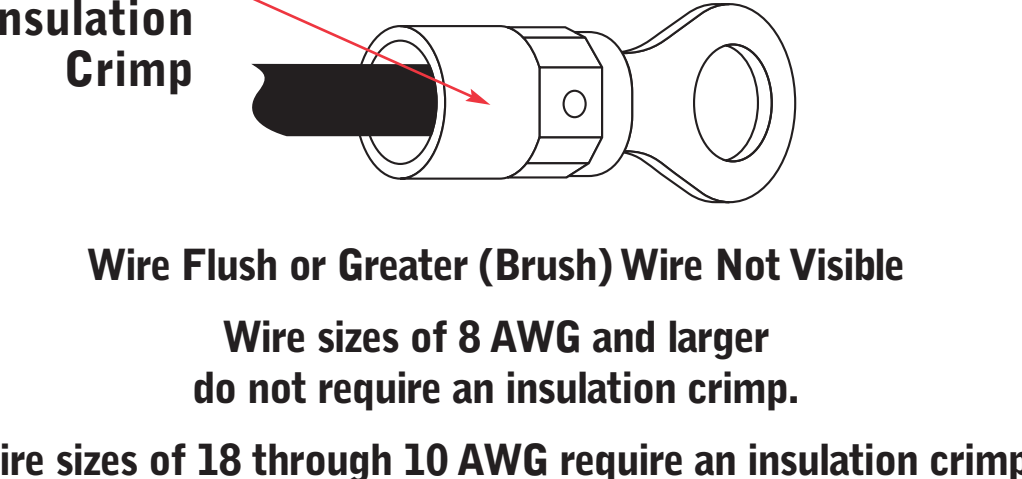
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



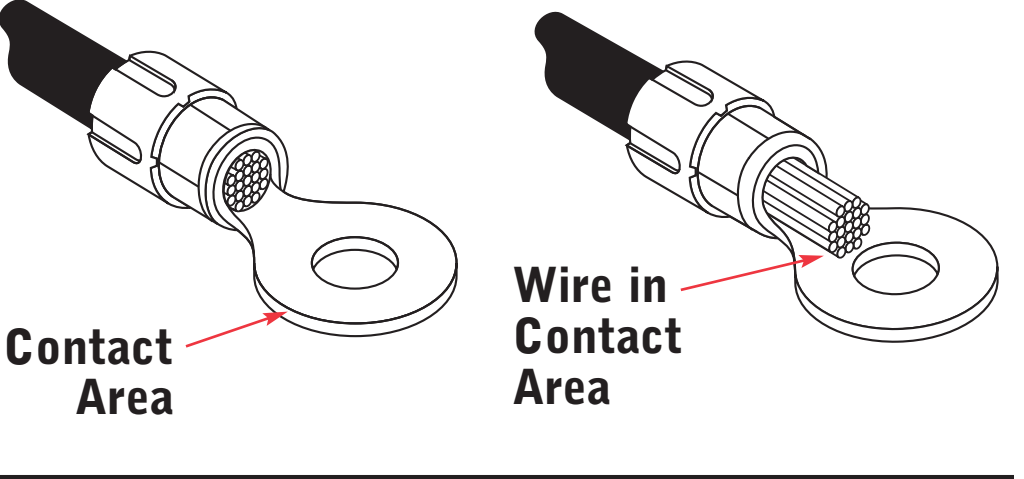
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

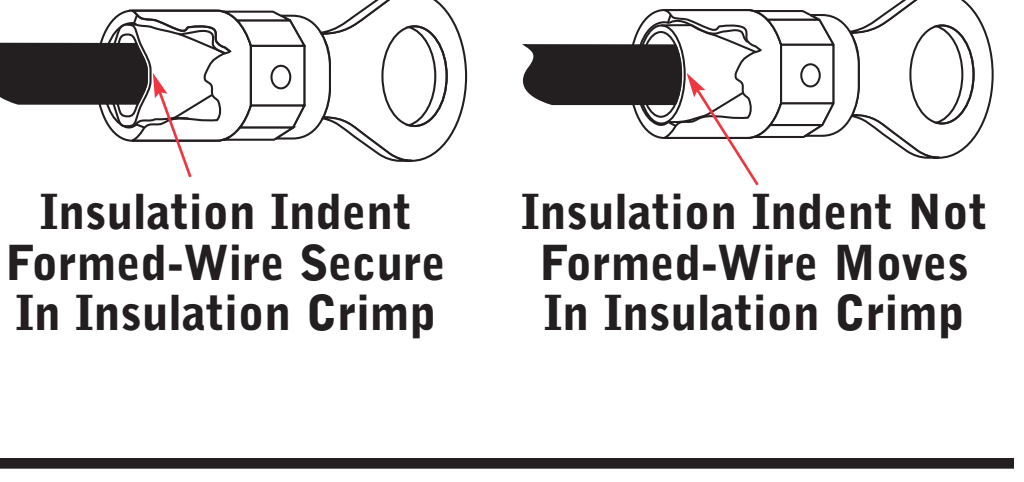


Wire in Contact Area

Contact Area

ACCEPT

REJECT

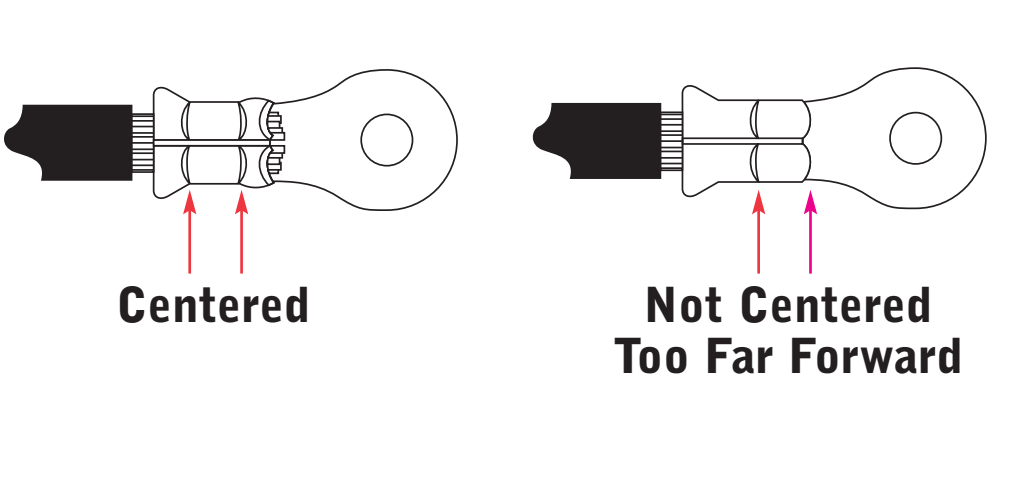


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

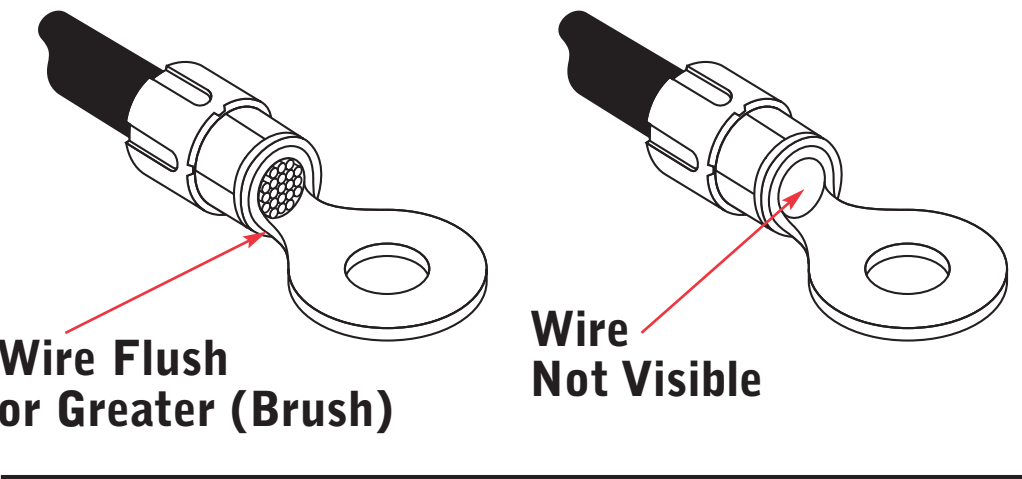


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

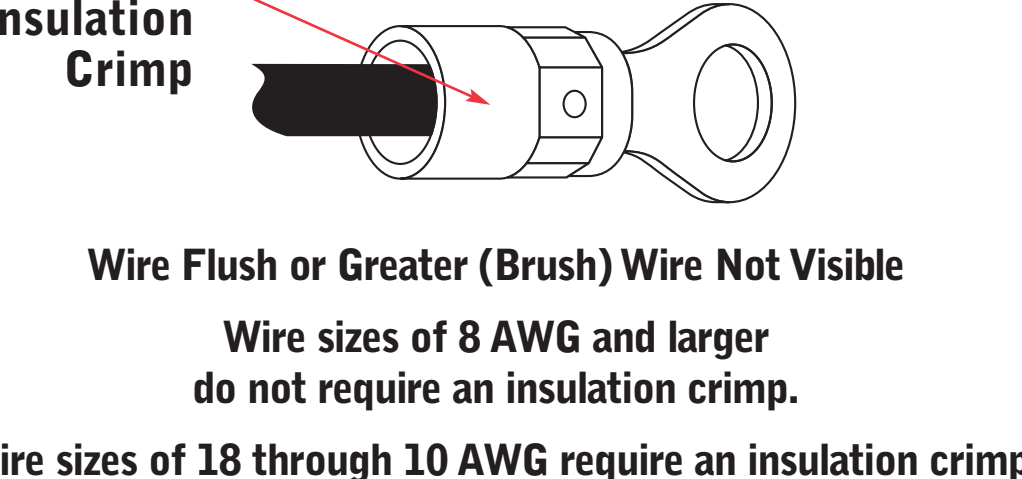


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



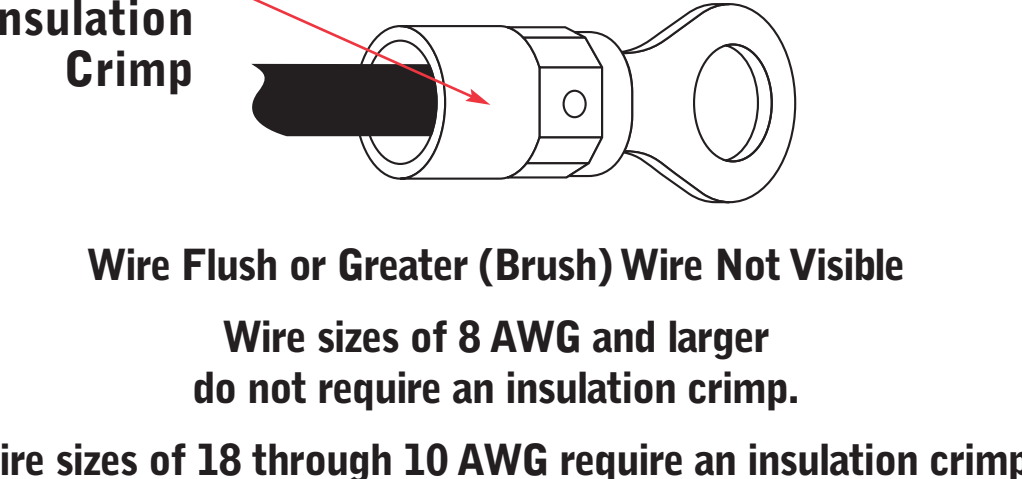
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



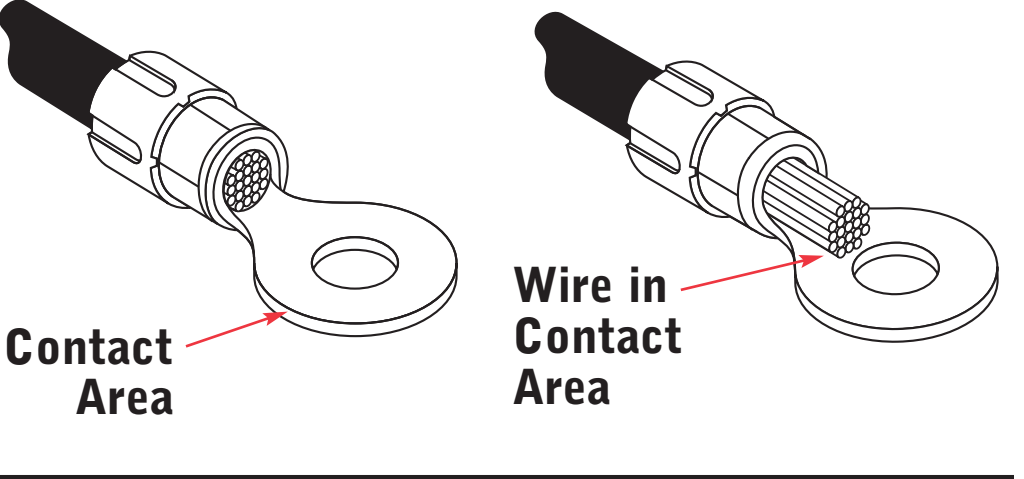
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

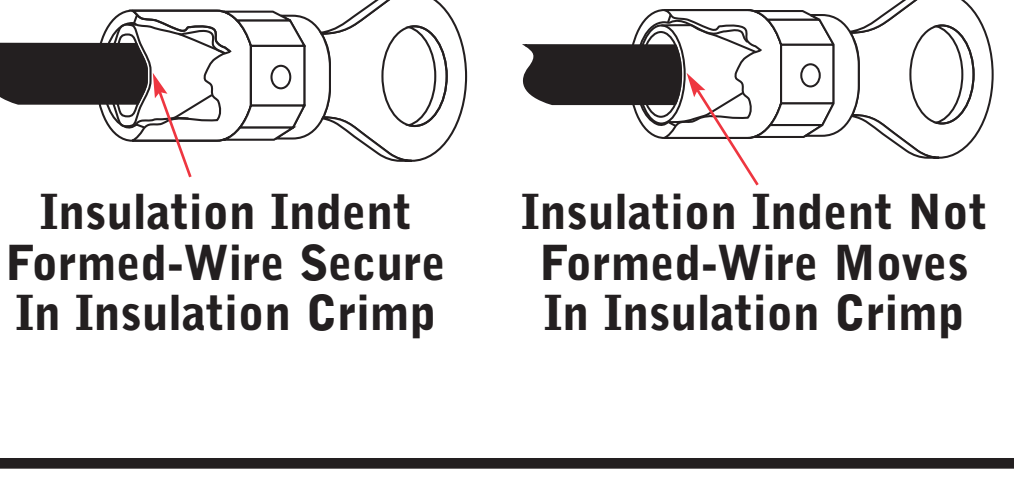


Wire in Contact Area

Contact Area

ACCEPT

REJECT

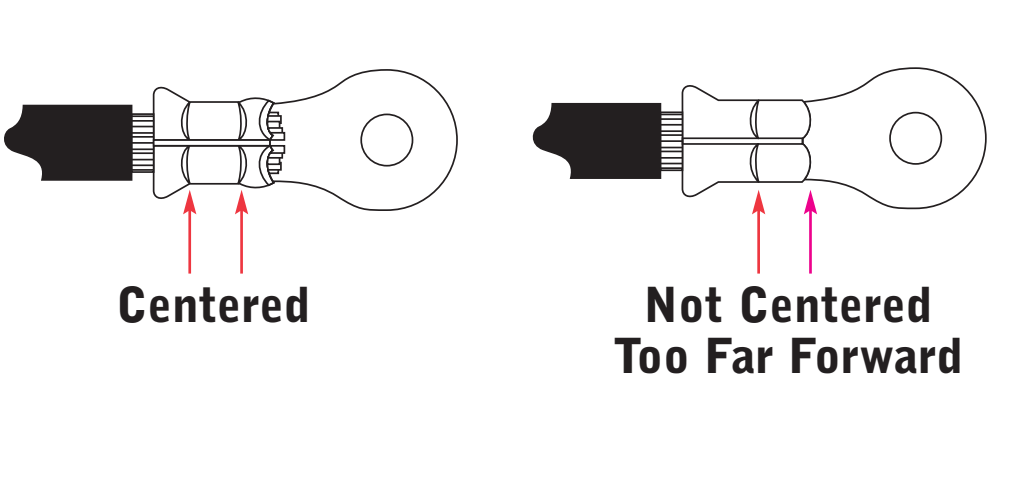


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

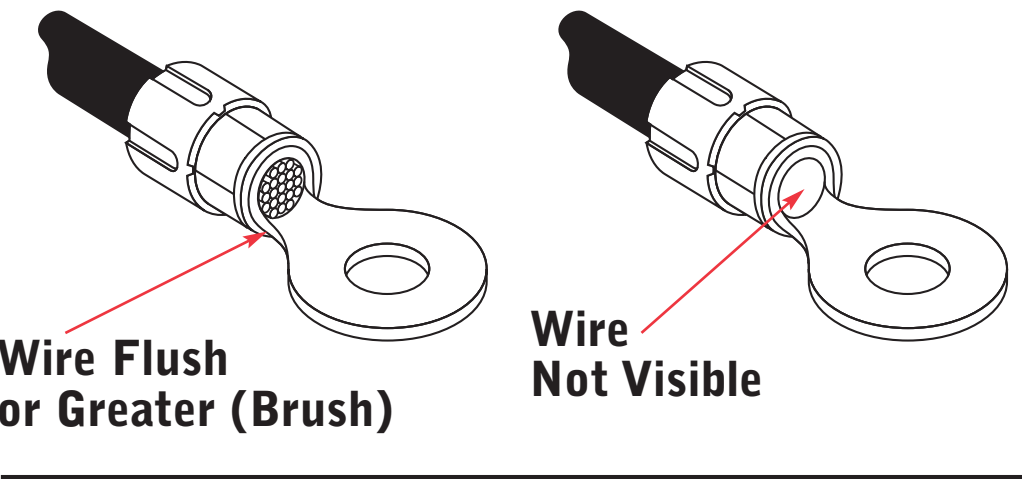


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

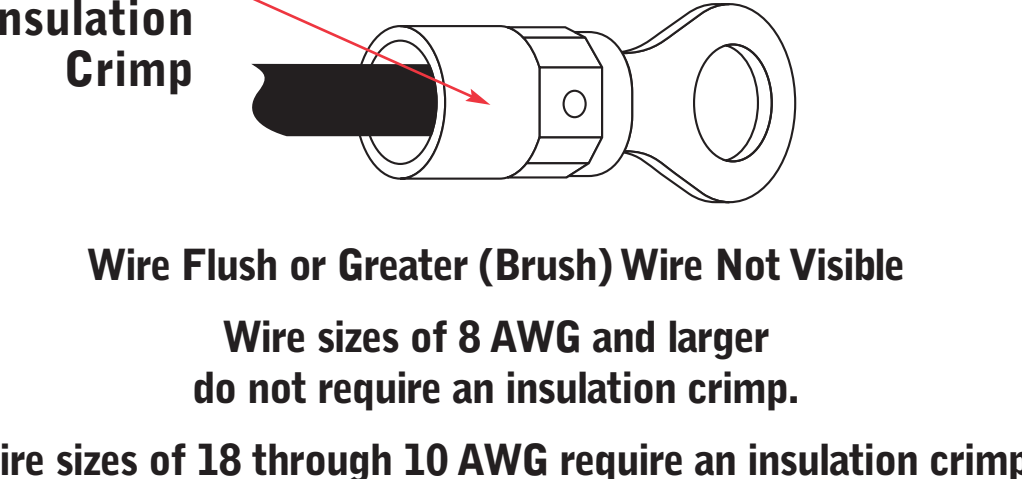


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



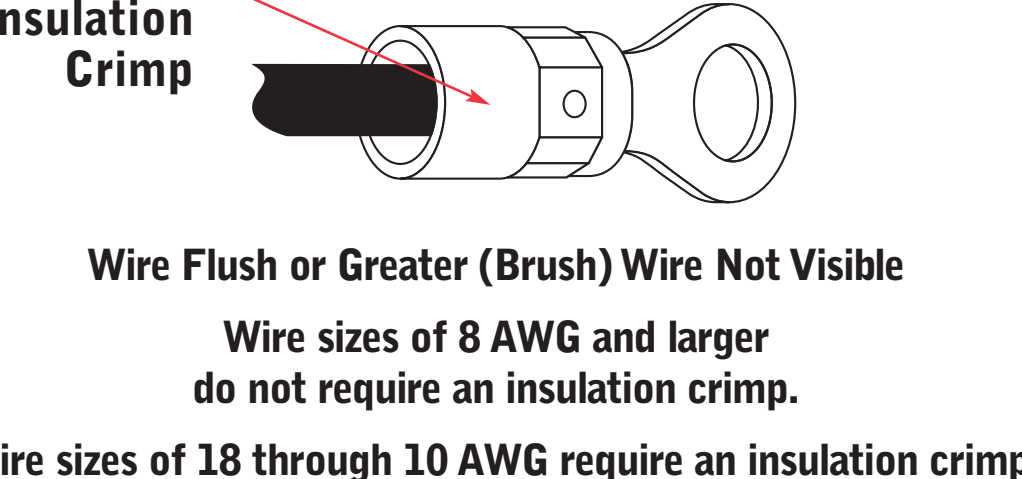
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



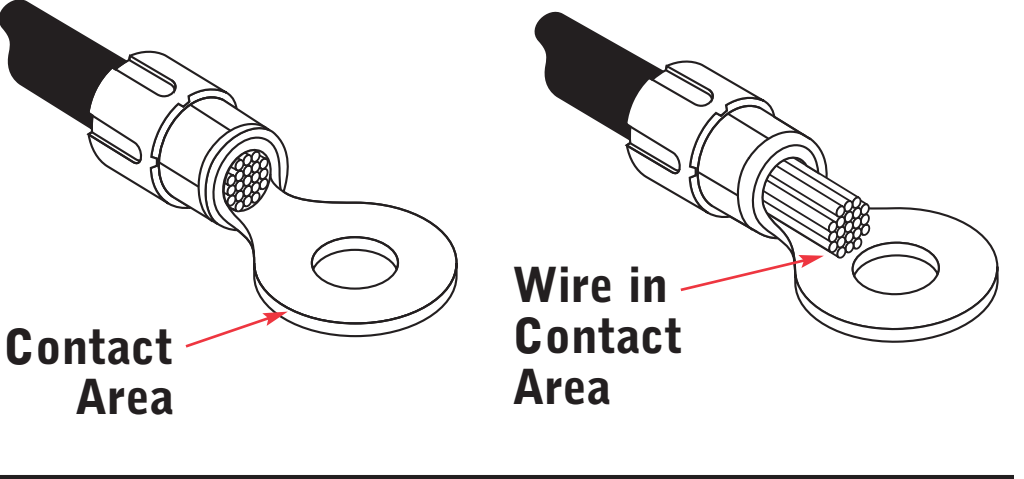
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

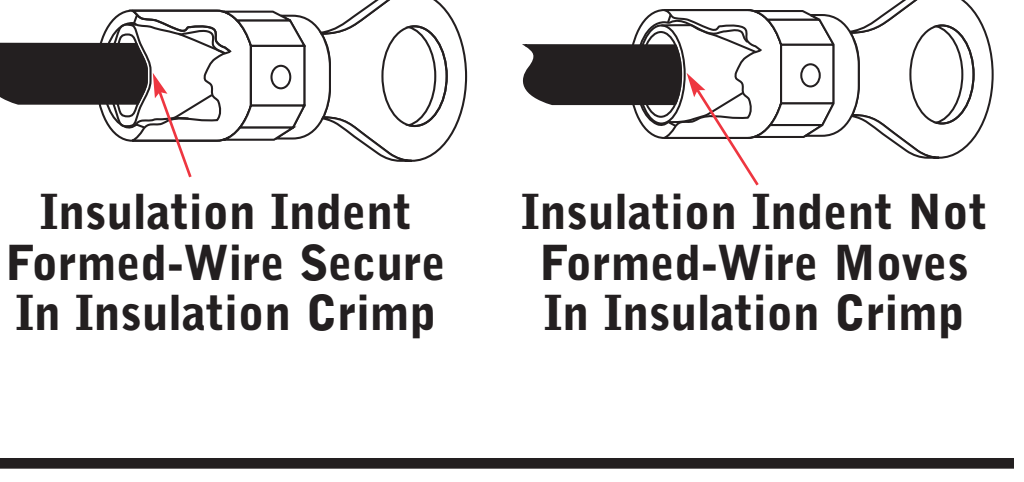


Wire in Contact Area

Contact Area

ACCEPT

REJECT

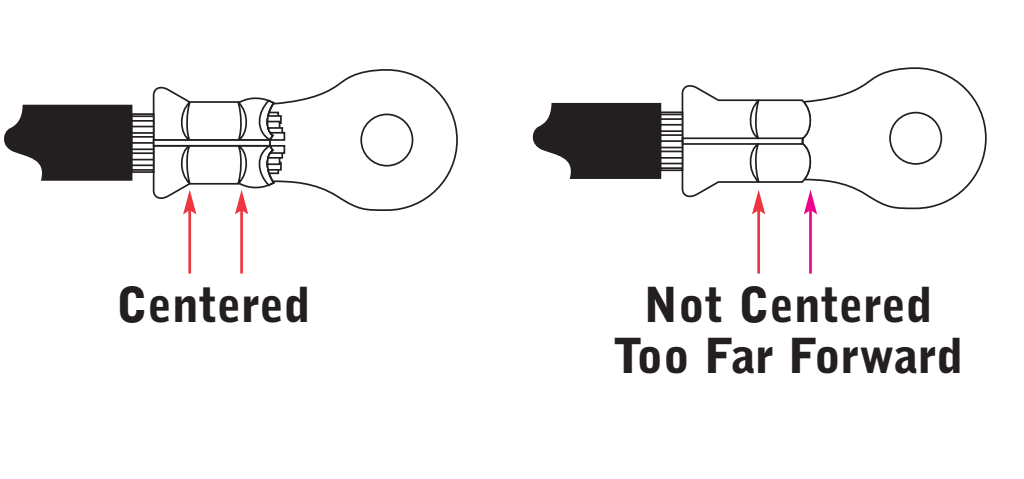


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

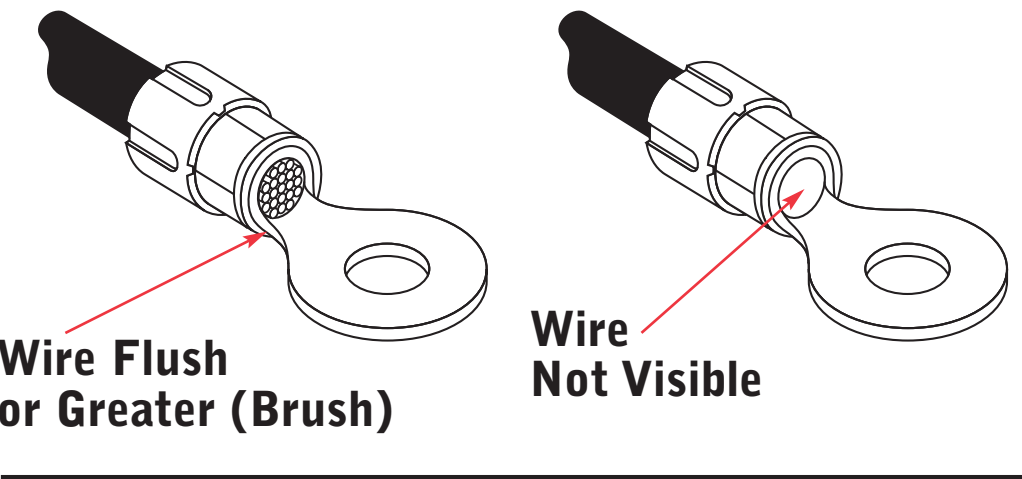


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

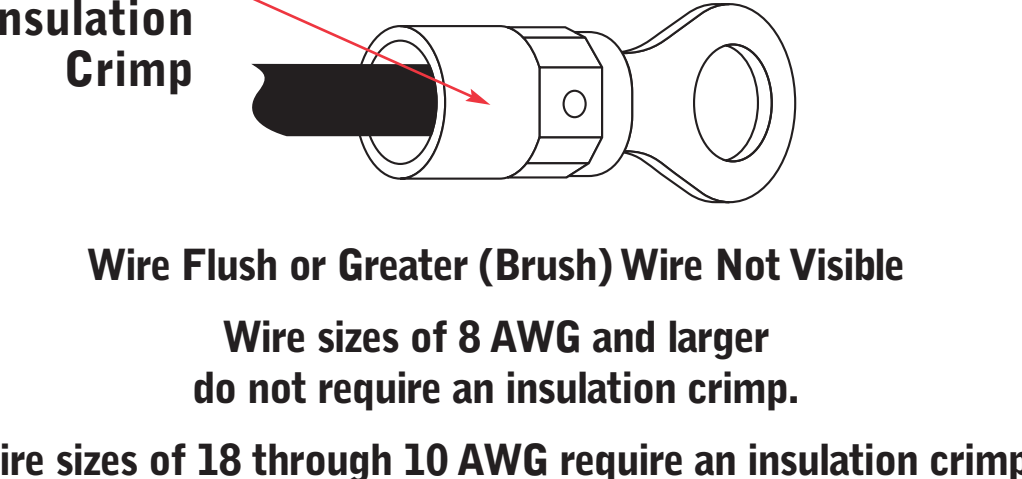


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



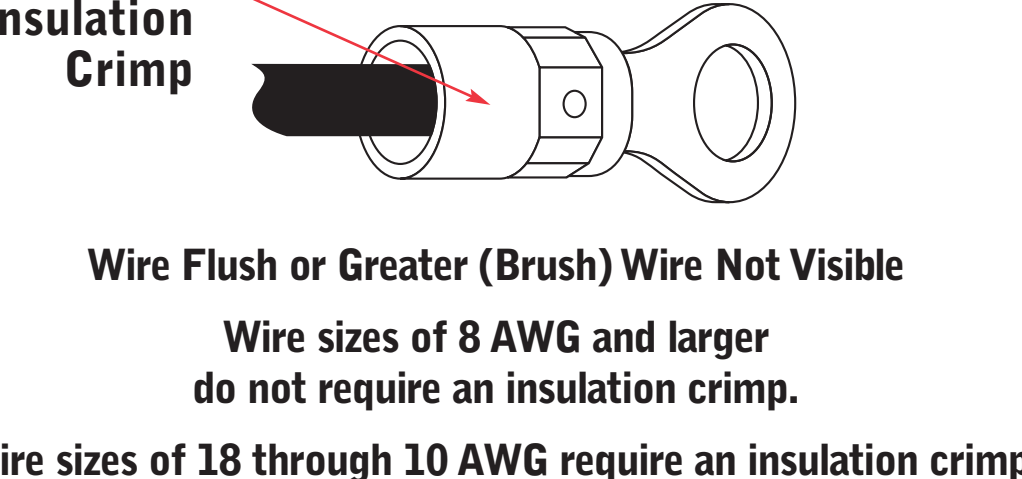
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



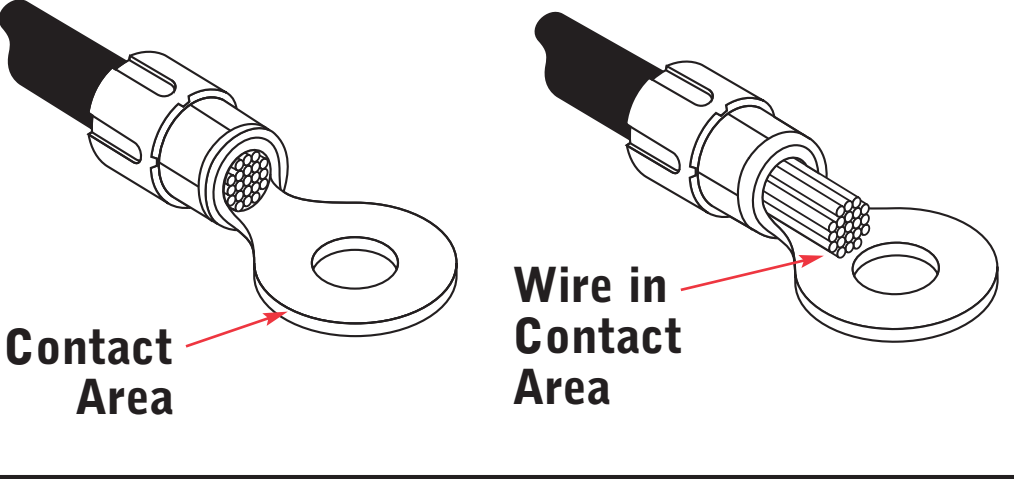
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

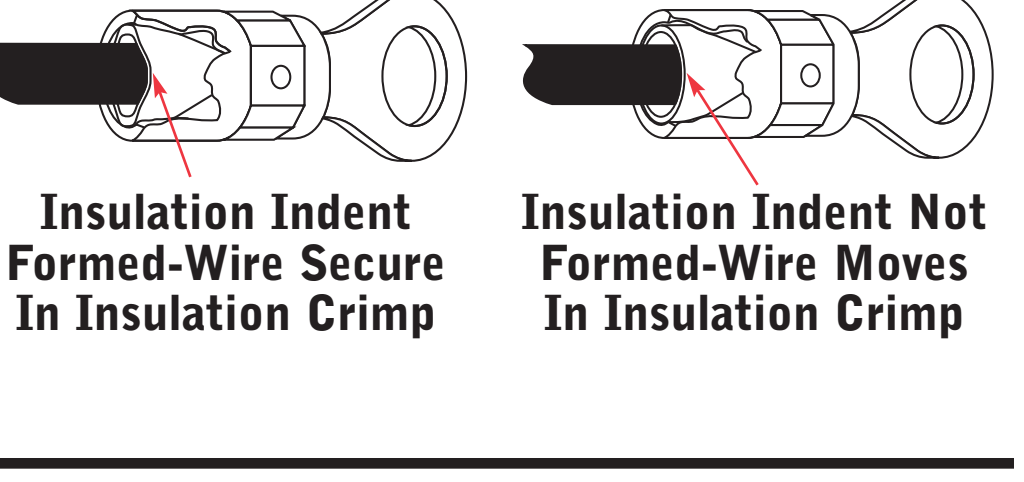


Wire in Contact Area

Contact Area

ACCEPT

REJECT

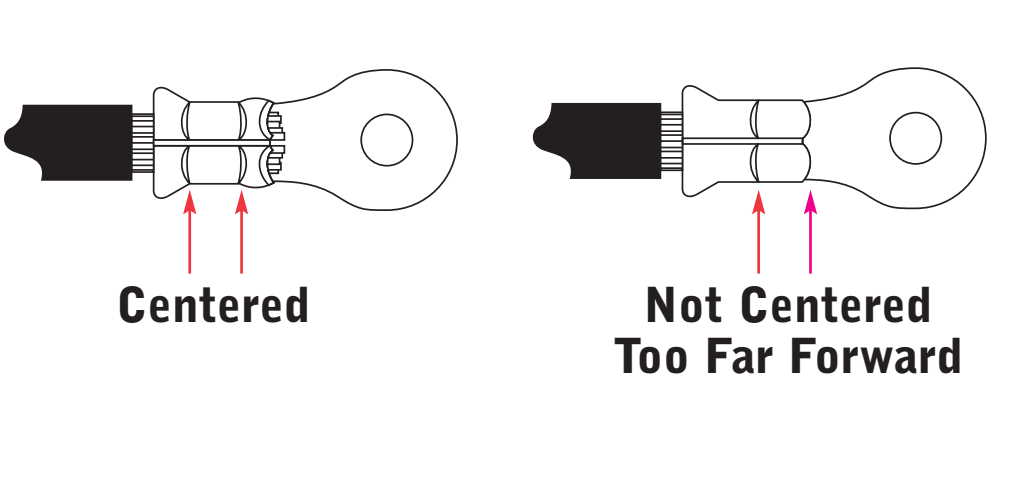


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

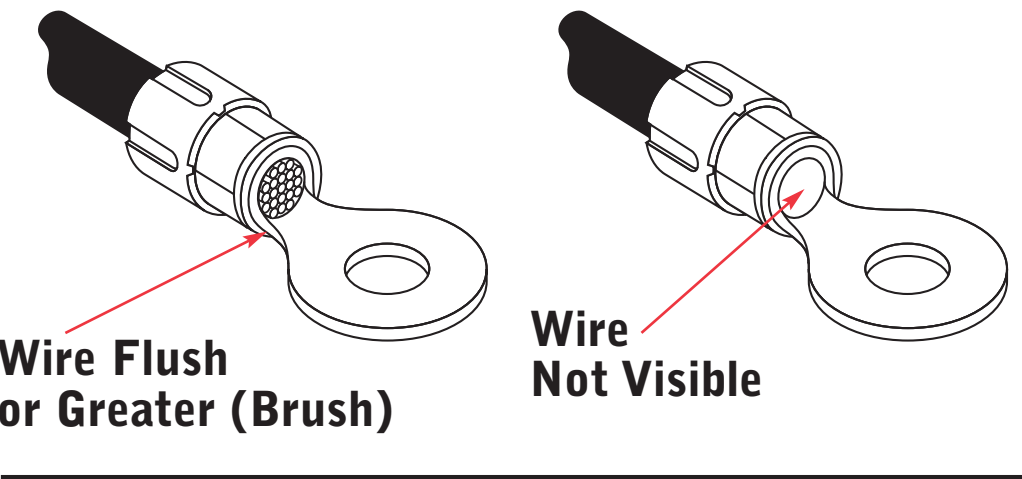


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

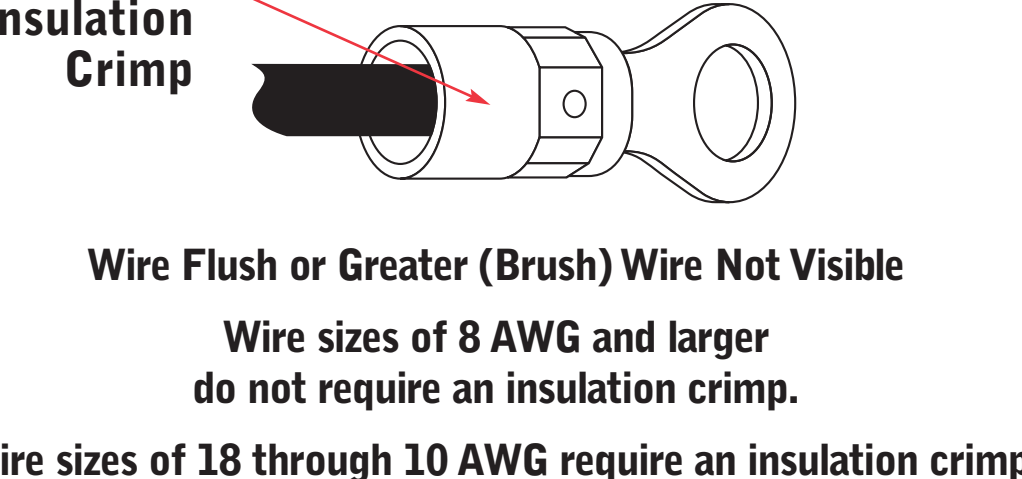


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



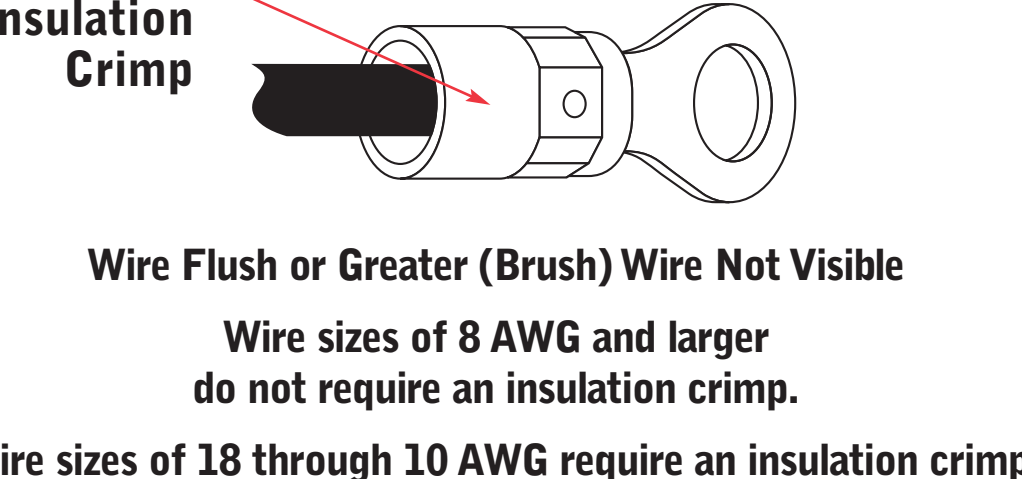
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



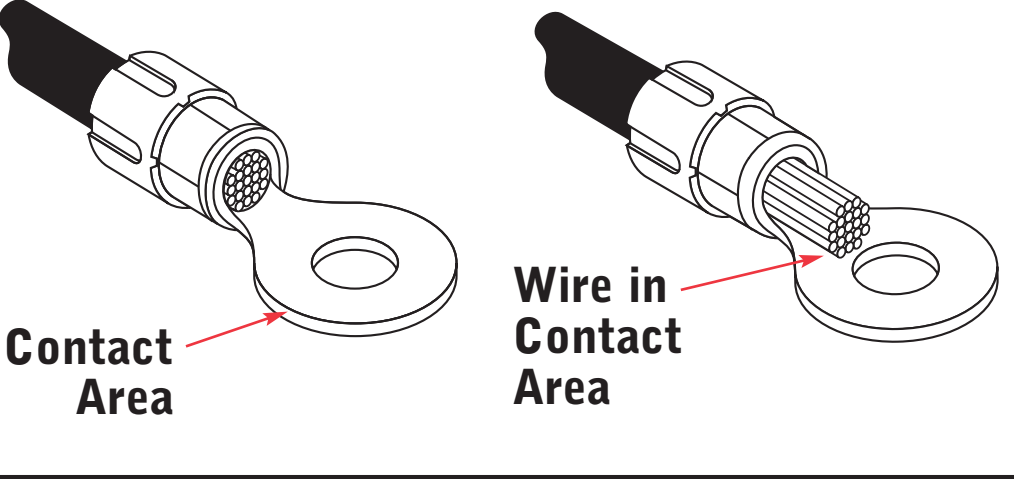
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

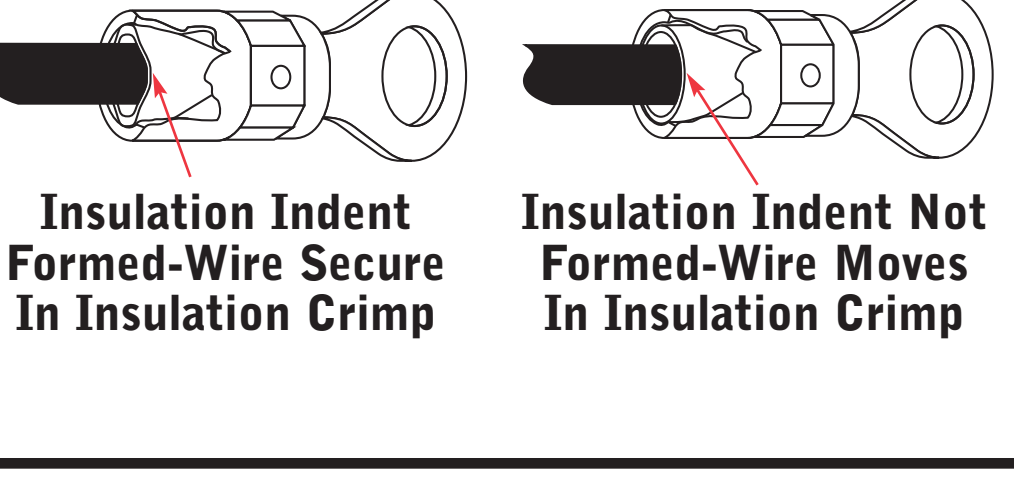


Wire in Contact Area

Contact Area

ACCEPT

REJECT

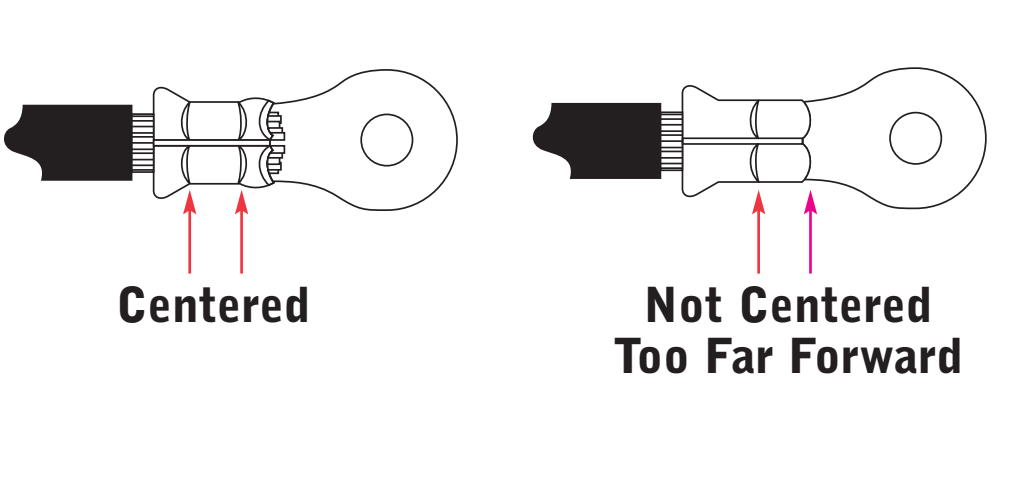


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

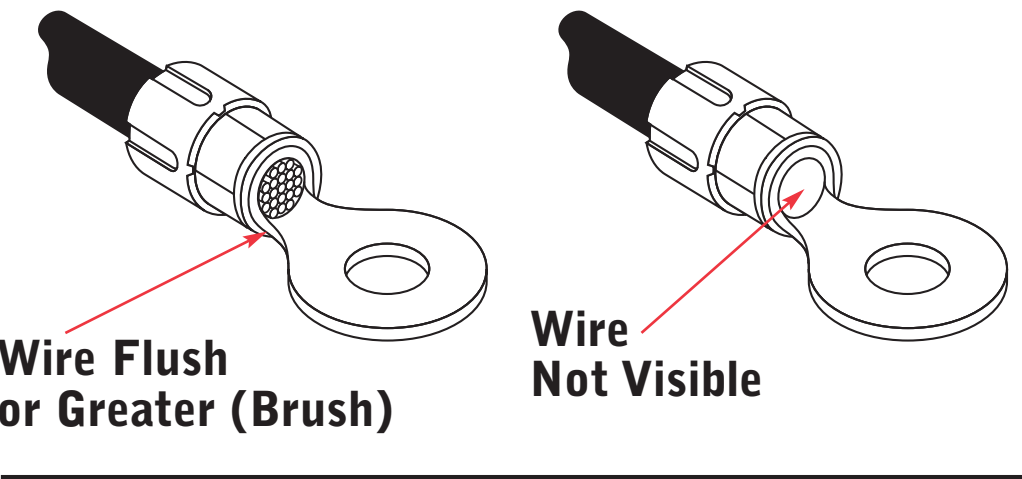


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

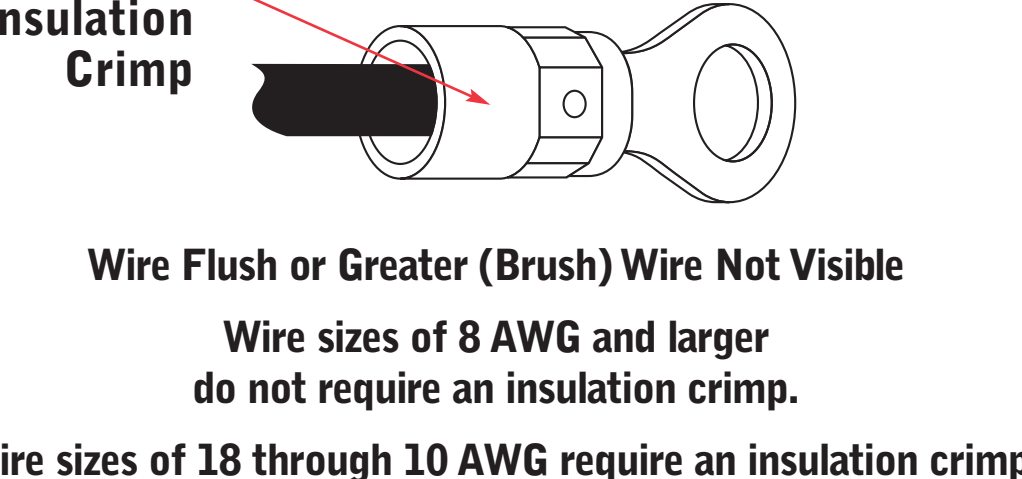


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



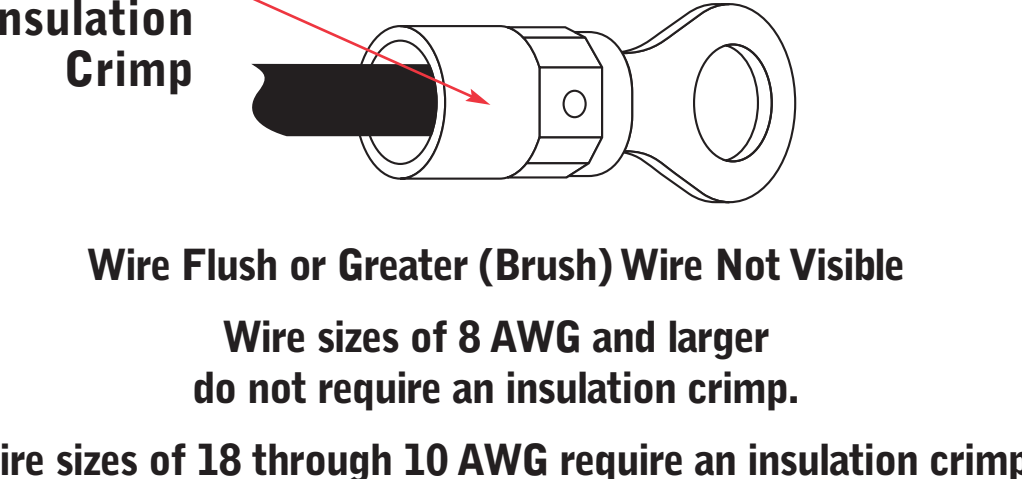
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



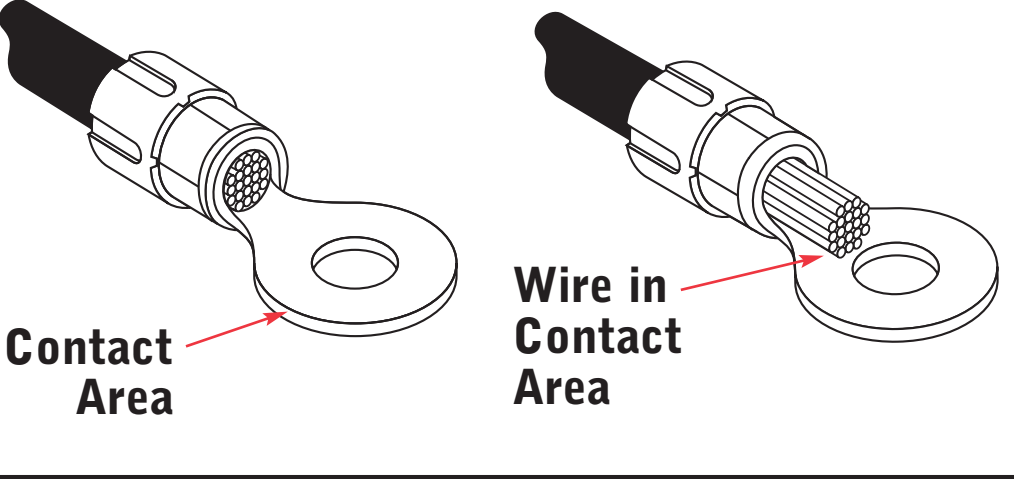
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

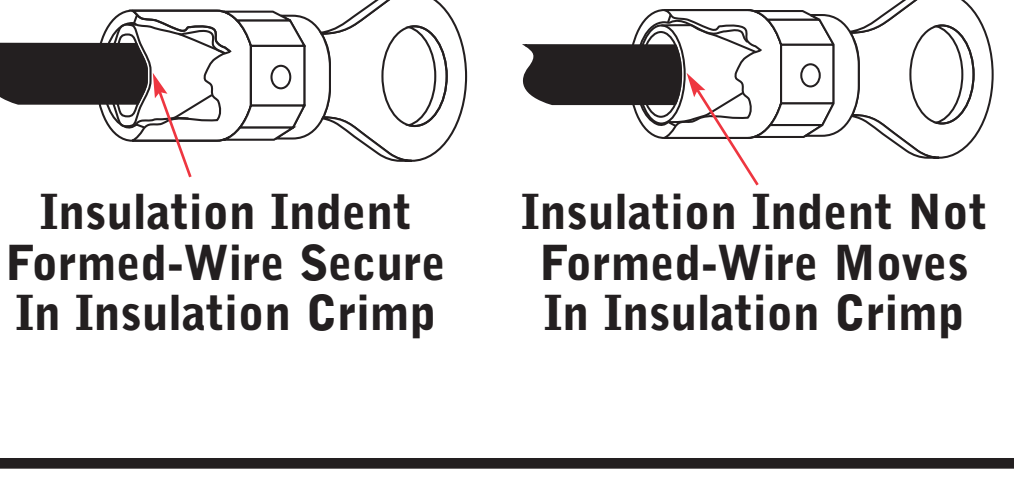


Wire in Contact Area

Contact Area

ACCEPT

REJECT

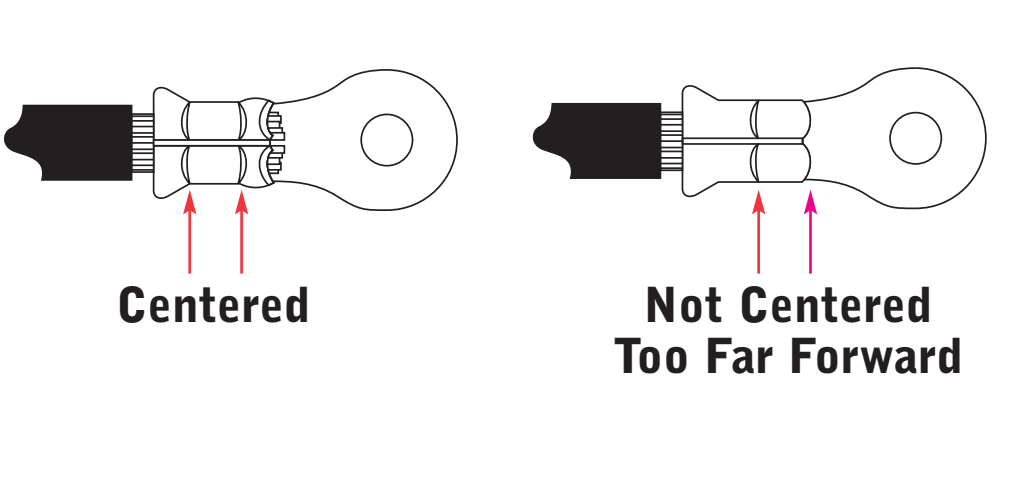


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

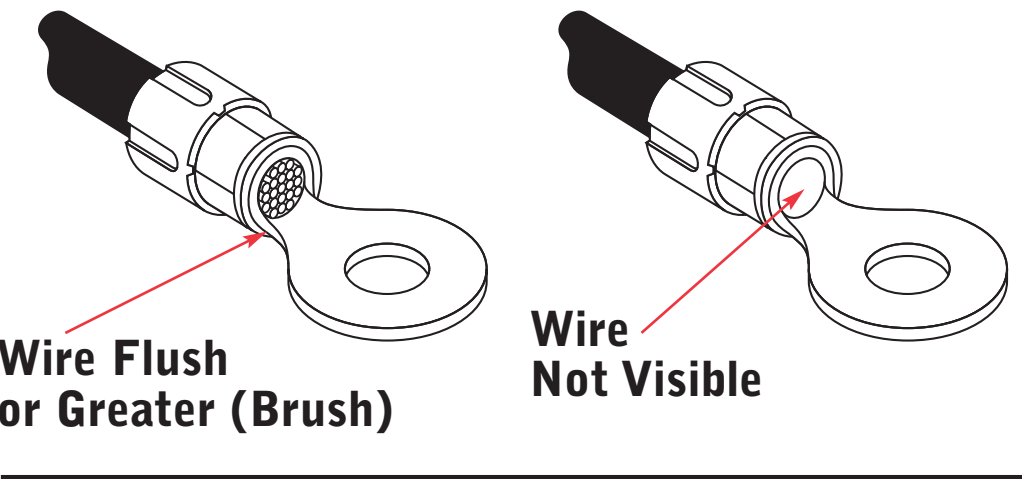


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

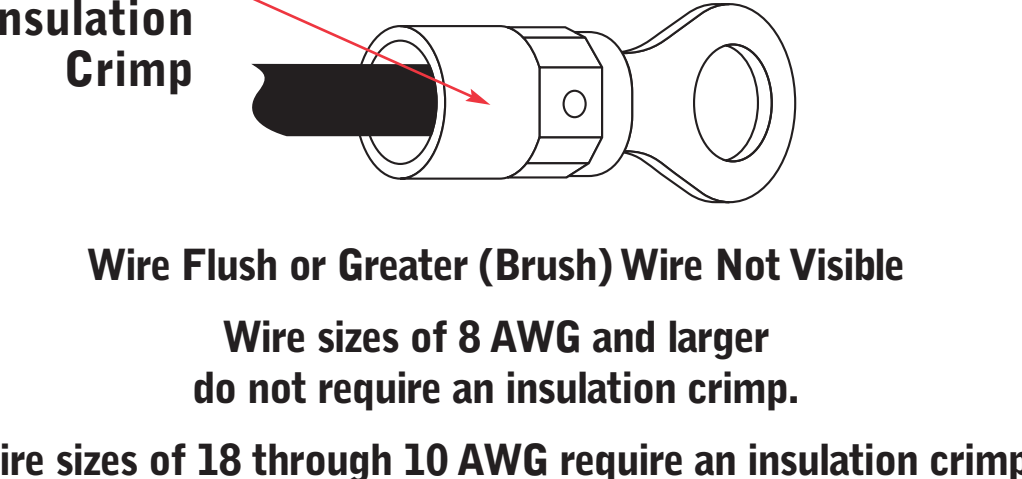


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



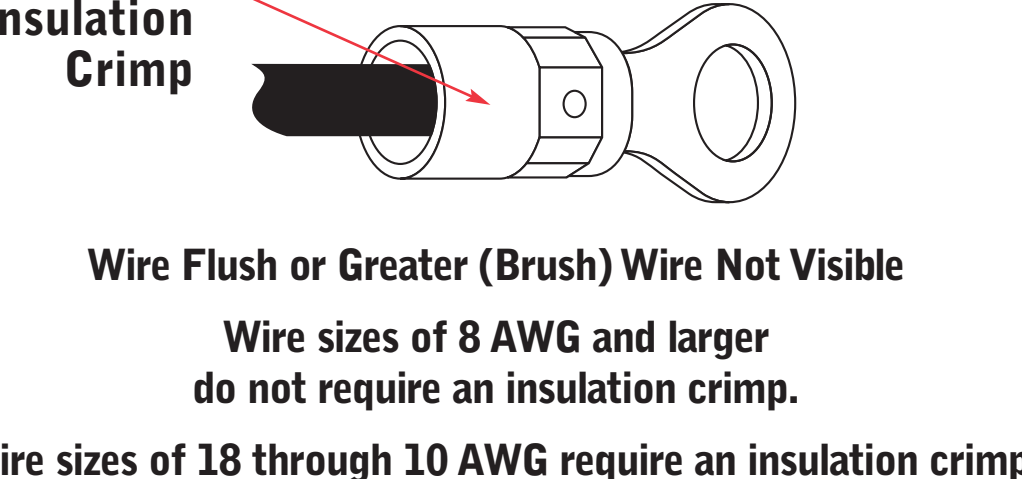
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



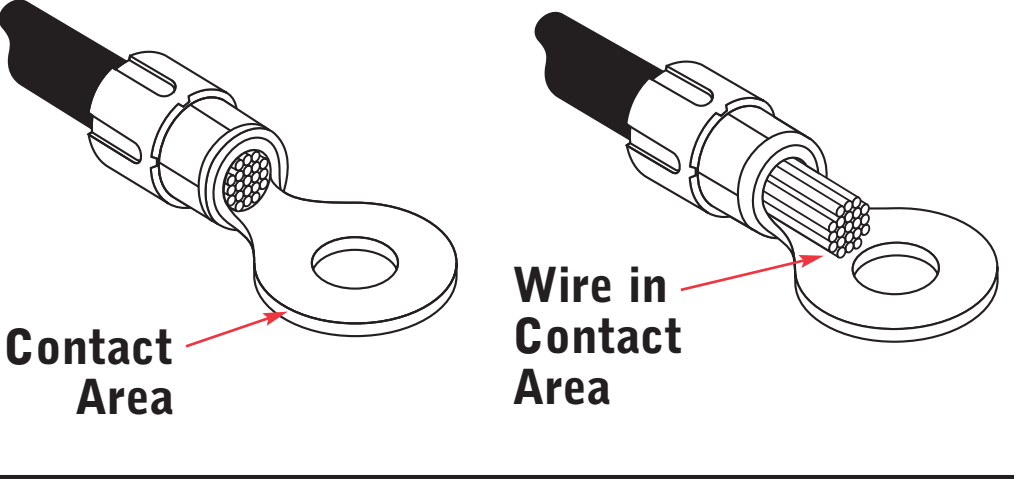
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

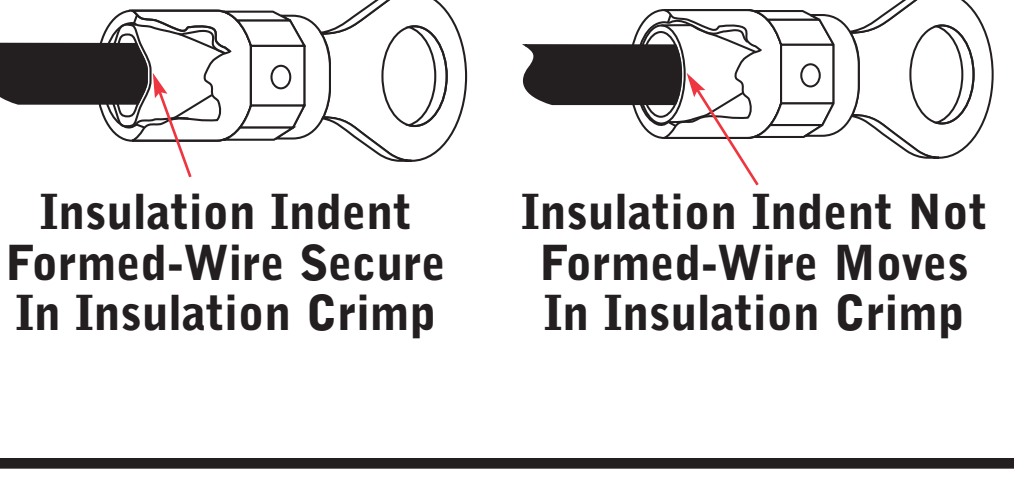


Wire in Contact Area

Contact Area

ACCEPT

REJECT

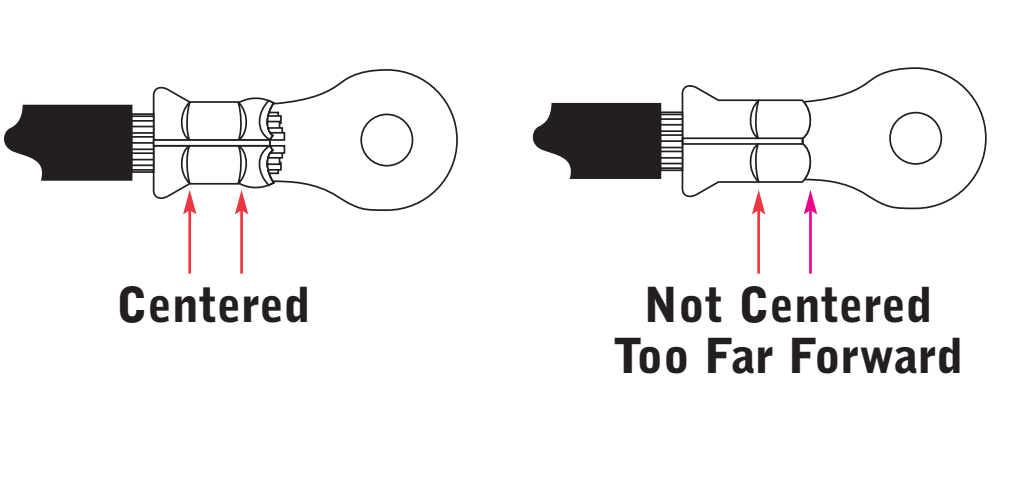


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

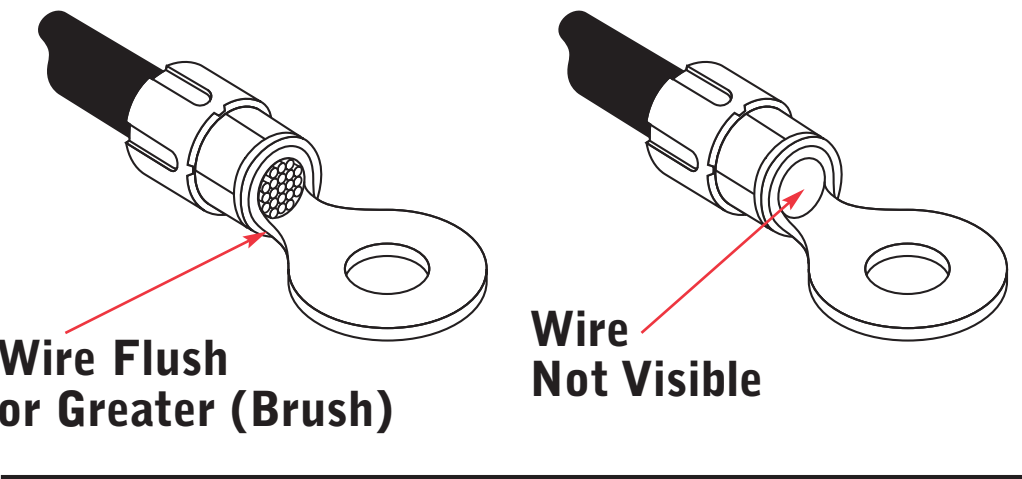


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

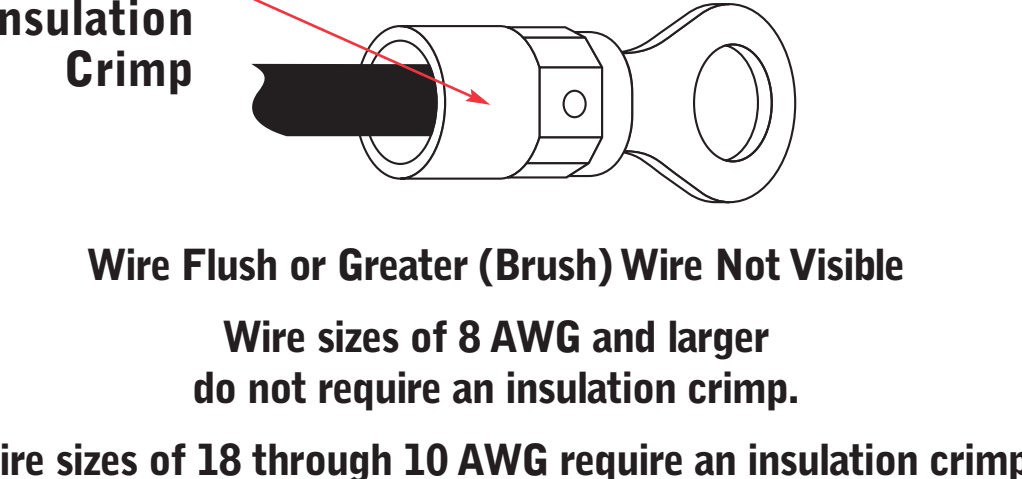


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



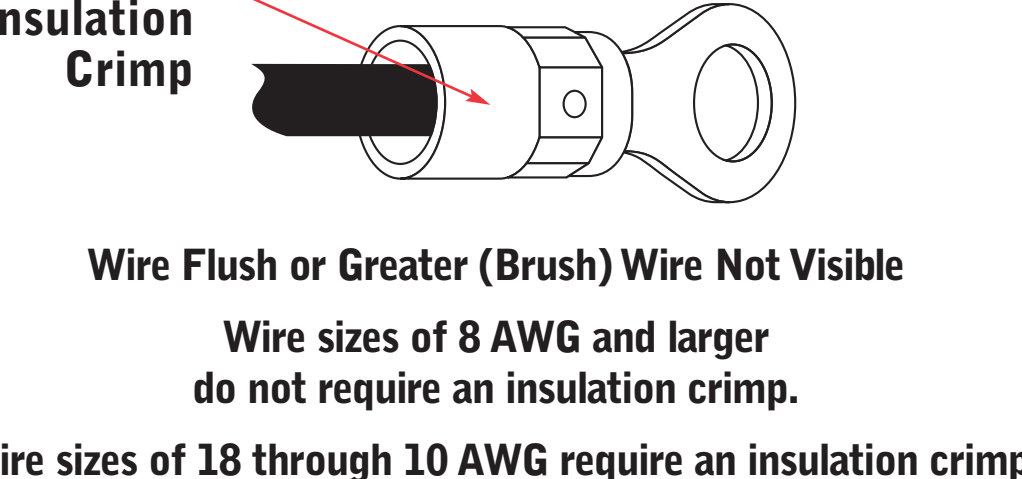
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



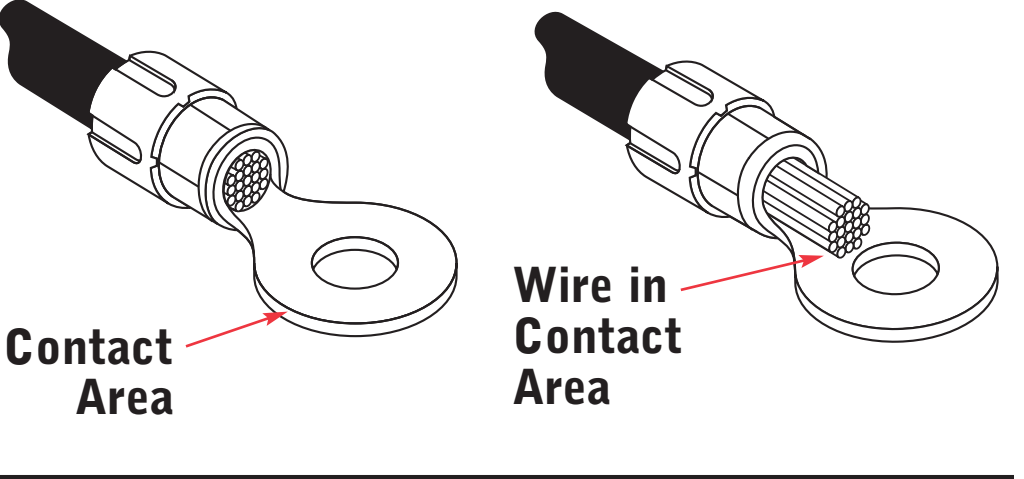
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

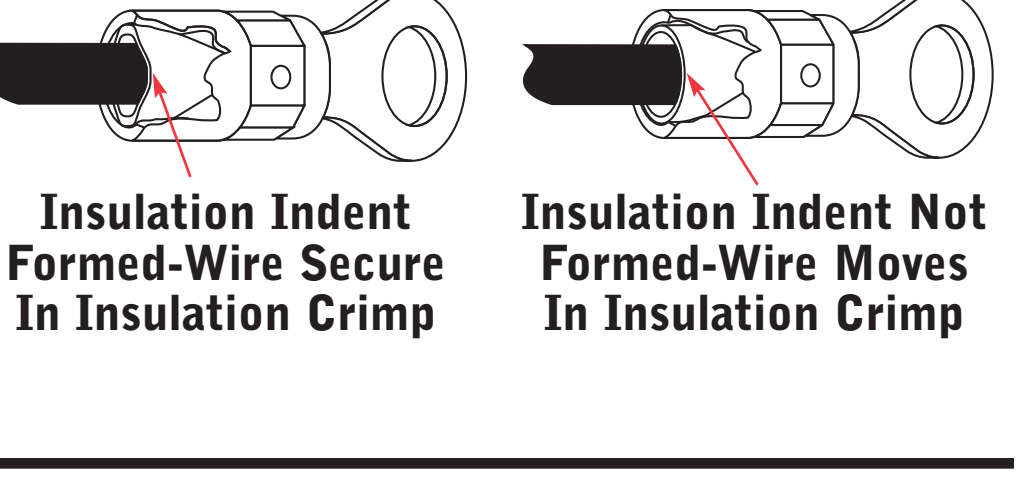


Wire in Contact Area

Contact Area

ACCEPT

REJECT

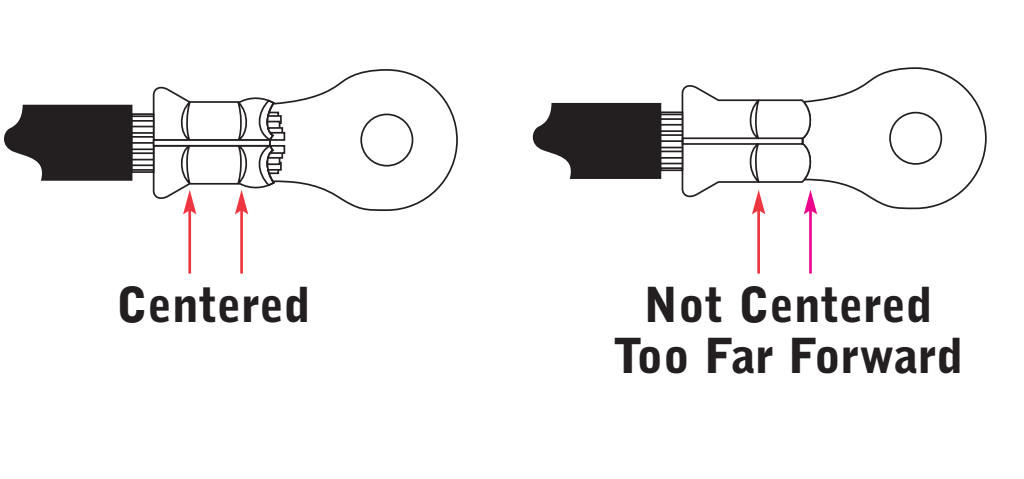


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

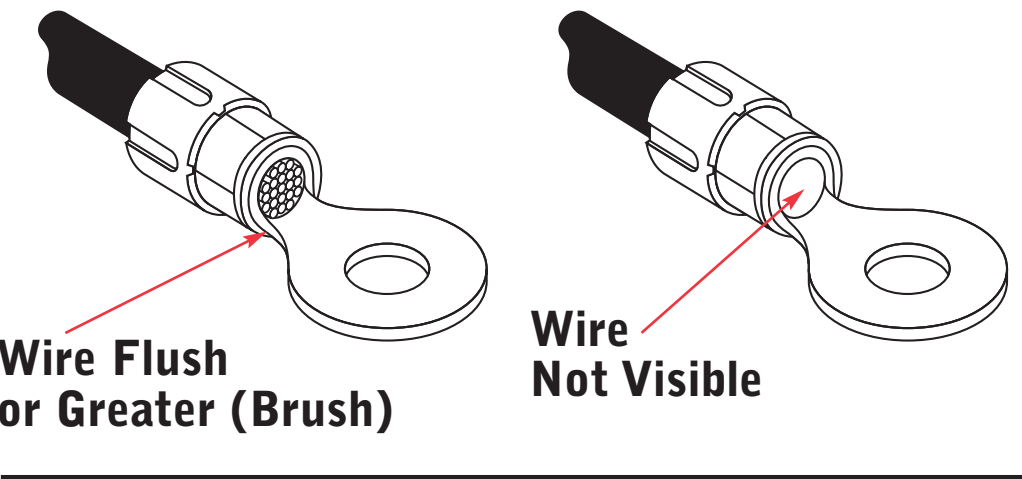


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

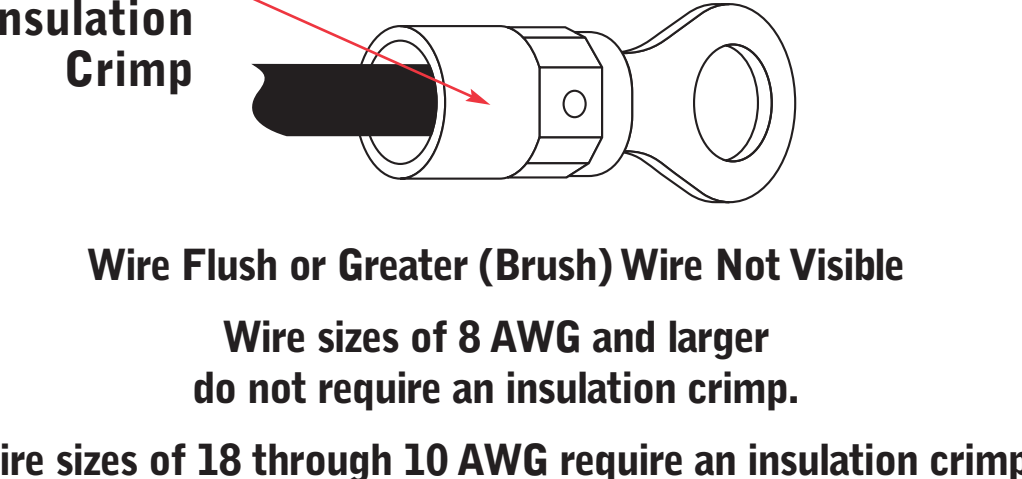


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



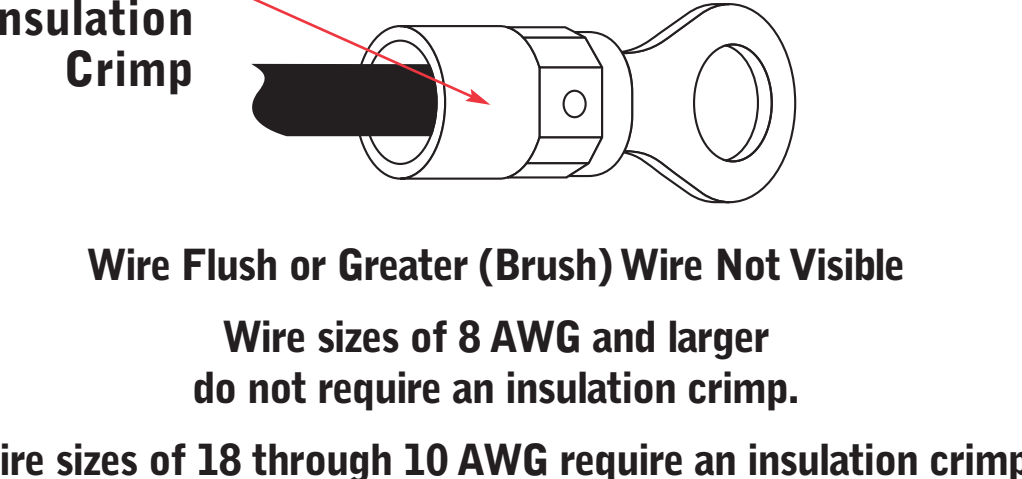
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



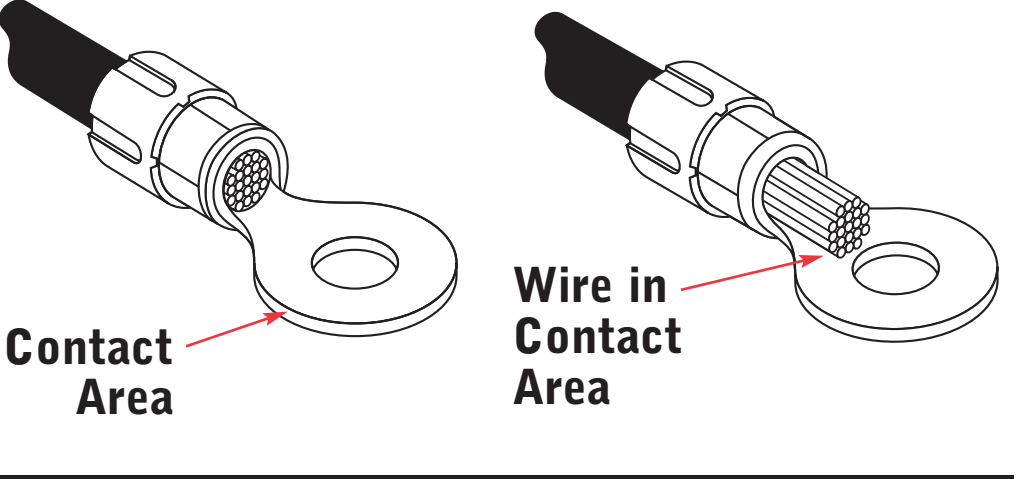
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

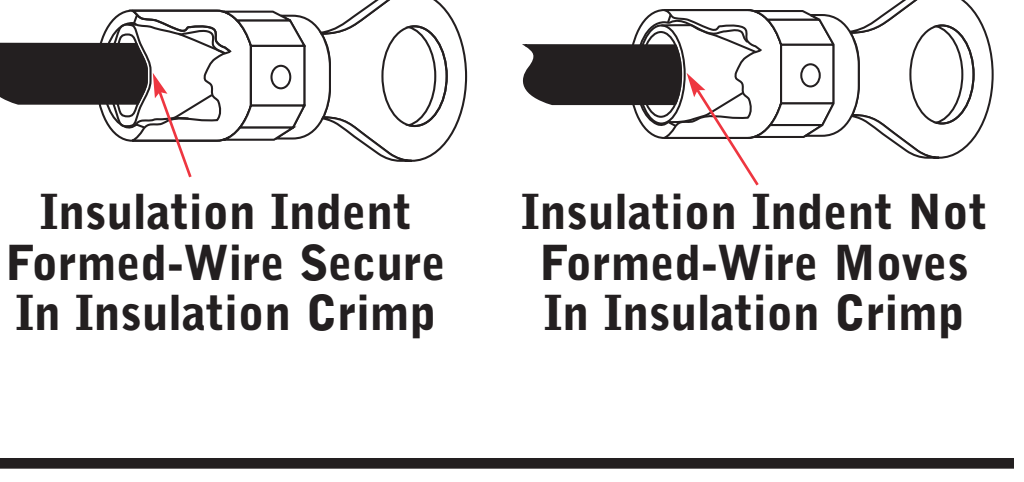


Wire in Contact Area

Contact Area

ACCEPT

REJECT

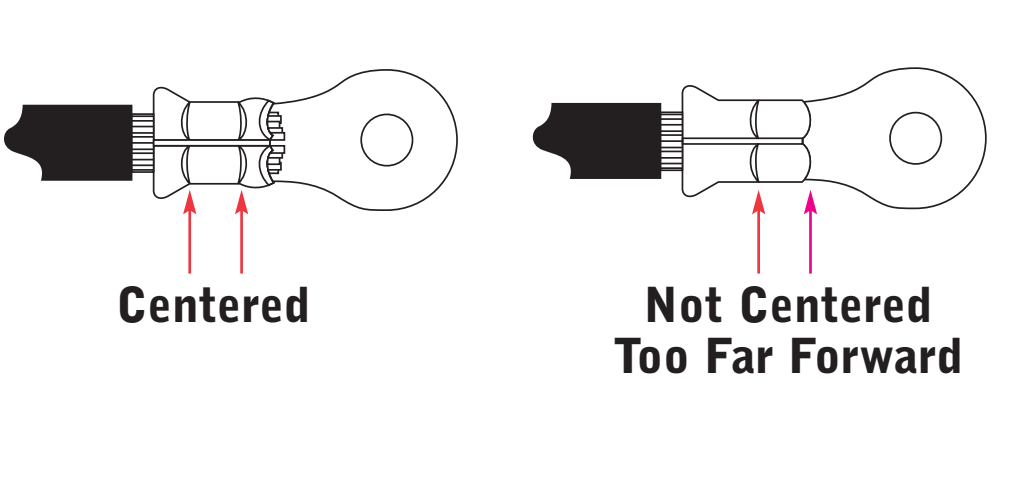


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

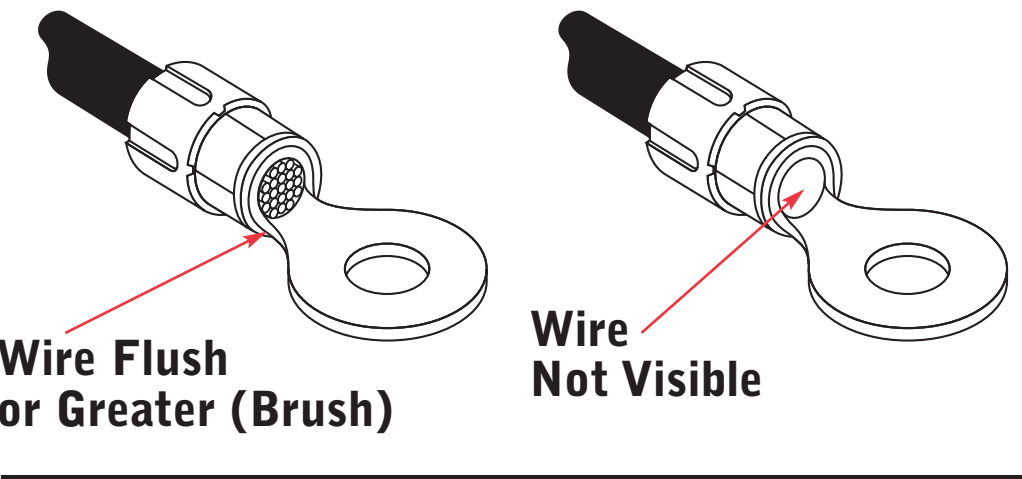


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

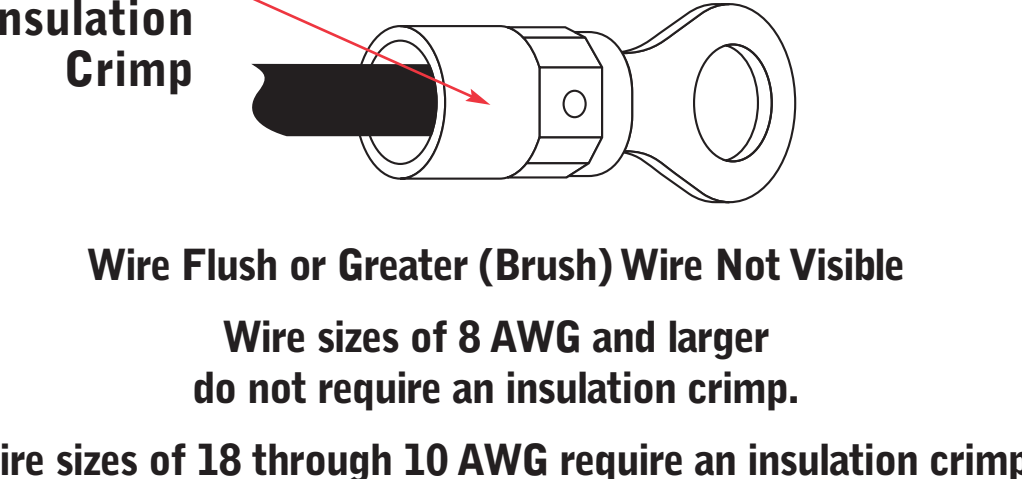


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



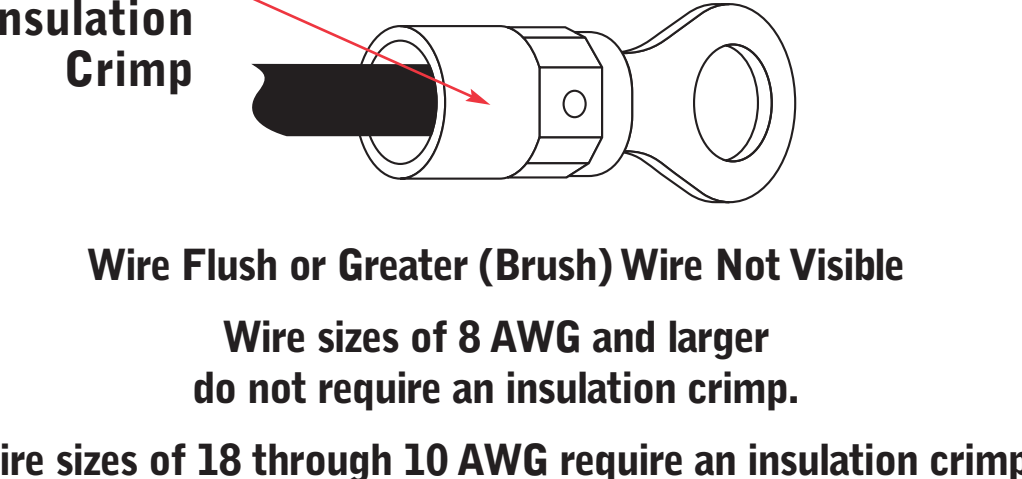
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



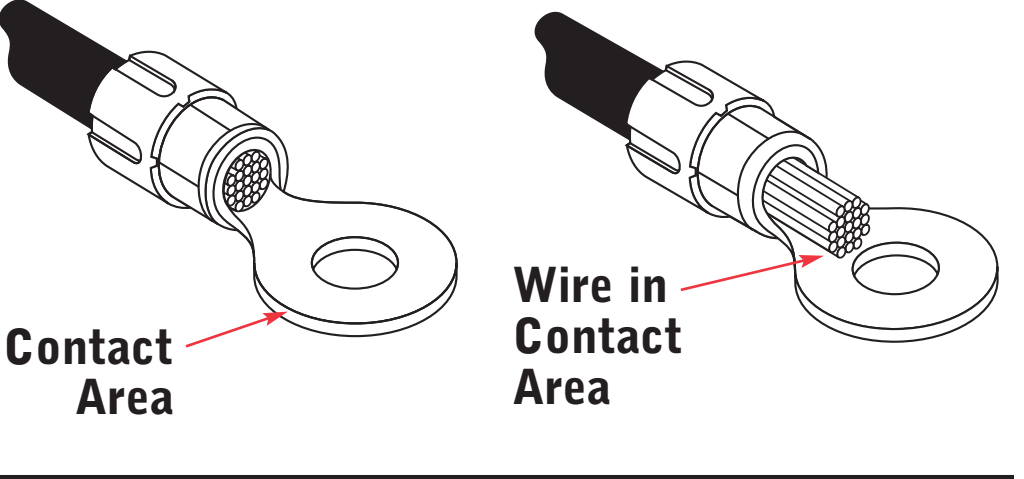
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

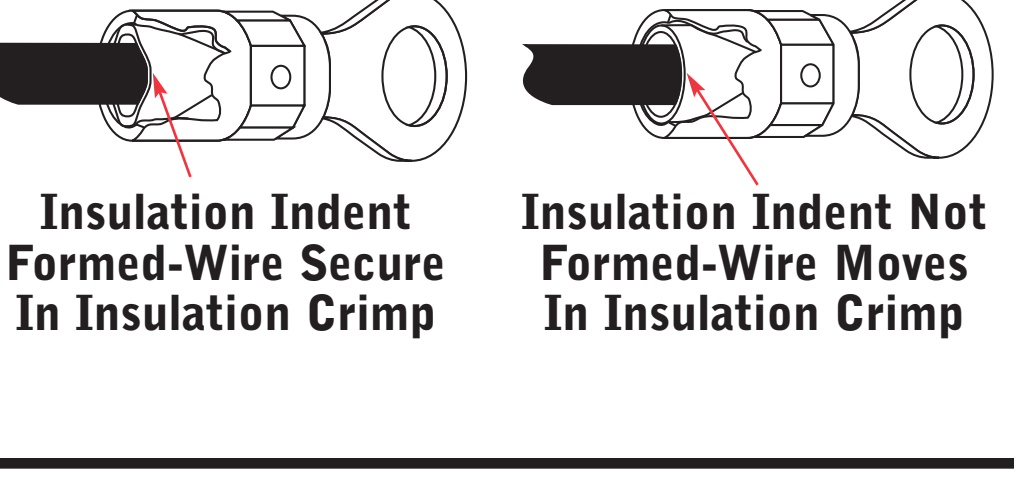


Wire in Contact Area

Contact Area

ACCEPT

REJECT

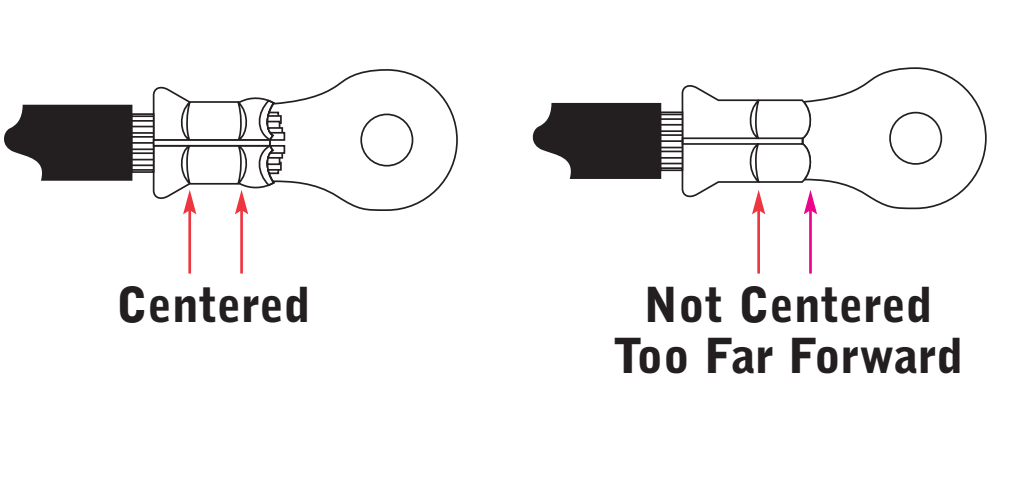


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

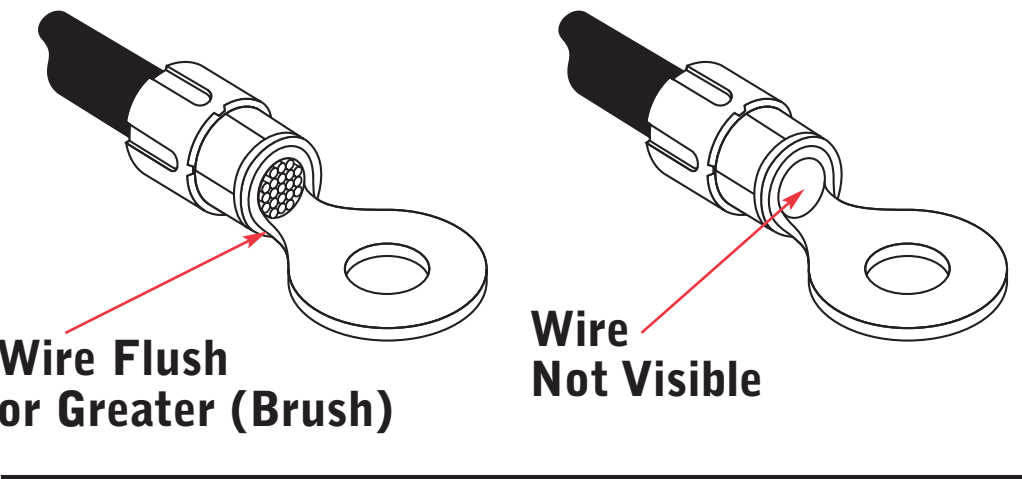


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

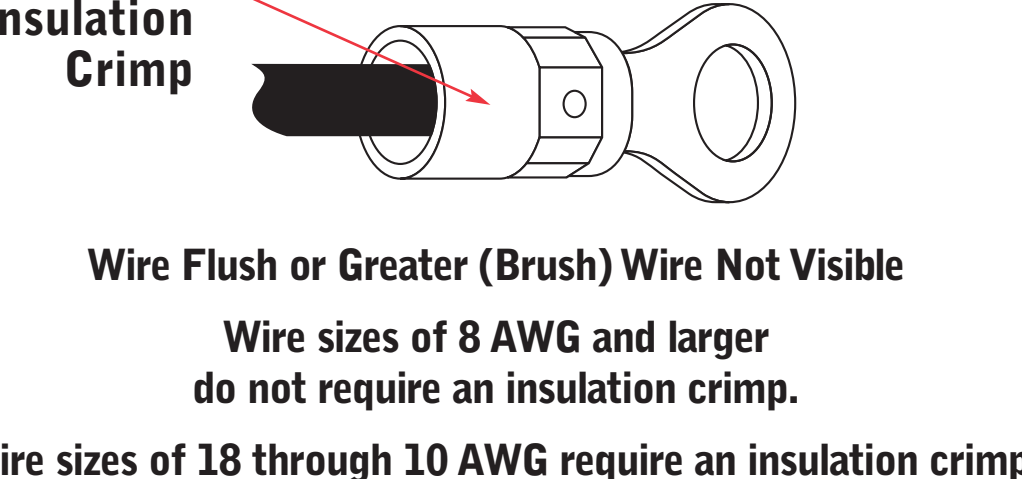


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



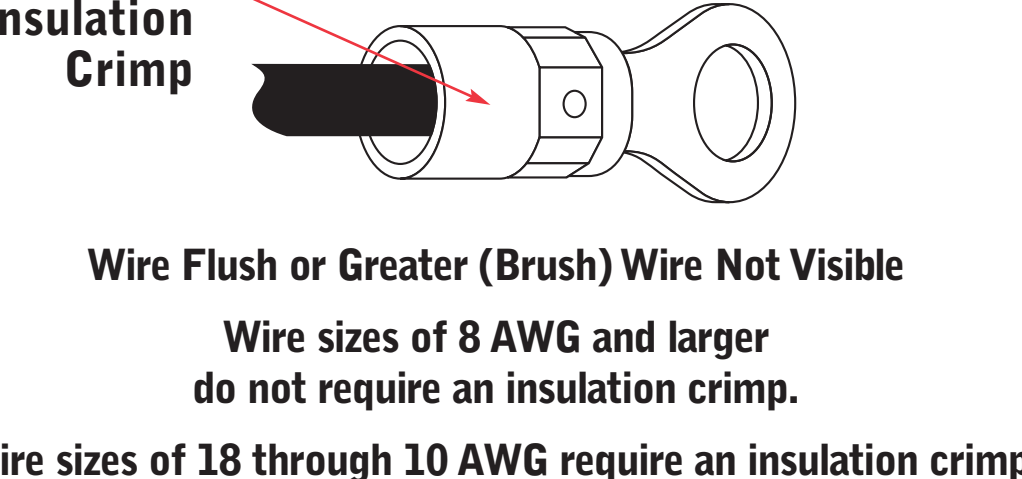
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



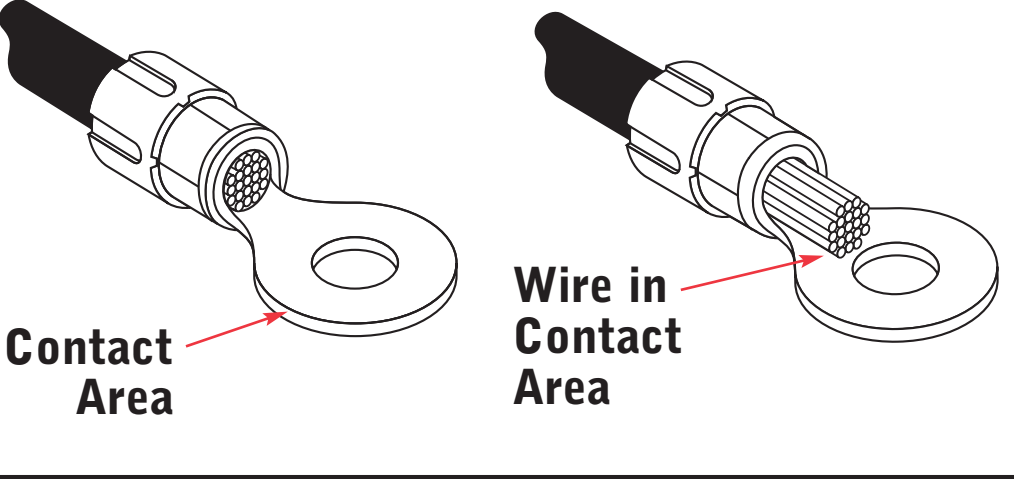
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

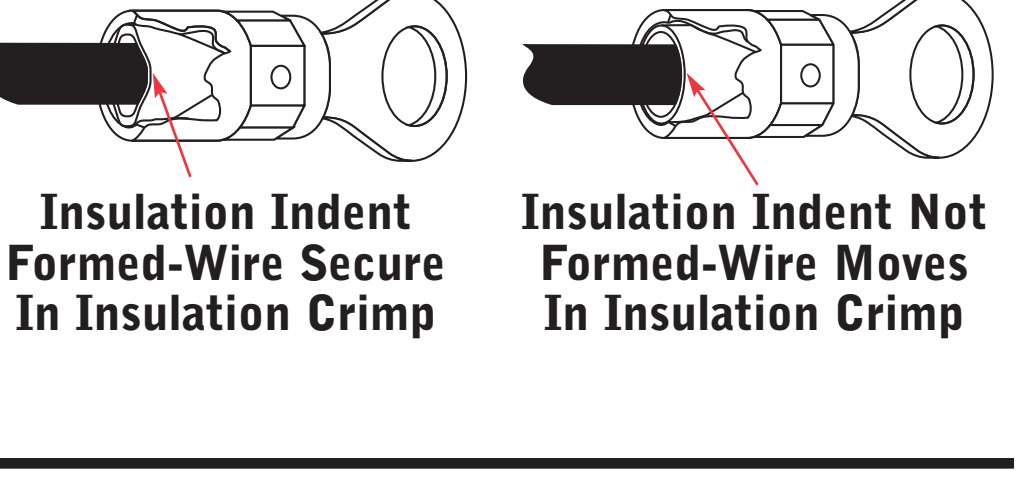


Wire in Contact Area

Contact Area

ACCEPT

REJECT

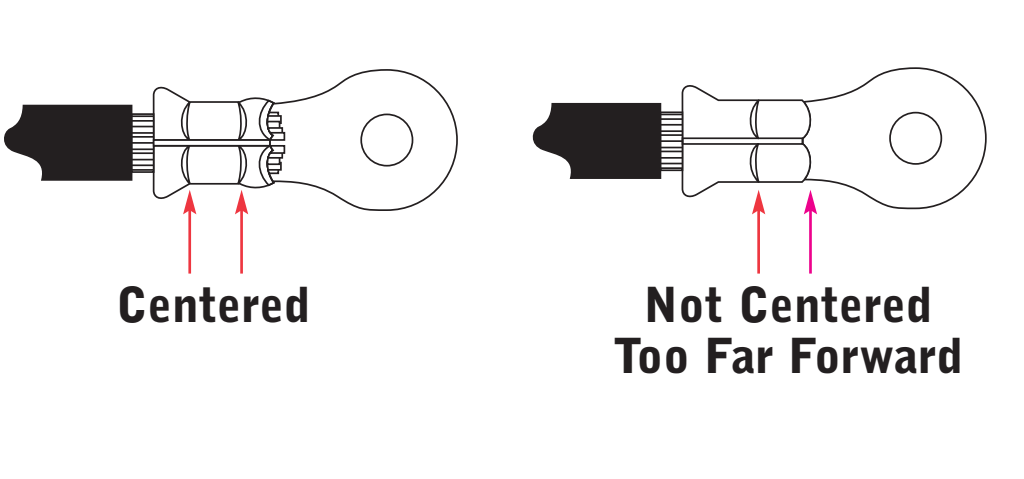


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

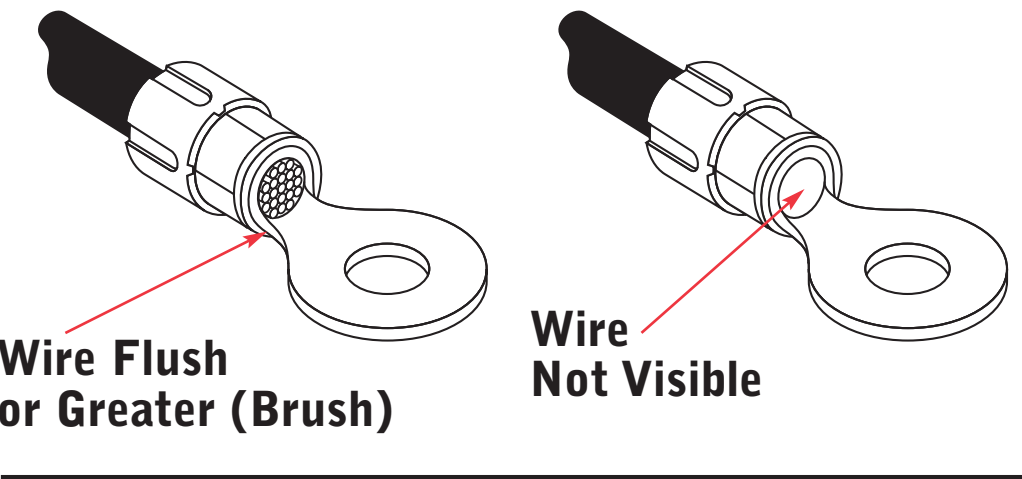


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

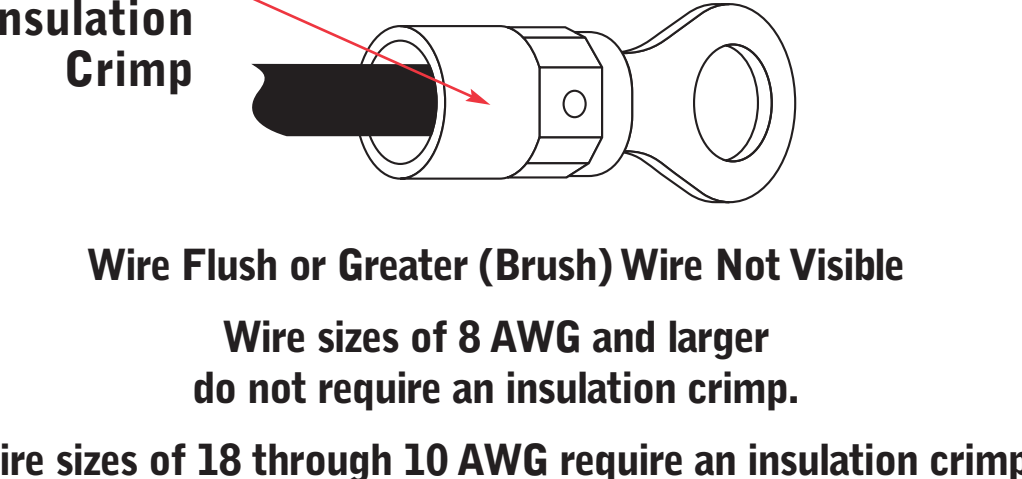


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



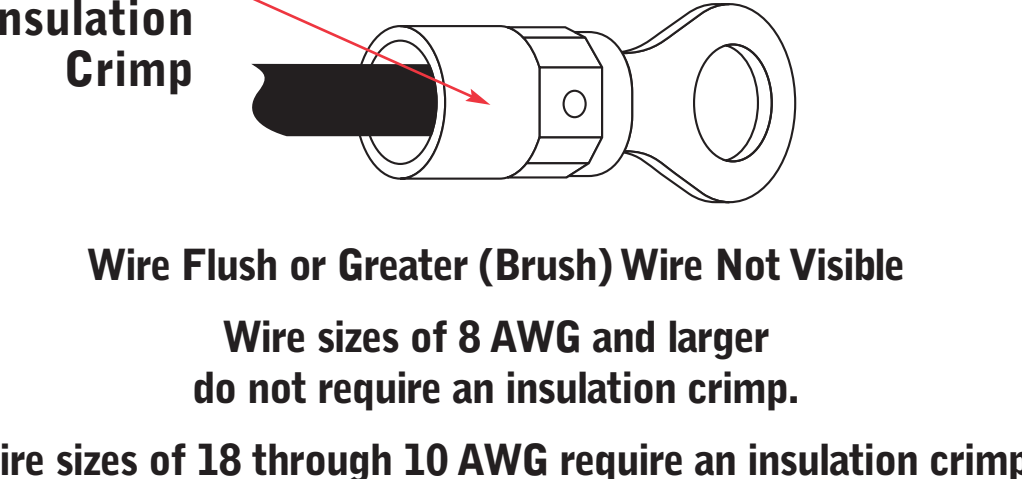
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



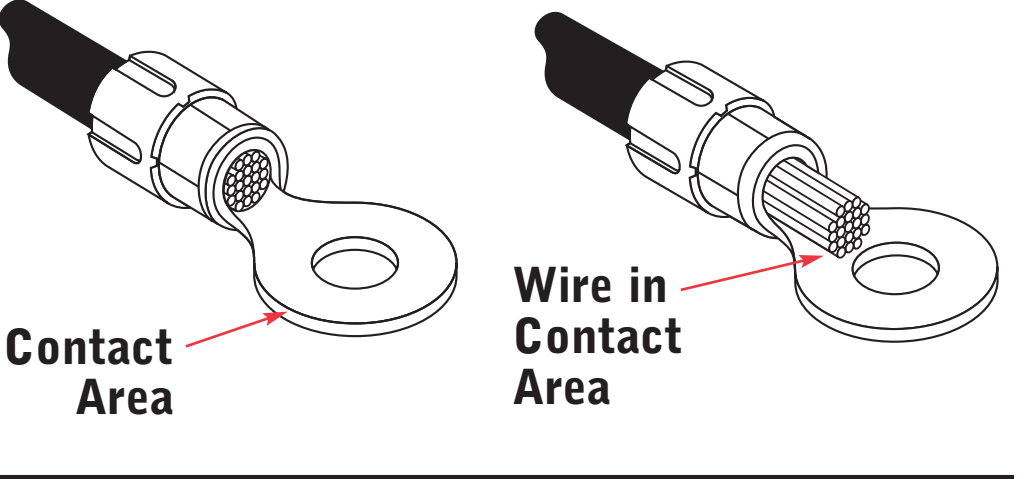
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

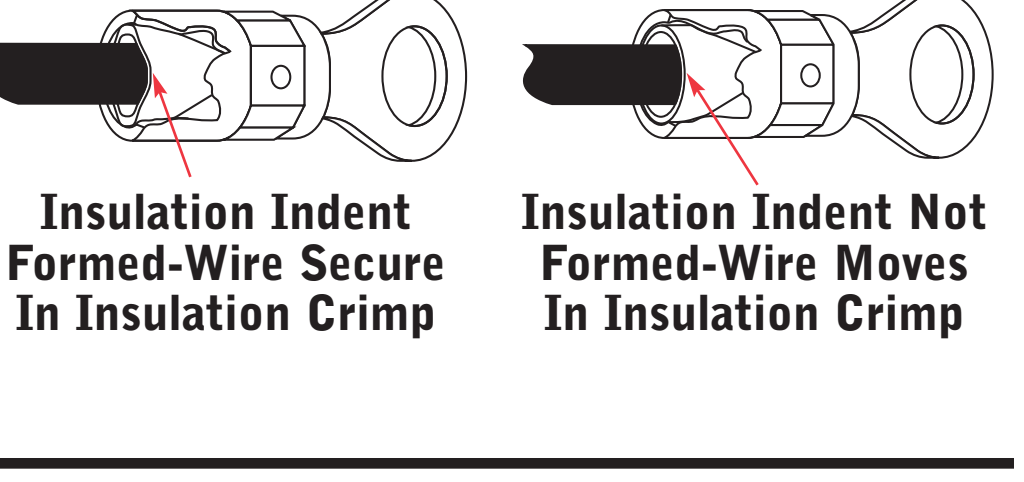


Wire in Contact Area

Contact Area

ACCEPT

REJECT

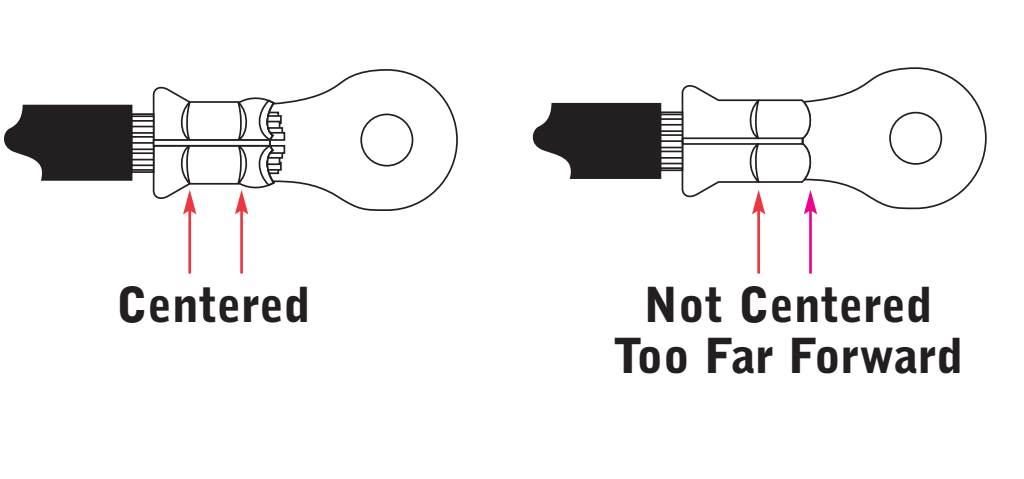


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

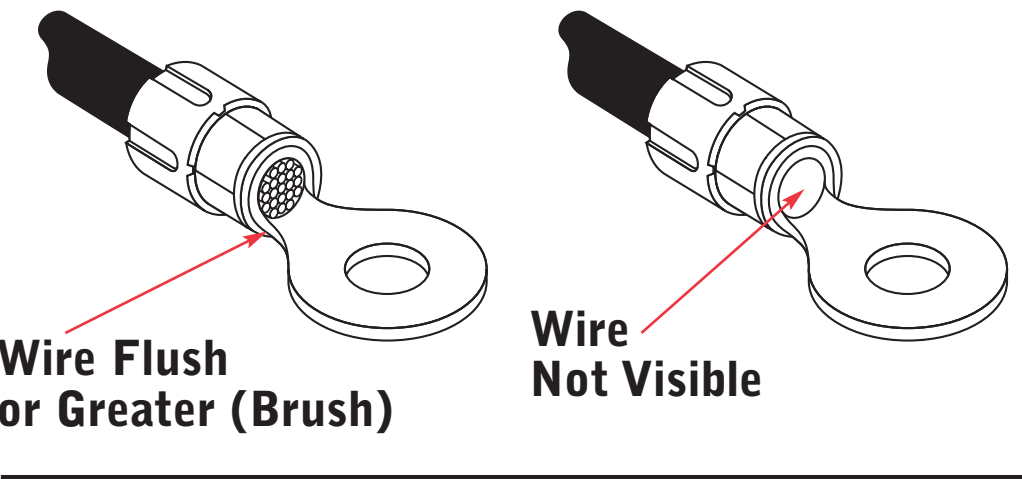


Centered

Not Centered Too Far Forward

ACCEPT

REJECT

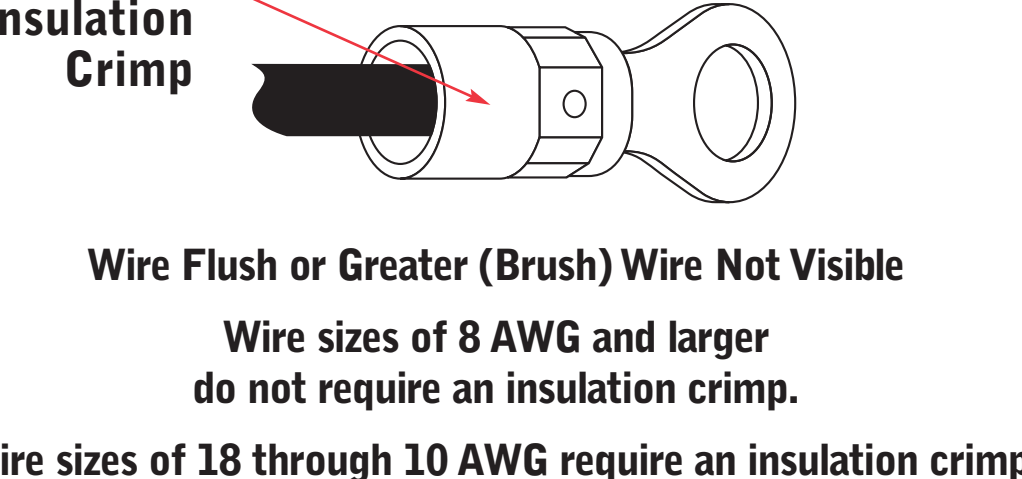


Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT



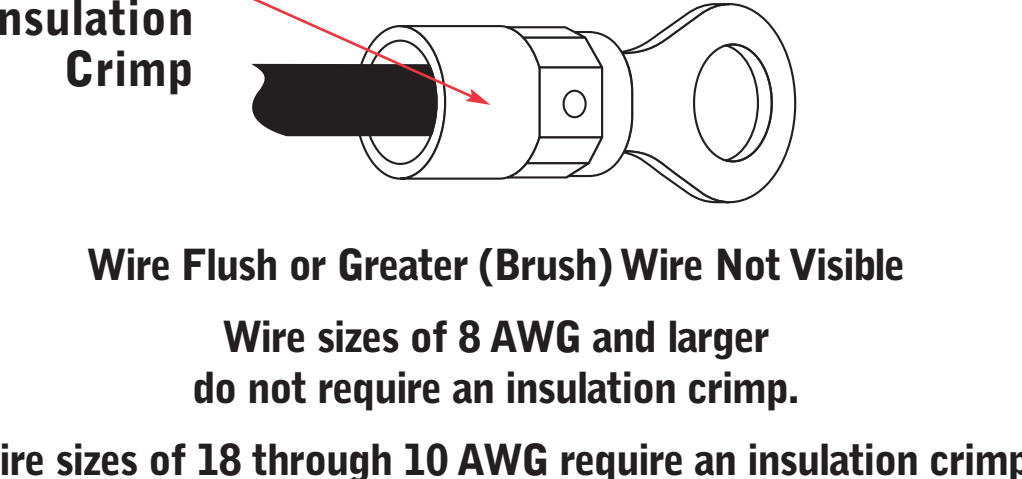
Wire Crimp

Wire Brush is Visible

Wire Brush Not Visible

ACCEPT

REJECT



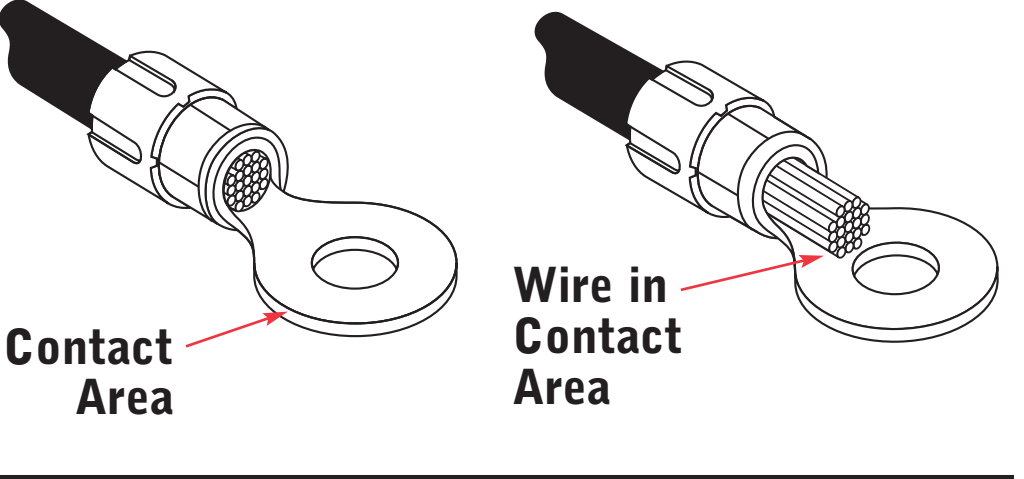
Insulation Crimp

Wire Stop

Wire Crimp

ACCEPT

REJECT

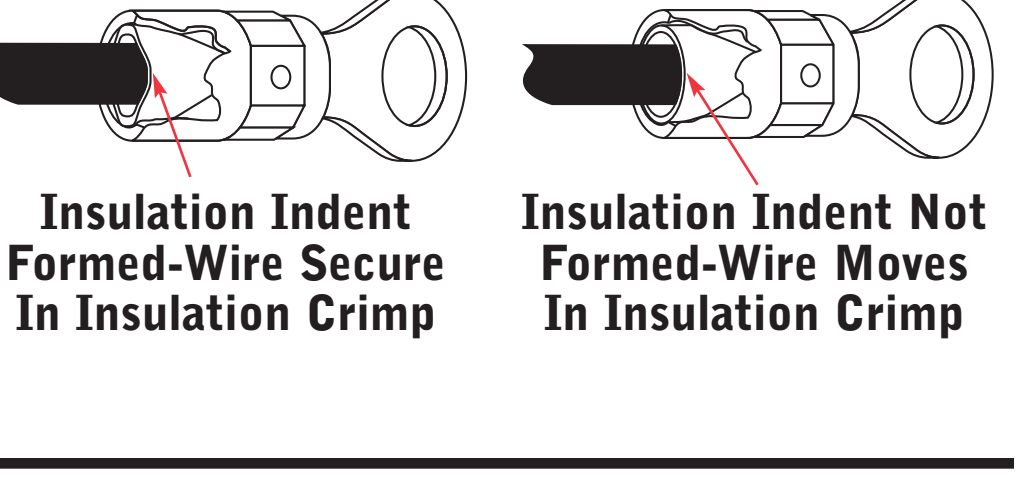


Wire in Contact Area

Contact Area

ACCEPT

REJECT

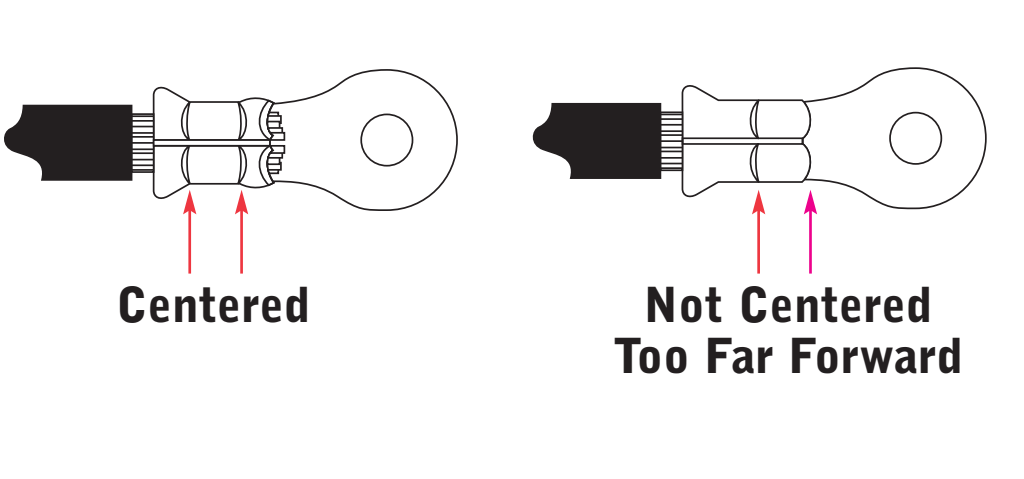


Insulation Indent Formed-Wire Secure In Insulation Crimp

Insulation Indent Not Formed-Wire Moves In Insulation Crimp

ACCEPT

REJECT

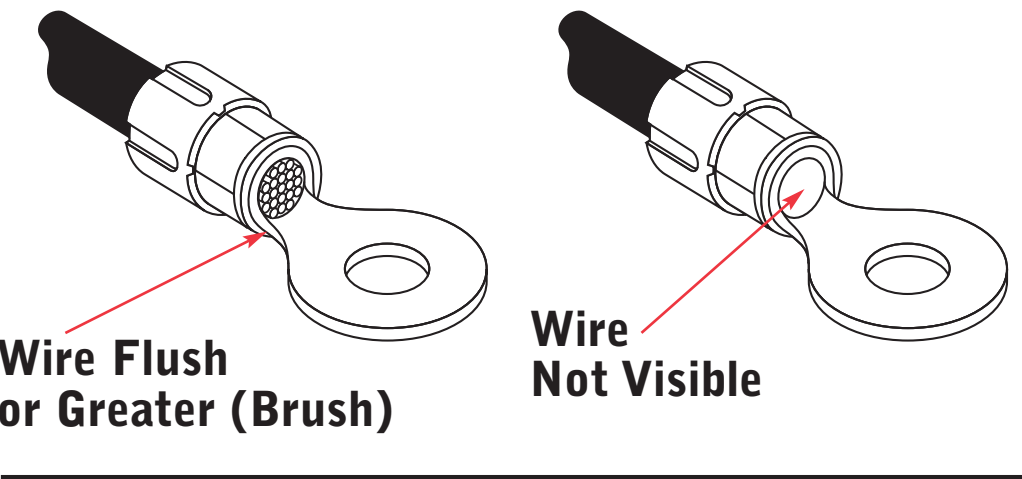


Centered

Not Centered Too Far Forward

ACCEPT

REJECT



Wire Flush or Greater (Brush)

Wire Not Visible

ACCEPT

REJECT

INSPECCIÓN VISUAL DE TERMINALES ENGARZADOS

INDUSTRIAL

Terminales de cilindro abierto

ACEPTAR

RECHAZAR

Engarzado correcto del aislamiento

Aislamiento perforado o aplastado

ACEPTAR

RECHAZAR

Se forman lengüetas metálicas de aislamiento y el alambre se sujeta firmemente

Lengüeta doblada de aislamiento

ACEPTAR

RECHAZAR

Área de contacto

Alambre en el área de contacto

ACEPTAR

RECHAZAR

Abolladuras o rayas leves pero sin melladuras visibles

Área de contacto dañada

ACEPTAR

RECHAZAR

Leve abocinamiento

Sin abocinamiento

ACEPTAR

RECHAZAR

Área de contacto

Alambre en el área de contacto

ACEPTAR

RECHAZAR

Área de contacto

Alambre en el área de contacto

Tipos de engarzado

ENGARZADO F PARA TERMINALES DE CILINDRO ABIERTO

ENGARZADO HENDEADOR PARA TERMINALES DE CILINDRO CERRADO

ENGARZADO CONFINADO PARA TERMINALES DE CILINDRO CERRADO

Resistencia a la tensión en libras

Calibre del alambre	*UL-486A	*UL-486-C	*UL-310	*Uso Militar Clase 2
26	3	N/A	N/A	7
24	5	N/A	N/A	10
22	8	8	8	15
20	13	10	13	19
18	20	10	20	38
16	30	15	30	50
14	50	25	50	70
12	70	35	70	110
10	80	40	80	150
8	90	45	N/A	225
6	100	50	N/A	300
4	140	N/A	N/A	400
2	180	N/A	N/A	550
1	200	N/A	N/A	650
1/0	250	N/A	N/A	700
2/0	300	N/A	N/A	750
3/0	350	N/A	N/A	825
4/0	450	N/A	N/A	875
250 MCM	500	N/A	N/A	1000
300 MCM	550	N/A	N/A	1120
350 MCM	600	N/A	N/A	1125

Tabla AWG-CMA

Tamaño de terminal	Límites CMA
26-22	202 - 810
24-20	320 - 1,020
22-18	509 - 2,600
22-16	509 - 3,260
16-14	2,050 - 5,180
14-12	3,260 - 8,213
12-10	5,180 - 13,100
8	13,100 - 20,800
6	20,800 - 33,100
4	33,100 - 52,600
2	52,600 - 83,700
1/0	83,700 - 119,500
2/0	119,500 - 150,500
3/0	150,500 - 190,000
4/0	190,000 - 231,000

Información técnica del alambre

CMA - Área milésima circular, es una unidad de área equivalente al área de un círculo cuyo diámetro es una milésima.

MIL - Una milésima equivale a 0.001 pulgadas.

0.001 = 1 mil

0.030 = 30 mil

0.125 = 125 mil

* UL - 486 A - Terminales (sólo para conductores de cobre)

* UL - 486 C - Empalmes a tope, empalmes paralelos, conectores de extremo cerrado y conectores manuales para alambres

* UL - 310 - Conectores rápidos, barra y acoples

* Uso militar Clase 2 - Terminales con aprobación militar sólo de acuerdo con la lista

Terminales de cilindro cerrado

ACEPTAR

RECHAZAR

Diámetro de abocinamiento

Sin abocinamiento

ACEPTAR

RECHAZAR

Centrado

Descentrado Demasiado adelantado

ACEPTAR

RECHAZAR

Alambres a ras o con mayor extensión (escobilla)

El alambre no es visible

ACEPTAR

RECHAZAR

Área de contacto

Alambre en el área de contacto

ENGARZADO DE AISLAMIENTO METÁLICO

ACEPTAR

RECHAZAR

Se deforma el aislamiento - El alambre está fijo en el engarzado del aislamiento

No se deforma el aislamiento - El alambre se mueve en el engarzado del aislamiento

EMPALMES A TOPE

10 a 18 AWG

ACEPTAR

RECHAZAR

Engarzado del aislamiento

Tope de alambre

Engarzado del alambre

La escobilla de alambre es visible

La escobilla de alambre no es visible

ACEPTAR

RECHAZAR

Camisa metálica ajustada

Camisa metálica no está ajustada

Conversión de pulgadas a milésimas

■ Multiplicar las pulgadas por 1000 o:

■ Mover el punto decimal 3 posiciones a la derecha o:

■ Cambiar terminología, es decir 0.032 pulg. = 32 milésimas o 32 mils.

Cálculo de CMA

D = diámetro en mils

Conductor sólido circular: Cambiar el diámetro de pulgadas a milésimas, después multiplicar el diámetro en milésimas por sí mismo.

CMA = D mils x D mils

Conductor trenzado: Determinar CMA de una sola hebra y multiplicar el resultado por el número total de hebras.

CMA = (D de una hebra x D de una hebra) x Número de hebras