Zoller+Fröhlich

Wiring Accessories

Single Insulated Wire Ferrules

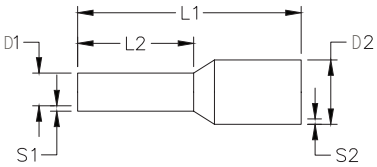
These tin-plated copper single insulated ferrules are designed to accommodate conductors with cross-sections ranging from 20AWG to 1AWG (0.5 to 50 mm²). Tolerances according to DIN 46228 part 4.

- Heat resistant from -5 to 105°C [23 to 221°F]
- CE / RoHs 2011/65/EU
- UL E333905
- CSA-US 1176867
- Insulating Collar: Polypropylene-fluoropolymer
- Tube: Copper (Cu-DHP)
- Tin Plating: Galvanically tin-plated, bright finish

Single Insulated Wire Ferrules											
Part Number		Cross Section		Dimensions [mm]						Qty	Price
Standard	DIN	AWG	mm²	L1	L2	D1	D2	S1	S2		
V30AE000006	V30AE000038	20	0.5	14	8	1	2.6	0.15	0.25	500	$7.25
V30AE000009	V30AE000041	18	0.75	14	8	1.2	2.8	0.15	0.25	500	$7.25
V30AE000013	V30AE000045	18	1.0	14	8	1.4	3.0	0.15	0.25	500	$7.25
V30AE000016	V30AE000048	16	1.5	14	8	1.7	3.5	0.15	0.25	500	$7.25
V30AE000017	V30AE000049	16	1.5	16	10	1.7	3.5	0.15	0.25	500	$12.00
V30AE000052	V30AE000052	14	2.5	15	8	2.2	4.2	0.15	0.25	500	$9.00
V30AE000053	V30AE000053	14	2.5	19	12	2.2	4.2	015	0.25	500	$14.00
V30AE000055	V30AE000055	12	4	18	10	2.8	4.8	0.2	0.3	500	$13.00
V30AE000056	V30AE000056	12	4	20	12	2.8	4.8	0.2	0.3	500	$16.50
V30AE000025	V30AE000058	10	6	20	12	3.5	6.3	0.2	0.3	100	$3.50
V30AE000026	V30AE000059	10	6	26	18	3.5	6.3	0.2	0.3	100	$4.75
V30AE000027	V30AE000060	8	10	22	12	4.5	7.6	0.2	0.4	100	$4.75
V30AE000028	V30AE000061	8	10	28	18	4.5	7.6	0.2	0.4	100	$5.25
V30AE000029	V30AE000062	6	16	22	12	5.8	8.8	0.2	0.4	100	$5.25
V30AE000030	V30AE000063	6	16	28	18	5.8	8.8	0.2	0.4	100	$8.00
V30AE000031	V30AE000064	4	25	30	16	7.3	11.2	0.2	0.4	50	$6.50
V30AE000033*	V30AE000067	2	35	30	16	8.3	12.7	0.2	0.4	50	$8.50
V30AE000035	V30AE000070	1/0	50	36	20	10.3	15	0.3	0.5	50	$12.00

* Not UL Certified

Available Colors	
Orange	White
Blue	Ivory
Black	Green
Gray	Brown
Yellow	Beige
Red	Olive



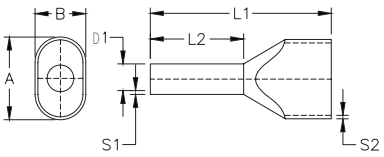
Twin Insulated Wire Ferrules

These tin-plated copper twin insulated ferrules are designed to accommodate conductors with cross-sections ranging from 20 AWG to 6 AWG (0.5 to 16 mm²). Tolerances according to DIN 46228 part 4.

- Heat resistant from -5 to 105°C [23 to 221°F]
- CE / RoHs 2011/65/EU
- UL E333905
- CSA-US 1176867
- Insulating Collar: Polypropylene-fluoropolymer
- Tube: Copper (Cu-DHP)
- Tin Plating: Galvanically tin-plated, bright finish

Twin Insulated Wire Ferrules												
Part Number		Cross Section		Dimensions [mm]							Qty	Price
Standard	DIN	AWG	mm²	L1	L2	D1	S1	S2	A	B		
V30AE001134	V30AE001145	2 x 20	2 x 0.5	14	8	1.4	0.15	0.3	5	3	500	$17.50
V30AE000606	V30AE000607	2 x 18	2 x 0.75	14	8	1.7	0.15	0.3	5.5	3	500	$18.00
V30AE000733	V30AE000734	2 x 18	2 x 0.75	16	10	1.7	0.15	0.3	5.5	3	500	$22.00
V30AE000608	V30AE000609	2 x 18	2 x 1	15	8	2	0.15	0.3	5.8	3.2	500	$18.00
V30AE000735	V30AE000736	2 x 18	2 x 1	19	12	2	0.15	0.3	5.8	3.2	500	$22.00
V30AE000623	V30AE000625	2 x 16	2 x 1.5	16	8	2.2	0.15	0.3	6.5	3.6	500	$18.00
V30AE000737	V30AE000738	2 x 16	2 x 1.5	20	12	2.2	0.15	0.3	6.5	3.6	500	$22.00
V30AE000611	V30AE000611	2 x 14	2 x 2.5	19	10	2.8	0.15	0.4	8	4.5	500	$20.00
V30AE000748	V30AE000748	2 x 14	2 x 2.5	21	12	2.8	0.15	0.4	8	4.5	100	$4.25
V30AE001148	V30AE001148	2 x 12	2 x 4	22	12	3.5	0.2	0.5	9	5.2	100	$10.50
V30AE001139	V30AE001150	2 x 10	2 x 6	23	12	4.5	0.2	0.5	11.4	6.2	100	$12.00
V30AE001141	V30AE001152	2 x 8	2 x 10	24	12	5.8	0.2	0.5	13.4	7.6	100	$16.00
V30AE001143	V30AE001154	2 x 6	2 x 16	29	16	8.3	0.3	0.6	17.2	9.5	50	$9.75

Available Colors		
Orange	Green	Gray
Blue	Ivory	Yellow
Black	Red	White



Wiring Accessories

Crimp Terminals

Partially insulated crimp terminals are constructed from high quality tin-plated copper and PVC. Heat resistant from -4°F [-20°C] up to +167°F [+75°C]. Flammability classification UL 94-V0.

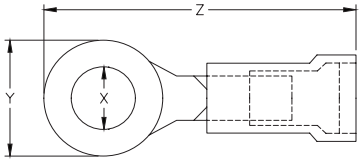
RoHS 2011/65/EU

- Insulation: polyvinyl chloride
- Sleeve material: copper

Ring Terminals

Partially Insulated PVC Ring Terminals

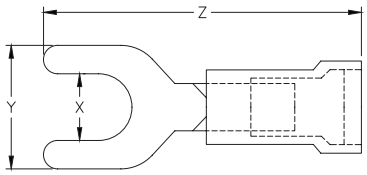
Part Number	Cross Section		Dimension [mm]			Qty	Price
	AWG	mm²	X	Y	Z		
V70RK004004	20 - 18	0.5 - 1	4.0	8.0	22.2	100	$10.50
V70RK004005	20 - 18	0.5 - 1	5.0	8.0	22.2	100	$10.50
V70RK004011	16 - 14	1.5 - 2.5	4.0	8.6	23.0	100	$11.00
V70RK004012	16 - 14	1.5 - 2.5	5.0	8.6	23.0	100	$12.00
V70RK004017	12 - 10	4 - 6	4.0	9.5	26.9	100	$17.50
V70RK004018	12 - 10	4 - 6	5.0	9.5	26.9	100	$17.50



Fork Terminals

Partially Insulated PVC Fork Terminals

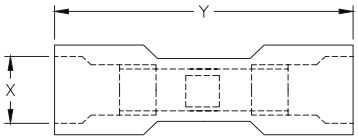
Part Number	Cross Section		Dimension [mm]			Qty	Price
	AWG	mm²	X	Y	Z		
V70GK004003	20 - 18	0.5 - 1	4.0	7.3	22.3	100	$10.50
V70GK004004	20 - 18	0.5 - 1	5.0	8.0	21.7	100	$11.00
V70GK004008	16 - 14	1.5 - 2.5	4.0	7.3	22.3	100	$10.50
V70GK004009	16 - 14	1.5 - 2.5	5.0	8.1	22.3	100	$12.00
V70GK004011	12 - 10	4 - 6	4.0	9.1	25.8	100	$16.00
V70GK004012	12 - 10	4 - 6	5.0	9.1	25.8	100	$16.00



Butt Connectors

Fully Insulated PVC Butt Connectors

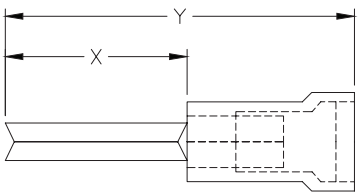
Part Number	Cross Section		Dimension [mm]		Qty	Price
	AWG	mm²	X	Y		
V70SV004001	20 - 18	0.5 - 1	5.4	26.0	100	$11.00
V70SV004002	16 - 14	1.5 - 2.5	6.1	26.0	100	$12.50
V70SV004003	12 - 10	4 - 6	8.0	26.0	100	$18.00



Pin Terminals

Partially Insulated PVC Pin Terminals

Part Number	Cross Section		Dimension [mm]		Qty	Price
	AWG	mm²	X	Y		
V70SS004001	20 - 18	0.5 - 1	12.0	23.3	100	$12.00
V70SS004002	16 - 14	1.5 - 2.5	12.0	23.4	100	$12.50
V70SS004003	12 - 10	4 - 6	14.0	28.2	100	$19.00



Note: Dimensions are approximate. Please visit our website www.AutomationDirect.com for complete engineering drawings.

Wiring Accessories

Disconnect Terminals

Disconnect terminals are constructed from copper-enhanced PVC and brass. Heat resistant from -4°F [-20°C] up to +167°F [+75°C]. Flammability classification UL 94-V0.

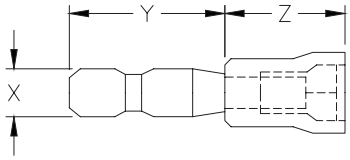
RoHS 2011/65/EU

- Insulation: polyvinyl chloride strengthened with copper
- Sleeve material: brass

Male Bullet Disconnect Terminals

Partially Insulated Male Bullet Disconnect Terminals

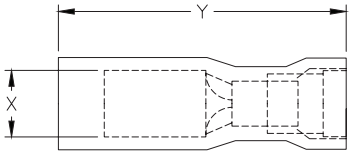
Part Number	Cross Section		Dimension [mm]			Qty	Price
	AWG	mm²	X	Y	Z		
V70RS004001	20 - 18	0.5 - 1	4.0	11.3	9.8	100	$9.75
V70RS004002	16 - 14	1.5 - 2.5	5.0	11.8	11.7	100	$11.00
V70RS004003	12 - 10	4 - 6	5.0	11.0	10.2	100	$12.50



Female Bullet Disconnect Terminals

Fully Insulated Female Bullet Disconnect Terminals

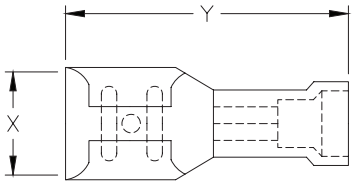
Part Number	Cross Section		Dimension [mm]		Qty	Price
	AWG	mm²	X	Y		
V70RV004001	20 - 18	0.5 - 1	4.0	23.9	100	$12.50
V70RV004002	16 - 14	1.5 - 2.5	5.0	23.9	100	$12.50
V70RV004003	12 - 10	4 - 6	5.0	27.8	100	$22.50



Partially Insulated PVC Female Disconnect Terminals

Partially Insulated Female Disconnect Terminals

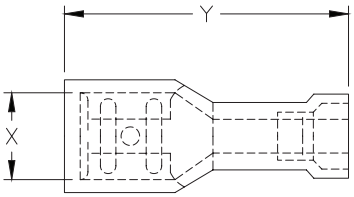
Part Number	Cross Section		Dimension [mm]		Qty	Price
	AWG	mm²	X	Y		
V70FH004001	20 - 18	0.5 - 1	2.8 x 0.5	19.5	100	$9.25
V70FH004002	20 - 18	0.5 - 1	2.8 x 0.8	18.8	100	$9.25
V70FH004003	20 - 18	0.5 - 1	4.8 x 0.5	19.5	100	$9.25
V70FH004004	20 - 18	0.5 - 1	4.8 x 0.8	19.5	100	$9.25
V70FH004005	20 - 18	0.5 - 1	6.3 x 0.8	20.9	100	$10.50
V70FH004006	16 - 14	1.5 - 2.5	2.8 x 0.5	18.8	100	$9.75
V70FH004007	16 - 14	1.5 - 2.5	2.8 x 0.8	18.8	100	$9.75
V70FH004008	16 - 14	1.5 - 2.5	4.8 x 0.5	19.5	100	$9.75
V70FH004009	16 - 14	1.5 - 2.5	4.8 x 0.8	19.5	100	$9.75
V70FH004010	16 - 14	1.5 - 2.5	6.3 x 0.8	20.9	100	$11.00
V70FH004011	12 - 10	4 - 6	6.3 x 0.8	23.8	100	$18.00



Fully Insulated PVC Female Disconnect Terminals

Fully Insulated Female Disconnect Terminals

Part Number	Cross Section		Dimension [mm]		Qty	Price
	AWG	mm²	X	Y		
V70FV004003	20 - 18	0.5 - 1	2.8 x 0.5	18.6	100	$12.00
V70FV004004	20 - 18	0.5 - 1	2.8 x 0.8	18.6	100	$12.00
V70FV004005	20 - 18	0.5 - 1	4.8 x 0.5	20.4	100	$12.50
V70FV004006	20 - 18	0.5 - 1	4.8 x 0.8	20.3	100	$12.50
V70FV004001	20 - 18	0.5 - 1	6.3 x 0.8	22.5	100	$12.50
V70FV004007	16 - 14	1.5 - 2.5	4.8 x 0.5	18.8	100	$12.50
V70FV004008	16 - 14	1.5 - 2.5	4.8 x 0.8	20.5	100	$12.50
V70FV004002	16 - 14	1.5 - 2.5	6.3 x 0.8	22.5	100	$14.00
V70FV004009	12 - 10	4 - 6	6.3 x 0.8	24.2	100	$22.00



Note: Dimensions are approximate. Please visit our website www.AutomationDirect.com for complete engineering drawings.

Wiring Accessories

Disconnect Terminals

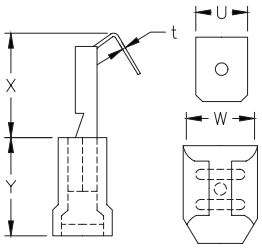
Disconnect terminals are constructed from copper-enhanced PVC and brass. Heat resistant from -4°F [-20°C] up to +167°F [+75°C]. Flammability classification UL 94-V0.

- Insulation: polyvinyl chloride strengthened with copper
- Sleeve material: brass

RoHS 2011/65/EU

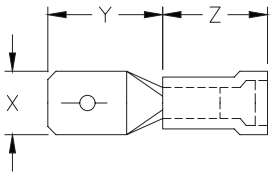
Partially Insulated Piggy Back Disconnect Terminals

Piggy Back Disconnect Terminals									
Part Number	Cross Section		Dimension [mm]					Qty	Price
	AWG	mm²	w	u	t	x	y		
V70FP004001	20 - 18	0.5 - 1	6.6	6.3	0.8	13.4	10.0	100	$12.50
V70FP004002	16 - 14	1.5 - 2.5	6.6	6.3	0.8	13.4	11.0	100	$12.50
V70FP004003	12 - 10	4 - 6	6.6	6.3	0.8	13.4	12.0	100	$19.00



Partially Insulated PVC Male Disconnect Terminals

Partially Insulated Male Disconnect Terminals							
Part Number	Cross Section		Dimension [mm]			Qty	Price
	AWG	mm²	X	Y	Z		
V70FS004001	20 - 18	0.5 - 1	2.8 x 0.5	8.0	10	100	$9.25
V70FS004002	20 - 18	0.5 - 1	2.8 x 0.8	9.0	9.5	100	$9.25
V70FS004003	20 - 18	0.5 - 1	4.8 x 0.5	9.0	9.9	100	$9.25
V70FS004004	20 - 18	0.5 - 1	4.8 x 0.8	9.4	10	100	$9.25
V70FS004005	20 - 18	0.5 - 1	6.3 x 0.8	10.8	10	100	$9.75
V70FS004008	16 - 14	1.5 - 2.5	4.8 x 0.5	8.7	10	100	$9.25
V70FS004009	16 - 14	1.5 - 2.5	4.8 x 0.8	9.2	10	100	$9.75
V70FS004010	16 - 14	1.5 - 2.5	6.3 x 0.8	10.8	10	100	$10.00
V70FS004011	12 - 10	4 - 6	6.3 x 0.8	10.8	13	100	$17.50



Note :Dimensions are approximate. Please visit our website www.AutomationDirect.com for complete engineering drawings.

Wiring Accessories

Crimping Tools

Crimping Tools			
Part Number	**Description**	**Weight**	**Price**
K70ZA000113	Crimping tool for use with single ferrules AWG 20 - 10 [0.5 - 6 mm²] and twin ferrules AWG 2 x 18 - 2 x 12 [2 x 0.75 - 2 x 4 mm²]. 5 crimping positions. With and without insulating collar. Conforms to DIN 46228 part 1 and 2.	0.74 lb [335g]	$115.00
K70ZA000117	Crimping tool for use with single ferrules AWG 10 - 4 [6 - 25 mm²] and twin ferrules AWG 2 x 12 - 2 x 8 [2 x 4 - 2 x 10 mm²]. 4 crimping positions. Conforms to DIN 46228 part 1 and 4.	1.19 lb [540g]	$124.00
K70ZA000130	Crimping tool for PVC-insulated terminals AWG 20 - 10 [0.5 - 6 mm²]. 3 crimping positions.	1.12 lb [510g]	$115.00

Note: Z&F crimping tools recommended by the ferrule manufacturer before terminating in terminal blocks, wire connectors, or end-product terminals (such as starters, etc.).

K70ZA000113

K70ZA000117

K70ZA000130

Crimping Tools Cross Reference				
	Part Number		**K70ZA000113**	**K70ZA000117**
	Standard	**DIN**		
Single Ferrules	V30AE000006	V30AE000038	X	—
	V30AE000009	V30AE000041	X	—
	V30AE000013	V30AE000045	X	—
	V30AE000016	V30AE000048	X	—
	V30AE000017	V30AE000049	X	—
	V30AE000052	V30AE000052	X	—
	V30AE000053	V30AE000053	X	—
	V30AE000055	V30AE000055	X	—
	V30AE000056	V30AE000056	X	—
	V30AE000025	V30AE000058	X	X
	V30AE000026	V30AE000059	X	X
	V30AE000027	V30AE000060	—	X
	V30AE000028	V30AE000061	—	X
	V30AE000029	V30AE000062	—	X
	V30AE000030	V30AE000063	—	X
	V30AE000031	V30AE000064	—	X
	V30AE000033	V30AE000067	—	—
	V30AE000035	V30AE000070	—	—
Twin Ferrules	V30AE001134	V30AE001145	X	—
	V30AE000606	V30AE000607	X	—
	V30AE000733	V30AE000734	X	—
	V30AE000608	V30AE000609	X	—
	V30AE000735	V30AE000736	X	—
	V30AE000623	V30AE000625	X	—
	V30AE000737	V30AE000738	X	—
	V30AE000611	V30AE000611	X	—
	V30AE000748	V30AE000748	X	—
	V30AE001148	V30AE001148	X	X
	V30AE001139	V30AE001150	—	X
	V30AE001141	V30AE001152	—	X
	V30AE001143	V30AE001154	—	X

Wiring Accessories – Crimping Tools

Crimping Tools Overview

Our high-quality industrial crimping tools are designed to crimp a wide range of insulated and non-insulated crimping terminals, ferrules, and connectors. They feature ergonomic handles and controlled-cycle ratcheting mechanisms to guarantee a uniform crimp every time. Choose from fixed or interchangeable die tools or tool/die sets with multiple dies.

Interchangeable-Die Crimping Tools

Part #	Description *	Qty	Price
DN-CT-HDL	Crimping tool handle for DN-CT-Dx dies (dies NOT included) Approximate dimensions: 9.75 x 2.52 x 0.95 in (234 x 64 x 24 mm); 16.2 oz (460g)	1	$66.00
DN-CT-D1	Die set for DN-CT-HDL; 26-22 & 12-10 AWG (0.1-0.4 & 4-6 mm^2) green & yellow insulated terminals	1	$50.00
DN-CT-D2	Die set forDN-CT-HDL; 22-14 AWG (0.5-2.5 mm^2) red & blue insulated terminals	1	$50.00
DN-CT-D3	Die set for DN-CT-HDL; 22-10 AWG (0.5-6 mm^2) non-insulated terminals	1	$44.00
DN-CT-D4	Die set for DN-CT-HDL; 24-8 AWG (0.25-10 mm^2) wire ferrules	1	$44.00
DN-CT-D5	Die set for DN-CT-HDL; 6-4 AWG (16-25 mm^2) wire ferrules	1	$44.00
DN-CT-D6	Die set for DN-CT-HDL; 2-1/0 AWG (35-50 mm^2) wire ferrules	1	$44.00
DN-CT-D7	Die set for DN-CT-HDL; 22-10 AWG (0.5-6 mm^2) open barrel non-insulated terminals	1	$69.00
DN-CT-D8	Die set for DN-CT-HDL; 8-pin (RJ45) modular plugs	1	$44.00
DN-CT-D9	Die set for DN-CT-HDL; 6-pin (RJ11/RJ12) modular plugs	1	$44.00
DN-CT-SET	Crimping tool modular system; includes handle and three die sets (DN-CT-HDL + DN-CT-D2 + DN-CT-D4 + DN-CT-D5) The die pairs are held together for easy handling, and interchange without separate tools.	1	$185.00

*** The DN-CT-xx series features a crimping tool with multiple interchangeable dies separately available. The die pairs are held together for easy handling, and can be interchanged without separate tools.**

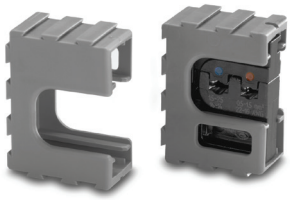
DN-CT-HDL
Crimping Tool

DN-CT-SET
Crimping Tool & Die Set

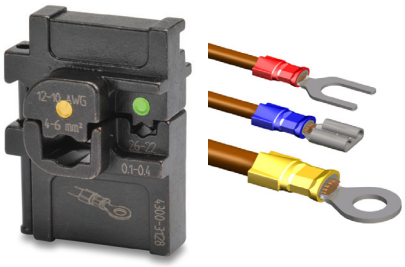
Wiring Accessories – Crimping Tool

DN-CT-Dx Interchangeable Crimping Dies (for DN-CT-xxx crimping tool only)

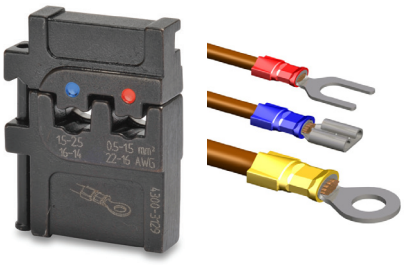
These dies are held together for easy handling, and can be interchanged without additional tools.
All DN-CT-Dx dies have been tested on leading brands of connectors to ensure quality connections.
Dies come in modular holders that can be connected together when not in use.



DN-CT-Dx die & holder



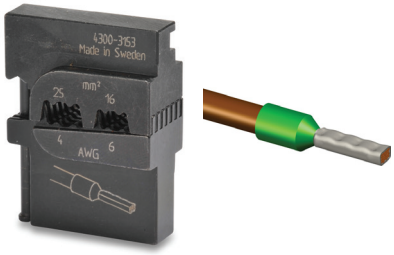
DN-CT-D1 (4300-3128)
Insulated Terminals & Connectors
26–22 AWG & 12–10 AWG
[Green & Yellow] (0.1–0.4 & 4–6 mm²)



DN-CT-D2 (4300-3129)
Insulated Terminals & Connectors
22–14 AWG
[Red & Blue] (0.5–2.5 mm²)

DN-CT-D3 (4300-3142)
Non-Insulated Terminals & Connectors
22–10 AWG (0.5–6 mm²)

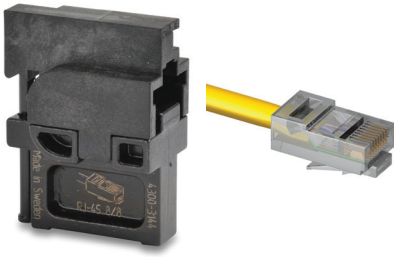
DN-CT-D4 (4300-3127)
Wire Ferrules
24–8 AWG (0.25–10 mm²)



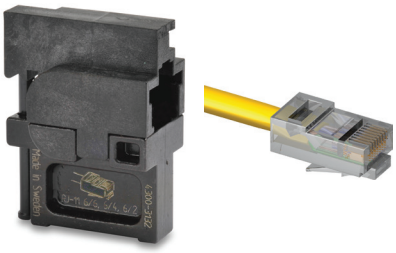
DN-CT-D5 (4300-3153)
Wire Ferrules
6–4 AWG (16–25 mm²)

DN-CT-D6 (4300-3154)
Wire Ferrules
2–1/0 AWG (35–50 mm2)

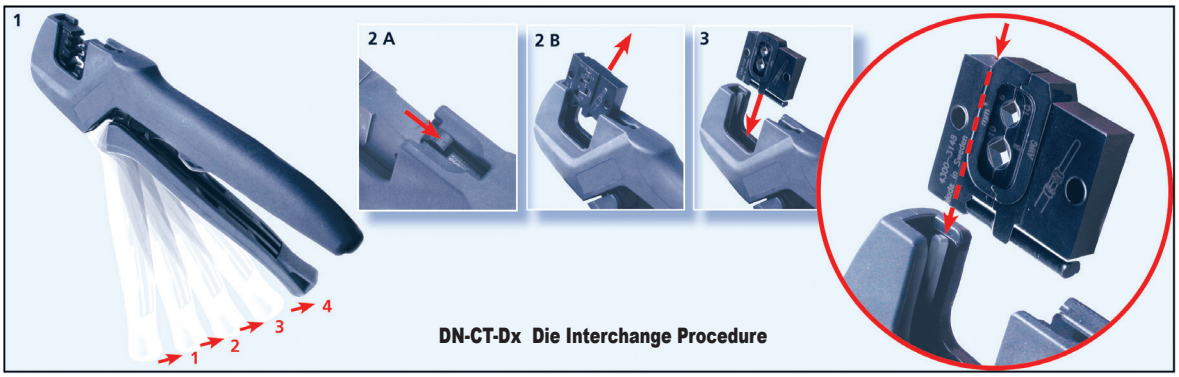
DN-CT-D7 (4300-3146)
Non-Insulated Open-Barrel Terminals
22–10 AWG (0.5–6 mm²)



DN-CT-D8 (4300-3144)
8-pin Modular Plugs
RJ45



DN-CT-D9 (4300-3132)
6-pin Modular Plugs
RJ11/RJ12



DN-CT-Dx Die Interchange Procedure