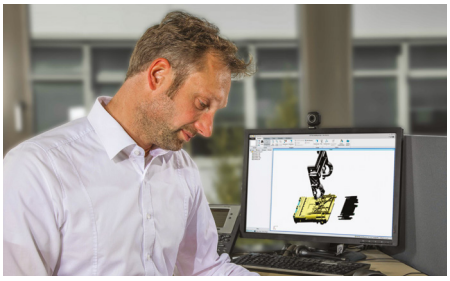
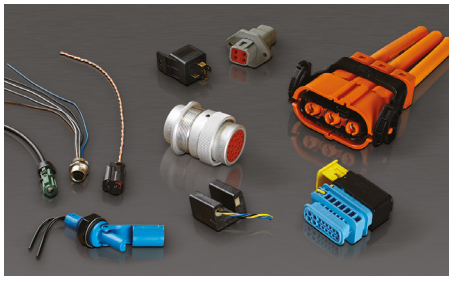
DEUTSCH HD30 & HDP20 CONNECTOR SERIES

TERMINALS AND CONNECTORS

TE Connectivity (TE) Industrial & Commercial Transportation is a reliable provider of solutions for even the harshest environment. With a focus on employee expertise and durable products, we deliver the solutions and support our customers can count on.





2,000+ Employees	10,000+ Customers	20,000+ Different Parts

Years ago, tractors, construction equipment, trucks, and boats had simple electrical systems that might have included electrical starting and a basic lighting package. Today, ECUs, joysticks, fuel-efficient engines, LED lights, and CAN systems are standard equipment. The need to protect sensitive electrical systems from vibration, moisture, dust, dirt, salt, and airborne particles has never been greater. TE Industrial & Commercial Transportation is a leader in supporting today's increasingly complex and sophisticated equipment and applications.

Our comprehensive line of products includes an unparalleled portfolio of rugged sensors, terminals, connectors, relays, and hybrid electric mobility solutions. These solutions are designed to withstand the harshest environmental conditions and to help vehicles operate safer, cleaner, and smarter.

Our solutions adapt to virtually any **harsh environment application**, including:

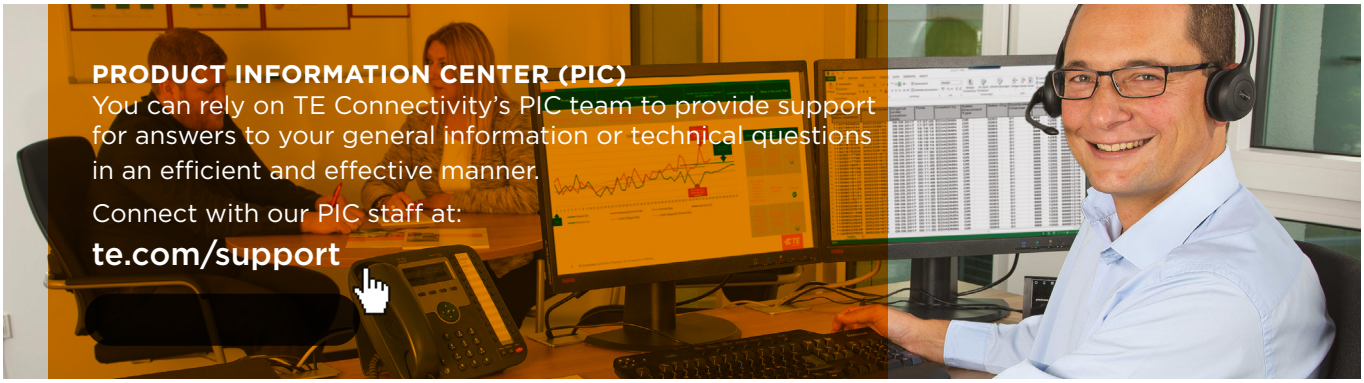
- Motors and Gearboxes
- ABS/EBS Brake Units
- Telematics Units
- Sensors
- Wire-To-Wire Coupling at the Chassis
- Infotainment Applications

MARKETS WE SERVE

ON-HIGHWAY	OFF-HIGHWAY	RECREATIONAL TRANSPORTATION

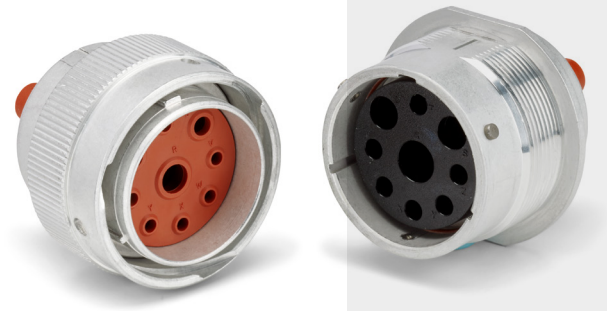
ONLINE RESOURCES

To learn more about TE Connectivity Industrial & Commercial Transportation, its products, and their corresponding documents and videos, please check out the following pages on TE.com:



DEUTSCH HD30 & HDP20 CONNECTOR SERIES

Designed specifically for the truck, bus, and off-highway industry, the HD30 & HDP20 series connectors are heavy duty, environmentally sealed, multi-pin circular connectors. Available in metal or thermoplastic housings, these connectors offer multiple pin configurations that accept contact sizes 4 through 20.



DEUTSCH HD30 & HDP20 CONNECTOR SERIES

FEATURES & BENEFITS

- The HD30 and HDP20 connector series are robust circular connection systems with quick connect/disconnect bayonet coupling.
- The HD30 connector series shell is made of metal and the HDP20 connector series shell is made of thermoplastic.
- Available in 19 contact arrangements up to 47 posistions, offering a broad array of options for power and signal circuits.
- Uses the DEUTSCH Common Contact Sytem - A unique system of interchangeable and intermatable contacts that can be used in all DEUTSCH connectors.
- Rated at 7.5 to 100 Amps and 250 VAC for 22 to 4 AWG (0.35-22.00 mm^2)
- Optional jam nuts and gaskets are available for mounting. Multiple backshell adapters and wire strain relief backshells are availalbe to enhance design flexibility and meet application specific needs.

KEY INDUSTRIES

DEUTSCH HD30 & HDP20 products can be utilized in the truck, bus, construction, agriculture, and special vehicles industries.


Truck


Bus


Construction


Agriculture


Special

APPLICATIONS

DEUTSCH HD30 & HDP20 products can be utilized in the following applications:


Powertrain


ABS/EBS Brake Units


Sensors, Displays and Devices


Wire-To-Wire


Telematics and Infotainment Applications

DEUTSCH HD30 & HDP20 OVERVIEW

HD30 SERIES

The DEUTSCH HD30 series connectors are constructed from a metal shell developed to meet the needs of the heavy duty equipment and transportation industries. The HD30 features include quick connectdisconnect bayonet coupling, single hole bulkhead mounting, silicone seals, and a rear insertion/rear removal contact system.

HD20 SERIES

The HDP20 series connectors are heavy duty rated, environmentally sealed, composite shell, multi-pin connectors. The composite thermoplastic shell is suited for applications where chemicals can damage a connector housing. HDP20 features quick connect-disconnect bayonet coupling, single hole bulkhead mounting, silicone seals, and a rear insertion/rear removal contact system.

PERFORMANCE SPECIFICATIONS

Temperature	Operating at temperatures -55°C to +125°C
Durability	No electrical or mechanical defects after 100 cycles of engagement and disengagement.
Vibration	No unlocking or unmating and exhibits no mechanical or physical damage after sinusoidal vibration levels of 20 G's at 10 to 2000 Hz in each of the three mutually perpendicular planes. No electrical discontinuities longer than 1 microsecond.
Fluid Resistance	Connectors show no damage when exposed to most fluids used in industrial applications.
Insulation Resistance	1000 megohms minimum at 25°C.
Immersion	IP68 rating
Moisture Resistance	Properly wired and mated connections will withstand immersion under three feet of water without loss of electronic qualities or leakage.
Dielectric Withstanding Voltage	Current leakage less than 2 milliamps at 1500 volts AC.
Thermal Cycle	No cracking, chipping or leaking after 20 test cycles from -55°C to +125°C.

MATERIAL SPECIFICATIONS (HD30)

Grommet	Silicone rubber
Insert Retainer	Unfilled PEI
Receptacle Interfacial Seal	Aluminum
Shell	Aluminum

MATERIAL SPECIFICATIONS (HD20)

Grommet	Silicone rubber
Insert Retainer	Unfilled PEI
Receptacle Interfacial Seal	Glass filled PA
Shell	Glass filled PA

PRODUCT DOCUMENTATION

Additional documentation is available for assistance with DEUTSCH HD30 & HDP20 products.

The following TE Connectivity document numbers may be helpful:

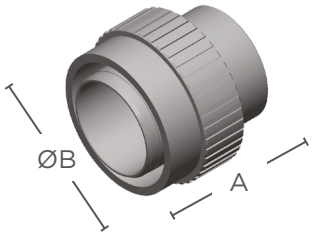
HD30 Series

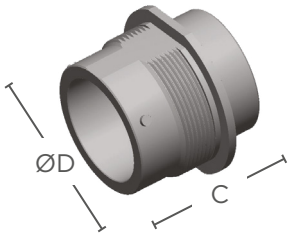
108-151014 (HD30 Series Product Specification)
114-151014 (HD30 Application Specification)
0425-013-1800 (Arrangements for Shell Size 18)
0425-014-2400 (Arrangements for Shell Size 24)

HDP20 Series

108-151015 (HDP20 Product Specification)
114-151015 (HDP20 Application Specification)
0425-013-1800 (Arrangements for Shell Size 18)
0425-014-2400 (Arrangements for Shell Size 24)

DEUTSCH HD30 & HDP20 DIMENSIONS





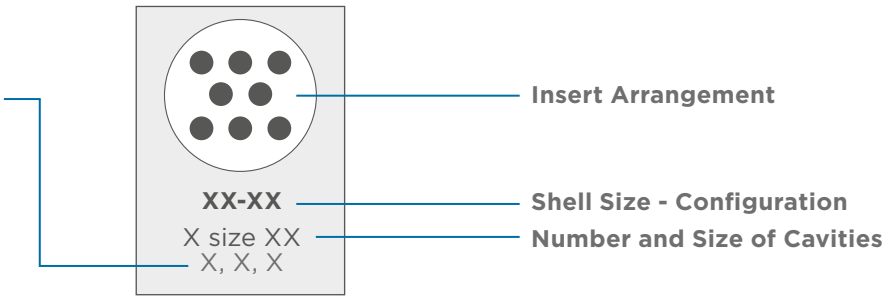
	HD/HDP Plug		HD/HDP Receptacle	
Shell Size	Overall Length A	Overall Height ØB	Overall Length C	Overall Height ØD
18	1.521 (38.63)	1.700 (43.17)	1.648 (41.86)	1.750 (44.45)
24	1.521 (38.63)	1.950 (49.53)	1.648 (41.86)	2.000 (50.80)

Dimensions are for reference only.

DEUTSCH HD30 & HDP20 CONFIGURATIONS

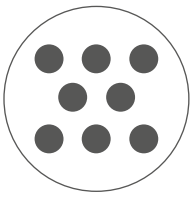
Wire Seal Options

N	Normal wire seals (green ring)
T	Thin wall wire seals (gray ring)
E	Extra thin wall wire seals (blue ring)

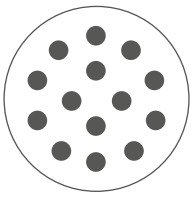


18 SHELL SIZE CONFIGURATIONS

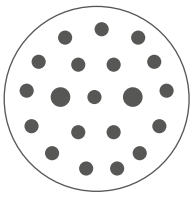
18-6
2 size 4 & 4 size 16
N, E



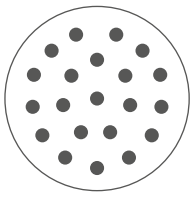
18-8
8 size 12
N, E



18-14
14 size 16
N, T, E



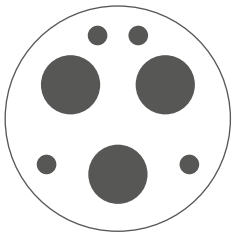
18-20
2 size 16 & 18 size 20
N, E



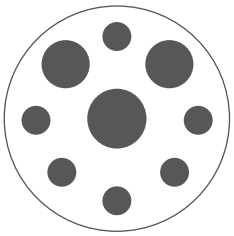
18-21
21 size 20
N

DEUTSCH HD30 & HDP20 CONFIGURATIONS

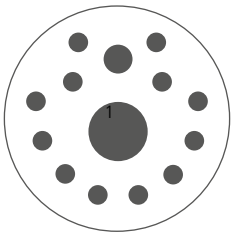
24 SHELL SIZE CONFIGURATIONS



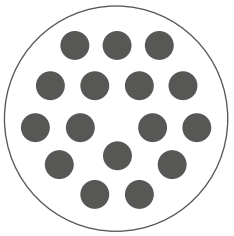
24-7(-C038 only)
3 size 4† & 4 size 16
N



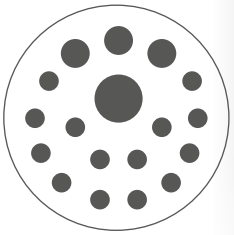
24-9
1 size 4, 2 size 8
& 6 size 12
N, E



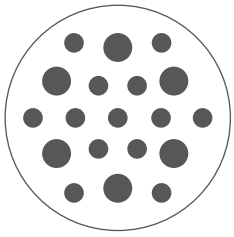
24-14
1 size 4, 1 size 12
& 12 size 16
N, E



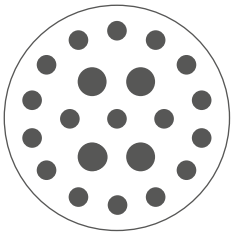
24-16
16 size 12
N, E



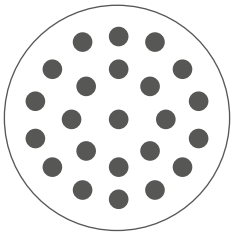
24-18
1 size 8, 3 size 12
& 14 size 16
N, E



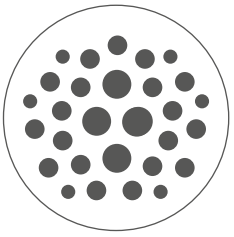
24-19
6 size 12
& 13 size 16
N, E



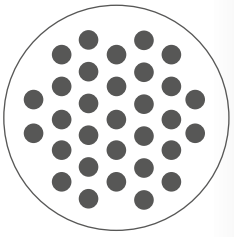
24-21
4 size 12
& 17 size 16
N, E



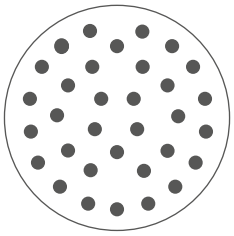
24-23
23 size 16
N, T, E



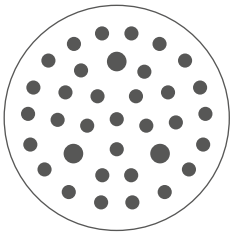
24-29
4 size 12, 19 size 16
& 6 size 20
E*



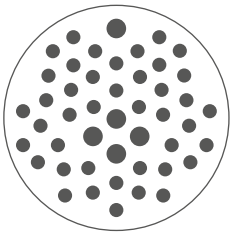
24-31
31 size 16
T*, E*



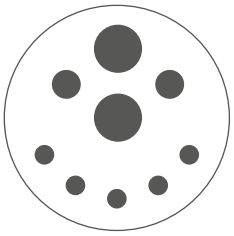
24-33
33 size 20
N



24-35
3 size 16
& 32 size 20
N, E



24-47
5 size 16
& 42 size 20
E*



24-91-P064‡
2 size 8, 2 size 12
& 5 size 16
N, E

*Modified seal, see drawing
‡Without P064 modification, plug cavities 4 and 5 are internally connected

DEUTSCH HD30 PART NUMBERING SYSTEM

Part Number
HD* 36 - 24 - 21 S * - ***

Series

Options

B	Breakaway plug
N	Non-environmental

Style

4	Receptacle
6	Plug

Shell Size

18	**24**

Configuration

Special Modifications

059	Cable Clamp/Adapter
072	Threaded Adapter

Wire Seals

N	Normal Position Wire Seals (green ring)
T	Thin Wall Wire Seals (gray ring)
E	Extra Thin Wall Wire Seals (blue ring)

Contacts

P	Pin
S	Socket

Note
Reverse arrangements are available as a keying option for the HD30 & HDP20 series connectors.

DEUTSCH HD30 ORDERING INFORMATION

Here are some of the common part numbers in the HD30 series. Several additional connectors may be available.

Shell Sz-Position	Series	Plug Standard Dia. Seal	Receptacle Standard Dia. Seal	Plug Reduced Dia. Seal	Receptacle Reduced Dia. Seal
18-6	HD30	HD36-18-6SN	HD34-18-6PN	HD36-18-6SE	HD34-18-6PE
18-8	HD30	HD36-18-8SN	HD34-18-8PN	HD36-18-8SE	HD34-18-8PE
18-14	HD30	HD36-18-14SN	HD34-18-14PN	HD36-18-14SE	HD34-18-14PE
18-20	HD30	HD36-18-20SN	HD34-18-20PN	HD36-18-20SE	HD34-18-20PE
18-21	HD30	HD36-18-21SN	HD34-18-21PN	HD36-18-21SE	HD34-18-21PE
24-7	HD30	HD36-24-7SN	HD34-24-7PN	HD36-24-7SE	HD34-24-7PE
24-9	HD30	HD36-24-9SN	HD34-24-9PN	HD36-24-9SE	HD34-24-9PE
24-14	HD30	HD36-24-14SN	HD34-24-14PN	HD36-24-14SE	HD34-24-14PE
24-16	HD30	HD36-24-16SN	HD34-24-16PN	HD36-24-16SE	HD34-24-16PE
24-18	HD30	HD36-24-18SN	HD34-24-18PN	HD36-24-18SE	HD34-24-18PE
24-19	HD30	HD36-24-19SN	HD34-24-19PN	HD36-24-19SE	HD34-24-19PE
24-21	HD30	HD36-24-21SN	HD34-24-21PN	HD36-24-21SE	HD34-24-21PE
24-23	HD30	HD36-24-23SN	HD34-24-23PN	HD36-24-23SE	HD34-24-23PE
24-29	HD30	HD36-24-29SN	HD34-24-29PN	HD36-24-29SE	HD34-24-29PE
24-31	HD30	HD36-24-31SN	HD34-24-31PN	HD36-24-31SE	HD34-24-31PE
24-33	HD30	HD36-24-33SN	HD34-24-33PN	HD36-24-33SE	HD34-24-33PE
24-35	HD30	HD36-24-35SN	HD34-24-35PN	HD36-24-35SE	HD34-24-35PE
24-47	HD30	HD36-24-47SN	HD34-24-47PN	HD36-24-47SE	HD34-24-47PE

Note
Undersize wire insulation is a major cause for leakage.

DEUTSCH HDP20 PART NUMBERING SYSTEM

Part Number
HDP 26 - 24 - 21 S * - **

Series

Style

4	Receptacle
6	Plug

Shell Size

18	**24**

Configuration

Contacts

P	Pin
S	Socket

Special Modifications

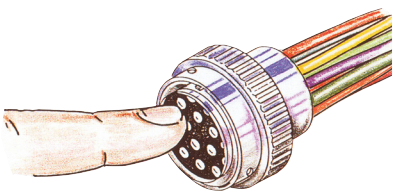
L015	Threaded Adapter
L017	Ring Adapter
L024	Wide Threaded Adapter

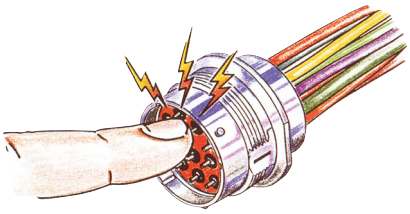
Wire Seals

N	Normal Position Wire Seals (green ring)
T	Thin Wall Wire Seals (gray ring)
E	Extra Thin Wall Wire Seals (blue ring)

helpful hint

Making the socket contact side the "hot side" can reduce the danger of electric shock.





DEUTSCH HDP20 ORDERING INFORMATION

Here are some of the common part numbers in the HDP20 series. Several additional connectors may be available.

Shell Sz-Position	Series	Plug Standard Dia. Seal	Receptacle Standard Dia. Seal	Plug Reduced Dia. Seal	Receptacle Reduced Dia. Seal
18-6	HDP20	HDP26-18-6SN	HDP24-18-6PN	HDP26-18-6SE	HDP24-18-6PE
18-8	HDP20	HDP26-18-8SN	HDP24-18-8PN	HDP26-18-8SE	HDP24-18-8PE
18-14	HDP20	HDP26-18-14SN	HDP24-18-14PN	HDP26-18-14SE	HDP24-18-14PE
18-20	HDP20	HDP26-18-20SN	HDP24-18-20PN	HDP26-18-20SE	HDP24-18-20PE
18-21	HDP20	HDP26-18-21SN	HDP24-18-21PN	HDP26-18-21SE	HDP24-18-21PE
24-7	HDP20	HDP26-24-7SN	HDP24-24-7PN	HDP26-24-7SE	HDP24-24-7PE
24-91-P064	HDP20	HDP26-24-91SN-P064	HDP24-24-91PN-P064	–	–
24-9	HDP20	HDP26-24-9SN	HDP24-24-9PN	HDP26-24-9SE	HDP24-24-9PE
24-14	HDP20	HDP26-24-14SN	HDP24-24-14PN	HDP26-24-14SE	HDP24-24-14PE
24-16	HDP20	HDP26-24-16SN	HDP24-24-16PN	HDP26-24-16SE	HDP24-24-16PE
24-18	HDP20	HDP26-24-18SN	HDP24-24-18PN	HDP26-24-18SE	HDP24-24-18PE
24-19	HDP20	HDP26-24-19SN	HDP24-24-19PN	HDP26-24-19SE	HDP24-24-19PE
24-21	HDP20	HDP26-24-21SN	HDP24-24-21PN	HDP26-24-21SE	HDP24-24-21PE
24-23	HDP20	HDP26-24-23SN	HDP24-24-23PN	HDP26-24-23SE	HDP24-24-23PE
24-29	HDP20	HDP26-24-29SN	HDP24-24-29PN	HDP26-24-29SE	HDP24-24-29PE
24-31	HDP20	HDP26-24-31SN	HDP24-24-31PN	HDP26-24-31SE	HDP24-24-31PE
24-33	HDP20	HDP26-24-33SN	HDP24-24-33PN	HDP26-24-33SE	HDP24-24-33PE
24-35	HDP20	HDP26-24-35SN	HDP24-24-35PN	HDP26-24-35SE	HDP24-24-35PE
24-47	HDP20	HDP26-24-47SN	HDP24-24-47PN	HDP26-24-47SE	HDP24-24-47PE

Note
Undersize wire insulation is a major cause for leakage.

DEUTSCH HD30 & HDP20 WIRE SEALING RANGE

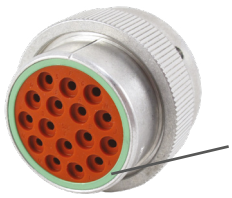
The wire sealing range is the recommended outside diameter of the wire insulation required to maintain an environmental seal in the rear connector cavities.

Contact Size	N-Seal Green Ring	T-Seal Gray Ring	T-Seal Modified*	E-Seal Blue Ring	E-Seal Modified*
20 14-22 AWG (2.5-0.35mm^2)	.040-.095 (1.02-2.41)	.040-.095 (1.02-2.41)	-	.040-.095 (1.02-2.41)	.040-.083 (1.01-2.10)
16 14-20 AWG (2.0-0.5mm^2)	.100-.134 (2.54-3.40)	.088-.134 (2.23-3.40)	.088-.106 (2.24-2.69)	.053-.120 (1.35-3.05)	.053-.103 (1.35-2.62)
12 10-14 AWG (6.0-2.0mm^2)	.134-.170 (3.40-4.32)	.113-.170 (2.87-4.32)	-	.097-.158 (2.46-4.01)	.097-.158 (2.46-4.01)
8 8-10 AWG (10.0-5.0mm^2)	.190-.240 (4.83-6.10)	.170-.240 (4.32-6.10)	-	.135-.220 (3.43-5.59)	-
4 6 AWG (16.0-13.0mm^2)	.280-.292 (7.11-7.42)	.261-.292 (6.63-7.42)	-	.261-.292 (6.63-7.42)	-
4 4 AWG (25.0-21.0mm^2)	.311-.420 (7.90-10.67)	-	-	-	-

*DEUTSCH cavity arrangements 24-29, 24-47, and 24-31 are only available with the modified seals. Arrangement 24-31 Modified E Seal = .053-.106. Please see drawings 0425-016-0000 and 0425-021-0000 for full specifications.

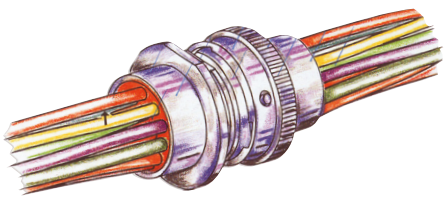
Color code is visible from the rear of the receptacle or plug.

Green: Normal Seal
Gray: Thin Wall Seal
Blue: Extra Thin Wall Seal



helpful hint

Proper wire outside diameters help provide water tight seals.



DEUTSCH HD30 & HDP20 SPECIAL MODIFICATIONS

The HD30 & HDP20 series connectors offer several modifications to enhance design flexibility and meet application specific needs. Options include breakaway plugs, adapters, and high amperage options just to mention a few. By combining the HD30 & HDP20 series connectors with the available modifications and accessories, the design possibilities are greatly expanded.

HDB - BREAKAWAY PLUG (HD30 SERIES ONLY)

The HDB breakaway plug is designed to provide an emergency disconnect between farm tractors and implements that require power connections. The HDB breakaway plug is designed to break the connection before damaging the wiring system. These plugs can be specified with pin or socket contacts and connect only with the HD30 series receptacles. As an added design convenience, the HDB breakaway plug is also available with an optional cable clamp (059 mod). Breakaway function occurs at an axial load of 50-100 lbs.

L015
Threaded
Adapter

L017
Ring Adapter

L024
Wide Threaded Adapter

L015/L017/L024 MODIFICATIONS

The L015/L024 threaded adapters and L017 ring adapter modifications are available for the DEUTSCH HDP20 series connectors. These adapter modifications provide simple, low cost assembly solutions for applications that require a backshell or conduit. The adapters are designed to be used with the backshell of your choice.

- The L015 threaded adapter is available on size 24 shells in the HDP20 series.
- The L017 ring adapter is available on size 24 or size 18 shells in the HDP20 series.
- The L024 wide threaded adapter is available on size 24 or size 18 shells in the HDP20 series.

C030 MODIFICATION

Originally designed for multiplexing and battery cable applications, the DEUTSCH C030 modification is an environmentally sealed, heavy duty two cavity connector that accepts size 4 solid contacts rated up to 100 amps for each cavity.

The C030 modification is available in size 18 shell in both metal (HD30 series) and thermoplastic (HDP20 series) to meet your heavy wire gauge application needs.

DEUTSCH HD30 & HDP20 SPECIAL MODIFICATIONS

C041/CL20 MODIFICATIONS

The C041 and CL20 modifications are available for the DEUTSCH HDP20 series 14 pin connector. The C041 modification features a data link key and reduced diameter seals on the receptacle. The CL20 modification includes a ring adapter, reduced diameter seals, and a data link key on the plug.

CABLE CLAMP/BACKSHELL MODIFICATIONS

DEUTSCH cable clamps provide positive support to the wire bundle while reducing strain on the connector. The backshell is available with or without drain holes.

Part Number Suffix	Description
-072	Adapter only
-059	Adapter and cable clamp assembly with drain holes
-L006	Adapter and cable clamp assembly without drain holes

DEUTSCH HD30 & HDP20 ACCESSORIES

Several accessory items can be used to complement the connectors. The HD30 & HDP20 family accessories include items such as boots, backshells, gaskets, and protective caps. Accessories are designed to complete the application and meet a wide array of design requirements such as solutions for mounting, providing additional protection, and offering increased aesthetics.

BOOTS

Boots provide a professional looking finishing touch for the DEUTSCH HD30 & HDP20 family of connectors. Made of durable plastisol, these slip-on boots are not only aesthetically appealing, but also provide increased protection from dirt, paint overspray, and pressure washing. The plastisol boots are rated from -20°F to +212°F (-28°C to +100°C) and offer a slip-on design making installation quick and easy.

Part Number	Description
HD30-18BT	18 shell size boot, gray
HD30-18BT-BK	18 shell size boot, black
HD30-18BT-90-BK	18 shell size boot, 90° bend, black
LC-90BT-HT	18 shell size boot, 90° bend, high temperature material, yellow
HD30-24BT	24 shell size boot, gray
HD30-24BT-BK	24 shell size boot, black
HD30-24BT-90-BK	24 shell size boot, 90° bend, black
MT-90BT-HT-24	24 shell size boot, 90° bend, high temperature material, yellow

*Distorting the boots can lessen their longevity

PROTECTIVE DUST CAPS

Protective caps are available for both plug and receptacle halves of the connectors. The metal caps, for use with the HD30 series, come with a mounting chain and are used to protect the connector while not mated. The thermoplastic caps, for use with the HDP20 series, are available with or without a lanyard.

HDP20 SERIES DUST CAPS

Shell Size	Part Number	Description
18	HDC26-18	Plug cap for receptacle protection, environmentally sealed
24	HDC26-24	

HD30 SERIES DUST CAPS

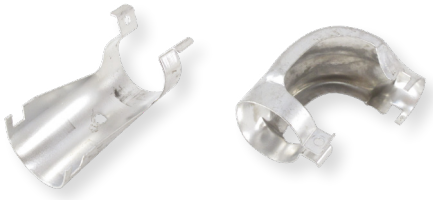
Shell Size	Part Number	Description
18	HDC36-18	Plug cap for receptacle protection
24	HDC36-24	
18	HDC34-18	Receptacle cap for plug protection
24	HDC34-24	

To order HD30(HD3-**) protective caps without the mounting chain, add -1E to the end of the part number

DEUTSCH HD30 & HDP20 ACCESSORIES

STRAIN RELIEF

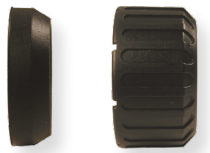
The DEUTSCH HD30 & HDP20 series connectors offer several backshell options to meet your design needs. Backshell options include straight or 90° and plastic or metal. The metal backshells work best with the HD30 series. It is attached to the rear of the connector using an adjustable screw and is secured to the wire bundle with the use of a tie wrap. The plastic backshells work best with the HDP20 series and attach to the rear of the connector with either a clamshell snap closure or by screwing them on to a threaded adapter. The rigid, durable backshells offer a high level of protection, provide strain relief, and improve aesthetics.



Shell Size	Orientation	HD30 Series Backshell Part Number
18	Straight	WHDS-18-1
24		WHDS-24-1
18	90°	WHDS-18-2
24		WHDS-24-2

Shell Size	Orientation	HDP20 Series L017 Backshell Part Number	Conduit Size
18	Straight	2428-016-1805	13, 17, 19 (mm) NW
	90°	2428-015-1805	13, 17, 19 (mm) NW
24	Straight	2428-008-2405	1”
	90°	2428-004-2405	1”
24	Straight	2428-010-2405	17, 19, 23, 26 (mm) NW
	90°	2428-011-2405	17, 19, 23, 26 (mm) NW

NW = Nominal Width of the conduit’s inside diameter. See drawings for full specifications.



Seal Ring

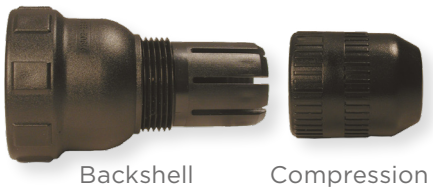
Cap Nut

Shell Size	HDP20 Series L015 Conduit Adapter Part Number		Conduit Size
24	Seal Ring SRN21	Cap Nut CN21	22 (mm) NW

DEUTSCH HD30 & HDP20 ACCESSORIES

BACKSHELLS FOR L015 MODIFICATION

The DEUTSCH HDP20 series backshells are designed to screw onto connectors with the L015 modification, which adds a threaded adapter. Rated for temperatures from -40°C to +134°C, the rigid, durable backshells offer a high level of protection, provide strain relief, and improve aesthetics.



Backshell Compression Nut

Shell Size	Cable Diameter	HDP20 Series L015 Backshell Part Number	HDP20 Series L015 Compression Nut Part Number
24	.430-.570	M902-2243	M902-2053
	.570-.710	M902-2244	M902-2054

Backshell Technical Specifications:

Material - PC/PET Polyester Blend, UV-Stabilized, Flame Retardant, Black

Flammability - material meets UL94-VO, Weatherability - UL746C

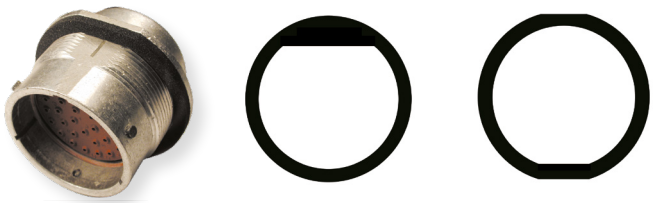
BACKSHELLS FOR L024 MODIFICATION

The DEUTSCH HDP20 series backshells are designed to screw onto connectors with the L024 modification, which adds a wide threaded adapter. The rigid, durable backshells offer a high level of protection, provide strain relief, and improve aesthetics.

Shell Size	Orientation	HDP20 Series L024 Backshell Part Number
18	Straight	2428-025-1805
24		2428-024-2405

GASKETS

Moisture, dirt, salt, sand, and road debris can all work their way into electrical panels through unsealed mounting flanges. Rated to operate in environments from -70°F to +225°F (-56°C to +107°C), these rugged high quality neoprene gaskets form a tight seal between the panel face and connector flange to help keep out destructive elements. The gaskets have a thickness of .125” and the material meets the UL-94-HBF, Mil-R-6130C, and FMVSS-302 flammability specifications.

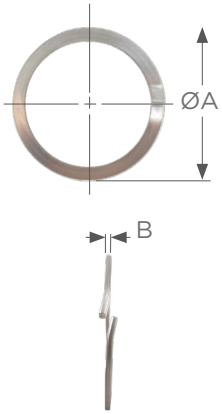


Receptacle Shell Size	Gasket Part Number
18	16-04978
24	16-04477

DEUTSCH HD30 & HDP20 ACCESSORIES

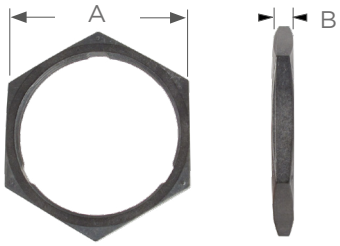
MOUNTING HARDWARE

DEUTSCH lockwashers and panel nuts are available to aid in mounting the HD30 and HDP20 series connectors. The lockwashers are used to add tension between the threads and the nut to provide a secure mount. The lockwasher and the panel nut should be used together.



Shell Size	Series	Panel Lockwasher Part Number	ØA	B
18	HDP20	2414-002-1886	1.892 (48.06)	-
	HD30	114021	1.699 (43.15)	.062 (1.57)
24	HDP20	2414-001-2486	2.080 (52.83)	-
	HD30	112264	1.887 (47.93	.062 (1.57)

Dimensions are for reference only



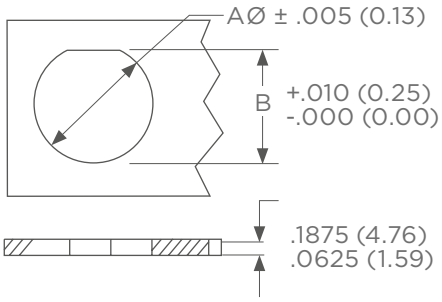
Panel Nut Mounting Torque	
HD30 series 18 shell size	260-280 IN. LB. (29.4-31.6 N.M.)
HDP20 series 18 shell size	45-55 IN. LB. (5.1-6.1 N.M.)
HD30 series 24 shell size	350-375 IN. LB. (39.5-42.6 N.M.)
HDP20 series 24 shell size	65-75 IN. LB. (7.4-8.4 N.M.)

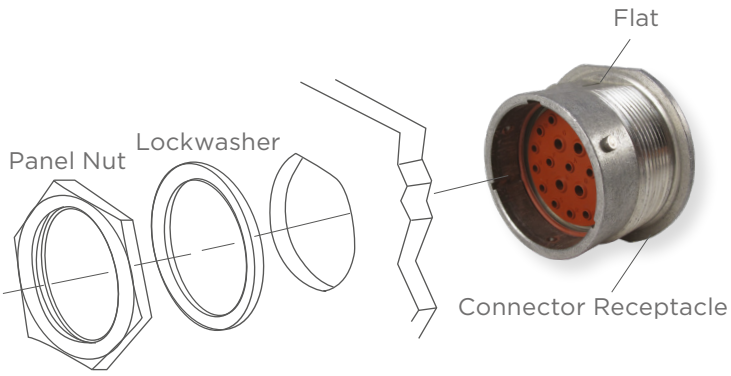
Shell Size	Series	Panel Nut Part Number	Material	A	B
18	HDP20	2411-002-1805	Plastic	1.685 (42.80)	.250 (6.35)
	HD30	114020-90	Metal		.178 (4.52)
24	HDP20	2411-001-2405	Plastic	1.875 (47.63)	.250 (6.35)
	HD30	112263-90	Metal		.178 (4.52)

Dimensions are for reference only

DEUTSCH HD30 & HDP20 MOUNTING

RECEPTACLE MOUNTING





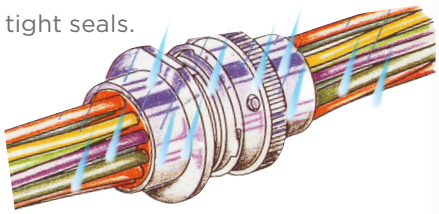
Recommended Size of Mounting Hole

Shell Size	ØA	B
18	1.507 (38.28)	1.442 (36.63)
24	1.696 (43.08)	1.632 (41.45)

Dimensions are for reference only

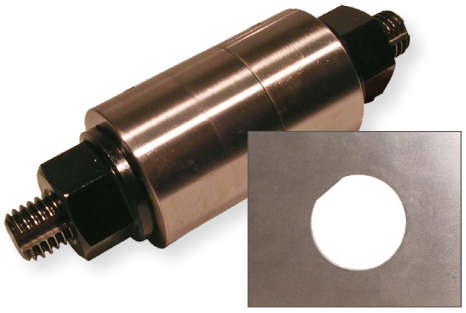
helpful hint

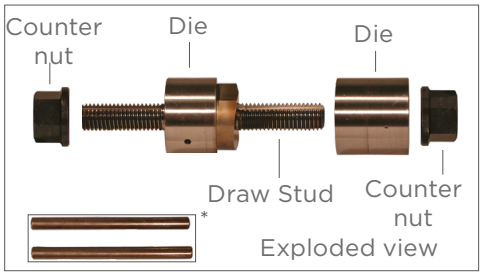
Proper wire outside diameters help provide water tight seals.



D HOLE PUNCH

The D hole punch is a hand tool used to cut a D shaped hole. The D shaped hole allows the connector to be securely mounted and helps prevent the connector from spinning.





*The rods included with the "D" hole punch are used to remove the cutout and are not used in the cutting process.

- Punchable Material: Up to .078" mild steel or aluminum. Up to .1875" plastic, wood, paneling, or other soft material.
- Tool Material: A2 material heat treated to a Rockwell hardness of 60 to 62.
- Tool Size: (rough dimensions) 5.5"L x 2"H x 2"D
- Sharpening: The tool can be sharpened as needed.
- Usability: A .625" minimum pilot hole is required to accommodate the draw stud. Air tools can be used.

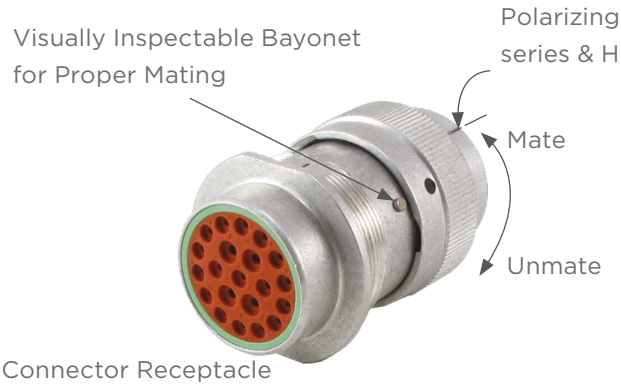
Shell Size	D Hole Punch Part Number
18	18-D-PUNCH
24	24-D-PUNCH

DEUTSCH HD30 & HDP20 HOW-TO INSTRUCTIONS

MATING INSTRUCTIONS

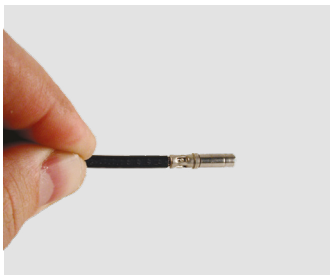
To mate the plug and the receptacle, line up the index groove on the plug with the flat surface on the receptacle, turn 1/4 turn clockwise. You will feel and hear the pieces snap into the locked position. To unmate the plug and receptacle, release the coupling ring by turning it counter-clockwise.

Mating Slot Positions

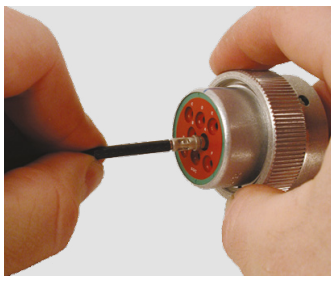


Note
When mating or unmating connectors, disassemble by hand. Do not use pliers or any other tool.

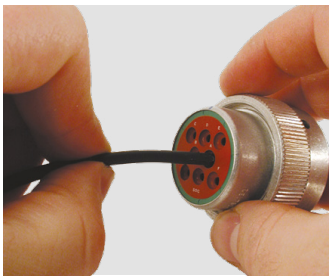
CONTACT INSERTION



Step 1:
Grasp contact approximately one inch behind the contact crimp barrel.



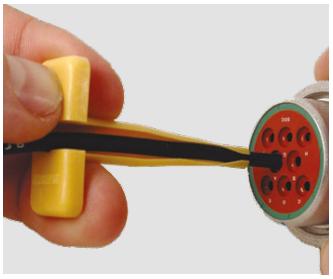
Step 2:
Hold connector with the rear grommet facing you.



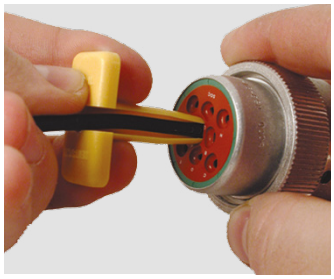
Step 3:
Push contact straight into connector grommet until a positive stop is felt. A slight tug will confirm that it is properly locked in place.

DEUTSCH HD30 & HDP20 HOW-TO INSTRUCTIONS

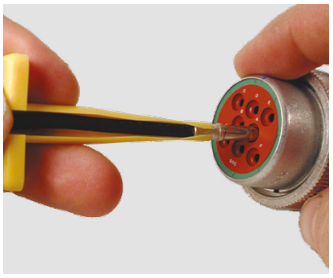
CONTACT REMOVAL



Step 1:
With rear insert toward you, snap appropriate size removal tool over the wire of contact to be removed.



Step 2:
Slide tool along the wire into the insert cavity until it engages contact and resistance is felt.



Step 3:
Pull contact wire assembly out of connector.

Note
Do not twist or insert tool at an angle.

DEUTSCH COMMON CONTACTS OVERVIEW

Several contacts are used interchangeably across most DEUTSCH connector product lines. This commonality improves performance, reliability, and maintainability by reducing changes in the assembly of the wire harness. The use of the same contact system helps eliminate many of the failures reported in harnesses where hundreds of different terminations are used.

CONTACT STYLES

Two styles of contacts are available: solid and stamped & formed. Both contact types use a crimp style termination, eliminating the need for solder. The variations in the contact system are those dictated by wire gauge and contact style.

SOLID

The solid contacts are designed for use with larger wire size and heavy duty applications. Solid contacts are manufactured using a cold heading process with solid copper alloy wire and are available with either a nickel or gold plating finish.

Solid contacts terminate wire from 4 AWG to 20 AWG (25 - 0.5mm2) and are available in 5 sizes each of the pin and socket. The applicable contact is determined by the size of the conductor only.

STAMPED & FORMED

Stamped & formed contacts are designed for use where wire termination costs are of primary concern without sacrificing reliability of electrical circuits. The stamped & formed contacts are made on a precision stamping machine using flat strip stock, then a durable and corrosion proof nickel, tin, or optional gold plating is applied.

The stamped & formed style contacts terminate wire from 10 AWG to 22 AWG (6.0 - 0.35mm2) and are available in multiple sizes to accommodate a wide range of wire insulation. The specific contact is determined by the outside diameter of wire insulation and conductor size.

DEUTSCH COMMON CONTACTS OVERVIEW

PERFORMANCE SPECIFICATIONS

DURABILITY

No electrical or mechanical defects after 100 cycles of engagement and disengagement.

CURRENT RATING (Contact current rating at 125°C continuous)

Contact Size	Max. Current
Size 20	7.5 amps
Size 16	13 amps
Size 12	25 amps
Size 8	60 amps
Size 4	100 amps

CONTACT RETENTION (Solid and Stamped & Formed)

Contacts withstand a minimum load of:
20 lbs (89 N) for size 20
25 lbs (111 N) for size 16
30 lbs (133 N) for size 12
35 lbs (156 N) for size 8
35 lbs (156 N) for size 4

CONTACT MILLIVOLT DROP

Contact Size	Test Current Amps	Millivolt Drop* (Solid)	Millivolt Drop* (S&F)
20	7.5	60	100
16	13	60	100
12	25	60	100
8	60	60	–
4	100	60	–

*Less drop through wire

CRIMP TENSILE STRENGTH (Solid)

Contact Size	Tensile Strength
Size 20	20 lbs
Size 16	25 lbs
Size 12	70 lbs
Size 8	90 lbs
Size 4	300 lbs

helpful hint

A crimp tensile test easily and rapidly identifies a proper crimp.

CRIMP TENSILE STRENGTH (Stamped & Formed)

Contact Size	Tensile Strength
Size 20	20 lbs
Size 16	25 lbs
Size 12	70 lbs

DEUTSCH COMMON CONTACTS SOLID CONTACT

SOLID CONTACT PART NUMBERS

Size	Solid Contact Part Numbers		Wire Size AWG (mm2)	Recommended Strip Length Inches (mm)	Min. Contact Retention	Ref Crimp Tensile Lbs. (N)	Max Rated Amps at 125°C Continuous
	Pin	Socket					
20	0460-202-20**	0462-201-20**	20 (0.50)	.156-.218 (3.96-5.54)	20 (89)	20 (89)	7.5
	0460-010-20**	0462-005-20**	16-18 (1.0-0.75)	.156-.218 (3.96-5.54)	20 (89)	20 (89)	7.5
16	0460-202-16**	0462-201-16**	16-20 (1.5-0.50)	.250-.312 (6.35-7.92)	25 (111)	35-20 (156-89)	13
	0460-215-16**	0462-209-16**	14 (2.0)	.250-.312 (6.35-7.92)	25 (111)	70 (311)	13
12	0460-204-12**	0462-203-12**	12-14 (3.0-2.0)	.222-.284 (5.64-7.21)	30 (134)	75-70 (334-311)	25
8	0460-204-08**	0462-203-08**	8-10 (10.0-5.0)	.430-.492 (10.92-12.50)	35 (156)	125-90 (556-400)	60
4	0460-204-04**	0462-203-04**	6 (16.0-13.0)	.430-.492 (10.92-12.50)	35 (156)	300 (1334)	100
4 (C038)	5960-203-04141	5962-203-04141	4 (25.0-21.0)	.430-.492 (10.92-12.50)	35 (156)	300 (1334)	100

** = Plating codes

SOLID CONTACT PLATING CODES

Part Number Suffix	Plating Material
31	Gold
90	Nickel (size 4 pin only)
141	Nickel

Note
See information drawing 0425-015-0000.

DEUTSCH COMMON CONTACTS STAMPED & FORMED

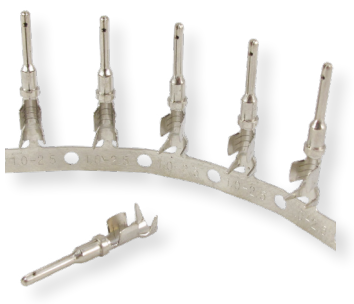
STAMPED & FORMED CONTACT PART NUMBERS

Size	S&F Contact Part Numbers		Carrier Strip	Wire Size AWG (mm^2)	Wire Insulation O.D. Range	Recommended Strip Length Inches (mm)	Min. Contact Retention	Max. Rated Amps at 125° C Continuous
	Pin	Socket						
20	1060-20-01**	1062-20-01**	20-01	16-22 (1.5-0.35)	.075-.125 (1.91-3.18)	.150-.200 (3.81-5.08)	20 (89)	7.5
	1060-20-02**	1062-20-02**	20-02	16-22 (1.5-0.35)	.051-.085 (1.30-2.16)	.150-.200 (3.81-5.08)	20 (89)	7.5
	-	1062-20-03** sleeveless	20-03	16-22 (1.5-0.35)	.075-.125 (1.91-3.18)	.150-.200 (3.81-5.08)	20 (89)	7.5
	1060-20-06**	1062-20-06**	20-06	14-16 (2.5-1.0)	.075-.125 (1.91-3.18)	.150-.200 (3.81-5.08)	20 (89)	7.5
16	1060-14-01**	1062-14-01**	14-16	14-18 (2.0-.75)	.095-.150 (2.41-3.81)	.150-.200 (3.81-5.08)	25 (111)	13
	1060-14-10**	1062-14-10**	14-16	14-18 (2.0-.75)	.095-.150 (2.41-3.81)	.150-.200 (3.81-5.08)	25 (111)	13
	1060-16-01**	1062-16-01**	16-18	14-18 (2.0-.75)	.075-.140 (1.90-3.55)	.150-.200 (3.81-5.08)	25 (111)	13
	1060-16-06**	1062-16-06**	0.5-1.0	16-20 (1.0-.50)	.055-.100 (1.40-2.54)	.150-.200 (3.81-5.08)	25 (111)	13
	1060-16-09**	1062-16-09**	16-18	14-18 (2.0-.75)	.075-.140 (1.90-3.55)	.150-.200 (3.81-5.08)	25 (111)	13
	1060-16-12**	1062-16-12**	1.0-2.5	12-16 (2.5-1.0)	.075-.140 (1.90-3.55)	.175-.225 (4.45-5.72)	25 (111)	13
	-	1062-16-14** sleeveless	14-16	12-16 (2.5-1.0)	.075-.140 (1.90-3.55)	.175-.225 (4.45-5.72)	25 (111)	13
12	1060-12-01**	1062-12-01**	12-14	12-14 (4.0-2.0)	.113-.176 (2.87-4.47)	.225-.275 (5.72-6.99)	30 (134)	25
	1060-12-02**	1062-12-02**	10-12	10† (6.0-4.0)	.140-.204 (3.56-5.18)	.225-.275 (5.72-6.99)	30 (134)	25

** = Plating codes; † = TXL wire insulation is preferred

S&F CONTACT PLATING CODES

Part Number Suffix	Plating Material
22	Nickel
44	Gold
66	Tin/Nickel
77	Tin
88	Selective Gold



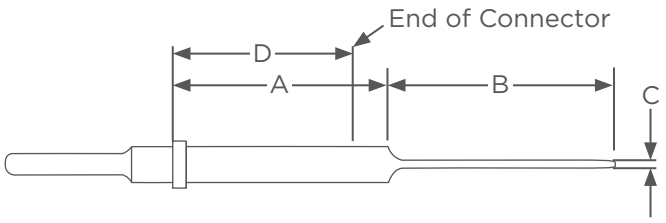
Note
See information drawing 0425-015-0000.

DEUTSCH COMMON CONTACTS PCB PINS

PCB PINS

Straight reduced diameter extended pins are available for installation in the DEUTSCH family of connectors. The use of removable contacts provides design flexibility and a low cost alternative to meet application needs. These solid copper alloy pins may be specified in various platings and assembled in HD30, HDP20, HD10, DRC, or DT receptacles.

MATERIAL SPECIFICATIONS	
Material	Copper alloyr
Plating Codes	31: Gold 90: Tin 141: Nickel
PCB Mounting	Consult factory for PCB mounting details and pin positions.



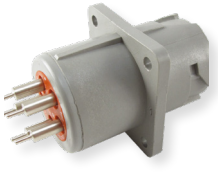
Note
See information drawing 0425-202-0000 for full specifications.

Contact Size	Part Number	A	B	C
20	0460-208-2031	1.305 (33.15)	.248 (6.30)	.025 (.64)
	0460-208-2090	1.305 (33.15)	.248 (6.30)	.025 (.64)
16	0460-208-16141	1.300 (33.02)	.248 (6.30)	.025 (.64)
	0460-208-1631	1.300 (33.02)	.248 (6.30)	.025 (.64)
	0460-229-16141	.545 (13.84)	.248 (6.30)	.025 (.64)
	0460-241-16141	1.305 (33.15)	.160 (4.06)	.040 (1.02)
	0460-244-16141	.976 (24.79)	.400 (10.16)	.041 (1.04)
	0460-244-1631	.976 (24.79)	.400 (10.16)	.041 (1.04)
12	0460-208-12141	1.305 (33.15)	.248 (6.30)	.025 (.64)
	0460-245-1231	1.024 (26.01)	.500 (12.70)	.041 (1.04)
	0460-245-1290	1.024 (26.01)	.500 (12.70)	.041 (1.04)

Series	D*
HD30/HDP20	.939 (23.85)
HD10	.925 (23.50)
DT	.777 (19.74)
DT04-2P	.677 (17.20)
DT04-3P	.677 (17.20)
DRC	1.063 (27.00)

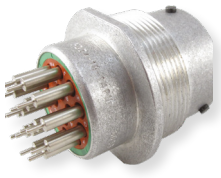
*D is equal to the distance from the contact shoulder to the end of the connector.

Dimensions are for reference only.



HD10 Series

HDP20 Series



HD30 Series

DEUTSCH COMMON CONTACTS CRIMPING

Crimping is defined as the act of joining a conductor to a pin or socket contact using a mechanical tool to compress and displace metal. In a good crimp joint, there is mutual flow of metal, causing a symmetrical distortion of wire strands.

CRIMPING CONFIGURATIONS

Stamped & formed contacts use a folded type of crimp (Fig. 1) while solid contacts use a 1, 2, or 4 indent crimp (Fig. 2). In both styles of crimps, the wire strands and the contact material are formed together in a solid mass creating a reduction of the wire strand area. The reduced wire strand area creates a minimum of voids allowing for excellent conductivity. Crimping may be accomplished with hand tools or power tools.

BENEFITS OF CRIMPED CONTACTS

Stamped & Formed Style

Cross-Section Across Axis
Figure 1

Solid Style

Indenter Crimp
Cross-Section Across Axis
Figure 2

Mechanically crimping contacts is the leading wire termination method for some very good reasons:

- With smaller wire, the crimp is as strong as the wire itself.
- The joint can be visually inspected. Viewing the wire through an inspection hole in the contact makes inspection quick and easy, both by the operator and the inspector.
- Plating thickness is not restricted, as in solder joints, so better corrosion resistance and contact reliability are achieved.
- Crimping can be done anywhere, without special preparation. Terminations are replaced or modified in the field exactly the same as in the shop, using the same tools and the same techniques, and with the same ease of operation and certainty of results.
- Total installed and maintenance costs are lower.

helpful hint

Solder should not be added to DEUTSCH terminals.

Note
The use of dielectric grease is not recommended.

DEUTSCH COMMON CONTACTS CRIMPING

CRIMP INSPECTION

Crimping tools provide lower total installation and maintenance costs. However, controls are required to help confirm that the proper crimp tools designed for the type and size contact are used, the pin or socket is properly inserted into the tool, the wire insulation is stripped properly, and the wire fully inserts into the contact.

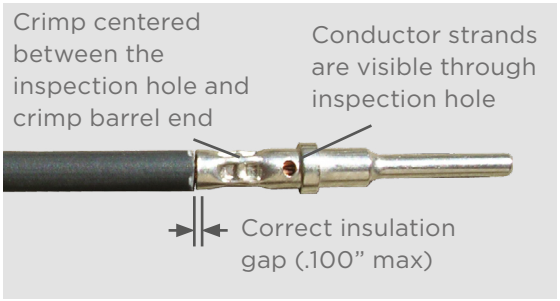
When a crimp is completed, correct termination can be visually inspected. The inspector should check for:

- The removed insulation should expose a conductor length that will pass beyond the inspection hole in the contact and still reveal the appropriate length of conductor between the contact and the insulation on the wire.
- Wire strands intact.
- All wire strands enter the contact barrel.
- Wire inserted to the proper depth in the contact.

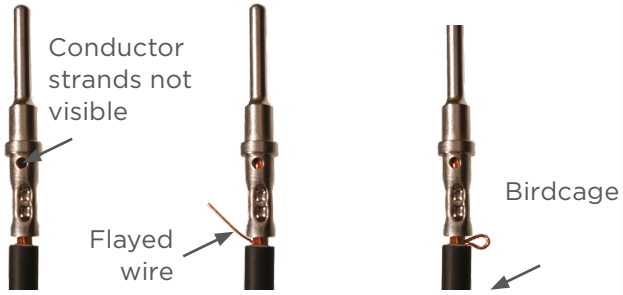
When the correct crimp tool and process are used, a good termination results.

Note
For more detailed crimp dimensions please request a drawing

SOLID CONTACT CRIMP

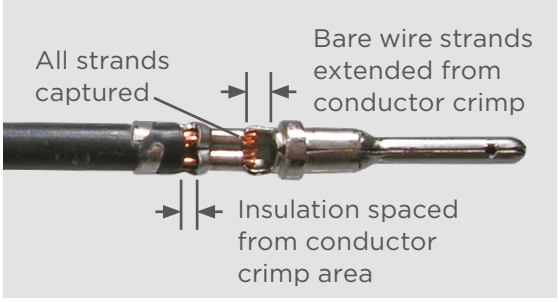


Acceptable Crimp

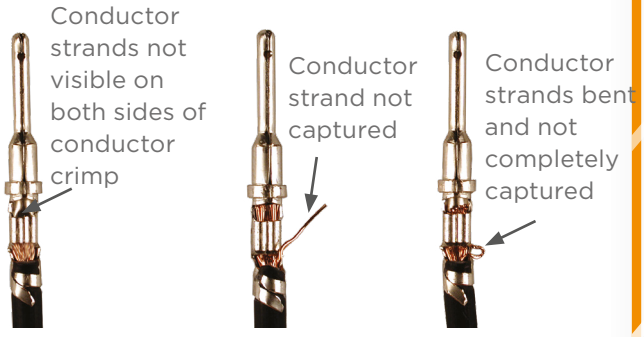


Unacceptable Crimps

STAMPED & FORMED CONTACT CRIMP



Acceptable Crimp



Unacceptable Crimps

DEUTSCH COMMON CONTACTS ACCESSORIES

Additional accessories are available to aid in the design flexibility and sealing requirements of applications. Accessory items such as sealing plugs and keying pins help to maintain an environmental seal and prevent mis-mating.

KEYING PINS

Keying pins are solid plastic rods used to help prevent mis-mating of like connectors in close proximity. Applicable DEUTSCH product lines include HD10, HD30, HDP20, DT, and DTM series.

Keying pins are inserted into the retention fingers of an empty socket cavity. Once installed, the keying pin blocks a mating contact pin from being inserted. The contact pin will be blocked before the coupling device mates the connectors, helping to prevent the mis-mating of like connectors. Proper usage requires that the corresponding mating pin be omitted and a sealing plug inserted in the rear cavity of the mating connector. Individual applications will vary, and testing should be done to determine the best pattern arrangement to help prevent improper connector mating,

Part Number	Contact Size	Color
0413-216-2005	20	Red
0413-215-1605	16	White
0413-214-1205	12	Yellow

Note
Multiple keying pins may be required to help prevent unintentional forced mating.

CONTACT CRIMP SLEEVE REDUCER

A crimp sleeve reducer is available to allow DEUTSCH size 4 solid contacts to accept 8-10 AWG wire. When populating a connector using a contact with a reducer sleeve, be sure the insert seal penetrates the rear grommet. The use of the crimp sleeve reducer requires no extra crimp tools and provides an easy transition and increased flexibility.

Insert Seal
0410-241-0406

Crimp Sleeve
0421-203-04141

Note
TXL wire insulation with 10 AWG is not recommended because it may not provide an environmental seal against the insert seal.

DEUTSCH COMMON CONTACTS ACCESSORIES

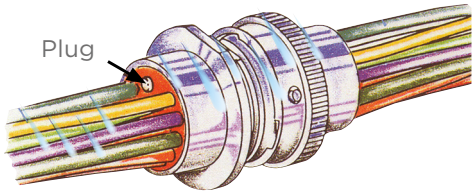
SEALING PLUGS

Open cavities provide pathways for contaminates to enter the connectors. To maintain seal integrity, any unused cavity must be filled with the appropriate size sealing plug.

Part Number	Contact Size	Description
114019	Size 4	Silicone rubber
114018	Size 8	Thermoplastic
114017	Size 12, 16	Thermoplastic
0413-217-1605 (locking sealing plug)	Size 16	Thermoplastic, retained by locking fingers
0413-003-1605	Size 16	Thermoplastic, used with STRIKE series
0413-204-2005	Size 20	Thermoplastic

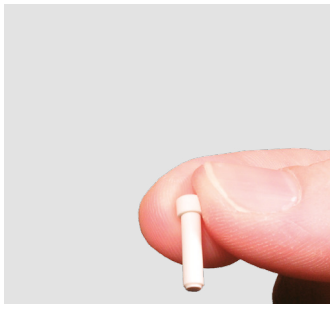
helpful hint

Sealing plugs are used to seal the connector when all the cavities are not used by wires.

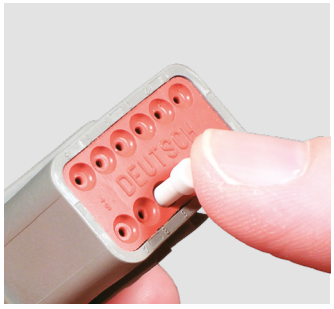


DEUTSCH COMMON CONTACTS HOW-TO INSTRUCTIONS

SEALING PLUG INSTALLATION



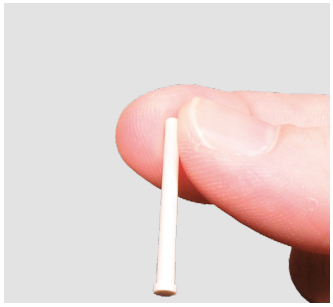
Step 1:
Holding the sealing plug with large diameter end away from the connector, gently apply downward pressure to force the sealing plug into the cavity.



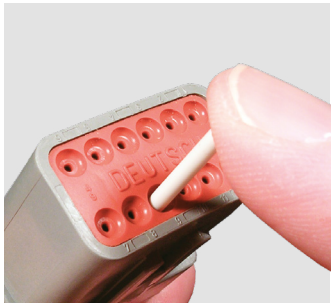
Step 2:
With perpendicular motion, apply downward pressure to the large diameter end of the sealing plug.

Step 3:
Apply pressure until sealing plug is forced to stop by contact with rear grommet. Visually inspect the sealing plug to confirm it is flush with cavity opening.

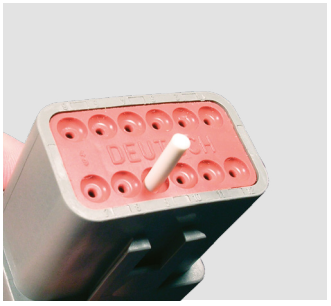
LOCKING SEALING PLUG INSTALLATION



Step 1:
Holding the sealing plug with large diameter end towards the connector, gently apply downward pressure to force the sealing plug into the cavity.



Step 2:
With perpendicular motion, apply downward pressure to the small diameter end of the sealing plug.

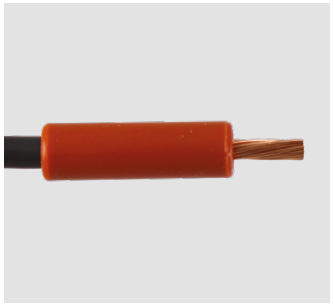


Step 3:
Apply pressure until sealing plug locks into place. A slight tug on the sealing plug will confirm it is locked into place.

DEUTSCH COMMON CONTACTS HOW-TO INSTRUCTIONS

CONTACT CRIMP SLEEVE REDUCER ASSEMBLY

Step 1:
Place crimp sleeve reducer into contact barrel.



Step 2:
Slide insert seal onto 8-10 AWG wire stopping just at the edge of the stripped insulation.

Step 3:
Insert wire into barrel of contact and crimp using designated tooling.

Step 4:
Confirm seal is not distorted.

DEUTSCH TOOLING OVERVIEW

CRIMP TOOL OVERVIEW

The two types of DEUTSCH contacts are solid and stamped & formed. Both styles of contacts are designed for crimp style terminations - no solder is required or recommended. A crimp style termination displaces the wire strands creating a superior bond between the wire and the contact.

Several tools are available for hand and production wire crimping, wire insertion and removal, and wedgelock/terminal position assurance removal. The tools are specific to the solid contacts or the stamped & formed contacts. To create a proper crimp and achieve the highest performance specifications, contacts must be crimped with the recommended tooling.

AUTOMATED TOOLING OVERVIEW

For higher production volumes, a pneumatic power crimp tool is available for the DEUTSCH solid contacts, and applicator dies for stamped & formed contacts. The HDP-400, a pneumatic solid crimp tool, is a fast, bench-top tool that crimps most DEUTSCH contacts. The HDP-400 has a foot control, and easy-to-change dies and locators for each contact size. TE's stamped & formed OCEAN applicator dies are heavy duty mini-dies that work in many industry standard presses. The OCEAN applicator dies offer simple adjustments and the flexibility to accept different sized contacts and wire gauge.

DEUTSCH TOOLING SOLID CONTACTS

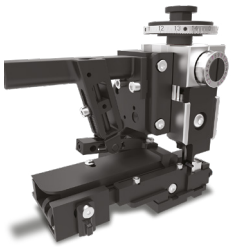
AUTOMATED TOOLING FOR SOLID CONTACTS

Tool Part Number	Contact Size	Contact Part Number
HDP-400	4	0460-204-0490 0462-203-04141
	8	0460-204-08141 0462-203-08141
	12	0460-204-12** 0462-203-12**
	16	0460-202-16** 0462-201-16**
		0460-215-16** 0462-209-16**
	20	0460-202-20** 0462-201-20**

For the appropriate die and locator, see drawing 0425-205-0000

DEUTSCH TOOLING STAMPED & FORMED CONTACTS

AUTOMATED TOOLING FOR STAMPED & FORMED CONTACTS

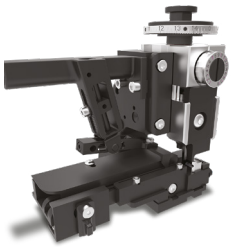


	Pin P/N	Socket P/N	Insulation Range O.D. (mm)	Applictor P/N Conversion Kit P/N
Size 12 -Group 1	1060-12-0144 1060-12-0166	1062-12-0144 1062-12-0166	.151-.176 (3.83-4.47)	2266124-1 7-2266124-8
			.130-.154 (3.30-3.91)	2266125-1 7-2266125-8
			.113-.135 (2.87-3.43)	2266126-1 7-2266127-8
Size 12 -Group 2	1060-12-0222 1060-12-0244	1062-12-0222 1062-12-0244	.185-.204 (4.70-5.18)	2266127-1 7-2266127-8
			.155-.190 (3.94-4.83)	2266128-1 7-2266128-8
			.140-.160 (3.56-4.06)	2266129-1 7-226129-8
Size 16 -Group 1	1060-14-0122 1060-14-0144 1060-14-0177 1060-14-1077 1060-14-1088	1062-14-0122 1062-14-0144 1062-14-0177 1062-14-1077 1062-14-1088	.120-.150 (3.05-3.81)	2266100-1 7-2266100-8
			.105-.125 (2.67-3.18)	2266101-1 7-2266101-8
	1060-16-0122 1060-16-0144 1060-16-0177 1060-16-0722 1060-16-0744 1060-16-0777 1060-16-0977 1060-16-0988	1062-16-0122 1062-16-0144 1062-16-0177 1062-16-0722 1062-16-0744 1062-16-0777 1062-16-0977 1062-16-0988	.105-.125 (2.67-3.18)	2266101-1 7-2266101-8
			.085-.111 (2.16-2.82)	2266102-1 7-2266102-8
			.075-.105 (1.91-2.67)	2266103-1 7-2266103-8
			.063-.094 (1.60-2.39)	2266104-1 7-2266104-8
Size 16 -Group 2	1060-16-0622 1060-16-0644 1060-16-0677 1060-16-0688	1062-16-0622 1062-16-0644 1062-16-0677 1062-16-0688	.063-.094 (1.60-2.39)	2266110-1 7-2266110-8
			.050-.075 (1.27-1.91)	2266111-1 7-2266111-8

The -1 suffix on the applicator p/n represents a mechanical feed, for other feed options contact your representative. The conversion kit is to convert applicators within the same group. For more information, please reference TE catalog 1-1773730-8 or contact your representative.

DEUTSCH TOOLING STAMPED & FORMED CONTACTS

AUTOMATED TOOLING FOR STAMPED & FORMED CONTACTS (continued)



	Pin P/N	Socket P/N	Insulation Range O.D. (mm)	Applictor P/N Conversion Kit P/N
Size 16 -Group 3	1060-16-1222 1060-16-1244 1060-16-1277 - - -	1062-16-1222 1062-16-1244 1062-16-1277 1062-16-1422 1062-16-1444 1062-16-1477	.120-.140 (3.05-3.56)	2266112-1 7-2266112-8
			.105-.125 (2.67-3.18)	2266113-1 7-2266113-8
			.090-.110 (2.29-2.79)	2266114-1 7-2266114-8
			.075-.095 (1.91-2.41)	2266115-1 7-2266115-8
Size 20 -Group 1	1060-20-0122 1060-20-0144 1060-20-0177 - - -	1062-20-0122 1062-20-0144 1062-20-0177 1062-20-0322 1062-20-0344 1062-20-0377	.105-.125 (2.67-3.18)	2266116-1 7-2266116-8
			.085-.111 (2.16-2.82)	2266117-1 7-2266117-8
			.075-.105 (1.91-2.67)	2266118-1 7-2266118-8
	1060-20-0222 1060-20-0244 1060-20-0277	1062-20-0222 1062-20-0244 1062-20-0277	.063-.085 (1.62-2.16)	2266119-1 7-2266119-8
			.050-.075 (1.27-1.91)	2266120-1 7-2266120-8

The -1 suffix on the applicator p/n represents a mechanical feed, for other feed options contact your representative. The conversion kit is to convert applicators within the same group. For more information, please reference TE catalog 1-1773730-8 or contact your representative.

DEUTSCH TOOLING ACCESSORIES

HDP-400 TOOLING ACCESSORIES

The Go-No-Go gauge is used to determine if the HDP-400 tool is calibrated within the recommended specifications to produce a proper crimp.

Part Number	Go-No-Go Gauges
GA20N	HDP-400 Size 20
450GA-16N	HDP-400 Size 16
450GA-12N	HDP-400 Size 12
GA8-SPEC	HDP-400 Size 8
450GA-4-SPEC	HDP-400 Size 4

DEUTSCH TOOLING HAND TOOL

For field service, prototype, and low-volume production, there are several easy-to-use hand crimp tools for both solid barrel and stamped & formed contacts. All hand crimp tools provide a tight, complete crimp with minimal effort. The HDT-48-00, the most commonly used tool for solid contacts, crimps a wide range of contact sizes. It provides a symmetrical four indent crimp, is compact and easy-to-use for field service, yet sturdy and reliable enough for low volume production. Hand crimp tools for DEUTSCH stamped & formed contacts are wire gauge specific and simultaneously crimp the insulation and conductor, saving time and effort during field service.

HAND TOOLS FOR SOLID CONTACTS

HDT-04-08

HDT-48-00

HDT-50-00

HDT-1561

Contact Size	Contact Part Number	Tool Part Number	Crimp Type
4	0460-204-0490 0462-203-04141	HDT-04-08	Two indent crimp
8	0460-204-08141 0462-203-08141	HDT-04-08	Two indent crimp
12	0460-204-12** 0462-203-12**	HDT-48-00	Four indent crimp
		HDT-1561	Two indent crimp
		HDT-50-00	One indent crimp
16	0460-202-16** 0462-201-16** 0460-215-16** 0462-209-16**	HDT-48-00	Four indent crimp
		HDT-1561	Two indent crimp
		HDT-50-00	One indent crimp
20	0460-202-20** 0462-201-20**	HDT-48-00	Four indent crimp
		HDT-1561	Two indent crimp
		HDT-50-00	One indent crimp

DEUTSCH TOOLING HAND TOOL

HDT-48-00 TOOLING ACCESSORIES

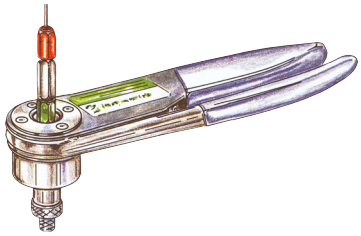
Replacement parts, such as adjustment screws, locking nuts, and inspection tools are available for the HDT-48-00 hand tool.

Part Number	Crimp Tool Replacement Part
0426-209-0000	Adjustment screw and locking nut
M2700-395-10	Locking nut

Part Number	Description
G454	HDT-48-00 Go-No-Go Gauge

helpful hint

Go-no-go gauges are used to inspect crimp tooling. The G454 gauge is used with the HDT-48-00 hand tool.



HAND TOOLS FOR DEUTSCH STAMPED & FORMED CONTACTS

DTT-12-00

DTT-12-01

DTT-16-00
DTT-16-01
DTT-20-00
DTT-20-02

Contact Size	Contact Part Number	Tool Part Number
12	1060-12-01** 1062-12-01**	DTT-12-00
	1060-12-02** 1062-12-02**	DTT-12-01
16	1060-16-01** 1062-16-01** 1060-16-06** 1062-16-06**	DTT-16-00 (14-16 AWG)
		DTT-16-01 (18 AWG)
20	1060-20-01** 1062-20-01**	DTT-20-00
	1060-20-02** 1062-20-02**	DTT-20-02

DEUTSCH TOOLING HAND TOOL

MULTI-USE REMOVAL TOOL

Part Number	Description
DT-RT1	Multi-use tool with a small hook on one end for wedgelock removal, and a small screwdriver on the other end to push back the locking fingers and release the contact. For use with the DT, DTM, DTP, DTV, DRB, and STRIKE series.

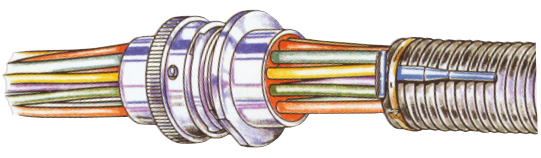
REMOVAL TOOLS

DEUTSCH removal tools are designed to simplify contact removal and field service repair in connectors that utilize a round shoulder contact retention system. Removal tools are compact, easy-to-use, and manufactured of heavy duty plastic to remove contacts without damage to the wire, insulation, connector seals, or connector body. The removal tools are required for wire removal in the DTHD, Jiffy Splices, HD10, HDP20, HD30, DRC, AEC, and WT series.

Part Number	Contact Size	Wire Gauge Range	Color
0411-027-0405	Size 4	4 AWG	Black
114009	Size 4	6 AWG	White
114008	Size 8	8-10 AWG	Green
0411-353-0805	Size 8 for HD Box	8-10 AWG	Green Extended
114010	Size 12	12 AWG	Yellow
0411-337-1205	Size 12	12-14 AWG Extra Thin Wall (E-Seal)	Orange
0411-291-1405	Size 16	14-16 AWG	Green
0411-310-1605	Size 16	16-20 AWG	Light Blue
0411-336-1605	Size 16	16-18 AWG Extra Thin Wall (E-Seal)	Dark Blue
0411-240-2005	Size 20	20-22 AWG	Red

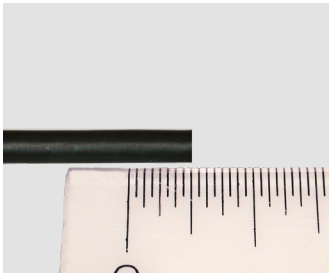
helpful hint

A contact removal tool taped or tie wrapped to the harness will make it easily available, should repairs be needed.



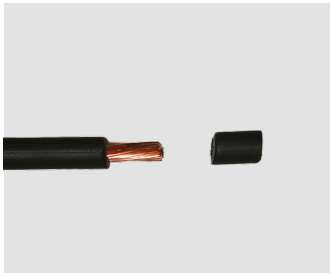
DEUTSCH TOOLING HOW-TO INSTRUCTIONS

WIRE STRIPPING



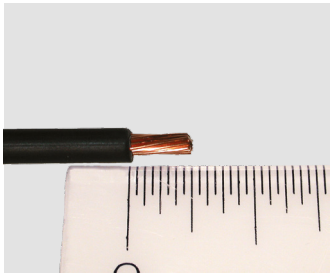
Step 1:

1. Choose the correct AWG for the contact being used.
2. Measure from the end of the wire the recommended strip length according to the contact size.
3. Place the wire into a stripping tool at the recommended strip length. Strip the wire according to stripping tool instructions.



Step 2:

1. After stripping, a small piece of the insulation should come off.
2. Check for any broken strands or for a dent in the wire. If either exist, the wire is damaged and should be cut and stripped again.

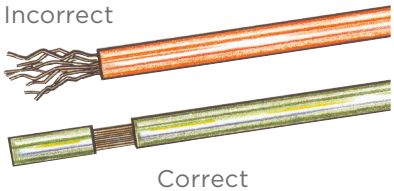


Step 3:
Measure the exposed strands to be sure the crimp length is correct.

helpful hint

Leaving the stripped portion of the insulation on the wire until crimping will avoid flayed wire strands.

Incorrect



Correct

CRIMPING WITH THE HDT-48-00 HAND TOOL

Step 1:

1. Strip insulation from wire.
2. Raise selector knob and rotate until arrow is aligned with wire size to be crimped.
3. Loosen locknut, turn adjusting screw in until it stops.

Step 2:
Insert contact with barrel up. Turn adjusting screw counterclockwise until contact is flush with indentor cover. Tighten locknut.

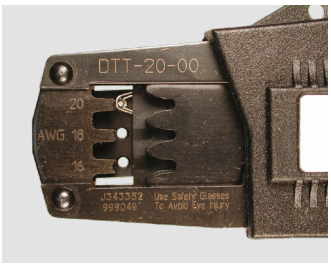
Step 3:

1. Insert wire into contact. Contact must be centered between indentors. Close handles until crimp cycle is completed.
2. Release handles and remove crimped contact.

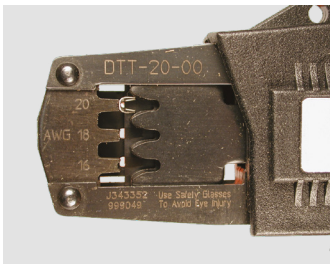
Note: Tool must be adjusted for each type/size of contact.

DEUTSCH TOOLING HOW-TO INSTRUCTIONS

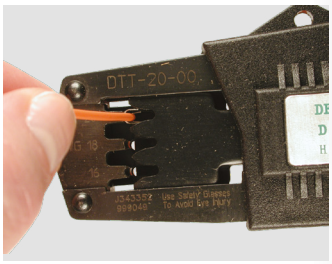
CRIMPING WITH DTT STYLE HAND TOOLS (SIZE 16 & 20)



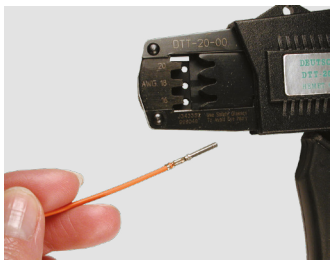
Step 1:
Cycle the hand tool to the open position. Place the contact into the correct die nest.



Step 2:
Partially close the tool until the contact is held in place.



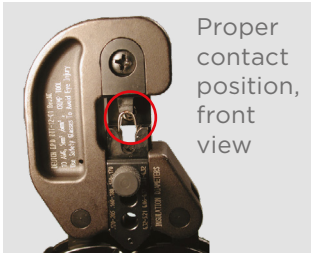
Step 3:
Insert the prestripped wire into the crimp area of the contact.

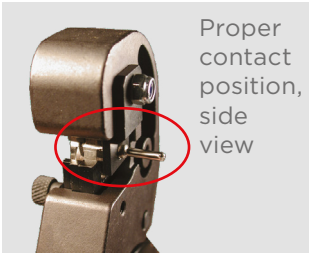


Step 4:
Close the tool until the ratchet releases. The ratchet is released when a loud click is heard and crimp is complete.

DEUTSCH TOOLING HOW-TO INSTRUCTIONS

CRIMPING WITH DTT-12-01 HAND TOOL





Step 1:
Cycle handles to release ratchet and fully open crimp jaws. Pull out insulation selector and push into proper diameter using the chart below.

Step 2:
1. Insert contact into locator. Adjust alignment and width of crimp wings if necessary to help confirm capture by crimp jaws.
2. Insert stripped wire into the contact. Close crimp tool until full-cycle ratchet control releases.

Wire Type	Insulation Selector
10 TXL	.150-.170
10 GXL	.160-.180
10 SXL	.170-.205
5.0 mm^2	.160-.180
6.0 mm^2	.170-.205

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