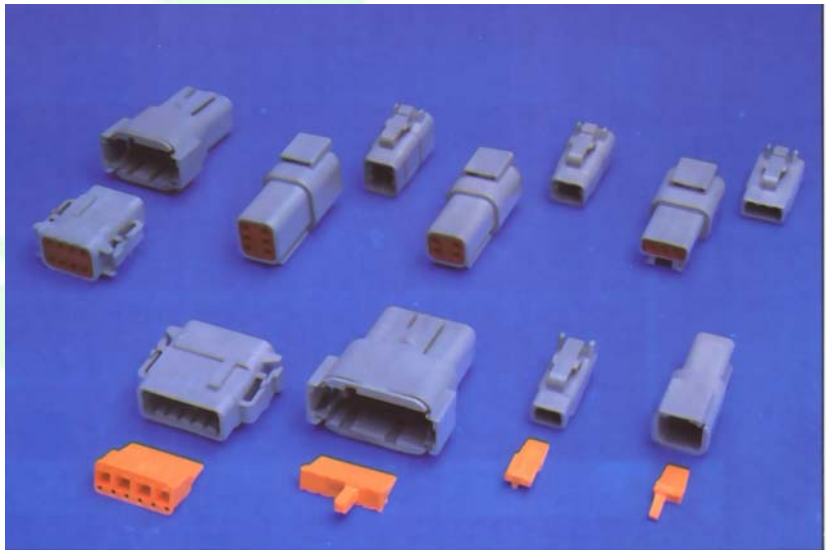


# DEUTSCH

## Industrial Products Division



TRANSPORTATION CONNECTORS  
**DTM SERIES**  
TECHNICAL MANUAL

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*Information contained herein is for reference only.*

*Consult factor for new envelope drawings, updated specifications, and additions to product lines.*



# DTM SERIES

## Features and Benefits

*Environmental  
Miniature  
Transportation  
Connectors*

Deutsch DTM Series of transportation connectors feature a miniature contact with an enhanced design based on the world class, field-proven Deutsch "DT" Series.

The DTM is the connector to be used in harsh environmental applications where reliable signal circuits are critical to operating performance. Typical applications include on or around the engine, the transmission and under the hood. In fact, everywhere data signals or critical electronic circuits go, the field proven Deutsch design of the DTM will provide reliable peak connector performance.

The new series is available in six arrangements, (2, 3, 4, 6, 8, & 12 pin).

The low cost, size 20 contacts terminate AWG 16 to 24 gage wire (0.2mm<sup>2</sup> to 1mm<sup>2</sup>). Closed entry socket (female) contacts featuring spring action fingers are protected by a stainless steel hood. This allows for positive axial alignment while mating and prevents probe damage during testing.

Thermoplastic housings offer a wide operating temperature range (-55° C to +125° C). Silicone rear wire and internal peripheral interface seals allow the DTM to withstand moisture and fluids.

The new DTM offers reliability and performance in a connector that fits everyone's budget.

### Specify Deutsch DTM



# DEUTSCH

**INDUSTRIAL PRODUCTS DIVISION**

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<http://www.deutschipd.com>



*DTM 2 pin receptacle with - E003 Endcap Modification  
DTM 2 pin plug with - E008 Sbrink Boot Adapter Modification*

<b>Features</b>	<b>Benefits</b>
• Integral connector latch	• Tactile and audible assembly feedback
• Rugged thermoplastic housing	• Field proven long service life
• -55° C to +125° C operating temperature	• Engine compartment rated
• Available in 2, 3, 4, 6, 8, & 12 contact arrangements	• Meets most harness design requirements
• Silicone Seals	• Superior environmental seal
• Accepts AWG 16 through 24 (1.0mm <sup>2</sup> to 0.2mm <sup>2</sup> )	• Seals on .053" to .120 dia. (1.35mm to 3.05mm)
• Crimp contacts with option of gold or nickel finish, solid or stamped construction	• Low cost, high reliability terminals for data & signal transmission
• Current rating 7.5 Amps all contacts @ 125° C continuous	• Meets most signal requirements
• Fail-safe secondary locks	• Positive contact retention
• Hand insertable/removable contacts	• No special tools required
• Budget minded	• Low installation costs

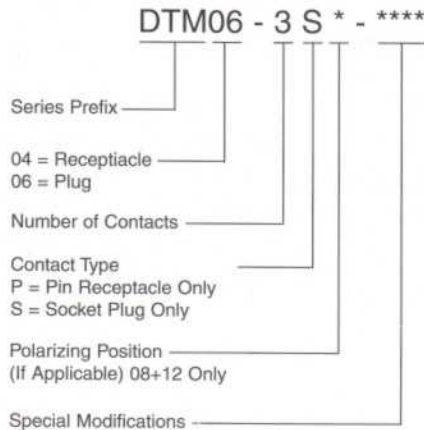
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dtmseries.pdf

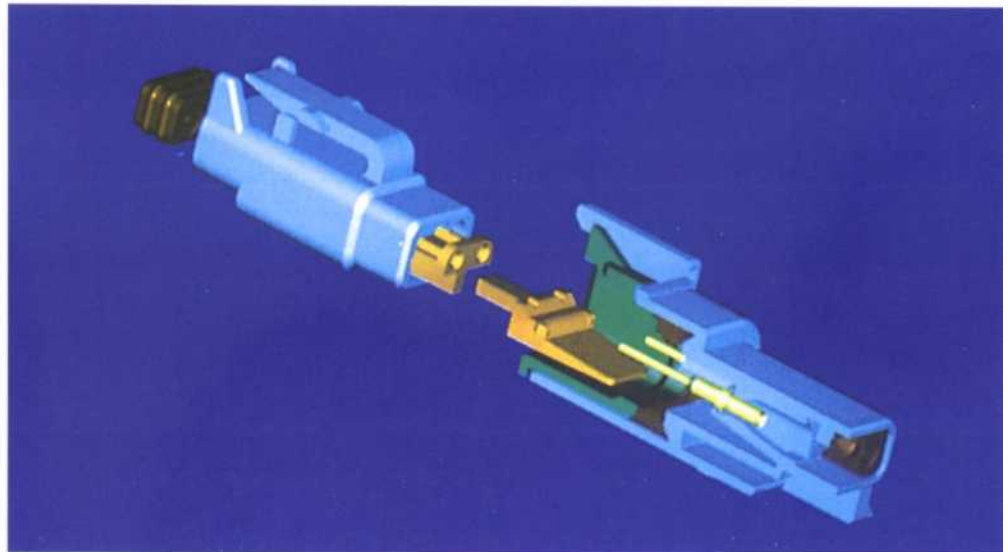


## Ordering Information Connector Part Numbering System



**Examples:**

- E003 - With End Cap Receptacle Only
- E008 - With Shrink Boot Adapter Plug Only



## General Specifications

**Dielectric Withstanding Voltage**  
Sea Level - 1500 VAC (RMS).

**Current Rating**  
20GA. - 7.5 amps continuous

**Silicone Insert**  
Front and rear seals provide water tight sealing.

**Physical Shock**  
No unlocking, unmating or other unsatisfactory result after 50g's in each of the three perpendicular planes.

**Submersion**  
Properly wired and mated connection will withstand immersion under three feet of water without loss of electrical qualities or leakage. Also meets DIN 40050, IP6K9K

**Vibration**  
Maintains continuity and exhibits no mechanical or physical damage after vibration levels of 20g's at 10-2000Hz.

**Temperature**  
Operative at temperatures from -55°C to +125°C at rated current.

**Contact Retention**  
Contacts withstand a minimum load of 20 lbs.

**Thermal Shock**  
No cracking, chipping or leaking after 5 cycles from -55°C to +125°C

**Insulation Resistance**  
1000 megohms minimum at 25°C

**Usable Wire Size**  
No. 20 stamped and formed contacts receive conductor AWG 16 - 20 (1mm<sup>2</sup> to .5mm<sup>2</sup>) wire.

No. 20 solid contact accepts AWG 20-24 (0.5 mm<sup>2</sup> to 0.2 mm<sup>2</sup>).

Rear insert will seal on smooth insulation from .053" to .120" o.d. (1.35mm to 3.5mm o.d.).

**Durability**  
No electrical or mechanical defects after 100 cycles of engagement/disengagement.

### Contact Millivolt Drop

SOLID	WIRE GAUGE	TEXT AMPS	MILLIVOLT DROP*
20	20	7.5 Amps	60
STAMPED & FORMED			
20	20	7.5 Amps	100

\*Less Drop through wire.

## Material Specification

- Housing (Plug & Receptacle) Thermoplastic
- Seals - Silicone Elastomer
- Secondary Locks - Thermoplastic
- Contacts - Copper Alloy, Nickel Plated, Gold Optional

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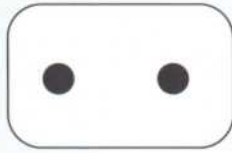




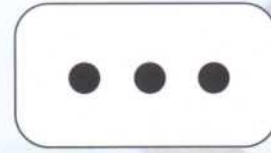
# DTM SERIES

## Contact Arrangements

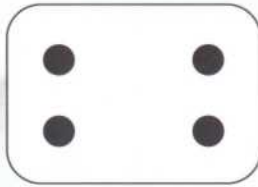
### Contact Arrangements



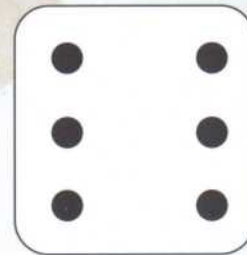
2  
2 SIZE 20



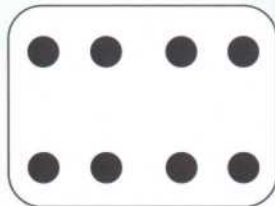
3  
3 SIZE 20



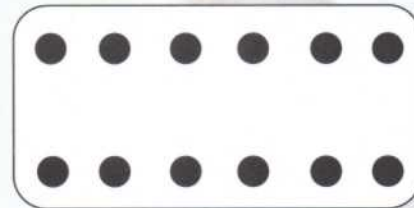
4  
4 SIZE 20



6  
6 SIZE 20



8  
8 SIZE 20



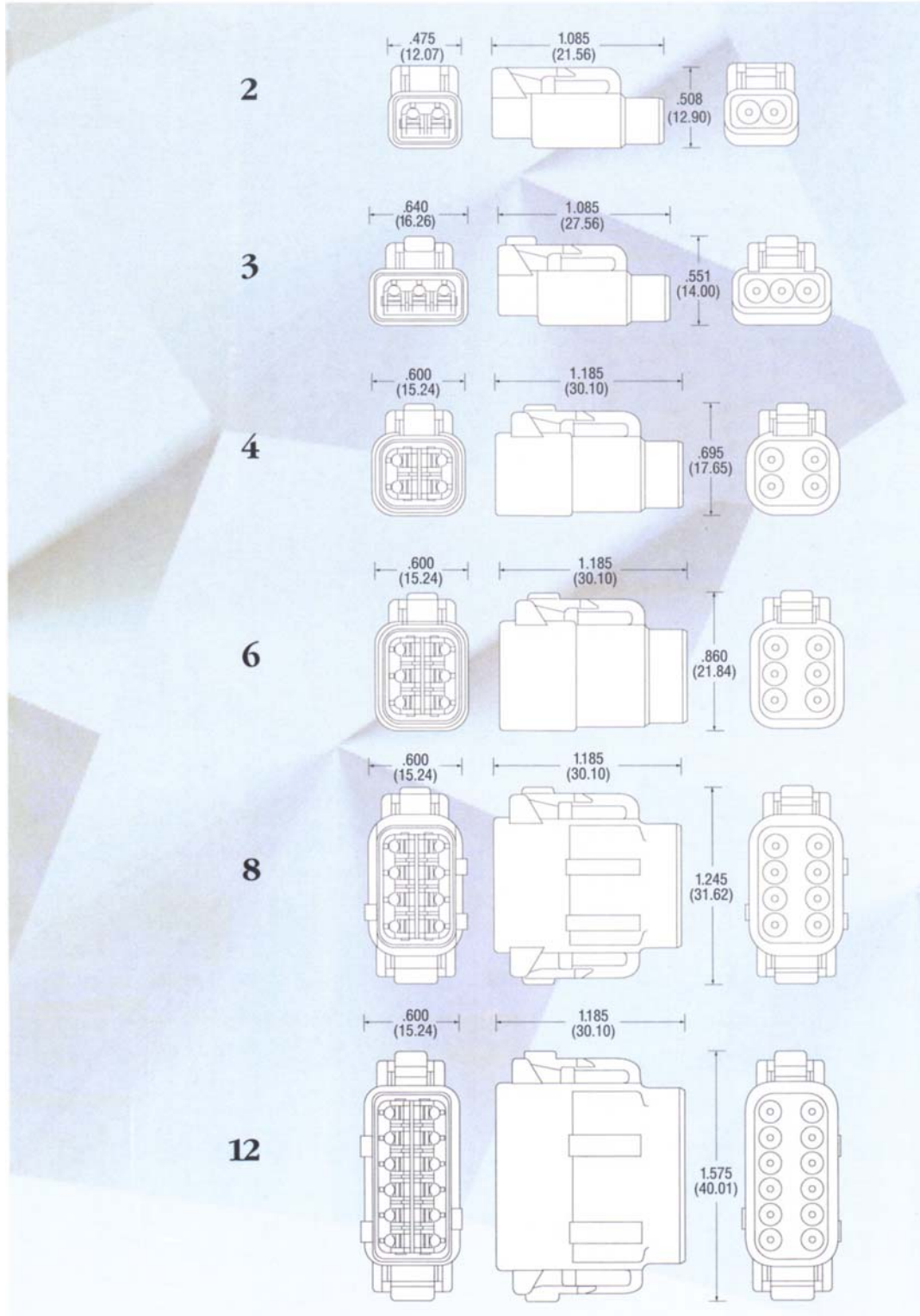
12  
12 SIZE 20

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Number of  
Contacts

Plug  
Cable To Cable

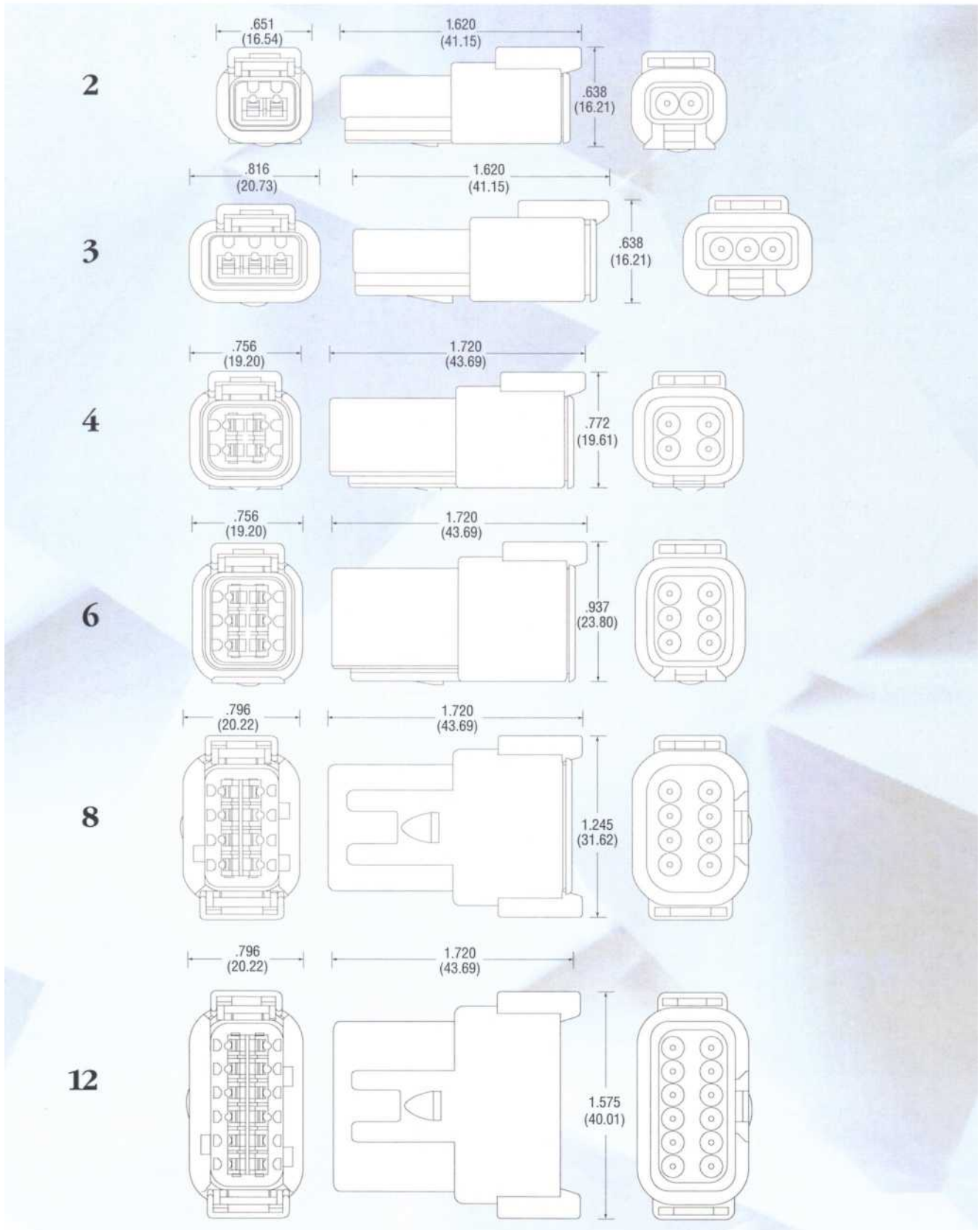


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*Number of  
Contacts*

*Receptacle  
Cable To Cable*

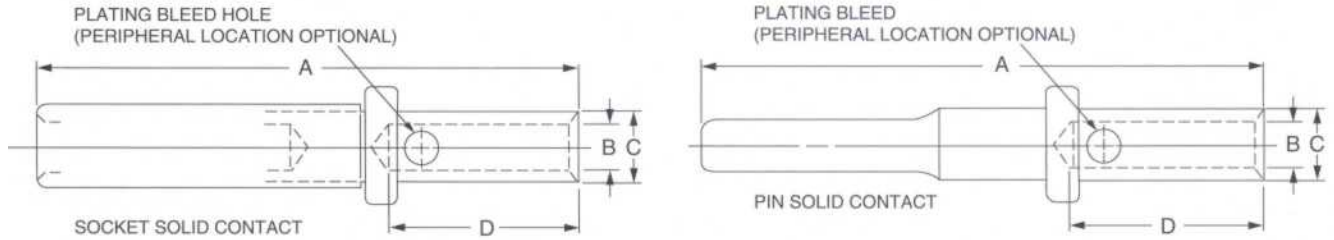


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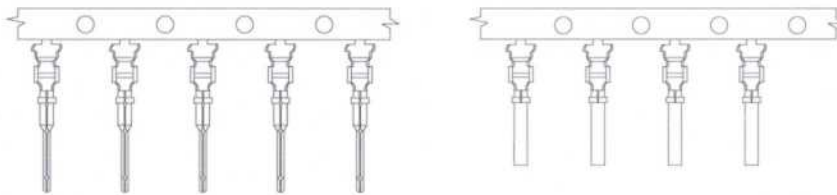
*Contacts*

**Solid - Crimp Type - Nickel Plated\*  
(Bulk)**



CONTACT PART NUMBER	SIZE & TYPE	A MAX	B MIN	C MAX	D MIN	WIRE GAUGE RANGE	RECOMMENDED STRIP LENGTH	HAND CRIMP TOOL	PRODUCTION CRIMP TOOL
0460-202-20141	20 PIN	.720	.043	.078	.157	20 AND 24 (0.5 - 0.2 mm <sup>2</sup> )	.156 - .218 (3.96 - 5.54 mm)		
0462-201-20141	20 SOC.	.656	.048	.078	.157	20 AND 24 (0.5 - 0.2 mm <sup>2</sup> )	.156 - .218 (3.96 - 5.54 mm)	HDT-48-00	HDP-400

**Stamped & Formed - Crimp Type - Nickel Plated\*  
Strip Form (4000 Per Reel)**



STAMPED & FORMED CONTACT PART NUMBER	SIZE & TYPE	WIRE GAUGE RANGE	INSULATION O.D.	RECOMMENDED STRIP LENGTH	HAND CRIMP TOOL	PRODUCTION CRIMP TOOL
1060-20-0122	20 PIN	16, 18 & 20 AWG (1.0 - 0.5 mm <sup>2</sup> )	0.075" - 0.125" (1.90mm - 3.15mm)	.150 - .200 (3.81 - 5.08 mm)	DTT-20-00	DCT 20 - 02 - 00
1062-20-0122	20 SOCKET	16, 18 & 20 AWG (1.0 - 0.5 mm <sup>2</sup> )	0.075" - 0.125" (1.90mm - 3.15mm)			
** 1060-20-0222	20 PIN	16, 18 & 20 AWG (1.0 - 0.5 mm <sup>2</sup> )	0.050" - 0.085" (1.30mm - 2.15mm)			
** 1062-20-0222	20 SOCKET	16, 18 & 20 AWG (1.0 - 0.5 mm <sup>2</sup> )	0.050" - 0.085" (1.30mm - 2.15mm)			

\*Contact factory for optional plating.  
\*\*Consult factory for availability.

*Tooling*

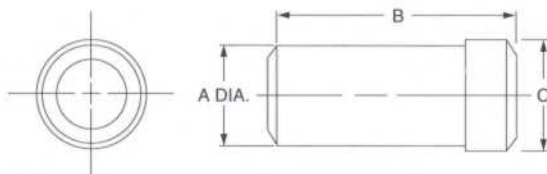


**DTT-20-0\***  
Hand Crimp Tool  
Stamped &  
Formed Contacts



**HDT-48-00**  
Universal Hand  
Crimp Tool  
Eight - Indent,  
Solid Contacts

*Sealing Plug*



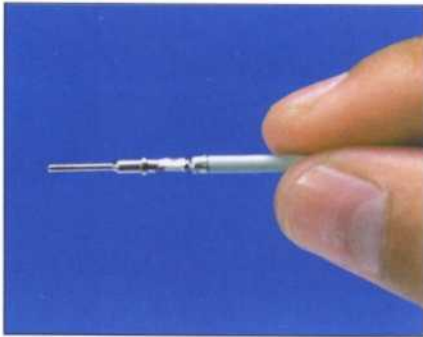
PART NUMBER	CONT. SIZE	A DIA.±.010	B DIM±.030	C DIAM±.015
0413-204-2005	20	.062	.575	.085



Information contained herein is for reference only. Consult factory for new envelope drawings, updated specifications, and additions to product lines.



### Assembly Contact Insertion



1. Grasp crimped contact approximately 1.0" (25.4mm) behind the contact barrel.



2. Hold connector with rear grommet facing you.



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



4. Once all contacts are in place, insert orange wedge: receptacles - with half holes aligning with contacts. Plugs - with contacts aligning behind full holes. The orange wedge will snap into place.

NOTE: The receptacle is shown - use the same procedure for plug.

### Contact Removal



1. Remove orange wedge using needle-nose pliers to pull wedge straight out.



2. To remove the contacts, gently pull wire backwards, while at the same time releasing the locking finger by moving it away from the contact with a screwdriver.



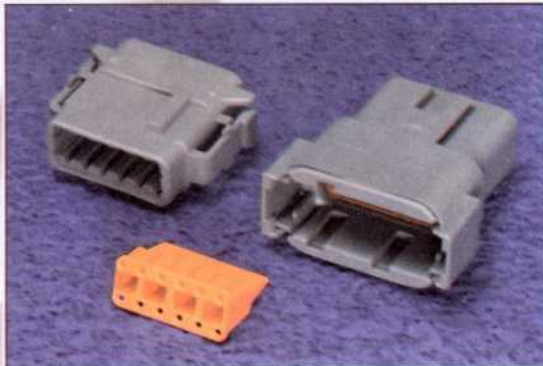
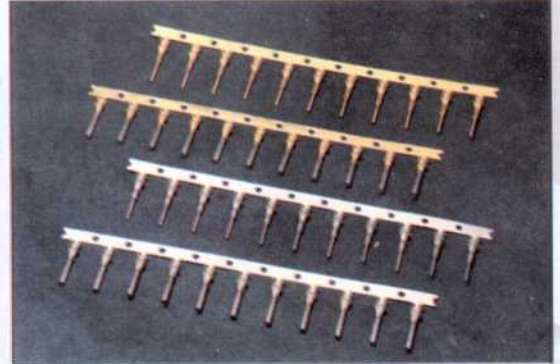
3. Hold the rear seal in place, as removing the contact will displace the seal.



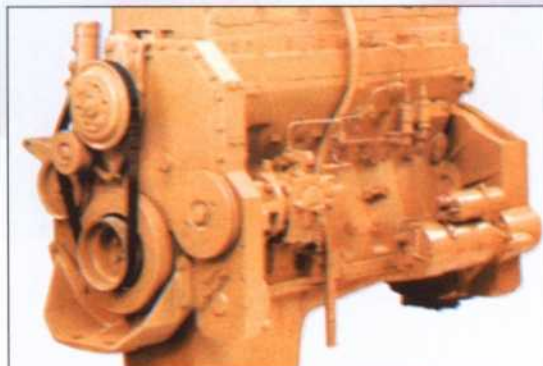
*Field Proven Interconnection Systems*



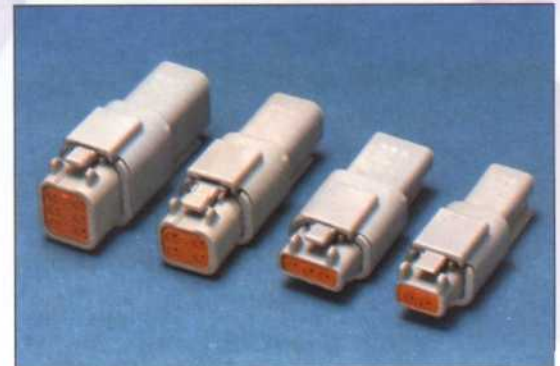
*Electronic Transmission Systems*



*Electronic Hitch Control*



*Electronic Fuel Injected Engines*







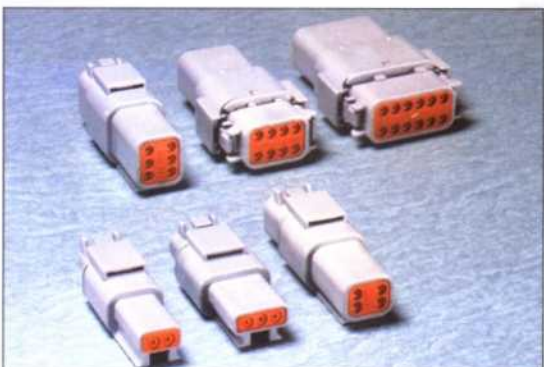
*Refr Systems*



*Generators*



*Light Systems*



# DEUTSCH

## Industrial Products Division

# COMMON CONTACT SYSTEM

### DEUTSCH COMMON CONTACT SYSTEM

Fundamental to the Deutsch connector series is the principle that all wires are terminated by a single contact system. The only variation in contacts is that dictated by wire gauge. The word "common" describes the Deutsch contact system well. Deutsch contacts, whether solid or stamped and formed, can be assembled into the entire Deutsch connector family. Let's look at the common system of contacts, tooling, processes, and terminations in detail:

### COMMON CONTACTS

The basic system uses five contact sizes: 4, 8, 12, 16, & 20. These are the only contacts that an O.E.M. or their supplier need stock no matter what connector is being terminated. Two styles of Deutsch contacts are available - solid crimp types, manufactured by a cold heading process of solid copper alloys. Stamped and formed contacts are manufactured with a series of progressive dies. Both contacts are interchangeable within the connector and are selected based upon the user's application. Stocking costs, engineering costs, and termination costs are all slashed, because the number of evaluations, test procedures, test reports, process standards, drawing notes, etc., are reduced, if not eliminated.

### COMMON TOOLING

Two hand crimp tools are used to crimp the five different sizes of contacts to the wire end. For semi-automation to full automation, one universal crimp tool will crimp the volume required for wire termination.

### COMMON PROCESSING

Using Deutsch contacts means that the way an O.E.M. supplier attaches a wire to its terminus never varies. This procedural standard allows electrical workers to become highly proficient in terminating Deutsch connectors.

### COMMON TERMINATIONS

The selection of Deutsch connectors means that all contact terminations will be the same, thus reducing the chance of errors in the harness system. Performance, reliability, and maintainability are critical to any electrical system. The use of a common contact system eliminates many of the failures reported in harnesses where hundreds of different types of terminations are used. The end result of selecting Deutsch is increased profits and long term performance.



For Regional Information Contact ...

**DEUTSCH**

INDUSTRIAL PRODUCTS DIVISION

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