

# Disconnects for Use in High Vibration Applications (Case 1)

## Applications:

Equipment that produces high vibrations or is in close proximity to sources of high vibration such as:

- Electrical motors
- Air compressors
- Pumps
- Commercial laundry equipment
- Transportation equipment

## Customer Concern:

A manufacturer of commercial vacuum cleaners for coin-operated car washes was having problems with reliability in high vibration environments. This vibration caused disconnects to slip off the male tabs, which caused internal arcing that damaged their controllers, resulting in numerous service complaints for their customers and downtime in the field.

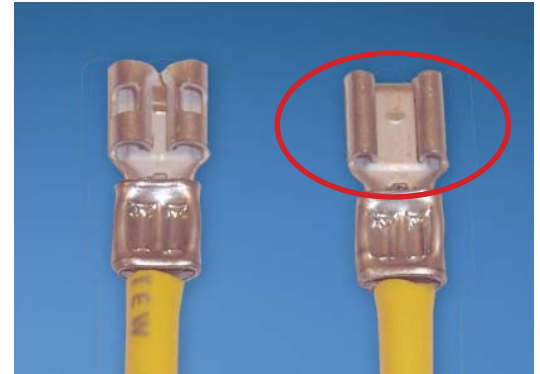
## Panduit Solution:

Insulated and Non-Insulated Vibration Resistant Female Disconnects

Panduit developed vibration resistant female disconnect samples for testing in this application. The solution required a higher disconnect withdrawal force to overcome the failures caused by the high vibration. As seen circled in the images on the right, the samples that passed were designed without the curl slots to increase the retention force between the curls of the female disconnect and the male tab. This increased retention force directly increased the frictional force, which ultimately delivers a higher disconnect withdrawal force. The customer evaluation of the new design showed that none of the vibration resistant female disconnects slipped off the male tabs. Customer downtime as a result of disconnects vibrating off of the male tabs has been eliminated since implementation of this product.

## Application Considerations:

Additional insertion force is required to properly install the vibration resistant female disconnect onto a male tab 12.4 pounds force (lbf) as compared to a standard female disconnect 7.9 lbf. Additional withdrawal force is also required to remove the vibration resistant female disconnect from a male tab 11.3 lbf versus a standard disconnect 9.9 lbf. Customers should determine if the additional force is acceptable in areas where the connection may require removal for maintenance, repair or modifications.



Standard Non-Insulated Female Disconnect on Left with High Vibration Disconnect on Right



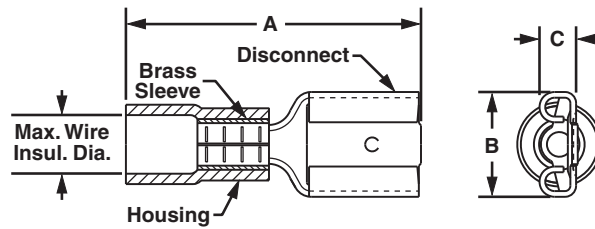
Standard Insulated Female Disconnect on Left with High Vibration Disconnect on Right



Commercial Automobile Vacuum Cleaner Application That Required a Female Disconnect with Increased Retention Force Against High Vibration

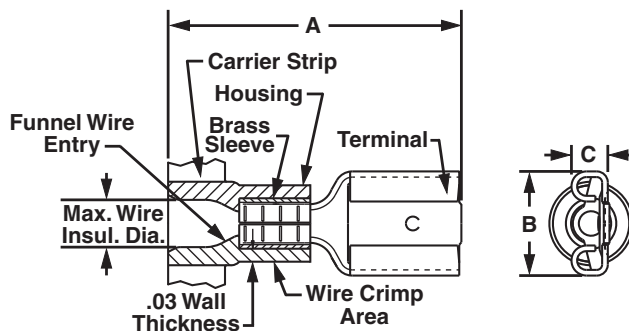
# Disconnects for Use in High Vibration Applications

## Loose Piece



Part Number	Tab Size In. (mm)	Wire Range AWG (mm <sup>2</sup> )	Color	Max. Wire Insul. Dia. In. (mm)	Dimensions In. (mm)			Crimp Tools
					A ±0.03	B ±0.02	C ±0.02	
<b>Non-Insulated</b>								
D10-250C-D	0.250 x .032 (6.4 x 0.8)	12 – 10 (4.0)	—	—	0.72 (18.29)	0.30 (7.62)	0.12 (3.05)	CT-100A, CT-160, CT-200, CT-260, CT-570, CT-1570, CT-2500 w/CT-2570CH
<b>Vinyl Insulated</b>								
DV10-250C-D	0.250 x .032 (6.4 x 0.8)	12 – 10 (4.0)	Yellow	0.229 (5.82)	1.04 (26.42)	0.30 (7.62)	0.12 (3.1)	CT-100A, CT-160, CT-260, CT-460, CT-1550, CT-1551, CT-2500 w/CT-2550CH

## Reel-Fed



**Tool Chart – Recommended Presses:**  
CP-861, CP-871

Part Number	Tab Size In. (mm)	Wire Range AWG (mm <sup>2</sup> )	Color	Max. Wire Insul. Dia. In. (mm)	Dimensions In. (mm)			CA-800/CA9 Applicator Die Inserts
					A ±0.03	B ±0.02	C ±0.02	
DV10-250C-2K	0.250 0.032 (6.4 x 0.8)	14 – 10 (4.0 – 2.5)	Yellow	0.22 (5.6)	0.95 (24.1)	0.29 (7.4)	0.12 (3.1)	CD-800-3 CD9-3B

### Notes:

- 600 V maximum voltage rating for insulated disconnects  
194°F (90°C) maximum temperature rating for insulated disconnects  
302°F (150°C) maximum temperature rating for non-insulated disconnects  
Stranded copper wire only
- Material:
  - Stamping: CDA-260 brass, tin-plated
  - High withdrawal force curl design
  - Housing: Vinyl
- UL 310 Certified
- Dimensions in parenthesis are in mm or mm<sup>2</sup>
- Wire strip length 9/32<sup>+1/32</sup>
- Package qty:
  - 2K = 2000 pcs./reel
  - D = 500 pcs.

### WORLDWIDE SUBSIDIARIES AND SALES OFFICES

PANDUIT CANADA  
Markham, Ontario  
cs-cdn@panduit.com  
Phone: 800.777.3300

PANDUIT EUROPE LTD.  
London, UK  
cs-emea@panduit.com  
Phone: 44.20.8601.7200

PANDUIT SINGAPORE PTE. LTD.  
Republic of Singapore  
cs-ap@panduit.com  
Phone: 65.6305.7575

PANDUIT JAPAN  
Tokyo, Japan  
cs-japan@panduit.com  
Phone: 81.3.6863.6000

PANDUIT LATIN AMERICA  
Guadalajara, Mexico  
cs-la@panduit.com  
Phone: 52.33.3777.6000

PANDUIT AUSTRALIA PTY. LTD.  
Victoria, Australia  
cs-aus@panduit.com  
Phone: 61.3.9794.9020

For a copy of Panduit product warranties, log on to [www.panduit.com/warranty](http://www.panduit.com/warranty)

For more information

Visit us at [www.panduit.com](http://www.panduit.com)

Contact Customer Service by email: [cs@panduit.com](mailto:cs@panduit.com)  
or by phone: 800.777.3300

©2014 Panduit Corp.  
ALL RIGHTS RESERVED.  
TMAN15-WW-ENG  
replaces WW-TMAN01  
1/2014



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.