

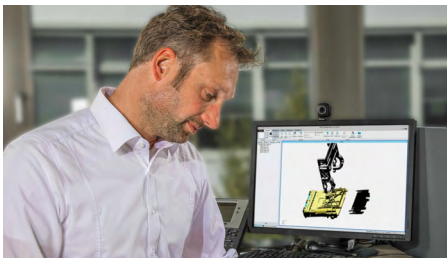


AMPSEAL CONNECTOR SERIES

Terminals and Connectors



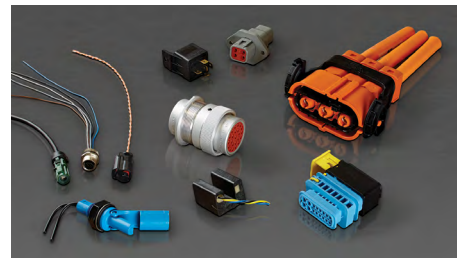
TE Connectivity (TE) Industrial & Commercial Transportation is a reliable provider of solutions for even the harshest environment. With a focus on employee expertise and durable products, we deliver the solutions and support our customers can count on.



**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



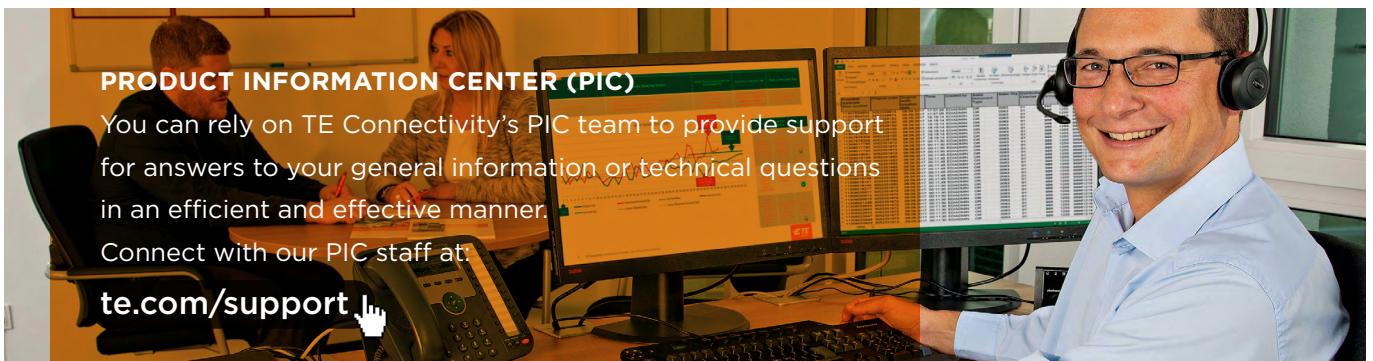
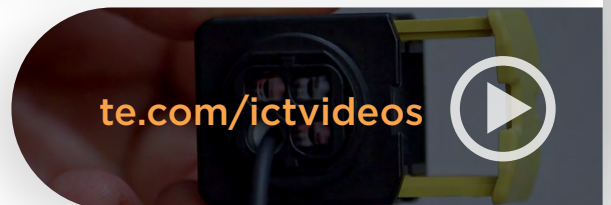
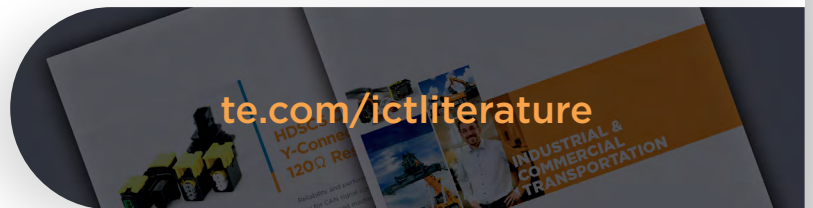
OFF-HIGHWAY



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:

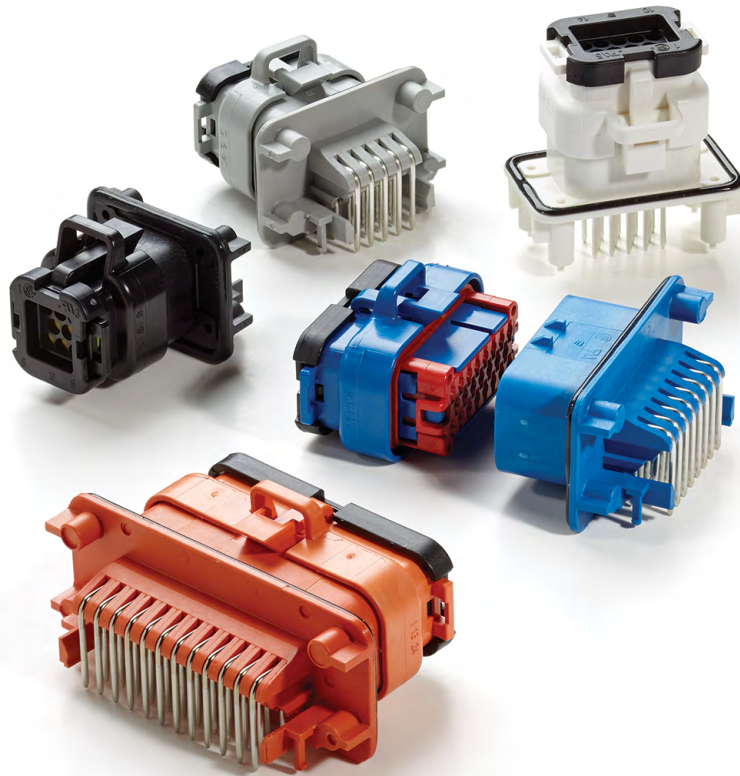


PRODUCT INFORMATION CENTER (PIC)

You can rely on TE Connectivity's PIC team to provide support for answers to your general information or technical questions in an efficient and effective manner.

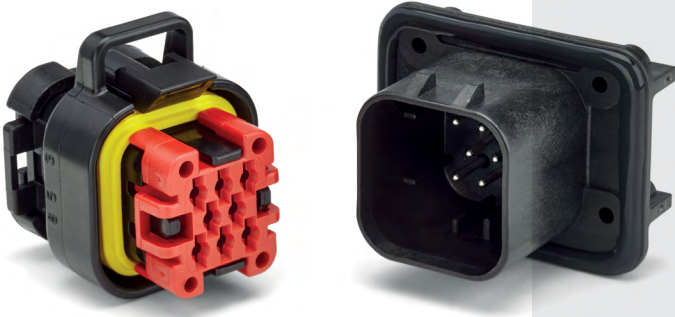
Connect with our PIC staff at:

te.com/support



AMPSEAL CONNECTOR SERIES

Our AMPSEAL connectors are designed for cable-to-board harsh environment applications. Environmentally sealed for rugged reliability, these connectors are available in cable plugs and PCB mount headers engineered to withstand extreme temperature and moisture, including high-temperature underhood applications. The pre-assembled receptacle housing connector features built-in contact sealing and an integral interfacial seal that protects mated connectors. Rated to IP6K9K, AMPSEAL connectors are offered in arrangements from 8 to 35 positions. Available accessories are backshells and sealing plugs.



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AMPSEAL CONNECTOR SERIES

BENEFITS

- Secure positive contact seating through secondary contact locking and lanceless contacts.
- Protect from dust, water, and overspray with up to IP6K9K rugged sealing capabilities.
- Reduce tangling during storage and handling thanks to lanceless receptacle contacts.
- Reduce wire strain with backshells available for all housing sizes.
- Minimize mismatching and misidentification with different connector colors and mechanical polarized keyings.

KEY INDUSTRIES

AMPSEAL products can be utilized in the truck, bus, construction, agriculture, special, marine and two-wheeler vehicle industries.



Truck



Bus



Construction



Agriculture



Special



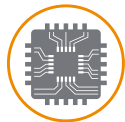
Marine



Two-Wheeler

APPLICATIONS

AMPSEAL products can be utilized in the following applications:



PCB Connections

PRODUCT DOCUMENTATION

Additional product documentation is available for assistance with AMPSEAL products. The following documentation may be helpful:

[108-1329 \(Product Specification, AMPSEAL Connectors\)](#)

[114-16016 \(Application Specification, AMPSEAL Connectors\)](#)



PERFORMANCE SPECIFICATIONS

Current:	Up to 17 A gold, up to 8 A tin
Temperature:	Operating at temperatures -40°C to +125°C for gold plated, -40°C to +105°C for tin plated
Mating Durability:	See note. Mate and unmate specimens for 10 cycles at maximum rate of 600 cycles per hour.
Insulation Resistance:	100 megohms minimum. TE Spec 109-28-4. Test between adjacent contacts of mated specimens.
Immersion:	Leakage current not to exceed 50 micro-amperes at 48 volts DC. TE Spec 109-74-5. Immerse specimens to a depth of 100 mm in 5% Salt water at a temperature of 23 ± 5°C for 1 hour. Check between adjacent circuits and each surface to reference electrode.
Random Vibration:	See note. TE Spec 109-21-7, Condition G, except 10-500 Hz frequency range. Subject mated specimens to 10 Gs for 8 hours each plane.
Voltage:	250 V ac
Flammability:	UL 94-V0-rated material

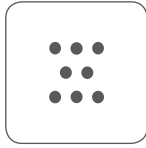
MATERIAL SPECIFICATIONS

Wire Seal:	Silicone rubber
Mating Seal:	Silicone rubber
Cover:	Glass-filled PBT
Locking Wedge:	PBT

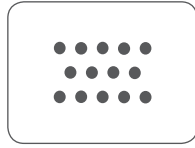
Note: Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 3 of TE product document 108-1329.

AMPSEAL HOUSINGS AND HEADERS

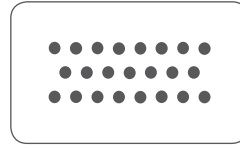
CONFIGURATIONS



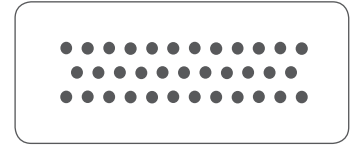
8 Positions
8 size 1.3 mm



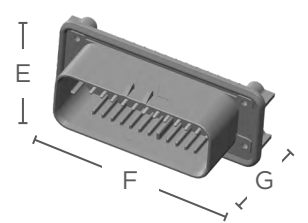
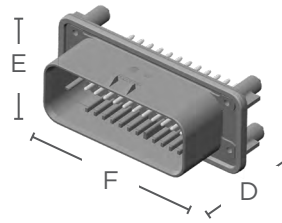
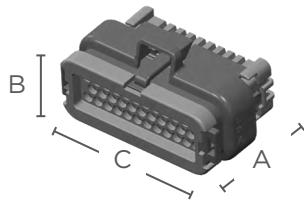
14 Positions
14 size 1.3 mm



23 Positions
23 size 1.3 mm



35 Positions
35 size 1.3 mm



DIMENSIONS

AMPSEAL Receptacle Housing				AMPSEAL Header			
Cavity	Overall Length A	Overall Height B	Overall Width C	Overall Length Straight D	Overall Height E	Overall Width F	Overall Length 90° G
8	1.32 (33.6)	1.36 (34.6)	1.08 (27.4)	1.35 (34.3)	1.26 (32.1)	1.61 (40.8)	1.49 (37.9)
14	1.32 (33.6)	1.36 (34.6)	1.39 (35.4)	1.35 (34.3)	1.26 (32.1)	1.92 (48.8)	1.49 (37.9)
23	1.32 (33.6)	1.36 (34.6)	1.87 (47.4)	1.35 (34.25)	1.26 (32.1)	2.39 (60.8)	1.49 (37.9)
35	1.32 (33.6)	1.36 (34.6)	2.50 (63.4)	1.35 (34.25)	1.26 (32.1)	3.03 (76.9)	1.49 (37.9)

Dimensions are for reference only

AMPSEAL HOUSINGS AND HEADERS

ORDERING INFORMATION

Position	Keyed Housing Color	Contact Finish	Receptacle Housing	Right-Angle PCB Header		Vertical PCB Header	
				Without Seal	With Seal	Without Seal	With Seal
				8	Black	Tin plated	776286-1
		Gold plated	1-776279-1	1-776280-1	1-776275-1	1-776276-1	
	Natural	Tin plated	776286-2	776279-2	776280-2	776275-2	776276-2
				Gold plated	1-776279-2	1-776280-2	1-776275-2
14	Black	Tin plated	776273-1	776266-1	776267-1	776261-1	776262-1
					Gold plated	1-776266-1	1-776267-1
	Natural	Tin plated	776273-2	776266-2	776267-2	776261-2	776262-2
					Gold plated	1-776266-2	1-776267-2
	Gray	Tin plated	776273-4	776266-4	776267-4	776261-4	776262-4
					Gold plated	1-776266-4	1-776267-4
	Blue	Tin plated	776273-5	776266-5	776267-5	776261-5	776262-5
					Gold plated	1-776266-5	1-776267-5
23	Black	Tin plated	770680-1	770669-1	776087-1	776200-1	776228-1
					Gold plated	1-770669-1	1-776087-1
	Natural	Tin plated	770680-2	770669-2	776087-2	776200-2	776228-2
					Gold plated	1-770669-2	1-776087-2
	Gray	Tin plated	770680-4	770669-4	776087-4	776200-4	776228-4
					Gold plated	1-770669-4	1-776087-4
	Blue	Tin plated	770680-5	770669-5	776087-5	776200-5	776228-5
					Gold plated	1-770669-5	1-776087-5
35	Black	Tin plated	776164-1	776180-1	776163-1	776230-1	776231-1
					Gold plated	1-776180-1	1-776163-1
	Natural	Tin plated	776164-2	776180-2	776163-2	776230-2	776231-2
					Gold plated	1-776180-2	1-776163-2
	Gray	Tin plated	776164-4	776180-4	776163-4	776230-4	776231-4
					Gold plated	1-776180-4	1-776163-4
	Blue	Tin plated	776164-5	776180-5	776163-5	776230-5	776231-5
					Gold plated	1-776180-5	1-776163-5
	Orange	Gold plated	776164-6	1-776180-6	1-776163-6	-	1-776231-6

AMPSEAL 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	Standard Seal
1.3 mm 16-20 AWG (1.5-0.5 mm ²)	.067-.106 (1.7-2.7)

AMPSEAL ACCESSORIES

The accessory items available to complement the AMPSEAL connectors, are backshells and sealing plugs.

BACKSHELLS

AMPSEAL backshells offer a high level of protection and help reduce wire strain. They are made of heavy-duty thermoplastic and provide enhanced aesthetics for AMPSEAL connector applications.



	Part Number	Description
8	2138529-1 (one half, two halves required per receptacle housing)	Vertical, sealed receptacle housing wire relief (a wire tie is recommended around the end of the backshell to aid in securing the halves together)
14	2138530-1 (one half, two halves required per receptacle housing)	
23	776464-1 (one half, two halves required per receptacle housing)	Vertical, sealed receptacle housing wire relief (accepts no. 4 self-tapping screw)
35	776463-1 (one half, two halves required per receptacle housing)	

SEALING PLUGS

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



Color	Part Number	Contact Size	Wire Gauge Range	Material
White	770678-1	1.3 mm	16-20 AWG	Nylon

AMPSEAL CONTACTS

The AMPSEAL connectors commonly use the 1.3 mm three contact beam lanceless stamped & formed contact system.

1.3 MM CONTACT PERFORMANCE SPECIFICATIONS

Durability

10 cycles (tin & gold)

Current Rating

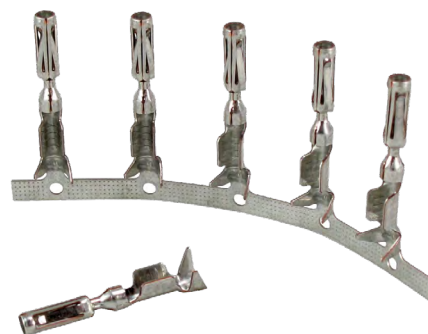
Contact Size	Max Current
1.3 mm (tin)	Up to 8 A
1.3 mm (gold)	Up to 17 A

Contact Retention

Contact Size	Min. Load
1.3 mm	Apply an axial load of 115 N to contacts in the axial direction with Wedge Lock in locked position. Contacts shall not dislodge.

Crimp Tensile Strength

Contact Size	Tensile Strength
1.3 mm	
20 AWG	≥ 80 N
18 AWG	≥ 90 N
16 AWG	≥ 150 N



1.3 MM STAMPED AND FORMED CONTACTS FOR AMPSEAL

Size	Receptacle Part Numbers				Wire Size AWG (mm2)	Insulation Diameter (mm)	Finish
	Strip Form	Package Quantity	Loose Piece	Package Quantity			
1.3 mm	770520-1	5000	770854-1	1000	16-20 (1.5-0.5)	.067-.106 (1.7-2.7)	Pre-tin plated
	770520-3	5000	770854-3	1000			Selective gold plated

AMPSEAL CONNECTORS

TOOLING

Tools are specific to each contact style. To create a proper crimp and achieve the highest performance specifications, contacts must be crimped with the recommended tooling.



HAND TOOLS FOR 1.3 MM CONTACTS



PRO-CRIMPER III CERTI-CRIMP II

Receptacle Strip Form	Receptacle Loose Piece	Tool P/N	Description
770520-1 770520-3	770854-1 770854-3	58529-1	PRO-CRIMPER III hand tool and die set assembly
		2217748-1	CERTI-CRIMP II straight action hand tool

Note: Base PRO-CRIMPER III tool part number with -2 suffix is the part number for the die set, which can be ordered separately

AUTOMATED TOOLING FOR 1.3 MM CONTACTS



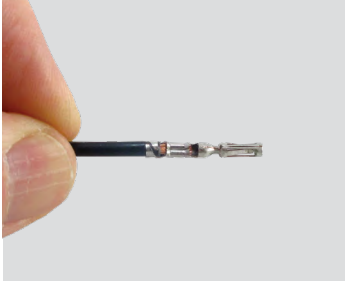
Receptacle Strip Form	Applicator P/N	Description
770520-1 770520-3	2151376-1	OCEAN end feed applicator with mechanical feed
	2151376-2	OCEAN end feed applicator with pneumatic feed

Note: Applicators with additional feed styles are available, contact your representative

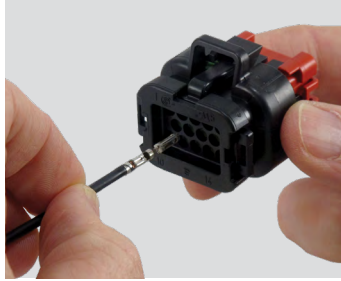
AMPSEAL CONNECTORS

HOW-TO INSTRUCTIONS

CONTACT INSERTION



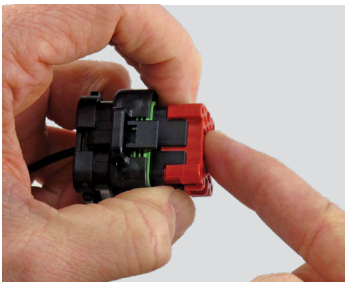
Step 1:
Grasp crimped contact approximately one inch behind the contact barrel.



Step 2:
Check that the wedgelock of the plug assembly is in open position. Align the contact with the applicable cavity.



Step 3:
Insert the contact into the connector cavity until there is an audible and tactile click. A slight tug will verify the contact is locked in place.



Step 4:
After all the contacts have been inserted, close the wedgelock by simultaneously squeezing locking latches inward and pushing the wedgelock into the housing.

Note

AMPSEAL connector grommet is solid until pierced.

CONTACT REMOVAL



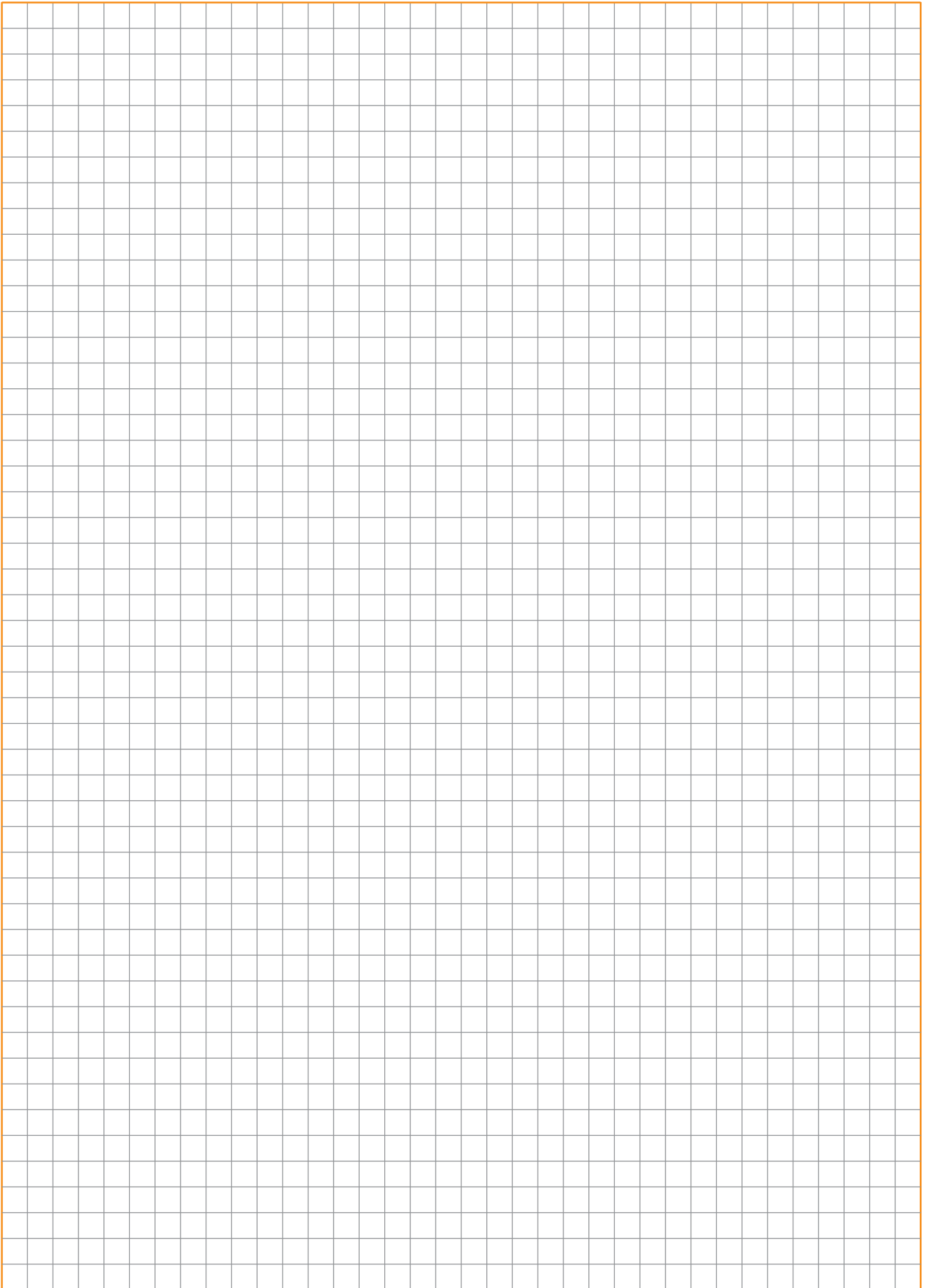
Step 1:
Insert the tip of a screwdriver (2-5 mm wide blade) between the edge of the plug assembly housing and one corner of the wedgelock.

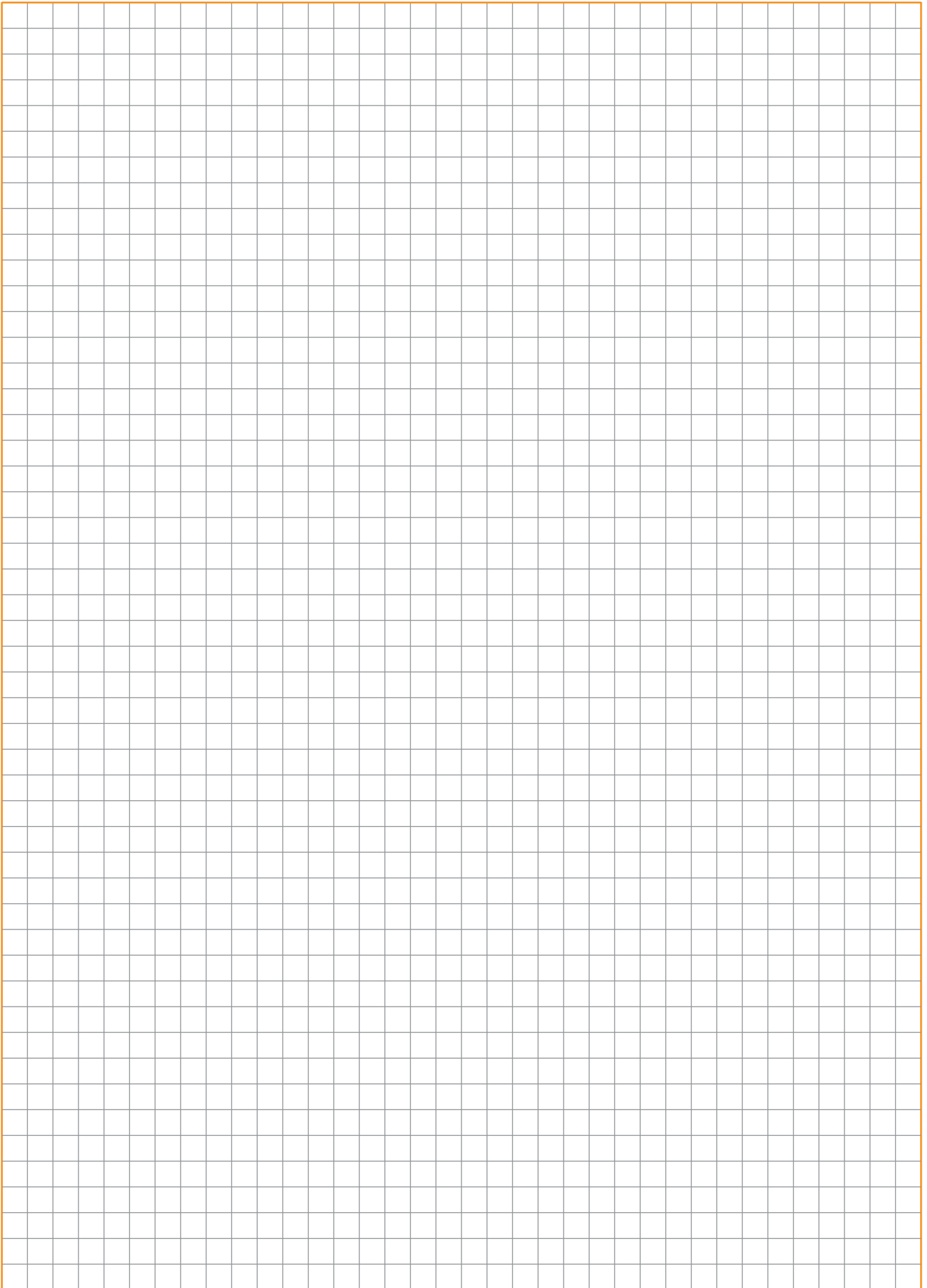


Step 2:
Gently pry the edge of the wedgelock until it is released from (but not completely removed) the housing. Repeat these steps for the opposite corner of the wedge.



Step 3:
Gently pull the wire of the contact to be removed while rotating the wire (a quarter turn each direction) back and forth until the contact is removed from the housing.





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1-1773979-2 06/19

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