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INTERNATIONAL

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# GPH<sup>®</sup>

## SHEAR BOLT CONNECTORS AND CABLE LUGS

COMPACT DESIGN • OPTIMUM PERFORMANCE



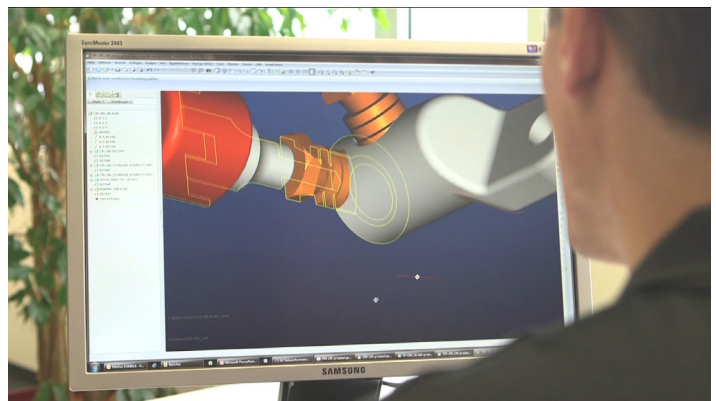
**Nexans**  
BRINGS ENERGY TO LIFE

## **GPH® Connection technology – Quality made in Germany for more than 60 years**

Nexans Power Accessories is the leading innovator, manufacturer and distributor of low, medium and high voltage accessories as well as connection technology for energy transmission and distribution networks.

Beside the standard product range of GPH® shear bolt connectors, Nexans is doing customized solutions for different applications – all tested according to the relevant standards. Nexans also develops and manufactures ready-to-install pre-assembled cable lengths and customized factory tested cable bridges. An extensive range of additional equipment and a variety of dedicated installation training and tooling make Nexans a strong partner in the transmission and distribution of energy.

Nexans Power Accessories have set industrial standards and shaped European norms. Quality and environmental awareness are central components of the corporate philosophy and management system. In addition to being certified according to DIN EN ISO 9001, we are also certified in the important sectors of environmental protection, energy and occupational safety.



## Distinctive features to compression products

### Fewer connector types cover the most cross-sections

GPH® shear bolt connectors are made of high-strength aluminum alloy with tin-plated surface. They allow the safe connection of copper and aluminum conductors of all designs and cross-sections of #16 AWG up to 2,000 kcmil.

### Reliable and tested for safety

GPH® mechanical connection technology clamps all conductors with an optimum contact force. The design is tested according to ANSI 119.4 as well as IEC 61238-1 class A and provides the highest contact quality for a maximum lifetime of the application.

### Special conductor channel

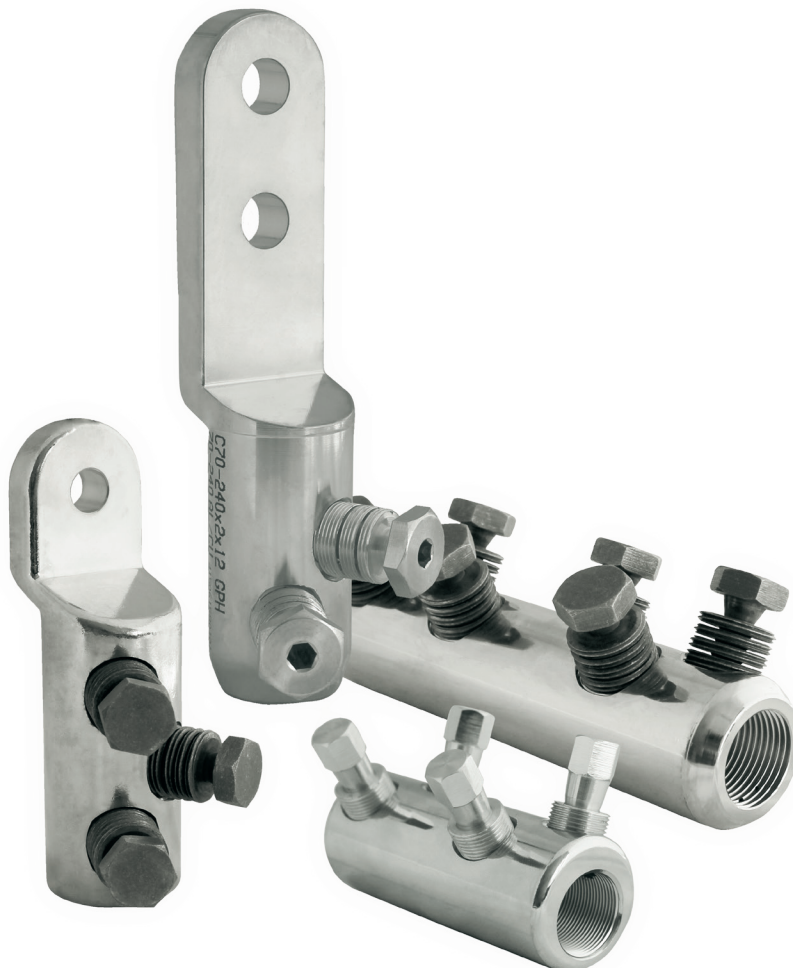
The special conductor channel allows the installation of all common, compressed and compacted conductors.

### Simple installation – best performance

With only one tool, our shear bolt connectors can be installed with an approved impact wrench or alternatively by hand.

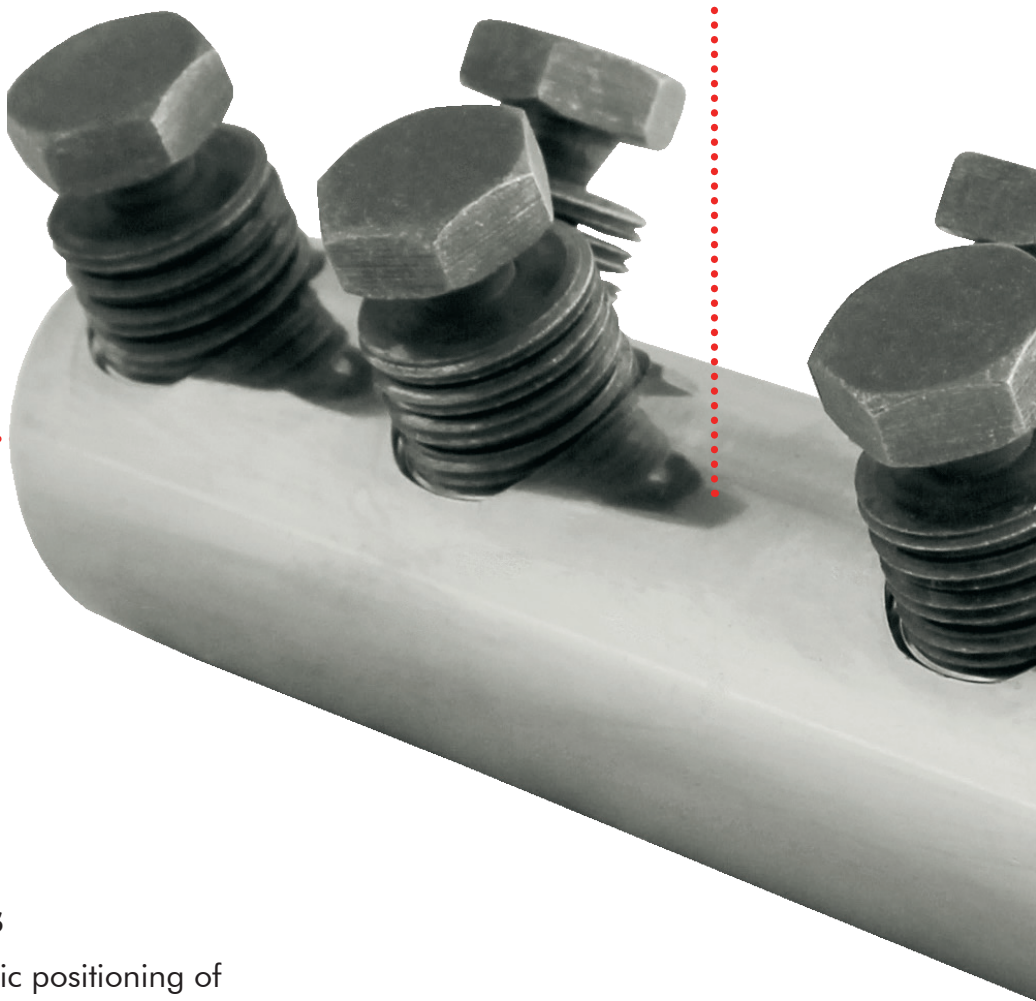
### One stop shop

From one source we offer for your applications reliable and economic power accessories and kits with components optimally harmonized.



## Oil stop

- Supports proper conductor positioning
- Prevents oil leakage when connecting paper-insulated belted cable with polymeric insulated cables in transition applications



## Centering rings

- Enclosed for the centric positioning of smaller conductors in the conductor channel
- Rings differ in color, assigned to respective conductor types



## Connector body

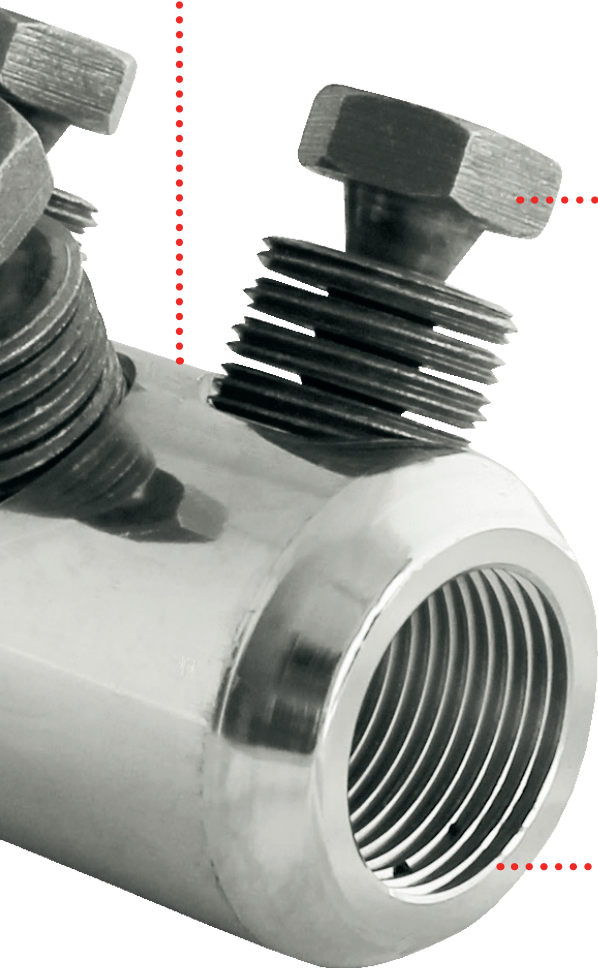
- Allows the range-taking connection of copper and aluminum conductors
- Made of high-strength aluminum alloy
- V-shaped bolt layout for highest contact quality
- Compact size fits to the accessories design for various applications
- Matching cable lugs for all conductor sizes available

## Shear bolts

- GPH® shear bolt system for quick and simple installation with standard tools
- Bolts made of aluminum or tin-plated brass, lubricated with special grease for optimum contact force
- Bolts shear-off at the appropriate torque moment, no torque wrench required

## Transverse grooving

- Rolled thread breaks the oxide layer of aluminum conductors and creates stable contacts
- Ensures high level cross-line conductivity of stranded conductors due to increased current flow from inner to outer strands
- Generates long term contact quality



## **GPH® Shear bolt connectors and cable lugs**

Shear bolt connectors by GPH® are a reliable and efficient way of connecting different conductor cross-sections and conductor materials for 1 kV up to 52 kV. All connectors are available with either Allen shear bolts or outer hexagon shear bolts.

### **Economic benefits & technical advance**

- Connects all common, compressed and compacted copper and aluminum conductors
- Fewer connector types cover the most common cross-sections
- Shear bolt connectors compensate conductor tolerances
- Quick and simple installation with standard tools, no crimping tools required
- Prevents installation mistakes
- Tested acc. to ANSI 119.4, IEC 61238-1 class A
- Wide application range
- Customized solutions, special types and dedicated designs available on request

### **Product range**

#### **Low voltage**

- Standard connectors and cable lugs for copper and aluminum conductors
- For conductor cross-sections from #16 AWG up to 600 kcmil
- Tested acc. to ANSI 119.4, IEC 61238-1 class A
- Up to 0.6/1 kV

#### **High voltage**


- Connectors, cable lugs and contacts for copper and aluminum conductors
- For conductor cross-sections up to 5,000 kcmil
- Tested acc. to IEC 61238-1
- Up to 400 kV

#### **Medium voltage**


- Transition connectors, branch connectors, repair connectors, standard connectors and cable lugs for copper and aluminum conductors
- For conductor cross-sections from #5 AWG up to 2,000 kcmil
- Tested acc. to ANSI 119.4, IEC 61238-1 class A
- Up to 52 kV

# Product Selection Guide


## 4/0-350 AWG-KCMIL AL SV-T-V-K

	Cat. no.	AL - AWG-KCMIL	No. of bolts	Dimensions (inch)				Tool outer hexagon
				L	d	D	b	
	#8-#2 AWG AL SV-T-V-K	#8-#2	2	1.417	0.315	0.630	0.630	AF3/8"
	#2-4/0 AWG AL SV-T-V-K	#2-4/0	2	2.165	0.551	0.984	0.945	AF3/8"
	4/0-350 AWG-KCMIL AL SV-T-V-K	4/0-350	4	3.150	0.748	1.260	1.457	AF3/8"


## M350-750 KCMIL EW

	Cat. no.	AL/CU - AWG-KCMIL	No. of bolts	Dimensions (inch)				Tool outer hexagon
				L	d	D	b	
	M#5-3/0 AWG EW	#5-3/0	2	2.745	0.492	0.945	1.260	AF3/8"
	M#2-300 AWG-KCMIL EW	#2-300	2	3.346	0.610	1.181	1.378	AF3/8"
	M4/0-500 AWG-KCMIL EW	4/0-500	4	4.724	0.787	1.299	2.205	AF1/2"
	M350-750 KCMIL EW	350-750	6	6.693	1.024	1.654	3.228	AF3/4"
	M750-1250 KCMIL EW	750-1250	6	7.874	1.339	2.047	3.701	AF3/4"

## C350-750 x 16 KCMIL EW

	Cat. no.	AL/CU - AWG-KCMIL	No. of bolts	Dimensions (inch)				Tool outer hexagon	Palm hole (inch)
				L	d	D	a		
	C#5-3/0 x 12 AWG EW	#5-3/0	1	2.362	0.492	0.945	1.260	AF3/8"	0.510
	C#2-300 x 12 AWG-KCMIL EW	#2-300	1	3.110	0.610	1.181	1.378	AF3/8"	0.510
	C4/0-500 x 16 AWG-KCMIL EW	4/0-500	2	3.740	0.787	1.299	2.205	AF1/2"	0.670
	C350-750 x 16 KCMIL EW	350-750	3	4.724	1.024	1.654	3.228	AF3/4"	0.670
	C750-1250 x 16 KCMIL EW	750-1250	3	5.118	1.339	2.047	3.701	AF3/4"	0.670

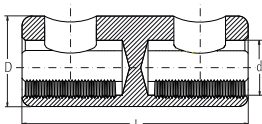
## C4/0-500 x 2 x 16 AWG-KCMIL EW

	Cat. no.	AL/CU - AWG-KCMIL	No. of bolts	Dimensions (inch)				Tool outer hexagon	Palm hole (inch)
				L	d	D	a		
	C#5-3/0 x 2 x 12 AWG EW	#5-3/0	1	2.362	0.492	0.945	1.260	AF3/8"	0.510
	C#2-300 x 2 x 12 AWG-KCMIL EW	#2-300	1	3.110	0.610	1.181	1.378	AF3/8"	0.510
	C4/0-500 x 2 x 16 AWG-KCMIL EW	4/0-500	2	3.740	0.787	1.299	2.205	AF1/2"	0.670
	C350-750 x 2 x 16 KCMIL EW	350-750	3	4.724	1.024	1.654	3.228	AF3/4"	0.670
	C750-1250 x 2 x 16 KCMIL EW	750-1250	3	5.118	1.339	2.047	3.701	AF3/4"	0.670

# Technical Drawings

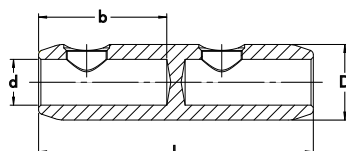
Shear bolt connector  
up to 1 kV  
for Al conductors

**4/0-350  
AWG-KCMIL AL SV-T-V-K**



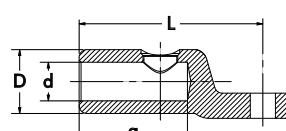
Shear bolt connector  
up to 52 kV  
for Al and Cu conductors

**M350-750  
KCMIL EW**



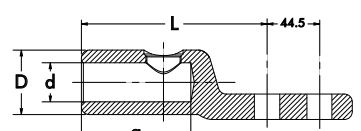
Shear bolt cable lug  
up to 52 kV  
for Al and Cu conductors

**C350-750 x 16  
KCMIL EW**



Shear bolt cable lug NEMA  
up to 52 kV  
for Al and Cu conductors

**C4/0-500 x 2 x 16  
AWG-KCMIL EW**





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