Earthing and Short-circuiting Devices

When working on electrical switchgear, **earthing and short-circuiting devices** are essential components for ensuring user safety and protecting the switchgear. For earthing, and to set up a temporary short-circuit-proof link to parts of the switchgear, you also need tools that meet the highest quality and reliability requirements.
PFISTERER has been developing and producing earthing and short-circuiting devices for decades, and symbolises this kind of quality and reliability. Through an optimised process, we are able to supply the widest variety of types of earthing and short-circuiting devices.

Technical description:

- Earthing and short-circuiting devices for short-circuit currents from 4.9 to 29.6 kA/s
- Copper earthing and short-circuiting cables can be supplied with cross-section from 25 mm^2 to 150 mm^2
- Individual conductors can be replaced by the appropriate connecting cluster
- Optimised protection from damage and atmospheric influences on cable ends
- Components suitable for different types of application
- Components dimensioned for high short-circuit currents

Our earthing and short-circuiting devices are made extensively to IEC 61230 standard, and type-tested on approved test equipment.

Our earthing and short-circuiting devices are available in four basic types:

- **Single-pole** earthing and sort-circuiting device
- **Double-pole** earthing and short-circuiting device with two short-circuiting cables and one earthing cable
- **Three-pole** earthing and short-circuiting device with three short-circuiting cables and one earthing cable
- **Four-pole** earthing and short-circuiting device with four short-circuiting cables and one earthing cable

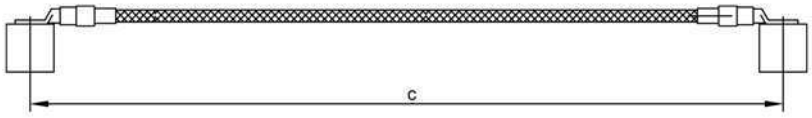
Cross-section of copper conductor	**Extremely reliable short-circuit current I_k indicated in A for a period of**				
mm^2	10 s	5 s	2 s	1 s	≤ 0.5 s
25	1600	2200	3500	4900	7000
35	2200	3100	4900	6900	10000
50	3100	4400	7000	9900	14000
70	4400	6200	9800	13800	19500
95	5900	8400	13200	18700	26500
120	7500	10600	16700	23700	33500
150	9400	13200	20900	29600	42000

A few basic types are shown below, other variants with different cross-sections, terminals and lengths are available on request.

Single-pole Earthing and Short-circuiting Cables

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm² in any length.

The standard conductor lengths are:
Earthing cable: c = 5,000 mm



No.	Version	Cable cross section (mm²)	Max. short circuiting current I_k 1s (kA)
369 201 001	0024	25	4.9
369 201 001	0029	35	6.9
369 201 001	0001	50	9.9
369 201 001	0113	70	13.8
369 201 001	0002	95	18.7
369 201 001	0115	120	23.7
369 201 001	0520	150	29.6

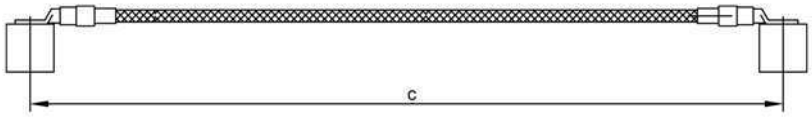
Single-pole Earthing and Short-circuiting Devices Type P3-U3

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm² in any length.

The standard conductor lengths are:
Earthing cable: c = 5000 mm

Possible connections:

Ball pin:	Ø 20 mm
T-Bolt:	Ø 15 mm
Circular conductor:	Ø 20 mm
Flat conductor:	Ø 20 mm



No.	Version	Cable cross section (mm²)	Max. short circuiting current I_k 1s (kA)
369 201 001	1419	25	4.9
369 201 001	0434	35	6.9
369 201 001	0669	50	9.9
369 201 001	0674	70	13.8
369 201 001	0678	95	18.7

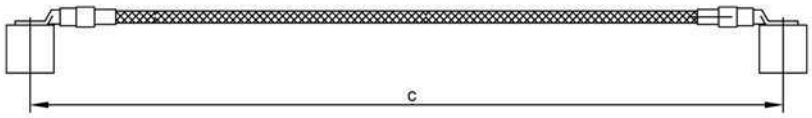
Single-pole Earthing and Short-circuiting Devices Type P5-U5

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm^2 in any length.

The standard conductor lengths are:
Earthing cable: c = 5000 mm

Possible connections:

Ball pin:	Ø 25 mm
T-Bolt:	Ø 20 mm
Circular conductor:	Ø 25 mm
Flat conductor:	Ø 20 mm

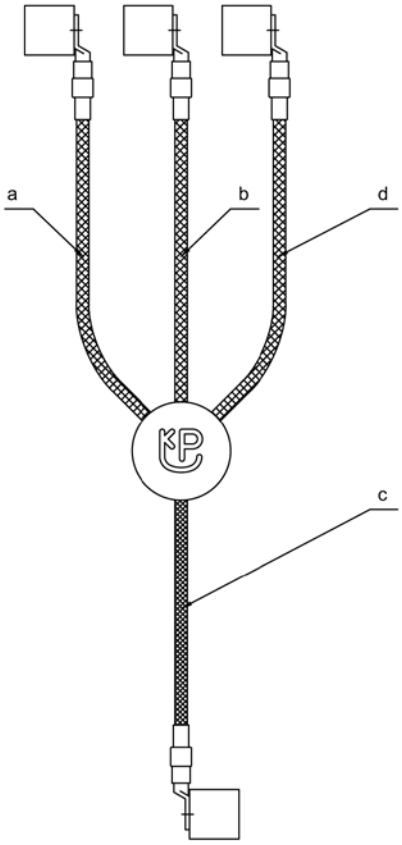


No.	Version	Cable cross section (mm^2)	Max. short circuiting current I_k 1s (kA)
369 201 001	1421	25	4.9
369 201 001	0950	35	6.9
369 201 001	0701	50	9.9
369 201 001	0705	70	13.8
369 201 001	0146	95	18.7
369 201 001	0713	120	23.7

Three-pole Earthing and Short-circuiting Cables

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm^2 in any length.

The standard conductor lengths are:
Short-circuiting cables: a = b = d = 600 mm
Earthing cable: c = 1,500 mm



No.	Version	Cable cross section (mm^2)	Max. short circuiting current I_K 1s (kA)
369 203 001	0062	25 / 25	4.9
369 203 001	1539	35 / 35	6.9
369 203 001	0020	50 / 25	9.9
369 203 001	0066	70 / 35	13.8
369 203 001	0067	95 / 35	18.7
369 203 001	0697	120 / 50	23.7
369 203 001	0700	150 / 50	29.6

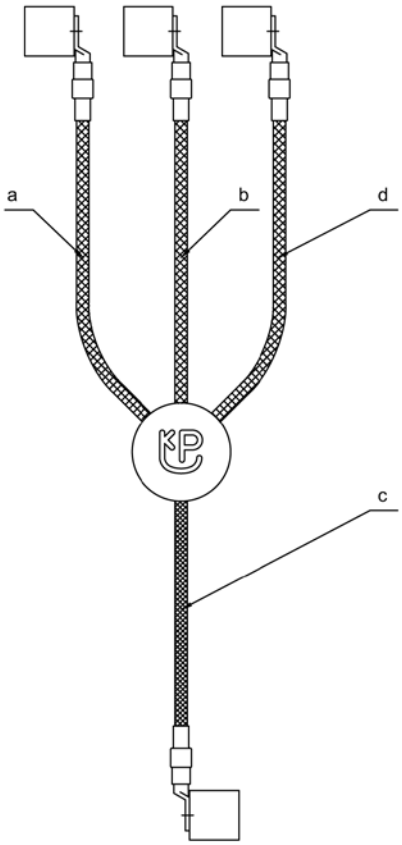
Three-pole Earthing and Short-circuiting Devices Type P3-U3

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm² in any length.

The standard conductor lengths are:
Short-circuiting cables: a = b = d = 600 mm
Earthing cable: c = 1,500 mm

Possible connections:

Ball pin:	Ø 20 mm
T-Bolt:	Ø 15 mm
Circular conductor:	Ø 20 mm
Flat conductor:	Ø 20 mm



No.	Version	Cable cross section (mm²)	Max. short circuiting current I_k 1s (kA)
369 203 001	1245	25 / 25	4.9
369 203 001	0033	35 / 35	6.9
369 203 001	0829	50 / 25	9.9
369 203 001	0334	70 / 35	13.8
369 203 001	0830	95 / 35	18.7

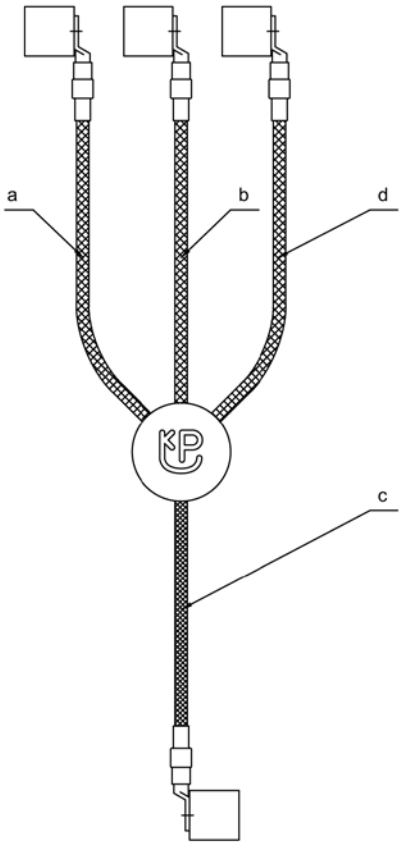
Three-pole Earthing and Short-circuiting Devices Type P5-U5

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm² in any length.

The standard conductor lengths are:
Short-circuiting cables: a = b = d = 600 mm
Earthing cable: c = 1,500 mm

Possible connections:

Ball pin:	Ø 25 mm
T-Bolt:	Ø 20 mm
Circular conductor:	Ø 25 mm
Flat conductor:	Ø 25 mm



No.	Version	Cable cross section (mm²)	Max. short circuiting current I_K 1s (kA)
369 203 001	1251	25 / 25	4.9
369 203 001	1252	35 / 35	6.9
369 203 001	0260	50 / 25	9.9
369 203 001	0080	70 / 35	13.8
369 203 001	0077	95 / 35	18.7
369 203 001	0009	120 / 50	23.7

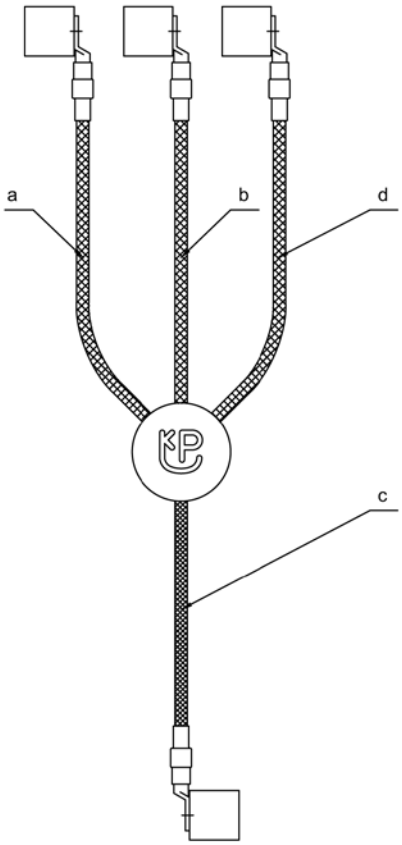
Three-pole Earthing and Short-circuiting Devices Type P2-U5

Utmost flexibility for assembling customer-specific earthing and short-circuiting devices. With a range of more than 25 line and earth clamps, conductor cross-sections are available from 25 to 150 mm^2 in any length.

The standard conductor lengths are:
Short-circuiting cables: a = b = d = 600 mm
Earthing cable: c = 1,500 mm

Possible connections:
Line clamp:
circular conductor: Ø 6-32 mm

Earth clamp:
Ball pin: Ø 25 mm
T-Bolt: Ø 20 mm
Circular conductor: Ø 25 mm
Flat conductor: Ø 25 mm



No.	Version	Cable cross section (mm^2)	Max. short circuiting current I_K 1s (kA)
369 203 001	1253	25 / 25	4.9
369 203 001	1254	35 / 35	6.9
369 203 001	1255	50 / 25	9.9
369 203 001	1256	70 / 35	13.8
369 203 001	1257	95 / 35	18.7
369 203 001	1258	120 / 50	23.7

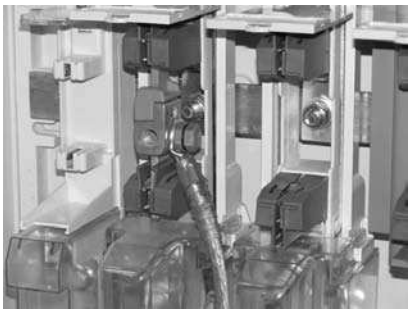
Earth Fittings for Medium Voltage Overhead Lines

This three-pole earthing and short-circuiting device is designed for use on medium voltage overhead lines. The fixed earthing poles allow rapid attachment and removal of the line clamps and also mark the work location.

Technical description:

- Three-pole earthing and short-circuiting device for use on medium voltage overhead lines
- Line clamps P1 are fixed to these earthing poles
- Length of short-circuiting cables: 1.5 m
- Ground wire length: 11 m
- Earth end can be connected to an earthing spike

No.	Version	Cable cross section (mm^2)	Max. short circuiting current I_K 1s (kA)
369 203 001	1036	50	9.9



Earthing and Short-circuiting Devices for Low Voltage

Our low-voltage **earthing and short-circuiting devices** are used in low-voltage overhead lines and low-voltage switchgear, for example in cable distribution cabinets.

All-insulated Earthing and Short-circuiting Devices

This all-insulated earthing and short-circuiting device is designed for use on low voltage overhead lines.

Technical description:

- All-insulated suspension clamps for conductor Ø 314 mm
- Suspension clamp with probe tip and LED indicator for voltage indication
- Earthing and short-circuiting cables in 600 mm wire cable lengths
- Glass-fibre reinforced polyester tubes in 500 and 800 mm tube lengths
- Transparent insulating handles with bending protection
- Insulated screw-type connecting cluster

No.	Cable cross section (mm²)	Max. short-circuit current I_k 1 s (A)	Number of suspension clamps	Length of insulating rods (mm)
360 528 528	25	4900	4	3 x 500 + 1 x 800
360 528 529	25	4900	5	4 x 500 + 1 x 800
360 528 530	25	4900	6	5 x 500 + 1 x 800

All-insulated Earthing and Short-circuiting Devices with Line Clamp P1

This earthing and short-circuiting device is designed for use on low voltage overhead lines with high short-circuit currents.

Technical description:

- Line clamp P1 fixed to handle
- Handle for easy handling

No.	Cable cross section (mm²)	Max. short-circuit current I_k 1 s (A)	Number of suspension clamps
360 528 531	35	6900	5

Earthing and Short-circuiting Devices for Low Voltage Distribution Boards

This earthing and short-circuiting device is designed for use on low-voltage distribution boards, cable distribution cabinets and fuse boxes. It is supplied as a set, consisting of the following components. Different contents available on request.

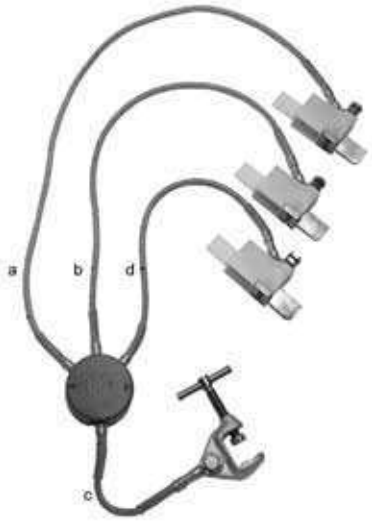
Technical description:

The set is made up of the following parts:

- 2 earthing and short-circuiting devices to standard DIN VDE 0683 Part 100, cable cross-section: 25 mm²
- Cable lengths: a = 300 mm; b = 600 mm; c = 800 mm; d = 1000 mm
- Screw-in thread for earthing cartridges, slotted cable lug for earth clamps
- 2 MP clamps for busbars with flexible handle and 2 spindle settings, 623 695 001
- 6 earthing cartridges for NH size 1 – 3, 364809001
- 1 earthing pole (350 mm) for inserting the earthing cartridges, or attaching the earthing and short-circuiting device
- 3 earthing inserts for DIAZED fuse holders, 623 688 001
- 3 earthign cartridges for NH size 00, 364 754 002
- 1 plastic carrying case with foam lining and user instructions, 364 558 001

No.
364 866 001

Three-pole Earthing and Short-circuiting Devices



With electromagnetic locking.
For low-voltage distributing boards and cable distribution cabinets with LV-HRC fuse rails 500 V, DIN 43 623.

Technical description:

- 3 earthing cartridges with electromagnetic locking (size 1 to 3), 361 337 337
- Earthing and short-circuiting cables with screw-type connecting cluster
- Earth clamp type E2
- Suitable earth handle 364 778 002 has to be ordered separately

No.	Cable cross section (mm²)	Cable length a (mm)	Cable length b (mm)	Cable length d (mm)	Cable length c (mm)	Weight (kg)
360 481 481	25	1000	750	500	250	2.7

Special Earth Fittings

Besides the earthing and short-circuiting fittings for medium and high voltages, PFISTERER also offers **special earth fittings** for special applications.

Discharge Rods

Discharge rods are used for discharging induction and balance voltages from high voltage capacitors.

Technical description:

- Copper hook fixed to glass-fibre reinforced polyester tube, colour yellow
- Earthing cable with cable lug
- Insulation length L_i = 500 mm
- Diameter of insulating element = 24 mm
- Copper hook length = 120 mm
- Copper hook diameter = 8 mm

Other types with other cable cross-sections and lengths are available on request.

No.	Version	Cable cross section (mm²)	Cable length (mm)	Pole length L (mm)
363 800 000	0003	25	2000	1000
363 800 000	0004	25	3000	1500

Earthing Devices for Railway Systems

When working on the overhead lines of electric railways, you need earthing devices that meet the highest quality and reliability requirements.
PFISTERER has been developing and producing earthing devices for railway systems for decades, and symbolises this kind of quality and reliability. Through an optimised process, we are able to supply the widest variety of types of earthing devices.

Technical description:

- Earthing devices for long-distance railways with a.c. or d.c. voltage, for underground railways and trolley lines
- Copper earthing and short-circuiting cables available with cross-sections from 25 mm^2 to 150 mm^2
- Earthing and short-circuiting devices available for profile-free earthing
- Optimised protection from damage and atmospheric influences on cable ends
- Components suitable for various types of application
- Components dimensioned for high short-circuit currents

Railway Earthing Devices for Overhead Lines

This railway earthing device is designed for use on overhead lines. It can be used for contact wire heights from 4.8 to 6.25 m. The use of rail earth clamp R50 allows profile-free earthing, and diesel locomotive operation is then possible in the earthed state.

Technical description:

Depending on type, this railway earthing device is made up of the following components:

- 1 contact wire earth clamp, 361 499 001
- 1 rail earth clamp, 363 322 005
- 1 earthing cable, 8.5 or 12 m long, 362 138 138
- 1 suspension hook, 360 453 453
- 1 telescopic type earthing pole (two-piece), 362 744 744

No.	Description	Length of earthing cable (m)	Profile-free	DB no.	DB drawing number
364 845 001	with telescopic earthing pole 2-piece	8.5	-	00237111	3 Ebgw 01.11
364 845 006	without earthing pole	8.5	-	-	-
364 845 002	with telescopic earthing pole 2-piece and suspension hook for earth wire	12	■	00237112	3 Ebgw 01.11
364 845 005	without earthing pole with suspension hook for earth wire	12	■	-	-

Railway Earthing Devices for Overhead Lines (Automobile Type)

This railway earthing device is designed for mobile use and is suitable for transporting in automobiles and vehicles of the emergency services or fire departments. The use of rail earth clamp R50 allows profile-free earthing, and diesel locomotive operation is then possible in the earthed state. The earthing pole and ratchet can be pulled off to mark the work location.

Technical description:

- Carrying length of the 5-piece earthing pole about 1,100 mm
- Short-circuit-proof Ik = 36.5 kA / 0.12 s

Depending on type, this railway earthing device is made up of the following components:

- 1 plug-in type earthing pole, No. 364 784 001
- 2 rail earth clamps, No. 363 322 005
- 2 contact wire earth clamps, No. 361 499 001
- 2 short-circuiting cables 50 mm², length 8.5 m or 12 m, with red marker flag
- 1 carryingcase for earthing pole, No 364 786 001
- 1 carrying case for 2 earthing sets, No. 364 785 001

No.	Description	Length of earthing cable (m)	Profile-free	DB no.	DB drawing number
364 766 001	with plug-in type earthing pole, 5-piece	8.5	-	00237126	3 Ebgw 01.21
364 766 004	with plug-in type earthing pole, 5-piece	12	■	-	-

Railway Earthing Devices for Railway Power Lines

This railway earthing device is designed for use on railway power lines.

Technical description:

It is made up of the following components:

- 1 Telescopic type earthing pole, two-piece, No. 362 744 001
- 1 Earth clamp U2, No. 361 346 001
- 1 contact wire earth clamp P50, with feeler bow, No. 363 418 003
- 1 short-circuiting cable 50 mm², length 4 m

No.	Length of earthing cable (m)	DB no.	DB drawing number
363 571 571	4	00237107	3 Ebgw 01.23

Railway Earthing Devices for Transformers

This railway earthing device is designed for use on the transformers of overhead line poles.

Technical description:
It is made up of the following components:
- 1 telescopic type earthing pole, 362 744 001
- 2 earth clamps U2, 361 346 001
- 2 line clamps P4, 360 332 001
- 2 short-circuiting cables 50 mm², length 4 m

No.	Length of earthing cable (m)	DB no.	DB drawing number
364 844 001	4	00237124	3 Ebgw 01.16

Railway Earthing Devices for Construction Machines

This railway earthing device is suitable for the protective earthing of construction machines.

Technical description:
It is made up of the following components:
- 1 earth terminal clamp U2, 361 346 001
- 1 rail earthing clamp R50, 363 32 005
- 1 short-circuiting cable 50 mm², length 12 m

No.	Length of earthing cable (m)	DB no.	DB drawing number
364 843 001	12	00237123	3 Ebgw 01.15

Overview Earth Clamps

No.	Type		Max. cross section						Max. short-circuit current	Clamping range	Clamping width	Weight
			(mm²)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ik 1 s (kA)	(mm)	(mm)	(g)
364 811 001	A1		150	-	16	-	-	-	29.6	16	-	656
364 544 002	A2		150	-	16 - 22	-	16 - 22	-	29.6	16 - 22	-	736
360 419 004	E2		70	-	-	-	2 - 30	2 - 30	13.8	2 - 30	-	370
360 416 002	F1		50	-	-	-	-	2 - 20	9.9	2 - 20	-	442
360 628 002	F2		95	-	-	-	-	2 - 22	18.7	2 - 22	-	978
360 414 001	U1		95	20	-	15	5 - 20	2 - 20	18.7	2 - 20	38	720
361 346 001	U2		150	25	-	15	5 - 20	2 - 20	29.6	2 - 20	38	754
364 704 004	U3		95	20	-	15	5 - 20	2 - 20	18.7	2 - 20	38	806
364 704 003	U4		150	25	-	15	5 - 20	2 - 20	29.6	2 - 20	38	836
364 714 002	U5		120	25	-	20	5 - 25	2 - 25	23.7	2 - 25	38	902
361 657 001	M12		150	-	-	-	-	-	29.6	-	-	210
361 658 001	M16		150	-	-	-	-	-	29.6	-	-	210
361 657 002	S12		150	-	-	-	-	-	29.6	-	-	250
361 659 001	S16		150	-	-	-	-	-	29.6	-	-	250

Overview Line Clamps

No.	Type		Max. cross section						Max. short-circuit current	Clamping range	Clamping width	Weight
			(mm²)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ik 1 s (kA)	(mm)	(mm)	(g)
364 904 001	P1		120	-	-	-	4 - 20	-	23.7	4 - 20	48	382
364 903 001	P2		150	-	-	-	6 - 32	-	29.6	6 - 32	57	526
360 330 002	P3		95	20	5 - 20	15	5 - 20	5 - 20	18.7	5 - 20	38	754
360 332 001	P4		120	25	5 - 20	15	5 - 20	5 - 20	23.7	5 - 20	38	782
360 333 002	P5		150	25	5 - 25	20	5 - 25	5 - 20	29.6	5 - 25	50	850
364 309 005	P6		70	-	-	-	4 - 23	4 - 23	13.8	4 - 23	27	440
363 245 006	P7		120	-	-	-	4.5 - 35	4.5 - 35	23.7	4.5 - 35	34	714
364 459 009	P8		150	-	-	-	10 - 85	-	29.6	10 - 85	40	886
360 335 003	P9		95	-	-	-	10 - 32	10 - 32	18.7	10 - 32	38	968
360 329 001	P10		50	-	-	-	5 - 16	5 - 16	9.9	5 - 16	40	722
360 335 004	P11		95	-	-	-	10 - 32	10 - 32	18.7	10 - 32	38	1010
363 091 297	P12		150	-	-	-	-	10 - 25	29.6	10 - 25	40	914

Overview Rail Earth Clamps for Railway Systems

No.	Type	Max. cross section						Max. short-circuit current	Clamping range	Clamping width	Weight
		(mm²)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ik 1 s (kA)	(mm)	(mm)	(g)
363 322 005	R50 	50	-	-	-	-	-	40 (Ik 0.12s)	-	-	2128
364 901 001	R51 	70	-	-	-	-	-	13.8 (Ik 1s)	-	-	5000
364 868 001	R52 	50	-	-	-	-	-	40 (Ik 0.12s)	-	-	858

Overview Contact Wire Earth Clamps for Railway Systems

No.	Type	Max. cross section						Max. short-circuit current	Clamping range	Clamping width	Weight
		(mm²)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ø (mm)	Ik 1 s (kA)	(mm)	(mm)	(g)
363 418 003	P50 	120	-	-	-	4.5 - 35	-	23.7	4.5 - 35	34	814
361 499 001	P51 	50	-	-	-	Ri80 - 150	-	36.5 (Ik 0.12s)	-	30	1070
361 499 499	P52 	50	-	-	-	Ri80 - 150	-	36.5 (Ik 0.12s)	-	30	942
362 947 947	P53 	50	-	-	-	Ri80 - 150	-	23.3 (Ik 0.12s)	-	30	1968

Earth Clamps

PFISTERER offers an extensive range of earth clamps for earthing and short-circuiting devices (see overview). These earth clamps are offered in various types, which are designed for different earth connection variants in indoor and outdoor installations.

Technical description:

- Earth clamps available in clamping ranges from 2 to 25 mm
- Earth clamps available with short-circuit current carrying capacity up to 29.6 kA/1 s
- Compact, robust design
- Easy handling
- Connected to an earthing and short-circuiting device by an M12 screw

Universal Earth Clamps U1

Earth clamp with capstan-head screw for use at various earth connection points.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 414 001	95	18700	2 - 20	38	720

Universal Earth Clamps U2

Earth clamp with capstan-head screw for use at various earth connection points. Suitable for higher short-circuit currents.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
361 346 001	150	29600	2 - 20	38	754

Universal Earth Clamps U3

Earth clamp with handle for use at various earth connection points.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 704 004	95	18700	2 - 20	38	806

Universal Earth Clamps U4

Earth clamp with capstan-head screw for use at various earth connection points.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 704 003	150	29600	2 - 20	38	836

Universal Earth Clamps U5

Earth clamp with handle for use at various earth connection points.

No.	Max. cross section of connected cable	Max. short-cir-cuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 714 002	120	23700	2 - 25	38	902

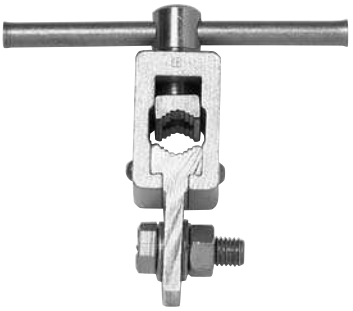
Earth Connection Sockets A1

Earth connection socket with wing screw for connection to a cylindrical earthing bolt.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(g)
364 811 001	150	29600	16	656

Earth Connection Sockets A2

Earth connection socket with capstan-head screw for connection to a cylindrical earthing bolt.



No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(g)
364 544 002	150	29600	16 - 22	736

Earth Clamps E2

Earth clamp with capstan-head screw.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(g)
360 419 004	70	13800	2 - 30	370

Penetrating Earth Clamps F1

Earth clamp with capstan-head screw for use on coated masts. The cupped gripping point and tip are hardened to ensure reliable contact.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(g)
360 416 002	50	9900	2 - 20	442

Gösag Penetrating Earth Clamps F2

Earth clamp with capstan-head screw for use on coated masts. The cupped gripping point and tip are hardened to ensure reliable contact.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(g)
360 628 002	95	18700	2 - 22	978

Compression Cable Lugs with M12 / M16 Wing Nut

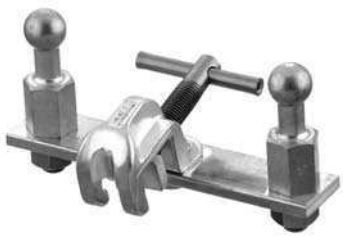
Earth connection through a compression cable lug with wing nut for connection to a thread bolt.

No.	Max. cross section of connected cable	Max. short-circuit current	Thread	Weight
	(mm^2)	I_k 1 s (A)	G	(g)
361 657 001	150	29600	M12	210
361 658 001	150	29600	M16	210

Compression Cable Lugs with S12 / S16 Wing Screw

Earth connection through a compression cable lug with wing screw for threaded connection.

No.	Max. cross section of connected cable	Max. short-circuit current	Thread	Weight
	(mm^2)	I_k 1 s (A)	G	(g)
361 657 002	150	29600	M12	250
361 659 001	150	29600	M16	250



Multi-contact Connection Devices U2

Suitable for connecting to 25 mm ball pins.
The multi-contact connection device consists of copper bar, universal clamp no. 361 346 001, and two 25 mm ball pins no. 360 938 095.

No.	Max. short-circuit current	Short-circuiting bar	Short-circuiting bar thickness	Weight	DB no.	DB drawing number
	I_k 1 s (A)	L x B (mm)	(mm)	(kg)		
363 463 463	29600	200 x 40	6	1.7	00157498	3 Ebgw 01.27

Multi-contact Connection Devices A1

With earth terminal socket A1 and three cylindrical earthing bolts with annular groove. The triple earth connection serves to earth and short circuit three single-pole earthing and short-circuiting cables.
Short-circuiting bar and connecting angle of Cu/Sn, 40 x 8 mm. Total length 195 mm.

No.	Max. short-circuit current	Short-circuiting bar	Short-circuiting bar thickness	Weight
	I_k 1 s (A)	L x B (mm)	(mm)	(kg)
364 900 001	29600	195 x 40	8	1.2

Multi-contact Connection Devices A2

With earth terminal socket A2 and three cylindrical earthing bolts with annular groove. The triple earth connection serves to earth and short circuit three single-pole earthing and short-circuiting cables.
Short-circuiting bar and connecting angle of Cu/Sn, 40 x 8 mm. Total length 195 mm.

No.	Max. short-circuit current	Short-circuiting bar	Short-circuiting bar thickness	Weight
	I_k 1 s (A)	L x B (mm)	(mm)	(kg)
364 899 001	29600	195 x 40	8	1.3

Rail Earthing Clamps

PFISTERER offers a range of rail earthing clamps for railway lines.

Rail Earth Clamps R50

This rail earth clamp is suitable for all rail base gauges. The small overall height (35 mm below the rail base) means there is no need to remove gravel. A separate handle allows easy placing of the clamp and protects the earth wire connection. When tightening the clamp, the annular cutting edge cuts through layers of dirt and oxide, thus ensuring a reliable contact. The counter surface is a hardened metal tip, which is spring-mounted and insulated. The clamp is therefore flame-resistant in the event of a short circuit.

No.	Max. cross section of connected cable	Max. short-circuit current	With ratchet	Weight	DB no.	DB drawing number
	(mm^2)	I_k 0,12 s (A)		(g)		
363 322 005	50	40000	■	2128	00157500	3 Ebgw 01.13
363 322 006	50	40000	-	1706	-	-

Rail Earth Clamps R51

This rail earth clamp is designed as an earthing magnet for use on trolley lines.

No.	Max. cross section of connected cable	Max. short-circuit current	Weight
	(mm^2)	I_k 1 s (A)	(g)
364 901 001	70	13800	5000

Rail Earth Clamps R52

Suitable for grooved rails.

No.	Max. cross section of connected cable	Max. short-circuit current	Weight
	(mm^2)	I_k 0,12 s (A)	(g)
364 868 001	50	40000	858

Line Clamps

PFISTERER offers an extensive range of line clamps for earthing and short-circuiting devices (see overview). Depending on type, these line clamps are designed for connection to overhead lines or in switchgear.

Technical description:

- Line clamps available with clamping ranges from Ø 4 to 85 mm
- Line clamps available with short-circuit current carrying capacity up to 29.6 kA/1s
- Screw jack made of A2 stainless steel ensures reliable contact between terminal and conductor
- Compact, robust design
- Easy handling
- Connected to an earthing and short-circuiting device by an M12 screw

Line Clamps P1 for Overhead Lines

Line clamp for use on overhead lines. The tilting screw jack allows the line clamp to be attached even at places that are difficult to access. This line clamp is distinguished by its particularly easy handling.

Technical description:

- Swivelling spindle with swivel range ±20°
- Base made of AlSi10Mg(Fe)

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 904 001	120	23700	4 - 20	48	382

Line Clamps P2 for Overhead Lines

Line clamp for use on overhead lines. The tilting screw jack allows the line clamp to be attached even at places that are difficult to access. This line clamp is distinguished by its particularly easy handling.
Line clamp P2 has a larger clamping range than line clamp P1, which is similar in design.

Technical description:

- Swivelling spindle with swivel range ±20°
- Base made of AlSi10Mg(Fe)

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 903 001	150	29600	6 - 32	57	526

Universal Line Clamps P3

Universal line clamp for various phase terminal points.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 330 002	95	18700	5 - 20	38	754

Universal Line Clamps P4

Universal line clamp for various phase terminal points.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 332 001	120	23700	5 - 20	38	782

Universal Line Clamps P5

Very short-circuit resistant line clamp for multiple applications.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 333 002	150	29600	5 - 25	50	850

Line Clamps P6 for Overhead Lines

Line clamp for the slanting insert on overhead lines.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 309 005	70	13800	4 - 23	27	440

Line Clamps P7 for High-Voltage Overhead Lines

Line clamp for the slanting insert on high-voltage overhead lines.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
363 245 006	120	23700	4,5 - 35	34	714

High-Voltage Line Clamps P8

Line clamp for connection to Al and Al/St lines, tubes and line contacts.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
364 459 009	150	29600	10 - 85	40	886

Parallel Line Clamps P9

Line clamp for the slanting insert on high-voltage overhead lines. Due to the parallel setting of the clamping jaws, this line clamp is suitable for attaching at high positions, e.g. the cross arms of high-voltage poles.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 335 003	95	18700	10 - 32	38	968

Parallel Line Clamps P10

Line clamp for the slanting insert on high-voltage overhead lines. Due to the parallel setting of the clamping jaws, this line clamp is suitable for attaching at high positions, e.g. the cross arms of high-voltage poles.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 329 001	50	9900	5 - 16	40	722

Parallel Line Clamps P11

Line clamp for the slanting insert on high-voltage overhead lines. Due to the parallel setting of the clamping jaws, this line clamp is suitable for attaching at high positions, e.g. the cross arms of high-voltage poles.
This line clamp is also fitted with a guard stirrup. This can be used to prevent loosened line clamps from falling off.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
360 335 004	95	18700	10 - 32	38	1010

Line Clamps P12 for Blade Contacts

Line clamp for use in all-insulated switchgear in retraction system Type R with blade contact of thickness 10, 16 and 20 mm and bead. The clamping jaws on the line clamp have fine-toothed grooves to ensure secure electrical contact and the best possible mechanical grip.

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)
363 091 297	150	29600	10 - 25	40	914

Current Collector Clamps S100

Technical description:

- With tilting spindle
- For current sampling on overhead lines up to 300 mm^2
- Screw jack with cross-pin for insulating pole 363 810 8xx
- Compact, simple robust design
- Spindle max. tightening torque = 25 Nm
- Conductor max. tightening torque = 6 Nm

No.	Swivel range	Conductor range	Continous current-carrying capacity	Max. cross section of connected cable	Weight
		(mm)	(A)	(mm^2)	(g)
360 328 010	± 20°	4 - 20	144	25	370

Contact Wire Earth Clamps

PFISTERER offers contact wire earth clamps for railway grounding devices. These contact wire earth clamps are designed for connection to various contact wires.

Technical description:

- Contact wire earth clamps for grooved, circular, sectional contact wires and double contact wires
- Jack screw made of A2 stainless steel ensures reliable contact between clamp and contact wire
- Compact, robust design
- Easy handling
- Earthing poles available for attaching all types of contact wire earth clamps

Contact Wire Earth Clamps P50

This contact wire earth clamp has a torsion-free earthing cable terminal at the front. The bow and thrust block are finely grooved to ensure secure electric contact and firm mechanical grip even when the conductors are corroded.

Technical description:

- Conductor range 4.5 – 35 mm
- With feeler bow for verifying absence of voltage to railway-internal specifications

No.	Max. cross section of connected cable	Max. short-circuit current	Clamping range	Clamping width	Weight	DB no.	DB drawing number
	(mm^2)	I_k 1 s (A)	(mm)	(mm)	(g)		
363 418 003	120	23700	4,5 - 35	34	814	00157499	4 Ebgw 01.26

Contact Wire Earth Clamps P51

This contact wire earth clamp is fitted with a flexible spindle and is used for grooved, circular or profile wires.

Technical description:

- With feeler bow for easy insertion into the contact wire
- The spring-mounted thrust block is connected to the M12 connecting screw on the back by means of flexible copper tapes
- 361 499 002 with shortened sensor

No.	Max. cross section of connected cable	Max. short-circuit current	Contact wire	Clamping width	Weight	DB no.	DB drawing number
	(mm^2)	I_k 0,12 s (A)		(mm)	(g)		
361 499 001	50	36500	Ri 80 - 150	30	1070	00157471	3 Ebgw 01.14
361 499 002	50	36500	Ri 80 - 150	30	1010	-	-

Contact Wire Earth Clamps P52

This contact wire earth clamp is fitted with a rigid spindle and is used for grooved, circular or profile wires.

Technical description:

- With feeler bow for easy insertion into the contact wire
- The spring-mounted thrust block is connected to the M12 connecting screw on the back by means of flexible copper tapes

No.	Max. cross section of connected cable	Max. short-circuit current	Contact wire	Clamping width	Weight
	(mm^2)	I_k 0,12 s (A)		(mm)	(g)
361 499 499	50	36500	Ri 80 - 150	30	942

Contact Wire Earth Clamps P53

This contact wire earth clamp is designed for use on double contact wires.

No.	Max. cross section of connected cable	Max. short-circuit current	Contact wire	Clamping width	Weight
	(mm^2)	I_k 0,12 s (A)		(mm)	(g)
362 947 947	50	23300	Ri 80 - 150	30	1968

Earthing and Phase Fixed Points

PFISTERER provides a range of both earthing and phase fixed points.
Special phase fixed points on request.

Maximum installation torque
M10: 33 Nm
M12: 56 Nm
M16: 135 Nm

Ball Pin, Straight, with Outside Thread

According to DIN 48088 Part 1.

Technical description:
Railway authorities licence 4 Ebgw 01.24

- 360 938 095 DB-No. 00 157 503
- 360 938 939 DB-No. 00 157 495
- 360 384 003 DB-No. 00 621 849

No.	Max. cross section of connected cable	Head diameter	Thread length	Thread	Width across flats	Max. short-circuit current	for line clamp
	(mm²)	(mm)	(mm)	G	(SW)	I_k 1 s (A)	
360 382 004	95	20	28	M12	22	18700	360 330 002
360 382 005	95	20	38	M12	22	18700	360 330 002
360 382 006	95	20	48	M12	22	18700	360 330 002
360 938 095	120	25	25	M16	27	23700	360 332 001 360 333 002
360 384 002	120	25	28	M12	27	23700	360 332 001 360 333 002
360 384 003	120	25	38	M12	27	23700	360 332 001 360 333 002
360 384 004	120	25	48	M12	27	23700	360 332 001 360 333 002
360 938 939	120	25	55	M16	27	23700	360 332 001 360 333 002

Ball Pin, Straight, with Inside Thread

According to DIN 48088 Part 1.

No.	Max. cross section of connected (mm²)	Head diameter (mm)	Thread G	Width across flats (SW)	Max. short-circuit current I_k 1 s (A)	for line clamp
612 633 005	95	20	M10	22	18700	360 330 002
612 633 004	95	20	M12	22	18700	360 330 002
615 820 001	120	25	M12	27	23700	360 332 001 360 333 002
615 822 001	120	25	M16	27	23700	360 332 001 360 333 002
360 786 003	70	20	M16	24	13800	360 330 002

Ball Pin, Angled, with Outside Thread

No.	Bracket	Max. cross section of connected cable (mm²)	Head diameter (mm)	Thread length (mm)	Thread G	Width across flats (SW)	Max. short-circuit current I_k 1 s (A)	for line clamp
360 784 001	45°	95	20	38	M12	24	18700	360 330 002
360 385 001	90°	120	25	45	M12	27	23700	360 332 001 360 333 002
360 786 001	90°	70	20	75	M12	24	13800	360 330 002

Ball Pin, Angled, with Inside Thread

No.	Bracket	Max. cross section of connected cable	Head diameter	Thread	Width across flats	Max. short-circuit current	for line clamp
		(mm²)	(mm)	G	(SW)	I_k 1 s (A)	
360 385 002	45°	120	25	M12	27	23700	360 332 001 360 333 002
360 786 002	90°	70	20	M12	24	13800	360 330 002
611 370 001	45°	120	20	M12	24	23700	360 330 002

T-Bolts, Straight, with Outside Thread

suitable for universal line clamp P3.

No.	Max. cross section of connected cable	Diameter	Width	Thread length	Thread	Max. short-circuit current
	(mm²)	Ø (mm)	(mm)	(mm)	G	I_k 1 s (A)
360 372 001	95	15	30	28	M12	18700
360 372 002	95	15	30	48	M12	18700

T-Bolts, Straight, with Inside Thread

suitable for universal line clamp P3.

No.	Max. cross section of connected cable	Diameter	Width	Thread	Max. short-circuit current
	(mm²)	Ø (mm)	(mm)	G	I_k 1 s (A)
610 670 001	95	20	58	M12	18700
615 805 001	95	15	30	M12	18700

T-Bolts, Angled, with Outside Thread

suitable for universal line clamp P3.

No.	Max. cross section of connected cable	Diameter	Width	Thread length	Thread	Max. short-circuit current
	(mm^2)	Ø (mm)	(mm)	(mm)	G	I_k 1 s (A)
360 567 001	95	15	30	28	M12	18700
360 567 002	95	15	30	48	M12	18700
600 925 001	95	15	30	38	M12	18700

T-Bolts, Straight, with Outside Thread

suitable for universal line clamp P5.

No.	Max. cross section of connected cable	Diameter	Width	Thread length	Thread	Max. short-circuit current	Max. torque
	(mm^2)	Ø (mm)	(mm)	(mm)	G	I_k 1 s (A)	(Nm)
360 386 001	120	20	58	28	M12	23700	56
360 386 002	120	20	58	48	M12	23700	56

Cylindrical Earthing Bolt with Outside Thread

To DIN 48088, part 2.
With annular groove.
Suitable for terminal sockets type A1 (No. 364 811 001) and A2 (No. 364 544 002).

No.	Thread	Thread length	Width across flats	Max. short-circuit current	Max. torque
	G	(mm)	(SW)	I_k 1 s (A)	(Nm)
360 407 407	M12	40	22	29600	56
360 408 408	M16	40	27	29600	135
360 408 003	M16	25	27	29600	135

Cylindrical Earthing Bolt with Inside Thread

To DIN 48088, part 2.
With annular groove.
Suitable for terminal sockets type A1 (No. 364 811 001) and A2 (No. 364 544 002).

No.	Thread	Width across flats	Max. short-circuit current	Max. torque
	G	(SW)	I_k 1 s (A)	(Nm)
610 923 001	M12	22	29600	56