

IBOCO



Wiring Ducts and Components

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Bocchiotti Industrial Group



KEY TO SUCCESS

Sales is the engine that drives the business. But successful sales require years of experience in extrusion, moulding and advanced technology and automated systems, perfect organisation in logistics and distribution. All of these elements are the well recognized keys to success that IBOCO has developed in more than 40 years of international activity.



CORPORATE PROFILE

Founded in 1965, Bocchiotti Group (marketed under the IBOCO's brand name), is one of the major manufacturers of wiring ducts, trunking, enclosures, conduits and metal trays. The Group is headquartered in Genoa, Italy, and has more than 500 employees in production plants and warehouses in 10 different locations. This allows to produce over 60 million metres of wiring ducts and trunking that are exported through 38 distributors and 2 branch offices (in France and USA).

HIGH STANDARD PRODUCTS FOR ADVANCED AND TIME-SAVING PANEL ASSEMBLING

Every item in the rapidly expanding product line is designed and produced to meet the needs of original equipment manufacturers, installers, panel builders, and system integrators and complies with IMQ, CE, UL, CSA and most international certifications.



IBOCO's extensive catalogue features several product lines: DIN rail, DIN rail accessories, slotted duct, DINOSAUR flexible duct, Spiralite, braided expandable sleeveings, installation tools and accessories. The Company's integrated panel management systems continue to evolve and grow to meet the changing needs of panel builders. However, its overriding philosophy remains unchanged: to simplify and accelerate panel building operations including wire identification, retention and separation.

IBOCO

THE MOST EXTENSIVE LINE OF WIRING DUCT AND COMPONENTS

BOCCHIOTTI wiring systems feature excellent assembly functionality and are ideal for any type of power and control panel where performance remains unaltered over time even under the heaviest operating conditions.

The reliability and durability of these products is guaranteed by a very severe selection of raw materials employed for their production and rigorous process controls.

Their superior quality is a guarantee of product compliance with all major national and international standards.

The full range, featuring state-of-the-art technical solutions, includes 9 types, 4 colours and 30 sizes of ducts with different side slot openings, size and colours, in addition to several functional components and accessories including universal spiral wrapping and galvanic zinc plating steel DIN rails.

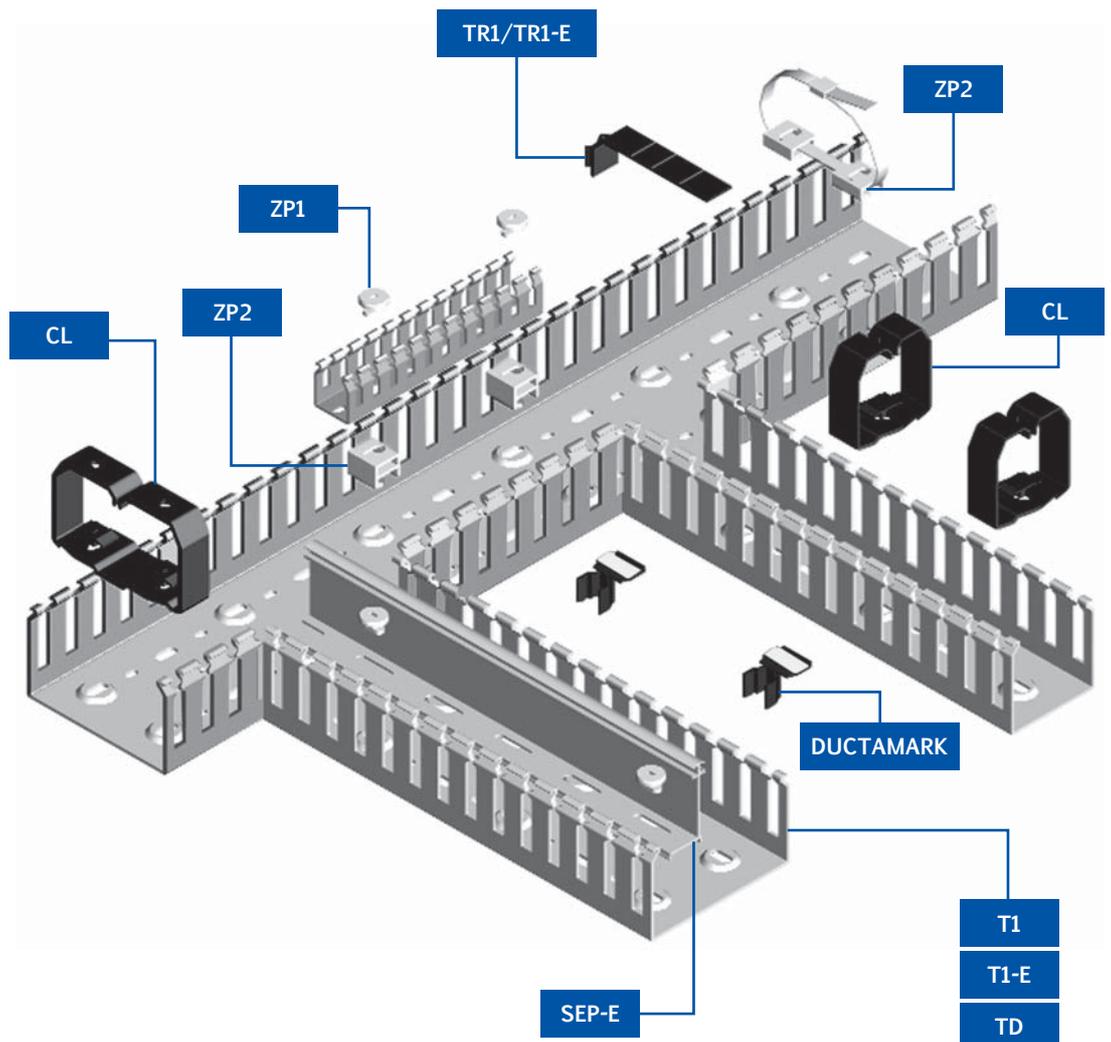


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The name of the following products illustrated in this Bocchiotti "Wiring Ducts and Components" Catalogue are all trademarks: DINBLOCK - DUCTAFIX - DUCTAMARK - TRACY.

The products presented in this Catalogue comply with applicable standards and are produced according to workmanlike manufacturing methods.

Correct installation by qualified staff, proper use and periodical maintenance contribute to safety and to the safeguarding of people and property.

Continuous production and technological improvement is the primary objective of Bocchiotti S.p.A. through the constant acquisition of new developments in international standards and materials. For this reason, technical specifications, sizes, drawings, pictures and product description may be altered without prior notice.

The information presented in this Catalogue is given only as an indication and in any case does not involve the liability of the manufacturer.

All rights of industrial property, name, corporate image and product exclusivity shall be reserved.

This Catalogue is property of Bocchiotti S.p.A.. No total or partial copy shall be allowed without prior authorization.

COMPLIANCE WITH INTERNATIONAL STANDARDS

CSA	Canadian Standards Association	C 22.2 n. 0 file n. 40464	Canada
DIN DIN VDE	Deutsches Institut für Normung Deutsches Institut für Normung Verband deutscher Elektrotechniker	43659 0660 Teil 506	Germany
AFNOR	Association Française de Normalisation	NF C 68-102	France
UL	Underwriters Laboratories	1565 recognized file n. E66583/E66583 SP	United States
CENELEC	Comité Européen de Normalisation Electrotechnique	CEI EN 50085-1 CEI EN 50085-2-3 CEI EN 60715	Europe/Italy

Bocchiotti products have also been tested and approved by the following Approval Agencies:

Agency	Reference	Bocchiotti wiring products concerned
EZU' Elektrotechnický zkušební ústav	N° 1001555 18-8-2000	T1, T1-E, T1-F, T1-EF, TD
MEEI Magyar Elektrotechnikai Ellenőrző Intézet	N° C4026K085	T1, T1-E, TD, DN-A
CSTB Centre Scientifique et Technique du Bâtiment	Fire Performance Certificate Classification: M1 Procès-Verbal de Classement n° RA 07-0315	The approval covers rigid self-extinguishing PVC used for the production of all Bocchiotti products in plastic insulating material. (GREY RAL 7030)
SIQ Slovenian Institute of Quality and Metrology	N° C212-0128/02	T1, T1-E, TD

NATO CODE

Bocchiotti has obtained the NATO MANUFACTURER CODE (NATO code A5536) from the Ministry of Defence, Central Military Procurement Office, and is listed in the "15-H4 Publication - NATO MANUFACTURERS CODE".

CE MARKING

CE directives define the procedures concerning the safety. The mark CE proves the conformity of the product to the safety requirements of the European Community. Bocchiotti is in full compliance with the low voltage Community Directive 2006/95/EC, and with its usual care and awareness of legal developments, is authorized to affix the CE mark on its products.

UNI EN ISO 9001:2000 CERTIFICATION



BOCCHIOTTI S.p.A. has obtained the Corporate Quality System Certification in compliance with UNI EN ISO 9001:2000 Standards (Certificate No. 9105. BOCC).



CERTIFICATIONS

Name	Certifications				Name	Certifications			
	 CSA CANADA	 IMQ ITALY	 UL REC USA	 R.I.N.A. ITALY		 CSA CANADA	 IMQ ITALY	 UL REC USA	 R.I.N.A. ITALY
CL 40x40	●		●	●	T1-F 120x80	●	○	●	●
CL 60x40	●		●	●	T1-F 25x100		○	●	
CL 40x60	●		●	●	T1-F 40x100	●	○	●	●
CL 60x60	●		●	●	T1-F 60x100	●	○	●	●
CL 80x60	●		●	●	T1-F 80x100	●	○	●	●
CL 100x60	●		●	●	T1-F 100x100	●	○	●	●
CL 120x60	●		●	●	T1-F 150x100	●	○	●	●
CL 40x80	●		●	●	T1-E 25x40	●	●	●	●
CL 60x80	●		●	●	T1-E 40x40	●	●	●	●
CL 80x80	●		●	●	T1-E 60x40	●	●	●	●
CL 100x80	●		●	●	T1-E 80x40	●	●	●	●
CL 120x80	●		●	●	T1-E 100x40	●	●	●	●
CL 60x100	●		●	●	T1-E 25x60	●	●	●	●
CL 80x100	●		●	●	T1-E 40x60	●	●	●	●
CL 100x100	●		●	●	T1-E 60x60	●	●	●	●
CL 150x100	●		●	●	T1-E 80x60	●	●	●	●
DINBLOK 3	●				T1-E 100x60	●	●	●	●
DN-AS				●	T1-E 120x60	●	●	●	●
DN-AM				●	T1-EF 25x80	●	○	●	●
DN-AL				●	T1-EF 40x80	●	○	●	●
DUCTAMARK 1	●				T1-EF 60x80	●	○	●	●
SEP-E 40	●			●	T1-EF 80x80	●	○	●	●
SEP-E 60	●			●	T1-EF 100x80	●	○	●	●
SEP-E 80	●			●	T1-EF 120x80	●	○	●	●
ST		●			T1-EF 25x100		○	●	
T1 15x18	●	●	●	●	T1-EF 100x100	●	○	●	●
T1 15x30	●	●	●	●	TD 25x25	●		●	●
T1 25x30	●	●	●	●	TD 37,5x25	●		●	●
T1 15x40	●	●	●	●	TD 50x37,5	●		●	●
T1 25x40	●	●	●	●	TD 25x50	●		●	●
T1 40x40	●	●	●	●	TD 37,5x50	●		●	●
T1 60x40	●	●	●	●	TD 50x50	●		●	●
T1 80x40	●	●	●	●	TD 75x50	●		●	●
T1 100x40	●	●	●	●	TD 100x50	●		●	●
T1 15x60	●	●	●	●	TD 125x50	●		●	●
T1 25x60	●	●	●	●	TD 37,5x75	●		●	●
T1 40x60	●	●	●	●	TD 50x75	●		●	●
T1 60x60	●	●	●	●	TD 75x75	●		●	●
T1 80x60	●	●	●	●	TD 100x75	●		●	●
T1 100x60	●	●	●	●	TD 125x75	●		●	●
T1 120x60	●	●	●	●	TD 75x125	●		●	●
T1 75x125	●	●	●	●	TD 100x125	●		●	●
T1 100x125	●	●	●	●	TPD 37,5x50				●
T1-F 25x80	●	○	●	●	TPD 50x50				●
T1-F 40x80	●	○	●	●	TPD 75x50				●
T1-F 60x80	●	○	●	●	TPD 100x50				●
T1-F 80x80	●	○	●	●	TPD 125x50				●
T1-F 100x80	●	○	●	●	ZP1		●		
					ZP2		●		

○ in compliance CEI EN 50085-2-3

T1

DUCT SERIES

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030, White
Standard Length: 2 metres
Standard Unit Supplied:
 Duct complete with cover



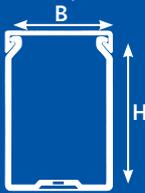
T1-F

DUCT SERIES

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres
Standard Unit Supplied:
 Duct complete with cover



This duct is ideal for wiring large-sized cables usually employed in power panels. With thick side and base, it has a strong construction and maximum application stability, very good holding also under heavy wiring and longer durability and reliability. Available in a wide range of heights for space optimization inside the electric panel.



BASE 15-25x30



BASE 25-40-60-75-80-100-120-150



Detail of duct body/cover coupling for maximum wire retention and maximum solidity



Blue colour duct recognized for intrinsic safe

Name	Dimensions (mm)					Section mm ²	Packaging metres
	B	H	E	F	G		
T1 15x18 G	15	18	5	7,5	4	200	72
T1 15x30 G	15	30	5	7,5	6	340	64
T1 25x30 G/W/BL*	25	30	5	7,5	8	610	72
T1 15x40 G*	15	40	5	7,5	10	460	48
T1 25x40 G/W	25	40	8	12	12	820	72
T1 40x40 G/W/BL*	40	40	8	12	12	1360	40
T1 60x40 G/BL*	60	40	8	12	12	1970	24
T1 80x40 G	80	40	8	12	12	2680	24
T1 100x40 G	100	40	8	12	12	3380	16
T1 15x60 G	15	60	5	7,5	10	680	32
T1 25x60 G/W/BL*	25	60	8	12	14	1190	48
T1 40x60 G/W/BL*	40	60	8	12	14	2040	36
T1 60x60 G/W/BL*	60	60	8	12	14	3080	24
T1 80x60 G/W	80	60	8	12	14	4150	24
T1 100x60 G/W*	100	60	8	12	14	5250	16
T1 120x60 G	120	60	8	12	14	6300	16
T1 75x125 G/W*	75	125	8	12	20	8398	12
T1 100x125 G/W*	100	125	8	12	20	11415	8

G = GREY RAL 7030

W = WHITE

BL = BLUE RAL 5015

* = Available upon request

Name	Dimensions (mm)					Section mm ²	Packaging metres
	B	H	E	F	G		
T1-F 25x80 G	25	80	8	12	16	1550	48
T1-F 40x80 G	40	80	8	12	16	2700	32
T1-F 60x80 G/W*/BL*	60	80	8	12	16	4140	24
T1-F 80x80 G/W*/BL*	80	80	8	12	16	5660	24
T1-F 100x80 G	100	80	8	12	16	7150	16
T1-F 120x80 G	120	80	8	12	16	8630	16
T1-F 25x100 G/BL*	25	100	8	12	18	2300	16
T1-F 40x100 G	40	100	8	12	18	3310	16
T1-F 60x100 G	60	100	8	12	18	5140	8
T1-F 80x100 G	80	100	8	12	18	7020	8
T1-F 100x100 G/BL*	100	100	8	12	18	8920	8
T1-F 150x100 G/W*	150	100	8	12	18	13570	8

G = GREY RAL 7030

W = WHITE

BL = BLUE RAL 5015

* = Available upon request

Lines T1-F/T1-EF h 80-100

Finger narrowing for easier vertical wiring before the cover is mounted, for correct wire positioning and circuit separation



T1-F



T1-E

DUCT SERIES

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres
Standard Unit Supplied:
 Duct complete with cover



T1-EF

DUCT SERIES

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres
Standard Unit Supplied:
 Duct complete with cover



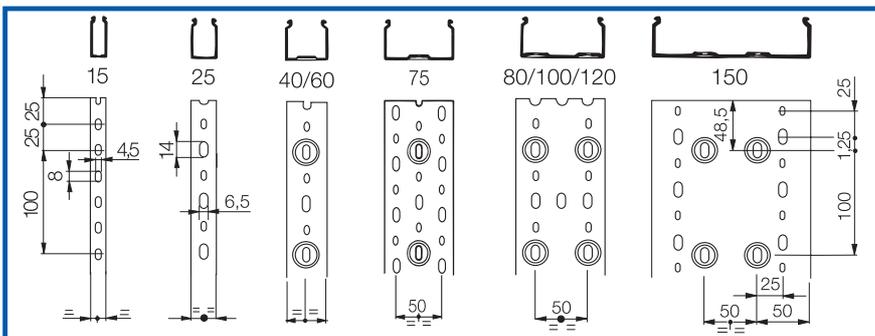
Name	Dimensions (mm)					Section mm ²	Packaging metres
	B	H	E	F	G		
T1-E 25x40 G	25	40	4	6	12	820	72
T1-E 40x40 G	40	40	4	6	12	1360	40
T1-E 60x40 G	60	40	4	6	12	1970	24
T1-E 80x40 G	80	40	4	6	12	2680	24
T1-E 100x40 G	100	40	4	6	12	3380	16
T1-E 25x60 G	25	60	4	6	14	1190	48
T1-E 40x60 G	40	60	4	6	14	2040	36
T1-E 60x60 G	60	60	4	6	14	3080	24
T1-E 80x60 G	80	60	4	6	14	4150	24
T1-E 100x60 G	100	60	4	6	14	5250	16
T1-E 120x60 G	120	60	4	6	14	6300	16

G = GREY RAL 7030

Name	Dimensions (mm)					Section mm ²	Packaging metres
	B	H	E	F	G		
T1-EF 25x80 G	25	80	4	6	16	1550	48
T1-EF 40x80 G	40	80	4	6	16	2700	32
T1-EF 60x80 G	60	80	4	6	16	4140	24
T1-EF 80x80 G	80	80	4	6	16	5660	24
T1-EF 100x80 G	100	80	4	6	16	7150	16
T1-EF 120x80 G	120	80	4	6	16	8630	16
T1-EF 25x100 G	25	100	4	6	18	2300	16
T1-EF 100x100 G	100	100	4	6	18	8920	8

G = GREY RAL 7030

T1/T1-E/T1-F/T1-EF - BOTTOM PERFORATION

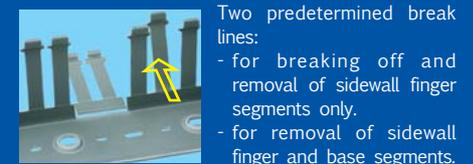
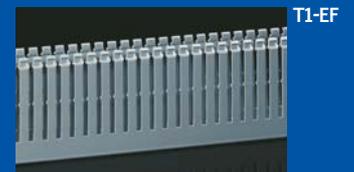
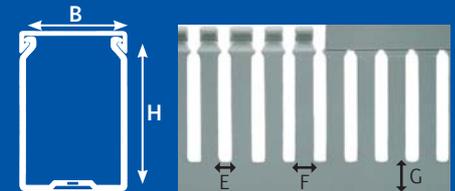


Duct bottom perforation according to DIN 43659

The bottom perforation of the cable duct series T1 and T1-E allows mounting on the panel with DUCTAFIX R6 or R4 or on DIN rails.

The recess bosses in the base of duct series T1 and T1-E allow rapid mounting of components CL, ZP2 and SEP-E inside the cable duct.

This duct is ideal for small sized wires commonly employed in electric and electronic control panels. This duct with restricted slot opening is strong and robust due to its thick base and side construction. Perfect solidity is also guaranteed in cantilevered applications. Made of a material with more than 3000 NPa modulus of elasticity, it allows for repeated opening and closing of the duct fingers during wiring operations even at low temperature, without breaking. Maximum accuracy and standardization in series installations is achieved due to close design tolerance.



Patented recess boss for rapid mounting of components.

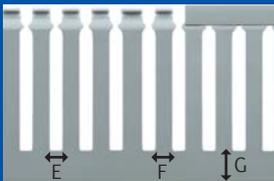
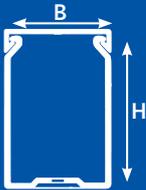
TD

DUCT SERIES

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres
Standard Unit Supplied:
 Duct complete with cover



This duct features a 12,5 module according to DIN 43659 standards which is particularly suitable for use with other DIN 12,5 equipment for perfect size interfacing. Optimized duct size/wire retention ratio and perfectly rounded finger edges for safe operations even in installations with difficult access. Repeated opening and closing of the fingers during wiring operations is possible due to their size and resilience.



Name	Dimensions (mm)					Section mm ²	Packaging metres
	B	H	E	F	G		
TD 25x25 G	25	25	5	7,5	7	460	48
TD 37,5x25 G	37,5	25	5	7,5	7	660	64
TD 50x37,5 G	50	37,5	5	7,5	10	1490	24
TD 25x50 G	25	50	5	7,5	11	990	48
TD 37,5x50 G	37,5	50	5	7,5	11	1500	24
TD 50x50 G	50	50	5	7,5	11	2060	24
TD 75x50 G	75	50	5	7,5	11	3200	24
TD 100x50 G	100	50	5	7,5	11	4330	16
TD 125x50 G*	125	50	5	7,5	11	5370	16
TD 37,5x75 G	37,5	75	5	7,5	13	2330	24
TD 50x75 G	50	75	5	7,5	13	3200	24
TD 75x75 G	75	75	5	7,5	13	4940	16
TD 100x75 G	100	75	5	7,5	13	6650	16
TD 125x75 G*	125	75	5	7,5	13	8310	12
TD 75x125 G*	75	125	5	7,5	20	8398	12
TD 100x125 G*	100	125	5	7,5	20	11415	8

G = GREY RAL 7030 * = Available upon request

The TD line features an innovative coupling. Reliability and functionality of this line in any type of application are further enhanced by this new solution, even in panels subject to high thermal and dynamic stress.



TPD

DUCT SERIES

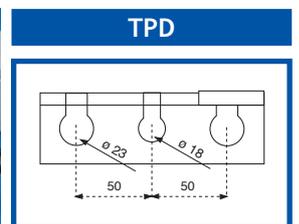
Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres
 Duct complete with cover



Slotted side-trunking with 18 and 23 mm diam. holes for branching rigid and corrugated pipes. Perfect fitting of the body-cover coupling system even under heavy duty conditions. Ideal trunking for use in lift installations.



Name	Packaging metres
TPD 37,5x50 G	24
TPD 50x50 G	24
TPD 75x50 G	24
TPD 100x50 G	16
TPD 125x50 G	16



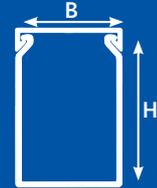
G = GREY RAL 7030



TS

DUCT SERIES

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres
Standard Unit Supplied:
 Duct complete with cover



Totally solid duct (no mounting holes in the bottom)

Name	Dimensions (mm)		Section mm ²	Packaging metres
	B	H		
TS 15x18 G	15	18	200	72
TS 15x30 G	15	30	340	64
TS 25x30 G	25	30	610	72
TS 25x40 G	25	40	820	72
TS 40x40 G	40	40	1360	40
TS 40x60 G	40	60	2040	36
TS 60x60 G	60	60	3080	24
TS 80x60 G	80	60	4150	24
TS 25x80 G	25	80	1550	48
TS 40x80 G	40	80	2700	32
TS 60x80 G	60	80	4140	24
TS 80x80 G	80	80	5660	24
TS 100x80 G	100	80	7150	16
TS 80x100 G	80	100	7020	8
TS 100x100 G	100	100	8920	8

G = GREY RAL 7030



COV

COVERS FOR T1, T1-F, T1-E, T1-EF, TD, TPD AND TS

Material: Rigid PVC, self extinguishing
Colour: Grey RAL 7030
Standard Length: 2 metres

Name	Packaging metres
COV 15 G	50
COV 25 G	50
COV 37,5 G	50
COV 40 G	50
COV 50 G	50
COV 60 G	50
COV 75 G	50
COV 80 G	50
COV 100 G	40
COV 120 G	40
COV 125 G	40
COV 150 G	40

G = GREY RAL 7030

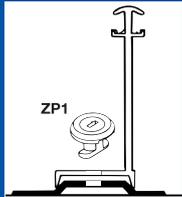
SEP-E

SEPARATORS FOR T1, T-F, T1-E AND T1-EF

Material: Rigid PVC, self extinguishing
 Colour: Grey RAL 7030
 Standard Length: 2 metres



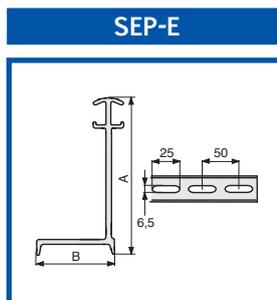
SEP-E allows the physical separation of circuits with different voltages and/or functions. The various mounting arrangements of SEP-E allow alternate compartmentation of duct and differing ratios of usable section.



SEP-E mounting detail



Name	For Ducts Height	Packaging metres
SEP-E 40	40	64
SEP-E 60	60	40
SEP-E 80	80	24

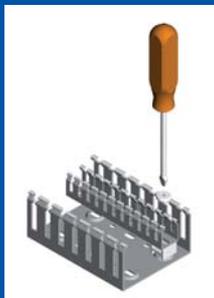


Name	Dimensions	
	A	B
SEP-E 40	33	23
SEP-E 60	52	23
SEP-E 80	72	23

ZP1/ZP2

FIXING INSERTS MODULAR SPACERS

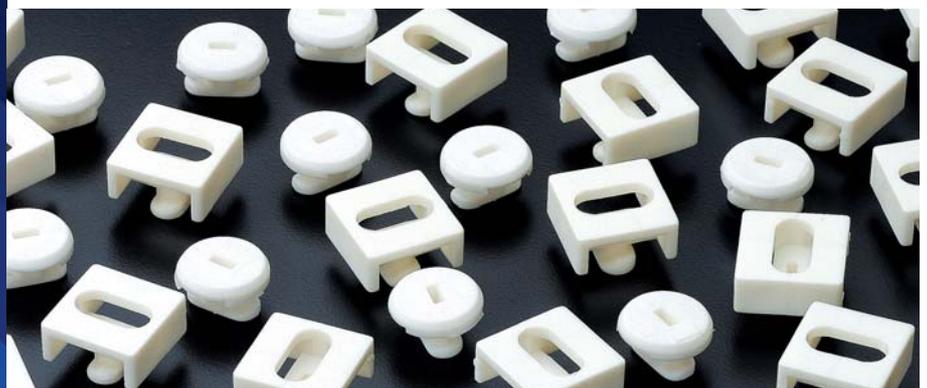
Material: Polyamide 6
 Colour: Natural



With a simple quarter turn, ZP1 is used to mount components and SEP-E separators inside duct. Also ZP1 can be used to mount smaller sizes of duct inside larger sizes, thus achieving separation of circuits with different voltages and/or functions. With a simple quarter turn ZP2 can be mounted inside duct. By stacking, mounting levels at different heights are achieved.

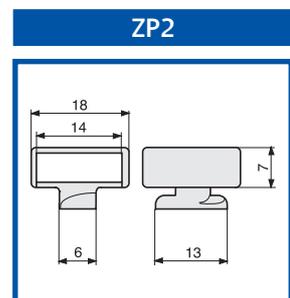
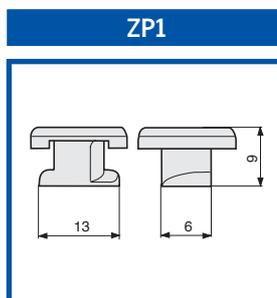


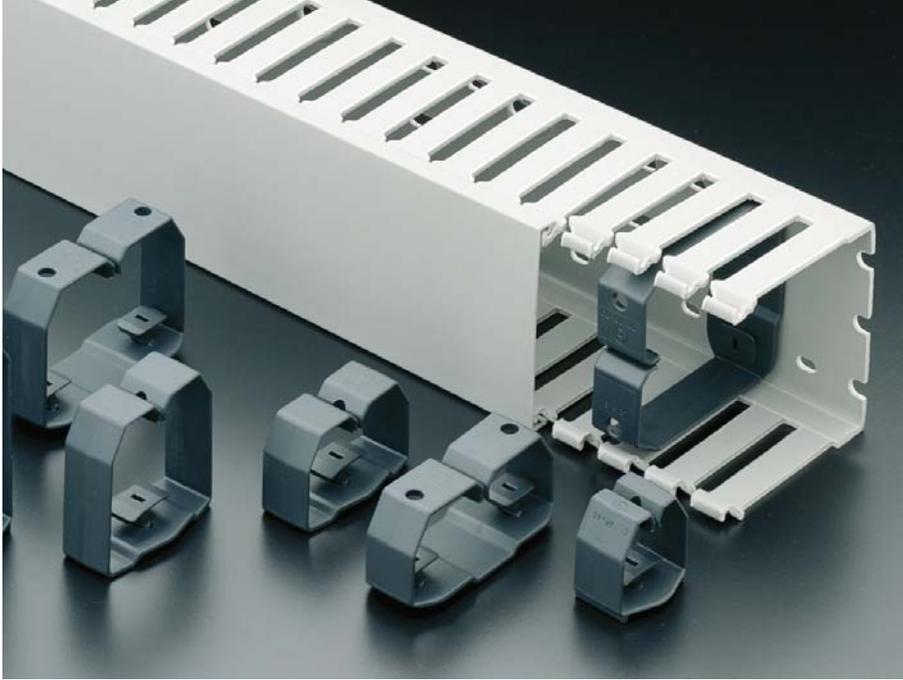
For tightening a wire bundle inside duct, pass a cable tie through ZP2.



Name	Packaging pieces
ZP1	1000 (10x100)

Name	Packaging pieces
ZP2	500 (10x50)





CL

WIRE RETAINERS FOR T1, T1-F,
T1-E AND T1-EF

Material: ABS/PC
Colour: Black

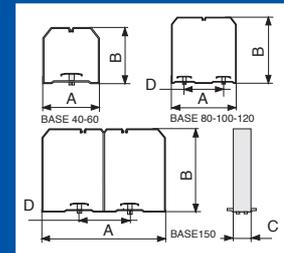


CL wire retainers are available in a totally new shape to meet the most sophisticated wire holding requirements. Made of PVC for a better surface finishing and excellent dynamic resistance, CL feature an exclusive and patented system - with in-built anchoring element (ZP1) - for faster installation, allowing to be repositioned even when the duct is already installed and offering maximum locking with antirotational pins inserted in the recess boss in the duct base.

CL are supplied in BLACK colour for a better aesthetic result, with name, size and quality marks placed on the upper front side. This solution offers immediate identification of the product and of the standards which it complies with, thus saving inspection and testing time.

Name	Dimensions				Packaging pieces
	A	B	C	D	
CL 40x40	35	36	20		120 (3x40)
CL 60x40	55	35	20		120 (3x40)
CL 40x60	35	56	20		120 (3x40)
CL 60x60	54	55	20		120 (6x20)
CL 80x60	74	55	20	50	60 (6x10)
CL 100x60	94	55	20	50	60 (6x10)
CL 120x60	114	54	20	50	50 (5x10)
CL 40x80	34	75	20		120 (6x20)
CL 60x80	54	75	20		60 (3x20)
CL 80x80	74	74	20	50	60 (6x10)
CL 100x80	94	75	20	50	30 (3x10)
CL 120x80	113	74	20	50	30 (3x10)
CL 60x100	54	95	20		40 (2x20)
CL 80x100	74	94	20	50	30 (3x10)
CL 100x100	93	94	20	50	30 (6x5)
CL 150x100	143	94	20	50	20 (4x5)

CL



Name	Packaging pieces
TR1	100 (2x50)
TR1-E	100 (2x50)
TRD*	100 (2x50)



* = Available upon request

With a perfect fitting on duct fingers owing to an anti-rotation tooth, the unique profile allows for a more rapid mounting. The ideal solution for every panel builder during original equipment assembly as well as during maintenance work.

TR1/TR1-E

WIRE RETAINERS WITH
PREDETERMINED BREAKLINES
FOR T1 (TR1), T1E (TR1-E)

Material: ABS/PC
Colour: Black

TRD

WIRE RETAINERS WITH
PREDETERMINED BREAKLINES
FOR TD

Material: Noryl® Modified PPO-Resins
Colour: Grey

A line of easy-to-use accessories that suit the various duct sizes to hold wires during wire operations. TR1, TR1-E and TRD come in one single size with predetermined breaklines to adapt them to different duct width: 100, 80, 60 and 40 for T1, T1-E and 100, 75, 50 and 37.5 for TD.

TR1-N/TR1-EN

WIRE RETAINERS

Material: Class reinforced Polyamide 6
Colour: Grey RAL 7030

- Fast installation
- Maximum locking
- Same colour of the ducts for a perfect integration
- Only 4 ref. for the whole range of ducts



Maximum locking

High resistance of the material and new anchorage system on both sides



Maximum flexibility - min. references

The predetermined breaklines allow the anchorage on all the bases of the ducts (from the base 40 up to 150 mm) by only 4 ref. (2 for T1 and 2 for T1-E)



Name	Packaging pieces
TR1-N 40-80	100 (4x25)
TR1-N 100-150	50 (2x25)

Name	Packaging pieces
TR1-EN 40-80	100 (4x25)
TR1-EN 100-150	50 (2x25)



Fast snap-in

It is sufficient to widen lightly a finger of T1 or 2 fingers of T1-E and the new wire retainer is mounted by an easy click

DINBLOK 3

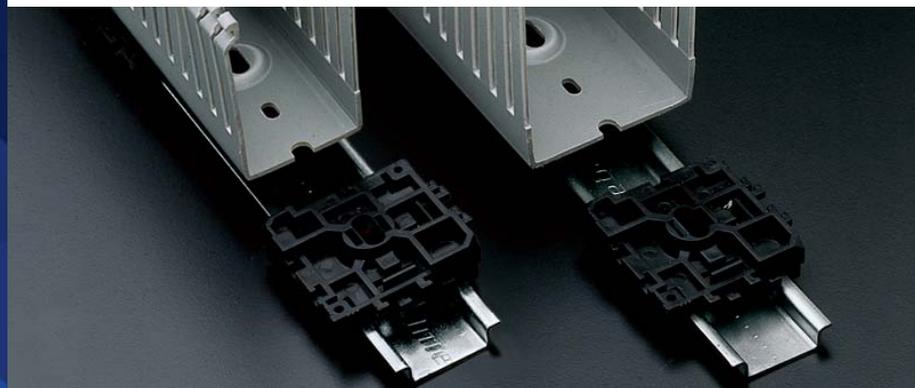
MOUNTING BLOCK

Material: Acetal Resin
Colour: Black



Allows the mounting of duct onto metal DIN mounting rails. DINBLOK can be applied in two different positions, in order to allow the mounting of duct in a horizontal as well as in a vertical direction.

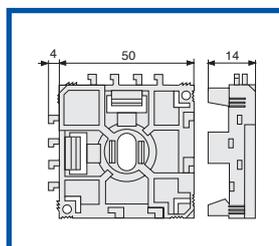
For good stability when mounting wiring duct with a width of 100, 120 and 150 on Din Rail it is recommended that two rails are used in parallel and that the Dinblok is snapped together.



Name	Packaging pieces
DINBLOK 3	100 (4x25)

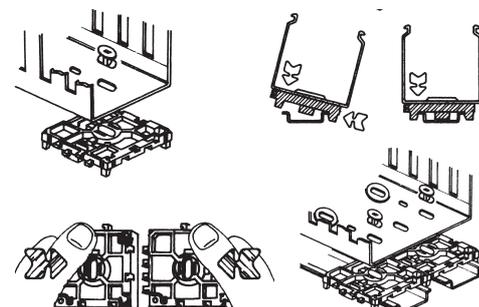
DINBLOK comes complete with ZP1

DINBLOK 3



DINBLOK 3

For mounting rails Omega 3/3A/3B type





DUCTAMARK 1

IDENTIFICATION TAG FOR T1

Material: Polyamide 6
 Colour: Black
 Slide: Transparent Polystyrene
 Label: White cardboard

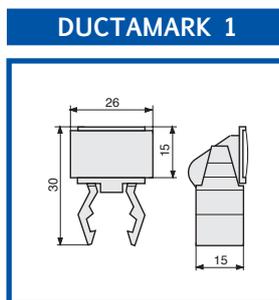


Resolves in a practical and functional manner the problem of control gear, and switchgear identification.

DUCTAMARK

- avoids glueing and drilling
- need not be removed during maintenance or alteration work which involves the removal of the covers
- is always clearly visible

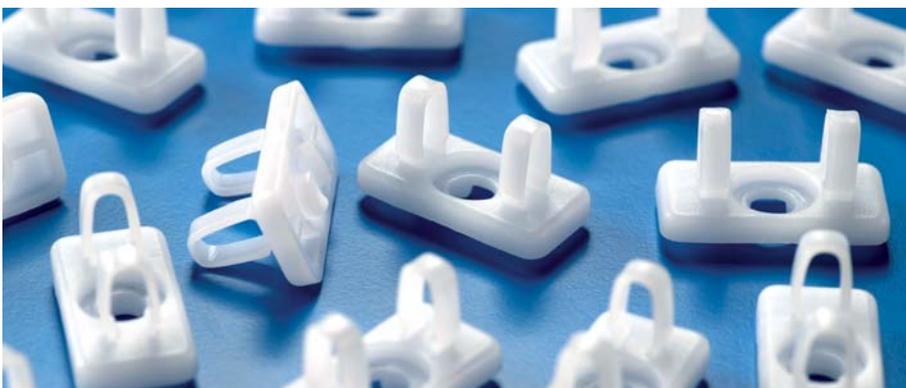
Name	Packaging pieces
DUCTAMARK 1	100



DUCTAMARK is mounted by snapping it onto the sidewall finger segments taking care that it is placed above the wires coming out to the sidewall slots.



DUCTAMARK 1



BLOKSEP-E

COMPONENT TO FIX THE SEPARATOR

Material: Polyamide 6
 Colour: Natural

Easy installation thanks to the antirotation system.
 Maximum locking.



An easy click to block the separator

Name	Packaging pieces
BLOKSEP-E	500 (10x50)



Antirotation system



Mounting with R4 and R6 rivets or with the standard systems

DUCTAFIX

WIRING DUCT RIVETS

Material: Polyamide 6
 Colour: Light Blue (R4)
 Orange (R6)

MAIN FEATURES

The nylon rivets, respectively light blue and orange, are equipped with fins for a perfect tightness and allow a quick insertion of the rivet in the rivet tool to make the mounting easier. For a proper fitting, rivets have to be inserted in one of the hole ends.

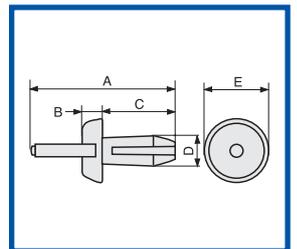


Name	Dimensions					Packaging pieces
	A	B	C	D	E	
DUCTAFIX R4	25	2	12	4	9	1000 (4x250)
DUCTAFIX R6	29	2	14	6,25	11	500 (2x250)



Natural colour - Available upon request

DUCTAFIX



RT4/RT6

RIVET TOOL

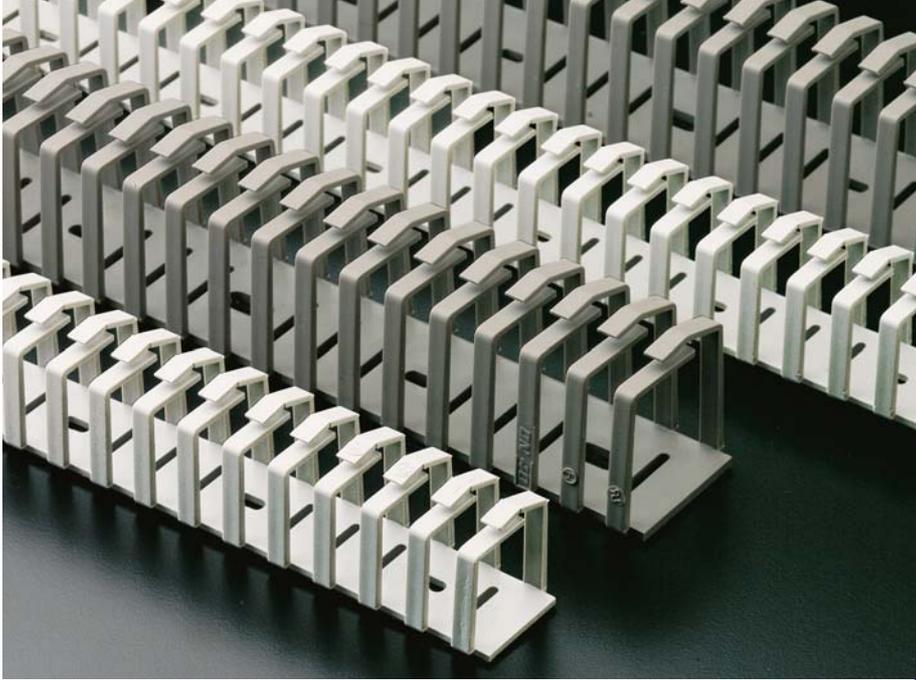
RT4 FOR R4 - RT6 FOR R6

- Independent sliding metal core for best tool stability and greater pressure exerted when inserting the rivet into the hole
- Soft plastics ergonomic handle
- Long (233 mm) metal body for easy insertion also in narrow and high wiring ducts



Name	Packaging pieces
RT4	4 (4x1)
RT6	4 (4x1)





DN-A

FLEXIBLE DUCTS

Material: Polypropylene
self-extinguishing, non-toxic
Colour: Grey RAL 7030, White
Standard length: 0,5 metres



Applicable to white DN-A only

For all applications where one does not want to provide mounting holes. For wiring to cabinet doors, from control panels and for electronic equipment.

For that part of the cable run that leans against the side of the control cabinet.

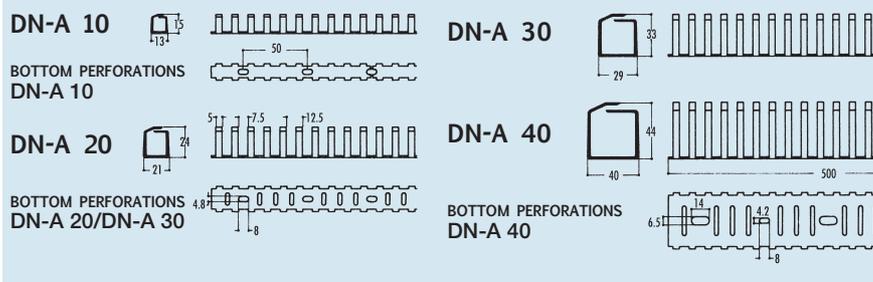
For containing wires in variable direction ensuring the flexibility of the wiring run.

Available in four sizes with adhesive tape.

- Due to the flexibility of the material individual wires can easily be added, or removed from total wires within the duct.
 - Since DN-A has no cover it can accommodate cables in restricted space applications, and also effectively removes the need for cable ties.
 - It can be used in extreme operating conditions (i.e. max. temp. up to 80°C).
 - DN-A withstands mechanical stress when installed. While in the event of fire does not emit corrosive, nor toxic gases, and smoke development is minimal.
 - The duct can be cut to desired length using scissors or knife.
- When applying the DN-A with adhesive tape, (DN-A 10, DN-A 20, DN-A 30, DN-A 40) it is necessary to make sure that the surface is perfectly clean and dry.

Name	Dimensions millimeter	Section mm ²	Packaging pieces
DN-A 10 G	13x15	100	42
DN-A 20 G	20x24	320	16
DN-A 30 G	30x33	620	12
DN-A 40 G	40x44	1220	8

G = GREY RAL 7030



Name	Dimensions millimeter	Section mm ²	Packaging pieces
DN-AS G	17,5x28	275	24
DN-AM G	32x43	900	24
DN-AL G	42,5x55	1550	14

G = GREY RAL 7030



DN-A

FLEXIBLE DUCTS

Material: Talc reinforced polypropylene
Colour: Grey RAL 7030
Standard length: 0,5 metres



Especially designed for compact installations. The new design allows for easier inserting and removal of the wires.



SPIRALITE

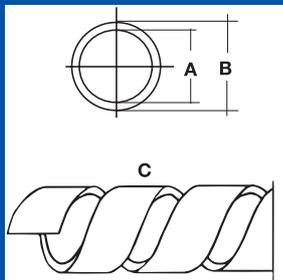
UNIVERSAL SPIRAL WRAPS

Material: Polyethylene natural (P)
Polyethylene self-extinguishing (PA)
According to ASTM D 635

Robust, yet simple to install, it gives mechanical protection to the wire bundle which remains flexible although rigidly held. Easily removed, it can be re-used in the case of temporary wiring.

Essential

- for fast and economical grouping of wire bundles
- for joining groups of wires and/or tubing for fluidic/pneumatic machine control
- for flexible connections between panel and door



Name	Dimensions (mm)			Packaging metres
	A	B	C	
P1	1,5	3	5	500 (10x50)
P2	4	6	8	500 (20x25)
P3	8	10	12	250 (10x25)
P4	9	12	12	200 (10x20)
PA1	1,5	3	5	500 (10x50)
PA2	4	6	8	500 (20x25)
PA3	8	10	12	250 (10x25)
PA4	9	12	12	200 (10x20)



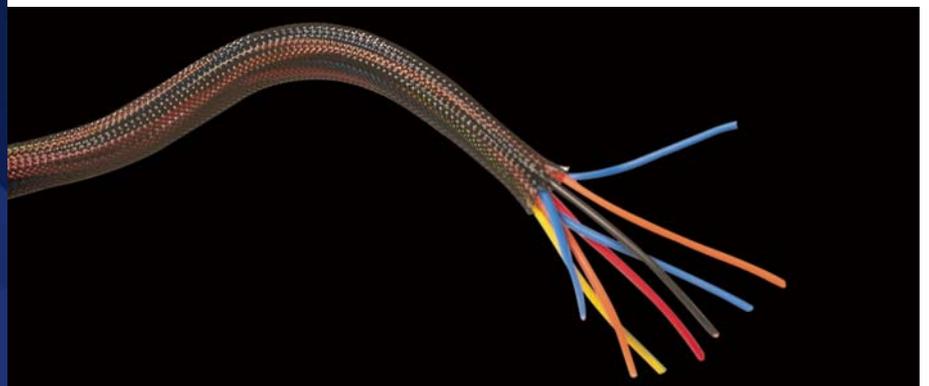
Black colour
Available upon request

TRACY

BRAIDED EXPANDABLE SLEEVING

Material: Self estinguishing polyester halogen free
Colour: Grey
Black available upon request

Maximum elongation: 42%
Maximum diameter expansions: 100%



Name	Nominal \varnothing	Packaging metres
TY 5 G	5	100
TY 10 G	10	100
TY 20 G	20	50
TY 30 G	30	50
TY 50 G	50	50

G = GREY



	TY
Material	Polyester halogen free
Tensile strength (kg/mm ²)	4,2
Elongation at break %	42
Operating temperature (°C)	from -50 up to 120
Self-extinguishing	UL 94 V2



DIN RAILS

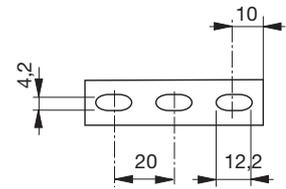
Steel treated with galvanic zinc plating and passivation
(gal Zn 8c according to DIN 50960)
Minimum thickness 6 micron
Standard length: 2 metres
RoHs compliant

- Ideal to support and anchor wiring equipment and ducts inside electric panels
- Of robust construction and corrosion resistant: cold rolled steel and treated with galvanic zinc plating and passivation
- F Series: with bottom perforation suitable for anchoring ducts and special supports

Name	Compliance	Packaging metres
G1	CEI EN 60715	24
G1F	CEI EN 60715	24
OMEGA 2F	CEI EN 60715	40
OMEGA 3	CEI EN 60715	40
OMEGA 3F	CEI EN 60715	40
OMEGA 3FD*	CEI EN 60715	40
OMEGA 3A		20
OMEGA 3AF		20
OMEGA 3AFD*		20

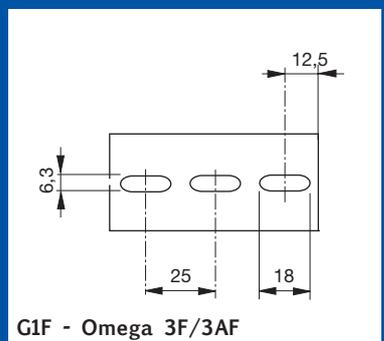
* = Available upon request

BOTTOM PERFORATION

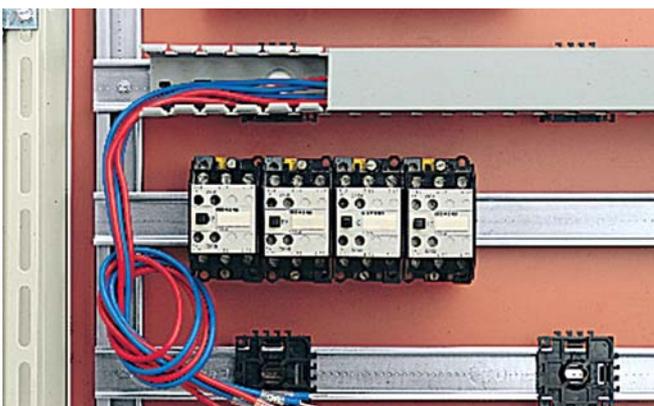


Omega 2F

<p>G1</p>	<p>G1F</p>
<p>Omega 3</p>	<p>Omega 3F (3FD)</p>
<p>Omega 3A</p>	<p>Omega 3AF (3AFD)</p>
<p>The unperforated DIN rails (G1/OMEGA 3/OMEGA 3A) present a dotted line in order to expedite the drilling of the mounting holes.</p>	
<p>Omega 2F</p>	



G1F - Omega 3F/3AF



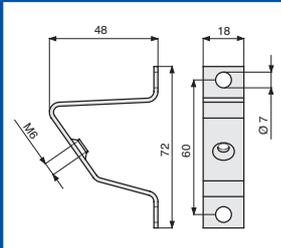
ST/STS

DIN RAIL SUPPORT BRACKETS

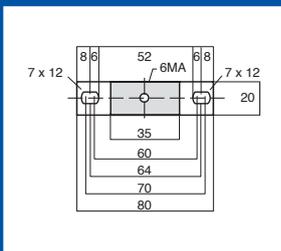
In cold-rolled steel treated with galvanic zinc plating and passivation

 applicable to ST only

ST



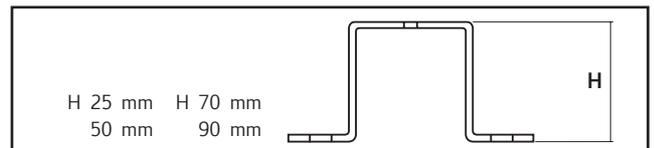
STS



Name	Packaging pieces
ST	20 (2x10)

Name	Packaging pieces
STS 25*	10
STS 50*	10
STS 70*	10
STS 90*	10

* = Available upon request



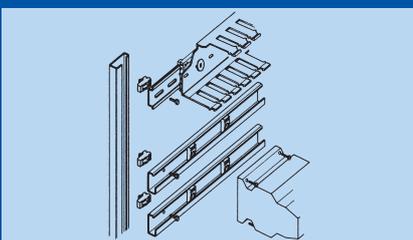
DINFIX

MOUNTING CLIPS

Material: Acetal resin (delrin) and galvanized steel

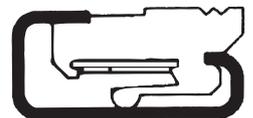
Dinfix permits the smooth mounting of metal rails on the mounting rail G1, thus allowing the construction of supporting frames for switchgear and wiring duct. DINFIX furthermore offers the possibility of installing onto the parallel rail G1, switchgear of a certain size and weight (e.g. transformers or contactors) that are not predisposed for snap-on assembly on the assembly rails Omega 3/3A/3B.

Service Temperature Limit
(-15°C / +100°C)

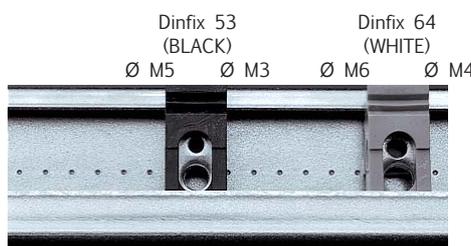


Name	Packaging metres
DINFIX 64*	100
DINFIX 53*	100

* = Available upon request



Once they are mounted, the Dinfix form a strong mounting plane at the level of the upper flange of the rail G1.





DINCLIC

MOUNTING CLIPS

Material: Zinc plated steel

With its help, one can snap onto all the mounting rails (except OMEGA 2F) those small switching devices which are not made for mounting on DIN rails.

Name	Packaging pieces
------	------------------

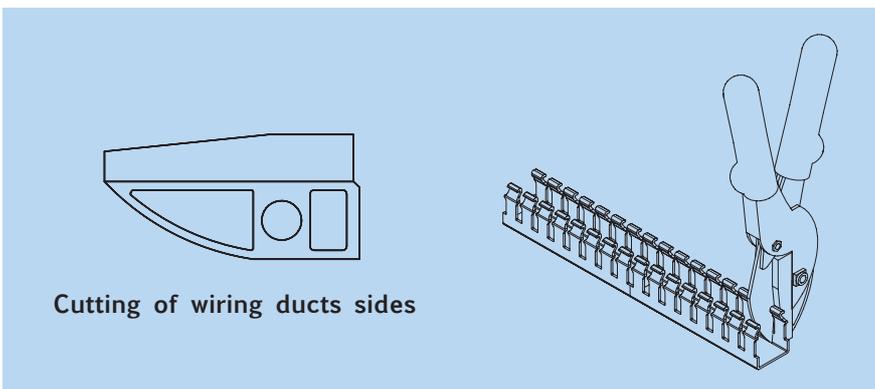
DINCLIC DM4*	40	Dinclid DM4 for mounting on rail G1, G1F
DINCLIC FM4*	40	Dinclid FM4 - FM5 for mounting on OMEGA 3
DINCLIC FM5*	40	OMEGA 3A - OMEGA 3F - OMEGA 3AF

* = Available upon request



Name	Pieces per carton
------	-------------------

4F	1
LAMA 4F	1



4F

MULTIFUNCTIONAL TOOL

4F is a multifunctional tool specially equipped with accessories. The interchangeable accessories enable:

- To cut and take off a portion of duct below the fingers.
- To cut both duct and/or cover
- To cut at different angles
- To cut rigid conduits, flexible conduits and sheaths

Specially shaped handle and dedicated accessories allow a perfect cut in a minimum strain.



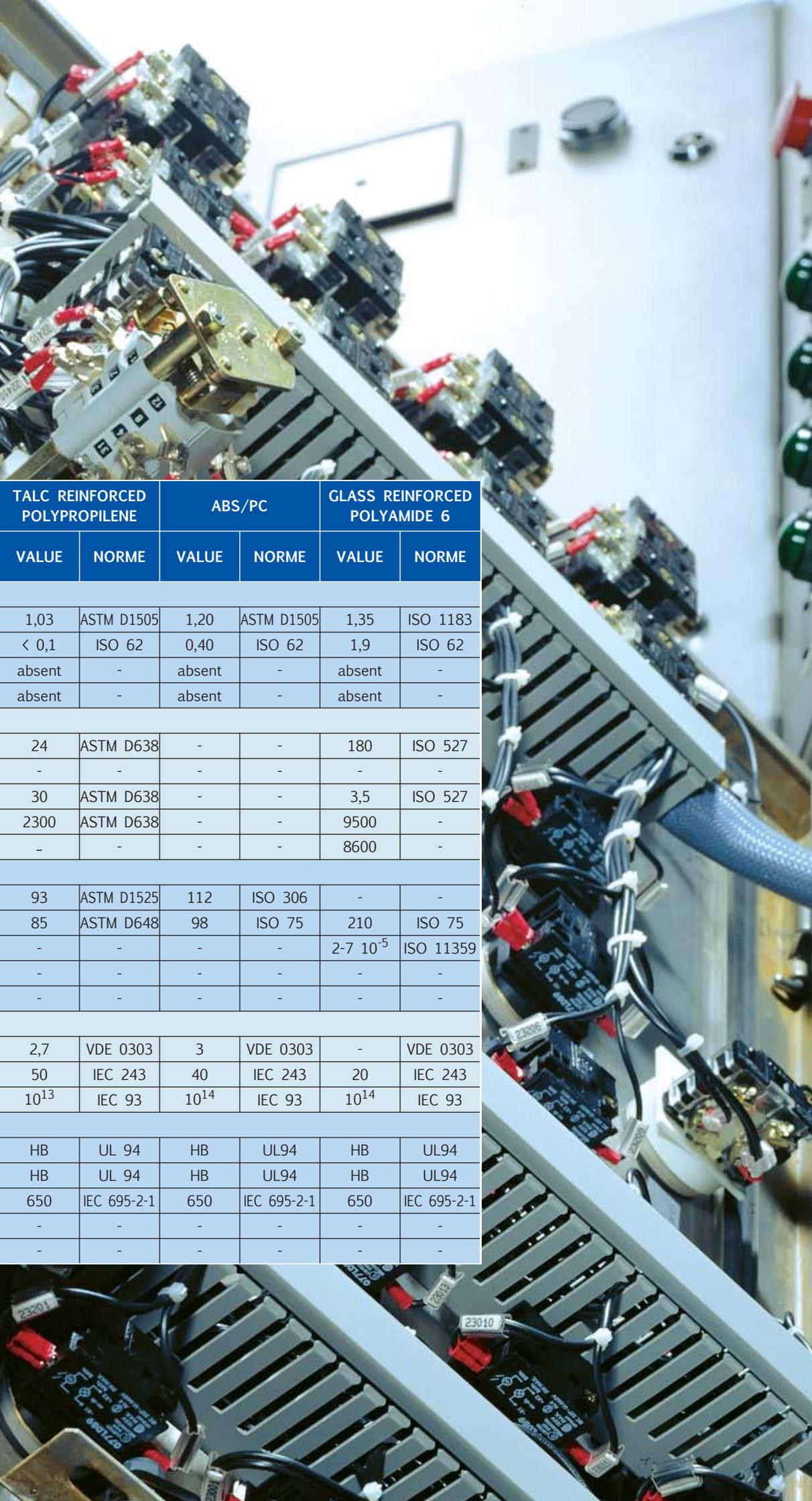
Spare blade for 4F

COMPLIANCE WITH INTERNATIONAL STANDARDS

IBOCO wiring products respond to all installation needs, coping with different uses and environment applications. They are manufactured with high quality materials that undergo severe quality controls and performance tests under extreme operating and duration conditions with a constant control of quality standards.

- Wiring ducts T1/T1-E, SEP-E are manufactured in rigid SELF-EXTINGUISHING PVC.
- Those components for which high bending resilience is required are in polyamide 6, polypropylene and ABS/PC.
- Spiralite is manufactured in natural polyethylene and self-extinguishing polyethylene.

MATERIALS	MEASURE UNIT	RIGID PVC		POLYAMIDE 6		POLYETHYLENE		FLAME RETARDANT POLYETHYLENE	
		VALUE	NORME	VALUE	NORME	VALUE	NORME	VALUE	NORME
CHEMICAL-PHYSICAL PROPERTIES									
Specific gravity	g/cm ³	1,55	DIN 53479	1,14	ASTM D792	0,92	ASTM D1505	0,97	DIN 53479
Water absorption (23°C)	%	<0,1	ISO 62	2,5	ASTM D570	< 0,1	ISO 62	< 0,1	ISO 62
Formaldehyde	ppm	absent	-	absent	-	absent	-	absent	-
Cadmium	ppm	absent	-	absent	-	absent	-	absent	-
MECHANICAL PROPERTIES									
Tensile stress at break	Mpa	39	ISO 527	45	ISO 527	17	ASTM D638	15	DIN 53455
Traction strenght	Mpa	44	ISO 527	55	ISO 527	9,5	ASTM D638	9	DIN 53455
Elongation at break	%	130	ISO 527	250	ISO 527	400	ASTM D638	600	DIN 53455
Tensile Modulus	Mpa	4400	ISO 527	950	ISO 527	-	-	240	DIN 53455
Flexural Modulus	Mpa	3200	ISO 527	1100	ISO 178	210	ASTM D790	130	DIN 53457
THERMAL PROPERTIES									
VICAT temperature	°C	84	DIN 53460	198	ISO 306	89	ASTM D1525	-	-
Heat Deflection Temperature	°C	72	ISO 75	185	ISO 75	-	-	-	-
Coefficient of expansion	K-1	6 10 ⁻⁵	DIN 53752	8-10 10 ⁻⁵	ASTM D696	22 10 ⁻⁵	DIN 53752	10 ⁻⁵	DIN 53752
Specific heat	kJ/kgK	0,94	INTERNAL	1,7	ASTM C351	-	-	-	-
Thermal conductivity	W/mk	0,14	DIN 52612	0,29	ASTM C177	0,32	DIN 52612	0,32	DIN 52612
ELECTRICAL PROPERTIES									
Dielectric constant	-	3,2 - 4,0	ASTM D150	5,0	VDE 0303	2,4	VDE 0303	2,3	DIN 53483
Dielectric strength	Kv/mm	70	IEC 243	35	IEC 243	90	IEC 243	90	IEC 243
Surface resistance	Ohm	10 ¹³	IEC 93	5 10 ¹¹	IEC 93	10 ¹³	IEC 93	10 ¹³	IEC 93
SELF-EXTINGUISHING									
Self-extinguishing 1,6 millimeters	-	V0	UL 94	V2	UL 94	HB	UL 94	V2	UL 94
Self-extinguishing 3,2 millimeters	-	V0	UL 94	V2	UL 94	HB	UL 94	V2	UL 94
Glow wire test (2 mm)	°C	960	IEC 695-2-1	650	IEC 695-2-1	650	IEC 695-2-1	850	IEC 695-2-1
CSTB Classification	-	M1 (RAL7030)	CSTB	-	-	-	-	-	-
Oxygen Index	%	43	ISO 4589	25	ASTM D2863	-	-	25	ASTM D2863



TALC REINFORCED POLYPROPYLENE		ABS/PC		GLASS REINFORCED POLYAMIDE 6	
VALUE	NORME	VALUE	NORME	VALUE	NORME
1,03	ASTM D1505	1,20	ASTM D1505	1,35	ISO 1183
< 0,1	ISO 62	0,40	ISO 62	1,9	ISO 62
absent	-	absent	-	absent	-
absent	-	absent	-	absent	-
24	ASTM D638	-	-	180	ISO 527
-	-	-	-	-	-
30	ASTM D638	-	-	3,5	ISO 527
2300	ASTM D638	-	-	9500	-
-	-	-	-	8600	-
93	ASTM D1525	112	ISO 306	-	-
85	ASTM D648	98	ISO 75	210	ISO 75
-	-	-	-	2-7 10 ⁻⁵	ISO 11359
-	-	-	-	-	-
-	-	-	-	-	-
2,7	VDE 0303	3	VDE 0303	-	VDE 0303
50	IEC 243	40	IEC 243	20	IEC 243
10 ¹³	IEC 93	10 ¹⁴	IEC 93	10 ¹⁴	IEC 93
HB	UL 94	HB	UL94	HB	UL94
HB	UL 94	HB	UL94	HB	UL94
650	IEC 695-2-1	650	IEC 695-2-1	650	IEC 695-2-1
-	-	-	-	-	-
-	-	-	-	-	-



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