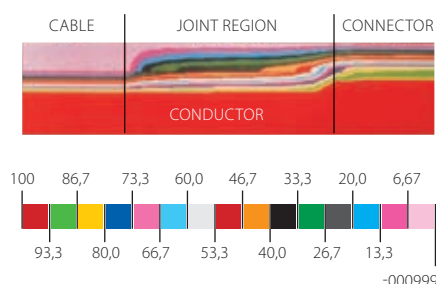




VOLTAGE DISTRIBUTION (PERCENT)
HEAT-SHRINKABLE JOINT



HEAT-SHRINK JOINTS

The preparation of cables and the installation techniques for medium voltage joints are identical to those for terminations. Even cable made with paper impregnated with non-migrant oil up to 36 kV uses the same basic design. In this way, the heat-shrink system sets new standards regarding the effectiveness, reliability and simplicity of cable installation. The performance and ease of installation of heat-shrink materials are not affected by stocking, even if long and in adverse environmental conditions. A low number of "kits" per cable type covers the entire range of sections, allowing use with any type of connector, regardless of the type of conductor (round or sectoral) and different shields.

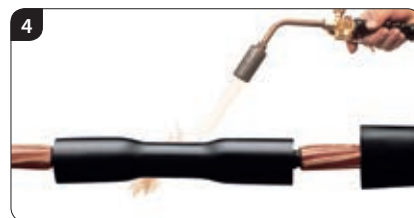
ELECTRICAL FIELD DISTRIBUTION

When the cable shield is cut, the electrical field is controlled by a material that has already been experimented in terminations: the electrical gradient control tube. This tube is made of non-linear impedance insulating material that is able to control the electrical field both at the end of the cable shield and on the metal connector. As with the terminations, thanks to the heat-shrink components, the range of joints includes practically all the configurations of the existing cables, as well as the joints mixed between different types of cable. The kit references that appear on the selection tables are those that are most used by national installers for cable applications up to 36 kV. In the described cases, please contact Raytech regardless of the type of cable.

HOW TO IDENTIFY AND ORDER COMPLEMENTARY ACCESSORIES

Accessory	Abbreviation to add to the product code	Example
Copper connectors	-C + Conductor cross section	GHVE 20/185-C95
Aluminium connectors	-CA + Conductor cross section	GHVE 20/185-CA95
Shear bolt connectors	-CPR + conductor cross section	GHVE 20/185-CPR95

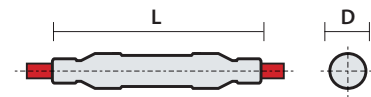
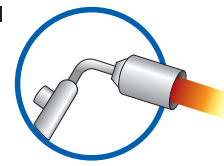
INSTALLATION SEQUENCE



SINGLE CORE HEAT-SHRINK JOINTS

For extruded and impregnated paper insulated cables.

High reliability and superior electrical, mechanical and sealing properties make these joints the ideal solution for all types of cables and installation.



Electrical performance:

CEI 20-24 • HD 629-1 • HD 629-2

FOR EXTRUDED INSULATION CABLES WITH COPPER WIRE SHIELD

([A]RG7H1R[X], [A]RE4H1E[X], [A]RG7H1M1[X])

Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVE 15/50-1	153003-000	7,2 - 17,5	25	50	700	75
GHVE 15/300-1	442803-000	7,2 - 17,5	70	300	700	80
GHVE 15/630-1	357174-000	7,2 - 17,5	400	630	1000	100
GHVE 20/240-1	623051-000	24	25	240	700	80
GHVE 20/630-1	GHVE20/630-1	24	240	630	1000	100
GHVE 30/240-1	GHVE30/240-1	36	35	240	1000	90
GHVE 30/500-1	GHVE30/500-1	36	300	500	1000	100



FOR EXTRUDED INSULATION CABLES WITH ALUMINIUM TUBE SHIELD

([A]RG7H1R[X], [A]RE4H1E[X], [A]RG7H1M1[X])

Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVE 15/50-1-H5	GHVE15/50-1-H5	17,5	25	50	700	75
GHVE 15/300-1-H5	GHVE15/300-1-H5	17,5	50	300	700	80
GHVE 15/630-1-H5	GHVE15/630-1-H5	17,5	400	630	1000	100
GHVE 20/240-1-H5	GHVE20/240-1-H5	24	25	240	700	80
GHVE 20/630-1-H5	GHVE20/630-1-H5	24	240	630	1000	100
GHVE 30/240-1-H5	GHVE30/240-1-H5	36	35	240	1000	90
GHVE 30/500-1-H5	GHVE30/500-1-H5	36	300	500	1000	100



FOR SINGLE CORE EXTRUDED INSULATION CABLES ARMoured WITH ALUMINIUM WIRES ([A]RG7H1RFR[X], [A]RE4H1EFE[X])

Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVE 20/240-1-ARM	623052-000	24	25	240	1700	80
GHVE 20/630-1-ARM	GHVE20/630-1-ARM	24	240	630	1700	100
GHVE 30/240-1-ARM	GHVE30/240-1-ARM	36	35	240	1850	100
GHVE 30/500-1-ARM	GHVE30/500-1-ARM	36	300	500	1850	110



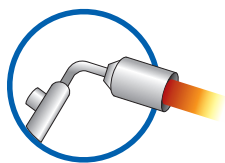
FOR INSULATED CABLES MADE OF PAPER IMPREGNATED WITH MIXTURE ([A]RC1HLR[X])

Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVP 20/70-1	190901-000	24	35	70	1000	75
GHVP 20/240-1	GHVP20/240-1	24	50	240	1000	75
GHVP 20/400-1	861101-000	24	300	400	1000	80



Supplies do not include connectors which must be requested separately.

For complementary accessories see page 172

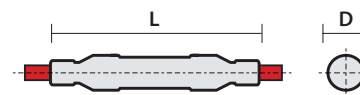

Electrical performance:

CEI 20-24 • HD 629-1 • HD 629-2

Accessories for cables in accordance with CPR, type RG26H1M16 (Italian designation), are suitable for

- Cables with copper conductors
- Special thermoplastic sheath
- Red copper wire screen
- High modulus rubber insulation

SINGLE CORE HEAT-SHRINK JOINTS



For cables CPR RG26H1M16 12/20 kV (U_{max} 24 kV)

Product Item	U _{max} (kV)	Ø on insulation (mm)	Ø on external sheath (mm)	Conductor cross section (mm ²)	L max (mm)	D max (mm)
GHVE 20/240-1 623051-000	24	17	26	25	700	80
		17	27	35	700	80
		18	28	50	700	80
		19	29	70	700	80
		20,6	30	95	700	80
		22	32	120	700	80
		23,7	34	150	700	80
		25	36	185	700	80
GHVE 20/630-1 GHVE20/630-1	24	27,8	39	240	1000	100
		30,8	43	300	1000	100
		33	46	400	1000	100
		37	49	500	1000	100

For cables CPR RG26H1M16 18/30 kV (U_{max} 36 kV)

Product Item	U _{max} (kV)	Ø on insulation (mm)	Ø on external sheath (mm)	Conductor cross section (mm ²)	L max (mm)	D max (mm)
GHVE 30/240-1 GHVE30/240-1	36	25,6	32	35	1000	90
		25	35	50	1000	90
		25	36	70	1000	90
		26	37	95	1000	90
		27	38	120	1000	90
		28,2	39	150	1000	90
		29,2	41	185	1000	90
		31,5	43	240	1000	90
GHVE 30/500-1 GHVE30/500-1	36	34,4	46	300	1000	100
		37	48	400	1000	100
		41	52	500	1000	100

TEMPERATURES

105°C

Working temperature


140°C

Max overload temperature


300°C

Short circuit temperature

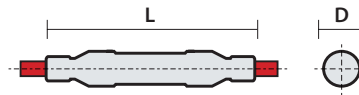
★ ADVANTAGES

- Immediately energizable
- Quick in installation
- Simple and reliable they do not require a special skilling
- Optimal distribution of the electric field
- Can be installed in all environmental conditions
- No shelf life

THREE CORE HEAT-SHRINK JOINTS

For extruded insulation cables and insulated cables.

High reliability and superior electrical, mechanical and sealing properties make these joints the ideal solution for all types of cables and installation.



FOR EXTRUDED INSULATION CABLES ([A]RG7H1OR, [A]RE4H1OR)

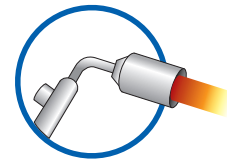
Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVE 15/50-3	545116-000	7,2 - 17,5	25	50	1500	105
GHVE 15/300-3	251291-000	7,2 - 17,5	70	300	1500	110
GHVE 15/630-3	GHVE15/630-3	7,2 - 17,5	400	630	1600	130
GHVE 20/240-3	708732-000	24	25	240	1500	110
GHVE 20/630-3	GHVE20/630-3	24	300	630	1600	140
GHVE 30/240-3	GHVE30/240-3	36	50	240	1800	120
GHVE 30/300-3	GHVE30/300-3	36	300		1900	150

FOR INSULATED ARMoured CABLES WITH GALVANIC CONTINUITY OF ARMOUR

Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVE 15/50-ARM	155000-001	7,2 - 17,5	25	50	1500	75
GHVE 15/300-ARM	153000-001	7,2 - 17,5	70	300	1500	110
GHVE 15/630-ARM	GHVE15/630-ARM	7,2 - 17,5	400	630	1600	130
GHVE 20/240-ARM	202400-001	24	25	240	1500	110
GHVE 20/630-ARM	GHVE20/630-ARM	24	300	630	1600	140
GHVE 30/240-ARM	GHVE30/240-ARM	36	50	240	1800	120
GHVE 30/300-ARM	GHVE30/300-ARM	36	300		1900	150

FOR INSULATED CABLES MADE OF IMPREGNATED PAPER ([A]RC1HLOR LEAD SHEATH OVER EACHCORE)

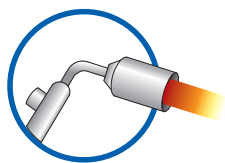
Product	Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	D max (mm)
GHVP 20/70-3	056242-000	24	35	70	1600	130
GHVP 20/240-3	843918-000	24	95	240	1600	140
GHVP 20/400-3	741685-000	24	300	400	1600	150



Electrical performance:

CEI 20-24 • CEI 20-62/2 • HD 629-1



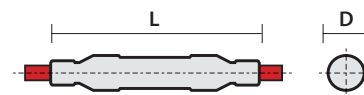

Electrical performance:

CEI 20-24 • CEI 20-62/2

HD 629-1 • HD 629-2



TRANSITION JOINTS BETWEEN SINGLE CORE CABLES



BETWEEN SINGLE CORE PAPER INSULATED CABLE AND EXTRUDED CABLE (RESPECTIVELY [A]RG7H1R[X] AND [A]RC1HLRX)

Product Item	U _{max} (kV)	Conductor cross section (mm ²)		ENEL serial number
		paper cable	extruded cable	
GHVE 20/25-1-T 202500-000	24	25		-
GHVE 20/240-1-T GHVE20/240-1-T	24	50 - 240	35 - 185	271074
GHVE 20/400-1-T 250499-000	24	240 - 400		-

BETWEEN SINGLE CORE PAPER INSULATED CABLE AND EXTRUDED CABLE WITH ALUMINIUM SHEET SCREEN (RESPECTIVELY [A]RC1HLRX AND ARG7H5EXY)

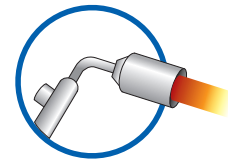
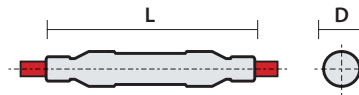
Product Item	U _{max} (kV)	Conductor cross section (mm ²)		ENEL serial number
		paper cable	extruded cable	
GHVE 20/240-1-TE GHVE20/240-1-TE	24	50 - 240	35 - 150	270118

BETWEEN SINGLE CORE EXTRUDED CABLE WITH WIRE SCREEN AND EXTRUDED CABLE WITH ALUMINIUM FOIL SCREEN (RESPECTIVELY [ARG7H1R[X] OR [A]RG7H1M1 AND ARG7H5EXY)

Product Item	U _{max} (kV)	Conductor cross section		L max (mm)	D max (mm)
		from (mm ²)	to (mm ²)		
GHVE 20/240-1X-TE GHVE20/240-1X-TE	24	25	240	1000	75

TRANSITION JOINTS BETWEEN MULTI CORE CABLES

The three core transition joints kits are composed of one three core joint and do not contain the connectors.

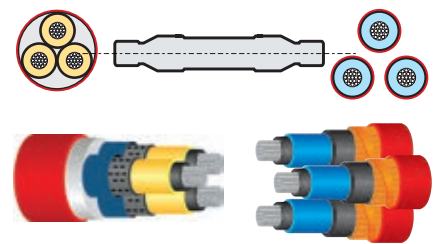


Electrical performance:

CEI 20-24 • CEI 20-62/2
HD 629-1 • HD 629-2

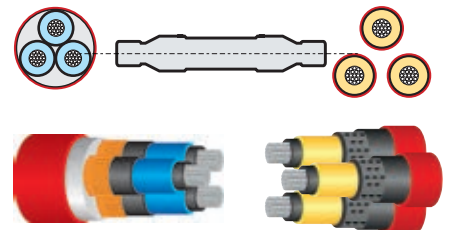
BETWEEN 3-CORE PAPER INSULATED CABLE AND 3 SINGLE CORE EXTRUDED CABLES (RESPECTIVELY [A]RC1HLOR AND [A]RG7H1R[X])

Product Item	U _{max} (kV)	Conductor cross section (mm ²)	
		paper cable	extruded cable
GHVT 20/25-1X-3H 202020-000	24	25	25
GHVT 20/240-1X-3H 202019-000	24	50 - 240	35 - 185
GHVT 20/400-1X-3H 202021-000	24	300 - 400	240 - 400



BETWEEN 3-CORE EXTRUDED CABLE AND 3 SINGLE CORE PAPER INSULATED CABLES (RESPECTIVELY [A]RG7H10R AND [A]RC1HLRX)

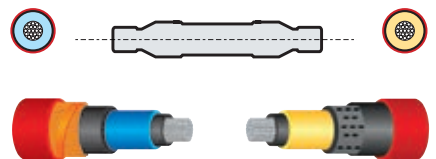
Product Item	U _{max} (kV)	Conductor cross section	
		from (mm ²)	to (mm ²)
GHVT 20/70-3X-1H on request 1	24	25	70
GHVT 20/240-3X-1H on request 2	24	95	240
GHVT 20/400-3X-1H on request 3	24	300	400



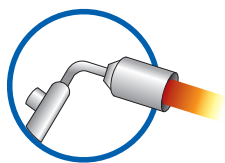
SINGLE CORE PLASTIC OR PAPER INSULATED CABLE JOINT WITH SCREEN INTERRUPTION

Single and three core joints are available, both on extruded cable and on impregnated paper insulated cable, also belted and for transition joint, which allow galvanic separation between the screens when the spliced cables are connected to two different earth networks.

Product Item	Type of cable	U _{max} (kV)	Conductor cross section		L max (mm)	D max (mm)
			from (mm ²)	to (mm ²)		
GHVP 20/240-1-IS 159852-INT	(A)RC4HLR(X)	24	50	240	1000	75
GHVE 20/240-1-IS 20GHIS-TEC	(A)GR7H1R(X)	24	50	240	1000	75
GHVE 20/150-1-IS 080799-TEC	ARG7H5EXY	24	35	150	1000	75



For complementary accessories see page 172

**Electrical performance:**

CEI 20-24 • CEI 20-62/2

HD 629-1 • HD 629-2

ENEL tables: DJ 4376

ENEL certification: DJ 4853 • DJ 4854



ENEL tables: DJ 4376

ENEL certification: DJ 4853 • DJ 4854

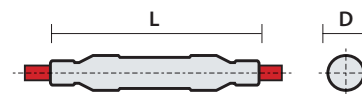


ENEL tables: DJ 4373

ENEL certification: DJ 4851 • DJ 4854



ENEL CERTIFIED HEAT-SHRINK JOINTS



FOR EXTRUDED INSULATION CABLES ([A]RG7H1RX 12/20 KV COPPER WIRE SHIELD - EXTERNAL PVC SHEATH)

Product Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	ENEL serial number
GHVE 20/185 - 1/U 512605-000	24	50	185	700	271071

FOR WIRE CARRYING OVERHEAD CABLES (ARG7H5EXY 12/20 KV ALUMINIUM TUBE SHIELD - EXTERNAL PE SHEATH)

Product Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	ENEL serial number
GHVE 20/150 - 1/U 478596-000	24	35	150	700	271072

FOR INSULATED CABLES WITH IMPREGNATED PAPER (RC4HLRX WITH COPPER CONDUCTORS from 50 to 150 mm² and ARC4HLRX WITH ALUMINIUM CONDUCTORS from 95 to 240 mm²)

Product Item	U _{max} (kV)	Conductor cross section from (mm ²) to (mm ²)		L max (mm)	ENEL serial number
GHVP 20/150 - 1/U 085563-000	17,5 e 24	50	150	1000	-
GHVP 20/240 - 1/U 573299-000	17,5 e 24	95	240	1000	271042