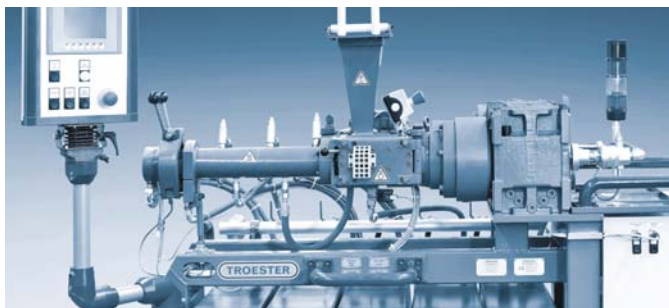


# CV Lines for the Production of Rubber Cables



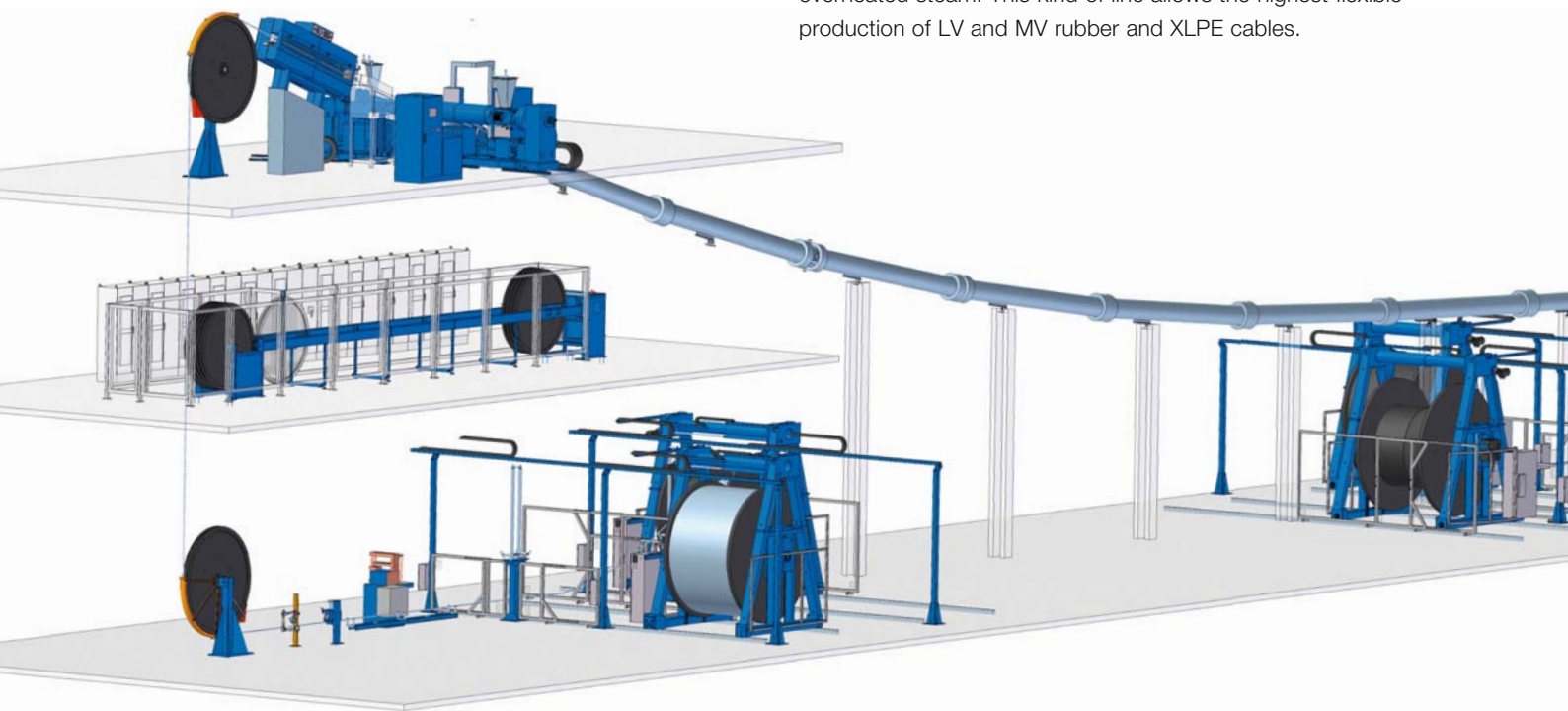
**TROESTER**

EXCELLENCE IN EXTRUSION.

# CV Lines for the Production of Rubber Cables

**Rubber compounds are used for various applications where for example flexibility or chemical resistance of the cable is required.**

The rubber cables are vulcanized with saturated steam at pressures of 18 - 24 bar. According to cable weight and cable diameter, the cables are produced either on Horizontal Rubber CV-Lines or on Catenary Rubber CCV-Lines.



Conductors with small diameters and low wall thicknesses are manufactured in horizontal CV lines. In this case, however, the beginning of the curing section is slightly declined and the CV tube runs out horizontally. For larger weights, the use of a catenary CCV line is required.

In case of limited space availability a turnaround autoclave can be installed to increase the output of the line. To avoid deformations when sheathing sensitive cables, lower steam pressures of 4 -7 bar can be applied. Nevertheless, economic speeds are achievable by using overheated steam.

Different rubber material properties required different curing and cooling processes. The application of several water overflows allows the flexible adjustment of the curing/cooling ration to optimally meet the individual requirements and to achieve the best line performances.

The lines are equipped with up to 3 extruders to produce cables in various designs: 1- or 2-layer insulation or sheathing, additional stripes or skin layers or 3-layer extrusion for medium voltage cables. Special tools and equipment allow the production of flat cables as well. A TROESTER developed line control system which is optimally matched to rubber CV lines ensures safe and easy handling and operation.

## **Combined Rubber & XLPE Extrusion Lines, Overheated Steam**

For the flexible production of Rubber and XLPE MV Cables on the same line, combined lines for such purposes are available. To meet each process the best way the line can be equipped with both, steam and nitrogen curing circuits and either combined or individual extruders for each material. The CV tube is equipped with heating zones which also allows to operate the line in with overheated steam. This kind of line allows the highest flexible production of LV and MV rubber and XLPE cables.

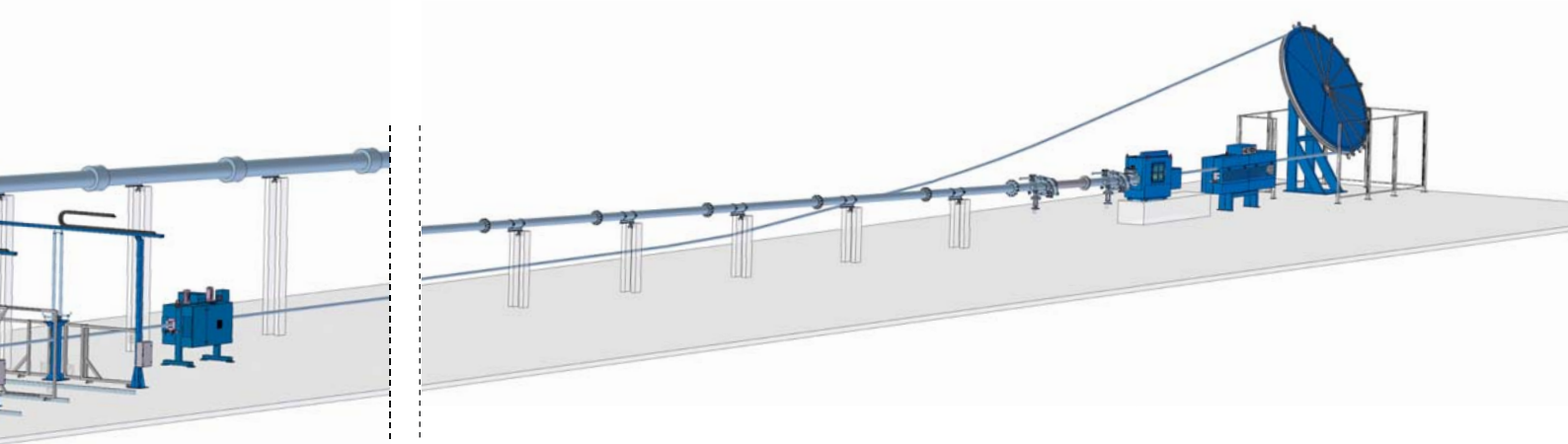
## **Main Advantages of Rubber CV Lines from TROESTER**

- > Flexible and efficient production over a wide product range
- > Excellent core tolerances by state-of-the-art extrusion technology
- > Special designed Rubber Extruders GS
- > Pin-type Extruder QSM for additional compound mixing
- > High line speeds due to optimum division of the heating and cooling section
- > 1- and 2-layer rubber insulation and sheathing
- > Skin and stripe extrusion
- > Medium Voltage (35 kV) triple extrusion process
- > Overheated Steam for sensitive products
- > Innovative line concepts (customized lines fit to special customers requirements)
- > Combined Rubber- and XLPE-Extrusion lines
- > Flat-Cable production
- > State-of-the-art line control
- > Over 120 years of experience in rubber processing technology

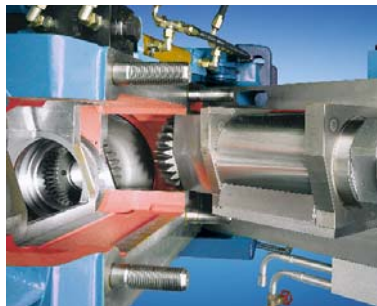




Extruder Group for 2-Layer extrusion



Portal Winder AWB



Feed roll in Hopper section



Pin-type Extruder QSM

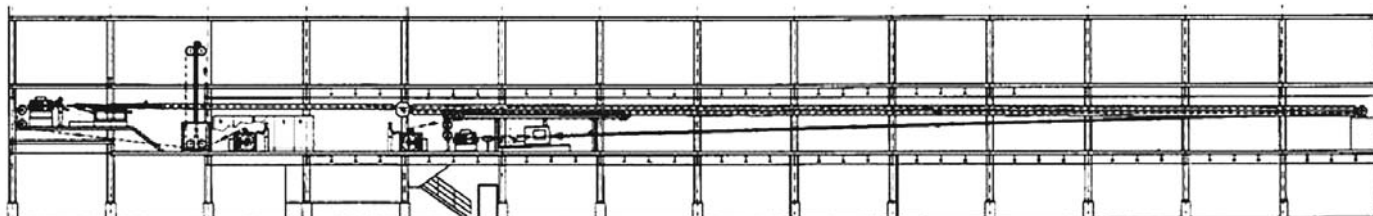


Embossing Unit

**Materials to Process**

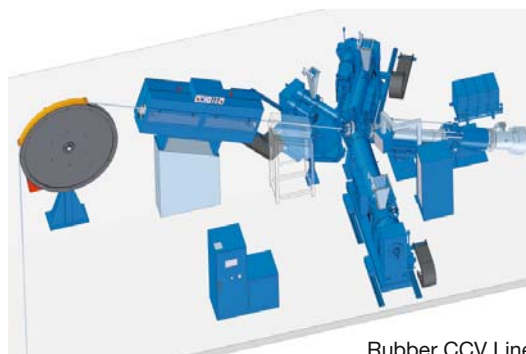
- EPDM** ethylene propylene rubber
- NBR** butadiene acrylnitril rubber
- CPE** chlorinated polyethylene rubber
- CSPE** chlorosulphonated polyethylene

- CR** polychloroprene
- NR** natural rubber
- EVA** ethylene vinylacetate rubber
- CM** chlorinated polyethylene
- SC Rubber** semi-conductive rubber
- Silicone rubber**



### Horizontal Rubber CV Line Line Characteristic (Example)

<b>Insulation</b>		
Voltage class	kV	1
Conductor cross section Cu/Al	mm <sup>2</sup>	0,75 - 35
Wall thickness	mm	0,5 - 3,6
Cable diameter max.	mm	14,2
<b>Sheathing</b>		
Inlet diameter	mm	5,5 - 17,0
Wall thickness	mm	1,0 - 3,3
Cable outer diameter	mm	8,0 - 23,0
Cable weight max.	kg/m	1,0
Tube length	m	100
Extruder group		60/120



Rubber CCV Line

### Catenary Rubber CCV Line Line Characteristic (Example)



Rubber CCV Line

<b>Insulation</b>		
Voltage class	kV	1 - 35
Conductor cross section Cu/Al	mm <sup>2</sup>	25 - 1000
<b>Wall thickness</b>		
Inner semi-conductor	mm	0,5 - 2,0
Insulation	mm	2,5 - 12,0
Outer semi-conductor	mm	0,5 - 2,0
Cable diameter max.	mm	72,0
<b>Sheathing</b>		
Inlet diameter max.	mm	100,0
Wall thickness	mm	2,0 - 12,5
Cable outer diameter	mm	125,0
<b>Flat cables</b>		
Inlet diameter max.	mm	40,0
Cable width before cross head max.	mm	90,0
Total wall thickness	mm	2,0 - 12,5
Cable width after cross head max.	mm	110,0
Cable construction	mm	40,0 x 110,0
Cable weight max.	kg/m	16
Tube length	m	142
Extruder group		60/150/90

# TROESTER

EXCELLENCE IN EXTRUSION.

**TROESTER GmbH & Co. KG**  
Am Brabrinke 1-4  
30519 Hannover, GERMANY  
Phone +49-511-87040  
Fax +49-511-864028  
E-mail [innovations@troester.de](mailto:innovations@troester.de)  
[www.troester.de](http://www.troester.de)

**TROESTER Machinery, Ltd.**  
300 Loomis Avenue  
Cuyahoga Falls, Ohio 44221, USA  
Phone +1-330-928-7790  
Fax +1-330-928-7239  
E-mail [info@troester-usa.com](mailto:info@troester-usa.com)  
[www.troester-usa.com](http://www.troester-usa.com)

**TROESTER Machinery (Shanghai) Co., Ltd.**  
Workshop No. 1, Area C  
No. 6999 Chuan'sha Road, Pudong  
Shanghai 201202, PR CHINA  
Phone +86-21-58598308  
Fax +86-21-58598310  
E-mail [info@troester.cn](mailto:info@troester.cn)  
[www.troester.cn](http://www.troester.cn)

**TROESTER Moscow**  
RUS-Moscow, 109815  
Phone +7-495-76014233  
E-mail [lusia13710@mail.ru](mailto:lusia13710@mail.ru)

**X-Compound GmbH**  
Hardmatt 932  
CH -5082 Kaisten, Switzerland  
Phone +41-62-869 10 30  
Fax +41-62-874 32 08  
E-mail [info@x-compound.com](mailto:info@x-compound.com)  
[www.x-compound.com](http://www.x-compound.com)