

corrugated plastic pipe technology

MACHINERY



UNICOR
future of corrugated pipes



	Page
› Corrugated pipe.....	4
› Applications.....	4
› Advantages	6
› Pipe design.....	8
› Pipe calculation and testing.....	9
› Corrugators	10
› A worldwide success story	10
› Production machinery.....	12
› Downstream equipment.....	13
› Production technologies	14
› Die heads	16
› Cooling mandrel	17
› Mould blocks.....	18
› Connection techniques.....	19
› After sales service	20
› Online Support Service.....	20





Small-sized corrugators

Corrugators	Pipe sizes (i.d. to o.d.)	Page
› UC 15 vertical	3 mm - 15 mm	22
› UC 15 G2	4.8 mm - 15 mm	24
› UC 36 G2	4.8 mm - 36 mm	26
› UC 58 G2	8 mm - 58 mm	28
› UC 58 vario vacuum	8 mm - 58 mm	30
› UC 90 G2	20 mm - 90 mm	34
› UC 135 G2	20 mm - 135 mm	36



Mid-sized corrugators

› UC 210	32 mm - 200 mm	38
› UC 280	32 mm - 280 mm	40
› UC 315	32 mm - 315 mm	42
› UC 800	95 mm - 800 mm	44



Large-sized corrugators

› UC 1200	200 mm - 1200 mm	46
› UC 1800	500 mm - 1800 mm	48

Corrugated pipe

Applications

UNICOR offers a wide range of corrugators for the production of material saving corrugated pipes from 3 mm i.d. up to 2400 mm o.d. There are countless different applications for corrugated pipes on the world market:

» Technical applications:

Flexible single wall, double wall and multi-layer corrugated pipe for the protection of cables in automotive and machine construction. Applications also in healthcare, telecommunication and household.

› **Diameters:** from 3 mm i.d. to 200 mm o.d.

» Cable protection:

Flexible single wall, double wall and multi-layer corrugated pipe for cable protection, inhouse building, road construction and long-distance circuits.

› **Diameters:** from 10 mm i.d. to 250 mm o.d.

» Drainage:

Single, double or triple wall pipe for civil engineering, land and road drainage.

› **Diameters:** from 50 mm o.d. to 1200 mm o.d.

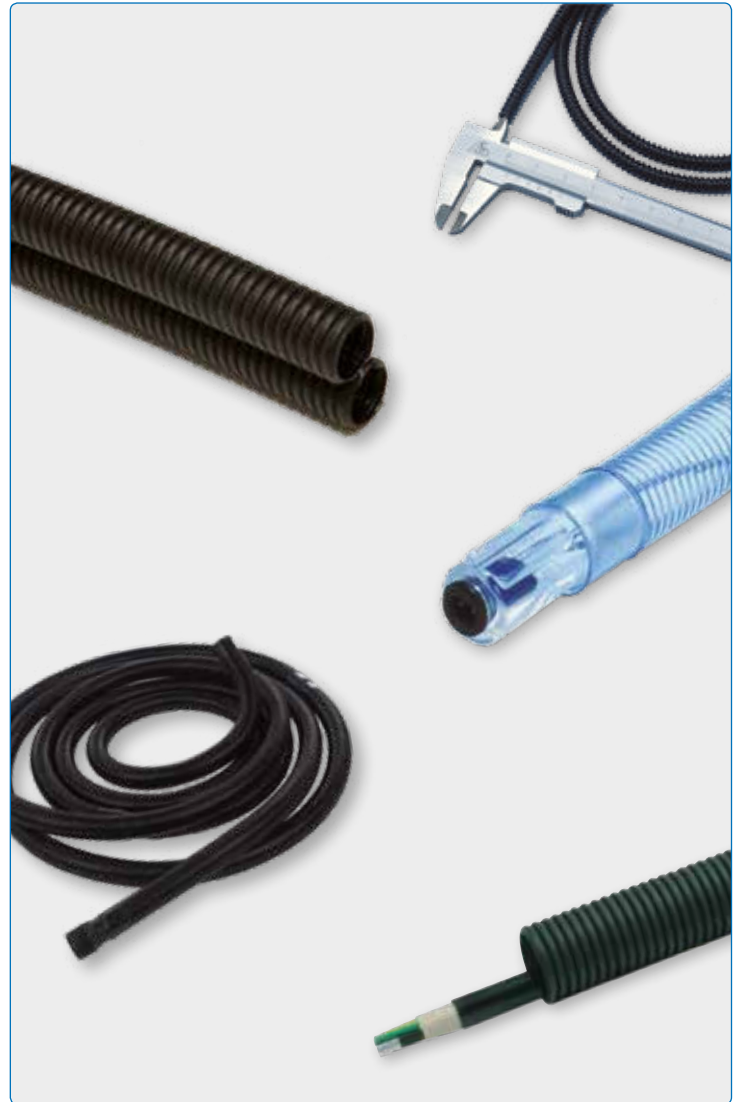
» Sewage and storm water:

Double and triple wall pipe for waste water and storm water disposal.

› **Diameters:** from 100 mm i.d. to 2400 mm o.d.



Small-sized





Mid-sized



Large-sized



Corrugated pipe

Advantages

High production speed

Due to the low weight, the production speed of corrugated pipes is clearly higher compared to smooth pipe (subject to same ring stiffness).

Material saving

The specific structure of corrugated pipes results in a saving of weight of up to 60% (compared to smooth pipes of same diameter and ring stiffness).

Easy handling

Compared to pipes made of steel, concrete, clay and glass fibre, corrugated pipes are easier to handle and can be installed without heavy equipment.

Resistance to corrosion

Pipes made of HDPE, PP or PVC offer a higher resistance to aggressive substances (i.e. waste water) compared to traditional pipe systems.

High flexibility

High-quality corrugated plastic pipes resist a deflection of up to 30%.

High ring stiffness

Corrugated pipes have a much higher ring stiffness than smooth pipes of the same weight.

Excellent water flow

The smooth surface of the inner layer of double wall corrugated pipes guarantees an excellent water flow.



High production speed



Material saving



Easy handling



Resistance to corrosion



High flexibility



High ring stiffness



Excellent water flow

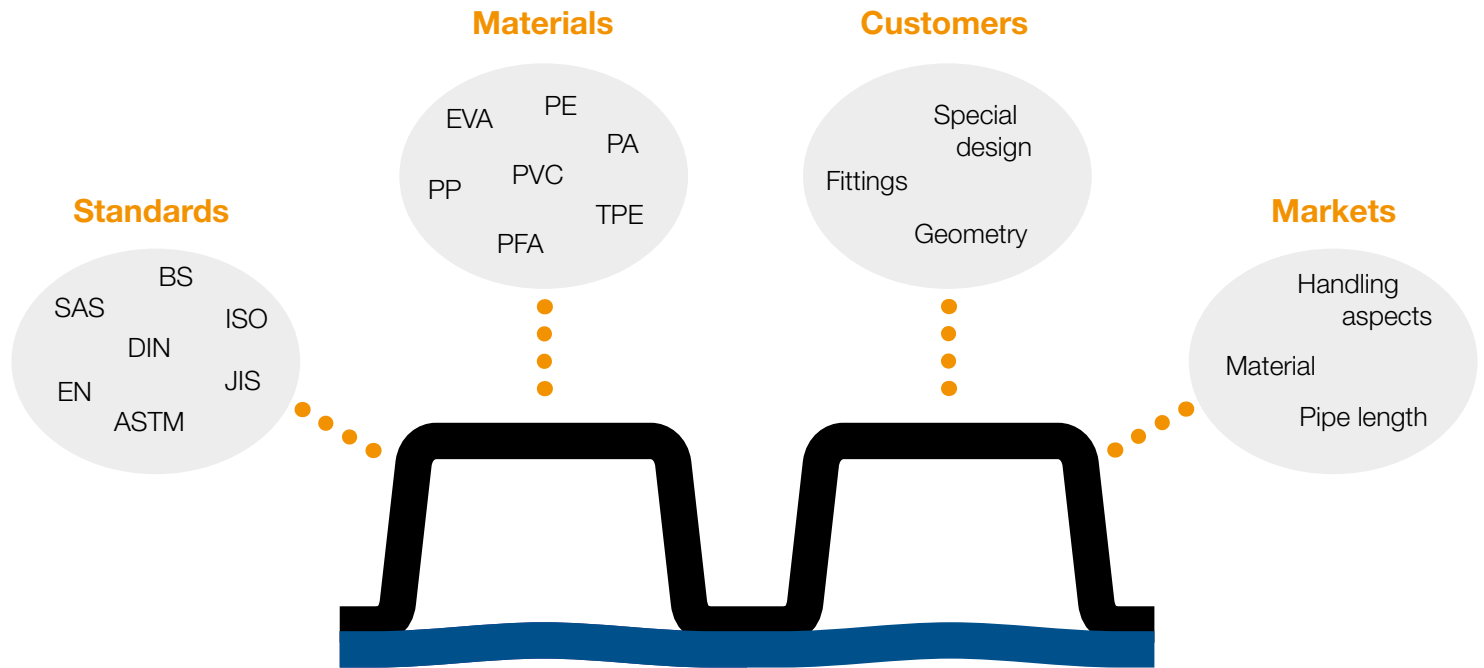
Corrugated pipe



There are numerous parameters decisively contributing to the design and the quality of a corrugated pipe:

- › National and international standards
- › Materials
- › Customers' requests
- › Market requirements
- › Etc.

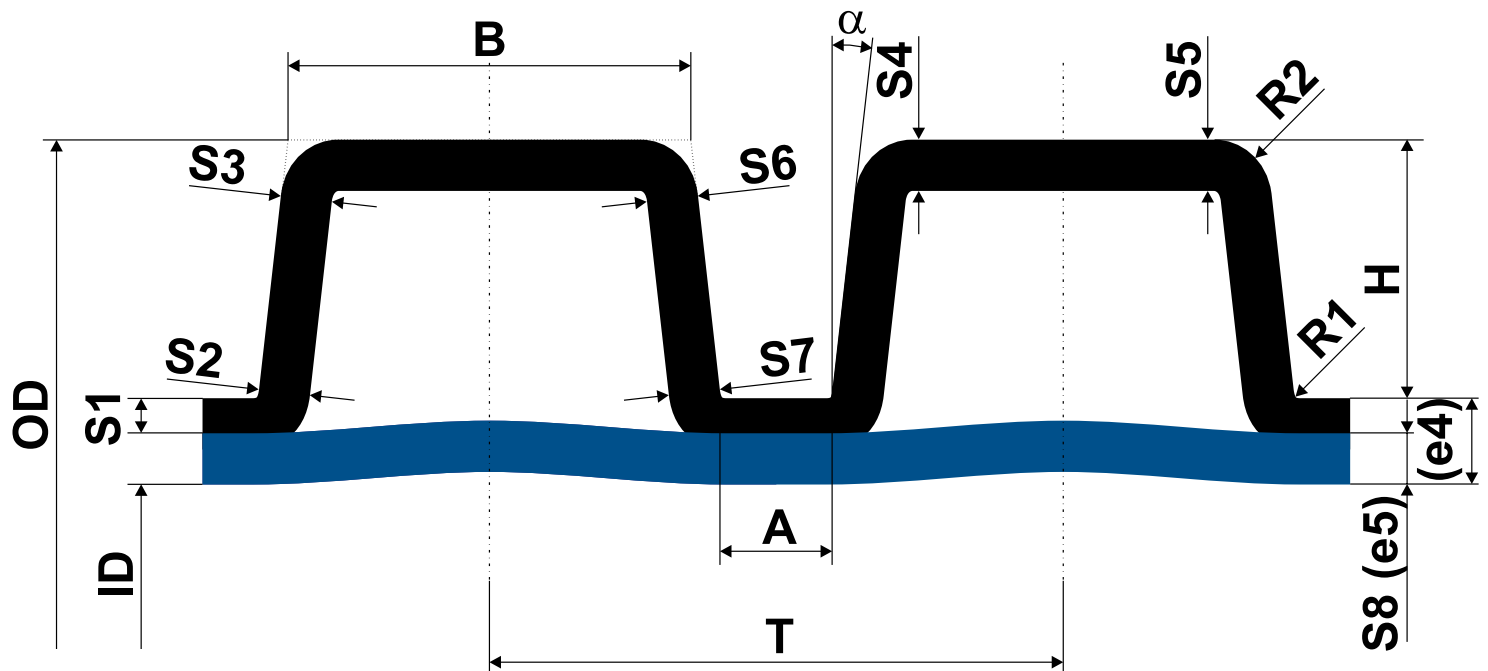
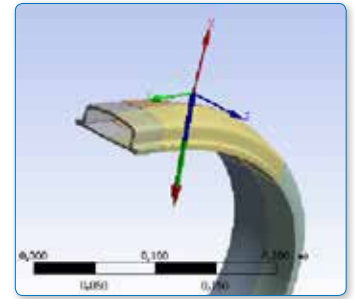
As one of the world market leaders, UNICOR is highly experienced in developing corrugated pipe machinery tailored to the many particular needs of pipe manufacturers and according to various standards and local requirements.



Pipe calculation and testing

Based on different product requirements, UNICOR calculates and designs the corrugated pipe geometry.

For this purpose UNICOR uses a profile calculation program of its own, state of the art FEM tools and a testing lab.



Corrugators

A worldwide success story

UNICOR's worldwide success is founded on constant developments and innovative machinery.

UNICOR sets standards regarding performance and quality.

Proof of this are more than 900 corrugators of all sizes running on all five continents.





Corrugators

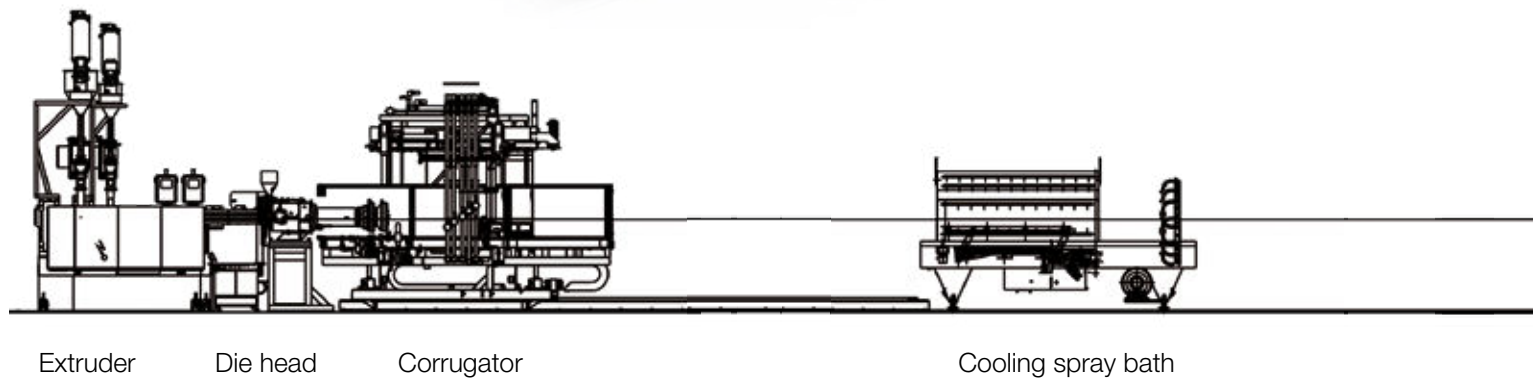
Production machinery

UNICOR offers its customers complete corrugated pipe extrusion lines. For the extruders and some parts of the downstream equipment we cooperate with selected long-time partners.

Every single unit that is contained in our production lines complies with the UNICOR guideline of PREMIUM quality.



Layout of a production line:



Downstream equipment

As a part of complete production lines, UNICOR develops and sells downstream equipment for nearly all applications.



ULV 50/200



TT 315



Planetary saw

Tipping table

Corrugators

Production technologies

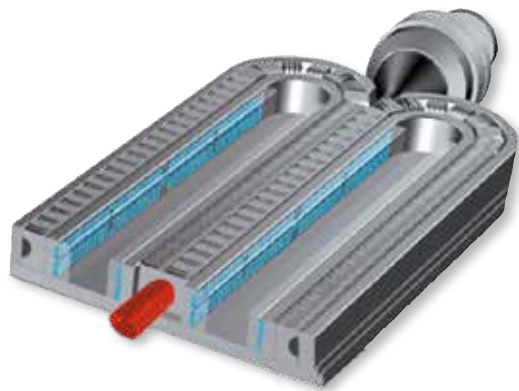
UNICOR offers different pipe production technologies:

» UNICOR's closed construction technology

UNICOR's small-sized corrugators for pipe diameters of up to 135 mm o.d. are built in closed construction. The forming channel and the return channel are evenly cooled with cooling water. The cooled walls absorb the heat energy from the mould blocks.

Features:

- › High production speed
- › Water cooling
- › Closed horizontal or vertical design
- › Vacuum technology available

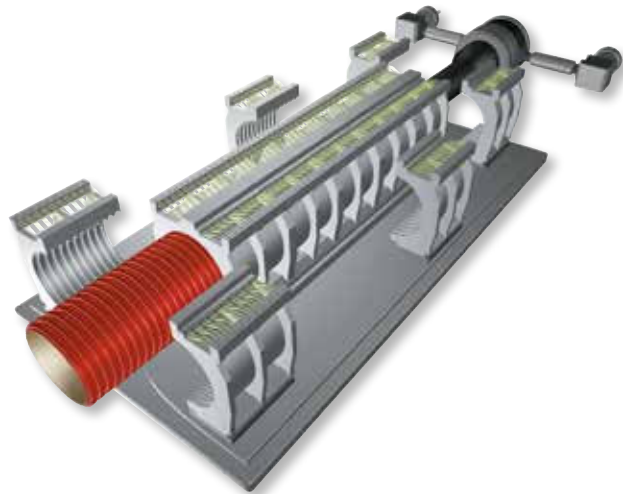


» UNICOR's shuttle corrugators

UNICOR's large-sized corrugators are designed for the production of large diameter pipes of excellent quality at high speed. UNICOR manufactures these machines for the production of single/double wall pipes of up to 2400 mm o.d.

Features:

- › High production speed
- › Direct mould block water cooling
- › Vacuum technology
- › Compact design
- › Less mould blocks required



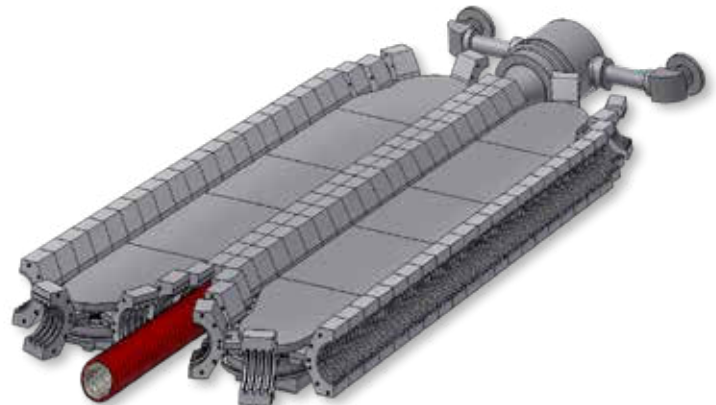
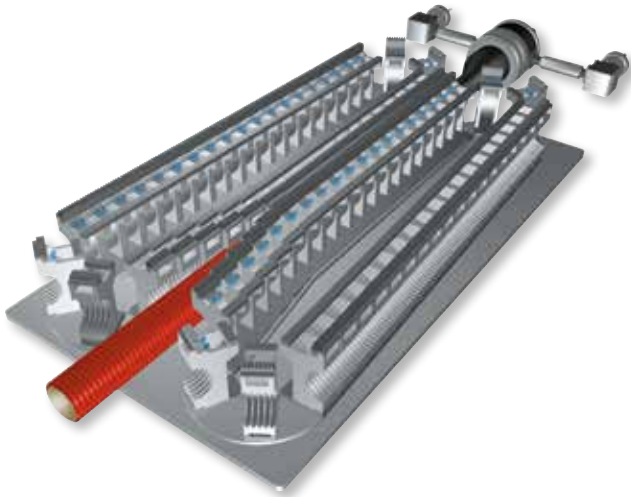
» UNICOR's open horizontal chain corrugators

UNICOR's mid-sized corrugators are designed for highest output and excellent product quality. This type of machinery

is available for the production of corrugated single/double wall pipes of up to 800 mm o.d.

Features:

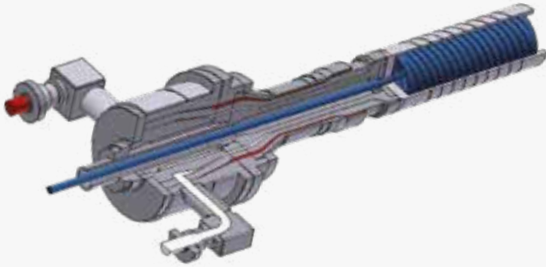
- › High production speed
- › Direct mould block water cooling
- › Vacuum technology
- › Quick change system for mould blocks



Production technologies

» Die heads:

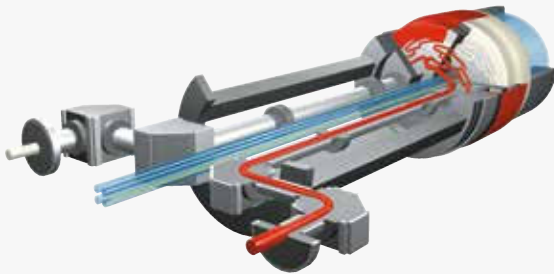
- › Swesy Die Head
for small-/mid-sized double wall pipes



SWESY Die Head – Advantages

- › Pre-heating for die sets possible
- › Wide range of diameters
- › Fastest change over time
- › Adjustment for inner and outer layer during production
- › Easy handling in adjusting
- › Increased output depending on flow characteristic of the polymer

- › Disc Die Head
for mid-/large-sized double wall pipes

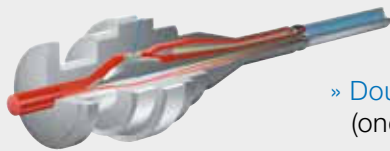


Disc Die Head – Advantages

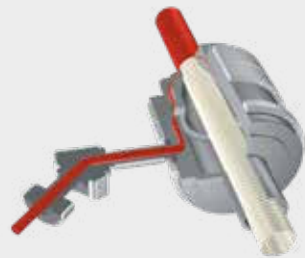
- › Reduced energy requirement of 65 %
- › Reduced flow time in the die head
- › No die gap adjusting required
- › No centering required
- › Tremendous weight reduction up to 80 %
- › Increased output depending on the flow characteristic of the polymer



» Single Wall Die Head



» Double Wall Die Head
(one extruder)

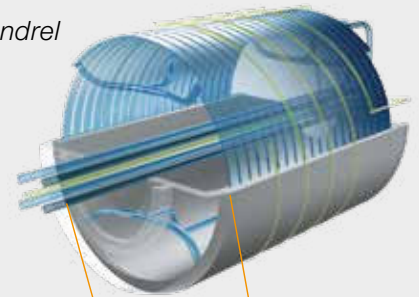


» Cross Die Head
for pipe in pipe production
and / or production of an
additional outer smooth
layer around a corrugated
pipe

» UNICOR cooling mandrel technology guarantees:

- › Increased output
- › High cooling capacity
- › Easy handling

Cooling mandrel



*Disc Die Head
with cooling mandrel*



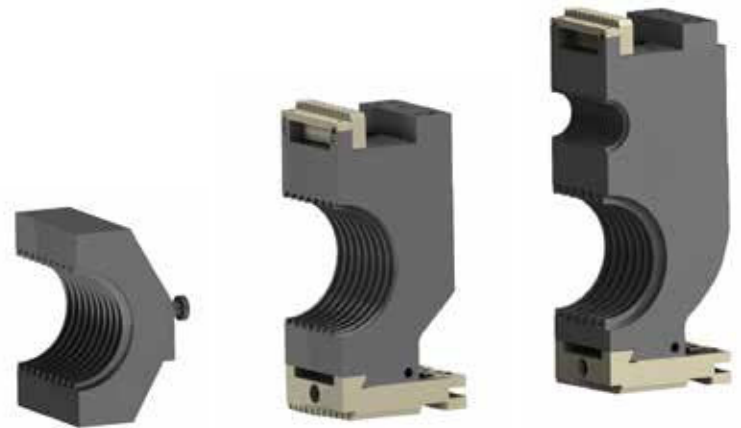
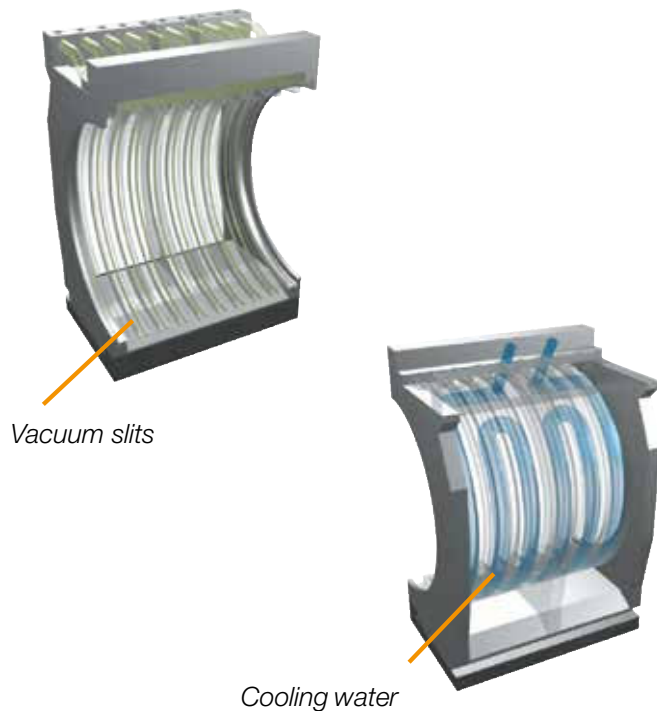
Corrugators

Production technologies

» Mould blocks

The corrugated pipe is formed inside the corrugator. During the extrusion process the plasticized material is blown into the forming channel. The forming of the pipe can be supported and optimized by using vacuum in the mould blocks. Water cooled mould blocks guarantee high outputs and excellent pipe quality.

Plastic pipes can be formed in mould blocks with one, two or three cavities (depending on corrugator) which means less investment costs and shorter changeover times.



Single, double and triple mould blocks



Connection techniques

There are various kinds of connection techniques.
The most common ones are:



The **in-line single-layer cuff** is produced inside the corrugator and is a connecting option for single and double wall pipe.



The **in-line double-layer cuff** is produced inside the corrugator and is a connecting option for double wall pipe.



The **spigot-end cuff** is a variation of the in-line single-layer cuff. The outer diameter of the cuff equals the outer diameter of the pipe. The spigot end has a lower profile than the rest of the pipe.



The **plug-in cuff** is the most common cuff. Depending on the individual application of this kind of cuff design, pipes can be cut to the pipe lengths desired without waste.



The **welded cuff** is similar to the plug-in cuff but is welded to the pipe end by friction or by mirror welding.



The **injected permanent cuff** is produced in an extrusion injection process directly to the pipe.



The **belled cuff** is produced on a bellying machine which heats the pipe end and forms the cuff.

Online Support Service

With the NEW UNICOR Online Support Service we offer a fast solution for trouble-shooting. Our service engineers have direct access to the control system of your corrugators via internet.

With this high-tech solution we can link your corrugator to our service team in order to provide direct help without any loss in time.

Your advantage:

Fast support and trouble-shooting for your production lines which guarantees minimised downtime.

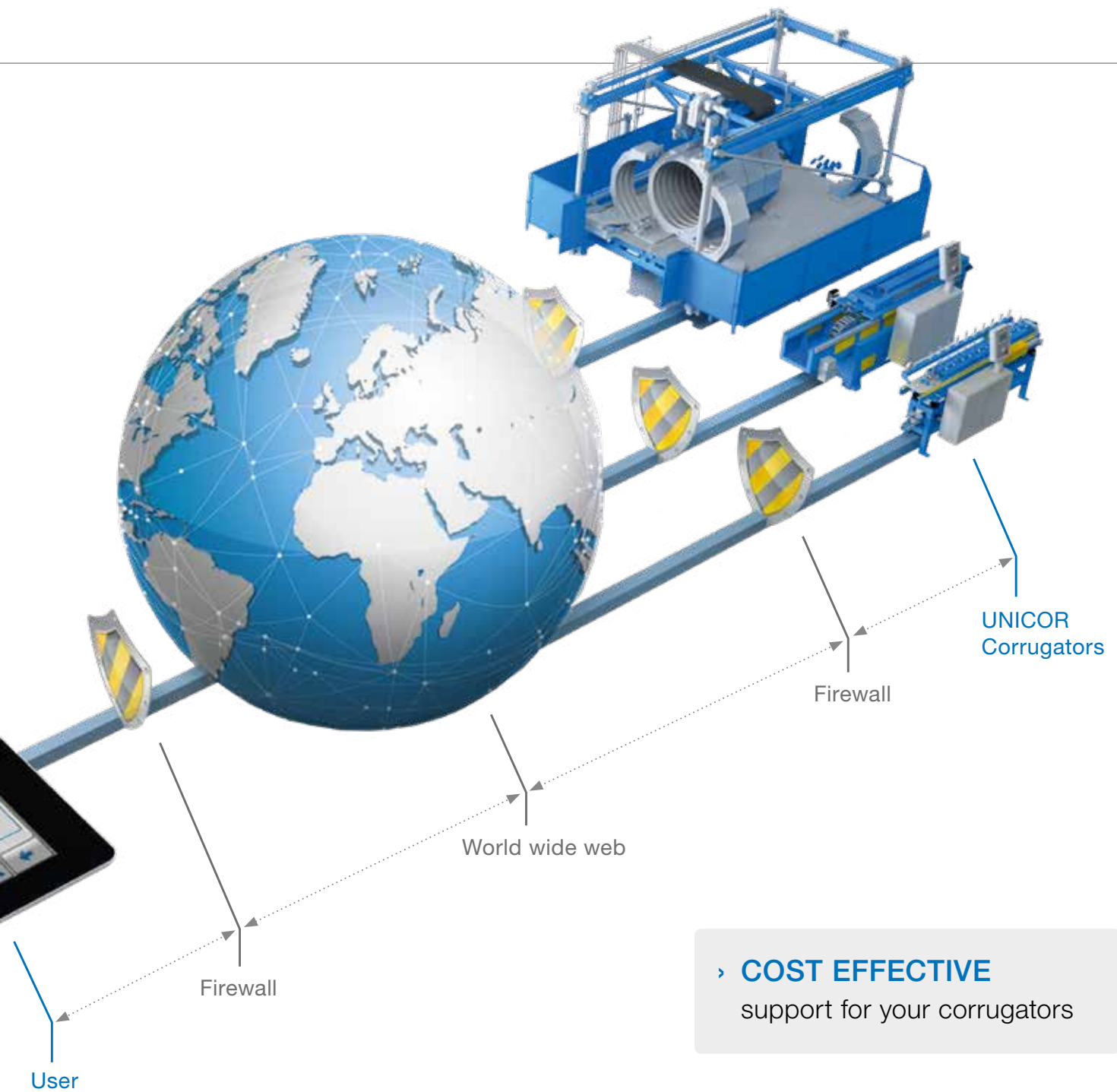
› **EASY ACCESS**

with smartphone, tablet or laptop

› **UNIVERSAL**

applicable for all corrugators







Vertical production of small pipes

Technical pipes, starting with an inner diameter as small as 3 mm can be produced at high extrusion speed and in

excellent quality on the corrugator UC 15 V vertical.

Features of UC 15 V vertical in detail:

- › Closed construction
- › Water cooling
- › High outputs
- › Mould blocks made of steel
- › Easy and quick mould block change
- › Precise lateral and height adjustment of corrugator
- › Clearance adjustment
- › Central lubrication with monitoring system
- › Multi zone vacuum technology available
- › Push off cylinder operated by air available
- › PLC control system
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motor
- › Telediagnostic service via internet available

Technical data:

	UC 15/63 V vertical	UC 15/105 V vertical
Mould blocks:	63	105
Max. PA output (kg/h):	17	30
Max. PP/PE output (kg/h):	20	35
Max. speed (m/min):	26	40
Chain length (mm):	1780	2967
Closed chain (mm):	585	1176
Connected load (kW):	4.1	4.5
Weight (kg):	600	660
Length (mm):	2650	2505
Width (mm):	1720	1720
Height (mm):	1970	2325
Extrusion axis:	vertical	vertical

V = vacuum





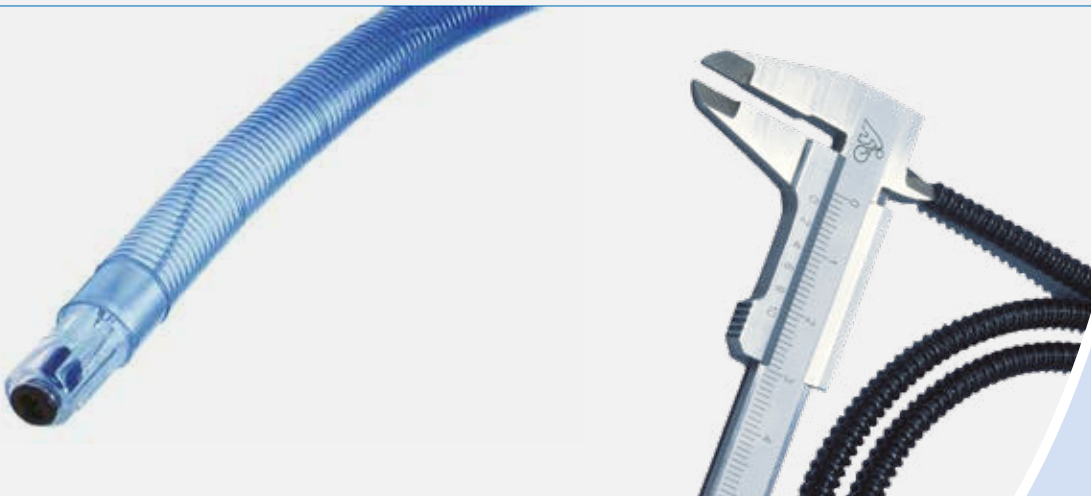
Available versions

- › UC 15/63 V vertical
- › UC 15/105 V vertical

Applications

- › Cable protection for:
 - TV, telephone
 - Glass fiber
 - Electricity
 - IT and computer
- › Automotive and airplane industry, machine and ship building
- › Healthcare

Samples of applications:



Materials

- › Polyolefines,
Polyamides,
PVC, PVDF,
EVA, TFA, TPE



Small-sized corrugator

Pipe Ø 4,8 mm i.d. to 15 mm o.d.

Corrugator for small technical pipes

Technical pipes for various applications are produced on the different versions of the corrugator UC 15 with speeds up to 40 m/min. With the variable chain length, the optimal

adaption of the corrugator to the product length is possible. This means saving raw material by avoiding waste.

Features of UC 15 in detail:

- › Closed construction corrugator
- › Mould blocks made of steel
- › Precise lateral and height adjustment of corrugator
- › Automatic central lubrication system
- › Switch board mounted at corrugator
- › PLC control unit
- › Maintenance-free servo motor
- › Integrated operator touch screen panel
- › Interface for synchronization with extruder
- › Reverse/forward turn of mould block by inching mode and/or ratchet unit
- › Visualisation for water pressure and temperature by analogue indicator
- › Visualisation of mould block temperature on main display
- › Water cooling system for indirect forming block cooling in middle, and back channel section
- › Corrugator in different length and output classes available



Technical data:

	UC 15/63 (V)	UC 15/105 (V)	UC 15/63-105 (V) vario vacuum	UC 15/63-175 (V) vario vacuum	UC 15/63-450 (V)* vario vacuum
Mould blocks:	63	105	63-105	63-175	63-450
Max. PVC output (kg/h):	30	50	30-50	30-70	30-105
Max. PP/PE output (kg/h):	20	35	20-35	20-50	20-80
Max. speed (m/min):	26	40	40	40	40
Chain length (mm):	1780	2967	1780-2967	1780-4944	1780-12717
Closed chain (mm):	585	1176	585-1176	585-2170	585-6063
Connected load (kW):	4.1	4.5	4.5	4.5	5.5
Weight (kg):	405	470	500	600	2100
Length (mm):	1043	1643	1770	3100	7300
Width (mm):	1000	1000	1000	1000	1000
Height (mm):	1655	1655	1655	1655	1655
Extrusion height (mm):	1100	1100	1100	1100	1100

V = vacuum *other lengths available

Max. speed: up to 40 m/min

UC 15 vario
vacuum

G2



Available versions

- › UC 15/63 (V)
- › UC 15/105 (V)
- › UC 15/63-105 (V)
vario vacuum
- › UC 15/63-175 (V)
vario vacuum
- › UC 15/63-450 (V)
vario vacuum

Applications

- › Cable protection for:
TV, telephone
Glass fiber
Electricity
IT and computer
- › Automotive and
airplane industry,
machine and
ship building
- › Healthcare

Materials

- › Polyolefines,
Polyamides,
PVC, PVDF,
EVA, TFA, TPE

Options:

- › Automatic mould block clearance adjustment
- › Multizone vacuum equipment
- › Visualisation for water pressure and temperature
on the main display with alarm function
- › Push off cylinder operated by air to separate
corrugator from die in case of power failures
- › Remote maintenance
- › Cuff control unit
- › Water cooled climate device for switch board
- › Return channel material monitoring



The new high-speed corrugator for small pipes

On the UC 36 corrugators, flexible single wall corrugated pipes, made of nearly all thermoplastic materials, can be produced. The machine is available in three different lengths and can optionally be equipped with vacuum.

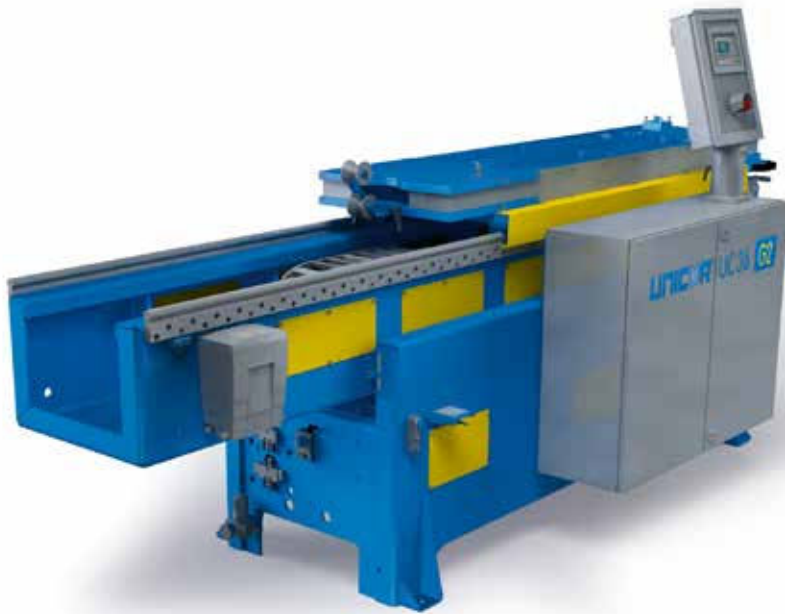
Features of UC 36 in detail:

- › Closed construction corrugator
- › Mould blocks made of steel
- › Precise lateral and height adjustment of corrugator
- › Suitable for the use of single and duo mould blocks
- › Automatic central lubrication system
- › Switch board mounted at corrugator
- › PLC control unit
- › Maintenance free servo motor
- › Integrated operator touch screen panel
- › Interface for synchronization with extruder
- › Reverse/forward turn of mould block by inching mode and/or ratchet unit
- › Visualisation for water pressure and temperature by analogue indicator
- › Visualisation of mould block temperature on main display
- › Optimized water cooling system for indirect forming block cooling in middle, curve and back channel section (cooling left, right, bottom and top of mould blocks)
- › Basic version with 50 pairs of mould blocks
- › Extension moduls for 65 or 80 pairs are available
- › Return channel material monitoring

Technical data:

	UC36/50 (V)	UC36/65 (V)	UC36/80 (V)
Mould blocks:	50	65	80
Max. PVC output (kg/h):	190	210	260
Max. PP/PE output (kg/h):	115	180	235
Max. speed (m/min):	60	60	60
Chain length (mm):	3770	4901	6032
Closed chain (mm):	1485	2050	2616
Connected load (kW):	4.5	4.5	4.5
Weight (kg):	1400	1500	1600
Length (mm):	3280	3280	3280
Width (mm):	1100	1100	1100
Height (mm):	1655	1655	1655
Extrusion height (mm):	1100	1100	1100

V = vacuum



Available versions

- › UC 36/50_80 (V)

Applications

- › Cable protection for:
TV, telephone
Glass fiber
Electricity
IT and computer
- › Automotive and
airplane industry,
machine and
ship building
- › Healthcare

Options:

- › Multizone vacuum equipment
- › Visualisation for water pressure and temperatur on the main display with alarm function
- › Push off cylinder operated by air to separate corrugator from die in case of power failures
- › Remote maintenance
- › Cuff control unit
- › Water cooled climate device for switch board
- › Automatic mould block clearance adjustment

Sample of application:



Materials

- › Polyolefines,
Polyamides,
PVC, PVDF,
EVA, TFA, TPE



The new UC 58 for all demands

On the UC 58 corrugators, flexible single wall corrugated pipes made of nearly all thermoplastic materials can be produced. The machine is available in three different lengths

and can optionally be equipped with vacuum. In addition, UNICOR offers a corrugator with vario vacuum technology.

Features of UC 58 in detail:

- › Closed construction corrugator
- › Mould blocks made of steel
- › Precise lateral and height adjustment of corrugator
- › Suitable for the use of single, duo and triple mould blocks
- › Automatic central lubrication system
- › Switch board mounted at corrugator
- › PLC control unit
- › Maintenance-free servo motor
- › Integrated operator touch screen panel
- › Interface for synchronization with extruder
- › Reverse/forward turn of mould block by inching mode and/or ratchet unit
- › Visualisation for water pressure and temperature by analogue indicator
- › Visualisation of mould block temperature on main display
- › Optimized water cooling system for indirect forming block cooling in middle and back channel section
- › Basic version with 70 or 90 pairs of mould blocks
- › Extension moduls from 70 to 90 and 90 to 120 pairs are available



Technical data:

	UC 58/70 (V)	UC 58/90 (V)	UC 58/120 (V)
Mould blocks:	70	90	120
Max. PVC output (kg/h):	140	210	310
Max. PP/PE output (kg/h):	100	150	240
Max. speed (m/min):	43	43	43
Chain length (mm):	3956	5086	6782
Closed chain (mm):	1376	1936	2785
Connected load (kW):	4.5	4.5 6.5	6.5
Weight (kg):	1480	1580 2140	2300
Length (mm):	3280	3280 4130	4130
Width (mm):	1100	1100	1100
Height (mm):	1655	1655	1655
Extrusion height (mm):	1100	1100	1100

V = vacuum



Available versions

- › UC 58/70_90 (V)
- › UC 58/90_120 (V)

Applications

- › Cable protection for:
TV, telephone
Glass fiber
Electricity
IT and computer
- › Automotive and
airplane industry,
machine and
ship building
- › Healthcare
- › Vacuum cleaners
- › Washing machines
- › Dishwashers

Options:

- › Automatic mould block clearance adjustment
- › Multizone vacuum equipment
- › Visualisation for water pressure and temperature on the main display with alarm function
- › Push off cylinder operated by air to separate corrugator from die in case of power failures
- › Remote maintenance
- › Cuff control unit
- › Water cooled climate device for switch board
- › Return channel material monitoring

Samples of applications:



Materials

- › Polyolefines,
Polyamides,
PVC, PVDF,
EVA, TFA, TPE



Vario technology for enhanced demands

The UC 58/40-90 (V) vario, the UC 58/40-120 (V) vario as well as the UC 58/50-100 (V) vario are UNICOR's efficient

solutions with flexible vario technology. Both corrugators are easy to operate and user-friendly.

Features of UC 58 vario vacuum in detail:

- › Closed construction
- › Water cooling
- › High outputs
- › Mould blocks made of steel
- › Easy and quick mould block change
- › Suitable for the use of single, duo and triple mould blocks
- › Precise lateral and height adjustment of corrugator
- › Clearance adjustment
- › Patented automatic clearance adjustment available
- › Central lubrication with monitoring system
- › Multi zone vacuum technology available
- › Push off cylinder operated by air available
- › PLC control system
- › Touch screen technology
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motor
- › Telediagnostic service via internet available



Technical data:

	UC 58/40-90 (V) vario vacuum	UC 58/40-120 (V) vario vacuum	UC 58/50-100 (V) im vario vacuum	
Mould blocks:	40-90	40-120	50-100	
Max. PVC output (kg/h):	70-210	70-310	70-210	
Max. PP/PE output (kg/h):	50-150	50-240	50-150	
Max. speed (m/min):	43	43	26	
Chain length (mm):	2260-5086	2260-6782	2540-5080	
Closed chain (mm):	524-1936	524-2785	656-1926	
Connected load (kW):	6.5	6.5	5.3	
Weight (kg):	1800	2050	2000	
Length (mm):	3036	3996	3036	
Width (mm):	985	985	880	
Height (mm):	1350	1350	1330	
Extrusion height (mm):	1100	1100	1100	

V = vacuum
im = imperial mould block length



 Sample of application:



Available versions

- › UC 58/40-90 (V)
vario vacuum
- › UC 58/40-120 (V)
vario vacuum
- › UC 58/50-100 (V) im
vario vacuum

Applications

- › Technical pipes
 - › Automotive and
airplane industry,
machine and
ship building
 - › Healthcare
 - › Vacuum cleaners
 - › Washing machines
 - › Dishwashers
 - › Inline production of:
 - › Protective pipes
for PEX and
Alu-PEX pipes
 - › Protective pipes
for cables
- and any other corruga-
ted products

Materials

- › Polyolefines, Polyamides,
PVC, PVDF, EVA,
TFA, TPE

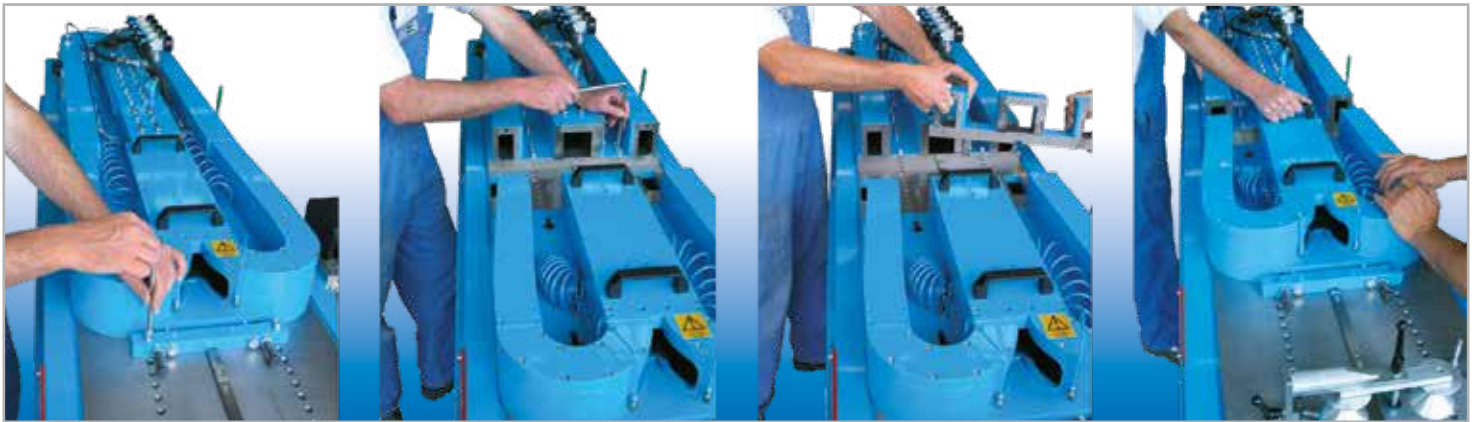


Small-sized corrugator

Vario technology: production without waste

The UNICOR vario corrugator technology allows the adaptation of the chain length to the product length by varying the number of mould blocks. This results in the highest possible exploitation of energy and raw material during the production of technical pipes.

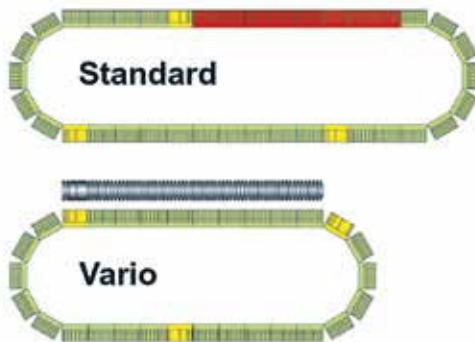
The benefit of this technology is a production without or with only a minimum of waste which means, in addition, an increase of productivity in pipe manufacturing.



Installation / removing of modules at vario corrugator UC 58



UC 15 / UC 58

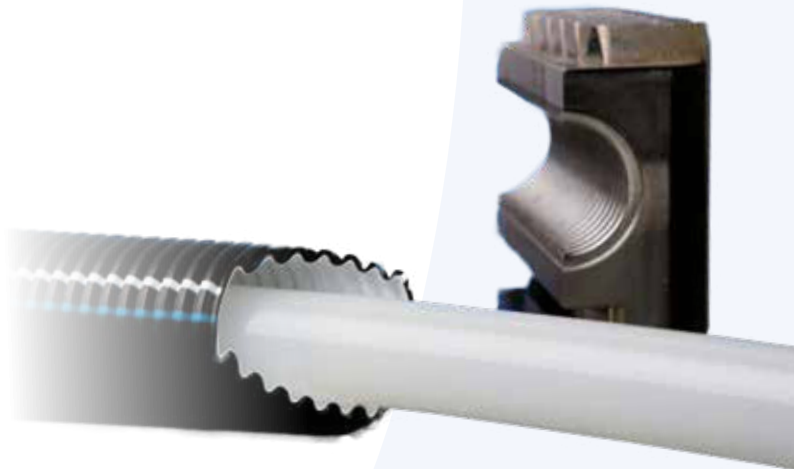
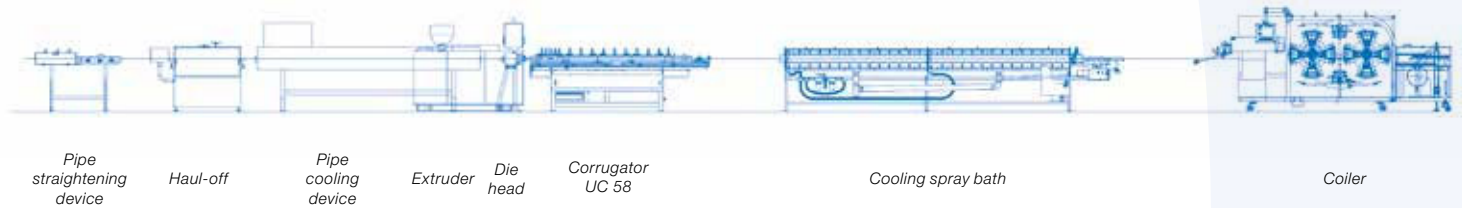


With vario technology you produce technical pipes in lengths according to your demands without waste.

Pipe-in-pipe production and cable insertion

Pipe-in-pipe production and cable insertion can be operated with highest outputs and excellent pipe quality due to optimized water cooling.

Pipe-in-pipe production line:





For corrugated single and double wall pipes from 20 to 90 mm

The closed designed UC 90 manufactures flexible corrugated single and double wall plastic pipes made from a variety of thermoplastic materials. High outputs and fast production speeds ensure high margins. The machine is available in two different lengths and can optionally be equipped with vacuum.

Features of UC 90 in detail:

- › Closed construction corrugator
- › Mould blocks made of steel
- › Precise lateral and height adjustment of corrugator
- › Suitable for the use of single, duo and triple mould blocks
- › Automatic central lubrication system
- › Switch board mounted at corrugator
- › PLC control unit
- › Maintenance-free servo motor
- › Integrated operator touch screen panel
- › Interface for synchronization with extruder
- › Reverse/forward turn of mould block by inching mode and/or ratchet unit
- › Visualisation for water pressure and temperature by analogue indicator
- › Visualisation of mould block temperature on main display
- › Optimized water cooling system for indirect forming block cooling in middle and back channel section
- › Basic version with 60 pairs of mould blocks
- › Extension moduls for 80 pairs are available

Technical data:

	UC 90/60 (V)	UC 90/80 (V)	
Mould blocks:	60	80	
Max. PVC output (kg/h):	255	390	
Max. PP/PE output (kg/h):	190	290	
Max. speed (m/min):	30	30	
Chain length (mm):	4522	6029	
Closed chain (mm):	1412	2166	
Connected load (kW):	6.5	6.5	
Weight (kg):	2150	2270	
Length (mm):	3720	3720	
Width (mm):	1270	1270	
Height (mm):	1655	1655	
Extrusion height (mm):	1100	1100	V = vacuum



Available versions

- › UC 90/60_80 (V)

Applications

- › Cable protection for:
TV, telephone
Glass fiber
Electricity
IT and computer
- › Core tube for spiral winding pipes
- › Protection pipes for district heating systems
- › Technical pipes
- › Drainage pipes for fields, streets, squares, buildings

and any other corrugated products

Options:

- › Automatic mould block clearance adjustment
- › Multizone vacuum equipment
- › Visualisation for water pressure and temperature on the main display with alarm function
- › Push off cylinder operated by air to separate corrugator from die in case of power failures
- › Remote maintenance
- › Cuff control unit
- › Water cooled climate device for switch board
- › Return channel material monitoring

Samples of applications:



Materials

- › Polyolefines,
Polyamides, PVC,
PVDF, EVA, TFA, TPE



Production of single and double wall pipes with high outputs

The closed designed UC 135 manufactures flexible corrugated single and double wall plastic pipes made from a variety of thermoplastic materials. High outputs and fast production speeds ensure high margins. The machine is available in three different lengths and can optionally be equipped with vacuum.

Features of UC 135 in detail:

- › Closed construction corrugator
- › Mould blocks made of steel
- › Precise lateral and height adjustment of corrugator
- › Suitable for the use of single and duo mould blocks
- › Automatic central lubrication system
- › Switch board mounted at corrugator
- › PLC control unit
- › Maintenance-free servo motor
- › Integrated operator touch screen panel
- › Interface for synchronization with extruder
- › Reverse/forward turn of mould block by inching mode and/or ratchet unit
- › Visualisation for water pressure and temperature on the main display with alarm function
- › Visualisation of mould block temperature on main display
- › Optimized water cooling system for indirect forming block cooling in middle, curve and back channel section (cooling left, right, bottom and top of mould blocks)
- › Basic version with 44 pairs of mould blocks
- › Extension moduls for 64 or 84 pairs are available
- › Automatic mould block clearance adjustment

Technical data:

	UC135/44 (V)	UC135/64 (V)	UC135/84 (V)
Mould blocks:	44	64	84
Max. PVC output (kg/h):	275	380	550
Max. PP/PE output (kg/h):	200	280	400
Max. speed (m/min):	30	30	30
Chain length (mm):	3318	4827	6333
Closed chain (mm):	872	1626	2380
Connected load (kW):	12	12	12
Weight (kg):	3590	3870	4150
Length (mm):	4660	4660	4660
Width (mm):	1480	1480	1480
Height (mm):	1700	1700	1700
Extrusion height (mm):	1100	1100	1100

V = vacuum



Available versions

- › UC 135/44_84 (V)

Applications

- › Cable protection for:
TV, telephone
Glass fiber
Electricity
IT and computer
- › Core tube for spiral winding pipes
- › Protection pipes for district heating systems
- › Technical pipes
- › Drainage pipes for fields, streets, squares, buildings

and any other corrugated products

Options:

- › Multizone vacuum equipment
- › Battery-buffered electrical emergency moving unit to separate corrugator from die in case of power failures
- › Remote maintenance
- › Cuff control unit
- › Water cooled climate device for switch board
- › Return channel material monitoring

Sample of application:



Materials

- › Polyolefines,
Polyamides, PVC,
PVDF, EVA, TFA, TPE



UC 210

The UC 210 is the all-rounder for mid-sized pipe diameters. The range of diameters has been optimized with this machine. The machines produces corrugated single and double walled pipes from 32 mm i.d. up to 200 mm o.d.

Due to the special chain construction, there is no need to

set the clearance of the mould blocks. The servo motor is maintenance-free.

The zoom technology of the mould block channel allows for weight minimized mould sizes, short die lengths and a high output.

Features of UC 210 in detail:

- › Open construction
- › Process controlled direct water cooling of mould blocks
- › High outputs
- › Multi zone vacuum technology
- › Quick pneumatic opening of center channel via spindles
- › Corrugator with zoom technology
 - › Weight optimized mould sizes
 - › Short die lengths
- › Mould blocks made of special aluminium alloy
- › Hard coated mould blocks
- › Easy and quick mould block change
- › Precise lateral and height adjustment of corrugator
- › Pre-adjusted clearance system
- › Central lubrication with monitoring system
- › Battery buffered push off spindle system
- › PLC control system
- › Touch screen technology
- › Graphic visualisation of process data
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motors
- › Telediagnostic service via internet available



Technical data:

UC 210/36 IV

UC 210/48 IV

Mould blocks:	36	48
Max. PVC output (kg/h):	750	950
Max. PP/PE output (kg/h):	630	800
Max. speed (m/min):	35	35
Chain length (mm):	4750	6333
Closed chain (mm):	1758	2550
Connected load (kW):	20	20
Weight (kg):	4800	5700
Length (mm):	4065	5430
Width (mm):	2240	2240
Height (mm):	2050	2050
Extrusion height (mm):	1100	1100

i = integrated water cooling
V = vacuum

Zooming channel



Available versions

- › UC 210/36 iV
- › UC 210/48 iV

Applications

- › Cable protection for:
 - TV, telephone
 - Glass fiber
 - Electricity
 - IT and computer
- › Protection pipes for district heating systems
- › Technical pipes
- › Drainage pipes for fields, streets, squares, buildings

and any other corrugated products

Samples of applications:



Materials

- › Polyolefines,
Polyamides, PVC,
PVDF, EVA, TFA, TPE



UC 280

The new water-cooled UC 280/48iV guarantees higher outputs in the production of mid-sized pipes (diameters 32 mm i.d. up to 280 mm o.d.). Due to the special chain construction, there is no need to set the clearance of the mould blocks. The servo motor is maintenance-free.

The zoom technology of the mould block channel allows for weight minimized mould sizes and short die lengths. All these features are particularly advantageous compared to air-cooled corrugators.

Features of UC 280 in detail:

- › Open construction
- › Process controlled direct water cooling of mould blocks
- › High outputs
- › Multi zone vacuum technology
- › Quick opening of center channel via spindles
- › Corrugator with zoom technology
 - › Weight optimized mould sizes
 - › Short die lengths
- › Mould blocks made of special aluminium alloy
- › Hard coated mould blocks
- › Easy and quick mould block change
- › Precise lateral and height adjustment of corrugator
- › Pre-adjusted clearance system
- › Central lubrication with monitoring system
- › Battery buffered push off spindle system
- › PLC control system
- › Touch screen technology
- › Graphic visualisation of process data
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motors
- › Telediagnostic service via internet available



Technical data:

UC 280/48 iV

Mould blocks:	48
Max. PVC output (kg/h):	980
Max. PP/PE output (kg/h):	830
Max. speed (m/min):	23.5
Chain length (mm):	6333
Closed chain (mm):	2550
Connected load (kW):	20.0
Weight (kg):	6000
Length (mm):	5050
Width (mm):	2380
Height (mm):	2180
Extrusion height (mm):	1100

i = integrated water cooling
V = vacuum

Zooming channel



UC 280



Available versions

- › UC 280/48 iV

Applications

- › Cable protection for:
 - TV, telephone
 - Glass fiber
 - Electricity
 - IT and computer
- › Protection pipes for district heating systems
- › Technical pipes
- › Drainage pipes for fields, streets, squares, buildings

and any other corrugated products



Sample of application:



Materials

- › Polyolefines,
Polyamides, PVC,
PVDF, EVA, TFA, TPE



Mid-sized corrugator

Pipe Ø 32 mm i.d. to 315 mm o.d.

UC 315

The UC 315 is a multi purpose corrugator which covers a size range of 32 mm i.d. up to 315 mm o.d. At the same time, outputs as high as 700 kg HDPE and 850 kg PVC per hour can be achieved.

The compact horizontal design of the UC 315 facilitates the

access to the corrugator to change mould blocks. The vertical adjustment of the UC 315 allows for the use of dual profile forming blocks, thereby reducing change-over times and investment costs. The bodies of the mould blocks are made of a special aluminium alloy and mounted to a steel carrier system by means of tension bolts.

Features of UC 315 in detail:

- › Open construction
- › Process controlled direct water cooling of mould blocks
- › High outputs
- › Multi zone vacuum technology
- › Mould blocks made of special aluminium alloy
- › Hard coated mould blocks
- › Suitable for the use of single and duo mould blocks
- › Precise lateral and height adjustment of corrugator
- › Central lubrication with monitoring system
- › Battery buffered push off spindle system
- › PLC control system
- › Touch screen technology
- › Graphic visualisation of process data
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motors
- › Telediagnostic service via internet available



Technical data:

	UC 315/35 IV	UC 315/48 IV
Mould blocks:	35	48
Max. PVC output (kg/h):	600	850
Max. PP/PE output (kg/h):	450	700
Max. speed (m/min):	18	25
Chain length (mm):	4617	6333
Closed chain (mm):	1174	2035
Connected load (kW):	20.0	30.0
Weight (kg):	4200	5390
Length (mm):	3675	5215
Width (mm):	1884	1884
Height (mm):	2020	2020
Extrusion height (mm):	1100	1100

i = integrated water cooling
V = vacuum





Available versions

- › UC 315/35 iV
- › UC 315/48 iV

Applications

- › Cable protection for:
 - TV, telephone
 - Glass fiber
 - Electricity
 - IT and computer
- › Protection pipes for district heating systems
- › Technical pipes
- › Sewer pipes
- › Drainage pipes for fields, streets, squares, buildings

and any other corrugated products



Sample of application:



Materials

- › Polyolefines,
Polyamides, PVC,
PVDF, EVA, TFA, TPE



UC 800

The UC 800/36 iV is a high quality corrugator for the production of single and double walled pipes up to 800 mm o.d.

Due to the special chain construction, there is no need to

set the clearance of the mould blocks. The servo motor is maintenance-free. The zoom technology of the mould block channel allows for weight minimized mould sizes, short die lengths and a high output.

Features of UC 800 in detail:

- › Open construction
- › Process controlled direct water cooling of mould blocks
- › High outputs
- › Multi zone vacuum technology
- › Quick opening of center channel via spindles
- › Corrugator with zoom technology
 - › Weight optimized mould sizes
 - › Short die lengths
- › Mould blocks compatible to UC 1200
- › Easy and quick mould block change
- › Mould blocks made of special aluminium alloy
- › Precise lateral and height adjustment of corrugator
- › Pre-adjusted clearance system
- › Central lubrication with monitoring system
- › Hydraulic buffered push off cylinder system
- › PLC control system
- › Touch screen technology
- › Graphic visualisation of process data

- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motors
- › Telediagnostic service via internet available

Compatibility of mould blocks:

- › UC 800 moulds can be used on UC 1200
- › Less investment necessary
- › No changes in product design



Technical data:

UC 800/36 iV

Mould blocks:	36
Max. PVC output (kg/h):	1150
Max. PP/PE output (kg/h):	930
Max. speed (m/min):	8.9
Chain length (mm):	6333
Closed chain (mm):	1935
Connected load (kW):	44
Weight (kg):	15000
Length (mm):	6900
Width (mm):	4100
Height (mm):	2300
Extrusion height (mm):	1400

i = integrated water cooling
V = vacuum

Zooming channel



UC 800



Available version

- › UC 800/36 iV

Applications

- › Sewer pipes
- › Drainage pipes for fields, streets, squares, buildings
- › Conveyor pipes
- › Cable protection for:
 - TV, telephone
 - Glass fiber
 - Electricity
 - IT and computer
- › Structural and civil engineering



Samples of applications:



Materials

- › Polyolefines, PVC



Large-sized corrugator

Pipe Ø 200 mm i.d. to 1200 mm o.d.

UC 1200

The UC 1200 shuttle corrugator is used for the production of large-sized pipes such as sewer and drainage pipes in road construction and civil engineering, water conveying pipes, main collectors in agricultural drainage, manholes and other

applications. The UC 1200 covers a size range of 200 mm i.d. up to 1200 mm o.d. and is one of the most popular corrugators of his class.

Features of UC 1200 in detail:

- › Open construction
- › Process controlled direct water cooling of mould blocks
- › High outputs
- › Multi zone vacuum technology
- › Shuttle principle
- › Parking station for in-line cuff production available
- › Metrical and imperial mould block length available
- › Mould blocks compatible to UC 1800
- › Mould blocks made of casted special aluminium alloy
- › Easy and quick mould block change
- › Precise lateral and height adjustment of corrugator
- › Central lubrication with monitoring system
- › Hydraulic buffered push off cylinder system
- › PLC control system
- › Touch screen technology
- › Graphic visualisation of process data
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motors
- › Telediagnostic service via internet available



Technical data:

	UC 1200/9 IV me	UC 1200/12 IV me	UC 1200/9 IV (PS me)	UC 1200/8 IV (PS im)
Mould blocks:	9	12	9+1/2 (PS)	8+1/2(PS)
Max. PVC output (kg/h):	1200	1200	1200	1200
Max. PP/PE output (kg/h):	1000	1000	1000	1000
Max. speed (m/min):	3	3	3 (2)	3 (2)
Chain length (mm):	4750	6333	4750+527 /+1054	4877+610 /+1220
Closed chain (mm):	3120	3120	3120	3120
Connected load (kW):	70.0	70.0	70.0	75.0
Weight (kg):	24000	24000	25500	25500
Length (mm):	8050	8050	8050	8050
Width (mm):	4500	4500	6000	6000
Height (mm):	4100	4100	4100	4100
Extrusion height (mm):	1760	1760	1760	1760

i = integrated water cooling

V = vacuum

PS = parking station

me = metrical mould block length

im = imperial mould block length

UC 1200



Available versions

- › UC 1200/9 iV me
- › UC 1200/12 iV me
- › UC 1200/9 iV (PS me)
- › UC 1200/8 iV (PS im)

Applications

- › Sewage and storm water
- › Drainage pipes for fields, streets, squares, buildings
- › Manholes
- › Conveyor pipes
- › Structural and civil engineering



Sample of application:

UC 1200 with parking station



Materials

- › Polyolefines, PVC



Large-sized corrugator

Pipe Ø 500 mm i.d. to 1800 mm o.d.

UC 1800

This innovative corrugator UC 1800 is designed for the production of drainage, storm water and sewer pipes. This corrugator uses a gripper system for the mould block transport in the return channels.

The extruders are placed on a movable platform.

Like all other UNICOR shuttle corrugators, this model has a high robustness and long life time.

Features of UC 1800 in detail:

- › Open construction
- › Process controlled direct water cooling of mould blocks
- › High outputs
- › Multi zone vacuum technology
- › Shuttle principle
- › Parking station for in-line cuff production available
- › Metrical and imperial mould block length available
- › Mould blocks made of casted special aluminium alloy
- › Easy and quick mould block change
- › Precise lateral and height adjustment of corrugator
- › Central lubrication with monitoring system
- › Hydraulic buffered push off cylinder system
- › PLC control system
- › Touch screen technology
- › Graphic visualisation of process data
- › Electrical control for synchronisation with extruder
- › Maintenance-free servo motors
- › Telediagnostic service via internet available



Technical data:

UC 1800/6 IV (PS im)

Mould blocks:	6+1 (PS)
Max. PVC output (kg/h):	1600
Max. PP/PE output (kg/h):	1350
Max. speed (m/min):	1.5
Chain length (mm):	3658 + 914
Closed chain (mm):	2200
Connected load (kW):	120.0
Weight (kg):	40000
Length (mm):	7400
Width (mm):	7200
Height (mm):	5000
Extrusion height (mm):	1750

i = integrated water cooling
V = vacuum
PS = parking station
im = imperial mould block length



UC 1800

Available version

- › UC 1800/6 iV (PS im)

Applications

- › Sewage and storm water
- › Manholes
- › Conveyor pipes
- › Structural and civil engineering

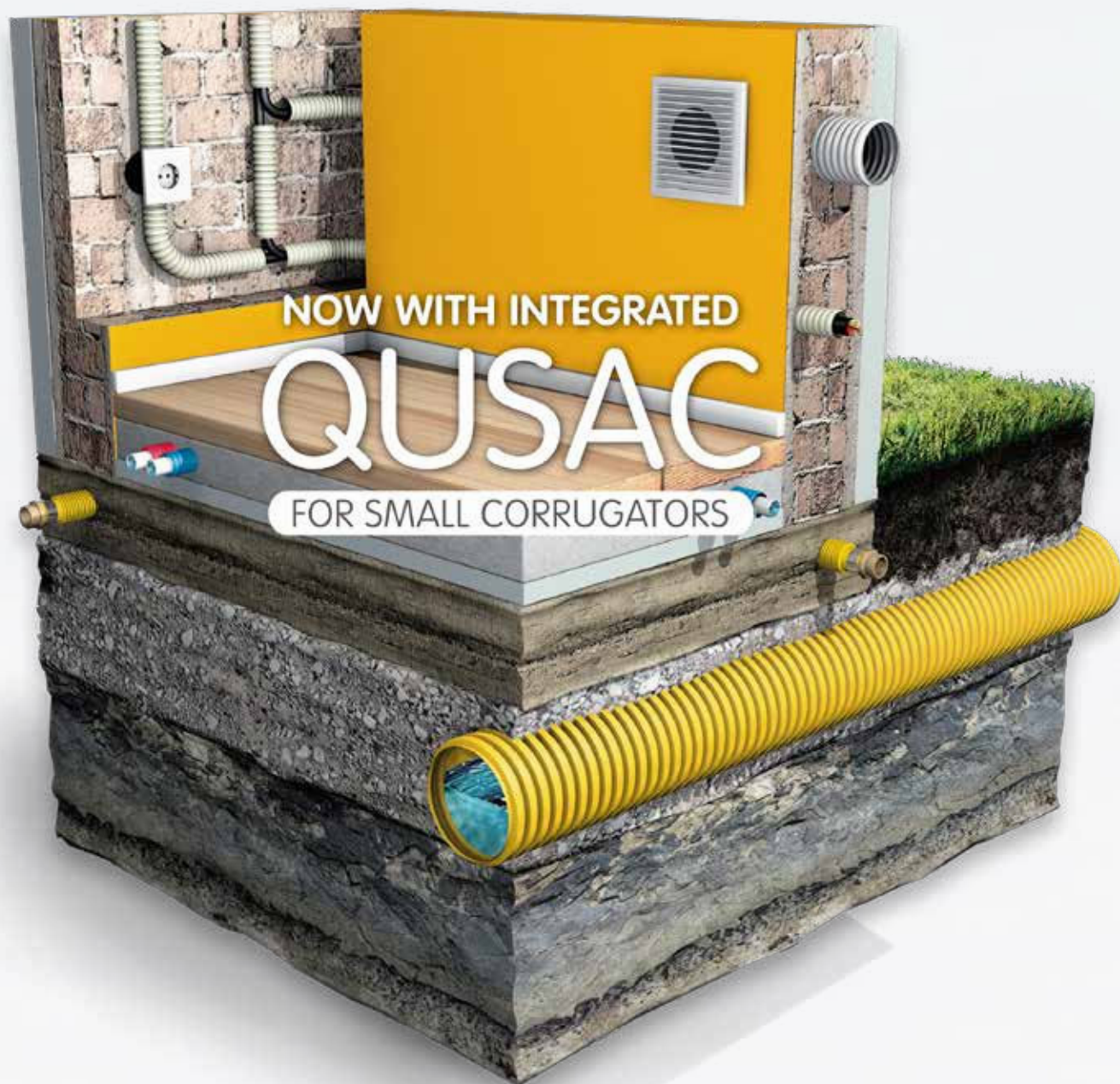
Materials

- › Polyolefines, PVC



Samples of applications:





NOW WITH INTEGRATED
QUSAC
FOR SMALL CORRUGATORS

G2 – THE NEW GENERATION OF SMALL CORRUGATORS

QUSAC

+ Quality

Long-term profitability at the highest level.

We as experts are the quality standard. Rely on our innovative technologies with our new small corrugators. Trust in operating times of decades and secure a profitable future for your production.

+ Usability

Consistent operating concept for full flexibility.

Stay flexible! Our new consistent and intuitive operating concept permits easy operator changes between your machines. Plan your employees machine-independently and optimize your capacity utilization.

+ Best Costs

Customized technologies – for low costs.

Small corrugators represent small costs at UNICOR. Choosing our new systems means low-priced purchases and long-term savings: e.g. by improved cooling output, modular carriage lengths and maintenance-free motors.



UNICOR GmbH
Industriestraße 56
97437 Hassfurt
Germany

Phone: +49 9521 956-0
Fax: +49 9521 956-195
www.unicor.com



a company of **GAW**GROUP