MACHINERY
CORRUGATED PLASTIC PIPE TECHNOLOGY
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<tr>
<td>UC 15 vertical</td>
<td>3 mm - 15 mm</td>
</tr>
<tr>
<td>UC 15 G2</td>
<td>4.8 mm - 15 mm</td>
</tr>
<tr>
<td>UC 36 G2</td>
<td>4.8 mm - 36 mm</td>
</tr>
<tr>
<td>UC 58 G2</td>
<td>8 mm - 58 mm</td>
</tr>
<tr>
<td>UC 58 vario vacuum</td>
<td>8 mm - 58 mm</td>
</tr>
<tr>
<td>UC 90 G2</td>
<td>20 mm - 90 mm</td>
</tr>
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<td>UC 135 G2</td>
<td>20 mm - 135 mm</td>
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<td>UC 210</td>
<td>32 mm - 200 mm</td>
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<td>UC 315</td>
<td>32 mm - 315 mm</td>
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<td>UC 800</td>
<td>95 mm - 800 mm</td>
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<td>UC 1200</td>
<td>200 mm - 1200 mm</td>
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<tr>
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<td>500 mm - 1800 mm</td>
</tr>
</tbody>
</table>

**Small-sized corrugators**

**Mid-sized corrugators**

**Large-sized corrugators**
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.
<table>
<thead>
<tr>
<th>Advantages</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High production speed</td>
<td>Due to the low weight, the production speed of corrugated pipes is clearly higher compared to smooth pipe (subject to same ring stiffness).</td>
</tr>
<tr>
<td>Material saving</td>
<td>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).</td>
</tr>
<tr>
<td>Easy handling</td>
<td>Compared to pipes made of steel, concrete, clay and glass fibre, corrugated pipes are easier to handle and can be installed without heavy equipment.</td>
</tr>
<tr>
<td>Resistance to corrosion</td>
<td>Pipes made of HDPE, PP or PVC offer a higher resistance to aggressive substances (i.e. waste water) compared to traditional pipe systems.</td>
</tr>
<tr>
<td>High flexibility</td>
<td>High-quality corrugated plastic pipes resist a deflection of up to 30%.</td>
</tr>
<tr>
<td>High ring stiffness</td>
<td>Corrugated pipes have a much higher ring stiffness than smooth pipes of the same weight.</td>
</tr>
<tr>
<td>Excellent water flow</td>
<td>The smooth surface of the inner layer of double wall corrugated pipes guarantees an excellent water flow.</td>
</tr>
</tbody>
</table>
High production speed

Material saving

Easy handling

Resistance to corrosion

High flexibility

High ring stiffness

Excellent water flow
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.
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:

- Extruder
- Die head
- Corrugator
- Cooling spray bath
As a part of complete production lines, UNICOR develops and sells downstream equipment for nearly all applications.
Corrugators

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
Corrugators

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
» UNICOR cooling mandrel technology guarantees:
› Increased output
› High cooling capacity
› Easy handling

» 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

Cooling mandrel

Disc Die Head
with cooling mandrel
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.
Connection techniques

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

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 **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 **injected permanent cuff** is produced in an extrusion injection process directly to the 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 **belled cuff** is produced on a belling machine which heats the pipe end and forms the cuff.
Remote maintenance unit

With the UNICOR RMU, remote maintenance unit, we offer a fast solution with which our technicians can access the machine control system directly via internet.

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

Your advantage:
Fast support and instant availability of your production lines, low downtime costs!
Remote Maintenance Corrugator Unit

» Technical details:

› Remote Maintenance Unit via IP net.

› Optionally available with wireless voice and video communication by visual and verbal connection between the UNICOR service specialists and your employees on site.

› Power connection RMU: 100-240 V, 50 or 60 Hz.

› UNICOR RMU (Remote Maintenance Unit) can be installed in the control cabinet. It is instantly applicable at the UNICOR corrugators due to standardised UNICOR interface technology (UIT).

› Precondition: internet access at customer site.
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:

<table>
<thead>
<tr>
<th></th>
<th>UC 15/63 V vertical</th>
<th>UC 15/105 V vertical</th>
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</thead>
<tbody>
<tr>
<td>Mould blocks:</td>
<td>63</td>
<td>105</td>
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<tr>
<td>Max. PA output (kg/h):</td>
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<td>30</td>
</tr>
<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Max. speed (m/min):</td>
<td>26</td>
<td>40</td>
</tr>
<tr>
<td>Chain length (mm):</td>
<td>1780</td>
<td>2967</td>
</tr>
<tr>
<td>Closed chain (mm):</td>
<td>585</td>
<td>1176</td>
</tr>
<tr>
<td>Connected load (kW):</td>
<td>4.1</td>
<td>4.5</td>
</tr>
<tr>
<td>Weight (kg):</td>
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<td>Height (mm):</td>
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<td>2325</td>
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<tr>
<td>Extrusion axis:</td>
<td>vertical</td>
<td>vertical</td>
</tr>
</tbody>
</table>

Pipe Ø 3 mm i.d. to 15 mm o.d.
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

Materials
› Polyolefines,
  Polyamides,
  PVC, PVDF,
  EVA, TFA, TPE
**Technical data:**

<table>
<thead>
<tr>
<th></th>
<th>UC 15/63 (V)</th>
<th>UC 15/105 (V)</th>
<th>UC 15/63-105 (V) vario vacuum</th>
<th>UC 15/63-150 (V) vario vacuum</th>
<th>UC 15/63-450 (V)* vario vacuum</th>
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</thead>
<tbody>
<tr>
<td>Mould blocks:</td>
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<td>105</td>
<td>63-105</td>
<td>63-150</td>
<td>63-450</td>
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<td>Max. PVC output (kg/h):</td>
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<td>50</td>
<td>30-50</td>
<td>30-65</td>
<td>30-105</td>
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<tr>
<td>Max. speed (m/min):</td>
<td>26</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Chain length (mm):</td>
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<td>2967</td>
<td>1780-2967</td>
<td>1780-4239</td>
<td>1780-12717</td>
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<td>Closed chain (mm):</td>
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<td>1176</td>
<td>585-1176</td>
<td>585-1824</td>
<td>585-6063</td>
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<td>Weight (kg):</td>
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<td>470</td>
<td>500</td>
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<td>1655</td>
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<td>1100</td>
<td>1100</td>
<td>1100</td>
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</table>
Max. speed: up to 40 m/min

Available versions
› UC 15/63 (V)
› UC 15/105 (V)
› UC 15/63-105 (V) vario vacuum
› UC 15/63-150 (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 maintanence
› Cuff control unit
› Water cooled climate device for switch board
› Return channel material monitoring
Small-sized corrugator

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 modules for 65 or 80 pairs are available
› Automatic mould block clearance adjustment
› Return channel material monitoring

Technical data:

<table>
<thead>
<tr>
<th></th>
<th>UC36/50 (V)</th>
<th>UC36/65 (V)</th>
<th>UC36/80 (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mould blocks:</td>
<td>50</td>
<td>65</td>
<td>80</td>
</tr>
<tr>
<td>Max. PVC output (kg/h):</td>
<td>120</td>
<td>180</td>
<td>215</td>
</tr>
<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>90</td>
<td>130</td>
<td>160</td>
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<td>Max. speed (m/min):</td>
<td>60</td>
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<tr>
<td>Chain length (mm):</td>
<td>3770</td>
<td>4901</td>
<td>6032</td>
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<tr>
<td>Closed chain (mm):</td>
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<td>2050</td>
<td>2616</td>
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<tr>
<td>Connected load (kW):</td>
<td>4.5</td>
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<td>4.5</td>
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<tr>
<td>Weight (kg):</td>
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<td>1500</td>
<td>1600</td>
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<tr>
<td>Length (mm):</td>
<td>3280</td>
<td>3280</td>
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</tr>
<tr>
<td>Width (mm):</td>
<td>1100</td>
<td>1100</td>
<td>1100</td>
</tr>
<tr>
<td>Height (mm):</td>
<td>1655</td>
<td>1655</td>
<td>1655</td>
</tr>
<tr>
<td>Extrusion height (mm):</td>
<td>1100</td>
<td>1100</td>
<td>1100</td>
</tr>
</tbody>
</table>

V = vacuum
UC 36

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

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

Options:
› 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 switchboard

Sample of application:
Small-sized corrugator

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
› Maintainence-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:

<table>
<thead>
<tr>
<th></th>
<th>UC 58/70 (V)</th>
<th>UC 58/90 (V)</th>
<th>UC 58/120 (V)</th>
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</thead>
<tbody>
<tr>
<td>Mould blocks:</td>
<td>70</td>
<td>90</td>
<td>120</td>
</tr>
<tr>
<td>Max. PVC output (kg/h):</td>
<td>140</td>
<td>210</td>
<td>310</td>
</tr>
<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>100</td>
<td>150</td>
<td>240</td>
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<tr>
<td>Max. speed (m/min):</td>
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<td>6782</td>
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<td>2785</td>
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<tr>
<td>Weight (kg):</td>
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<tr>
<td>Height (mm):</td>
<td>1655</td>
<td>1655</td>
<td>1655</td>
</tr>
<tr>
<td>Extrusion height (mm):</td>
<td>1100</td>
<td>1100</td>
<td>1100</td>
</tr>
</tbody>
</table>

Pipe Ø 8 mm i.d. to 58 mm o.d.
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

Materials
› Polyolefines,
  Polyamides,
  PVC, PVDF,
  EVA, TFA, TPE
Small-sized corrugator

Vario technology for enhanced demands

The UC 58/40-90 (V) vario as well as the UC 58/40-120 (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:

<table>
<thead>
<tr>
<th></th>
<th>UC 58/40-90 (V) vario vacuum</th>
<th>UC 58/40-120 (V) vario vacuum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mould blocks:</td>
<td>40-90</td>
<td>40-120</td>
</tr>
<tr>
<td>Max. PVC output (kg/h):</td>
<td>70-210</td>
<td>70-310</td>
</tr>
<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>50-150</td>
<td>50-240</td>
</tr>
<tr>
<td>Max. speed (m/min):</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Chain length (mm):</td>
<td>2260-5086</td>
<td>2260-6782</td>
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<tr>
<td>Closed chain (mm):</td>
<td>524-1936</td>
<td>524-2785</td>
</tr>
<tr>
<td>Connected load (kW):</td>
<td>6.5</td>
<td>6.5</td>
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<tr>
<td>Weight (kg):</td>
<td>1800</td>
<td>2050</td>
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<tr>
<td>Length (mm):</td>
<td>3036</td>
<td>3996</td>
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<tr>
<td>Width (mm):</td>
<td>985</td>
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</tr>
<tr>
<td>Height (mm):</td>
<td>1350</td>
<td>1350</td>
</tr>
<tr>
<td>Extrusion height (mm):</td>
<td>1100</td>
<td>1100</td>
</tr>
</tbody>
</table>

Pipe Ø 8 mm i.d. to 58 mm o.d.
Available versions
› UC 58/40-90 (V) vario vacuum
› UC 58/40-120 (V) 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 corrugated products

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

Sample of application:
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.
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:
Small-sized corrugator

Pipe Ø 20 mm i.d. to 90 mm o.d.

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:

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

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

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 modules for 64 or 84 pairs are available
› Automatic mould block clearance adjustment

Technical data:

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<tr>
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<th>UC135/44 (V)</th>
<th>UC135/64 (V)</th>
<th>UC135/84 (V)</th>
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<td>Mould blocks:</td>
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<td>Max. PVC output (kg/h):</td>
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<td>380</td>
<td>550</td>
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<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>200</td>
<td>280</td>
<td>400</td>
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<td>Max. speed (m/min):</td>
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<td>Chain length (mm):</td>
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<td>Closed chain (mm):</td>
<td>872</td>
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<td>Height (mm):</td>
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<td>1700</td>
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<td>Extrusion height (mm):</td>
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<td>1100</td>
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</tbody>
</table>
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

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

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:
Mid-sized corrugator

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:

<table>
<thead>
<tr>
<th></th>
<th>UC 210/36 IV</th>
<th>UC 210/48 IV</th>
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<tbody>
<tr>
<td>Mould blocks:</td>
<td>36</td>
<td>48</td>
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<tr>
<td>Max. PVC output (kg/h):</td>
<td>750</td>
<td>950</td>
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<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>630</td>
<td>800</td>
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<td>Max. speed (m/min):</td>
<td>35</td>
<td>35</td>
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<td>Chain length (mm):</td>
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<td>6333</td>
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<tr>
<td>Closed chain (mm):</td>
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<td>Connected load (kW):</td>
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<td>Weight (kg):</td>
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<td>Length (mm):</td>
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<td>Width (mm):</td>
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<td>Height (mm):</td>
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<tr>
<td>Extrusion height (mm):</td>
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<td>1100</td>
</tr>
</tbody>
</table>

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

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

Samples of applications:
Mid-sized corrugator

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:

<table>
<thead>
<tr>
<th>UC 315/35 iV</th>
<th></th>
<th>UC 315/48 iV</th>
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</thead>
<tbody>
<tr>
<td>Mould blocks:</td>
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<td>48</td>
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<tr>
<td>Max. PVC output (kg/h):</td>
<td>600</td>
<td>850</td>
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<tr>
<td>Max. PP/PE output (kg/h):</td>
<td>450</td>
<td>700</td>
</tr>
<tr>
<td>Max. speed (m/min):</td>
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<td>25</td>
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<tr>
<td>Chain length (mm):</td>
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<tr>
<td>Closed chain (mm):</td>
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<td>Connected load (kW):</td>
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<tr>
<td>Weight (kg):</td>
<td>4200</td>
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<td>Length (mm):</td>
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<td>Width (mm):</td>
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<td>1884</td>
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<td>Height (mm):</td>
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<td>2020</td>
</tr>
<tr>
<td>Extrusion height (mm):</td>
<td>1100</td>
<td>1100</td>
</tr>
</tbody>
</table>
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

Materials
› Polyolefines, Polyamides, PVC, PVDF, EVA, TFA, TPE
Mid-sized corrugator

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): 1250

**Zooming channel**
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

Materials
› Polyolefines, PVC

Samples of applications:
Large-sized corrugator

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:

<table>
<thead>
<tr>
<th>UC 1200/9 IV</th>
<th>UC 1200/12 IV</th>
<th>UC 1200/9 IV (PS me)</th>
<th>UC 1200/8 IV (PS lm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>me</td>
<td>me</td>
<td>(PS me)</td>
<td></td>
</tr>
<tr>
<td>Mould blocks:</td>
<td>9</td>
<td>12</td>
<td>9+1/2 (PS)</td>
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<tr>
<td>Max. PVC output (kg/h):</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td>Max. PP/PE output (kg/h):</td>
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<td>1000</td>
<td>1000</td>
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<tr>
<td>Max. speed (m/min):</td>
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<td>3</td>
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<td>Chain length (mm):</td>
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<td>Extrusion height (mm):</td>
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</table>

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

Materials
› Polyolefines, PVC
Large-sized corrugator

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
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:
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sales@unicor.com

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