Concrete Pipe and Manhole Making Machines
Production Equipment for Precast Concrete Elements for Infrastructure Projects
### Machine selection
Which machine for what products?

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# Machine selection

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### Machine selection

#### Products for sewage water treatment and rainwater utilization system

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### Machine selection

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## Machine selection

### Products for roadways

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<tr>
<th></th>
<th>ATLAS</th>
<th>BLIZZARD</th>
<th>MISTRAL</th>
<th>PRIMUSS</th>
<th>RP</th>
<th>TORNADO</th>
<th>VARIANT</th>
<th>VENTUS</th>
<th>ZELOS</th>
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### Other concrete products

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<tr>
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<th>ATLAS</th>
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<th>PRIMUSS</th>
<th>RP</th>
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### Other concrete products

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<td>✔️</td>
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<td>✔️</td>
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<td>concrete fence elements</td>
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<td>✔️</td>
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</tbody>
</table>
The ATLAS is a modular system that combines the individual segments of concrete feeding, vibration compaction, pressing and transporting components into a workable bespoke system providing flexibility and versatility for your production needs. Each technique delivers advanced technology developed and proven in all our fully automatic systems.

Together the individual constructed modular components make it possible to quickly prepare for repeat production or mould change to meet the demands of a wide range of products. Production with the ATLAS can be configured for either manual or semi-automatic operation. This wide scope of diversity and manufacturing ability make the relatively low investment cost for the ATLAS production platform an attractive decision for many producers.

**PRODUCT CAPABILITIES**
- Monolithic Manhole Tanks and Base Units
- Drainage Pipes and Rings
- Box Culverts and Rectangular Tanks
- Three Chamber Rings and Base Units
- Other Products for Sewerage, Drainage, Road applications

**Capacity data**

<table>
<thead>
<tr>
<th>Category</th>
<th>Range</th>
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<tbody>
<tr>
<td>Product dimensions max. Ø</td>
<td>150 – 3,600 mm</td>
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<tr>
<td>Length max.</td>
<td>250 – 3,500 mm</td>
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<tr>
<td>Product weight max.</td>
<td>50 – 25,000 kg</td>
</tr>
<tr>
<td>Cycle times</td>
<td>3 – 25 min</td>
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</tbody>
</table>
The ATLAS is very well suited for the production of

Products for sewerage

- seating rings
- cones
- manholes
- manhole bases
- manhole cover frames
- shaft pipes
- concrete pipes
- egg-shaped pipes
- rectangular cover plates
- rocker pipes
- large size pipes
- module ovoid pipes
- prebed pipes
- rectangular manholes
- jacking pipes
- rectangular manhole base units
- egg-shaped manhole bottoms
- cover slabs

Products for drainage

- street gullies
- drainage channels
- drainage pipes
- drainage rings
- street gullies (GB)
- street gullies (NL)
- roof drainage shafts (F)
- dual box culverts
- box culverts with partition
- individual box culverts
- slotted drain pipes

Products for power supply ducts and telecommunication

- cable channels
- cable distribution boxes
- box culverts
- galleries

Products for sewage water treatment and rainwater utilization

- septic tanks
- three chamber rings
- three chamber base units
- tank cones
- rain water cisterns
- concrete tanks (square/rectangular)
- drainage rings
- tank rings
- separator tanks
- egg-shaped tanks

Products for roadways

- road barriers
- foundation supports
Schematic construction of the ATLAS

**ATLAS 200/100**

1. Lifting harness with press
2. Mould equipment
3. Distributor
4. Feeding unit
5. Supports for lifting harness
6. Vertical vibrator
7. Control unit
8. Power box

**ATLAS 200/250**

1. Lifting harness with press
2. Mould equipment
3. Distributor
4. Feeding unit
5. Supports for lifting harness
6. Central vibrator
7. Control panel
8. Power box

**ATLAS 350/300**

1. Turning device
2. Mould equipment
3. Linear press
4. Feeding unit
5. Ejection unit
6. Central vibrator
7. Steel pallets
Photo gallery ATLAS
The stationary automatic BLIZZARD production equipment is designed around a 180° rotating tilt table station for the manufacturing of a wide range of products. The rotating process allows the production of products that previously were restricted to methods involving wet cast moulds and vibration tables. These items can now be manufactured by the use of full automation to achieve greater output and profitability.

The BLIZZARD technology allows improvement to production efficiency and the enhanced quality of numerous products to meet market demand. The developed vibration technology is precisely controlled allowing all freshly made product to be directly demoulded onto steel pallets for conveyor transfer to curing racks. The average time for a mould cassette change is 10 to 15 minutes this rapid exchange from one mould to another assists in advancing manufacturing flexibility creating client satisfaction.

The whole plant can be operated by a single operator.

**PRODUCT CAPABILITIES**

- Cable Channels and Distribution boxes
- Drainage Channels
- Steps, Chimneys and other Building Products
- Landscape Elements (Paving Slabs, Column and Wall Caps etc)
- Retaining Walls
- Manhole Base Units
- Median Barriers and other Road / Rail Products

**Capacity data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Product dimensions max.</td>
<td>(L x W x H) 1.700 - 1.700 - 1.500 mm</td>
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<tr>
<td>Heights max.</td>
<td>25 – 1.500 mm</td>
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<tr>
<td>Product weight max. up to</td>
<td>bis 5.000 kg</td>
</tr>
<tr>
<td>Cycle times</td>
<td>1.5 – 5.5 min</td>
</tr>
</tbody>
</table>
The BLIZZARD is very well suited for the production of

**Products for sewerage**

- seating rings
- manhole cover slabs
- rectangular cover plates
- cover slabs
- manholes
- manhole bases
- manhole cover frames
- rectangular manholes
- rectangular manhole base units
- egg-shaped manhole bottoms

**Products for drainage**

- drainage channels
- roof drainage shafts (F)
- street gullies (NL)
- street gullies (IR)
- kerb drainages (IR)
- U-channels

**Products for power supply ducts and telecommunication**

- cable channels
- cable channel covers
- cable distribution boxes
- covers for cable distribution boxes
- duct covers

**Products for building construction**

- square steps
- chimneys
- wall elements
- retaining walls
- cattle slats
- electronic blocks
- sanitary blocks
- ventilation flues

**Other concrete products**

- window frames
- cellar wing walls
- lawn stones
- paving slabs
- panels
- sills
- retaining wall elements
- fence posts
- pier caps

**Products for roadways**

- road barriers
- kerbstones
- railway sleepers
- street gullies (J)
- wall caps
Schematic construction of the BLIZZARD

BLIZZARD 180/150

1. Mould turning device
2. Mould equipment
3. Pallet return device
4. Feeding unit
5. Curing rack
6. Vertical vibrator
7. Portal robot
8. Press carriage
Photo gallery BLIZZARD
The versatile MISTRAL machine is designed for the production of pipes, manhole units, rectangular and square boxes. It offers good efficient cycle and mould changeover times across the various product types. Our patented GEBA process ensures the exact length precision of products. Precise forming of concrete pipe and manhole spigots can be achieved through our SYSTEM-OPTIMA method.

The MISTRAL utilizes a pit installed vibrator unit which reduces noise levels. The setup is accessible from three sides allowing optional handling systems to accommodate various product types (please see page 54 PRINZING-PFEIFFER Handling).

The highly effective central vibrator technology assures excellent product quality and together with tamper vibration providing exact concrete pipe spigots. The hydraulic mould clamping of outer case and inner core in conjunction with the automatic height adjustment provide efficient versatility at mould changeover. The MISTRAL machine can be dedicated either to one type of product or across a scope of products.

**PRODUCT CAPABILITIES**
- Concrete Pipes
- Manholes, Tanks and Rings
- Box Culverts

**Capacity data**

<table>
<thead>
<tr>
<th>Product dimensions max. Ø</th>
<th>150 – 2.000 mm</th>
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<tbody>
<tr>
<td>Lengths max.</td>
<td>250 – 2.500 mm</td>
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<tr>
<td>Product weight max.</td>
<td>50 – 5.000 kg</td>
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<tr>
<td>Cycle times</td>
<td>2 – 6 min</td>
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</table>
The MISTRAL is very well suited for the production of

Products for sewerage

- seating rings
- cones
- manholes
- manhole bases
- manhole cover frames
- shaft pipes
- concrete pipes
- egg-shaped pipes
- rocker pipes
- module ovoid pipes
- prebed pipes
- rectangular manholes
- rectangular manhole base units
- egg-shaped manhole bottoms
- rectangular cover plates
- cover slabs

Products for drainage

- roof drainage shafts (F)
- slot drainage channels
- drainage rings
- drainage pipes
- street gullies
- street gullies (GB)
- street gullies (NL)
- kerb drainages (IR)
- street gullies (IR)
- slotted drain pipes

Products for power supply ducts and telecommunication

- cable distribution boxes

Products for sewage water treatment and rainwater utilization system

- tank rings
- three chamber rings
- tank cones
- drainage rings
- concrete tanks (square / rectangular)

Products for building construction

- chimneys

Other concrete products

- palisades

Products for roadways

- street gullies (I)
Schematic construction of the MISTRAL

MISTRAL 150/250 single production

1. Control panel
2. Press
3. Outer mould
4. Mould core
5. Central vibrator
6. Concrete hopper
7. Conveyor belt

MISTRAL 150/250 double production
Photo gallery MISTRAL
Production of monolithic manhole bases with varying channels

The benchmark PRIMUSS innovation integrates the highest level of automation and control technology in the design and manufacture of monolithic manhole bases with bespoke mixed inlet and outlet entries and benching. In using proven robotic programming the varying location, diameter and angular dimensions of different pipe inlets permit precise milling by PRIMUSS immediately after product demoulding.

The efficient PRIMUSS effectively reduces mould and labour expense associated with mould assembly and demoulding thus eliminating costs and waste connected with polystyrene formers and plastic liners. PRIMUSS lowers tooling and energy costs through the milling of fresh concrete.

All monolithic manhole bases produced by PRIMUSS are milled from high compacted fine grain concrete. Dimensionally precise bases are formed due to partial curing in the mould. The base units are manufactured using concrete with high strength and low W/C ratio.

All PRIMUSS channels (benching) are designed for optimum flow. The operating software produces a quick setup for complex inlet/outlet design improving manufacturing flexibility from information given by the site engineer.

PRIMUSS manhole bases set the benchmark standard for best practices in terms of quality, efficiency and production output.

www.primuss.eu

Capacity data

<table>
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<td>Product weight max.</td>
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<tr>
<td>Cycle times</td>
<td>5-25 min</td>
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</table>
The PRIMUSS is very well suited for the production of

Products for sewerage

rectangular manhole bases units  manhole bases  egg-shaped manhole bottoms
Schematic construction of the PRIMUSS

PRIMUSS 125/150

1. Control panel
2. Conveyor belt for milled material
3. Industrial robot
4. Milling station with turntable
5. Cutter
Photo gallery PRIMUSS
The **RADIAL PRESS RP** stands for the state of the art technology associated with high performance manufacturing machine systems for concrete pipe production. The counter rotating compaction distributor and pressing head deliver high dimensional precision across a range of concrete pipe having a maximum outside diameter of 2500 mm and a minimum inside diameter of 250 mm. Its ability to produce lengths from 1000 mm to 6000 mm at a fast rate increases by using two outer moulds mounted to a turntable allowing the joint operation of production and demoulding.

The **RADIAL PRESS RP** has a high drive power for producing thick wall doubled reinforced concrete pipe. All constituent parts are designed with high reliability and long life minimal wear in mind.

It produces low noise levels thus creating an environment for good and safe working conditions for staff.

This production system delivers a manufacturing excellence for a large range of concrete pipe at a high rate of output unchallenged in the marketplace.

**PRODUCT CAPABILITIES**
- Reinforced and Unreinforced Concrete pipes
- Pressure Pipes up to 6 m in length
- Jacking Pipes
- Rocker Pipes

### Capacity data

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<th>min. inner Ø 250 mm</th>
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<td>Product weight</td>
<td>100 - 10000 kg</td>
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<tr>
<td>Cycle times</td>
<td>1,0 - 4,5 min</td>
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</table>
The RADIAL PRESS RP is very well suited for the production of

Products for sewerage

rocker pipes  prebed pipes  concrete pipes  jacking pipes

Products for drainage

drainage pipes  slotted drain pipes

Products for fresh water supply

pressure pipes
Schematic construction of the RADIAL PRESS RP

RADIAL PRESS RP 1625

1. Turn table
2. Working table
3. Concrete hopper
4. Main shaft
5. Driving unit
6. Bell-end compactor
7. Outer mould fixation
8. Machine main frame
9. Pressing tool
The TORNADO machine is established with a solid reputation as a proven and reliable production system for concrete manholes, pipes and similar products such as street gullies. It offers efficient cycle and product change times for these various product types. The TORNADO operating arrangement comprises of four modular components creating a wide range of product flexibility.

Our patented GEBA process ensures the exact length precision of products. Precise forming of concrete pipe and manhole spigots can be achieved through our SYSTEM-OPTIMA method.

The TORNADO utilizes a pit installed vibrator unit which reduces noise levels. The setup is accessible from three sides allowing optional handling systems to accommodate various product types (please see page 54 PRINZING-PFEIFFER Handling).

The highly effective central vibrator technology assures excellent product quality and together with tamper vibration providing exact concrete pipe spigots. The hydraulic mould clamping of outer case and inner core in conjunction with the automatic height adjustment provide efficient versatility at mould changeover.

The TORNADO machine can be dedicated either to one type of product or across a scope of products.

PRODUCT CAPABILITIES
- Manhole Risers and Cones
- Concrete Pipes
- Manholes, Tanks, Rings & Base Units
- Box Culverts
- Drainage, Sewerage and Building Products

Capacity data

<table>
<thead>
<tr>
<th>Product dimensions max. Ø</th>
<th>150 – 2.500 mm</th>
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<tbody>
<tr>
<td>Lengths max.</td>
<td>250 – 1.500 mm</td>
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<tr>
<td>Product weight max.</td>
<td>50 – 6.000 kg</td>
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<tr>
<td>Cycle times</td>
<td>2 – 4.5 min</td>
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The TORNADO is very well suited for the production of

**Products for sewerage**
- seating rings
- cones
- manholes
- manhole bases
- manhole cover frames
- manhole cover slabs
- rocker pipes
- shaft pipes
- rectangular manholes
- rectangular manhole base units
- cover slabs
- rectangular cover plates
- egg-shaped manhole bottoms

**Products for drainage**
- roof drainage shafts (F)
- slot drainage channels
- drainage rings
- drainage pipes
- street gullies
- street gullies (GB)
- street gullies (NL)
- kerb drainages (IR)
- street gullies (IR)
- individual box culverts

**Products for power supply ducts and telecommunication**
- cable distribution boxes
- box culverts
- galleries

**Products for sewage water treatment and rainwater utilization system**
- tank rings
- three chamber rings
- tank cones
- drainage rings
- concrete tanks (square/rectangular)

**Products for building construction**
- chimneys

**Other concrete products**
- palisades

**Products for roadways**
- street gullies (J)
Schematic construction of the TORNADO

TORNADO 150/150

1. Pallet magazine
2. Pallet cleaning
3. Oiling station
4. Pallet feed
5. Anchor magazine
6. Press
7. Concrete hopper
8. Conveyor belt
9. Outer mould
10. Mould core
11. Central vibrator
12. Step feeder
Photo gallery TORNADO
**VARIANT**

Production plant for large sized pipes and box culverts

**VARIANT** production is a high level efficient process for a combination of products that need to be produced in large numbers to meet market demand. The **VARIANT** can be configured with a single station or two for a greater output rate with the flexibility to produce concrete pipe and manhole side by side.

The incorporated vibration and compaction technology is a developed design that is sufficiently powerful enough for large products. The **VARIANT** utilizes a pit installed vibrator unit which reduces noise levels. The easy operated system supports quick mould exchange by hydraulic core clamping with up to five locations.

This manufacturing process improves your production capabilities for large concrete products having high strength and exact specifications.

**PRODUCT CAPABILITIES**

- Concrete Pipes - Diameter range from 300 mm to 3600 mm
- Box Culverts - Range from 1200 mm x 600 mm to 3600 mm x 3600 mm
- Jacking Pipes
- Pipes with PVC or HDPE Lining
- Oval and Arch Pipes

**Capacity data**

<table>
<thead>
<tr>
<th>Product dimensions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>min. inner Ø 250 mm</td>
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<td>Lengths</td>
<td>250 – 5000 mm</td>
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<tr>
<td>Product weight max.</td>
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<tr>
<td>Cycle times:</td>
<td>3 – 25 min</td>
</tr>
</tbody>
</table>
The VARIANT is very well suited for the production of

### Products for sewerage

- concrete pipes
- egg-shaped pipes
- prebed pipes
- large size pipes
- module ovoid pipes
- jacking pipes
- cones
- manholes
- manhole bases
- shaft pipes
- rocker pipes
- rectangular manholes
- rectangular manhole base units

### Products for drainage

- drainage pipes
- individual box culverts
- U-channels
- slotted drain pipes

### Products for power supply ducts and telecommunication

- box culverts
- galleries

### Products for sewage water treatment and rainwater utilization

- separator tanks
Schematic construction of the VARIANT

VARIANT 3600 D

1. Pivoting press
2. Central vibrator
3. Feeding unit
4. Gap feeding unit
5. Control box
6. Mould equipment
7. Mould fixation frame
Photo gallery VARIANT
VENTUS

A production line for concrete posts, transmission poles and pressure pipe

The PRINZING-PFEIFFER VENTUS combines the benefits of centrifugal spinning production and the addition of selected associated machinery.

The degree of automation, individual components, equipment and machines of the production line are assembled according to customer requirements.

The advantages of VENTUS

- High concrete compaction by centrifugal spinning leads to higher density
- Smooth and blemish free product surfaces
- The centrifugal force achieves exact length and diameter dimensions
- Curing of fresh products in the mould maintains high dimensional standards
- Greater flexibility in pipe and pole design in regards of length, wall thickness and outer geometry

The VENTUS is especially suited for the production of longitudinally pre-stressed concrete products with excellent structural properties:

- Masts for electricity supply, telecommunications and lighting
- Half shells for irrigation and drainage
- Posts and poles for civil engineering and port projects
- Pressure pipes for water supply

Capacity data

<table>
<thead>
<tr>
<th>Product dimensions</th>
<th>max. inner Ø 3,000 mm</th>
<th>min. inner Ø 150 mm</th>
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<td>Cycle times</td>
<td>20 – 40 min</td>
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</table>
The VENTUS is very well suited for the production of

Products for sewerage

- concrete pipes
- large size pipes

Products for fresh water supply

- pressure pipes
- flumes

Products for power supply ducts and telecommunication

- poles

Products for building construction

- piles
VENTUS

Schematic construction of the VENTUS

1. Lifting traverse
2. Centrifugal spinning machine
3. Feeding unit
4. Demoulding station
5. Control panel
Photo gallery VENTUS
Automatic production line for a wide range of concrete products

The production system ZELUS is fully automated having a high degree of efficiency allowing a closed cycle carousel for a wide range of precast and wet cast products. A crane robot manages the automated handling of up to 130 battery style moulds to racking in an 8 hour working period, then subsequently acting as a demoulding tool. This circular system delivers high quality and a greater output of a range of products previously limited to inefficient static moulds.

ZELUS has the capability and capacity to produce a wide range of oblique product shapes up to 1 m high x 3 m width x 6 m length with a weight reaching to 5000 kg.

This highly efficient line has an exact dosing system for the precise filling of individual moulds mounted within carrier frames which act as transport pallets to convey newly made product to a curing rack. An alternative SCC (self compacting concrete) dosing method can also be implemented. A filling depth tolerance of +/- 1 mm is maintained on the finished product.

<table>
<thead>
<tr>
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<td>Lengths max.</td>
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<td>6.000 mm</td>
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<td>Product weight max.</td>
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<td>1 - 5000 kg</td>
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<td>Cycle times</td>
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<td>3 - 5 min</td>
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The ZELUS is very well suited for the production of

Products for sewerage

- seating rings
- manhole cover frames
- rectangular cover plates
- cover slabs

Products for drainage

- drainage channels
- roof drainage shafts (F)

Products for power supply ducts and telecommunication

- cable channels
- cable channel covers
- cable distribution boxes
- covers for cable distribution boxes
- duct covers

Products for building construction

- wall elements
- retaining walls
- square steps
- cattle slats
- chimneys
- joists

Products for roadways

- road barriers
- kerbstones
- railway sleepers

Products for sewage water treatment and rainwater utilization system

- cover for egg-shaped tanks

Other concrete products

- panels
- sills
- window frames
- wall caps
- cellar wing walls
- lawn stones
- retaining wall elements
- paving slabs
- fence posts
- pier caps
- concrete fence elements
Schematic construction of the ZELUS

ZELUS DC 400/25

1. Mould turning device
2. Mould equipment
3. Demoulding position
4. Feeding unit
5. Pallet stack
6. Vertical vibrator
7. Portal robot
Photo gallery ZELUS
Since over 100 years PRINZING-PFEIFFER develops, constructs and builds mould equipment for the production of precast concrete parts for different purposes.

This has initially started with mould equipment, in which the concrete was poured or compacted by tampers.

Today PRINZING-PFEIFFER produces mould equipment for various uses. Our staff in our mould making workshop and the long-standing experience of our employees guarantee an optimal design of the mould for the product being produced.

For the production of products in small numbers wet-cast moulds are especially suitable. Wet-cast moulds are designed by PRINZING-PFEIFFER specifically to the client's demands. Examples are wet-cast moulds for large size manhole base units and jacking pipes. PRINZING-PFEIFFER also delivers the necessary handling equipment as lifting harnesses and turning devices for the transport and turning.

Beside the individual wet-cast moulds PRINZING-PFEIFFER develops and produces „system-mould equipment“, which is used especially in automatically working production systems for the wet-cast method, for example the ZELUS.
Photo gallery wet-cast moulds
In 1907 PRINZING started manufacturing concrete mould equipment. Our clients now profit from this long-standing experience. Excellent quality of the concrete products with high service life of the mould equipment are our aims. This we achieve by using our know-how in the construction of different individual moulds and long experience of our staff in our mould making workshop.

**Mould equipment for machines**
The mould equipment has been developed and well-tried (especially for our plants). By the use of 3D construction all mould equipment is customized, developed and drawn. Guaranteed advice and service is also available long term.

**Special mould equipment**
Upon customers requests we build mould equipment according their product drawings.

**Mould equipment for machines from other manufacturers**
Also for these machines we construct and build mould equipment with consideration of the specific particularities of the original.
Photo gallery dry-cast mould equipment
Handling systems

PRINZING-PFEIFFER offers modular built components for an automatic production cycle. The range covers from small pallet cleaning stations, product transport systems, testing and marking devices up to fully automatic working plants, for which only few employees are necessary for the supervision.

PRINZING-PFEIFFER offers handling systems as stand alone solutions or integration to existing structures. Also new machines or existing plants can be extended with modules from the line of products of PRINZING-PFEIFFER handling systems as follows:

- Steel pallet handling
- Pallet handling
- Product handling
- Product testing device
- Feeding device
- Marking stations

Advantages

- Modular built to extend as you like
- Universal use for different machine types
- Use of high-quality automatisation components
- Logically thought out operation plan
- Increase of capacity
- Increase of quality
- Reduction of personnel
- Improvement of job conditions
Photo gallery handling systems
Our cage welding machines are worldwide successful on the market for decades. We are a leading manufacturer of fully automatic cage welding machines for the production of reinforced-concrete pipes. PRINZING-PFEIFFER cage welding machines are optimized for our pipe and manhole machine. These are high performance welding machines for the efficient and reliable production of reinforcement cages and hoops in resistance welding processes.

According to the requirements of capacity, product or production line of the precast parts, we offer our customers the optimal working cage welding machine.

### Capacity data

<table>
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<tr>
<th>Dimension of product</th>
<th>max. outside Ø 4,400 mm</th>
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<td>min. inner Ø 340 mm</td>
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<td>Quantity longitudinal wires</td>
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<td>Winding wire</td>
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<td>Longitudinal wire</td>
<td>Ø 5 - 10 mm</td>
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<tr>
<td>Cycle times</td>
<td>1 - 20 min</td>
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</table>
Photo gallery Cage Welding Machine
Separate drives for perfect mixing results in a short time

The TOPWERK-Mixers of the SM series provide the perfect solution for making concrete types used in the production of paving blocks, kerbstones, hollow blocks, plates, and pipes and manholes as well as precast concrete elements. The production of self compacting concrete is also possible.

The reliable planetary mixers are characterized by their high mixing intensity and are used by many customers around the world for many years.

The new generation has been further developed and improved.

The separate main drive is realized by one or more gear motors in combination with a ball bearing. The diameter of this ball bearing is depending on the mixer size and is 60 to 90% of the mixer diameter. This results in an extremely rigid drive and there is almost no vertical movement of the mixing tools. This is especially important for fast and clean discharge. The separately driven mixing tools are mounted on the tool carrier within the ball bearing. The overlying rotational movement of the main drive and star drive results in an elliptical motion, in which the mixing paddles slip over all areas of the mixer bottom and thereby provides a good mixing.

With the separate drive it is possible to start the mixing tools under load one after the other and then the main drive. On request, all drives can be equipped with speed controls. Thereby the mixing stars can be adjusted relatively to each other and to the main drive and be adapted to the mixtures. Through different speeds the pollution of the mixing tools can be reduced.

All this is not possible for mixers with central drive.

To improve the mixing results it is possible to add water or cement in the lower area of the mixing trough directly in the mixture, if requested. Water is filled in by lateral water inlets, thereby the mixing tools and the upper part of the mixing trough remains dry and there is significantly less caking. The cement is dosed and slowly added by a speed controlled screw to prevent cement lumps. The addition of cement directly into the mixture reduces the cement dust deposits in the upper part of the mixing trough considerably. There is much less pollution in the subsequent mixture and the cleaning effort is reduced.

The frame of the mixer is designed to be self-supporting with lower and upper frame and provides thereby also for the torsional rigidity. In particular, this framework allows the installation of two large double doors, making cleaning and maintenance easier and the safety of personnel is significantly increased. The framework allows the installation of a flat slide with two large discharge openings.

Accessories

Compulsory concrete mixer
Photo gallery compulsory concrete mixer
For special requirements we offer special finishing systems for precast concrete products being manufactured with our production machines. So customers special requests can be implemented with our concrete pipe cutting machine, milling machine and drilling centers. These plants can be used as single machines or can be integrated in production lines.

**Working scope of the PRINZING-PFEIFFER finishing system centers:**
- Straight and bevel cuts 0 - 90° with contour control
- For reinforced and unreinforced precast concrete parts
- Milling of spigot ends of cutted pipes or to remill spigot ends with patented scanning of the inner diameter
- Milling of end faces
- Milling of chamfers
- Milling of grooves in spigot ends
- Drilling of joints in pipes
- Drilling of joints in manhole rings and manhole bottom units

**Capacity data**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<td>Lengths max.</td>
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<td>Drilling diameter max.</td>
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<td>Product weight max.</td>
<td>25 t</td>
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Photo gallery Pipe and Manhole Processing Machines
Production Processes

Radial-Pressing Process

PRINZING-PFEIFFER, with the world’s largest number of installed systems with counter-rotating compression tool, is mainly responsible for the development of the modern radial-pressing-method. The counter-rotating compression tool and the fully automatic compaction control is a prerequisite for the tension-free and complete embedding of the reinforcement.

The PRINZING-PFEIFFER RADIAL PRESS has been continuously developed and is today a fully automated high-performance machine for concrete pipes, reinforced concrete pipes and pressure pipes.

PRINZING-PFEIFFER offers the RADIAL PRESS in different designs for products from DN 250 to DN 2000 and length of 3,5 or 6 m for pressure pipes. Especially sewage pipes (with and without bell, with and without base), jacking pipes, double spigot pipes, short pipes, slot pipes and pressure pipes.

Equipment Features (some optional)
- Counter-rotating compression tool consisting of distributor and press piston
- Separately adjustable drives for distributor and press piston
- Fully automatic compression control for uniform compaction
- Continuous monitoring and documentation of the compaction effect
- Exact reinforcement cage centering device
- Variable length change with height-adjustable working table
- Quick change system (QCS) for semi-automatic nominal diameter change
- Programmable electronic control Siemens S7

The Advantages of the Radial-Pressing Process
- Fast and homogeneous concrete compaction by radial compression
- Tension-free embedding of the reinforcement by counter-rotating compression tool
- Low water-cement ratio and thus very high concrete strength by economical cement consumption
- Exact length by full mould space limitation
- Very short cycle time due to high compression efficiency of the pressing tool
- High reliability of product quality through fully automated compression regulator
- High dimensional accuracy of the final products due to transport of fresh products in the outer mould to the demoulding area
- Suitable for the production of pipes with wear-resistant interior coatings (patented process for manufacturing compound pipes)
- High flexibility of the design of the pipes with respect to the length, the wall thickness and the outer geometry
- Simple machine design not being dependent on deep foundation pit and suitable for integration in pipe systems with variable grade of automation up to fully automatic pipe production line
- Very high reliability of the machine at a very low wear
- Very low noise emission compared to conventional methods with vibration compaction
Centrifugal process for posts, poles and pressure pipes

A particular strength of the centrifugal process is the production of longitudinally prestressed concrete products. So the manufacturing of versatile products with today's PRINZING-PFEIFFER centrifugal systems is possible:

- Poles for energy supply, telecommunication and lighting
- Half shells for irrigation and drainage
- Pressure pipes for water supply
- Posts for civil engineering and port projects

Centrifugal systems consist of a large number of individual machines and devices, which are delivered in a different degree of automation, depending on the requirements of on PRINZING-PFEIFFER.

The advantages of the Centrifugal process:

- Higher density through a very high concrete compaction
- Closed smooth surfaces of the products
- Exact length and outer diameter by full mould space
- High dimensional accuracy of the final products by curing the fresh products in the outer mould
- High flexibility in the pipe design with respect to the length, the wall thickness and the outer geometry
- Suitable for the production of longitudinally prestressed concrete products with excellent structural qualities.

Operation

During the centrifugal process, the mould with the uncompacted fresh concrete is set in rotation. This affects on the concrete mass a centrifugal force, which presses the concrete outward to the mould wall. The aggregates with the higher specific weight move more easily towards the mould wall as the lighter parts. This delivers a typical grain structure of a concrete texture with outmost density and minimum pore volume. The outer layer contains very densely packed the coarse grain and a smooth, closed surface. The internal layer consists of cement paste and aggregate small parts (the so-called „fat-layer“).
Production Processes

The Vibro-Compaction and Pressing Process

PRINZING was involved in the development of the vibro-compaction method for the concrete precast concrete industry. PRINZING has continuously developed the vibro-compaction process for their own machine programme which can be adjusted to suit different concrete elements.

Different processes

- **GEBA-Process**
  The concrete precast parts are produced to the exact length

- **Automatic length process**
  Method for the infinitely variable length adjustment

- **Automatic production**
  for manhole base units with precise spigot-ends by curing onto the spigot-end

- **OPTIMA-Process**
  for the production of pipes and manhole elements with exact joints, tolerance ± 0,5 mm

- **Automatic cast-in-place**
  of step elements in any design

- **Efficient production**
  of manhole elements with integral concrete step ladder (CONSTEP)

- **Automatic feeding**
  and cast-in of integral gaskets

- **Efficient vibro-compaction**
  and pressing process integrated in tilting table machines (BLIZZARD)

Advantages

- Fast and homogenous compaction by vibration and additional hydraulic pressing power
- Low water to cement ratio and therefore higher strength of the concrete parts
- Short cycle times by fast compaction process and direct demoulding
- Various forming possibilities for small and large sized products
- Efficient production of all requirements up to a fully automatic production system
The Wet-Cast Process

The production of precast concrete parts by wet-casting only requires the use of mould equipment and originally required minimum support equipment. However now more and more automatic production lines are in operation, as for example the ZELUS, to use the specific advantages of the wet-cast procedure by the optimal use of high efficient production systems.

By the development of self-compacting concrete the wet-cast process gains in importance.

Advantages

• Small product tolerances
• Best surface finish
• Efficient for small quantity
• Complex product shapes are achievable

Special mould equipment

Upon customers requests we build mould equipment according their product drawings.

Operation

Using the wet-cast process for different products wet-cast moulds are filled with liquid concrete mixture (in comparison to the Vibro-Compaction and Pressing Process where moist concrete mixtures are used) and afterwards with vibrators or vibration tables compacted.

By using self-compacting concrete the need for compaction by vibration is redundant.

After the concrete casting is cured, the mould equipment will be opened and the product demoulded.
The quality standard for the future
PRINZING-PFEIFFER has developed the manhole further. Based on the PRINZING patented econorm® gasket – an integrated gasket with load compensation attributes – PRINZING-PFEIFFER built a manhole system which is also accepted as an European PAS-Standard.

A system with future
At the installation the manhole sinks safely by its own weight in the smooth and stable, not resilient filling of the gasket.

Advantages
• Precise and problem-free installation regardless the weather
• Better load distribution by sand filled gasket
• Seats, suits, supports and seals very well
• Errors are eliminated by the integrated econorm® gasket element
• 150 mm wall thickness
• Exact dimensions
• Combination of various manhole elements
• System is defined in the Standard PAS 1004

The details in the system
• Simple joining
• Nondestructive interchangeability
• Correctly placed gasket element
• Permanent gasket effect by twin large gasket surfaces
• Uniform load compensation and permanent adaptability by non resilient sand bedding
• Horizontal and vertical load transmission with distributed loads

www.econorm.de
The company standard TOBNORM® was developed by well-known concrete companies, seal manufacturers and machinery producers. The user gets with TOBNORM® an economic quality improvement in compliance of all other requirements of the standard EN 1917 + DIN V 4034-1. Manholes in accordance to standard EN 1917 + DIN V 4034-1 + TOBNORM® are DIN compatible and involves much higher security for tightness, durability and longevity.

- Load distribution element always integrated
- Compression seal always integrated
- Non resilient load distribution element
- Meet the requirements on building site
- Large seal surface, safe seal effect
- Installation errors are not possible
- Standard DIN V 4034/1 compatible

The safety of TOBNORM®

Vertical pressing tests have shown that TOBNORM® - Manhole Systems always resist vertical loads over 40 tons (corresponds to class D).

These tests are clearly defined in the Standard and guarantee a safe component.

The technique of TOBNORM®

An optimal load transfer between the components excludes undistributed loads and avoids cracking. By the tight integration of gasket and load distribution element installation errors are not possible on building site.
Tradition and progress have a long history at PRINZING. PRINZING was founded in 1862 by the master blacksmith Georg Prinzing. Obviously in those years there was no need for equipment for precast concrete parts. But at this time the founder’s aim was to supply craftsmen and farmers with forged hardware of all kinds.

From the beginning PRINZING was an innovative and forward-looking company. Pressing and forging machinery was driven by using water power. PRINZING was also the pioneer in producing electricity for the local village Weiler. The progression from the craftsman’s establishment to an ultra-modern and innovative producer of machinery was always influenced by developments and PRINZING being flexible responds always very quickly to market needs.

From about 1907 PRINZING specialized in the production of equipment for newly developed precast concrete parts. Simple wet-cast moulds were built to produce bricks, kerbstones and concrete pipes. Thousand of such moulds were produced and sold in Germany and abroad.

With the introduction of vibration technology, in which PRINZING was pioneering involved, the production of precast concrete parts could be rationalized. This was also the starting signal for the industrial production of precast concrete parts in large quantities of much good quality.

One of PRINZING’s developments, the patented central vibrator, resulted in the worldwide export of machines for the production of pipes and cable stones in the 50’s. At this time the first manhole machine was developed, which was chain driven and electrically operated. By 1970 it was possible to increase the output of the manhole machines and the quality of the products considerably, due to the introduction of hydraulics.

Also at this time the moveable tilting table machine for the continued and efficient production of kerbstones and U-channels, together with bricks was successfully marketed.

An overview of the equipment and machines of the early years is seen in the gallery of the company’s history.
Photo gallery Company’s History Prinzing

01. Tilting mould with ejection device for shuttering stones
02. Mould Equipment for production of concrete drain pipes with splitted outer mould and shrinkable inner core about 1910
03. Brochure of modern Prinzing moulds at the time about 1930
04. Potato cleaning device about 1895
05. Concrete moulds are picked up with horse-drawn vehicle about 1907
06. With a horse-drawn carriage a cone mould and a mould for gutters are collected around 1920
07. Oskar Prinzing with VW Beetle
08. Mobile concrete mixer with lift bucket for feeding and water containers - the steel construction is riveted, about 1910 - 1930
09. Egg-layer for concrete supporting rings
10. 3 concrete pipe moulds for junction pipes are collected with the horse-drawn sleigh about 1920
11. The loading of concrete pipe moulds on a truck in 1940 required much man power.
The registration of the newly formed company Maschinenfabrik Ettlingen Gmbh took place at the Chamber of Commerce Ettlingen in the year 1900. Quickly the metal workshop developed into a fabrication company manufacturing moulds for concrete products and particularly for concrete pipes. It was in 1903 that engineer Heinrick Schoth joined the company as co-owner in the position of technical manager and set about developing the “Ettlingen Concrete Pipepress” for the industrialised production of concrete pipes. Prior to this point concrete pipe was cast or tamped manually.

Friedrich Pfeiffer Dipl. Ing in 1929 became a shareholder and developed the Packerhead machine (coreless pipe press) in which the rising rotating piston compacted concrete instead of a vibrating core. Within a few years this revolutionary manufacturing process was sold throughout Germany, Europe and other overseas markets.

Upon Heinrick Schoth’s retirement the company name was changed to “Maschinenfabrik Ettlingen Friedrich Pfeiffer KG”. The Packerhead machine was further developed to produce a range of concrete pipe having internal diameters from 300 mm to 1200 mm and an effective length of 2.0 m. New creations followed shortly such as moulds for larger diameter pipes, centrifugal spinning machines for pressure pipe, transmission poles and piles. It was during 1961 that the first turnkey factory for the manufacture of pressure pipe was completed in Teheran. Company expansion in 1963 led to the opening of the Langenhahn / Westerwald factory.

During this period complete plants for concrete pipe and pole manufacturing were delivered. 1972 saw the company move to new facilities within the industrial estate of Ettlingen.

Through diligence and technological progress “Maschinenfabrik Ettlingen Friedrich Pfeiffer” became known worldwide for the unique manufacture and supply of machinery, mould equipment and automatic handling systems for all sizes of wet and dry cast pipe, centrifugal spun pipe / pole and manholes.

An overview of the early years of production and equipment is shown in the company history gallery.

Entering the business Hans-Ulrich Pfeiffer and Reinhold Pfeiffer Dipl.Ing further developed the company vibration machines and in 1969 the Radial Press was created.
Photo gallery Company's history

Trade fair Munich 1955

Production hall Ettlingen approx. 1938

Brochure pipe press 1955

Pipe manufacturing 1958

Blacksmith 1930

Pipe press 1955

Brochure moulds 1955
More than 150 years after PRINZING’s foundation, the company moved to a new address, but is still located in Blaubeuren, Germany.

Since 2008 PRINZING develops, tests and produces in the completely re-built complex for customers around the world.

The year 2014 is also an important step for the development of PRINZING. During the formation of the TOPWERK Group the also traditional company PFEIFFER and their range of products was integrated.

PFEIFFER, founded in 1900 and with installations for production of concrete pipes all over the world, represents together with PRINZING more than 250 years experience in the area of production plants for the manufacture of precast concrete parts for the infrastructure construction.

Together with PFEIFFER, a worldwide leading German producer of pipe machines, there is a supplement of the machine program, which is unique in this kind.

PRINZING-PFEIFFER has developed within the last decades this extensive product portfolio and successfully established on the world markets. The huge machine and product program is only one unique feature of company PRINZING-PFEIFFER – more are countless patents, developments and special solutions.

Thus PRINZING now offers a complete program for the production of precast concrete elements, which can be adapted to each customer’s request and need. Either for small and medium quantities, as well as large quantity production various production systems are available.

It is differentiated between Production systems for precast concrete products for:
- Pressure line construction
- Sewerage
- Drainage
- Power supply ducts and telecommunication
- Sewage water treatment and rainwater utilization
- Building construction
- Products for roadways and

Standard concrete products.

Additional to the production plants PRINZING-PFEIFFER offers the complete accessories, like mixing plants, cage welding machines and handling systems from one source, to realise for our customers worldwide, at each location, ready-for-use TOPWERKE.
Photo gallery final assembly in PRINZING-PFEIFFER factory
How to find us

Coming from direction Munich, Stuttgart and Frankfurt follow the A 8 until exit Merklingen.

Then follow from Machtholsheim the L 1230 until the intersection with the B 28. Follow the B 28 direction Reutlingen, located on the left side is the industrial area.
After Sales Service

The service team is available for any questions you might have and we are glad to assist you at any time. Our main goal is to satisfy your requests on a premium level.

Benefit from our continuously growing service range. We offer services that provide an excellent equipment availability, for example:

- High quality spare parts and competent technical advice - worldwide
- Problem solving with capable assistance
- Efficient assistance and technical support via teleservice
- Secure – fast – information available everywhere
- Professional guidance on all questions regarding process engineering
- Optimized retrofits due to continuous developments
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Internet: www.prinzing-pfeiffer.de