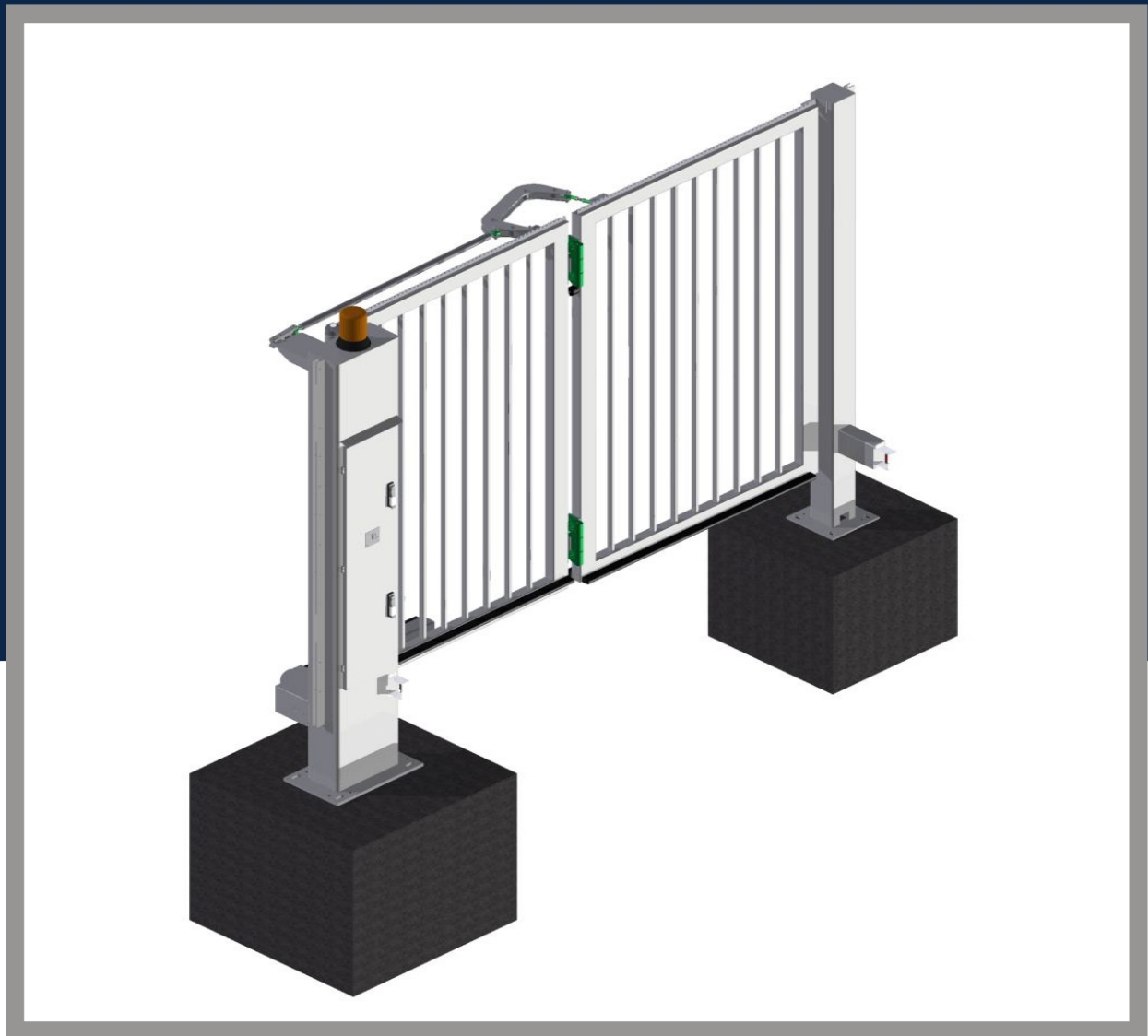


# FOLDING SWING GATE FFT- GARANT 1



for clear widths from 3 to 4.5 m

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**GARANT 1 – Folding Swing Gates** are the ideal solution for the vehicle monitoring of individual lanes in the access area of a facility when many cars enter or leave the area within a short period of time. Due to its inexpensive and space-saving single-leaf folding mechanism the GARANT 1 Folding Swing Gate can be easily adjusted to its purpose. The electro-hydraulic folding swing gate is actuated by an energy-efficient, tamper-proof and low-maintenance **Garant HS** drive unit – the first choice for the representative securing of plant and facility access areas. Popular versions are the arrangement of the gates per lane (adjacent in line) or in lock form (opposite-facing, arranged parallelly). All gates can be controlled by all common access control systems and are predestined for plants, military bases, airports and public access areas with a high vehicle frequency. Definable opening speeds from 0.5 to 1.0 metre per second achieve the comfort of a hitherto used barrier system. The modern added value comprises an optimal protection of vehicle and passenger traffic. Because of its compact structure existing plant entrances can be easily expanded without immense structural work.

## Attributes:

- reliable securing of outdoor areas with a high vehicle and visitor frequency
- compact construction and low space requirements
- enclosed electro-hydraulic drive version
- hydraulic braking and blocking at the end positions
- clear optics by vandalism proof integration of all power unit components
- power emergency release not exposed but integrated into the gate post and therefore tamper-resistant
- short opening and closing times
- 100% duty cycle, industrial standard
- various possible options, for example, enhancement as a lock

**Use** for vehicle separation with concurrent protection against unauthorised persons, especially in areas that are vulnerable:

- authority facilities
- industrial plants and power plants
- military facilities
- supply facilities
- airports (access to the aviation security area)

## Versions / Names:

**FFT-Garant 1 – HS 280:** folding swing gate, drive type Garant, single-leaf, cylinder stroke 280 mm

**FFT-Garant 1 – HS 400:** folding swing gate, drive type Garant, single-leaf, cylinder stroke 280 mm/400 mm

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Geometrical Key Figures:	FFT-Garant 1 – HS 280	FFT-Garant 1 – HS 400
<b>opening width</b>	3000 to 4000 mm	4000 to 4500 mm
<b>variable gate height</b>	1800 to 3000 mm	1800 to 3000 mm
<b>ground clearance</b>	50 – 120 mm	50 – 120 mm
<b>area folded</b>	max. 2400 x 400 mm	max. 2650 x 400 mm
<b>total height</b>	gate height plus 300 mm lower edge area	gate height plus 300 mm lower edge area
<b>partition</b>	1 folding leaf	1 folding leaf
<b>frame, lower beam</b>	RT* 80/60, RT* 100/60 mm	RT* 100/60 mm
<b>drive gate post</b>	RT* 400/200 mm	RT* 400/200 mm
<b>slam post</b>	ST* 150 mm	ST* 150 mm
<b>cylinder stroke</b>	280 mm	400 mm
<b>pump type</b>	vertical pump unit P12	vertical pump unit P12
<b>drive motor</b>	3x230/400 V, 50 Hz, 0.37 kW	3x230/400 V, 50 Hz, 0.37 kW
<b>opening time</b>	approx. 8 seconds (without braking)	approx. 12 seconds (without braking)

\* RT = rectangular tube, ST = square tube

**The Folding Gate Garant 1** is manufactured as an assembly unit consisting of the gate leaves, drive post, slam post, drive unit, control, safety and operating components.

**The folding gate leaves** are welded torsion-resistant and dimensioned according to the static requirements. The gate filling is welded in between upper and lower beam (bar spacing maximum 120 mm). The gate leaves are connected pairwise to at least two solid gate hinges. The gate leaf on the side of the drive is equipped with the enclosed hydraulic cylinder. Two inductive approaching sensors for the end positions are integrated into the lower beam. The outer lateral beam is manufactured from round tube with upper and lower pins on the gate posts. The forced guidance of the folding mechanism happens via an adjustable thrust rod which is attached to the gate post and a curved control stalk which connects both gate leaves.

**The drive gate post** consists of rectangular tube profiles RR 400/ 200 mm with an adjustable upper and lower panel with neck journal and base bearings for holding the gate leaves, welded head cover and a massive base plate. The gate posts have a spacious cut-out of approximately 330 x 1600 mm on the inside, which is closed by a service door that is hung on 3 hinges. The door is locked by 2 profile cylinder lockable lever closures. The door inside holds the document compartment for circuit diagrams and the gate inspection book. Inside

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the gate post the motor-/ pump unit is mounted on a holder and the terminal strips and the control box are fixed on a separate assembly plate in the upper area.

The gate post has additional cut-outs for the lifting cylinder and other control elements.

The compact **hydraulic unit "Garant 700/80 Vertikal"** consists of a three-phase electric motor, one (in both directions of rotation working) gear pump P 12 and a 3.5 dm<sup>3</sup> hydraulic container. The unit is stored vibration-free on silent blocks. The flow rate is 2.6 litres and the average/ maximum operating pressure is 2/ 4 MPa. The hydraulic medium is biodegradable (Note: Every passing car has the tenfold amount of oils for safe operation).

The **hydraulic cylinder Garant-280 respectively 400** (the number stands for the piston stroke) is completely covered. The front ball joint head, the back fork mounting and all media lines are not visible but protected tamper-proof. The slim cylinder lining holds the switch flags for the end position settings as well as an accident prevention contact profile. The thrust of the cylinder is 7000 N. The opening angle is 95°.

**Easily accessible components:** All components necessary for the operation are accommodated safely in the drive gate post - which simplifies the assembly, commissioning and maintenance significantly.

**Control:** Microprocessor-control unit

**Mains connection:** three-phase 3x230/400 V, 50 Hz, **Control voltage:** 24 VDC

**Power consumption:** approx. 575 W (without accessories), **Duty cycle:** 100%

**Protection class:** IP 54

**Control functions:**

- gate **Stop** as well as **Open and Close** (self-locking) between the end positions
- remote operability which is secured by floating contacts
- serial transfer of status signals of the gate statuses **Gate-Open, Gate-Closed** and **Collective Alarm**
- all gate typical components are connectable and controllable in various logics

**Power failure/ Damage:** The gate system is hydraulically blocked in the particular position. The unlocking happens by opening a ball valve, which is on the hydraulic unit, safely locked in the drive post. If there are optional electric piston rod locks, they are also locked / unlocked by a profile cylinder lock. By the optional assembly of an approved fire brigade safe, there is the option to unlock the gate from the outside. Therefore, the demand for a separate fire brigade access can be omitted.

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## Base plate serial:

- 300 mm upper edge area with spacious cable entry
- pairwise arrangement of dowel holes and levelling screws for an optimal perpendicular and flush assembly

## TORWERK– Long-lasting corrosion protection in 4 steps:



The coating thickness is 260 µm, all requirements on corrosion protection stresses according to DIN EN 12944-2- C4 (long protective effect) are met.

## First-class haptics due to:

- a hermetically welded construction
- a surface free of zinc cavities
- welding seams that are ground flatly (mitre corners) after zinc coating
- no warping of the surface because of zinc cavities

## Environmentally friendly procedure:

- no use of solvents
- recycling of oversprays

## Options:

### Colour design/ labelling:

Gate posts and gate leaves are designable in colour tones according to RAL/DB.

## Signaller:

- LED- rotating beacon (serial)
- LED-light red/ green (optional)
- **Reflexite** contour marking from microprismatic foils with a high reflection value, high visibility even from sharp angles, on the gate's lower beam inside and outside

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## Safety:

- TÜV approved safety device, self-monitoring, according to European gate standards DIN EN 12978 + 12453 for power-operated gates, consisting of double chamber pressure strips on the main and secondary locking edges and the electronic analysis unit
- 2 light barriers consisting of sender and receiver in different heights outside between the gate posts as an additional security device
- one light barrier consisting of sender and receiver for securing the swing opening area, separately elevated (optional)
- 2-channel induction loop detector

## Control elements:

- key switch **Open–Close** outside and key switch **Open–Emergency Stop–Close** inside (serial)
- radio remote control (optional)
- key switch **On–Off** (optional)
- timer (optional)
- code card reader and other communication systems available on demand

## Design gate leaves:

- instead of bar filling, fence type filling
- closed sheet metal filling or perforated steel plate filling in a powder-coated version

## Torwerk-assembly service:

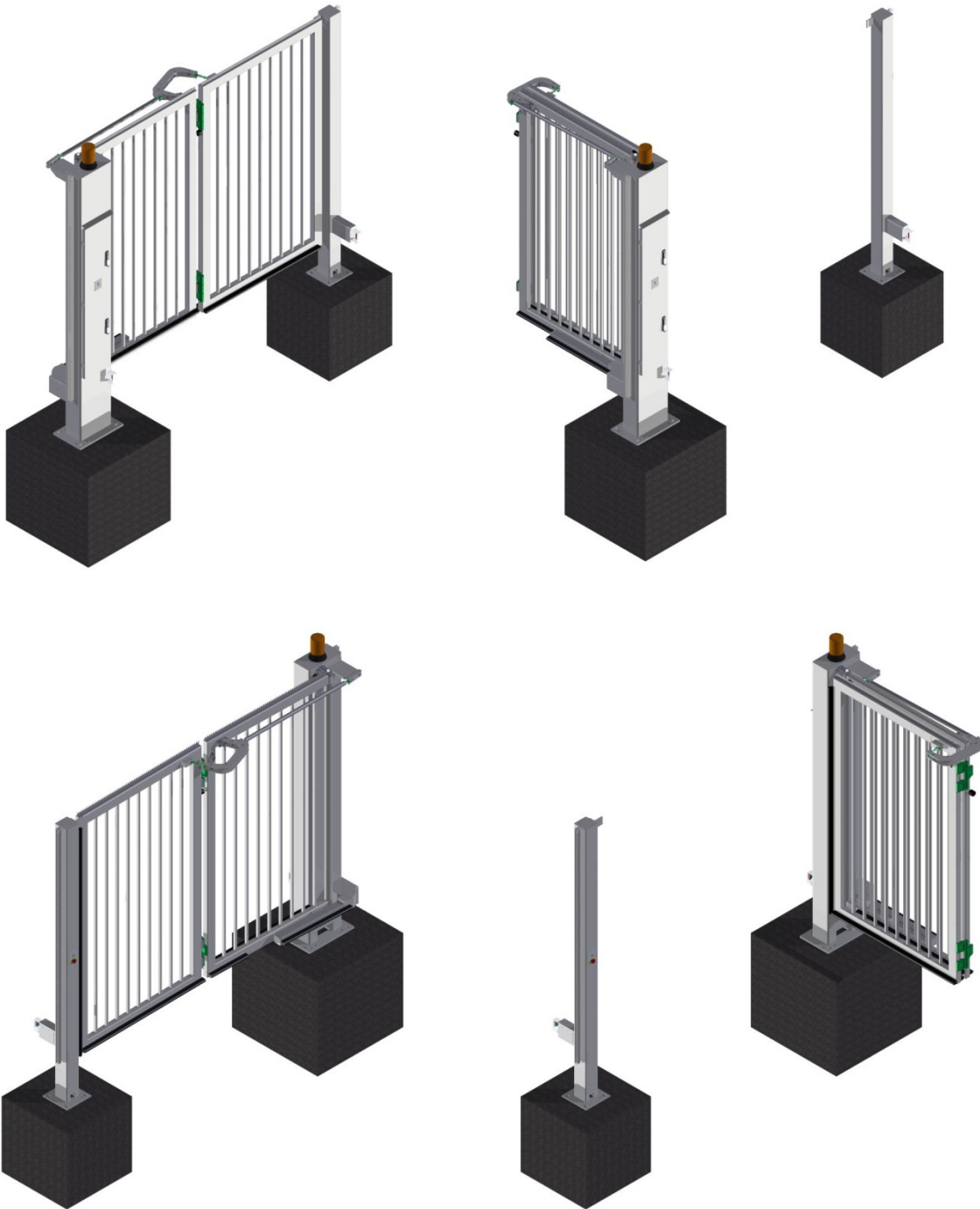
Every configured **Folding Swing Gate–Garant** is completely pre-assembled at the factory and internally wired and as far as possible connected before it is delivered.

The assemblers only need to unload the drive post with the mounted gate leaves onto the foundation on-site, adjust it, level it using the levelling screws and anchor it with the provided dowels.

A qualified gate technician needs to fill the unit on-site, possibly adjust the leaf mechanism and the end positions switch-off. A qualified electrician connects the gate to the power supply, to the external control elements, to light barriers as well as to possible induction loops.

The Folding Swing Gate–Garant is ready for operation. The time-consuming reading of manuals and sorting of components and fasteners are reduced to a minimum.

# FOLDING SWING GATE FFT-GARANT 1



Construction and Design: Siegmund Huth / Maik Brunner/ Andreas Panek  
Electrotechnical equipment: Stefan Carl / Matthias Martius

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