

OBJECT FUSES • The manufactory for tailor made protection



FOLDING SWING GATE FFT-GARANT 3 THE COMBINATION GATE



for clear widths from 4 to 5.5 m

FOLDING SWING GATE FFT-GARANT 3

Combi Folding Swing Gates Garant 3 are the ideal asymmetric solution for vehicle and person monitoring in the access area of a facility when passenger and vehicle traffic need to be managed safely and reliably within a short period of time. Due to its space-saving three-leaf gate structure and the separate control options of the asymmetric gate partition the combi gate FFT-GARANT 3 can be easily adjusted to its purpose. The electro-hydraulic folding swing gate is actuated by two energy-efficient, tamper-proof and low-maintenance **Garant HS** drive units with single control – the first choice for the representative securing of plant and facility access areas. A popular variant is the arrangement of a **Combi FFT-Garant 3 gate** in the lane that is closest to the monitored gateway. Combined with an adjoining turnstile all security requirements of a guarded plant access can be met optimally. The passenger traffic is separated by the turnstile, cyclists and wheelchair users can be checked through the small single leaf gate, car traffic through the folding swing gate and trucks are separated by opening the complete gate system. 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 ensure a high frequency of controls. The modern added value comprises an optimal protection of vehicle and handicapped accessible 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
- asymmetric, single controllable leaves allow three needs-based opening widths for cyclists, wheelchair users, car and truck traffic
- 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



Combination example FFT-Garant 3 + DKR-Rondo 1

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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 3- HS 280: folding swing gate, drive type Garant, double-leaf, cylinder stroke 280 mm

FFT-Garant 3- HS 400: folding swing gate, drive type Garant, double-leaf, cylinder stroke 400 mm

Geometrical Key Figures:

	FFT-Garant 3- HS 280	FFT-Garant 3- HS 400
opening width	4000 to 5000 mm	5000 to 5500 mm
variable gate height	1800 to 3000 mm	1800 to 3000 mm
ground clearance	50 – 120 mm	50 – 120 mm
area folded	1850 to 2170 x 500 mm	2170 to 2330 x 500 mm
total height	gate height plus 300 mm lower edge area	gate height plus 300 mm lower edge area
partition	1x single- / 1x folding leaf	1x single- / 1x folding leaf
asymmetric partition	1/3 zu 2/3	1/3 zu 2/3
frame, lower beam	RT* 80/60, RT* 100/60 mm	RT* 100/60 mm
drive gate post 1	RT* 400/200 mm	RT* 400/200 mm
drive gate post 2	RT* 400/200 mm	RT* 400/200 mm
cylinder stroke	280 mm	400 mm
pump type	vertical pump unit P12	vertical pump unit P12
drive motor	3x230/400 V, 50 Hz, 0.37 kW	3x230/400 V, 50 Hz, 0.37 kW
opening time	approx. 8 seconds (without braking)	approx. 12 seconds (without braking)

* RT = rectangular tube

Combi Folding Swing Gates Garant 3 are 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

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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 posts consist 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 the gate post the motor-/ pump unit is mounted on a holder and the terminal strips and/ or the control box are fixed on a separate assembly plate in the upper area. The gate posts have 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 dm³ 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: 2x Microprocessor-control unit, Master-Slave

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

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Control functions:

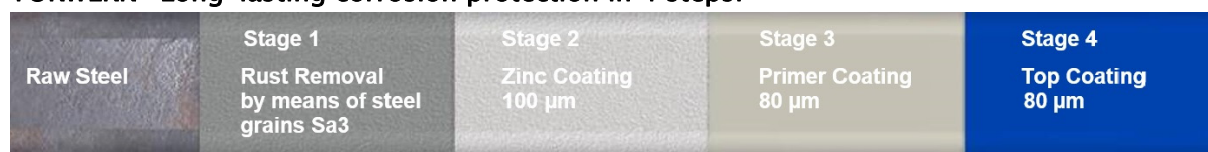
- door leaf **Open–Close** (self–locking) between the end positions (passenger, cyclist traffic)
- gate folding leaf **Open–Close** (self–locking) between the end positions (car traffic)
- door leaf and folding gate **Open–Close** (self–locking) between the end positions (truck traffic)
- remote operability 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.

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

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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

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

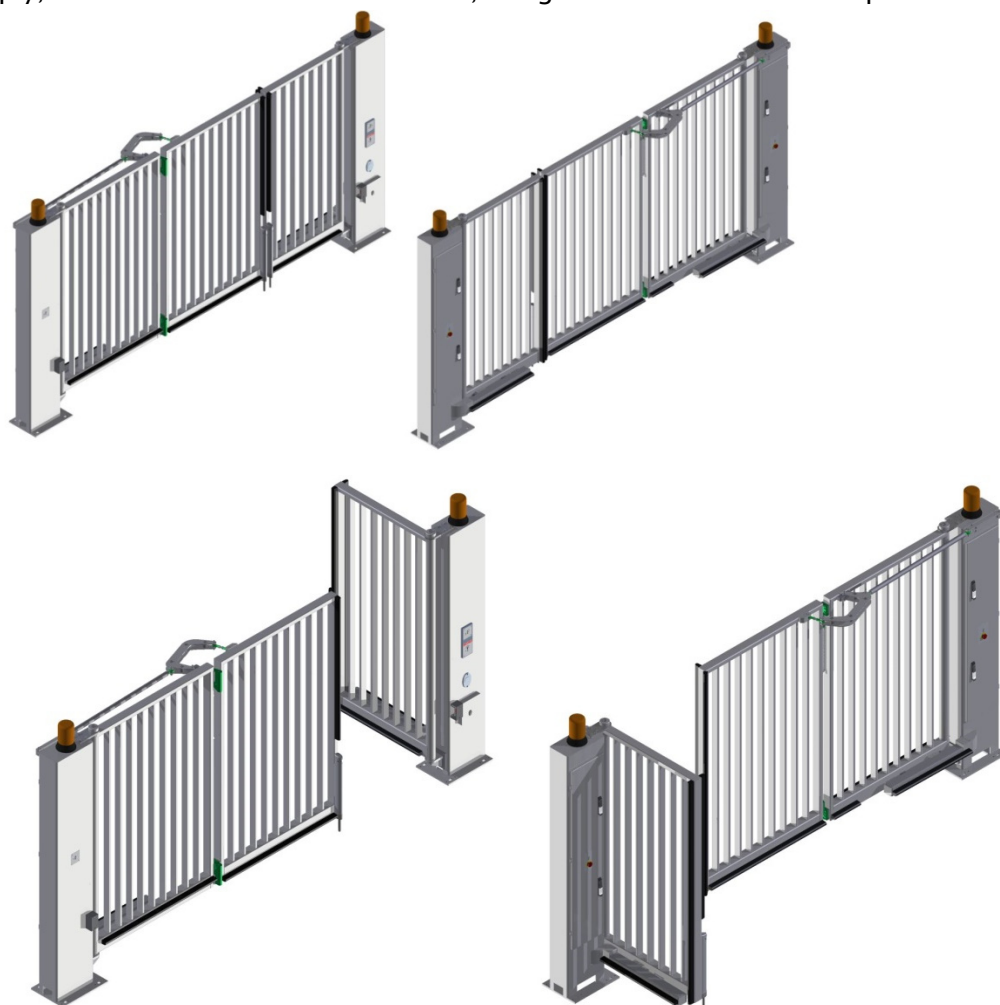
Torwerk-assembly service:

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.

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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.



Construction and Design: Siegmund Huth / Andreas Panek

Electrotechnical equipment: Stefan Carl / Matthias Martius

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