



German quality you can trust



Effortless Closing. Exceptionally Silent.  
Onsys Hinge







The company's origins date back to 1888, when Karl Hettich began making the new clock component he had invented. By 1930, his descendants had diversified into furniture fittings, setting up production in East Westphalia – a centre of the German furniture industry. Today, Hettich, still family owned, has become an industry leader with a worldwide reputation.

We're one of the world's largest manufacturers of high-quality furniture fittings, with over 6,700 employees in more than 100 countries. We work to inspire our customers with our ideas and our passion.

In India, Hettich has set up a state-of-the-art manufacturing unit in Indore in 2019 where Onsys Hinges are being exclusively manufactured and made available for markets across the globe. This new plant marks the onset of a new era for the Hettich Group and brings India right to the global stage.

The company's success has been built on four enduring values: **Quality, Innovation, Close cooperation with customers and absolute reliability.**



### **Quality**

Hettich products stand for high quality. Once assembled, our fittings function perfectly day in, day out. High quality products and processes confirm our sense of value, our self confidence and our image. The way to the quality goal for each one of us is to cultivate an intense quality awareness.

### **Innovation**

The right balance of continuity and innovation generates trust in the Hettich brand. We offer timely, high-value solutions for today's furniture; at the same time, we identify and shape the trends of tomorrow. We review and improve existing solutions ready for the future. Driving innovation is our capacity for looking at things from new angles.

### **Closeness to Customers**

For us closeness to customers implies sharpened awareness, attention to detail, a grasp of complex challenges, and efficiency in production and logistics. We know our customers. We're there when our customers need us! The keynote of our partnership with our customers is direct, person-to-person communication.

### **Reliability**

Quality, innovation, closeness to customers – they're nothing without reliability! Reliability encompasses the durability of our products and the reliability of Hettich people – each and every one of us. The solid basis for reliability is robust and stable processes.



### **Free Design Service**

Looking for designs to liven up your Living Room, Bedroom, Bathroom or Kitchen? A dedicated team of highly qualified Interior Designers are at service to provide customized design solutions to suit individual tastes and budgets, completely free of cost.

### **Free Consultation at Doorstep**

Looking for perfect Furniture Fitting solutions? A dedicated team of highly qualified professional will provide expert solutions to suit your need and budget right at your doorstep, completely free of cost.

### **Hettich Customer Care Service**

In today's fast paced and technologically advanced era, most of the organizations succumb to the pressure of staying ahead of the competition and often end up neglecting the most critical aspect of business i.e. customers. Hettich, being a customer-centric organisation, is very sensitive towards this. Hence, we constantly endeavour to provide the best quality driven products and services and be ever-responsive to customer needs and feedbacks.

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# Fast assembly concealed hinge

- ▶ Onsys
- ▶ Key selling points



**Integrated Silent System, unbeatable value for money**  
 The key to good cabinets is a reliable, user friendly hinge. Like Onsys, the value for money champion from Hettich. Onsys closes automatically even from an automatic closing angle of 35° – gently and quietly.

Also works reliably in very warm and cold environments. Raises furniture quality – lowers costs. Onsys simply clips onto the mounting plate – quickly and efficiently. Designed in Germany. Produced to the highest quality standards.



**Benefit from thermal stability:**  
 No doors slamming when it's hot, no doors left standing open when it's cold.



**Install the more efficient way:**  
 No adjustment necessary as doors both large and small always close gently and reliably.



**Upgrade with flexibility:**  
 Upgrade to the diverse Sensys range easily possible – thanks to the Hettich platform.



**Tested for reliability:**  
 Tested for 40,000 hinge opening & closing cycles.



10 year performance warranty



3 year anti-rust warranty

## Fast assembly concealed hinge

- ▶ Onsys with integrated silent system
- ▶ Range summary



Onsys Hinge 105°



Mounting plates



Accessories



Technical information



### Hettich Technical Assistant

- ▶ Installation
- ▶ Adjusting
- ▶ Service

## Fast assembly concealed hinge

- ▶ Onsys 105° hinge range
- ▶ 105° opening angle, drilling pattern TH 52



- ▶ Concealed hinge with clip on installation with Integrated Silent System
- ▶ Quality classification under EN 15570, Level 2
- ▶ For door thickness of 14 – 25 mm
- ▶ Cup diameter 35 mm
- ▶ Cup depth 11.5 mm
- ▶ Integrated overlay adjustment + 2 mm / - 2 mm
- ▶ Integrated depth adjustment + 2.5 mm / - 1.5 mm
- ▶ Height adjustment at mounting plate
- ▶ Steel, nickel plated

Drilling pattern	full overlay (Base B 12.5 mm)	half overlay (Base B 3 mm)	inset (Base B -4 mm)

### With integrated Silent System, with self closing feature (Onsys 4447i)

Cup assembly	Mounting hole $\varnothing \times T$ mm	full overlay 200 ea.	half overlay 200 ea.	inset 200 ea.
for screwing on	-	9 249 400	9 249 410	9 249 420
for pressing in	$\varnothing 10 \times 11$	9 249 401	9 249 411	9 249 421

### Other Options differentiated by function

#### With only self closing feature (Onsys 4447)

Cup assembly	Mounting hole $\varnothing \times T$ mm	full overlay 200 ea.	half overlay 200 ea.	inset 200 ea.
for screwing on	-	9 249 490	9 249 500	9 249 510
for pressing in	$\varnothing 10 \times 11$	9 249 491	9 249 501	9 249 511

#### Without Silent System, without self closing feature, for handleless applications (Onsys 4477)

Cup assembly	Mounting hole $\varnothing \times T$ mm	full overlay 200 ea.	half overlay 200 ea.	inset 200 ea.
for screwing on	-	9 249 580	9 249 590	9 249 600
for pressing in	$\varnothing 10 \times 11$	9 249 581	9 249 591	9 249 601

# Fast assembly concealed hinge

- ▶ Onsys 105° hinge
- ▶ Planning & Calculation of Distances



## Minimum reveal per door

Door thickness mm	Cup distance C mm				
	3.0	4.0	4.5	5.0	6.0
14	0.1	0.1	0.1	0.1	0.1
15	0.2	0.2	0.2	0.2	0.2
16	0.3	0.3	0.3	0.3	0.3
17	0.4	0.4	0.4	0.4	0.4
18	0.6	0.6	0.6	0.6	0.6
19	0.8	0.8	0.8	0.8	0.8
20	1.1	1.1	1.1	1.0	1.0
21	1.6	1.4	1.4	1.4	1.3
22	2.4	2.0	1.9	1.8	1.7
23	3.3	2.8	2.6	2.5	2.2
24	4.1	3.6	3.4	3.2	2.9
25	5.0	4.5	4.2	4.0	3.6

Please note:

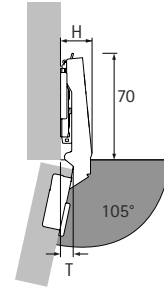
The table entries refer to doors with an edge radius of 1 mm.

On doors with other radii, the minimum reveal changes as follows:

Radius 0 mm:  
Values shown in table + 0.4 mm

Radius 3 mm:  
Values shown in table - 0.6 mm

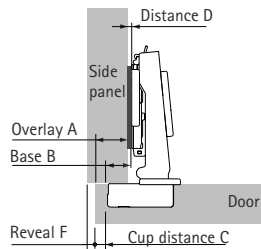
## Protrusions / installed depth



Hinge protrusion H / door protrusion T for distance D = 0 mm and cup distance C = 3 mm

Door mounting option	H mm	T mm
full overlay	20.0	7.5
half overlay	30.0	17.0
inset	37.0	24.0

## full overlay

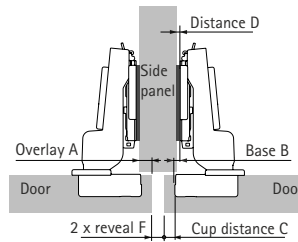


$$\text{Distance D} = C + B - A$$

$$= \text{cup distance C} + 12.5 \text{ mm} - \text{overlay A}$$

Overlay mm	Cup distance C mm				
	3.0	4.0	4.5	5.0	6.0
Distance D mm					
10	5.5	6.5	7.0	7.5	8.5
11	4.5	5.5	6.0	6.5	7.5
12	3.5	4.5	5.0	5.5	6.5
13	2.5	3.5	4.0	4.5	5.5
14	1.5	2.5	3.0	3.5	4.5
15	0.5	1.5	2.0	2.5	3.5
16		0.5	1.0	1.5	2.5
17			0.0	0.5	1.5
18					0.5

## half overlay

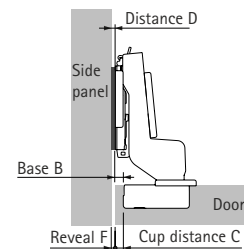


$$\text{Distance D} = C + B - A$$

$$= \text{cup distance C} + 3 \text{ mm} - \text{overlay A}$$

Overlay mm	Cup distance C mm				
	3.0	4.0	4.5	5.0	6.0
Distance D mm					
0.5	5.5	6.5	7.0	7.5	8.5
1.5	4.5	5.5	6.0	6.5	7.5
2.5	3.5	4.5	5.0	5.5	6.5
3.5	2.5	3.5	4.0	4.5	5.5
4.5	1.5	2.5	3.0	3.5	4.5
5.5	0.5	1.5	2.0	2.5	3.5
6.5		0.5	1.0	1.5	2.5
7.5			0.0	0.5	1.5
8.5					0.5

## inset



$$\text{Distance D} = C + B + F$$

$$= \text{cup distance C} - 4 \text{ mm} + \text{reveal F}$$

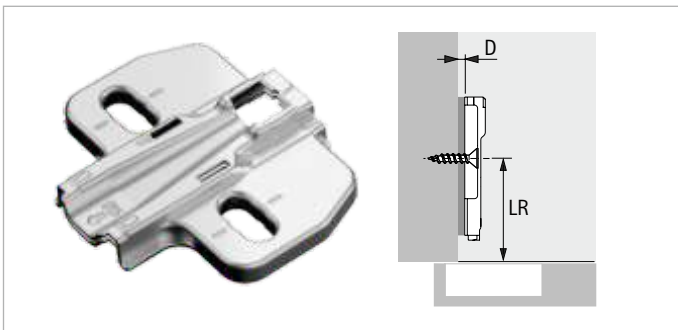
Overlay mm	Cup distance C mm				
	3.0	4.0	4.5	5.0	6.0
Distance D mm					
14	0.1	0.6	1.1	2.1	
15	0.2	0.7	1.2	2.2	
16	0.3	0.8	1.3	2.3	
17	0.4	0.9	1.4	2.4	
18	0.6	1.1	1.6	2.6	
19	0.8	1.3	1.8	2.8	
20	0.1	1.1	1.6	2.0	3.0
21	0.6	1.4	1.9	2.4	3.3
22	1.4	2.0	2.4	2.8	3.7
23	2.3	2.8	3.1	3.5	4.2
24	3.1	3.6	3.9	4.2	4.9
25	4	4.5	4.7	5.0	5.6

## Advice

- ▶ For mounting plates and accessories, see page 9
- ▶ For mounting options, assembly information, installation instructions and quality criteria, see page 10-12



## Cross mounting plate for screwing on



- For 4.5 mm ø x 16 mm countersunk screws
- Quality classification under EN 15570, Level 3
- Hole spacing 32 mm
- Oblong hole height adjustment  $\pm 3$  mm
- Steel nickel plated

Hole line distance LR mm	Order no. / Distance D mm		PU
	0,0	1,5	
37	9 281 438	9 281 439	200 ea.

## Cross mounting plate 4 Hole



- Can be used with Onsys hinges 4447i, 4447, 4477
- Cover caps with customised print available on request
- Steel, Nickel plated

Order no.	PU
9 336 546	100 ea.

## Cover cap for Onsys hinge arm



- Can be used with Onsys hinges 4447i, 4447, 4477
- Cover caps with customised print available on request
- Steel, Nickel plated

Order no.	PU
9 281 440	100 set

# Onsys Hinge

- ▶ Soft close concealed hinge with clip on installation
- ▶ Opening angle 105°



Product	Article No.	SAP	Item Description	Qty.	Unit	PU
<b>Onsys Hinges with 2 hole mounting plate</b>						
	<b>Onsys 4447i Hinge - TH42 for 14-25 mm thick doors; Opening angle 105°</b>					
	9 281 432	9 281 432	Onsys Hinge - 25 mm - 0 Crank with mounting plate & cover caps	1	Pair	50
	9 281 434	9 281 434	Onsys Hinge - 25 mm - 9.5 Crank with mounting plate & cover caps	1	Pair	50
	9 281 436	9 281 436	Onsys Hinge - 25 mm - 16 Crank with mounting plate & cover caps	1	Pair	50
	<b>Onsys 4447 Hinge - TH42 for 14-25 mm thick doors; Opening angle 105° (Non Silent)</b>					
	9 297 208	9 297 208	Onsys Hinge - 25 mm - 0 Crank with mounting plate & cover caps	1	Pair	50
	9 297 209	9 297 209	Onsys Hinge - 25 mm - 9.5 Crank with mounting plate & cover caps	1	Pair	50
	9 297 210	9 297 210	Onsys Hinge - 25 mm - 16 Crank with mounting plate & cover caps	1	Pair	50
	<b>Onsys 4477 Hinge - TH42 for 14-25 mm thick doors; Opening angle 105° (Non Spring Push to Open)</b>					
	9 297 202	9 297 202	Onsys Hinge - 25 mm - 0 Crank with mounting plate & cover caps	1	Pair	50
	9 297 203	9 297 203	Onsys Hinge - 25 mm - 9.5 Crank with mounting plate & cover caps	1	Pair	50
	9 297 204	9 297 204	Onsys Hinge - 25 mm - 16 Crank with mounting plate & cover caps	1	Pair	50
<b>Onsys Hinges with 4 hole mounting plate</b>						
	<b>Onsys 4447i Hinge - TH42 for 14-25 mm thick doors; Opening angle 105°</b>					
	9 336 570	9 336 570	Onsys Hinge - 25 mm - 0 Crank with mounting plate & cover caps	1	Pair	50
	9 336 591	9 336 591	Onsys Hinge - 25 mm - 9.5 Crank with mounting plate & cover caps	1	Pair	50
	9 336 592	9 336 592	Onsys Hinge - 25 mm - 16 Crank with mounting plate & cover caps	1	Pair	50



### Full overlay door

The door is in front of the cabinet side and only a small gap remains at the side within which the door can open reliably. Alternatively, the door can also be overlaid fully, in this case sufficient space must be allowed at the side for the required minimum reveal. Straight hinges are used.

### Half overlay door

This is where two doors are positioned in front of a cabinet centre panel, with the required overall reveal between them (at least 2 x minimum reveal). In other words, each door has a reduced overlay. Cranked hinges are used.

### Inset door

The door is positioned inside the carcass, i.e. next to the carcass side. Here too, a gap is needed so that the door can open reliably. Highly cranked hinges are used here. For an inset door, the mounting plate must be set back by the thickness of the door + 1 mm as well as by any any chosen door offset.

### Minimum reveal

For full overlay and inset doors  
The minimum reveal (also known as the door clearance or minimum clearance) is the space required at the side so that the door can open. The size of the minimum reveal depends on the cup distance C, the door thickness and the type of hinge selected. Radii on the door edges reduce the door clearance. The minimum reveal is shown in the table for the respective hinge types.

### Minimum reveal

For half overlay doors  
The total reveal selected between the doors must be at least twice the minimum reveal. Both doors can then be opened at the same time.

### Cup distance C

Cup distance C is the distance between door edge and the edge of the cup drilling. The greater the distance selected for cup distance C, the smaller door clearance will be, i.e. the minimum reveal required.

### Overlay / Base

Overlay refers to the projection of the door in front of the carcass side. Base refers to the projection of the cup in front of the carcass side for a mounting plate distance of 0 mm.

A = Overlay  
B = Base

### Number of hinges per door

Door width, height and weight as well as the material quality of the door are decisive factors determining the number of hinges required.

The factors encountered in practice differ widely from case to case. For this reason, the number of hinges specified in the diagram must be understood as a guide only. If in doubt, it is recommended to carry out a trial mounting and adjust the number of hinges as necessary. For reasons of stability, space X between the hinges must always be made as large as possible. Distance X must be at least 280 mm.

## General calculation of distances

Mounting plates are available in various distances. The effective height of the mounting plate is defined by distance D. Distance D is embossed on the top of each mounting plate. A larger distance D reduces overlay for full and half overlay applications. On inset doors, a larger distance D increases the door reveal. Before determining the required distance,

check whether the desired reveal is equal to or greater than the required minimum reveal. If the desired reveal is less than the required minimum reveal, the required minimum reveal can be reduced by increasing cup distance C or by producing radii on the door edges.

### Calculation of distances

For full overlay and half overlay doors

The required distance D can be determined after checking the minimum reveal. Ideally, door overlay and cup distance should be selected to produce distance D that is available as mounting plate.

Example: Working out distances according to the table  
 Overlay = 14 mm and cup distance C = 4.5 mm yield a distance D equal to 3.0 mm.

Example: Working out distances with calculation formula

Hinge for full overlay, base B = 12.5 mm  
 Distance D = Cup distance C + base B - overlay A  
 Distance D = 4.5 mm + 12.5 mm - 14 mm = 3.0 mm

Intermediate distances not available as mounting plate distances are achieved by adjusting the hinge overlay.

Overlay mm	Cup distance C mm				
	3,0	4,0	4,5	5,0	6,0
	Distance D mm				
10	7,5	8,5	9,0	9,5	10,5
11	6,5	7,5	8,0	8,5	9,5
12	5,5	6,5	7,0	7,5	8,5
13	4,5	5,5	6,0	6,5	7,5
14	3,5	4,5	5,0	5,5	6,5
15	2,5	3,5	4,0	4,5	5,5
16	1,5	2,5	3,0	3,5	4,5
17	0,5	1,5	2,0	2,5	3,5
18		0,5	1,0	1,5	2,5
19			0,0	0,5	1,5
20					0,5

### Calculation of distances

For inset doors

When calculating the mounting plate distance using the table for inset doors, allowance is automatically made for the reveal that is shown as the minimum reveal produced by cup distance C and door thickness in the table of minimum reveals. If a reveal is to be produced that is larger than this minimum reveal, select a mounting plate distance of the appropriate size.

Example: Working out distances according to the table  
 From the table, a door thickness = 20 mm and cup distance C = 4.5 mm produces a mounting plate distance of 1.5 mm. This creates the required minimum reveal of 1 mm, for example. If a reveal of 2.5 mm is required instead, the selected mounting plate distance must be correspondingly 1.5 mm larger. In this example, therefore, a distance of 3 mm instead of 1.5 mm.

Example: Working out distances with calculation formula

Hinge for inset application, base value B = - 4 mm  
 Distance D = Cup distance C + base B + reveal F  
 Distance D = 4.5 mm - 4 mm + 1 mm = 1.5 mm

Intermediate distances not available as mounting plate distances are achieved by adjusting the hinge overlay.

Door thickness mm	Cup distance C mm				
	3,0	4,0	4,5	5,0	6,0
	Distance D mm				
14	1,6	2,6	3,1	3,6	4,6
15	1,7	2,7	3,2	3,7	4,7
16	1,9	2,9	3,4	3,9	4,8
17	2,1	3,0	3,5	4,0	5,0
18	2,3	3,3	3,7	4,2	5,2
19	2,6	3,5	4,0	4,5	5,5
20	3,0	3,9	4,3	4,8	5,8
21	3,7	4,4	4,8	5,2	6,1

# Fast assembly concealed hinge

- ▶ Onsys
- ▶ Quality criteria



## Quality that meets all the demands

### Quality that meets all the demands

The quality of hinges is subject to a process of continuous monitoring. Hettich fittings comply with the national and international quality standards of the markets our customers operate in. The diagrams below show examples of the principles behind some of the testing processes.

### Application area

Hettich hinges can be used in living room, kitchen, bathroom and office furniture both in the home and business environment.

### Load capacity

The quality levels indicated on products comply with the requirements of EN 15570 and satisfy the overload tests at the specified level. We will be pleased to provide any further information you may require.

### Corrosion test

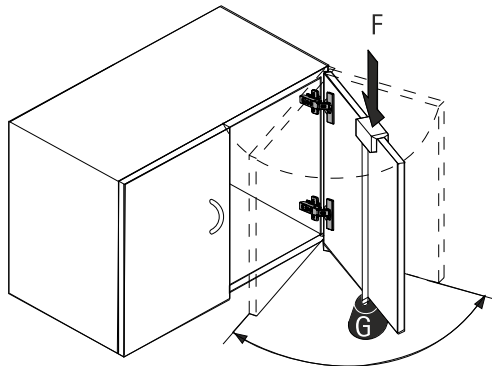
Hettich hinges satisfy the requirements on corrosion defined in DIN EN ISO 9227-2012 using the 24-hour neutral salt spray test method (NSS) as well as DIN EN ISO 6270-2-2012 using the method based on a 96-hour changing condensation water atmosphere with alternating humidity and air temperature (AHT).

### Quality assurance

The processes for assuring the quality of Hettich hinges are certified under EN ISO 9001, Cert. No. DE8000209.

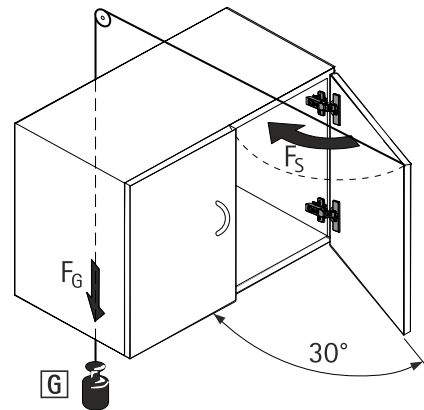
## Endurance test

The door is subjected to a specific number of opening and closing cycles.



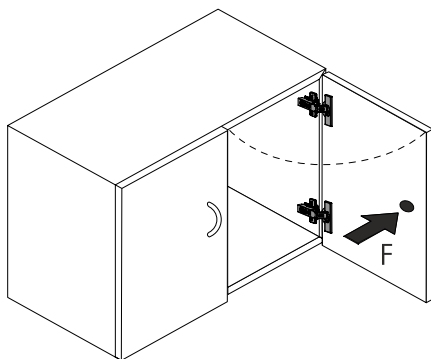
## Closing test

The door is opened by 30° and pushed closed from this position by means of a pulley and falling weight.



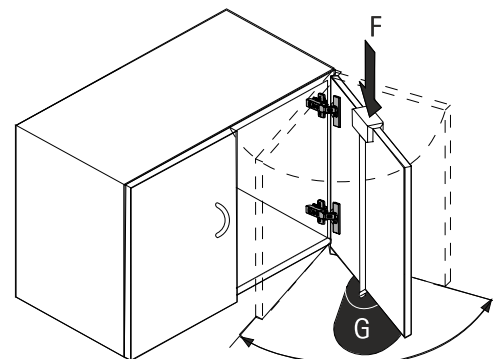
## Horizontal test

The door is over opened with a defined test force F. (This test only applies to hinges with an opening angle < 135°.)



## Vertical test

The door is subjected to a specific number of opening and closing cycles under a defined additional load G.





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