

HALFEN HBS-05 THREADED COUPLERS

Technical Product Information





We are one team. **We are Leviat.**

Leviat is the new name of CRH's construction accessories companies worldwide.

Under the Leviat brand, we are uniting the expertise, skills and resources of HALFEN and its sister companies to create a world leader in fixing, connecting and anchoring technology.

The products you know and trust, including the HALFEN HBS-05 Threaded couplers, will remain an integral part of Leviat's comprehensive brand and product portfolio. As Leviat, we can offer you an extended range of specialist products and services, greater technical expertise, a larger and more agile supply chain and better, faster innovation.

By bringing together CRH's construction accessories family as one global organisation, we are better equipped to meet the needs of our customers, and the demands of construction projects, of any scale, anywhere in the world.

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HALFEN HBS-05 THREADED COUPLER

General Overview

HALFEN HBS-05: The versatile Threaded coupler

Reinforcement connections are made with the HALFEN HBS-05 Threaded coupler by simple screwing together of socket and connecting bars. Using the wide range of available bars and sockets nearly every type of reinforcement connection can be created.

HALFEN HBS-05 fulfils national and international calculation standards. Extensive certificates and test reports prove suitability even for extreme circumstances:

- increased fatigue stability in bridge structures
- alternating cyclic loads, including large earthquakes
- impact loads in nuclear power-stations

HALFEN HBS-05 Threaded couplers guarantee reliable planning and increased cost efficiency.

By using high-quality base materials, and with the high manufacturing standards which are standard in our certificated production facilities, the continuous reliability and quality of our products is ensured.



HBS-05 Couplers and connecting rebars

Increased reliability in planning:

- Officially approved by DIBt approval no. Z-1.5-189 (DIBt Deutsches Institut für Bautechnik = German Centre of Competence for Construction)
- Approval also for non-predominantly static loads and maximum fatigue strength for example: use in bridges or crane rails
- Ductility class B—meets the requirements for alternating cyclic loads such as in earthquake or similar natural catastrophes
- Numerous country-specific approvals, tests reports and certificates confirm compliance with the calculation criteria used in international standards
- Exceptional load capacity—the HBS-05 fulfils the high demands required for exceptional loads i.e. explosions or impact loads

Efficient and economical:

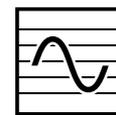
- No torque wrench or special tools are required to install the sleeves. A simple visual check is all that is required
- An extensive range of accessories, pre-assembled coupler bars and formwork fixings save installation time and ensures optimal support in the formwork
- Easy identification of matching socket and connector bars using colour-coded screw plugs and protective caps



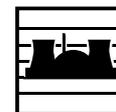
Turning Torso in Malmö (Sweden)



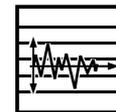
Official building authority approval



Suitable also for non-predominantly static loads



Approved for exceptional loads



Fulfils requirements for buildings in earthquake endangered zones



Internationally recognised with ISO 15835 standard

HALFEN HBS-05 THREADED COUPLER

General Overview

Official building authority approval DIBt Z-1.5-189

An extensive range of threaded couplers and end-anchor with building authority approval allows a wide range of possible applications. All types can be used for predominantly static loads as well as for non-predominantly static loads. In predominantly static loads, as for continuous rebar, all of these connection types can be exposed to 100% of both tensile and compression load capacity.



No torque wrench or special tools are required to install the sockets; a simple visual check is all that is needed to ensure correct installation. The bar must be screwed completely into the socket ensuring that the thread is not visible.

Fatigue strength according to the approval

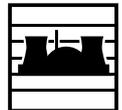
The values achieved for fatigue stability in HBS-05 Threaded couplers are an assurance for operational stability in structures that are subject to fatigue control for example: road-bridges, towers or machinery foundations.



- Stress variation ranges for
 $N = 2 \cdot 10^6$:
 $\Delta\sigma_{RSK} = 80 \text{ N/mm}^2$ for
 $d_{HBS} = 12 - 20 \text{ mm}$
 $\Delta\sigma_{RSK} = 70 \text{ N/mm}^2$ for
 $d_{HBS} = 25 - 28 \text{ mm}$
- Wöhler curve stress exponents:
 $k_1 = 3.5$ for $N \leq 2 \cdot 10^6$
 $k_1 = 3$ for $2 \cdot 10^6 \leq N \leq 10^7$
 $k_2 = 5$

Exceptional loads according to the approval

Dimensioning for exceptional loads, for example: in nuclear power stations or in buildings subject to possible explosions or for impact loads, places high demands on the threaded coupler's ductility properties. This high level of ductility enables all variants in the HALFEN HBS-05 range to fulfil the demands caused by these effects; even under shock loads.



HBS-05-Seismic in ductility class C, Application according to test certificate A - 32/08

HALFEN HBS-05 Threaded couplers can be delivered in ductility-class B (standard in this catalogue) and ductility-class C "HBS-05 Seismic." For HBS-05 Seismic (ductility-class C) please contact our technical support teams. For this application test report A-32/08 is valid.



International Approvals

The HALFEN HBS-05 Threaded coupler fulfils the requirements for a number of international calculation standards. Further information on types, their use and application possibilities for HALFEN HBS-05 Threaded couplers with regards to national and international calculation regulations can be acquired from our Engineering Support team.



For addresses please see the back of this catalogue. Approvals, Certificates etc. for: Germany, Finland, Croatia, Poland, Rumania, Lithuania, Sweden, Switzerland, United Kingdom, the Ukraine, and Hungary.

DIBt

VTT

IFH

INGERC

SPSC

GF

EMPA

ÉMI

HALFEN HBS-05 THREADED COUPLER

Compatible Products

End anchors with HALFEN HSC Stud connector

The HALFEN HSC Stud connector is a DIBt approved reinforcement that has been optimized for anchorings in concrete. The reinforcement capability can be used to full capacity in spite of extremely short rebar lengths.

Further information can be found in our Technical Product Information HALFEN HSC Stud connector. Download at www.halfen.com

The HALFEN HSC Anchors are especially suitable for highly congested applications, for example corbels and frame corners. The difficulties occurred in conventional methods of reinforcement layout and anchoring bar-stresses are avoided. The required amount of reinforcement can be reduced and the system is better defined. Apart from the time and cost saving aspects a notable advantage is the increased safety reliability.

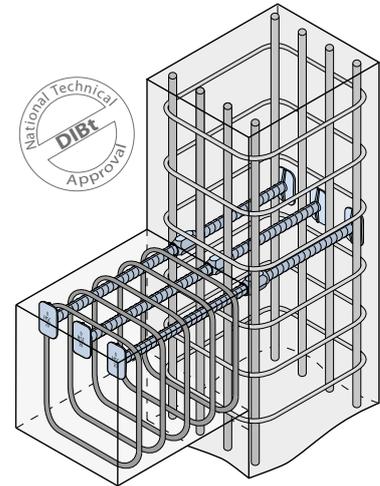


The free HSC Calculation software is available for download at: www.halfen.com

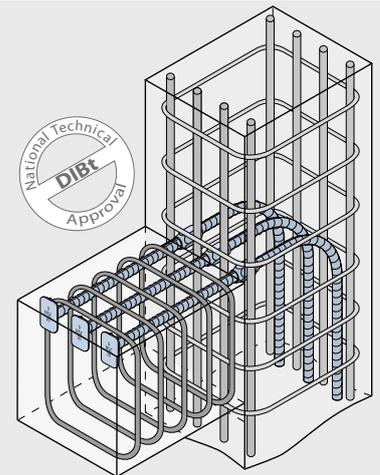


- innovative anchor-head
- forged anchor-head allows extremely short anchor lengths
- calculation design concept based on EC 2

Corbel with HALFEN HSC Stud Connector



It is possible and DIBt approved to combine HBS-05 with the HSC System. See DIBt approval Z-21.8-1973 for HALFEN HSC Stud Connector. Download at www.halfen.com



HSC corbel combined with HALFEN HBS-05 Threaded coupler

Structural steel connections using the HALFEN HUC Universal connection

The HALFEN HUC Universal connection is a highly efficient system for introducing static stresses into concrete components using bolt connections.

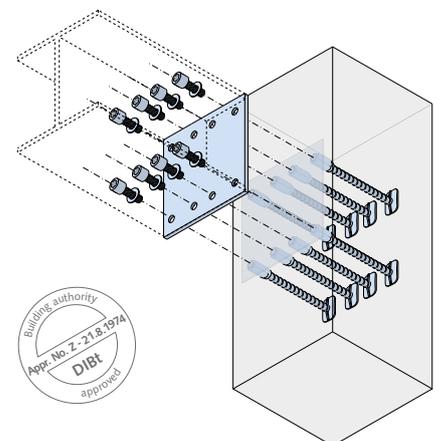
The HSC-B Connector is designed for large loads, reliable transfer of tension loads, shear loads and bending moments.

The calculation for HSC-B Socket bars with and without end anchors is described in detail in our Technical Product Information HALFEN HUC Universal connection.

Download at www.halfen.com



The free HUC calculation software is available for download at: www.halfen.com



HALFEN HBS-05 THREADED COUPLER

Load capacities

Forces (rebar) and ductility for HBS-05 B 500 B

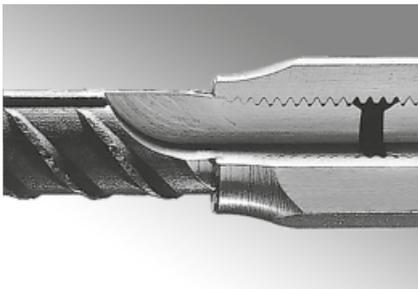
Forces (rebar) F_{sd} for HBS-05 Socket and connecting bars B 500 B

Reinforcing steel bars B 500 B according to DIN 488-1

Bar diameter [mm]	F_{sd} [kN]	R_m/R_e	A_{gt} [%]
12	49.2	≥ 1.08	≥ 5.0
14	66.9		
16	87.4		
20	136.6		
25	213.4		
28	267.7		
32	349.7		

Forces (rebar) $F_{sd} = A_s \cdot f_{yd}$ ($f_{yd} = f_{yk}/1.15$) according to EN 1992-1-1

The bolt threads are cold formed; the resulting surface compression increases the hardness of the thread. The conical shaping at the bar-tip guarantees a tight fit of the bar and reduces the notch sensitivity.



Specification texts example

HALFEN HBS-05-S Threaded reinforcement bar including a plastic-protection cap, for tension and compression resistant connection of reinforcement bars.

In accordance with DIBt approval Z-1.5-189, for predominantly static, non-predominantly static and exceptional loads.

HBS-05-S-20 / 1380

S = socket bar, 20 = diameter reinforcement bar [mm], B500B, M20 thread, thread depth $L_1 = 28.5$ mm, bar length $L = 1380$ [mm].

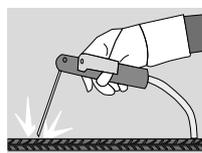
or equivalent; deliver and install to formwork according to the manufacturer's assembly instructions.

HBS-05 Threaded coupler offers a number of bar shapes and combination possibilities. We make bent, cranked and straight bars (left-hand thread also available) or with end-anchors to weld on to steel structures or with reducing sockets according to customers' requests. When ordering please state the type description and the relevant measurements x , y , c , d_{BR} , v , α etc.

Legend:

- S : Socket bar with screw socket
- B : Socket bar, forged, with nail flange
- A : Connecting bar
- L : Left-hand thread
- D : Double socket bar
- AA : Double connecting bar
- G : Bent, bent 2x or cranked
- U : Bent 2x (only for double connector bar SDU/BDU)
- E : Weld on end anchor
- EA : Weld on end anchor bar (fixed)
- RZ : Reducing sockets
- w : Symbol for flash-butt welding

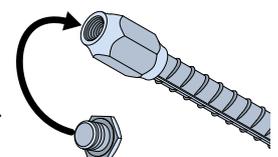
Notes



If constructing special-lengths and special-types in the factory and weld joints are required on HBS-05 reinforcing connections, then according to DIN EN ISO 17660-1 flash-butt welding joints are compulsory. The weld joints are marked with a 'w' in the construction drawing for each product.

DIN EN ISO 17660-1 regulations are valid for non-cyclic stresses. According to approval Z-1.5-189 welding is, in the case of fatigue-inducing cyclic stress, only allowed for diameter ≤ 25 mm. Welding can also negatively influence the material properties. For this reason welding or applying heat to bend-areas is prohibited. DIN EN ISO 17660 is to be observed.

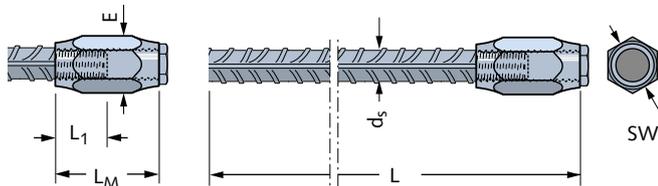
The thread in the HALFEN HBS-05 Sockets and connection bars are delivered with colour-coded thread-protection caps to prevent corrosion. Replace the caps after striking the formwork and remove only immediately prior to connecting the sockets and connection rebar.



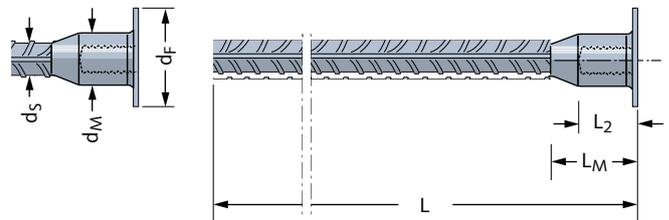
HALFEN HBS-05 THREADED COUPLER

Product Overview

HBS-05-S Socket bars with screw socket



HBS-05-B Socket bars with forged socket and nailing flange



HBS-05-S Standard lengths [mm]

Reinforcing steel bars B 500 B according to DIN 488-1

Rebar d_s	HBS-05- L	Order no. 0053.020-	Dimensions					Weight kg/piece
			Thread	L_1	L_M	SW	E	
S-12	400	00001	M12	16.5	36	19	21.9	0.402
	610	00002						0.589
	860	00003						0.811
	1180	00004						1.096
	⓪...	-						-
S-14	990	00007	M14	19.5	42	22	25.4	1.275
	1370	00008						1.735
	⓪...	-						-
S-16	400	00009	M16	22.5	48	24	27.7	0.759
	1110	00010						1.857
	1570	00011						2.584
	⓪...	-						-
S-20	400	00012	M20	28.5	60	30	34.6	1.240
	1380	00013						3.615
	⓪...	-						-
S-25	400	00015	M25 × 2.5 Special thread	36.0	75	36	41.6	1.978
	1730	00016						7.032
	⓪...	-						-
S-28	400	00018	M28 × 2.5 Special thread	40.5	84	41	47.3	2.557
	1930	00019						9.865
	⓪...	-						-
S-32	⓪...	-	M32 × 3 Special thread	45.5	96	50	57.5	-

Other bar-lengths and bar shapes are available on request (→ pages 9-11).
⓪ Please state required length when ordering.

HBS-05-B Standard lengths [mm]

Reinforcing steel bars B 500 B according to DIN 488-1

Rebar d_s	HBS-05- L	Order no. 0053.010-	Dimensions					Weight kg/piece
			Thread	L_2	L_M	d_M	d_F	
B-12	400	00001	M12	18	35	19	44	0.440
	610	00002						0.613
	860	00003						0.835
	1300	00005						1.225
	⓪...	-						-
B-14	400	00006	M14	21	39	22	46	0.542
	1370	00009						1.748
	⓪...	-						-
B-16	400	00010	M16	25.5	44	25	49	0.758
	1110	00011						1.856
	1570	00012						2.583
	⓪...	-						-
B-20	400	00013	M20	30	51	31	57	1.210
	1380	00014						3.580
	⓪...	-						-
B-25	400	00016	M25 × 2.5 Special thread	39	71	39	63	1.929
	1730	00017						6.983
	⓪...	-						-
B-28	400	00019	M28 × 2.5 Special thread	44	73	44	69	2.395
	1930	00020						9.703
	⓪...	-						-

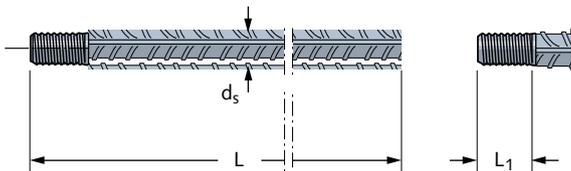
Other bar-lengths and bar shapes are available on request (→ page 9-11).
Special lengths may have resistance flash welded bar joints at delivery.
⓪ Please state required length when ordering.

Threads of the HALFEN HBS-05 Socket and connecting bars are delivered with colour-coded screw plugs and protective caps. The corresponding colour-codes for the thread size are specified in the connecting bar tables.

HALFEN HBS-05 THREADED COUPLER

Product Overview

HBS-05-A Connecting bars



HBS-05-A Standard lengths [mm]

Reinforcing steel bars B 500 B according to DIN 488-1

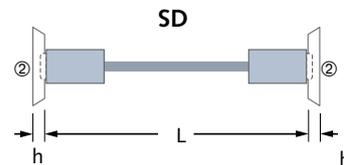
Rebar d_s	HBS-05-		Dimensions		Colour-code	Weight kg/piece.
	L	Order no.	Thread	L_1		
A-12	380	00001	M12	16.5	green	0.337
	590	00002				0.524
	840	00003				0.746
	1160	00004				1.030
	① ...	-				-
A-14	970	00007	M14	19.5	red	1.174
	1350	00008				1.634
	① ...	-				-
A-16	375	00009	M16	22.5	orange	0.592
	1085	00010				1.714
	1545	00011				2.440
	① ...	-				-
A-20	370	00012	M20	28.5	lightblue	0.914
	1350	00013				3.335
	① ...	-				-
A-25	360	00015	M25 × 2.5 Special thread	36.0	brown	1.386
	1690	00016				6.507
	① ...	-				-
A-28	360	00018	M28 × 2.5 Special thread	40.5	black	1.739
	1890	00019				9.129
	① ...	-				-
A-32	① ...	-	M32 × 3 Special thread	45.5	blue	-

Also available with left-hand thread HBS-05-AL.
Connecting rebars with left-hand thread on request.
Other bar-lengths and bar shapes are available on request (→ pages 9-11)
① Please state required length when ordering.

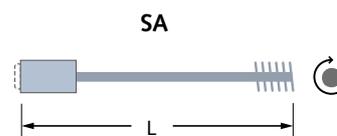
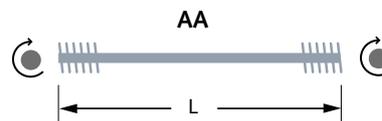
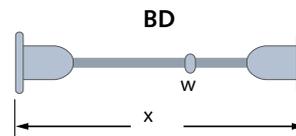
HBS-05 Product variations for straight bars

Right-hand thread

Left-hand thread



Nailing plate^②
h see page 17



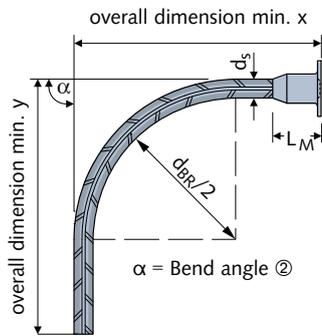
Min. length for double bars HBS-05 ... [mm]

d_s	-AA, -ALA, ALAL	-SA/-SAL	-SD	-BD
12	150	180	205	210
14	150	180	210	220
16	150	185	215	220
20	150	190	230	265
25	180	230	275	300
28	200	255	305	325
32	220	280	340	-

① Make allowance for thickness h (→ page 17) when using nailing-plates.

HALFEN HBS-05 THREADED COUPLER Bar Shapes

HBS-05-BG Bent socket bars, forged socket with nailing flange



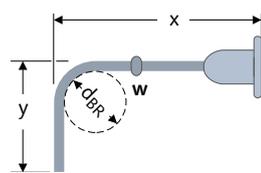
Order example:
Socket bars BG, bent 1x
HBS-05-BG-16
 $x = 250$ mm
 $y = 550$ mm
 $d_{BR} = 10 d_s$
 $\alpha = 90^\circ$

min. x and min. y dimensions for bent socket bars -BG [mm]								
Article description	Thread	with bending roll $\varnothing d_{BR}$:						20 d_s
		4 d_s		7 d_s		10 d_s	15 d_s	
HBS-05-Rebar/ d_s /x/y	L_M	min. x	min. y	min. x	min. y	min. x	min. x	min. x
BG-12/①...	35	95	96	-	-	131	161	191
BG-14/①...	39	109	112	-	-	151	186	221
BG-16/①...	44	124	128	-	-	172	212	252
BG-20/①...	51	-	-	181	190	211	261	311
BG-25/①...	71	-	-	233	238	271	333	396
BG-28/①...	73	-	-	255	266	297	367	437

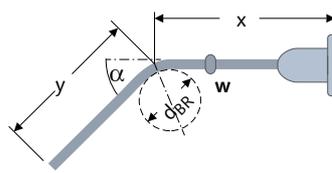
① State required lengths x and y in [mm] when ordering.
 ② If not stated otherwise when ordering, $\alpha = 90^\circ$ will be delivered.

Examples of bar shapes:

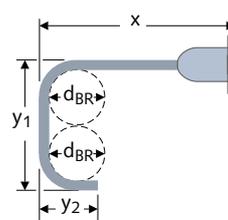
BG, 1x bent 90°



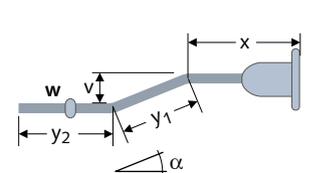
BG, 1x bent



BG, 2x bent^③

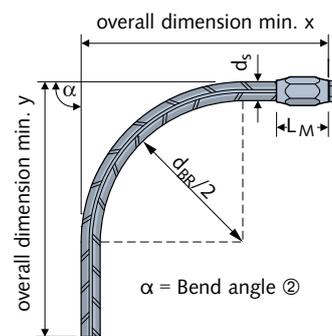


BG, cranked^③



③ Please include relevant drawings when ordering.

HBS-05-SG Bent bars with threaded coupler



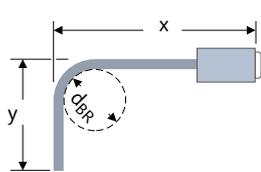
Order example:
Socket bars SG, bent 1x
HBS-05-SG 16
 $x = 250$
 $y = 1000$
 $d_{BR} > 10 d_s$
 $\alpha = 90^\circ$

min. x and min. y dimensions for bent coupler bars -SG [mm]								
Article description	Socket	with bending roll $\varnothing d_{BR}$:						20 d_s
		4 d_s		7 d_s		10 d_s	15 d_s	
HBS-05-Rebar/ d_s /x/y	L_M	min. x	min. y	min. x	min. y	min. x	min. x	min. x
SG-12/①...	36	96	96	-	-	132	162	192
SG-14/①...	42	112	112	-	-	154	189	224
SG-16/①...	48	128	128	-	-	176	216	256
SG-20/①...	60	-	-	190	190	220	270	320
SG-25/①...	75	-	-	238	238	275	338	400
SG-28/①...	84	-	-	266	266	308	378	448
SG-32/①...	96	-	-	304	304	352	432	512

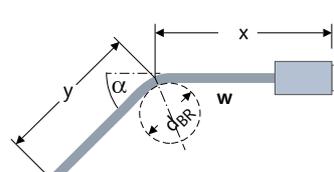
① State required lengths x and y in [mm] when ordering.
 ② If not stated otherwise when ordering, $\alpha = 90^\circ$ will be delivered.

Examples of bar shapes:

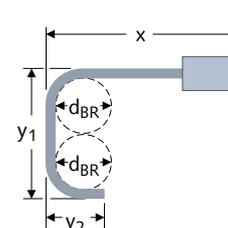
SG, 1x bent 90°



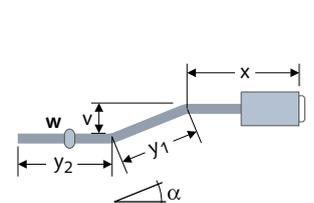
SG, 1x bent



SG, 2x bent^③



SG, cranked^③



③ Please include relevant drawings when ordering.

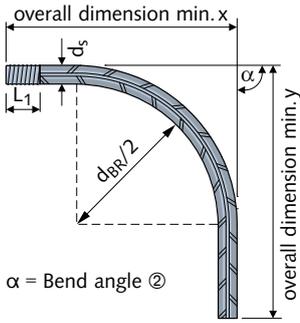
HALFEN HBS-05 THREADED COUPLER

Bar shapes

HBS-05-AG/-ALG Connecting bars bent

Connecting bars

- **AG** = curved, with right-hand thread 
- **ALG** = curved, with left-hand thread 

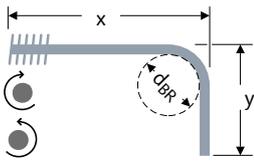


Order example:
Connecting bars AG, bent 1x
HBS-05-AG 16
 $x = 250$,
 $y = 1000$,
 $d_{BR} = 10 d_s$
 $\alpha = 90^\circ$

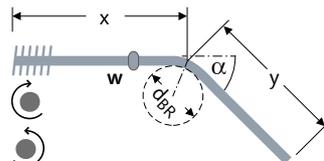
Article description	Thread	for bends $\varnothing d_{BR}$								
		4 d_s		7 d_s		10 d_s		15 d_s		20 d_s
HBS-05-Rebar/ d_s /x/y	L_1	min. x	min. y	min. x	min. y	min. x	min. x	min. x	min. x	min. x
AG - 12/①...	16,5	77	96	-	-	113	143	173		
AG - 14/①...	19,5	90	112	-	-	132	167	202		
AG - 16/①...	22,5	103	128	-	-	151	191	231		
AG - 20/①...	28,5	-	-	159	190	189	239	289		
AG - 25/①...	36,0	-	-	199	238	236	299	361		
AG - 28/①...	40,5	-	-	223	266	265	335	405		
AG - 32/①...	45,5	-	-	254	304	302	382	462		

① State required lengths x and y in [mm] when ordering.
 ② If not stated otherwise when ordering, $\alpha = 90^\circ$ will be delivered.

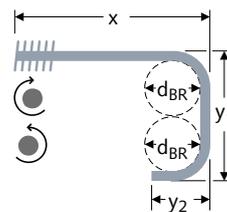
AG/ALG, 1x bent 90°



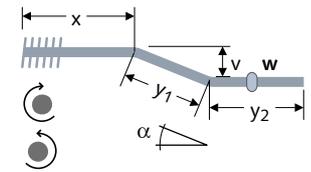
AG/ALG, 1x bent



AG/ALG, 2x bent^③



AG/ALG, cranked^③



③ Please include relevant drawings when ordering.

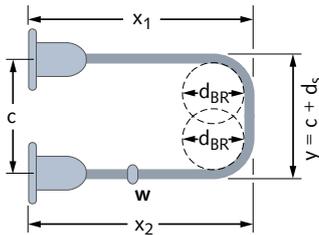
HBS-05

Order example: **Double socket bar BDU, bent 2x**
HBS-05-BDU 16; $x_1=350$, $x_2=350$, $y=300$, $c=284$, $d_{BR}=10 d_s$

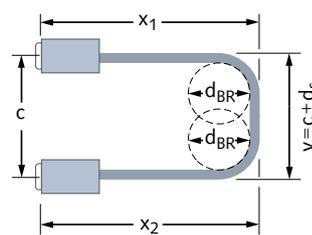
Order example: **Double connector bar AAG, bent 2x**
HBS-05-AAG 16; $x_1=750$, $x_2=750$, $y=300$, $c=284$, $d_{BR}=10 d_s$
 as appropriate state thread direction (only for left-hand thread)

 c = axial spacing

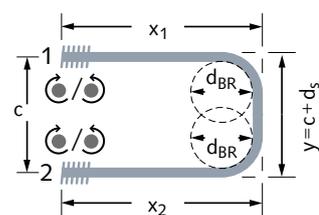
BDU



SDU



AAG



HBS-05 BDU min. lengths

d_s	4 d_s		7 d_s		10 d_s		15 d_s		20 d_s	
	min. x	min. c	min. x	min. c	min. x	min. c	min. x	min. c	min. x	min. c
12	95	89	113	132	131	176	161	248	191	320
14	109	101	130	151	151	202	186	286	221	370
16	124	112	148	170	172	228	212	324	252	420
20	-	-	181	208	211	280	261	400	311	520
25	-	-	233	255	271	345	333	495	396	645
28	-	-	255	283	297	384	367	552	437	720
32	-	-	-	-	-	-	-	-	-	-

HBS-05 SDU/AAG min. lengths

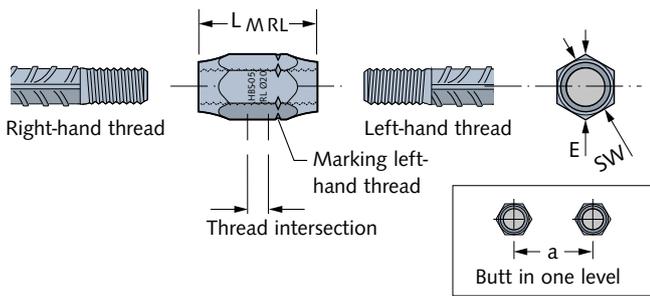
d_s	4 d_s		7 d_s		10 d_s		15 d_s		20 d_s	
	min. x	min. c	min. x	min. c	min. x	min. c	min. x	min. c	min. x	min. c
12	96	89	114	132	132	176	162	248	192	320
14	112	101	133	151	154	202	189	286	224	370
16	128	112	152	170	176	228	216	324	256	420
20	-	-	190	208	220	280	270	400	320	520
25	-	-	237	255	275	345	337	495	400	645
28	-	-	266	283	308	384	378	552	448	720
32	-	-	304	320	352	436	432	628	512	820

HALFEN HBS-05 THREADED COUPLER

HBS-05 R-/L- Sleeve

HBS-05-R-/L- Connecting sleeve

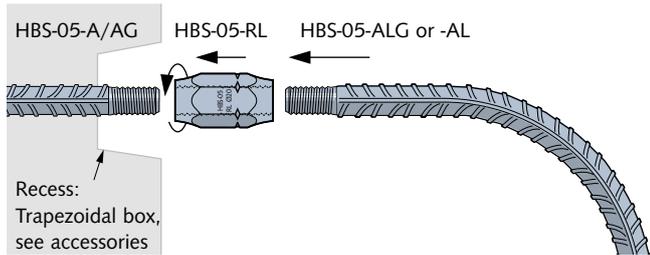
Right/left hand coupler sleeve with overlapping counter threads to connect a non-rotatable connection bar with a left-hand thread for example (HBS-05-ALG bent) to a fixed connection bar with right-hand thread.



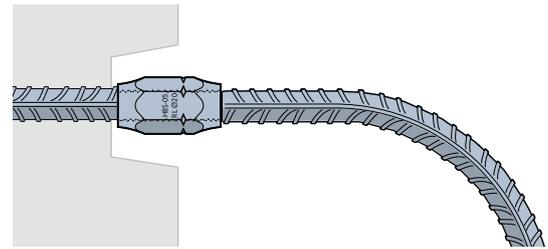
R-/L-Connecting sleeve [mm]					
Article description	Order no.	Dimensions			
		L _{MRL}	a _{min.}	SW	E
HBS-05-Rebar - d _s	0725.010-				
RL - 12	00001	38	42	19	21.9
RL - 14	00002	44	46	22	25.4
RL - 16	00003	50	48	24	27.7
RL - 20	00004	62	55	30	34.6
RL - 25	00005	77	67	36	41.6
RL - 28	00006	86	76	41	47.3
RL - 32	00007	98	90	50	57.7

Installation

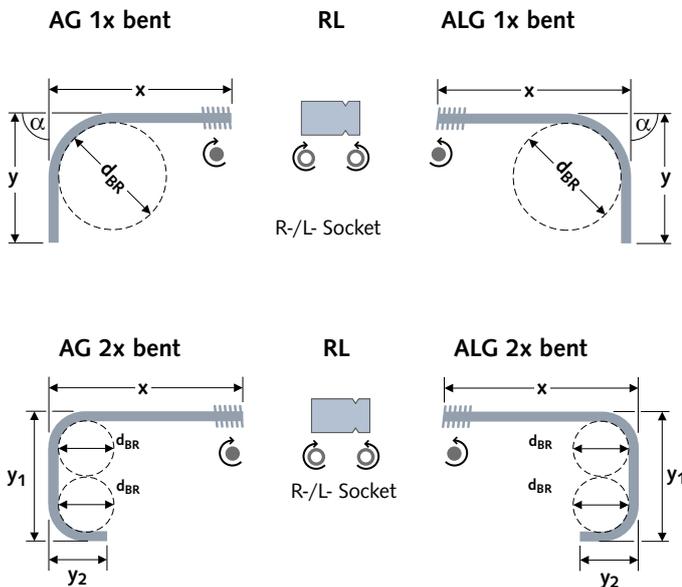
Prior to installation



After installation



Application example:



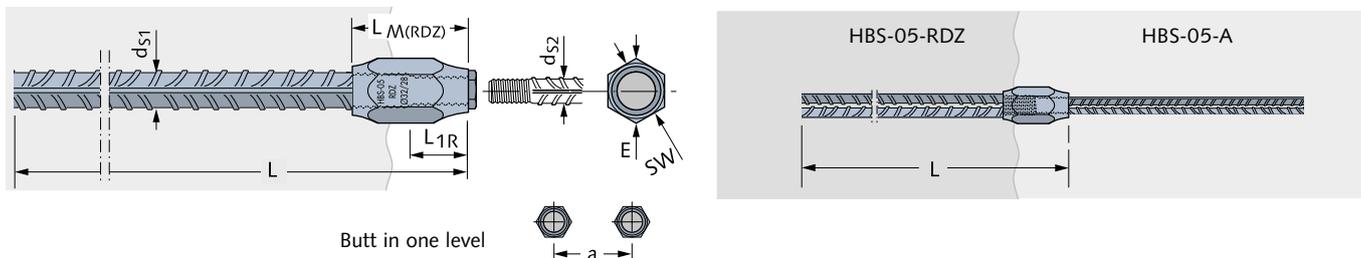
Order example:

Type HBS-05-RL - 20
 Thread-Ø resp. bar-Ø _____

HALFEN HBS-05 THREADED COUPLER

Reducing coupler bars

HBS-05-RDZ Reducing coupler bar

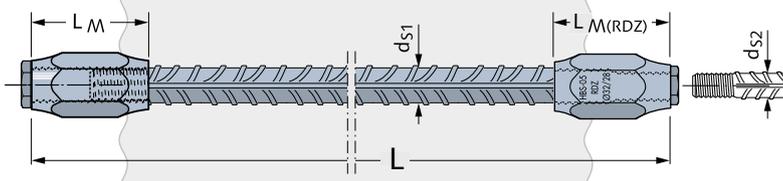


HBS-05-RDZ [mm]

Article description HBS-05 rebar $d_{s1} / d_{s2} - L$	Order no.	Dimensions						
		Thread		L_{1R}	$L_{M(RDZ)}$	$a_{min.}$	SW	E
RDZ - 16/14 - ①...	0053.420	M 16	M 14	19.5	50	48	24	27.7
RDZ - 20/16 - ①...		M 20	M 16	22.5	59	55	30	34.6
RDZ - 25/20 - ①...		M 25×2.5	M 20	28.5	72	67	36	41.6
RDZ - 28/25 - ①...		M 28×2.5	M 25×2.5	36.0	85	76	41	47.3
RDZ - 32/28 - ①...		M 32×3.0	M 28×2.5	40.5	96	90	50	57.7

① State required length L [mm] when ordering.

HBS-05-SRZ Double coupler rebar, one end with reducing coupler



Also available cranked

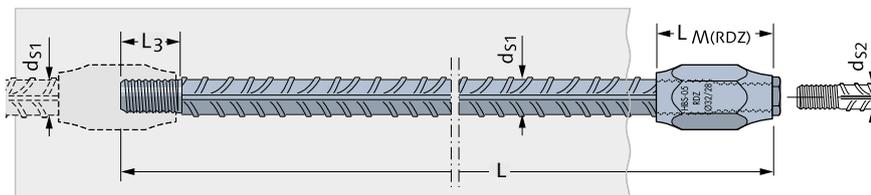
Sleeves can be ordered separately.

HBS-05-SRZ Dimensions [mm]

Article description HBS-05-Rebar/ $d_{s1} / d_{s2} - L$	Order no.
SRZ - 16/14 - ①...	0053.440
SRZ - 20/16 - ①...	
SRZ - 25/20 - ①...	
SRZ - 28/25 - ①...	
SRZ - 32/28 - ①...	

① State required length L [mm] when ordering.

HBS-05-ARZ Double connecting bar with reducing coupler



HBS-05-ARZ Dimensions [mm]

Article description HBS-05-bar/ $d_{s1} / d_{s2} - L$	Order no.
ARZ - 16/14 - ①...	0053.430
ARZ - 20/16 - ①...	
ARZ - 25/20 - ①...	
ARZ - 28/25 - ①...	
ARZ - 32/28 - ①...	

① State required length L [mm] when ordering.

Minimal lengths for reducing bars -RDZ /-ARZ [mm]

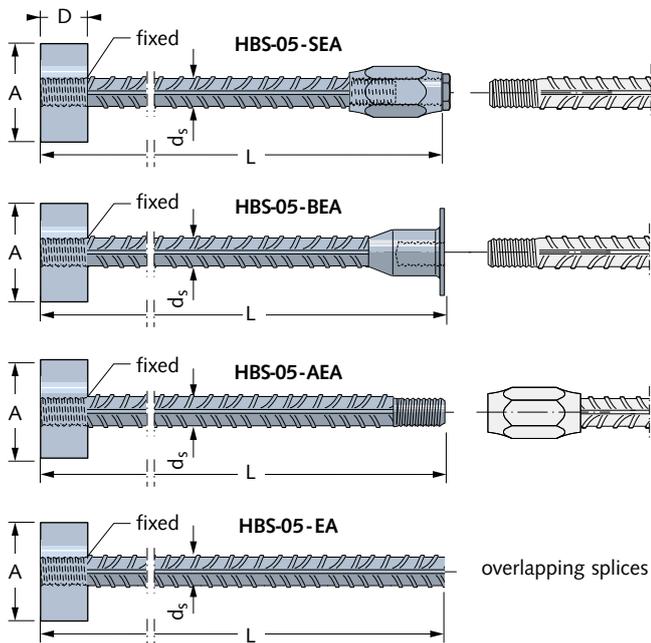
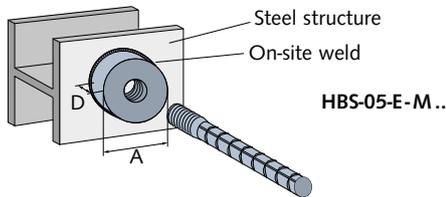
d_s	12	14	16	20	25	28	32
-ARZ	180	180	185	190	230	255	280
-SRZ	205	210	215	230	275	305	340

① Make allowance for thickness h (→ page 17) when using nailing-plates.

HALFEN HBS-05 THREADED COUPLER

HBS-05 End Anchor

HBS-05-EA/-E Bar with end anchor / loose end anchor



Minimal lengths for double coupler/connector bars HBS-05 ... [mm]		
d_s	-SEA; -BEA	-AEA
12	180	150
14	180	150
16	185	150
20	190	150
25	230	180
28	255	200
32	280	220

① Make allowance for thickness h (→ page 17) when using nailing-plates.

Loose end anchor HBS-05-E (Dimensions see table -EA)

The HBS-05-E End-anchor is especially for attaching HBS-05 bars by welding onto steel constructions. Static proof (for example for the welding seam) is required for each particular application. End anchor material is S235J2, material number is 1.0117 according to EN 10025-2.

Also approved for end anchorage in concrete.

We recommend: The amount of metal can be considerably reduced by using forged anchor-heads as end anchors in concrete.

With the HSC Stud connector We offer a building authority approved reinforcement using forged anchor-heads as end anchors in concrete. (→ page 6)

HBS-05-EA End anchor bar fixed [mm]

Article description HBS-05-rebar/ d_s / L	Dimensions		
	Thread	A	D
EA-12 / ①...	M12	41	18
EA-14 / ①...	M14	46	20
EA-16 / ①...	M16	52	25
EA-20 / ①...	M20	64	30
EA-25 / ①...	M25 × 2.5 ②	80	35
EA-28 / ①...	M28 × 2.5 ②	90	40
EA-32 / ①...	M32 × 3.0 ②	110	45

① State required length L [mm] when ordering.

② Special thread

Order example: - end anchor loose: **HBS-05- E** -M20

- end anchor: **HBS-05-SEA - 20 / 740**

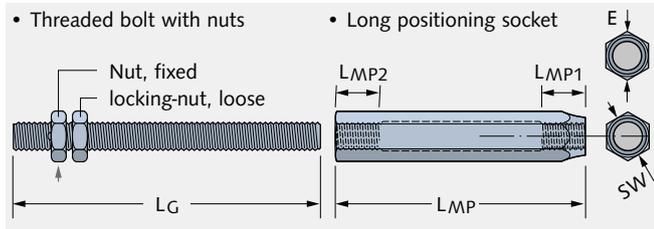
Type _____
 Thread-Ø or bar-Ø _____
 Bar length × [mm] _____

HALFEN HBS-05 THREADED COUPLER

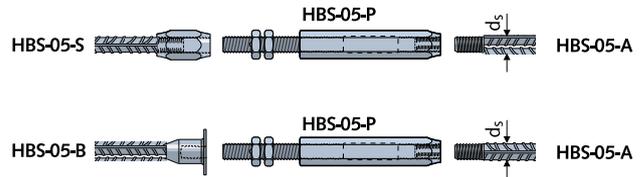
HBS-05 Positioning Coupler

BS-05-P-SET, Adjustable length positioning coupler

Set consists of:



Combinations with positioning coupler HBS-05 - P



Standard lengths HBS-05-P [mm]							
Article description HBS-05- ... - d _s	Order no. 0725.050-	Dimensions					
		L _G	L _{MP}	L _{MP1}	L _{MP2}	SW	E
P-12-SET	00001	133	106	18	18	19	21.9
P-14-SET	00002	146	117	21	21	22	25.4
P-16-SET	00003	159	128	24	24	24	27.7
P-20-SET	00004	210	170	30	25	30	34.6
P-25-SET	00005	245	200	38	30	36	41.6
P-28-SET	00006	263	215	42	35	41	47.3
P-32-SET	00007	302	245	48	40	50	57.7

Installation dimensions for standard length positioning couplers [mm]				
Spacing between rebar ends			Reference value K	Torque value for
A	A _{min.}	A _{max.}	K _{max.}	Threaded bolts M _A [Nm]
171	151	191	97	30
187	167	207	104	40
203	183	223	111	60
270	240	300	150	80
314	283	344	170	100
336	305	366	179	140
385	350	419	206	190

Materials:

- Positioning coupler: 11 SMn 30+C according to DIN EN 10277-3 (W 1.0715);
- Threaded rod: Strength class 10.9 according to DIN 976-1.

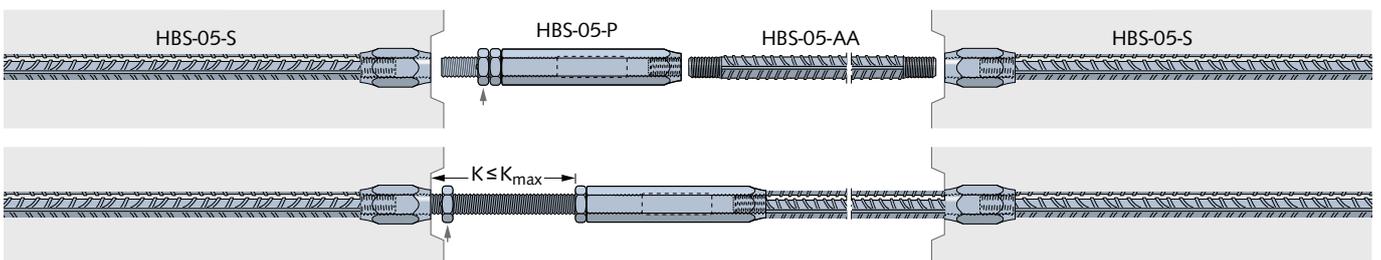
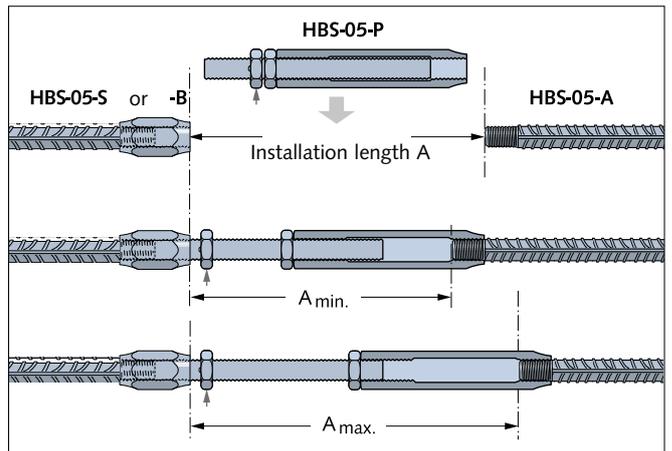
Application: The positioning coupler serves as a connection between axial fixed and non-rotatable reinforcing bars for example:

- in areas between previously concreted sections such as a crane opening in floor slabs
- connecting precast reinforcing cages
- connection between difficult to access rebars

Positioning sockets are freely adjustable allowing building tolerances to be easily compensated.

Simple installation: Screw the positioning socket on to the connection bar, using a torque wrench with a torque of M_A, screw in the treaded rod using the fixed nut then counter the loose nut against the positioning socket. Can be used for non-predominantly static loads as well as for impact loads.

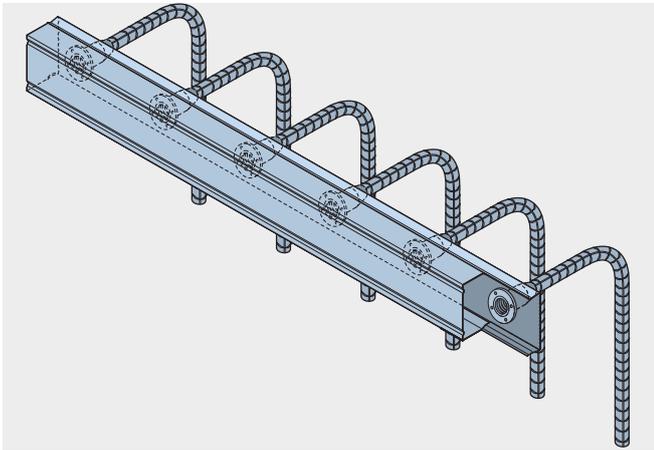
Adjusting installation length A



HALFEN HBS-05 THREADED COUPLER

HBS-05-Box

HBS-05-Box with socket rebars



- optimal shear load transfer with U-shaped steel casing with profiled backing
- u-shaped box cover in galvanized steel sheet
- box length: 1250 mm (other lengths on request)
- HBS-05 Socket bars are available in 12 - 14 - 16 mm bar diameters pre-assembled in a steel casing

Areas of application:

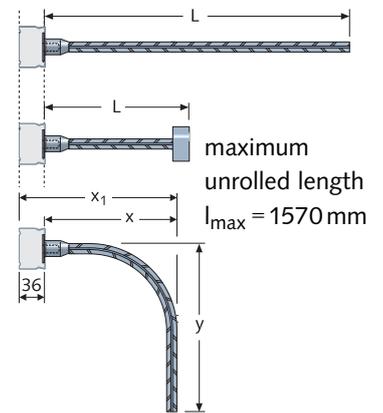
- cost effective formwork aid with multiple in-line installation
- with sliding formwork
- recess to form a keyed joint for shear loads

The HBS-05 Connection

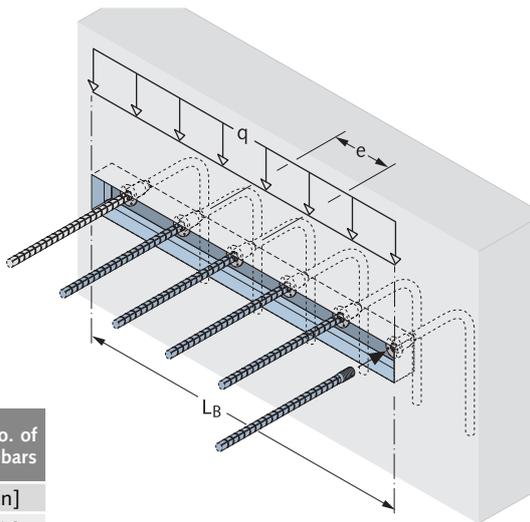
HBS-05-B → Page 8
straight

HBS-05-BEA → Page 14
end anchor

HBS-05-BG → Page 10
bent



$$x_1 = x + 36 \text{ mm}$$

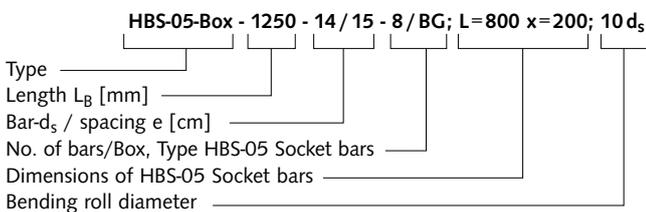


Bar spacing e	No. of rebars
[cm]	[n]
7.5	16
10	12
15	8
20	6
25	5

① For diameter 16 mm the no. of rebars is limited to 10 per box!

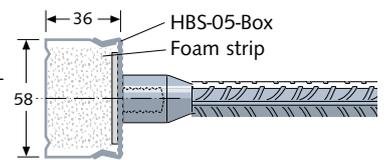
The HBS-05 Box is similar to the HALFEN Rebend connection HBT 55 casing.

Order example:

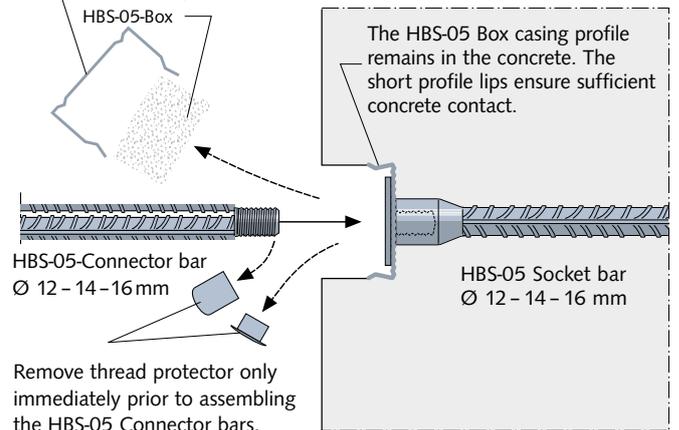


Installation:

1. Nail the HBS-05-Box to the formwork. Attach the HBS-05 bar ends to the reinforcement.
2. After striking the formwork:



remove the cover and the foam strip from the HBS-05-Box



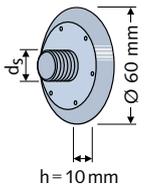
HALFEN HBS-05 THREADED COUPLER

HBS-05 Accessories

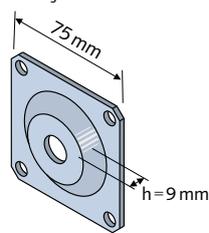
Attaching HBS-05-S Coupler bars, straight or bent, to formwork

For wood formwork

Plastic nail-plate for d_s 12 – 20 mm

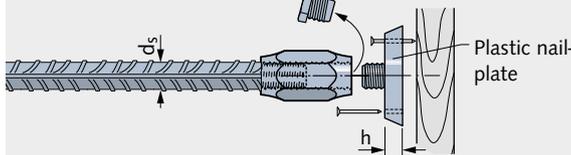


Steel nail-plate, zinc-plated re-usable for d_s 25 – 32 mm

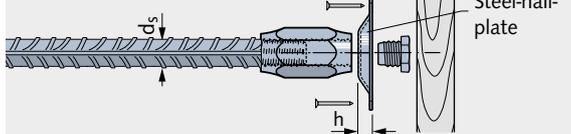


Fixing to timber formwork

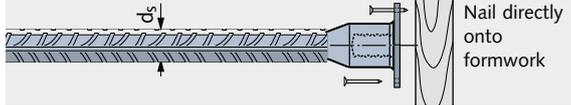
• HBS-05-S, $d_s = 12 - 20$ mm



• HBS-05-S, $d_s = 25$ to 32 mm

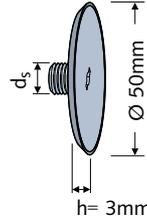


• HBS-05-B with Nail flange



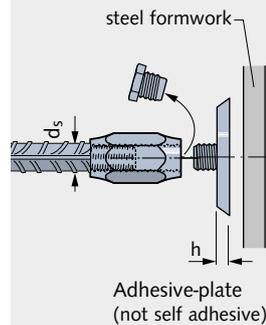
For steel formwork

Adhesive-plate, plastic for d_s 12 – 16 – 20 mm



Fixing to steel formwork

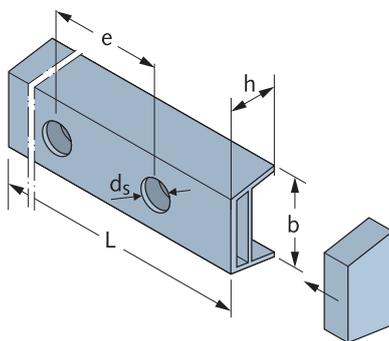
Adhesive-plate, plastic for 12–16–20 mm $\varnothing d_s$ bars



Nail-plate, Adhesive-plate [mm]

Article description	d_s	Order no.
Plastic nail-plate		0725.020-
HBS-05-12-KS	12	00002
HBS-05-14-KS	14	00003
HBS-05-16-KS	16	00004
HBS-05-20-KS	20	00005
Steel nail-plate		0725.030-
HBS-05-25-GV	25	00001
HBS-05-28-GV	26/28	00002
HBS-05-32-GV	32	00003
Adhesive-plate		0741.100-
6306-12	12	00002
6306-16	16	00003
6306-20	20	00004

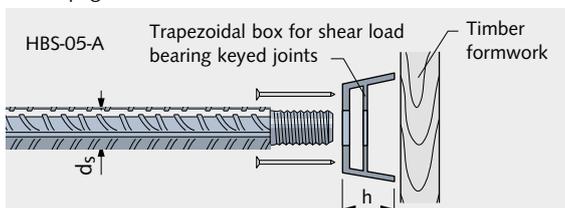
Trapezoidal box for shear load bearing keyed joints (Fixing of connecting bars)



Trapezoidal Box [mm]			
Article description	h / b	for d_s	Order no.
TPL	35 / 60	12–20	0725.060
TPL	50 / 90	25–32	
① State dimensions of L, e and d_s when ordering			
End cap for trapezoidal box [mm]			
Article description	h / b	for d_s	0725.070-
TPL-EDK	35 / 60	12–20	00001
TPL-EDK	50 / 90	25–32	00002

Standard bar spacings e [mm]		
e	Number of holes	L
75	13	1000
100	10	
125	8	
150	7	
200	5	
250	4	
300	4	
400	3	
450	3	
Other lengths on request		

Application example for reinforcement connection with R-L-socket → page 11.



Order example:

HBS-05-TPL-35/60-5 holes \varnothing 16, e=200 mm

Type _____
 Dimensions h / b [mm] _____
 No. and diam. of holes _____
 Hole spacing e [mm] _____

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