



- 1 Lot number stamped on**  
– reliable traceability
- 2 NORMA® logo**  
– a visible sign of quality
- 3 Organic/inorganic coating**  
– optimum protection against corrosion
- 4 Nominal diameter stamped on**  
– prevents mistakes
- 5 Special design**  
– even distribution of clamping force and excellent roundness
- 6 Rounded band edges**  
– optimum hose protection

## Springband hose clamps in acc. with DIN 3021

Thanks to their dynamic spring properties, NORMACLAMP® FBS springband hose clamps are the perfect choice for hose spigot systems that are exposed to significant temperature fluctuations. Once installed, NORMACLAMP® FBS clamps ensure an automatic re-tensioning effect for an extended period. Even at low temperatures, this mechanism still enables sufficiently high levels of radial clamping force to be achieved, which in turn ensure excellent sealing reliability. With NORMACLAMP® FBS clamps, even hoses that are exposed to significant temperature fluctuations or have a tendency to “creep” can be joined securely.



A springband hose clamp with dynamic spring properties which ensure an automatic re-tensioning effect. It is particularly suitable for use with hose-spigot joints which are submitted to extreme temperature changes. Manual or pneumatic tools are used for professional installation.

### Advantages at a glance

- One-piece, bolt-free hose clamp
- Even distribution of clamping force
- Optimum roundness
- Temperature resistance from –40 °C to 200 °C
- Clear traceability due to batch numbering

### Applications

- Machine building
- White goods
- Agricultural machines
- Engine manufacturing
- Cooling and heating water circuits
- Fuel vent system
- Air ducts
- Water and brine outlet lines

### Materials

Material	Zinc/aluminum coating	Organic coating
C 75 S	Base coat	Top coat

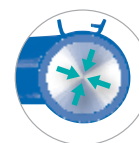
**Corrosion resistance in salt spray testing**  
480 h and up

### Short description

- Dynamic clamp
- Band material C 75 S
- Coating containing zinc; no chromium(VI)
- Nominal diameter of 13 mm to 80 mm in various gradations



- At high temperatures**
- Hose diameter increases
  - FBS adapts to internal pressure



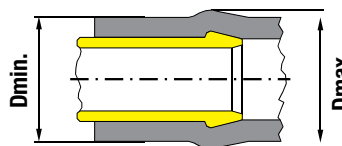
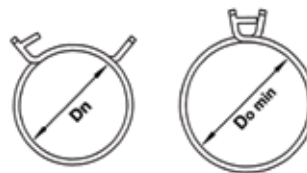
- At low temperatures**
- Hose diameter decreases
  - FBS re-tensions
  - Clamping force is retained and clamp provides perfect seal

### Determine clamp

To determine which clamp is right for you, follow these steps:

1. Push the hose onto the spigot and measure  $D_{min.}$  and  $D_{max.}$
2. Based on the  $D_{min.}$  value, determine the nominal diameter ( $D_n$ ) of the clamp in question.  $D_n = D_{min.}$
3. Compare the  $D_{max.}$  value with the minimum diameter ( $D_{0 min.}$ ) specified for the open clamp and select the clamp that is appropriate.  
 $D_{0 min.} \geq D_{max.}$

If required, we can send you an appropriate template before you place your order. If you have any additional, application-specific questions, we will be happy to advise you in more detail.



### Technical data & Ordering information

NORMACLAMP® FBS STANDARD							
Width	Designation	$D_n$ mm	$D_n$ in inches	$D_{0 m}$ in mm	$D_{0 min}$ in inches	Material C 75 S Product No.	
						Black	Silver
12	FBS 13/12	13	1/2	14.5	9/16	0112 8024 013	0112 8074 013
	FBS 14/12	14	9/16	15.8	5/8	0112 8024 014	0112 8074 014
	FBS 15/12	15	9/16	16.8	11/16	0112 8024 015	0112 8074 015
	FBS 16/12	16	5/8	17.5	11/16	0112 8024 016	0112 8074 016
	FBS 17/12	17	11/16	18.5	3/4	0112 8024 017	0112 8074 017
	FBS 18/12	18	11/16	19	3/4	0112 8024 018	0112 8074 018
	FBS 19/12	19	3/4	21	13/16	0112 8024 019	0112 8074 019
	FBS 20/12	20	13/16	21.6	7/8	0112 8024 020	0112 8074 020
	FBS 21/12	21	13/16	22.5	7/8	0112 8024 021	0112 8074 021
	FBS 22/12	22	7/8	24.5	15/16	0112 8024 022	0112 8074 022
	FBS 23/12	23	15/16	24.7	1	0112 8024 023	0112 8074 023
	FBS 24/12	24	15/16	26	1	0112 8024 024	0112 8074 024
	FBS 25/12	25	1	27	1 1/16	0112 8024 025	0112 8074 025
	FBS 26/12	26	1	28	1 1/8	0112 8024 026	0112 8074 026
	FBS 27/12	27	1 1/16	29	1 1/8	0112 8024 027	0112 8074 027
	FBS 28/12	28	1 1/8	30.5	1 3/16	0112 8024 028	0112 8074 028
	FBS 29/12	29	1 1/8	31.5	1 1/4	0112 8024 029	0112 8074 029
	FBS 30/12	30	1 3/16	32.5	1 1/4	0112 8024 030	0112 8074 030
	FBS 32/12	32	1 1/4	34.5	1 3/8	0112 8024 032	0112 8074 032
	FBS 35/12	35	1 3/8	38	1 1/2	0112 8024 035	0112 8074 035
	FBS 36/12	36	1 7/16	39	1 9/16	0112 8024 036	0112 8074 036
	FBS 38/12	38	1 1/2	41.5	1 5/8	0112 8024 038	0112 8074 038
	FBS 40/12	40	1 9/16	42.5	1 11/16	0112 8024 040	0112 8074 040
	FBS 42/12	42	1 5/8	44.5	1 3/4	0112 8024 042	0112 8074 042
	FBS 44/12	44	1 3/4	46.5	1 13/16	0112 8024 044	0112 8074 044
	FBS 46/12	46	1 13/16	49	1 15/16	0112 8024 046	0112 8074 046
	FBS 47/12	47	1 7/8	50	2	0112 8024 047	0112 8074 047
	FBS 50/12	50	2	53	2 1/16	0112 8024 050	0112 8074 050
	FBS 55/12	55	2 3/16	58	2 1/4	0112 8024 055	0112 8074 055
	FBS 60/12	60	2 3/8	63	2 1/2	0112 8024 060	0112 8074 060

Special diameters available on request



Refer to pages 188 and 190.

**R**



The NORMACLAMP® FBS R was designed with the aim of achieving the smallest overall height that was technically possible so that it could be used in difficult installation conditions.

**Advantages at a glance**

- Space-saving clamp

**Materials**

- C75S

**NORMACLAMP® FBS R**

Width	Designation	D <sub>n</sub> mm	D <sub>n</sub> in inches	D <sub>0 min</sub> mm	D <sub>0 min</sub> in inches	Material C 75 S Product No.	
						Black	Silver
12	FBS 14/12 R	14	9/16	15.8	5/8	0112 8025 014	0112 8075 014
	FBS 16/12 R	16	5/8	17.5	11/16	0112 8025 016	0112 8075 016
	FBS 19/12 R	19	3/4	21	13/16	0112 8025 019	0112 8075 019
	FBS 23/12 R	23	15/16	24.7	1	0112 8025 023	0112 8075 023
	FBS 27/12 R	27	1 1/16	29	1 1/8	0112 8025 027	0112 8075 027
	FBS 40/12 R	40	1 9/16	42.5	1 11/16	0112 8025 040	0112 8075 040

Special diameters available on request



Refer to pages 188 and 190.

**C**



A pre-opened clamp that is prepositioned on the hose. The retaining mechanism for this version is part of the band and is integrated into the clamp.

**Advantages at a glance**

- Pre-assembled clamp
- Ready to use

**Materials**

- C75S

**NORMACLAMP® FBS C**

Width	Designation	D <sub>n</sub> mm	D <sub>n</sub> in inches	D <sub>0 min</sub> mm	D <sub>0 min</sub> in inches	Material C 75 S Product No.
						Silver
12	FBS 17/12	17	11/16	18.5	3/4	0112 8502 017
	FBS 21/12	21	13/16	22.5	7/8	0112 8502 021
	FBS 23/12	23	15/16	24.7	1	0112 8502 023
	FBS 25/12	25	1	27	1 1/16	0112 8502 025
	FBS 27/12	27	1 1/16	29	1 1/8	0112 8502 027
	FBS 29/12	29	1 1/8	31.5	1 1/4	0112 8502 029
	FBS 32/12	32	1 1/4	34.5	1 3/8	0112 8502 032
	FBS 36/12	36	1 7/16	39	1 9/16	0112 8502 036
	FBS 40/12	40	1 9/16	42.5	1 11/16	0112 8502 040
	FBS 44/12	44	1 3/4	46.5	1 13/16	0112 8502 044



Refer to page 188.

HC



A pre-opened version that is secured by a plastic clip. Once the clamp has been pushed onto the hose, this clip can be released easily by hand.

**Advantages at a glance**

- Easy to assemble

**Materials**

- C75S

**NORMACLAMP® FBS HC**

Width	Designation	D <sub>n</sub> mm	D <sub>n</sub> in inches	D <sub>0 min</sub> mm	D <sub>0 min</sub> in inches	Material C 75 S Product No.	
						Black	Silver
12	FBS 13/12	13	1/2	14.5	9/16	0112 8302 013	0112 8352 013
	FBS 14/12	14	9/16	15.8	5/8	0112 8302 014	0112 8352 014
	FBS 15/12	15	9/16	16.8	11/16	0112 8302 015	0112 8352 015
	FBS 16/12	16	5/8	17.5	11/16	0112 8302 016	0112 8352 016
	FBS 17/12	17	11/16	18.5	3/4	0112 8302 017	0112 8352 017
	FBS 18/12	18	11/16	19	3/4	0112 8302 018	0112 8352 018
	FBS 19/12	19	3/4	21	13/16	0112 8302 019	0112 8352 019
	FBS 20/12	20	13/16	21.6	7/8	0112 8302 020	0112 8352 020
	FBS 21/12	21	13/16	22.5	7/8	0112 8302 021	0112 8352 021
	FBS 22/12	22	7/8	24.5	15/16	0112 8302 022	0112 8352 022
	FBS 23/12	23	15/16	24.7	1	0112 8302 023	0112 8352 023
	FBS 24/12	24	15/16	26	1	0112 8302 024	0112 8352 024
	FBS 25/12	25	1	27	1 1/16	0112 8302 025	0112 8352 025
	FBS 26/12	26	1	28	1 1/8	0112 8302 026	0112 8352 026
	FBS 27/12	27	1 1/16	29	1 1/8	0112 8302 027	0112 8352 027
	FBS 28/12	28	1 1/8	30.5	1 3/16	0112 8302 028	0112 8352 028
	FBS 29/12	29	1 1/8	31.5	1 1/4	0112 8302 029	0112 8352 029
	FBS 30/12	30	1 3/16	32.5	1 1/4	0112 8302 030	0112 8352 030
	FBS 32/12	32	1 1/4	34.5	1 3/8	0112 8302 032	0112 8352 032
	FBS 35/12	35	1 3/8	38	1 1/2	0112 8302 035	0112 8352 035
	FBS 36/12	36	1 7/16	39	1 9/16	0112 8302 036	0112 8352 036
	FBS 38/12	38	1 1/2	41.5	1 5/8	0112 8302 038	0112 8352 038
	FBS 40/12	40	1 9/16	42.5	1 11/16	0112 8302 040	0112 8352 040
	FBS 42/12	42	1 5/8	44.5	1 3/4	0112 8302 042	0112 8352 042
	FBS 44/12	44	1 3/4	46.5	1 13/16	0112 8302 044	0112 8352 044
	FBS 46/12	46	1 13/16	49	1 15/16	0112 8302 046	0112 8352 046
	FBS 47/12	47	1 7/8	50	2	0112 8302 047	0112 8352 047
	FBS 50/12	50	2	53	2 1/16	0112 8302 050	0112 8352 050
	FBS 55/12	55	2 3/16	58	2 1/4	0112 8302 055	0112 8352 055
	FBS 60/12	60	2 3/8	63	2 1/2	0112 8302 060	0112 8352 060

Special diameters available on request

**MC**



A pre-opened (and, if required, prepositioned) clamp that is secured with a small metal clip. The retaining clip for this version is removed by using pliers.

**Advantages at a glance**

- Secured clamp

**Materials**

- C75S

**NORMACLAMP® FBS MC**

Width	Designation	D <sub>n</sub> mm	D <sub>n</sub> in inches	D <sub>0 min</sub> mm	D <sub>0 min</sub> in inches	Material C 75 S Product No.	
						Black	Silver
12	FBS 13/12	13	1/2	14.5	9/16	0112 8019 013	0112 8475 013
	FBS 14/12	14	9/16	15.8	5/8	0112 8019 014	0112 8475 014
	FBS 15/12	15	9/16	16.8	11/16	0112 8019 015	0112 8475 015
	FBS 16/12	16	5/8	17.5	11/16	0112 8019 016	0112 8475 016
	FBS 17/12	17	11/16	18.5	3/4	0112 8019 017	0112 8475 017
	FBS 18/12	18	11/16	19	3/4	0112 8019 018	0112 8475 018
	FBS 19/12	19	3/4	21	13/16	0112 8019 019	0112 8475 019
	FBS 20/12	20	13/16	21.6	7/8	0112 8019 020	0112 8475 020
	FBS 21/12	21	13/16	22.5	7/8	0112 8019 021	0112 8475 021
	FBS 22/12	22	7/8	24.5	15/16	0112 8019 022	0112 8475 022
	FBS 23/12	23	15/16	24.7	1	0112 8019 023	0112 8475 023
	FBS 24/12	24	15/16	26	1	0112 8019 024	0112 8475 024
	FBS 25/12	25	1	27	1 1/16	0112 8019 025	0112 8475 025
	FBS 26/12	26	1	28	1 1/8	0112 8019 026	0112 8475 026
	FBS 27/12	27	1 1/16	29	1 1/8	0112 8019 027	0112 8475 027
	FBS 28/12	28	1 1/8	30.5	1 3/16	0112 8019 028	0112 8475 028
	FBS 29/12	29	1 1/8	31.5	1 1/4	0112 8019 029	0112 8475 029
	FBS 30/12	30	1 3/16	32.5	1 1/4	0112 8019 030	0112 8475 030
	FBS 32/12	32	1 1/4	34.5	1 3/8	0112 8019 032	0112 8475 032
	FBS 35/12	35	1 3/8	38	1 1/2	0112 8019 035	0112 8475 035
	FBS 36/12	36	1 7/16	39	1 9/16	0112 8019 036	0112 8475 036
	FBS 38/12	38	1 1/2	41.5	1 5/8	0112 8019 038	0112 8475 038
	FBS 40/12	40	1 9/16	42.5	1 11/16	0112 8019 040	0112 8475 040
	FBS 42/12	42	1 5/8	44.5	1 3/4	0112 8019 042	0112 8475 042
	FBS 44/12	44	1 3/4	46.5	1 13/16	0112 8019 044	0112 8475 044
	FBS 46/12	46	1 13/16	49	1 15/16	0112 8019 046	0112 8475 046
	FBS 47/12	47	1 7/8	50	2	0112 8019 047	0112 8475 047
	FBS 50/12	50	2	53	2 1/16	0112 8019 050	0112 8475 050
	FBS 55/12	55	2 3/16	58	2 1/4	0112 8019 055	0112 8475 055
	FBS 60/12	60	2 3/8	63	2 1/2	0112 8019 060	0112 8475 060

Special diameters available on request