

High Temperature Cam Followers

APPLICATION:

Automation Equipment
Machine Tools
Packaging
Material-handling equipment

HIGHLIGHTS:

Needle or cylindrical bearings
Built-in shaft
Accepts high radial and shock loads

INDUSTRIES:

Automotive
Food & Beverage
Pulp, Paper & Forestry
Oil & Gas
Metals & Steel Mills



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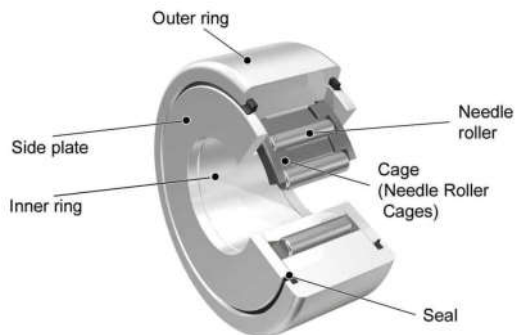
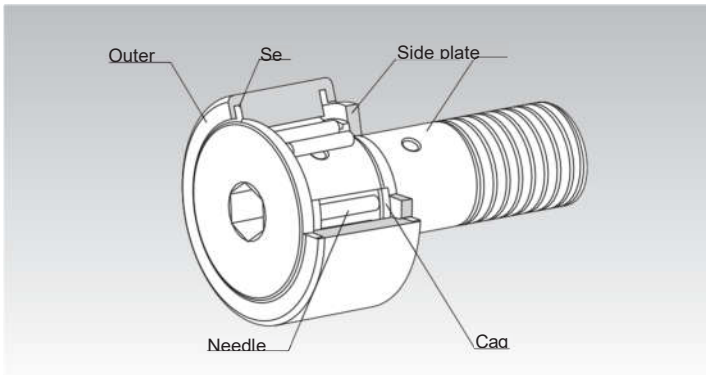
Structure and Features

GMW High-Temp Cam Followers with bushings outperform ordinary grease or oil lubricated cam followers for high temperature 300°C (573°F), low temperature (-73°C and below) and submerged applications.

The GMW cam followers are self-lubricating and contains a special grease as a lubricating solution high temperature conditions. They are designed to handle moderate loads and heavy loads providing low speeds from 120rpm up to 280rpm. GMW high temperature Cam Followers bearings provide reliable performance at temperatures up to 300°C (573°F)

Includes typical applications:

- Industrial furnace trolley
- Temporary mode steel factory
- Glass factory thermal production line
- Kiln conveyor belt

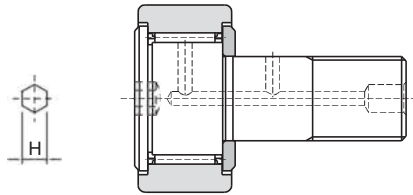


All High-temp Cam Followers come with the following benefits:

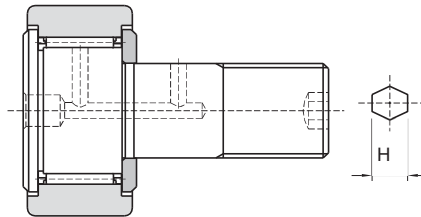
- Special heat resistance for temperatures up to 300°C with suffix HT2/G
- Manganese phosphate coating (according to EN ISO 9717) ensures enhanced corrosion protection, good lubricant adhesion and better runability
- AISI52100 high-strength steel material

In addition, GMW cam followers suffix (L) also perform well in low temperatures environments of -100°F and below (-73°C and below) and in wet or submerged applications. With the following characteristics:

- Grease special temperatures environments of -100° F and below (-73°C and below)
- Stainless steel material SUS304, SUS440 or special chrome-plated surface helps the bearings prevent lightning
- Increased radial clearance (multiple of C5)



Model CF-A (Suffix HT2/G or L)



Model CF-B (Suffix HT2/G or L)



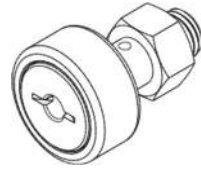
Model NURT (Suffix HT2/G or L)

Types and Features

Popular Type Cam Followers Model CF

It is a popular type of Cam Follower provided with a driver groove on the head of the stud. A highly corrosion resistant stainless steel type (symbol M) is also available.

Specification



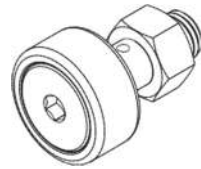
Model CF-HT2/G

Cam Followers with a Hexagon Socket Model CF-A

Since the stud head has a hexagon socket, this model can easily be installed using a hexagon wrench.

A type whose stud screw has a hexagon socket (CF-B) is also available. (applicable to stud diameter of 12 or greater)

Specification

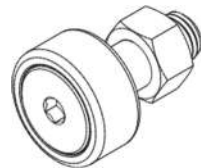


Model CF-AHT2/G

Eccentric Cam Followers with a Hexagon Socket Model CFH-A

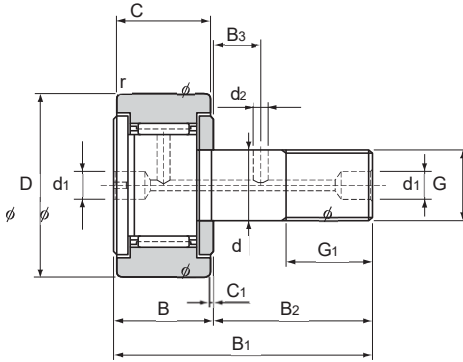
This model can be installed in the same mounting hole as that of model CF. Since the mounting shaft of the stud and the stud head are eccentric by 0.25 mm to 1.0 mm, the position of this model can easily be adjusted simply by turning the stud. Thus, it is a compact, highly accurate eccentric cam follower with an integral structure. As a result, the man-hours for machining and assembly can significantly be reduced because it is unnecessary to align the cam follower with the cam groove and machine the mounting-hole area with precision.

Specification



Model CFH-AHT2/G

Model CF (Popular Type (Cylindrical Outer Ring))



Stud diameter d	Model No.	Main dimensions													Shoulder height f (Min.)
		Outer diameter D	Outer ring width C	Threaded G	G ₁	B	Overall length B ₁	B ₂	B ₃	C ₁	d ₁	d ₂	r _{min}		
5	CF 5	13	9	M5×0.8	7.5	10	23	13	—	0.5	3.1*	—	0.3	9.7	
6	CF 6	16	11	M6×1	8	12	28	16	—	0.6	4*	—	0.3	11	
8	CF 8	19	11	M8×1.25	10	12	32	20	—	0.6	4*	—	0.3	13	
10	CF 10	22	12	M10×1.25	12	13	36	23	—	0.6	4*	—	0.3	15	
10	CF 10-1	26	12	M10×1.25	12	13	36	23	—	0.6	4*	—	0.3	15	
12	CF 12	30	14	M12×1.5	13	15	40	25	6	0.6	6	3	0.6	20	
12	CF 12-1	32	14	M12×1.5	13	15	40	25	6	0.6	6	3	0.6	20	
16	CF 16	35	18	M16×1.5	17	19.5	52	32.5	8	0.8	6	3	0.6	24	
18	CF 18	40	20	M18×1.5	19	21.5	58	36.5	8	0.8	6	3	1	26	
20	CF 20	52	24	M20×1.5	21	25.5	66	40.5	9	0.8	8	4	1	36	
20	CF 20-1	47	24	M20×1.5	21	25.5	66	40.5	9	0.8	8	4	1	36	
24	CF 24	62	29	M24×1.5	25	30.5	80	49.5	11	0.8	8	4	1	40	
24	CF 24-1	72	29	M24×1.5	25	30.5	80	49.5	11	0.8	8	4	1	40	
30	CF 30	80	35	M30×1.5	32	37	100	63	15	1	8	4	1	46	
30	CF 30-1	85	35	M30×1.5	32	37	100	63	15	1	8	4	1	46	
30	CF 30-2	90	35	M30×1.5	32	37	100	63	15	1	8	4	1	46	

Note) The seal must be used at temperature of 280°C or below.

Those models marked with "*" have a greasing hole only on the head.

Model number coding

CF8 V M UU HT2/G - L

Model number

No symbol: With cage

V : Full-roller Type

No symbol: Carbon steel

M : Stainless steel

no symbol: without seal

UU : With seal

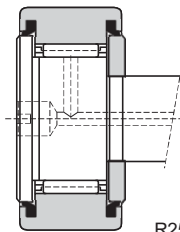
HT : High-temp up to max 300°C

L : Low-temp (-73°C)

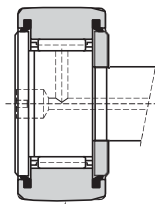
Note) Full-roller Type is applicable for Stud Diameter 6 to 30.

To download a desired data, search for the corresponding model number in the Technical site.

<https://shm.net.vn/en>

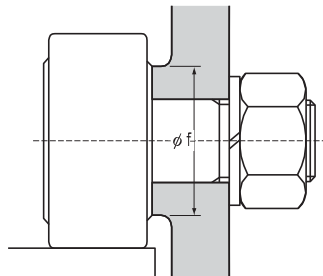


Model CF...UU



Model CF...UUR

R250(CF5)
R500(CF6 to CF18)
R1000(CF20 to CF30)

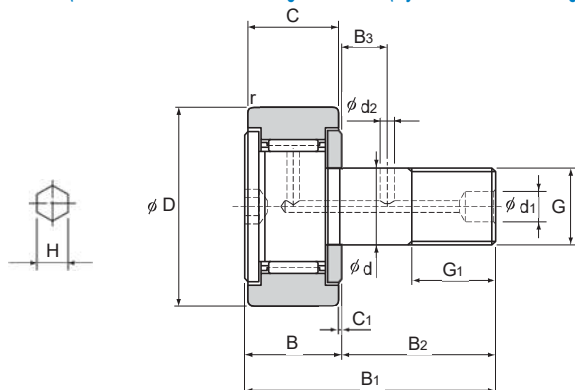


Unit: mm

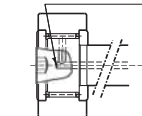
	Basic load rating				Maximum permissible load F0 kN	Track load capacity		Rotational speed limit * min ⁻¹	Mass	
	With cage		Full rollers			Cylindrical outer ring kN	Spherical outer ring kN		With cage g	Full rollers g
	C	C0	C	C0						
	kN	kN	kN	kN						
	3.14	2.77	—	—	1.42	2.25	0.53	280	10.5	—
	3.59	3.58	6.94	8.5	2.11	3.43	1.08	250	18.5	19
	4.17	4.65	8.13	11.2	4.73	4.02	1.37	230	28.5	29
	5.33	6.78	9.42	14.3	5.81	4.7	1.67	200	45	46
	5.33	6.78	9.42	14.3	5.81	5.49	2.06	190	60	61
	7.87	9.79	13.4	19.8	9.37	7.06	2.45	150	95	97
	7.87	9.79	13.4	19.8	9.37	7.45	2.74	120	105	107
	12	18.3	20.6	37.6	17.3	11.2	3.14	100	170	173
	14.7	25.2	25.2	51.3	26.1	14.4	3.72	90	250	255
	20.7	34.8	33.2	64.8	32.1	23.2	8.23	80	460	465
	20.7	34.8	33.2	64.8	32.1	21	7.15	80	385	390
	30.6	53.2	46.7	92.9	49.5	34.2	10.5	70	815	820
	30.6	53.2	46.7	92.9	49.5	39.8	12.9	60	1140	1140
	45.4	87.6	67.6	145	73.7	52.6	14.9	50	1870	1870
	45.4	87.6	67.6	145	73.7	56	16.1	50	2030	2030
	45.4	87.6	67.6	145	73.7	59.3	17.3	50	2220	2220

Note) The rotation speed limit value in the table (*) applies to models that have no seal and use grease lubrication. With those models using oil lubrication, up to 130% of this value is permitted. With those attached with seals, up to 70% of this value is permitted.

Model CF-A (Cam Followers with Hexagon Socket (Cylindrical Outer Ring))

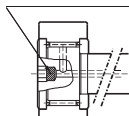


Oil hole is a blind hole



CF12A to 20-1A
CF12AM to 30-2AM

Plug pressed into hexagon socket to render oil hole as a blind hole



CF24A to CF30-2A

Stud diameter	Model No.	Main dimensions													
		Outer diameter	Outer ring width	Threaded				Overall length							Shoulder height f
d		D	C	G	G ₁	B	B ₁	B ₂	B ₃	C ₁	d ₁	d ₂	H*	r _{min}	(Min.)
3	CF 3-A	10	7	M3×0.5	5	8	17	9	—	0.5	—*	—	2 (1.5)	0.2	6.8
4	CF 4-A	12	8	M4×0.7	6	9	20	11	—	0.5	—*	—	2.5 (2)	0.3	8.6
5	CF 5-A	13	9	M5×0.8	7.5	10	23	13	—	0.5	—*	—	3 (2.5)	0.3	9.7
6	CF 6-A	16	11	M6×1	8	12	28	16	—	0.6	—*	—	3	0.3	11
8	CF 8-A	19	11	M8×1.25	10	12	32	20	—	0.6	—*	—	4	0.3	13
10	CF 10-A	22	12	M10×1.25	12	13	36	23	—	0.6	—*	—	5	0.3	15
10	CF 10-1-A	26	12	M10×1.25	12	13	36	23	—	0.6	—*	—	5	0.3	15
12	CF 12-A	30	14	M12×1.5	13	15	40	25	6	0.6	6	3	6	0.6	20
12	CF 12-1-A	32	14	M12×1.5	13	15	40	25	6	0.6	6	3	6	0.6	20
16	CF 16-A	35	18	M16×1.5	17	19.5	52	32.5	8	0.8	6	3	6	0.6	24
18	CF 18-A	40	20	M18×1.5	19	21.5	58	36.5	8	0.8	6	3	6	1	26
20	CF 20-A	52	24	M20×1.5	21	25.5	66	40.5	9	0.8	8	4	8	1	36
20	CF 20-1-A	47	24	M20×1.5	21	25.5	66	40.5	9	0.8	8	4	8	1	36
24	CF 24-A	62	29	M24×1.5	25	30.5	80	49.5	11	0.8	8	4	8	1	40
24	CF 24-1-A	72	29	M24×1.5	25	30.5	80	49.5	11	0.8	8	4	8	1	40
30	CF 30-A	80	35	M30×1.5	32	37	100	63	15	1	8	4	8	1	46
30	CF 30-1-A	85	35	M30×1.5	32	37	100	63	15	1	8	4	8	1	46
30	CF 30-2-A	90	35	M30×1.5	32	37	100	63	15	1	8	4	8	1	46

Note) The seal must be used at temperature of 280°C or below.

Those models marked with "*" do not have a greasing hole and cannot be replenished with grease.

Model number coding

CF12 V M UU HT2/G - L

Model number

No symbol: With cage

V : Full-roller Type

No symbol: Carbon steel

M: Stainless steel

HT : High-temp up to max 300°C

L : Low-temp (-73°C)

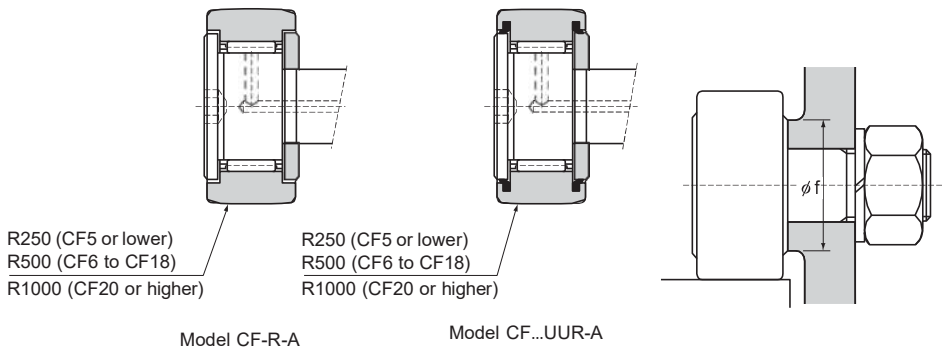
no symbol: without seal

UU : With seal

Note) Full-roller Type is applicable for Stud Diameter 6 to 30.

To download a desired data, search for the corresponding model number in the Technical site.

<https://shm.net.vn/en>



Unit: mm

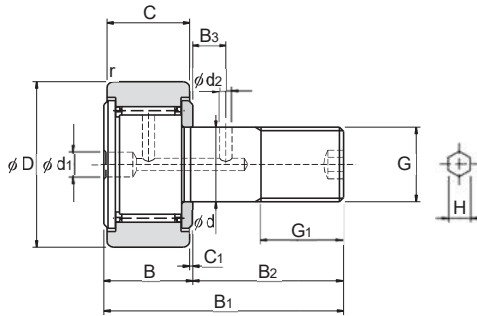
	Basic load rating				Maximum permissible load F ₀ kN	Track load capacity		Rotational speed limit * min ⁻¹	Mass	
	With cage		Full rollers			Cylindrical outer ring kN	Spherical outer ring kN		With cage g	Full rollers g
	C	C ₀	C	C ₀						
	kN	kN	kN	kN						
	1.47	1.18	—	—	0.36	1.37	0.37	250	4.5	—
	2.06	2.05	—	—	0.78	1.76	0.47	220	7.5	—
	3.14	2.77	—	—	1.42	2.25	0.53	190	10.5	—
	3.59	3.58	6.94	8.5	2.11	3.43	1.08	170	18.5	19
	4.17	4.65	8.13	11.2	4.73	4.02	1.37	150	28.5	29
	5.33	6.78	9.42	14.3	5.81	4.7	1.67	130	45	46
	5.33	6.78	9.42	14.3	5.81	5.49	2.06	120	60	61
	7.87	9.79	13.4	19.8	9.37	7.06	2.45	100	95	97
	7.87	9.79	13.4	19.8	9.37	7.45	2.74	90	105	107
	12	18.3	20.6	37.6	17.3	11.2	3.14	80	170	173
	14.7	25.2	25.2	51.3	26.1	14.4	3.72	80	250	255
	20.7	34.8	33.2	64.8	32.1	23.2	8.23	70	460	465
	20.7	34.8	33.2	64.8	32.1	21	7.15	60	385	390
	30.6	53.2	46.7	92.9	49.5	34.2	10.5	50	815	820
	30.6	53.2	46.7	92.9	49.5	39.8	12.9	50	1140	1140
	45.4	87.6	67.6	145	73.7	52.6	14.9	50	1870	1870

GMW High-Temp Cam Followers

Note) “★” indicates that the dimensions in the parentheses in this row apply to stainless steel types.
 The rotation speed limit value in the table (*) applies to models that have no seal and use grease lubrication. With those models using oil lubrication, up to 130% of this value is permitted. With those attached with seals, up to 70% of this value is permitted.

Note) CF24 or larger cam followers with hexagon sockets (symbol - A, excluding SUS models) are constructed with a plug fit- ted into the through hole that links the hexagon socket to the greasing hole (see dimensional drawing φ d₁, φ d₂: to prevent grease leakages from the hexagon socket.
 During greasing, take care to ensure that the plug is not forced out of the hexagon socket by excessive pressure.

Model CF-B (Cam Followers with Hexagon Socket (Cylindrical Outer Ring))



Stud diameter d	Model No.	Main dimensions													
		Outer diameter D	Outer ring width C	Threaded G	G ₁	B	Overall length B ₁	B ₂	B ₃	C ₁	d ₁	d ₂	H*	r _{min}	Shoulder height f (Min.)
12	CF 12-B	30	14	M12x1.5	13	15	40	25	6	0.6	6	3	6	0.6	20
12	CF 12-1-B	32	14	M12x1.5	13	15	40	25	6	0.6	6	3	6	0.6	20
16	CF 16-B	35	18	M16x1.5	17	19.5	52	32.5	8	0.8	6	3	6	0.6	24
18	CF 18-B	40	20	M18x1.5	19	21.5	58	36.5	8	0.8	6	3	6	1	26
20	CF 20-B	52	24	M20x1.5	21	25.5	66	40.5	9	0.8	8	4	8	1	36
20	CF 20-1-B	47	24	M20x1.5	21	25.5	66	40.5	9	0.8	8	4	8	1	36
24	CF 24-B	62	29	M24x1.5	25	30.5	80	49.5	11	0.8	8	4	8	1	40
24	CF 24-1-B	72	29	M24x1.5	25	30.5	80	49.5	11	0.8	8	4	8	1	40
30	CF 30-B	80	35	M30x1.5	32	37	100	63	15	1	8	4	8	1	46
30	CF 30-1-B	85	35	M30x1.5	32	37	100	63	15	1	8	4	8	1	46
30	CF 30-2-B	90	35	M30x1.5	32	37	100	63	15	1	8	4	8	1	46

Model number coding

CF12 V M UU HT2/G - L

Model number

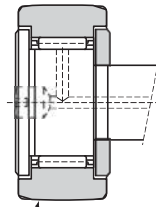
No symbol: With cage
V : Full-roller Type

No symbol: Carbon steel
M : Stainless steel

No symbol: without seal
UU : With seal

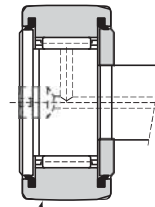
L : Low-temp (-73°C)
HT: High-Temp up to max 300°C

Note) Full-roller Type is applicable for Stud Diameter 12 to 30.



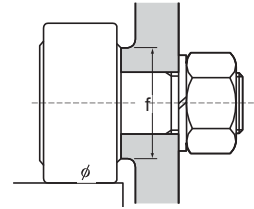
R500 (CF12 to CF18)
R1000 (CF20 or higher)

Model CF-R-B



R500 (CF12 to CF18)
R1000 (CF20 or higher)

Model CF...UUR-B



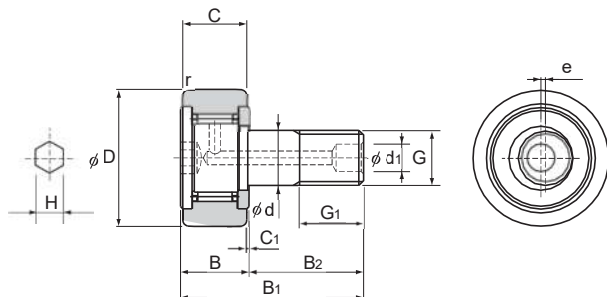
Unit: mm

	Basic load rating				Maximum permissible load F0 kN	Track load capacity		Rotational speed limit * min ⁻¹	Mass	
	With cage		Full rollers			Cylindrical outer ring kN	Spherical outer ring kN		With cage g	Full rollers g
	C	C0	C	C0						
	kN	kN	kN	kN						
	7.87	9.79	13.4	19.8	9.37	7.06	2.45	230	95	97
	7.87	9.79	13.4	19.8	9.37	7.45	2.74	220	105	107
	12	18.3	20.6	37.6	17.3	11.2	3.14	190	170	173
	14.7	25.2	25.2	51.3	26.1	14.4	3.72	180	250	255
	20.7	34.8	33.2	64.8	32.1	23.2	8.23	170	460	465
	20.7	34.8	33.2	64.8	32.1	21	7.15	150	385	390
	30.6	53.2	46.7	92.9	49.5	34.2	10.5	120	815	820
	30.6	53.2	46.7	92.9	49.5	39.8	12.9	110	1140	1140
	45.4	87.6	67.6	145	73.7	52.6	14.9	100	1870	1870
	45.4	87.6	67.6	145	73.7	56	16.1	90	2030	2030
	45.4	87.6	67.6	145	73.7	59.3	17.3	80	2220	2220

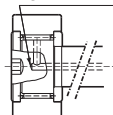
Note) "★" indicates that the dimensions in the parentheses in this row apply to stainless steel types.

The rotation speed limit value in the table (*) applies to models that have no seal and use grease lubrication. With those models using oil lubrication, up to 130% of this value is permitted. With those attached with seals, up to 70% of this value is permitted.

Model CFH-A (Eccentric Cam Followers with Hexagon Socket (Cylindrical Outer Ring))

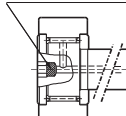


Oil hole is a blind hole



CFH12A to 20-1A
CFH12AM to 30-2AM

Plug pressed into hexagon socket to render oil hole as a blind hole



CFH24A to CFH30-2A

Stud diameter d	Model No.	Main dimensions												
		Outer diameter D	Outer ring width C	Threaded G	G ₁	B	B ₁	B ₂	C ₁	d ₁	Runout e	H*	r _{min}	Shoulder height f (Min.)
5	CFH 5-A	13	9	M5×0.8	7.5	10	23	13	0.5	—*	0.2	3(2.5)	0.3	9.7
6	CFH 6-A	16	11	M6×1	8	12	28	16	0.6	—*	0.25	3	0.3	11
8	CFH 8-A	19	11	M8×1.25	10	12	32	20	0.6	—*	0.25	4	0.3	13
10	CFH 10-A	22	12	M10×1.25	12	13	36	23	0.6	—*	0.3	5	0.3	15
10	CFH 10-1-A	26	12	M10×1.25	12	13	36	23	0.6	—*	0.3	5	0.3	15
12	CFH 12-A	30	14	M12×1.5	13	15	40	25	0.6	6	0.4	6	0.6	20
12	CFH 12-1-A	32	14	M12×1.5	13	15	40	25	0.6	6	0.4	6	0.6	20
16	CFH 16-A	35	18	M16×1.5	17	19.5	52	32.5	0.8	6	0.5	6	0.6	24
18	CFH 18-A	40	20	M18×1.5	19	21.5	58	36.5	0.8	6	0.6	6	1	26
20	CFH 20-A	52	24	M20×1.5	21	25.5	66	40.5	0.8	8	0.7	8	1	36
20	CFH 20-1-A	47	24	M20×1.5	21	25.5	66	40.5	0.8	8	0.7	8	1	36
24	CFH 24-A	62	29	M24×1.5	25	30.5	80	49.5	0.8	8	0.8	8	1	40
24	CFH 24-1-A	72	29	M24×1.5	25	30.5	80	49.5	0.8	8	0.8	8	1	40
30	CFH 30-A	80	35	M30×1.5	32	37	100	63	1	8	1	8	1	46
30	CFH 30-1-A	85	35	M30×1.5	32	37	100	63	1	8	1	8	1	46
30	CFH 30-2-A	90	35	M30×1.5	32	37	100	63	1	8	1	8	1	46

Note) GMW also manufactures types that have a driver groove and a greasing hole on the head. (Model numbers of types with a driver groove do not include symbol "A" in the end.)

The seal must be used at temperature of 280°C or below.

Those models marked with "*" do not have a greasing hole and cannot be replenished with grease.

Model number coding

CFH24-1 V M UU HT2/G - L

Model number

L: Low-temp (-73°C)

No symbol: With cage

HT: High-temp up to max 300°C

V : Full-roller Type

no symbol: without seal

No symbol: Carbon steel

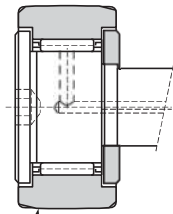
UU : With seal

M : Stainless steel

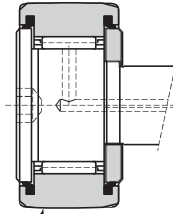
Note) Full-roller Type is applicable for Stud Diameter 6 to 30.

To download a desired data, search for the corresponding model number in the Technical site.

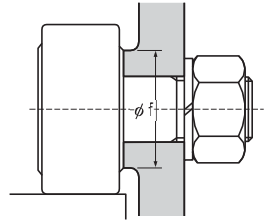
<https://shm.net.vn/en>



R500 (CFH18 or lower)



R1000 (CFH20 or higher)



Model CFH-R

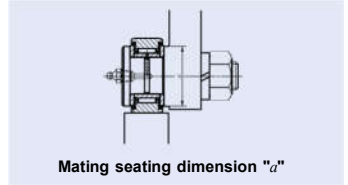
	Basic load rating				Maximum permissible load F_0 kN	Track load capacity		Rotational speed limit * min^{-1}	Mass	
	With cage		Full rollers			Cylindrical outer ring kN	Spherical outer ring kN		With cage g	Full rollers g
	C	C_0	C	C_0						
	kN	kN	kN	kN						
	3.14	2.77	—	—	1.42	2.25	0.53	200	10.5	—
	3.59	3.58	6.94	8.5	2.11	3.43	1.08	190	18.5	19
	4.17	4.65	8.13	11.2	4.73	4.02	1.37	170	28.5	29
	5.33	6.78	9.42	14.3	5.81	4.7	1.67	150	45	46
	5.33	6.78	9.42	14.3	5.81	5.49	2.06	140	60	61
	7.87	9.79	13.4	19.8	9.37	7.06	2.45	120	95	97
	7.87	9.79	13.4	19.8	9.37	7.45	2.74	100	105	107
	12	18.3	20.6	37.6	17.3	11.2	3.14	90	170	173
	14.7	25.2	25.2	51.3	26.1	14.4	3.72	80	250	255
	20.7	34.8	33.2	64.8	32.1	23.2	8.23	70	460	465
	20.7	34.8	33.2	64.8	32.1	21	7.15	60	385	390
	30.6	53.2	46.7	92.9	49.5	34.2	10.5	60	815	820
	30.6	53.2	46.7	92.9	49.5	39.8	12.9	50	1140	1140
	45.4	87.6	67.6	145	73.7	52.6	14.9	50	1870	1870
	45.4	87.6	67.6	145	73.7	56	16.1	50	2030	2030
	45.4	87.6	67.6	145	73.7	59.3	17.3	50	2220	2220

Roller Followers

Some examples of the identification number of Roller Followers are shown below. For applicable roller guide method, seal structure and shape of outer ring outside surface, refer dimension table of each series

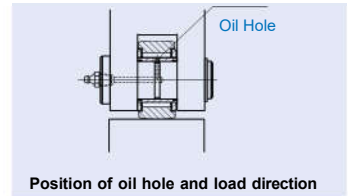
Lubrication

In Sealed Type Roller Followers, Cylindrical Roller Followers and Inch series Roller Followers, is prepacked as the lubricating grease. For Roller Followers without prepacked grease, grease or oil should be supplied through the oil hole of the inner ring for use. If they are used without lubrication, wear of rolling contact surfaces may take place, leading to a short bearing life



Oil Hole

Open type separable Roller Followers have no oil hole. Inner rings of other types of Metric series Roller Followers have an oil hole

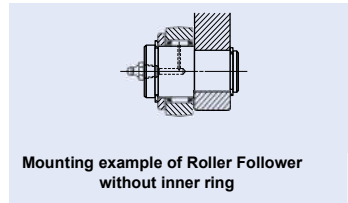


Mounting

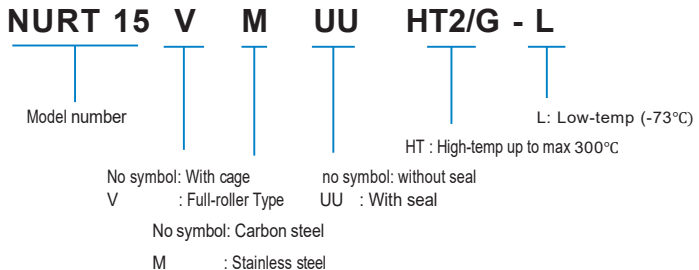
Provided with prepacked grease. In case of shield and sealed types, match the side surface correctly to the mating seating surface indicated by the

When mounting Roller Followers, pay special attention to avoid locating the oil hole of the inner ring within the

When mounting Sealed Type Separable Roller Followers, do not cause the side plates to come off. If they come off, set them again in place taking care to avoid damaging the seal lips.

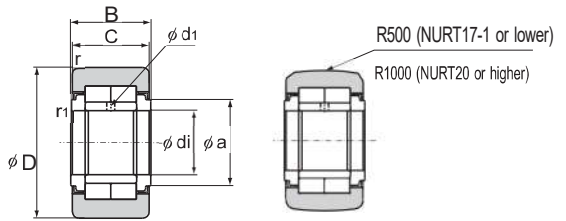


Model number coding



Model NURT (Double-row Cylindrical Rollers)

Optional specifications		Symbol
Material	Carbon steel	No Symbol
Roller guide	Full rollers	No Symbol
Seal	Without seal	No Symbol
Outer ring shape	Cylindrical outer ring	X
	Spherical outer ring	R



Model NURT-X

Model NURT-R

Model No.	Main dimensions								Basic load rating		Maximum permissible load F_0 kN	Track load capacity		Rotational speed limit min ⁻¹	Mass g
	Inner diameter d_i	Outer diameter D	B	C	a	r_{smin}	r_{tmin}	Lubrication hole d_i	C kN	C_0 kN		Cylindrical outer ring kN	Spherical outer ring kN		
NURT 15	15	35	19	18	20	0.6	0.3	2	23.4	27.2	11.5	11.2	3.14	5200	100
NURT 15-1	15	42	19	18	20	0.6	0.3	2	23.4	27.2	27.2	13.3	4.06	5200	160
NURT 17	17	40	21	20	22	1	0.5	2.5	25.2	30.9	21.2	14.4	3.72	4700	150
NURT 17-1	17	47	21	20	22	1	0.5	2.5	25.2	30.9	30.9	16.9	4.72	4700	225
NURT 20	20	47	25	24	27	1	0.5	2.5	38.9	48.9	24.8	21	7.15	3800	245
NURT 20-1	20	52	25	24	27	1	0.5	2.5	38.9	48.9	42.7	23.2	8.23	3800	310
NURT 25	25	52	25	24	31	1	0.5	2.5	43	58.1	27.1	23.2	8.23	3300	285
NURT 25-1	25	62	25	24	31	1	0.5	2.5	43	58.1	58.1	27.6	10.5	3300	450
NURT 30	30	62	29	28	38	1	0.5	2.5	57.5	74.3	34.3	32.9	10.5	2800	465
NURT 30-1	30	72	29	28	38	1	0.5	2.5	57.5	74.3	74.3	38.2	12.9	2800	695
NURT 35	35	72	29	28	44	1.1	0.6	3	63.3	87.5	52.4	38.2	12.9	2300	635
NURT 35-1	35	80	29	28	44	1.1	0.6	3	63.3	87.5	87.5	42.4	14.9	2300	840
NURT 40	40	80	32	30	51	1.1	0.6	3	86.9	124	45.7	44.1	14.9	1900	820
NURT 40-1	40	90	32	30	51	1.1	0.6	3	86.9	124	96.5	49.6	17.3	1900	1130
NURT 45	45	85	32	30	55	1.1	0.6	3	91.7	137	48	46.9	16.1	1700	890
NURT 45-1	45	100	32	30	55	1.1	0.6	3	91.7	137	132	55.2	20.5	1700	1400
NURT 50	50	90	32	30	60	1.1	0.6	3	96.3	149	50.1	49.6	17.3	1500	960
NURT 50-1	50	110	32	30	60	1.1	0.6	3	96.3	149	149	60.7	23.3	1500	1690