

# NTN®

## Bearing Units Stainless Series

CAT. No. 3903-V / E



# Bearing Units Stainless Series



## 1. Features

### Superior corrosion resistance

NTN bearing units in the stainless series feature ball bearings inserted into housings and covers made of stainless steel that provide superior resistance to corrosion as compared to standard series cast iron units.

### Superior dust prevention

Installing a stainless steel dust cover with a rubber seal to the bearing housing provides a high level of protection against foreign matter, and prevents water or dust from coming in direct contact with bearings (a bearing housing designed for the cover is required when installing the cover).

### Clean external appearance

The bearing housing has a smooth casting surface made with NTN's proprietary casting method, which helps to prevent adhesion of foreign matter for a more hygienic operation.

### Filling grease for food processing machinery

#### ① Solid grease for food processing machinery (grease suffix: LP09)

Heat-solidifying grease for food machinery has a high degree of safety as it is composed of food-grade lubricating grease that complies with the NSF (National Sanitation Foundation) H1 standard (incidental contact with food) and ultra high molecular weight polyethylene approved according to an FDA (US Food and Drug Administration) standard. The solid grease is also heat treated so that it solidifies with a large quantity of lubricant remaining inside. The lubricant is fed gradually to the raceway due to the bearing's heat and centrifugal forces, which means minimal leakage and no contamination of the area surrounding the bearing.

There is also minimal grease emulsification and discharge due to the penetration of water, which helps to extend the operating life of the grease.

#### ② Grease for food processing machinery (grease suffix: L791)

Bearing units have a high degree of safety when filled with lubricating grease approved as NSF H1 standard.



Grease for food processing machinery

# Stainless bearing units with superior corrosion resistance and dust-proofing, and filled with grease for food processing machinery

## 2. Materials

Parts		Materials
Bearing	Raceways	Martensite stainless steel (equivalent to SUS440C)
	Rolling element	Martensite stainless steel (SUS440C)
	Slinger, retainer	Austenite stainless steel (SUS304)
	Rubber seal	Nitril rubber
	W shape screw head set screw	Martensite stainless steel (SUS410)
Bearing housing		Austenite stainless steel casting (SUS13)
Cover		Austenite stainless steel (SUS304)
Grease nipple		Austenite stainless steel (SUS304)

## 3. Recommended operating temperature and allowable speed

Grease (suffix)	Operating temperature range (°C)
Solid grease for food processing machinery (LP09)	-10 ~ +100 (temperature under continuous use 80°C or less)
Grease for food processing machinery (L791)	-20 ~ +110

Allowable  $dn$  value: 10000 [ $dn$  = bore diameter  $d$  (mm) x operating speed  $n$  (min<sup>-1</sup>)]

The allowable  $dn$  value is for bearings with solid grease for food processing machinery. Contact NTN if bearings that exceed this figure are required.

## 4. Corrosion resistance

◎ Excellent ○ Good △ Slightly poor ▲ Poor × Very poor

Materials	Condition		Atmosphere		Water		Acid		
	Dry	Wet	Dry	Wet	Natural water	Sodium water	Nitric acid	Sulfuric acid	Hydrochloric acid
Martensite stainless steel (SUS440C, SUS410)	○	△	△	▲	▲	×	×	×	×
Austenite stainless steel (SUS304, SCS13)	◎	◎	◎	○	◎	○	△	△	△
High carbon chromium bearing steel (SUJ2)	△	▲	▲	×	×	×	×	×	×
Carbon steel, cast iron	▲	×	×	×	×	×	×	×	×

Reference) This data has been obtained by observing surface conditions of the materials, and may be improved with the use of anti-corrosion surface treatment.  
Not recommended for use as bearings within liquids.

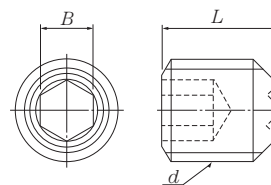
## 5. Set screw

### ① Tightening torque for set screw

Tighten the two set screws uniformly using the torque listed in this table. Over tightening the set screws may cause the inner ring to crack.

Bearing number F-UC	Designation of set screws (W shape screw head)	Tightening torque (Max) N·m {kgf·cm}
204, 205	M5×0.8	3.9 {40}
206	M6×0.75	4.9 {50}
207		5.8 {60}
208~210	M5×1	7.8 {80}

### ② Set screw number



Unit : mm

Set screw number	$d$	$L$	$B$	Bearing number of applicable unit
F-S7W5×0.8×6	M5×0.8	6	2.5	F-UC204~205
F-S7W6×0.75×6.5	M6×0.75	6.5	3	F-UC206~207
F-S7W8×1×8-3	M8×1.0	8	4	F-UC208~210

## 6. Applications

Bearings with solid grease are suitable in applications requiring a clean operating environment, such as food processing and packaging machinery, and areas requiring corrosion resistance.

Note) The NTN stainless series is not suitable for use as low-dust generating bearings.

## 7. Compatibility

Installation dimensions are the same as previous NTN bearing units, and also compatible with bearing units from other Japanese bearing manufacturers.

## 8. Special specifications

The standard grease for this stainless series is food processing grade grease, however, contact NTN for additional information on stainless steel units filled with grease for high temperatures, low dust generation, vacuum and other applications.

Grease specifications are also recommended when used with triple-sealed bearings.

**Handling precautions: cannot be used in situations where the bearings will come in contact with organic solvents (such as acetone, petroleum benzene and refined kerosene).**

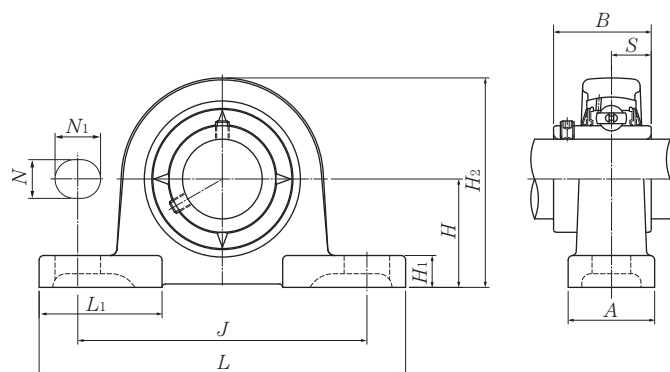
## Pillow type bearing unit ; F-UCPM2 series

### Cylindrical bore, set screw type

(models with the grease suffix L791 are filled with grease for food processing machines, and LP09 are filled with solid grease for food processing machines.)

Example bearing number : **F-UCPM205/LP09**

Grease suffix



Shaft dia. mm inch	Bearing number	Nominal dimensions mm inch											Bolt size	Bearing number	
		H	L	J	A	N	N <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>	B	S			
20	F-UCPM204D1/LP09	33.3	120	95	30	12	14	11	64	42	31	12.7	M10	F-UC204D1/LP09	
	F-UCPM204D1/L791													F-UC204D1/L791	
3/4	F-UCPM204-012D1/LP09	1 5/16	4 23/32	3 3/4	1 3/16	15/32	9/16	7/16	2 17/32	1 21/32	1.2205	0.500	3/8	F-UC204-012D1/LP09	
	F-UCPM204-012D1/L791													F-UC204-012D1/L791	
25	F-UCPM205D1/LP09	36.5	130	105	30	12	14	12	70	42	34.1	14.3	M10	F-UC205D1/LP09	
	F-UCPM205D1/L791													F-UC205D1/L791	
13/16	F-UCPM205-013D1/LP09	1 7/16	5 1/8	4 1/8	1 3/16	15/32	9/16	15/32	2 3/4	1 21/32	1.3425	0.563	3/8	F-UC205-013D1/LP09	
	F-UCPM205-013D1/L791													F-UC205-013D1/L791	
7/8	F-UCPM205-014D1/LP09	1 7/16	5 1/8	4 1/8	1 3/16	15/32	9/16	15/32	2 3/4	1 21/32	1.3425	0.563	3/8	F-UC205-014D1/LP09	
	F-UCPM205-014D1/L791													F-UC205-014D1/L791	
15/16	F-UCPM205-015D1/LP09	1 7/16	5 1/8	4 1/8	1 3/16	15/32	9/16	15/32	2 3/4	1 21/32	1.3425	0.563	3/8	F-UC205-015D1/LP09	
	F-UCPM205-015D1/L791													F-UC205-015D1/L791	
1	F-UCPM205-100D1/LP09	1 7/16	5 1/8	4 1/8	1 3/16	15/32	9/16	15/32	2 3/4	1 21/32	1.3425	0.563	3/8	F-UC205-100D1/LP09	
	F-UCPM205-100D1/L791													F-UC205-100D1/L791	
30	F-UCPM206D1/LP09	42.9	155	121	36	17	20	13	82	54	38.1	15.9	M14	F-UC206D1/LP09	
	F-UCPM206D1/L791													F-UC206D1/L791	
1 1/16	F-UCPM206-101D1/LP09	1 11/16	6 3/32	4 3/4	1 13/32	21/32	25/32	1/2	3 7/32	2 1/8	1.5000	0.626	1/2	F-UC206-101D1/LP09	
	F-UCPM206-101D1/L791													F-UC206-101D1/L791	
1 1/8	F-UCPM206-102D1/LP09	1 11/16	6 3/32	4 3/4	1 13/32	21/32	25/32	1/2	3 7/32	2 1/8	1.5000	0.626	1/2	F-UC206-102D1/LP09	
	F-UCPM206-102D1/L791													F-UC206-102D1/L791	
1 3/16	F-UCPM206-103D1/LP09	1 11/16	6 3/32	4 3/4	1 13/32	21/32	25/32	1/2	3 7/32	2 1/8	1.5000	0.626	1/2	F-UC206-103D1/LP09	
	F-UCPM206-103D1/L791													F-UC206-103D1/L791	
1 1/4	F-UCPM206-104D1/LP09	1 11/16	6 3/32	4 3/4	1 13/32	21/32	25/32	1/2	3 7/32	2 1/8	1.5000	0.626	1/2	F-UC206-104D1/LP09	
	F-UCPM206-104D1/L791													F-UC206-104D1/L791	
35	F-UCPM207D1/LP09	47.6	161	127	38	17	20	14	92	54	42.9	17.5	M14	F-UC207D1/LP09	
	F-UCPM207D1/L791													F-UC207D1/L791	
1 1/4	F-UCPM207-104D1/LP09	1 7/8	6 11/32	5	1 1/2	21/32	25/32	9/16	3 5/8	2 1/8	1.6890	0.689	1/2	F-UC207-104D1/LP09	
	F-UCPM207-104D1/L791													F-UC207-104D1/L791	
1 5/16	F-UCPM207-105D1/LP09	1 7/8	6 11/32	5	1 1/2	21/32	25/32	9/16	3 5/8	2 1/8	1.6890	0.689	1/2	F-UC207-105D1/LP09	
	F-UCPM207-105D1/L791													F-UC207-105D1/L791	
1 3/8	F-UCPM207-106D1/LP09	1 7/8	6 11/32	5	1 1/2	21/32	25/32	9/16	3 5/8	2 1/8	1.6890	0.689	1/2	F-UC207-106D1/LP09	
	F-UCPM207-106D1/L791													F-UC207-106D1/L791	
1 7/16	F-UCPM207-107D1/LP09	1 7/8	6 11/32	5	1 1/2	21/32	25/32	9/16	3 5/8	2 1/8	1.6890	0.689	1/2	F-UC207-107D1/LP09	
	F-UCPM207-107D1/L791													F-UC207-107D1/L791	

Ref 1. For bearings filled with grease for food processing machinery (L791), a lubrication type can also be made if requested. In this case, a supplementary suffix "D1" will be added.



Pillow type bearing unit ; F-UCPM2 series



Stainless steel dust cover and two sided rubber seal (left)  
One closed stainless steel dust cover (right)

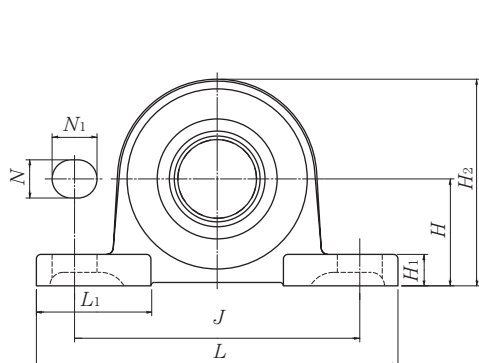
	Housing number	Unit number with pressed stainless dust cover type		Nominal dimensions		Mass (approx.)	
		Open end	Close end	mm $t_1$	inch $A_4$	kg Standard	lb With cover
	PM204	F-FS-UCPM204D1/LP09 F-FS-UCPM204D1/L791 F-FS-UCPM204-012D1/LP09 F-FS-UCPM204-012D1/L791	F-FSM-UCPM204D1/LP09 F-FSM-UCPM204D1/L791 F-FSM-UCPM204-012D1/LP09 F-FSM-UCPM204-012D1/L791	5 $\frac{3}{16}$	51 2	0.6 1.3	0.6 1.3
	PM205	F-FS-UCPM205D1/LP09 F-FS-UCPM205D1/L791 F-FS-UCPM205-013D1/LP09 F-FS-UCPM205-013D1/L791 F-FS-UCPM205-014D1/LP09 F-FS-UCPM205-014D1/L791 F-FS-UCPM205-015D1/LP09 F-FS-UCPM205-015D1/L791 F-FS-UCPM205-100D1/LP09 F-FS-UCPM205-100D1/L791	F-FSM-UCPM205D1/LP09 F-FSM-UCPM205D1/L791 F-FSM-UCPM205-013D1/LP09 F-FSM-UCPM205-013D1/L791 F-FSM-UCPM205-014D1/LP09 F-FSM-UCPM205-014D1/L791 F-FSM-UCPM205-015D1/LP09 F-FSM-UCPM205-015D1/L791 F-FSM-UCPM205-100D1/LP09 F-FSM-UCPM205-100D1/L791	5 $\frac{3}{16}$	55 $2\frac{5}{32}$	0.7 1.5	0.7 1.5
	PM206	F-FS-UCPM206D1/LP09 F-FS-UCPM206D1/L791 F-FS-UCPM206-101D1/LP09 F-FS-UCPM206-101D1/L791 F-FS-UCPM206-102D1/LP09 F-FS-UCPM206-102D1/L791 F-FS-UCPM206-103D1/LP09 F-FS-UCPM206-103D1/L791 F-FS-UCPM206-104D1/LP09 F-FS-UCPM206-104D1/L791	F-FSM-UCPM206D1/LP09 F-FSM-UCPM206D1/L791 F-FSM-UCPM206-101D1/LP09 F-FSM-UCPM206-101D1/L791 F-FSM-UCPM206-102D1/LP09 F-FSM-UCPM206-102D1/L791 F-FSM-UCPM206-103D1/LP09 F-FSM-UCPM206-103D1/L791 F-FSM-UCPM206-104D1/LP09 F-FSM-UCPM206-104D1/L791	5 $\frac{3}{16}$	60 $2\frac{3}{8}$	1.1 2.4	1.1 2.4
	PM207	F-FS-UCPM207D1/LP09 F-FS-UCPM207D1/L791 F-FS-UCPM207-104D1/LP09 F-FS-UCPM207-104D1/L791 F-FS-UCPM207-105D1/LP09 F-FS-UCPM207-105D1/L791 F-FS-UCPM207-106D1/LP09 F-FS-UCPM207-106D1/L791 F-FS-UCPM207-107D1/LP09 F-FS-UCPM207-107D1/L791	F-FSM-UCPM207D1/LP09 F-FSM-UCPM207D1/L791 F-FSM-UCPM207-104D1/LP09 F-FSM-UCPM207-104D1/L791 F-FSM-UCPM207-105D1/LP09 F-FSM-UCPM207-105D1/L791 F-FSM-UCPM207-106D1/LP09 F-FSM-UCPM207-106D1/L791 F-FSM-UCPM207-107D1/LP09 F-FSM-UCPM207-107D1/L791	5 $\frac{3}{16}$	69 $2\frac{23}{32}$	1.3 2.9	1.5 3.3



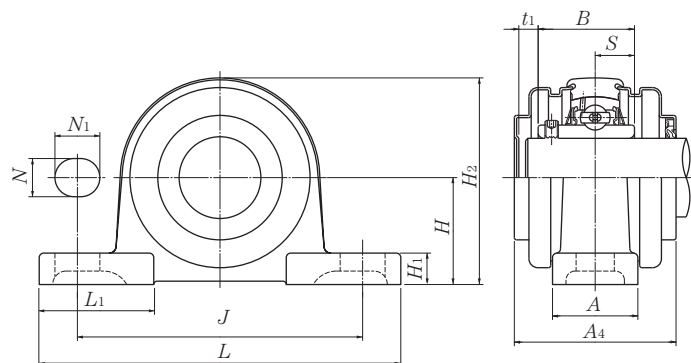
## Pillow type bearing unit ; F-UCPM2 series

### Cylindrical bore, set screw type

(models with the grease suffix L791 are filled with grease for food processing machines, and LP09 are filled with solid grease for food processing machines.)



Stainless steel dust cover type (Open end)



Stainless steel dust cover type (Close end)

Shaft dia. mm inch	Bearing number	Nominal dimensions mm inch											Bolt size	Bearing number	
		H	L	J	A	N	N <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>	B	S			
40	F-UCPM208D1/LP09	49.2	171	137	40	17	20	14	98	52	49.2	19	M14	F-UC208D1/LP09	
	F-UCPM208D1/L791													F-UC208D1/L791	
1 1/8	F-UCPM208-108D1/LP09	1 15/16	6 13/32	5 13/32	1 9/16	2 1/32	2 5/32	9/16	3 27/32	2 1/16	1.9370	0.748	1/2	F-UC208-108D1/LP09	
	F-UCPM208-108D1/L791													F-UC208-108D1/L791	
1 7/16	F-UCPM208-109D1/LP09													F-UC208-109D1/LP09	
	F-UCPM208-109D1/L791													F-UC208-109D1/L791	
45	F-UCPM209D1/LP09	54	180	146	40	17	20	14	105	60	49.2	19	M14	F-UC209D1/LP09	
	F-UCPM209D1/L791													F-UC209D1/L791	
1 5/8	F-UCPM209-110D1/LP09	2 1/8	7 3/32	5 3/4	1 9/16	2 1/32	2 5/32	9/16	4 1/8	2 3/8	1.9370	0.748	1/2	F-UC209-110D1/LP09	
	F-UCPM209-110D1/L791													F-UC209-110D1/L791	
1 11/16	F-UCPM209-111D1/LP09													F-UC209-111D1/LP09	
	F-UCPM209-111D1/L791													F-UC209-111D1/L791	
1 3/4	F-UCPM209-112D1/LP09													F-UC209-112D1/LP09	
	F-UCPM209-112D1/L791													F-UC209-112D1/L791	
50	F-UCPM210D1/LP09	57.2	195	159	45	19	22	16	114	65	51.6	19	M16	F-UC210D1/LP09	
	F-UCPM210D1/L791													F-UC210D1/L791	
1 13/16	F-UCPM210-113D1/LP09	1 1/4	7 11/16	6 1/4	1 25/32	3/4	7/8	5/8	4 1/2	2 9/16	2.0315	0.748	5/8	F-UC210-113D1/LP09	
	F-UCPM210-113D1/L791													F-UC210-113D1/L791	
1 7/8	F-UCPM210-114D1/LP09													F-UC210-114D1/LP09	
	F-UCPM210-114D1/L791													F-UC210-114D1/L791	
1 15/16	F-UCPM210-115D1/LP09													F-UC210-115D1/LP09	
	F-UCPM210-115D1/L791													F-UC210-115D1/L791	
2	F-UCPM210-200D1/LP09													F-UC210-200D1/LP09	
	F-UCPM210-200D1/L791													F-UC210-200D1/L791	

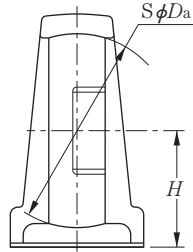
Ref 1. For bearings filled with grease for food processing machinery (L791), a lubrication type can also be made if requested. In this case, a supplementary suffix "D1" will be added.

## Housing tolerances for units (JIS B 1559)

### 1. Tolerances for spherical bore of housing

Unit :  $\mu\text{m}$

Housing number PM, FM	$D_a$ Deviations $\Delta D_{\text{am}}$			
	Tolerance class J7		Tolerance class K7	
	high	low	high	low
204	—	—	+7	−18
205	—	—	+9	−21
206~208	+18	−12	—	—
209, 210	+22	−13	—	—



### 2. Center height tolerances for pillow type bearing unit

Unit : mm

Housing number PM	H deviation $\Delta H_s$
204~210	$\pm 0.15$

Housing number	Unit number with pressed stainless dust cover type		Nominal dimensions mm inch		Mass (approx.) kg lb	
	Open end	Close end	$t_1$	$A_4$	Standard	With cover
PM208	F-FS-UCPM208D1/LP09	F-FSM-UCPM208D1/LP09	6	80	1.7	1.8
	F-FS-UCPM208D1/L791	F-FSM-UCPM208D1/L791				
	F-FS-UCPM208-108D1/LP09	F-FSM-UCPM208-108D1/LP09				
	F-FS-UCPM208-108D1/L791	F-FSM-UCPM208-108D1/L791	$\frac{7}{32}$	$3\frac{5}{32}$	3.7	4.0
	F-FS-UCPM208-109D1/LP09	F-FSM-UCPM208-109D1/LP09				
	F-FS-UCPM208-109D1/L791	F-FSM-UCPM208-109D1/L791				
PM209	F-FS-UCPM209D1/LP09	F-FSM-UCPM209D1/LP09	6	80	1.8	2.0
	F-FS-UCPM209D1/L791	F-FSM-UCPM209D1/L791				
	F-FS-UCPM209-110D1/LP09	F-FSM-UCPM209-110D1/LP09				
	F-FS-UCPM209-110D1/L791	F-FSM-UCPM209-110D1/L791	$\frac{7}{32}$	$3\frac{5}{32}$	4.0	4.4
	F-FS-UCPM209-111D1/LP09	F-FSM-UCPM209-111D1/LP09				
	F-FS-UCPM209-111D1/L791	F-FSM-UCPM209-111D1/L791				
	F-FS-UCPM209-112D1/LP09	F-FSM-UCPM209-112D1/LP09				
	F-FS-UCPM209-112D1/L791	F-FSM-UCPM209-112D1/L791				
PM210	F-FS-UCPM210D1/LP09	F-FSM-UCPM210D1/LP09	6	85	2.4	2.6
	F-FS-UCPM210D1/L791	F-FSM-UCPM210D1/L791				
	F-FS-UCPM210-113D1/LP09	F-FSM-UCPM210-113D1/LP09				
	F-FS-UCPM210-113D1/L791	F-FSM-UCPM210-113D1/L791	$\frac{7}{32}$	$3\frac{11}{32}$	5.3	5.7
	F-FS-UCPM210-114D1/LP09	F-FSM-UCPM210-114D1/LP09				
	F-FS-UCPM210-114D1/L791	F-FSM-UCPM210-114D1/L791				
	F-FS-UCPM210-115D1/LP09	F-FSM-UCPM210-115D1/LP09				
	F-FS-UCPM210-115D1/L791	F-FSM-UCPM210-115D1/L791				
	F-FS-UCPM210-200D1/LP09	F-FSM-UCPM210-200D1/LP09				
	F-FS-UCPM210-200D1/L791	F-FSM-UCPM210-200D1/L791				

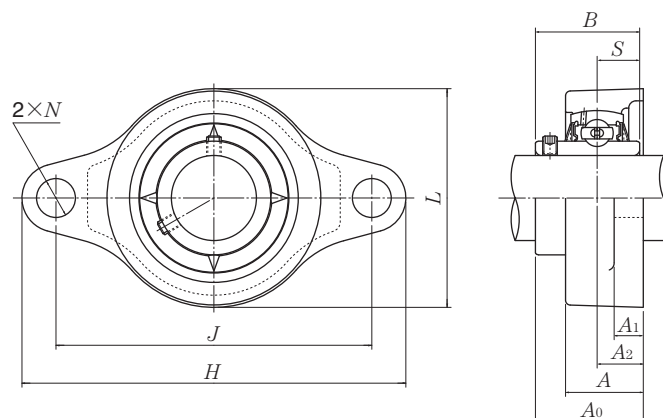
## Flange type bearing unit ; F-UCFM2 series

### Cylindrical bore, set screw type

(models with the grease suffix L791 are filled with grease for food processing machines, and LP09 are filled with solid grease for food processing machines.)

Example bearing number : **F-UCFM205/LP09**

Grease suffix



Shaft dia. mm inch	Bearing number	Nominal dimensions mm inch										Bolt size	Bearing number	
		H	J	A <sub>2</sub>	A <sub>1</sub>	A	N	L	A <sub>0</sub>	B	S			
20	F-UCFM204D1/LP09 F-UCFM204D1/L791	112	90	15	10	25.5	12	60	33.3	31	12.7	M10	F-UC204D1/LP09 F-UC204D1/L791	
3/4	F-UCFM204-012D1/LP09 F-UCFM204-012D1/L791	4 13/32	3 35/64	19/32	13/32	1	15/32	2 3/8	1 5/16	1.2205	0.500	3/8	F-UC204-012D1/LP09 F-UC204-012D1/L791	
25	F-UCFM205D1/LP09 F-UCFM205D1/L791	127	99	16	10	26.5	16	68	35.8	34.1	14.3	M14	F-UC205D1/LP09 F-UC205D1/L791	
13/16	F-UCFM205-013D1/LP09 F-UCFM205-013D1/L791												F-UC205-013D1/LP09 F-UC205-013D1/L791	
7/8	F-UCFM205-014D1/LP09 F-UCFM205-014D1/L791												F-UC205-014D1/LP09 F-UC205-014D1/L791	
15/16	F-UCFM205-015D1/LP09 F-UCFM205-015D1/L791												F-UC205-015D1/LP09 F-UC205-015D1/L791	
1	F-UCFM205-100D1/LP09 F-UCFM205-100D1/L791												F-UC205-100D1/LP09 F-UC205-100D1/L791	
30	F-UCFM206D1/LP09 F-UCFM206D1/L791	145	117	18	10	30	16	80	40.2	38.1	15.9	M14	F-UC206D1/LP09 F-UC206D1/L791	
1 1/16	F-UCFM206-101D1/LP09 F-UCFM206-101D1/L791												F-UC206-101D1/LP09 F-UC206-101D1/L791	
1 1/8	F-UCFM206-102D1/LP09 F-UCFM206-102D1/L791												F-UC206-102D1/LP09 F-UC206-102D1/L791	
1 3/16	F-UCFM206-103D1/LP09 F-UCFM206-103D1/L791												F-UC206-103D1/LP09 F-UC206-103D1/L791	
1 1/4	F-UCFM206-104D1/LP09 F-UCFM206-104D1/L791												F-UC206-104D1/LP09 F-UC206-104D1/L791	
35	F-UCFM207D1/LP09 F-UCFM207D1/L791	47.6	130	19	12	32	16	90	44.4	42.9	17.5	M14	F-UC207D1/LP09 F-UC207D1/L791	
1 1/4	F-UCFM207-104D1/LP09 F-UCFM207-104D1/L791												F-UC207-104D1/LP09 F-UC207-104D1/L791	
1 5/16	F-UCFM207-105D1/LP09 F-UCFM207-105D1/L791												F-UC207-105D1/LP09 F-UC207-105D1/L791	
1 3/8	F-UCFM207-106D1/LP09 F-UCFM207-106D1/L791												F-UC207-106D1/LP09 F-UC207-106D1/L791	
1 7/16	F-UCFM207-107D1/LP09 F-UCFM207-107D1/L791												F-UC207-107D1/LP09 F-UC207-107D1/L791	

Ref 1. For bearings filled with grease for food processing machinery (L791), a lubrication type can also be made if requested. In this case, a supplementary suffix "D1" will be added.





Flange type bearing unit ; F-UCFM2 series



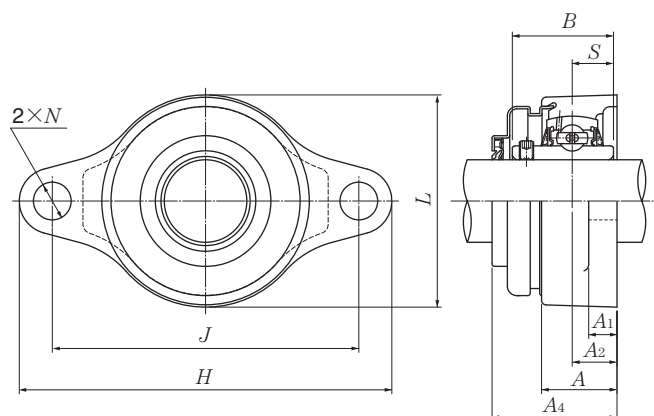
Stainless steel dust cover and rubber seal (left)  
Closed stainless steel dust cover (right)

	Housing number	Unit number with pressed stainless dust cover type		Nominal dimensions		Mass (approx.)	
		Open end	Close end	mm $t_1$	inch $A_4$	kg Standard	lb With cover
	FM204	F-FS-UCFM204D1/LP09 F-FS-UCFM204D1/L791 F-FS-UCFM204-012D1/LP09 F-FS-UCFM204-012D1/L791	F-FSM-UCFM204D1/LP09 F-FSM-UCFM204D1/L791 F-FSM-UCFM204-012D1/LP09 F-FSM-UCFM204-012D1/L791	5 $\frac{3}{16}$	40.5 $1 \frac{19}{32}$	0.4 0.9	0.4 1.9
	FM205	F-FS-UCFM205D1/LP09 F-FS-UCFM205D1/L791 F-FS-UCFM205-013D1/LP09 F-FS-UCFM205-013D1/L791 F-FS-UCFM205-014D1/LP09 F-FS-UCFM205-014D1/L791 F-FS-UCFM205-015D1/LP09 F-FS-UCFM205-015D1/L791 F-FS-UCFM205-100D1/LP09 F-FS-UCFM205-100D1/L791	F-FSM-UCFM205D1/LP09 F-FSM-UCFM205D1/L791 F-FSM-UCFM205-013D1/LP09 F-FSM-UCFM205-013D1/L791 F-FSM-UCFM205-014D1/LP09 F-FSM-UCFM205-014D1/L791 F-FSM-UCFM205-015D1/LP09 F-FSM-UCFM205-015D1/L791 F-FSM-UCFM205-100D1/LP09 F-FSM-UCFM205-100D1/L791	6.5 $\frac{1}{4}$	44 $1 \frac{23}{32}$	0.9 1.3	0.7 1.3
	FM206	F-FS-UCFM206D1/LP09 F-FS-UCFM206D1/L791 F-FS-UCFM206-101D1/LP09 F-FS-UCFM206-101D1/L791 F-FS-UCFM206-102D1/LP09 F-FS-UCFM206-102D1/L791 F-FS-UCFM206-103D1/LP09 F-FS-UCFM206-103D1/L791 F-FS-UCFM206-104D1/LP09 F-FS-UCFM206-104D1/L791	F-FSM-UCFM206D1/LP09 F-FSM-UCFM206D1/L791 F-FSM-UCFM206-101D1/LP09 F-FSM-UCFM206-101D1/L791 F-FSM-UCFM206-102D1/LP09 F-FSM-UCFM206-102D1/L791 F-FSM-UCFM206-103D1/LP09 F-FSM-UCFM206-103D1/L791 F-FSM-UCFM206-104D1/LP09 F-FSM-UCFM206-104D1/L791	6 $\frac{7}{32}$	48 $1 \frac{7}{8}$	0.8 1.8	1.1 2.0
	FM207	F-FS-UCFM207D1/LP09 F-FS-UCFM207D1/L791 F-FS-UCFM207-104D1/LP09 F-FS-UCFM207-104D1/L791 F-FS-UCFM207-105D1/LP09 F-FS-UCFM207-105D1/L791 F-FS-UCFM207-106D1/LP09 F-FS-UCFM207-106D1/L791 F-FS-UCFM207-107D1/LP09 F-FS-UCFM207-107D1/L791	F-FSM-UCFM207D1/LP09 F-FSM-UCFM207D1/L791 F-FSM-UCFM207-104D1/LP09 F-FSM-UCFM207-104D1/L791 F-FSM-UCFM207-105D1/LP09 F-FSM-UCFM207-105D1/L791 F-FSM-UCFM207-106D1/LP09 F-FSM-UCFM207-106D1/L791 F-FSM-UCFM207-107D1/LP09 F-FSM-UCFM207-107D1/L791	6.5 $\frac{1}{4}$	53.5 $2 \frac{3}{32}$	11 2.4	1.5 2.7

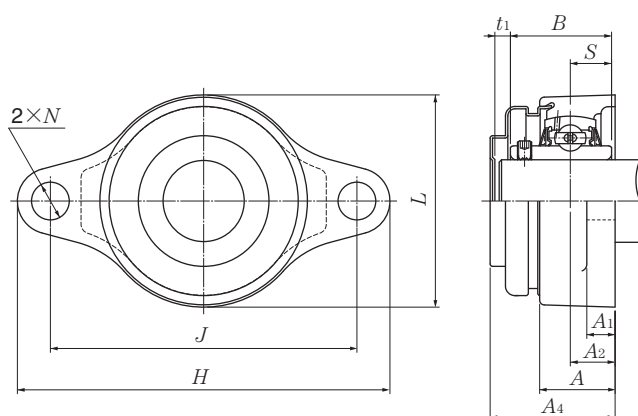
## Flange type bearing unit ; F-UCFM2 series

### Cylindrical bore, set screw type

(models with the grease suffix L791 are filled with grease for food processing machines, and LP09 are filled with solid grease for food processing machines.)



Stainless steel dust cover type (Open end)



Stainless steel dust cover type (Close end)

Shaft dia. mm inch	Bearing number	Nominal dimensions mm inch										Bolt size	Bearing number	
		H	J	A <sub>2</sub>	A <sub>1</sub>	A	N	L	A <sub>0</sub>	B	S			
40	F-UCFM208D1/LP09 F-UCFM208D1/L791	172 6 <sup>23</sup> / <sub>32</sub>	144 5 <sup>43</sup> / <sub>64</sub>	21 53 <sup>53</sup> / <sub>64</sub>	12 15 <sup>15</sup> / <sub>32</sub>	35 1 <sup>3</sup> / <sub>8</sub>	16 5 <sup>5</sup> / <sub>8</sub>	100 3 <sup>15</sup> / <sub>16</sub>	51.2 2 <sup>1</sup> / <sub>64</sub>	49.2 1.9370	19 0.748	M14 1/2	F-UC208D1/LP09 F-UC208D1/L791	
1 <sup>1</sup> / <sub>8</sub>	F-UCFM208-108D1/LP09 F-UCFM208-108D1/L791												F-UC208-108D1/LP09 F-UC208-108D1/L791	
1 <sup>7</sup> / <sub>16</sub>	F-UCFM208-109D1/LP09 F-UCFM208-109D1/L791												F-UC208-109D1/LP09 F-UC208-109D1/L791	
45	F-UCFM209D1/LP09 F-UCFM209D1/L791	180 7 <sup>3</sup> / <sub>32</sub>	148 5 <sup>53</sup> / <sub>64</sub>	22 55 <sup>55</sup> / <sub>64</sub>	13 1 <sup>13</sup> / <sub>32</sub>	36 1 <sup>13</sup> / <sub>32</sub>	19 3 <sup>3</sup> / <sub>4</sub>	108 4 <sup>1</sup> / <sub>4</sub>	52.2 2 <sup>1</sup> / <sub>16</sub>	49.2 1.9370	19 0.748	M16 5/8	F-UC209D1/LP09 F-UC209D1/L791	
1 <sup>5</sup> / <sub>8</sub>	F-UCFM209-110D1/LP09 F-UCFM209-110D1/L791												F-UC209-110D1/LP09 F-UC209-110D1/L791	
1 <sup>11</sup> / <sub>16</sub>	F-UCFM209-111D1/LP09 F-UCFM209-111D1/L791												F-UC209-111D1/LP09 F-UC209-111D1/L791	
1 <sup>3</sup> / <sub>4</sub>	F-UCFM209-112D1/LP09 F-UCFM209-112D1/L791												F-UC209-112D1/LP09 F-UC209-112D1/L791	
50	F-UCFM210D1/LP09 F-UCFM210D1/L791	189 7 <sup>7</sup> / <sub>16</sub>	157 6 <sup>3</sup> / <sub>16</sub>	22 55 <sup>55</sup> / <sub>64</sub>	13 1 <sup>15</sup> / <sub>32</sub>	37 1 <sup>15</sup> / <sub>32</sub>	19 3 <sup>3</sup> / <sub>4</sub>	115 4 <sup>17</sup> / <sub>32</sub>	54.6 2 <sup>5</sup> / <sub>32</sub>	51.6 2.0315	19 0.748	M16 5/8	F-UC210D1/LP09 F-UC210D1/L791	
1 <sup>13</sup> / <sub>16</sub>	F-UCFM210-113D1/LP09 F-UCFM210-113D1/L791												F-UC210-113D1/LP09 F-UC210-113D1/L791	
1 <sup>7</sup> / <sub>8</sub>	F-UCFM210-114D1/LP09 F-UCFM210-114D1/L791												F-UC210-114D1/LP09 F-UC210-114D1/L791	
1 <sup>15</sup> / <sub>16</sub>	F-UCFM210-115D1/LP09 F-UCFM210-115D1/L791												F-UC210-115D1/LP09 F-UC210-115D1/L791	
2	F-UCFM210-200D1/LP09 F-UCFM210-200D1/L791												F-UC210-200D1/LP09 F-UC210-200D1/L791	

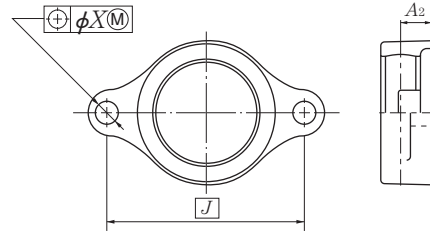
Ref 1. For bearings filled with grease for food processing machinery (L791), a lubrication type can also be made if requested. In this case, a supplementary suffix "D1" will be added.

## Housing tolerances for units (JIS B 1559)

### 3. Tolerances for flange type housing

Unit : mm

Housing number PM	Deviations $\Delta A_{2s}$	Tolerances for mounting bolt holes $X$
204~210	$\pm 0.5$	0.7



Housing number	Unit number with pressed stainless dust cover type		Nominal dimensions mm inch		Mass (approx.) kg lb	
	Open end	Close end	$t_1$	$A_4$	Standard	With cover
FM208	F-FS-UCFM208D1/LP09	F-FSM-UCFM208D1/LP09	7	61	1.4	1.5
	F-FS-UCFM208D1/L791	F-FSM-UCFM208D1/L791				
	F-FS-UCFM208-108D1/LP09	F-FSM-UCFM208-108D1/LP09				
	F-FS-UCFM208-108D1/L791	F-FSM-UCFM208-108D1/L791	$\frac{9}{32}$	$2 \frac{13}{32}$	3.1	3.3
	F-FS-UCFM208-109D1/LP09	F-FSM-UCFM208-109D1/LP09				
	F-FS-UCFM208-109D1/L791	F-FSM-UCFM208-109D1/L791				
FM209	F-FS-UCFM209D1/LP09	F-FSM-UCFM209D1/LP09	7	62	1.8	1.9
	F-FS-UCFM209D1/L791	F-FSM-UCFM209D1/L791				
	F-FS-UCFM209-110D1/LP09	F-FSM-UCFM209-110D1/LP09				
	F-FS-UCFM209-110D1/L791	F-FSM-UCFM209-110D1/L791				
	F-FS-UCFM209-111D1/LP09	F-FSM-UCFM209-111D1/LP09	$\frac{9}{32}$	$2 \frac{7}{16}$	4.0	4.2
	F-FS-UCFM209-111D1/L791	F-FSM-UCFM209-111D1/L791				
	F-FS-UCFM209-112D1/LP09	F-FSM-UCFM209-112D1/LP09				
FM210	F-FS-UCFM210D1/LP09	F-FSM-UCFM210D1/LP09	7	64.5	1.9	2.0
	F-FS-UCFM210D1/L791	F-FSM-UCFM210D1/L791				
	F-FS-UCFM210-113D1/LP09	F-FSM-UCFM210-113D1/LP09				
	F-FS-UCFM210-113D1/L791	F-FSM-UCFM210-113D1/L791				
	F-FS-UCFM210-114D1/LP09	F-FSM-UCFM210-114D1/LP09				
	F-FS-UCFM210-114D1/L791	F-FSM-UCFM210-114D1/L791	$\frac{9}{32}$	$2 \frac{17}{32}$	4.2	4.4
	F-FS-UCFM210-115D1/LP09	F-FSM-UCFM210-115D1/LP09				
	F-FS-UCFM210-115D1/L791	F-FSM-UCFM210-115D1/L791				
	F-FS-UCFM210-200D1/LP09	F-FSM-UCFM210-200D1/LP09				
	F-FS-UCFM210-200D1/L791	F-FSM-UCFM210-200D1/L791				

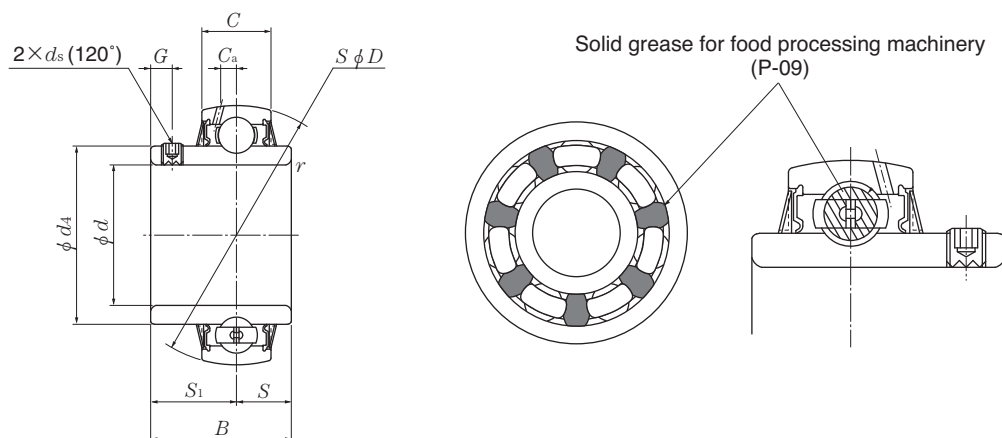
# Ball bearings for stainless units ; F-UC2 series

## Cylindrical bore, set screw type

(models with the grease suffix L791 are filled with grease for food processing machines, and LP09 are filled with solid grease for food processing machines.)

Example bearing number : **F-UC205D1/LP09**

Grease suffix



Shaft dia.  mm inch	Bearing number	Nominal dimensions mm    inch											Basic load rating <sup>1)</sup>		Factor	Mass (approx.)
		<i>d</i>	<i>D</i>	<i>B</i>	<i>C</i>	<i>r</i> <sub>s min</sub>	<i>S</i>	<i>S</i> <sub>1</sub>	<i>G</i>		<i>d</i> <sub>s</sub>	<i>C</i> <sub>a</sub>	<i>d</i> <sub>4</sub>	dynamic <i>C</i> <sub>r</sub> (kN)		
20   3/4	F-UC204D1/LP09	20	47	31	17	1	12.7	18.3	4.5	M5×0.8	3.8	29.6	9 900	6 650	13.2	0.17
	F-UC204D1/L791															
	F-UC204-012D1/LP09	0.7500	1.8504	1.2205	0.6693	0.039	0.500	0.720	0.177	No.10-32UNF	0.150	1.1654	2 220	1 500		0.39
	F-UC204-012D1/L791															
25  13/16  7/8  15/16  1	F-UC205D1/LP09	25	52	34.1	17	1	14.3	19.8	5	M5×0.8	4	33.9	10 800	7 850	13.9	0.20
	F-UC205D1/L791															
	F-UC205-013D1/LP09	0.8125	2.0472	1.3425	0.6693	0.039	0.563	0.780	0.197	No.10-32UNF	0.157	1.3346	2 430	1 770		0.53
	F-UC205-013D1/L791															
	F-UC205-014D1/LP09	0.8750	2.0472	1.3425	0.6693	0.039	0.563	0.780	0.197	No.10-32UNF	0.157	1.3346	2 430	1 770		0.51
	F-UC205-014D1/L791															
	F-UC205-015D1/LP09	0.9375	2.0472	1.3425	0.6693	0.039	0.563	0.780	0.197	No.10-32UNF	0.157	1.3346	2 430	1 770		0.46
	F-UC205-015D1/L791															
	F-UC205-100D1/LP09	1.0000	2.0472	1.3425	0.6693	0.039	0.563	0.780	0.197	No.10-32UNF	0.157	1.3346	2 430	1 770		0.44
	F-UC205-100D1/L791															
30  1 1/16  1 1/8  1 3/16  1 1/4	F-UC206D1/LP09	30	62	38.1	19	1	15.9	22.2	5	M6×0.75	4.9	40.8	15 000	11 300	13.8	0.30
	F-UC206D1/L791															
	F-UC206-101D1/LP09	1.0625	2.4409	1.5000	0.7480	0.039	0.626	0.874	0.197	1/4-28UNF	0.193	1.6063	3 350	2 540		0.82
	F-UC206-101D1/L791															
	F-UC206-102D1/LP09	1.1250	2.4409	1.5000	0.7480	0.039	0.626	0.874	0.197	1/4-28UNF	0.193	1.6063	3 350	2 540		0.77
	F-UC206-102D1/L791															
	F-UC206-103D1/LP09	1.1875	2.4409	1.5000	0.7480	0.039	0.626	0.874	0.197	1/4-28UNF	0.193	1.6063	3 350	2 540		0.73
	F-UC206-103D1/L791															
	F-UC206-104D1/LP09	1.2500	2.4409	1.5000	0.7480	0.039	0.626	0.874	0.197	1/4-28UNF	0.193	1.6063	3 350	2 540		0.66
	F-UC206-104D1/L791															
35  1 1/4  1 5/16  1 3/8  1 7/16	F-UC207D1/LP09	35	72	42.9	20	1.5	17.5	25.4	6	M6×0.75	5.4	46.8	19 700	15 300	13.8	0.40
	F-UC207D1/L791															
	F-UC207-104D1/LP09	1.2500	2.8346	1.6890	0.7874	0.059	0.689	1.000	0.236	1/4-28UNF	0.213	1.8425	4 450	3 450		1.21
	F-UC207-104D1/L791															
	F-UC207-105D1/LP09	1.3125	2.8346	1.6890	0.7874	0.059	0.689	1.000	0.236	1/4-28UNF	0.213	1.8425	4 450	3 450		1.15
	F-UC207-105D1/L791															
	F-UC207-106D1/LP09	1.3750	2.8346	1.6890	0.7874	0.059	0.689	1.000	0.236	1/4-28UNF	0.213	1.8425	4 450	3 450		1.08
	F-UC207-106D1/L791															
	F-UC207-107D1/LP09	1.4375	2.8346	1.6890	0.7874	0.059	0.689	1.000	0.236	1/4-28UNF	0.213	1.8425	4 450	3 450		1.01
	F-UC207-107D1/L791															

Note 1) The basic dynamic load rating  $C_r$  of the bearing differs to ball bearings for conventional bearing steel units.

Ref 1. Bearings with solid grease (LP09) specifications might not be able to be refilled.



**Solid grease bearing  
for food processing machinery**

## 1. Inner ring tolerances

Unit :  $\mu\text{m}$

Bearing number F-UC	Bore diameter deviations $\Delta d_{\text{mp}}$		Bore diameter variations $\Delta V_{\text{dp}}$	Width variations $\Delta B_s$ (ref.)		Radial runout $K_{\text{ia}}$ (ref.)
	high	low	max.	high	low	max.
204~206	+18	0	12	0	-120	18
207~210	+21		14			20

## 1. Outer ring tolerances

Unit :  $\mu\text{m}$

Bearing number F-UC	Outside diameter deviations $\Delta D_{\text{m}}$		Radial runout $K_{\text{ea}}$ (ref.)
	high	low	max.
204	0	-11	20
205~208		-13	25
209, 210		-15	35

Shaft dia.  mm inch	Bearing number	Nominal dimensions mm    inch											Basic load rating <sup>1)</sup>		Factor  $f_0$	Mass (approx.)  kg lb
		$d$	$D$	$B$	$C$	$r_s$ min	$S$	$S_1$	$G$	$d_s$	$C_a$	$d_4$	dynamic $C_R$ (kN)	static $C_{0r}$ (kN)		
40	F-UC208D1/LP09	40	80	49.2	21	1.5	19	30.2	8	M8×1	6	53	22 400	17 800	14	0.60
	F-UC208D1/L791															
1 $\frac{3}{8}$	F-UC208-108D1/LP09	1.5000	3.1496	1.9370	0.8268	0.059	0.748	1.189	0.315	5/16-24UNF	0.236	2.0866	5 050	4 000		1.52
	F-UC208-108D1/L791															
1 $\frac{7}{16}$	F-UC208-109D1/LP09	1.5625													1.46	
	F-UC208-109D1/L791															
45	F-UC209D1/LP09	45	85	49.2	22	1.5	19	30.2	8	M8×1	6.1	57.5	25 200	20 400	14.1	0.68
	F-UC209D1/L791															
1 $\frac{5}{8}$	F-UC209-110D1/LP09	1.6250	3.3465	1.9370	0.8661	0.059	0.748	1.189	0.315	5/16-24UNF	0.240	2.2638	5 650	4 600		1.76
	F-UC209-110D1/L791															
1 $\frac{11}{16}$	F-UC209-111D1/LP09	1.6875													1.68	
	F-UC209-111D1/L791															
1 $\frac{3}{4}$	F-UC209-112D1/LP09	1.7500	1.57													
	F-UC209-112D1/L791															
50	F-UC210D1/LP09	50	90	51.6	24	1.5	19	32.6	9	M8×1	6.1	62.4	27 000	23 200	14.4	0.78
	F-UC210D1/L791															
1 $\frac{13}{16}$	F-UC210-113D1/LP09	1.8125	3.5433	2.0315	0.9449	0.059	0.748	1.283	0.354	5/16-24UNF	0.240	2.4567	6 050	5 200		2.03
	F-UC210-113D1/L791															
1 $\frac{7}{8}$	F-UC210-114D1/LP09	1.8750														1.92
	F-UC210-114D1/L791															
1 $\frac{15}{16}$	F-UC210-115D1/LP09	1.9375													1.81	
	F-UC210-115D1/L791															
2	F-UC210-200D1/LP09	2.0000	1.69													
	F-UC210-200D1/L791															

Note 1) The basic dynamic load rating  $C_r$  of the bearing differs to ball bearings for conventional bearing steel units.

Ref 1. Bearings with solid grease (LP09) specifications might not be able to be refilled.