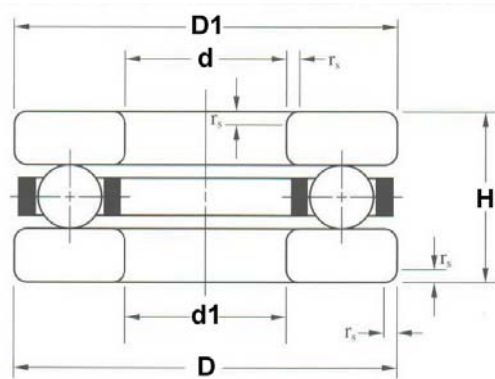


**Miniature Thrust Ball Bearings** (or axial bearings) are available with bore sizes as small as 2mm. Miniature thrust bearings are normally supplied in SAE52100 chrome steel with brass retainers but can also be manufactured in stainless steel (possibly subject to minimum requirements). Miniature thrust bearings can withstand axial or thrust loads only. There are separate types of miniature thrust bearing with either flat washers or washers incorporating a groove or raceway for heavier loads. The grooved type has one washer with a slightly larger bore to allow it to locate in the housing while the other washer has a smaller OD to locate on the shaft.

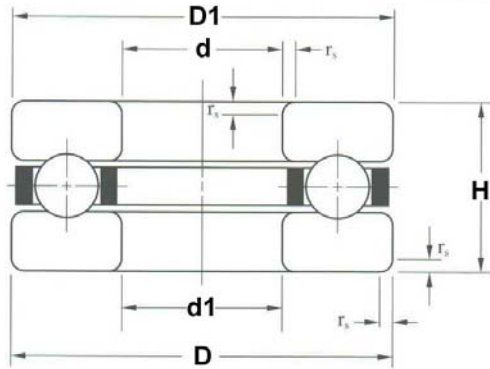
### Miniature Thrust Ball Bearing-F Series



**Tolerance Codes:** ABEC-1, ABEC-3, ABEC-5, ABEC-7  
**Material:** AISI52100, AISI440C, AISI304, AISI316, Ceramic  
**Retainer:** PTFE, Nylon, PEEK or Stainless Steel

Type	d (mm)	D (mm)	d1 (mm)	D1 (mm)	H (mm)	Load Rating Cr(N)	Load Rating Cor(N)	Steel Ball	
								piece	diameter
F2-6	2.0	6	2.0	6.0	3.0	117	83	6	1.000
F2X-7	2.5	7	2.5	7.0	3.5	156	117	6	1.200
F3-8	3.0	8	3.2	7.8	3.5	600	480	6	1.588
F4-9	4.0	9	4.2	8.8	4.0	800	520	6	1.588
F4-10	4.0	10	4.2	9.8	4.0	658	580	6	1.588
F5-11	5.0	11	5.2	10.8	4.5	988	880	7	1.588
F6-12	6.0	12	6.2	11.8	4.5	1600	1255	8	2.000
F7-15	7.0	15	7.2	14.8	5.0	2200	2000	8	2.500
F8-16	8.0	16	8.2	15.8	5.0	2500	3000	9	3.000
F9-17	9.0	17	9.2	16.8	5.0	578	627	10	2.381
F10-18	10.0	18	10.2	17.8	5.5	2230	2721	10	2.381

Miniature Thrust Ball Bearing-FM Series



**Tolerance Codes:** ABEC-1, ABEC-3, ABEC-5, ABEC-7  
**Material:** AISI52100, AISI440C, AISI304, AISI316, Ceramic  
**Retainer:** PTFE, Nylon, PEEK or Stainless Steel

Code	d (mm)	D (mm)	d1 (mm)	D1 (mm)	H (mm)	Load Rating Cr (N)	Load Rating Cor (N)	Max. Speed (1000rpm)		Steel Ball	
								Grease	Oil	piece	dia.
F3-8M	3	8	3.2	7.8	3.5	600	480	11.0	15.0	6	1.588
F4-9M	4	9	4.2	8.8	4.0	800	520	8.0	12.0	6	1.588
F4-10M	4	10	4.2	9.8	4.0	658	580	6.0	10.0	6	1.588
F5-10M	5	10	5.2	9.8	4.0	950	830	5.1	8.1	7	1.588
F5-11M	5	11	5.2	10.8	4.5	988	880	5.0	8.0	7	1.588
F5-12M	5	12	5.2	11.8	4.0	988	880	5.0	8.0	7	1.588
F6-12M	6	12	6.2	11.8	4.5	1600	1255	5.0	7.0	8	2.000
F6-13M	6	13	6.2	12.8	5.0	1600	1255	5.0	7.0	8	2.000
F6-14M	6	14	6.25	13.8	5.0	1800	1588	4.0	7.0	8	2.381
F7-13M	7	13	7.2	16.8	4.5	1422	1255	4.0	7.0	9	2.000
F7-15M	7	15	7.2	14.8	5.0	2200	2000	3.6	7.1	8	2.500
F7-17M	7	17	7.2	16.8	6.0	2600	2256	3.5	7.0	8	2.381
F8-16M	8	16	8.2	15.8	5.0	2500	3000	4.0	8.0	9	3.000
F8-19M	8	19	8.2	18.8	7.0	3452	3000	3.0	5.0	8	3.175
F9-20M	9	20	9.2	19.8	7.0	3356	2999	2.5	4.5	8	3.175
F10-18M	10	18	10.2	17.8	5.5	2230	2721	2.5	4.5	10	2.381