

ADR X-SPACE ball bearings

ADR created the **ADR X-SPACE** range to respond quickly to requests from space customers.

This range exists in **super duplex** version for metric and inch thin section ball bearings.

While maintaining an exceptional level of performance, this range allows a **reduction** in **development time** and **cost**.

Typology of mechanisms targeted mainly concerns **SADM** (solar panels), **APM** (antennas), **filter wheels** or **small mechanisms**, a market where **ADR** is widely present with its high precision ball bearings.



- Based on ADR large Space heritage
- More than 20 duplex ball bearings
- From 8 mm bore up to 142 mm outer diameter
- Fluid space lubrication in standard – Possibility solid lubricant on specification
- Quality material for space application and outgassing tested
- Development phase reduced
- Manufacture and test tooling available
- 3 parameters always taken into account :
 - Performance : Load capacity - Torque - Stiffness
 - Reliability thanks to robust design
 - Industrial optimization

Version

Super duplex ball bearings
Angular contact versions only with full cage
Back-to-Back configuration (DO)
Non separable version only

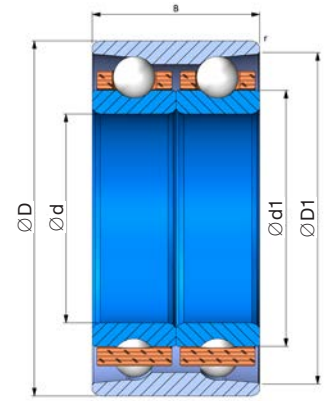
Open version only
Contact angle 15°
Tolerance class T4/TA4 (metric/inch) – ABEC 7
Materials space qualified

Materials

AISI 440C/X105CrMo17 + phenolic resin (space qualified)
Fluid lubrication for space application
Note: Solid or specific lubrication on demand only

Documentation

Technical Definition of Product (TDP), overall dimension drawing, DML, DPL
Specific calculations (launching/orbit loads, stiffness, lifetime, friction...): personalized document supplied on demand



METRIC ADR X-SPACE BALL BEARINGS

Basic designation	Dimensions in mm						Basic load rating N ² for axial/radial and Nm ² for moment						Mass g
							Radial		Axial		Moment		
	d	D	B	d1	D1	r ¹⁾	Dyn. C	Stat. Co	Dyn. C ax.	Stat. Co ax.	Dyn. C Mt	Stat. Co Mt	
XDM608H	8	22	14	12.45	19.4	.3	3,775	2,396	2,490	2,240	21.6	12.8	24.6
XDM61801H	12	21	10	15	19.2	.3	2,002	1,694	1,315	1,313	10.7	8.5	12.3
XDM61802H	15	24	10	17.9	22.2	.3	2,382	2,378	1,535	2,117	14.1	13.4	14.5
XDM61902H	15	28	14	18.95	25.9	.3	4,656	3,781	3,040	3,648	32.7	24.9	31
XDM61804H	20	32	14	24	29.6	.3	4,000	4,230	2,550	3,327	32.1	32.3	36
XDM61905H	25	42	18	30.3	38.8	.3	7,918	8,256	5,020	7,554	80.9	80	84
XDM61806H	30	42	14	34	39.6	.3	4,572	6,085	2,830	6,042	45.8	58.6	52
XDM61907H	35	55	20	41.1	51.2	.3	10,587	12,246	6,630	8,578	136	143.4	146
XDM61807H	35	47	14	39	44.6	.3	4,752	6,893	2,900	6,864	52.2	73.5	60
XDM61813H	65	85	20	71.6	81	.6	13,149	21,940	7,880	21,870	245	405	260

THIN SECTION ADR X-SPACE BALL BEARINGS

Basic designation	Dimensions in mm/inches						Basic load rating N ² for axial/radial and Nm ² for moment						Mass g
							Radial		Axial		Moment		
	d	D	B	d1	D1	r ¹⁾	Dyn. C	Stat. Co	Dyn. C ax.	Stat. Co ax.	Dyn. C Mt	Stat. Co Mt	
XAA717H	26.9875	38.1	12.7	30.57	36.05	.38	4,866	5,909	3,200	4,695	44.9	51.3	38
	1.0625	1.5	.5	1.2035	1.4193	.015							
XAA721H	33.3375	44.45	12.7	36.92	42.4	.38	5,118	6,771	3,310	5,505	54	66.5	45
	1.3125	1.75	.5	1.4535	1.6693	.015							
XAA624H	38.1	47.625	9.525	41.38	45.48	.25	3,491	5,412	2,190	4,560	37.2	53	33
	1.5	1.875	.375	1.6291	1.7906	.0098							
XAA725H	39.6875	50.8	12.7	43.27	48.75	.38	5,564	8,116	3,535	6,709	65.7	89	52
	1.5625	2	.5	1.7035	1.9193	.015							
XAA832H	50.8	63.5	12.7	55.17	60.55	.635	5,956	9,858	3,700	8,326	84.3	128.9	79
	2	2.5	.5	2.172	2.3839	.025							
XAA840H	63.5	76.2	12.7	67.87	73.25	.635	6,279	11,599	3,820	9,943	104.3	177.8	96
	2.5	3	.5	2.672	2.8839	.025							
XAA1040H	76.2	79.375	15.875	68.97	75.65	1.015	9,789	19,131	6,700	10,360	201	187.5	151
	3	3.125	.625	2.7154	2.9783	.04							
XAA1349H	77.7875	98.425	15.875	85.144	93.26	.38	13,930	28,968	9,420	15,381	317	352	260
	3.0625	3.875	.625	3.3521	3.6717	.015							
XAA848H	76.2	88.9	12.7	80.57	85.92	.635	6,651	13,575	3,980	11,758	182.3	239	114
	3	3.5	.5	3.172	3.3827	.025							
XAA856H	88.9	101.6	12.7	93.27	98.6	.635	6,988	15,551	4,125	13,573	149.5	309	132
	3.5	4	.5	3.672	3.8819	.025							
XAA1064H	101.6	117.475	15.875	107.07	113.7	1.015	11,613	30,334	7,550	16,149	316.5	433	233
	4	4.625	.625	4.2154	4.4764	.04							
XAA1076H	120.65	136.525	15.875	126.12	132.7	1.015	12,356	35,940	7,920	19,044	459	579	274
	4.75	5.375	.625	4.9654	5.2244	.04							
XAA1080H	127	142.875	15.875	132.47	139	1.015	12,623	37,973	8,050	20,096	408.5	636	288
	5	5.625	.625	5.2154	5.4724	.04							

¹⁾ Minimum bearing corner radius and maximum shaft or housing fillet radius.

²⁾ Load ratings per ISO 76 and ISO 281. For space application, a margin must be applied (ECSS requirements or contact ADR).

Note: References based and designed from space heritage ball bearings and compliant to ECSS standard requirements (materials, outgassing...)