

HDF-M1 Component Sets

Ultra-Thin Pancake Type Harmonic Gearing

Features

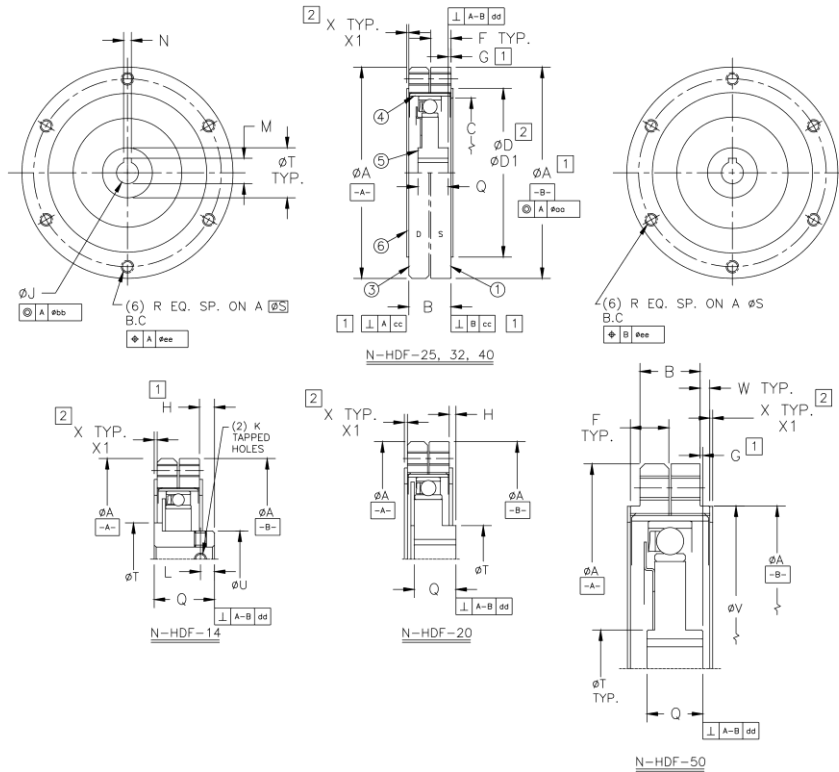
- Low backlash
- Compact design
- Shortest axial length
- High torque-to-weight ratio
- Single stage ratios to 267:1
- High positional accuracy



Standard Specifications

Size	Ratio	Rated Speed	Torque at Rated Speed		Repeated Torque Limit		Momentary Torque Limit		Maximum Input Speed		
			Nm	in lb	Nm	in lb	Nm	in lb	Oil	Grease	
			rpm	rpm							
10	50	3000	1	9	2	18	3	22	8000	3500	
	64		1.2	11	2	21	3	27			
14	50	3000	2	18	4	35	5	44	6000	3500	
	64		3	27	6	53	8	66			
	80		3.5	31	7	62	9	77			
	100		3.5	31	7	62	9	77			
	50		6	53	12	106	15	133			
17	66	3000	8	71	16	142	20	177	6000	3500	
	80		8	71	16	142	20	177			
	102		10	89	20	177	25	221			
	50		12	106	24	212	30	266			
20	60	3000	12	106	24	212	30	266	5000	3500	
	80		15	133	30	266	38	332			
	84		15	133	30	266	38	332			
	100		18	159	36	319	45	398			
	120		20	177	40	354	50	443			
	126		20	177	40	354	50	443			
	160		20	177	40	354	50	443			
	50		20	177	40	354	50	443			
25	60	3000	20	177	40	354	50	443	5000	3000	
	80		25	221	50	443	63	553			
	100		30	266	60	531	75	664			
	120		32	283	64	566	80	708			
	150		36	319	72	637	90	797			
	160		36	319	72	637	90	797			
	200		36	319	72	637	90	797			
	50		40	354	80	708	100	885			
32	60	3000	45	398	90	797	113	996	4500	3000	
	66		45	398	90	797	113	996			
	80		55	487	110	974	138	1217			
	100		70	620	140	1239	175	1549			
	135		80	708	160	1416	200	1770			
	160		85	752	170	1505	213	1881			
	200		85	752	170	1505	213	1881			
	50		80	708	160	1416	200	1770			
40	62	3000	85	752	170	1505	213	1881	4500	3000	
	80		100	885	200	1770	250	2213			
	84		100	885	200	1770	250	2213			
	100		120	1062	240	2124	300	2655			
	120		120	1062	240	2124	300	2655			
	125		135	1195	270	2390	338	2987			
	160		150	1328	300	2655	375	3319			
	168		150	1328	300	2655	375	3319			
	200		150	1328	300	2655	375	3319			
	50		120	1062	240	2124	300	2655			
50	60	3000	120	1062	240	2124	300	2655	3500	2500	
	80		180	1593	360	3186	450	3983			
	100		220	1947	440	3894	550	4868			
	120		250	2213	500	4425	625	5532			
	150		280	2478	560	4956	700	6196			
	160		280	2478	560	4956	700	6196			
	200		280	2478	560	4956	700	6196			
	80		480	4248	960	8497	1200	10621			
65	100	1500	540	4779	1080	9559	1350	11949	1750	1750	
	135		625	5532	1250	11063	1563	13829			
	160		650	5753	1300	11506	1625	14382			
	200		650	5753	1300	11506	1625	14382			
	267		650	5753	1300	11506	1625	14382			
	80		900	7966	1800	15931	2250	19914			
80	100	1500	950	8408	1900	16816	2375	21021	1500	1500	
	125		1000	8851	2000	17701	2500	22127			
	168		1000	8851	2000	17701	2500	22127			
	200		1000	8851	2000	17701	2500	22127			
	200		1000	8851	2000	17701	2500	22127			

Dimensions



	10	14	20	25	32	40	50	65	80
ØA	40 ^{+0.025} ₀	50 ^{+0.015} ₀	70 ^{+0.018} ₀	85 ^{+0.023} ₀	110 ^{+0.025} ₀	135 ^{+0.025} ₀	170 ^{+0.025} ₀	220 ^{+0.044} ₀	270 ^{+0.049} ₀
B	9.5	10.7 ± .15	12.7 ± .15	17 ± .25	21 ± .25	27 ± .30	25 ± .30	45	53
ØC	-	32 ± .51	47 ± .51	59 ± .51	77 ± .51	95 ± .51	119 ± .51	-	-
ØD	-	39.5 ± .51	54 ± .51	69.4 ± .51	92.1 ± .51	111.1 ± .51	134.4 ± .51	-	-
ØD1	-	40.2 ± .51	54.7 ± .51	70.2 ± .51	92.9 ± .51	111.9 ± .51	135.2 ± .51	-	-
F	4.5	5 ± .1	6 ± .1	8 ± .2	10 ± .2	13 ± .2	16 ± .2	22	26
G	-	-	-	.38 ± .38	.94 ± .38	1.8 ± .38	1.12 ± .38	-	-
H	-	3.76 ± .38	.94 ± .38	-	-	-	-	-	-
ØJ	6 ^{+0.012} ₀	6 ^{+0.012} ₀	9 ^{+0.015} ₀	11 ^{+0.018} ₀	14 ^{+0.020} ₀	14 ^{+0.020} ₀	19 ^{+0.020} ₀	40 ^{+0.025} ₀	50 ^{+0.025} ₀
K	-	M3 x 0.5	-	-	-	-	-	-	-
L	-	3.5 ± .38	-	-	-	-	-	-	-
ØM	7 ⁺¹ ₀	-	10.4 ⁺¹ ₀	12.8 ⁺¹ ₀	16.3 ⁺¹ ₀	16.3 ⁺¹ ₀	21.8 ⁺¹ ₀	43.3 ⁺² ₀	53.8 ⁺² ₀
N	2 ± .0125	-	3 ± .0125	4 ± .013	5 ± .013	5 ± .013	6 ± .013	12 ± .0215	14 ± .0215
Q	7	15.0	11.4	12.8	15.6	19.4	23.2	34.5	41.5
R	M3	M3 x 0.5	M4 x 0.7	M5 x 0.8	M6 x 1.0	M8 x 1.25	M10 x 1.5	M12	M16
S	34	44	60	75	100	120	150	195	240
ØT	11	18	20	28	36	32	50	56	110
ØU	-	14	-	-	-	-	-	-	-
ØV	-	-	-	-	-	-	135 ^{+0.025} ₀	-	-
W	-	-	-	-	-	-	4.52 ± .1	-	-
X	-	.81 ± .13	.81 ± .13	.81 ± .13	.81 ± .13	1.57 ± .13	1.57 ± .13	-	-
X1	-	.94 ^{+0.13} ₀	.94 ^{+0.13} ₀	.94 ^{+0.13} ₀	.94 ^{+0.13} ₀	1.70 ^{+0.13} ₀	1.70 ^{+0.13} ₀	-	-
aa	.050	.050	.070	.076	.078	.088	.098	.098	.098
bb	.013	.013	.013	.015	.015	.018	.020	.020	.020
cc	.018	.018	.018	.023	.025	.025	.025	.025	.025
dd	.010	.010	.010	.013	.013	.013	.015	.015	.015
ee	.25	.25	.25	.25	.25	.25	.25	.25	.25
Weight kg (lb)	.072 (.16)	.09 (.2)	.32 (.7)	.59 (1.3)	1.04 (2.3)	2 (4.4)	3.31 (7.3)	4.3 (9.5)	5.3 (11.7)

- A. ITEM 1 STATIC CIRCULAR SPLINE MARKED "S"
- ITEM 2 ONLY APPEARS WITH HDR & HDA
- ITEM 3 DYNAMIC CIRCULAR SPLINE MARKED "D"
- ITEM 4 FLEXSPLINE
- ITEM 5 WAVE GENERATOR
- ITEM 6 WEAR WASHERS
- B. DIMENSIONS MARKED 1 ESTABLISH INTERFACE AND INSTALLATION REQUIREMENTS, AND MUST BE MAINTAINED UNDER ALL OPERATING CONDITIONS.
- C. DIMENSIONS MARKED 2 ARE NECESSARY TO LOCATE WEAR WASHERS, ITEM 6, IN
- D. HDF 50 CAN BE LOCATED ON THE OUTER DIAMETER OF THE CIRCULAR SPLINE, DIMENSION A, OR ON THE PLOT DIAMETER DIMENSION V.
- E. DRAWING IS FOR DIMENSIONAL REVIEW ONLY. **DO NOT SCALE**

Ordering Codes

HDF-AAA-BBB-M1-CCCCC

Size: 010, 014, 020, 025, 032, 040, 050, 065, 080

Ratio: 050, 064, 066, 080, 084, 100, 102, 120, 125, 135, 150, 160, 168, 200, 267

Special Designator: by factory for non-standard units



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