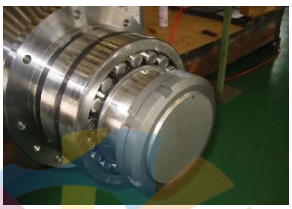
HLB®

The globally recognized HARDLOCK Bearing Nut (HLB)

HARDLOCK BEARING NUT

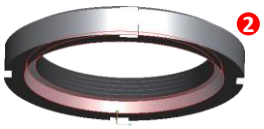


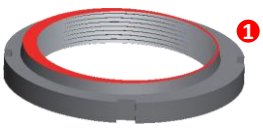
ADVANTAGES

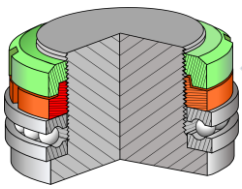
- Self-locking effect remains even under severe vibration.
- Completely locked even if there is no clamp load.
- All metal with little galling enables repeated reuse.
- Can be installed with commercially available tools.

Mark of quality assurance

REMARKABLE LOCKING FORCE RELIEVING COMPLICATED MAINTENANCE WORK







"The Wedge Principle" with the combination of 1 Convex Nut having a truncated protrusion arranged off-center and 2 Concave Nut having a concentric conical recess, creates a strong perpendicular load that will be applied to the shaft to prevent loosening.

Due to the strong locking force created by the wedge principle, no matter how severe vibrations and impacts generated by high speed rotation the HLB is exposed to, it will remain in a stable locked condition.

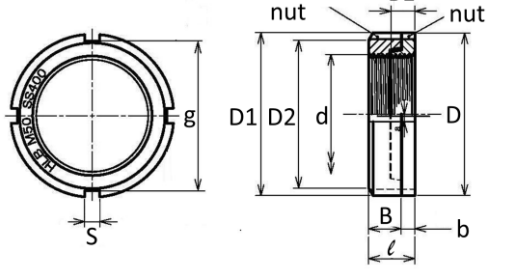
INSTALLATION PROCEDURE

1. Use a hook wrench to tighten the Convex Nut to the appropriate torque required for the application.
2. Install the Concave Nut by hand until it no longer turns, then make sure that the space between the Convex Nut and Concave Nut is more than 1 thread pitch.
3. Use a torque wrench to tighten the Concave Nut to the recommended torque.
   If a torque wrench is not available, use a hook wrench and tighten more than 360 degrees.
4. Even with or without a gap after tightening to the recommended torque, HLB will produce a sufficient locking effect.
5. The Convex Nut and Concave Nut can be installed in opposite order with no reduction in the self-locking effect. Nevertheless, it is recommended to tighten Convex Nut first if a heavier load is applied.

STANDARD MATERIALS AND SURFACE TREATMENTS

Materials	Surface treatment
Low Carbon Steel (JIS SS400 equivalent)	Manganese Phosphate
Medium Carbon Steel (JIS S45C)	Manganese Phosphate
Stainless Steel (JIS SUS304 equivalent)	Unplated

*Please contact us for other materials and surface treatments.



DIMENSION AND TIGHTENING TORQUE TABLE

AN	Normal Size	Pitch	Convex nut					Concave nut					Common to Convex & Concave		Overall height (ℓ) approx	Bottom surface squarness (Max)	Unit Weight (g) approx.	Tightening torque (**N-m**) *Common to material/strength	
			D		B1			D1		D2	B								
	d	P	Basis	Tolerance	Basis	Torelance	b	Basis	Tolerance	Basis (Approx.)	Basis	Tolerance	S	g				Convex nut	Concave nut (Recommended)
AN00	M10	0.75	18	0 -0.5	6	0 -0.5	3.5	18	0 -0.5	17	6	0 -0.5	3	14	9.5	0.05	19	*	16
AN01	M12	1	22	0 -0.5	6	0 -0.5	3.5	22	0 -0.5	17	6	0 -0.5	3	18	9.5		17	*	16
AN02	M15	1	25	0 -0.5	7	0 -0.5	4.5	25	0 -0.5	21	7	0 -0.5	4	21	11.5		23	*	28
AN03	M17	1	28	0 -0.5	7	0 -0.5	4.5	28	0 -0.5	24	7	0 -0.5	4	24	11.5		29	*	37
AN04	M20	1	32	0 -0.5	8	0 -0.5	5.5	32	0 -0.5	26	8	0 -0.5	4	28	13.5		43	*	55
AN05	M25	1.5	38	0 -0.5	10	0 -0.5	6	38	0 -0.5	32	10	0 -0.5	5	34	16		72	*	80
AN06	M30	1.5	45	0 -0.5	10	0 -0.5	6	45	0 -0.5	38	10	0 -0.5	5	41			103	*	115
AN07	M35	1.5	52	0 -0.5	11	0 -0.5	7	52	0 -0.5	44	11	0 -0.5	5	48	18		150	*	130
AN08	M40	1.5	58	0 -0.5	9	0 -0.5	5	58	0 -0.5	50	12	0 -0.5	6	53	17		170	*	155
AN09	M45	1.5	65	0 -0.5	10	0 -0.5	6	65	0 -0.5	56	13	0 -0.5	6	60	19		240	*	170
AN10	M50	1.5	70	0 -0.5	11	0 -0.5	7	70	0 -0.5	61	14	0 -0.5	6	65	21		285	*	200
AN11	M55	2	75	0 -0.5	11	0 -0.5	6	75	0 -0.5	67	15	0 -0.5	7	69	21	0.07	310	*	210
AN12	M60	2	80	0 -0.5	11	0 -0.5	6	80	0 -0.5	73	15	0 -0.5	7	74	21		340	*	240
AN13	M65	2	85	0 -0.5	12	0 -0.5	7	85	0 -0.5	79	12	0 -0.5	7	79	19		330	*	255
AN14	M70	2	92	0 -0.5	12	0 -0.5	7	92	0 -0.5	85	12	0 -0.5	8	85	19		390	*	270
AN15	M75	2	98	0 -0.5	13	0 -0.5	8	98	0 -0.5	90	13	0 -0.5	8	91	21		480	*	300
AN16	M80	2	105	0 -0.5	15	0 -0.5	10	105	0 -0.5	95	15	0 -0.5	8	98	25		660	*	310
AN17	M85	2	110	0 -0.5	16	0 -0.5	11	110	0 -0.5	102	16	0 -0.5	8	103	27		760	*	340
AN18	M90	2	120	0 -0.5	16	0 -0.5	11	120	0 -0.5	108	16	0 -0.5	10	112	27		940	*	350
AN19	M95	2	125	0 -0.5	17	0 -0.5	12	125	0 -0.5	113	17	0 -0.5	10	117	29		1,090	*	380
AN20	M100	2	130	0 -0.5	18	0 -0.5	13	130	0 -0.5	120	18	0 -0.5	10	122	31		1,230	*	390

* Concave Nut (Clamp Nut) shall be tightened to the torque appropriate for the application.
HLB of M105 - M200 are also available . Refer to our Website https://www.hardlock.co.jp/en/.

- External dimensions: JIS B1554(2016) / ISO2982
- Threads tolerance: Class 6H JIS B0209(2001) / ISO965
- In case of tightening Concave Nut first, the recommended tightening torque of Concave Nut in the above table is applied to Convex Nut (acts as Lock Nut).

HARDLOCK®

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