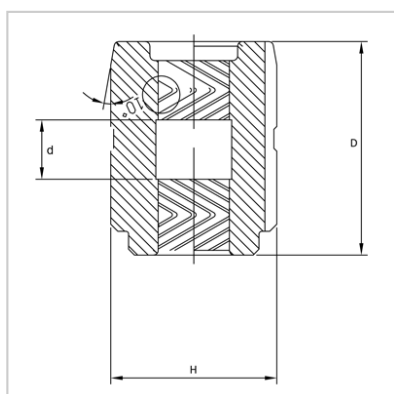


Customized Bearing

Fluid dynamic bearings-2



D	
Outer Dia.	2
Bearing designation	4
D2	
□Clockwise identification mark	3
size□	
D-cut	H20X040X030N
Fan height	2.7
speed	
□rpm□	2.9
d	
Inner Dia.	5~6
B	
Height	LT43:6000rpmDown /LT44:6000rpmUp

MONTON Fluid Dynamic Bearing (FDB) which is suitable for high quality rotating parts such as fans, motors, flywheels, and gyroscopes, etc. The innovative technology is to process the inner diameter surface of the bearing and make the grooves with special programs and special tooling. This kind of sintered copper alloy bearing with herringbone groove and recirculation groove on the outer diameter surface will generate dynamic oil pressure when it is running at high speed. The herringbone will gather lubricating oil concentrating and average distributing naturally between shaft and bearing to keep a stable rotation. It is called FDB, which is currently the most effective among various fluid dynamic bearing in the world.

Fluid dynamic bearings (FDB bearing) are unique bearing types especially designed for computers, communications, and consumer electronics industries. It is commonly used in cooling fans for servers and PCs.

In comparison with standard ball bearings and sleeve bearings used in the past, fluid dynamic bearings have the advantage of lower noise

and steadier performance while operating. our fluid dynamic bearings achieved better lifetime and vibration resistance .

Fluid Dynamic Bearing (FDB) is a product with micron-level and high precision. It plays an indispensable and important role in the global electronic, fan-motor and electric appliance markets where products tend to be light, thin, short and small, and pursue for high efficiency, high speed and high quality. Jialian-Tech insists on technology innovation, implements quality assurance system, concentrates on environmental protection and energy saving, and executes standardized production management to provide the highest quality bearings which can help customers upgrade their fans, motors, flywheels and gyroscopes, etc. to the leading high end product.

FDB bearing's life expectation is based on the result of high temperature and high humidity test (temperature 80°C, humidity 65%). L10 life factor can then be calculated according to the test data. The environmental temperature of general product manufacturing, which is 60°C , can then be calculated approximately 100,000hrs.

Various types of fans, motors, flywheels, and gyroscopes, etc. have different types and sizes of bearings that respond to the different kinds of operations. As long as it is a directional rotating part, all can use the precision sealed Fluid Dynamic Bearing (FDB) of MONTON to improve the quality of your products and extend the service life. Our FDB has a simple appearance, it doesn't need to apply preload spring and it is easy to install and assemble. In particular, ultra-high-speed fan motors are used in household appliances, drones, servers, and precision instruments. It is more effective to use our FDB to lower vibration and reduce noise. If currently listed, specifications do not meet your products, the newer size can be designed according to the customer's request when there is a large demand. If you would like forward information about your product, please contact with us.

Herringbone Groove Fluid Dynamic Bearing (FDB) can be used in Fan and Motor market. It can also be used in many different marketing fields, such as Optics motors, Servo motors, Spindle motors, Trail motors, Axial flow fans, and Centrifugal flow fans and Blowers. FDBs are especially important supporters of high-speed flywheels, gear

transmission systems, motors, gyroscopes, and other precision rotating parts. FDB can promote the above rotating systems to a quiet, long-life grade. They are the best partners of all rotating parts, and they are the most outstanding new favorite of the bearing industry in this high-speed generation.

Herringbone Groove Fluid Dynamic Bearing (FDB) has characteristics of long-life, low vibration, low noise, high damping, and is suitable for high rotation. It can be widely used in motors, fans, flywheels, gyroscopes, and other markets. FDB is quite different from traditional Sleeve/Cu-alloy/Cu-tube bearings, though there is all similar shape. FDB uses a special formula include refined copper alloy, by processes of forming with pressure, sintered in high temperature, cleaning in supersonic, impregnating with lubricant in a vacuum. It can accept more ring stress, be more porous, and have more oil storage. The unique Herringbone Groove and lubricant will generate a magical dynamic oil pressure when the shaft is rotating to form a uniform cylindrical oil film. The bearing generates uniform radial damping around the shaft. It will concentrate the shaft to avoid metal friction and contact effectively. This is an important function that other brand bearings can't match.

In the era of 5G and 6G communications, PC/NB, game computers, and servers with high data flow and high heat sources all require high-speed cooling fans. High-speed hair dryers, instant hand dryers, high-

resolution aerial cameras, intelligent drones, and precision gyroscopes all require ultra-high-speed and low-noise motors. Ball bearings will encounter some bottlenecks including expensive, high-frequency noise, short-life, friction and heating from the shaft and the inner ring, etc. Once the above bearings of goods switch to FDB, almost all troubles will be solved. The high-level ones enjoy the following advantages: quietness, long-lived, durability, and cost down. The lower ones can easily upgrade, increase competitiveness and open up new markets.

The characteristics of FDBs, such as low noise, low vibration, impact resistance, low power consumption, and long life, are also applicable to other fields. FDBs are also used in fan motors of servers and notebook PCs. Nidec is not only working to expand these application areas; it is also striving to improve the original functions of FDBs. For example, we have developed software that simulates the motor behavior to shorten the design and development period for thinner HDD spindle motors that have higher performance. At the same time, we are also studying oil used for the FDBs, and working to develop oil that satisfies the requirements of lower friction and longer life.

Application:

Measurement Technology
Consumer Electronics
Fan with FDB Motor Technology
LIDAR systems
Hard Disc Drives (HDD)
Virtual reality - motion tracking
Cooling fans
Respiratory equipment

VRWearing equipment
Computer fan
Groscope
High speed wheel

Features

Extremely quiet operation and high running accuracy
High rotational speed, up to 15,000rpm
Low vibration, low noise
Low electric power consumption
Long working life

Code System

Codes	H/F	15	X	040	X	045		/	LT43
char.	Rotation direction	ID		OD		Height	Special requirment		Oil
Mark	F CCW (Counter clockwise)	15		040		016			LT43
	H CW (clockwise)	20		080		020			LT44
		30				025			

Direction of rotation	F	CCW		
	H	CW		
Bore dimension	15	1.5mm		
	20	2.0mm		
	30	3.0mm		
Outer diameter dimension	040	4.0mm		
	080	8.0mm		
Height dimension	016-105	1.6mm-10.5mm		
Special requirement	N	Available to rotate in both directions		
Oil code	L43			
	L44			

Bearing List

d Inner Dia.	D Outer Dia.	B Height	Bearing designation	D2 (Clockwise identification mark size)	D-cut	Fan height	speed (rpm)
1.2	4	2.0	H12X040X020N	2.7	2.9	4~6	LT43:6000rpmDown
		2.5	H12X040X025N			4~6	LT44:6000rpmUp
1.5	4	2.0	H15X040X020N	2.7	2.9	4~6	LT43:6000rpmDown LT44:6000rpmUp
		2.5	H15X040X025N			4~6	
		3.0	H15X040X030N			6~10	
		4.0	H15X040X040N			6~10	
2	4.0	1.6	H20X040X016N	2.7	2.9	3~4	LT43:6000rpmDown LT44:6000rpmUp
		2.0	H20X040X020N			3~4	
		3.0	H20X040X030N			5~6	
		4.0	H20X040X040N			7~10	
3	8.0	7.5	H30X080X075N	5	5.4	15~25	LT43:6000rpmDown LT44:6000rpmUp
		8.5	H30X080X085N			15~25	
		9.5	H30X080X095N			25~40	
		10.5	H30X080X105N			25~40	