

CHUANGNENG GT5701KOF006BV24U146O2UIS

Instruction Manual: BK12 BF12 Ball Screw End Supports

Brand: CHUANGNENG

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the CHUANGNENG BK12 and BF12 Fixed and Floated Ball Screw End Supports. These components are designed to provide stable and precise support for SFU1605 ball screws in various industrial and scientific applications, particularly in CNC machinery.

2. PRODUCT OVERVIEW

The package includes one BK12 bearing block (fixed side) and one BF12 bearing block (floated side). These units are crucial for ensuring the smooth and accurate operation of ball screw systems by providing rigid support at one end and allowing for thermal expansion at the other.



Figure 2.1: Overview of BK12 and BF12 Ball Screw End Supports with accessories.



Figure 2.2: Another perspective of the BK12 and BF12 units.

Key features include high rigidity, high precision, and stable rotational performance, contributing to a long service life due to low friction and low operational noise. The units are made from carbon steel and feature a blackening process for enhanced surface durability and precision.

3. SPECIFICATIONS

Below are the detailed specifications for the BK12 and BF12 Ball Screw End Supports:

| Specification | Detail |
|-----------------------|----------------------------------|
| Product Name | BK12+BF12 Ball Screw End Support |
| Color | Black |
| Material | Carbon Steel |
| Compatible Ball Screw | SFU1605 |
| Bearing Type | Ball Bearing |

| Specification | Detail |
|----------------------|---------------------------|
| Compatible Lubricant | Grease |
| Package Dimensions | 5.08 x 3.54 x 3.23 inches |
| Weight | 1.48 Pounds |
| Model Number | GT5701KOF006BV24U146O2UIS |

For precise dimensional information, refer to the technical drawings below:

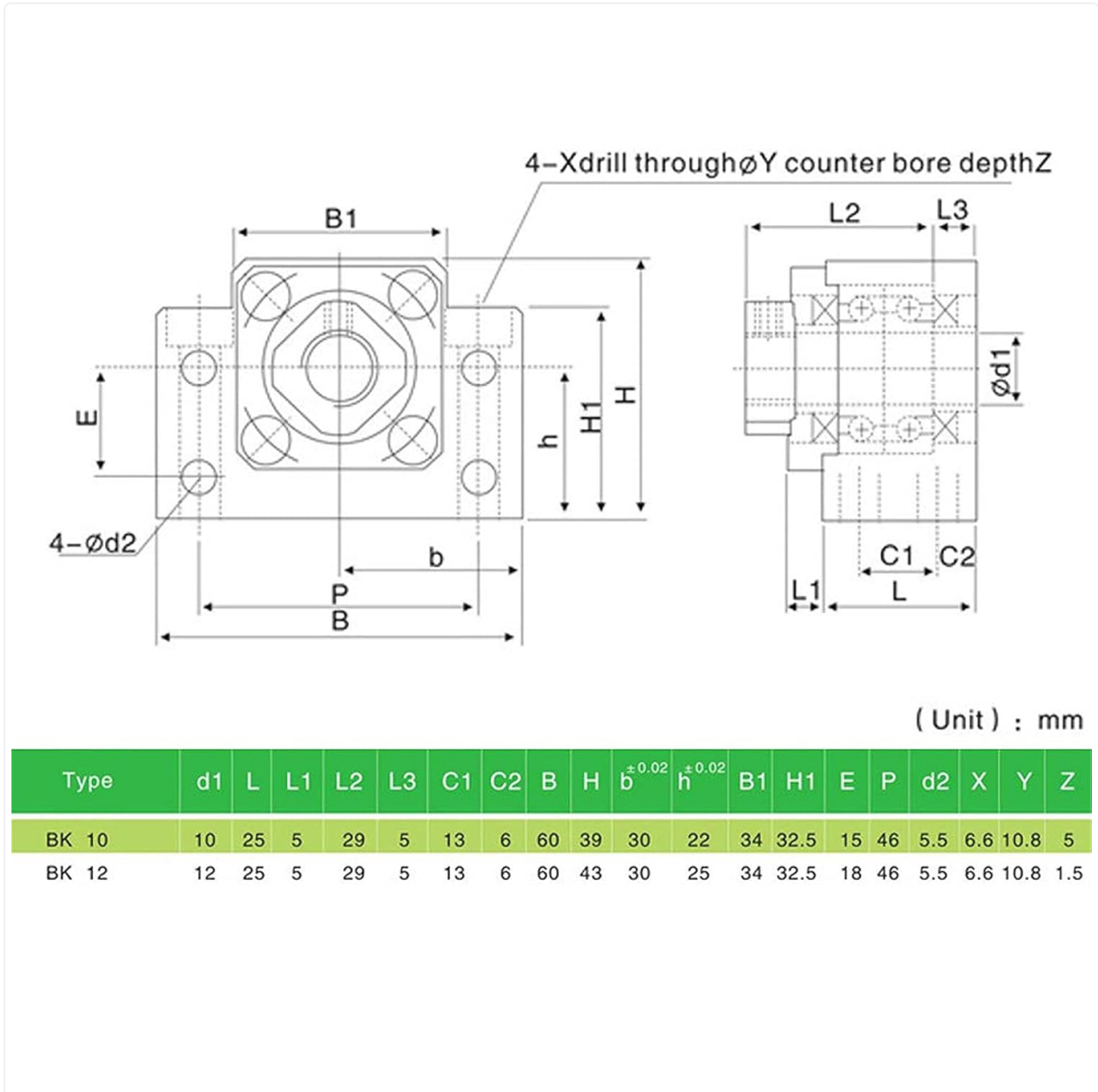
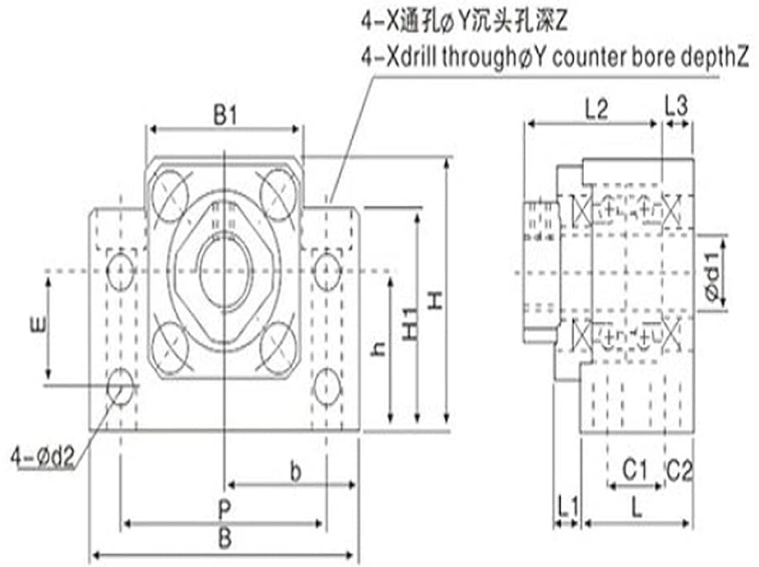


Figure 3.1: BK Series Dimensional Drawing.

BK

固定侧 Fixed Side



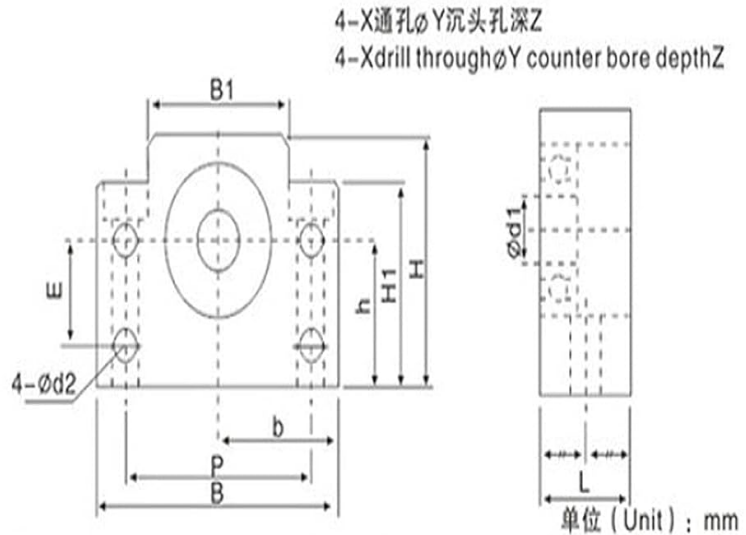
单位 (Unit) : mm

| 型号 Type | d1 | L | L1 | L2 | L3 | C1 | C2 | B | H | b ^{+0.02} | h ^{+0.02} | B1 | H1 | E | P | d2 | X | Y | Z |
|------------|----|----|----|----|----|----|----|-----|-----|--------------------|--------------------|-----|------|----|-----|-----|-----|------|------|
| BK 10 | 10 | 25 | 5 | 29 | 5 | 13 | 6 | 60 | 39 | 30 | 22 | 34 | 32.5 | 15 | 46 | 5.5 | 6.6 | 10.8 | 5 |
| BK 12 | 12 | 25 | 5 | 29 | 5 | 13 | 6 | 60 | 43 | 30 | 25 | 34 | 32.5 | 18 | 46 | 5.5 | 6.6 | 10.8 | 1.5 |
| BK 15 | 15 | 27 | 6 | 32 | 6 | 15 | 6 | 70 | 48 | 35 | 28 | 40 | 38 | 18 | 54 | 5.5 | 6.6 | 11 | 6.5 |
| BK 17 | 17 | 35 | 9 | 44 | 7 | 19 | 8 | 86 | 64 | 43 | 39 | 50 | 55 | 28 | 68 | 6.6 | 9 | 14 | 8.5 |
| BK 20 | 20 | 35 | 8 | 43 | 8 | 19 | 8 | 88 | 60 | 44 | 34 | 52 | 50 | 22 | 70 | 6.6 | 9 | 14 | 8.5 |
| BK 25 | 25 | 42 | 12 | 54 | 9 | 22 | 10 | 106 | 80 | 53 | 48 | 64 | 70 | 33 | 85 | 9 | 11 | 17.5 | 11 |
| Bk 30 | 30 | 45 | 14 | 61 | 9 | 23 | 11 | 128 | 89 | 64 | 51 | 76 | 78 | 33 | 102 | 11 | 14 | 20 | 13 |
| Bk 35 | 35 | 50 | 14 | 67 | 12 | 26 | 12 | 140 | 96 | 70 | 52 | 88 | 79 | 35 | 114 | 11 | 14 | 20 | 13 |
| BK 40 | 40 | 61 | 18 | 76 | 15 | 33 | 14 | 160 | 110 | 80 | 60 | 100 | 90 | 37 | 130 | 14 | 18 | 26 | 17.5 |

Figure 3.2: BK Series Dimensional Table.

BF

支撑侧 Floated Side



| 型号 Type | d1 | L | B | H | $b^{±0.02}$ | $h^{±0.02}$ | B1 | H1 | E | P | d2 | X | Y | Z |
|------------|----|----|-----|-----|-------------|-------------|-----|------|----|-----|-----|-----|------|------|
| BF 10 | 8 | 20 | 60 | 39 | 30 | 22 | 34 | 32.5 | 15 | 46 | 5.5 | 6.6 | 10.8 | 5 |
| BF 12 | 10 | 20 | 60 | 43 | 30 | 25 | 34 | 32.5 | 18 | 46 | 5.5 | 6.6 | 10.8 | 1.5 |
| BF 15 | 15 | 20 | 70 | 48 | 35 | 28 | 40 | 38 | 18 | 54 | 5.5 | 6.6 | 11 | 6.5 |
| BF 17 | 17 | 23 | 86 | 64 | 43 | 39 | 50 | 55 | 28 | 68 | 6.6 | 9 | 14 | 8.5 |
| BF 20 | 20 | 26 | 88 | 60 | 44 | 34 | 52 | 50 | 22 | 70 | 6.6 | 9 | 14 | 8.5 |
| BF 25 | 25 | 30 | 106 | 80 | 53 | 48 | 64 | 70 | 33 | 85 | 9 | 11 | 17.5 | 11 |
| BF 30 | 30 | 32 | 128 | 89 | 64 | 51 | 76 | 78 | 33 | 102 | 11 | 14 | 20 | 13 |
| BF 35 | 35 | 32 | 140 | 96 | 70 | 52 | 88 | 79 | 35 | 114 | 11 | 14 | 20 | 13 |
| BF 40 | 40 | 37 | 160 | 110 | 80 | 60 | 100 | 90 | 37 | 130 | 14 | 18 | 26 | 17.5 |

Figure 3.3: BF Series Dimensional Drawing and Table.

4. SETUP AND INSTALLATION

Proper installation of the ball screw end supports is critical for the performance and longevity of your ball screw system. Follow these steps carefully:



Figure 4.1: BK12 Fixed-Side Bearing Block.



Figure 4.2: BF12 Floated-Side Bearing Block.

Mounting Method of Ball Screw Support:

1. **Fixed Side (BK12) Installation:** Secure the BK12 bearing block to the threaded rod on the fixed side of your ball screw assembly.
2. **Tightening the Fixed Side:** Insert the fixed side into its position. Tighten the lock nut, and then secure the assembly using the cushion block and inner six-angle bolts. Ensure all connections are firm to prevent movement.
3. **Supporting Side (BF12) Installation:** The BF12 supporting side bearing is fixed on the threaded rod shaft using a stop ring. Once the stop ring is in place, load the entire assembly into the BF12 bearing block. This floated design allows for axial thermal expansion and contraction of the ball screw.

Ensure that all mounting surfaces are clean and flat to achieve optimal alignment and performance.

5. OPERATION

The BK12 and BF12 ball screw end supports are passive mechanical components designed to facilitate the smooth rotation and linear movement of a ball screw. Once properly installed, their operation is integral to the overall ball screw system. They provide the necessary rigidity and support for the ball screw to translate

rotational motion into precise linear motion. No specific user interaction is required with the support units themselves during operation, beyond ensuring the ball screw system is running within its design parameters.

6. MAINTENANCE

Regular maintenance is essential to ensure the longevity and optimal performance of your ball screw end supports.

- **Lubrication:** The support units, particularly the BK type bearing, are pre-filled with an appropriate amount of lithium soap grease and sealed with a special gasket. For long-term use, periodic inspection of the grease and re-lubrication with compatible grease may be necessary, depending on the operating environment and duty cycle.
- **Inspection:** Regularly inspect the bearing blocks for any signs of wear, damage, or looseness in the mounting bolts. Ensure that the ball screw rotates smoothly within the bearings without excessive play or binding.
- **Cleaning:** Keep the area around the bearing blocks clean and free from dust, debris, and contaminants, which can affect bearing performance and lifespan.

7. TROUBLESHOOTING

While these components are robust, issues can arise from improper installation or external factors. Here are some common issues and potential solutions:

- **Excessive Noise or Vibration:**
 - Check for proper alignment of the ball screw with the support units. Misalignment can cause undue stress and noise.
 - Inspect bearings for wear or damage. Replace if necessary.
 - Ensure all mounting bolts are securely tightened.
- **Stiffness or Binding in Ball Screw Movement:**
 - Verify that the BF12 (floated side) is not overly constrained, allowing for thermal expansion.
 - Check for foreign objects or debris obstructing the ball screw path or within the bearing units.
 - Ensure adequate lubrication.
- **Premature Wear:**
 - Review operating conditions to ensure they are within the specified limits for the components.
 - Confirm proper lubrication schedule and type.
 - Re-check installation for any persistent misalignment or excessive loads.

If issues persist after attempting these troubleshooting steps, consult with a qualified technician or contact CHUANGNENG customer support.

8. WARRANTY AND SUPPORT

For information regarding warranty coverage, technical support, or replacement parts for your CHUANGNENG BK12 and BF12 Ball Screw End Supports, please refer to the product's original purchase documentation or contact your supplier. CHUANGNENG is committed to providing high-quality products and support to ensure customer satisfaction.

