CAPT 凯普特传动

HIGH-TECH | LEADING QUALITY | GLOBAL DEVELOPMENT

PRECISION MANUFACTURING SUPERIOR INGENUITY

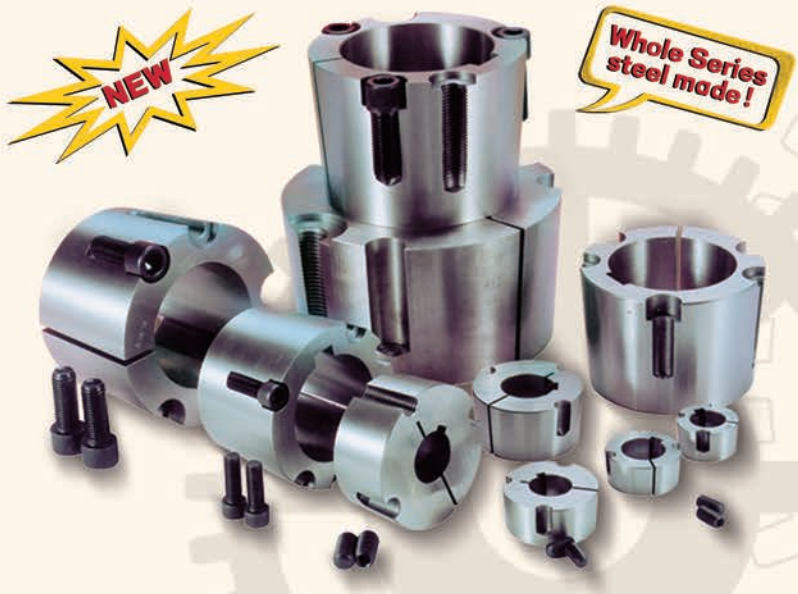
CUSTOM MECHANICAL POWER TRANSMISSION AND INDUSTRIAL DRIVE COMPONENT EXPERTS

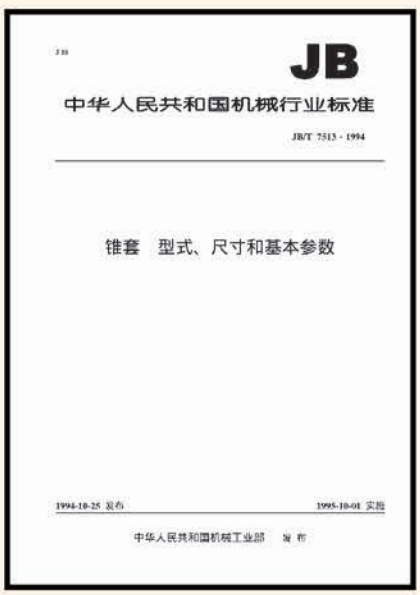
CAPT POWER TRANSMISSION

凯普特传动

SHIJIAZHUANG CAPT POWER TRANSMISSION CO., LTD.

TB-Bushings(short for Taper Lock Bushings) was designed and introduced in the 1970s. By achieving secure and easy installation between bore and the shaft, they were used to replace the traditional bore to size products as a relatively new type of connection method. This product was then applied for patents in Europe, the US, Japan as well as the rest of the world, with the patent protection lasting until the mid-1980s.
Taper bushing were gradually popularized and applied to various shaft to output conne -ctions, such as sprockets, sheaves, couplings, timing pulleys and other transmission parts. The increased usage throughout the industrial market boosted the standardization and com -mercialization of this product and turned it into a highly successful standardized indust -rial component.




JB

中华人民共和国机械行业标准

JB/T 7513 - 1994

锥套 型式、尺寸和基本参数

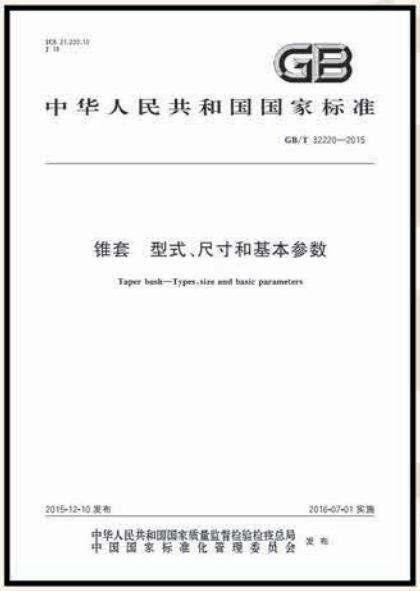
1994-10-25 发布 1995-10-01 实施

中华人民共和国机械工业部 发布

In the mid-to-late 1980s, along with the reform and opening policies in China and with the rising production cost in Europe, many European firms took the initiative to source high-quality and low-cost transmission parts from China to export to the European market.
In 1986, Shijiazhuang Sprocket General Factory (CHSSB) began serial production of sprockets and other power transmission components for the export market. In 1989, CHSSB took the initiative in producing TB bushings for export to Europe, eventually achieving an annual production capacity of 500,000 sets. In 1994, CHSSB was responsible for drafting the original "Taper Bushing Type, Main Dimensions and Basic Paramet -ers" Machinery Industry Standard of the People's Republic of China (JB/T 7513-1994), which was approved and implemented by the Ministry of Machinery Industry of China in October 1994.

LRQA CERTIFIED ISO 9001
UKAS MANAGEMENT SYSTEMS 0001

In 2015, CAPT Power Transmission Co., Ltd. (CAPT), became responsible for drafting the JB bushing standard, and made comprehensive revisions to the JB/T 7513-1994 "Taper Bushing Type, Main Dimensions and Basic Parameters" in accordance with the relevant requirements of GB national standards. This included requirements and regulations for the application and quality control of taper bushings. The National Standard of the People's Republic of China GB/T 32220-2015 was officially iss -ued in 2015 by General Administration of Technical Supervision and Technical Standards Committee of the People's Republic of China and officially implemented on July 1, 2016.


GB

中华人民共和国国家标准

GB/T 32220—2015

锥套 型式、尺寸和基本参数

Taper bush—Types, size and basic parameters

2015-12-10 发布 2016-07-01 实施

中华人民共和国国家质量监督检验检疫总局
中国国家标准化管理委员会 发布

Comparison of Mechanical& Material Properties, Quality/Risk Assessment of TAPER BUSHING

Material parameter	Material original design standard		GB material design standard		CAPT selection of material standard	Domestic and international product market status (material selection)
Taper bush material grade	GG25 (full series)	C45 (large bore size)	HT250 (small and medium size)	C45 (large size)	C45 (full range)	HT200
Material tensile strength MPa	>275	>600	>250	>600	>600	>200
Material hardness HB	>175-225	>170-260	>175-225	>170-260	>170-260	>130
Product surface treatment delivered status	natural color	natural color	natural color or black phosphate	natural color or black phosphate or black oxide	natural color or black phosphate or black oxide	black phosphate
Product usage reliability	common	high reliability	common	high reliability	high reliability	The material's strength is insufficient compared to the design and national standard requirements, making it prone to damage and failure.
Product application quality risk	Low torque for conventional use,low risk	High torque use, no risk	Low torque for conventional use, low risk	High torque use, no risk	High torque use, no risk	High risk
Set screws standard grade	12.9	12.9	12.9	12.9	12.9	No grade/8.8/10.8/12.9
Product quality status	Meet design standard	Meet design standard	Meet GB design standard	Meet GB design standard	Higher than GB design standard	It falls below the market's fair quality standard.

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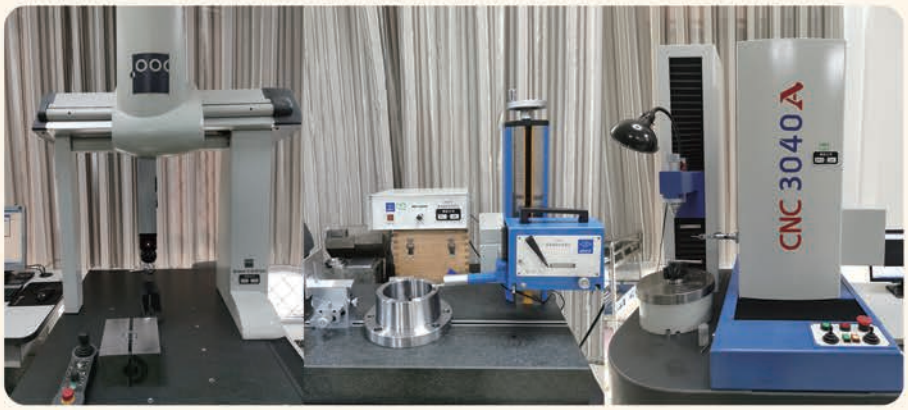
CAPT Power Transmission Co., Ltd. (CAPT) has a history of more than 30 years in producing the full range of steel TB bushings, which are produced in strict accordance with international (DIN, ANSI, ISO, etc.) and domestic (GB) standards. The products are of the highest quality, manufactured with precision equipment and reliable materials, becoming a leading supplier in the international and domestic markets.

Adhering to the core concept of "Superior Ingenuity", in the past 30 years CAPT has made significant investments in refining the production process by using intelligent production systems and equipment to imp -rove efficiency and reduce costs. Fast and flexible production can be carried out acc -ording to customer demands to achieve the ultimate combination of precision, reli -ability, and cost effectiveness.

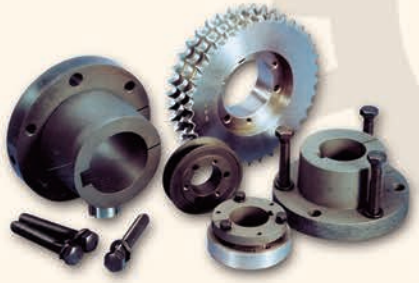


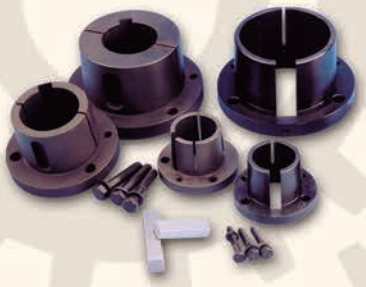
As the original draftee of the TB-Bushing standards in China, CAPT has always fo -cused on quality for the international and Chinese domestic market. Strict control is placed on product quality while engin -eering research and development conti -nue to advance product quality with sup -erior equipment and material to exceed domestic and international standard and achieve true high strength and high prec -ision products. This is demonstrated by the introduction of the full range of steel TB-Bushing products into the standardized drive components market.

Main characteristics of TB bushings:

1. Material directly affects the strength and reliability of the product. Because the working principle of the taper bushings is to lock the taper surface with the tightening screws, insufficient strength of the main body material will lead to cracking or even damaging the taper surface and thread (commonly known as thread slipping/ stripping). Insufficient main body strength can also damage the keyway during connection to the shaft due to the same reason (commonly known as rolling key) and the product will ultimately fail.

Chinese GB National Standard: Main body material of taper bushing is C45 steel (Mpa>600) and grey cast iron HT250 (Mpa>250).
CAPT Standard: Main body material of taper bushing is C45 steel (Mpa>600).
Normal market standard: Main body material is grey cast iron HT200 (Mpa>200) which has low strength and does not meet Chinese GB national standard or international standards.





2. The following are the main factors that affect installation, usage, and failures: differences in product manufacturing technique and quality control standards on bore size, mounting screw holes and keyway accuracy.
3. The tightening screws used for the taper bushes are also key accessories. The connection between the taper bushing, the shaft and the bore depends entirely on the tightening force gen -erated by the screw, so that the shaft, the bore and the keyway can be connected reliably. Therefore, the GB national standard clearly stipulates the torque requirements of the screw (grade 12.9).

Chinese GB National Standard: Screw grade 12.9.
CAPT Standard:Source grade 12.9 screws internationally with clear identification markings.
Normal market standard: To save cost, the screw quality fluct -uates between grade 8.8 to grade 12.9 without appropriate identification markings.

Screw grade and material list:
Grade 8.8 screws: C45 steel;
Grade 10.8 screws: 40Cr;
Grade 12.9 screws: 42CrMo.

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