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# JTEKT





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## 1. Company Overview (Pre-Merger History)



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On January 1 2016, JTEKT, the product of the merger of two companies with rich histories and traditions, celebrated the 10<sup>th</sup> anniversary of its founding.

歴史と伝統ある2社が合併し誕生したジェイテクトは、2016年1月に10周年を迎えました。



## 1. Company Overview (Post-Merger History)



- 2005 Koyo Seiko Co., Ltd. and Toyoda Machine Works Ltd. sign a merger agreement. /光洋精工(株)と豊田工機(株)が合併契約書締結
- 2006 Founding of JTEKT Corporation. / (株) ジェイテクト誕生
- 2007 Founding of electric power steering (EPS) manufacturing company JTEKT SONA Automotive India Ltd. in India through joint venture with SONO KOYO Steering Systems Ltd. /インドにSONA KOYO STEERING SYSTEMS LTD.と合弁で電動パワーステアリング (EPS) の生産会社、JTEKT SONA AUTOMOTIVE INDIA LTD.を設立
- 2008 Founding of machine tools sales and service company TOYODA Micromatic Machinery India Ltd. in India through joint venture with Micromatic Grinding Technologies. /インドにMICROMATIC GRINDING TECHNOLGIES と合弁で工作機械の販売・サービス会社、TOYODA MICROMATIC MACHINERY INDIA LIMITEDを設立
- 2009 Acquisition of needle bearing business from TIMKEN Company (US). /米国TIMKEN COMPANYからニードル軸受事業を買収
- 2012 Opening of Iga testing facility. /伊賀試験場開所
- 2014 Large-scale bearing technology development center starts fullscale operations. /大形軸受技術開発センター 本格稼動
- 2016 10<sup>th</sup> Anniversary /10周年

## 1. Company Overview

Company Name

株式会社ジェイテクト JTEKT CORPORATION 株式会社 捷太格特

Head Office / Headquarters

Head Office: 3-5-8 Minamisenba, Chuo Ward, Osaka

Nagoya Headquarters: 15F Midland Square, 4-7-1 Nakamura Ward, Nagoya Osaka Headquarters: Same as head office

#### Capital

JPY455.091 billion (As at 31/3/2016)

■ Sales Revenue

JPY1.3999 trillion (Consolidated) JPY634.8 billion (Independent) \*As of March 2016

Number of Employees

43,938 (Consolidated) 11,348 (Own) \*As of 31/3/2016

Number of Consolidated Subsidiaries

Consolidated Subsidiaries: 132 / Equity Method Affiliated Companies: 19 / Total: 151

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1. Company Overview (International Bases)



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Expansion into 27 countries worldwide (#of Companies: 133, #of Employees: 43,938)



## 2. Product Overview



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## 2. Product Overview (Bearings)



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#### **Main Products**

 Bearings are used in the rotating parts of various machines to reduce frictional resistance. /軸受(ベアリング)は、あらゆる機械の回転部分に使用され、摩擦抵抗を軽減する役割を担ってい ます。

Applicable

• Since no machine can work without them, bearings are known as the "rice of industry." /軸受なしではどんな機械も動かすことはできないため、「産業のコメ」とも呼ばれます。



## 2. Product Overview (Machine Tools)



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#### **Main Products**

Machine tools support the stable and quality production of our customers. Supporting the future of the Japanese craft spirit of 'monozukuri' by chasing the dream of technology.

Applicable

お客さまの安定した生産と品質を支える工作機械。技に夢を求めて「モノづくり」の未来を支えます。



Extra-Large Horizontal-Type Machining Center

Vertical-Type Machining Center

## 2. Product Overview (Mechatronics)





## 3. Export Controls /輸出管理について

Since the Toshiba-Kongsberg scandal (1987) we have worked to strengthen our in-house management structure (establishment of an export control office under direct control of the company president) and contributed to exports controls for machine tools through the activities of CISTEC and the Japan Machine Tool Builders' Association.

東芝機械ココム違反事件(1987年)発覚以降、社内管理体制を強化する(社長直轄の輸出管理室を設置)と共に、CISTEC/日 工会の活動を通じて、工作機械の輸出管理に貢献

- 1988 In-house regulations for export control (Compliance Program: CP) registered with the Ministry of Economy, Trade, and Industry (METI). /輸出管理社内規則 (Compliance Program : CP) を経済産業省へ登録
- 1989 One of our executives appointed as Chairperson of the CISTEC expert committee. /当社役員が、CISTECの専門部会の会長に就任
- 1999 Inaugurated the Export Control Committee within the Japan Machine Tool Builders' Association (JMTBA) (one of our executives appointed as inaugural Chairperson). /一般社団法人日本工作機械 工業会 (Japan Machine Tool Builders' Association [JMTBA]) に、輸出管理委員会を発足(当社役員が初代 院長に就任)
- 2016 Our company president appointed as Chairperson of JMTBA/Export Control, contributing to machine tool export control activities. /当社社長が、JMTBA・輸出管理委員長に就任し、工作機械の輸出管理活動に貢献

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## 4. 1) Control Procedure / Empty Empty 2

Of sales volume of JPY1.4 trillion (consolidated basis), international sales account for over JPY800 billion (approx. 60%) in transactions with approx. 10,000 companies.

売上高:15,000億円(連結ベース)の内、海外売上高:9,000億円超(約6割)、約10万社と取引



Robust in-house control consists of the following three-step export control process 以下を「輸出管理三点セット」として、社内管理を徹底

1) Customer Review: Examination for interacting with safe customers.

#### 顧客審査:「安全なお客さま」とお付き合いする審査

Customers shall not be individuals or companies involved with terrorism, weapons of mass destruction (atomic, chemical, or biological weapons, or missiles used to transport such), or conventional weapons (pistols, machine guns, tanks, etc. テロ、大量破壊兵器(核、化学・生物兵器、それを運搬する手段であるミサイル)や、通

常兵器(ピストル、マシンガンや戦車など)に関与していない企業や個人であること。

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2) End-Use Review: Examination to determine if the end-use is safe.

用途審査 : 「**安全な用途」であることの審査** 

They are not to be used as parts for, or in the development and/or manufacture of weapons of mass destruction or conventional weapons.

大量破壊兵器、通常兵器の部品に使用されないこと、開発や製造に使用されないこと。

#### 3) Classification: Decision based on law.

#### 該非判定:法律に基づく判定

Check whether or not the goods are subject to regulation under the law. Goods that are subject to regulation require METI permission before export.

\*In our case, high precision machine tools and bearings are applicable. 法律で定める規制対象貨物か否かを確認すること。規制対象貨物の場合は、経済産業省の許可を 取得した上で輸出が必要です。

※当社の場合、高精度の工作機械、軸受が該当

#### 1) Customer Review: Review to determine if the customer is safe.

顧客審査:「安全なお客さま」か否かを審査する

**Safe Customer:** A business or individual that is not involved with terrorism, weapons of mass destruction, or conventional weapons.

安全なお客さま: テロ、大量破壊兵器や通常兵器に関係していない企業や個人

Specifically:

Customer information should be collected within the scope of normal everyday activities. There is no need to conduct a special investigation, but please refer to sources such as the **customer's website** to determine whether or not the customer is 'safe'.

お客さま(顧客)情報は、日常の営業活動の中で分かる範囲で行います。特別な調査は必要ありませんが、インターネットの<mark>顧客</mark> **ホームページ**等を確認して「安全」なお客様かどうか確認して下さい。

If there is a risk that they have a relationship with the military, please notify the export control office.

もし、軍事に関係している恐れがある場合は、輸出管理室までご一報下さい。

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## 4. 1) Control Procedure

#### 2) End-Use Review: Review to determine that the end-use is safe.

用途審査:「安全な用途」であることの審査

Confirm that the goods will not be used as a part of weapons of mass destruction or conventional weapons, or in their development or manufacture.

大量破壊兵器や通常兵器の部品に使用されないこと、開発や製造に使用されないこと。

Specifically:

Please confirm, at the enquiry or ordering stage, what the goods or technologies you are intending to export to the customer will be used for.

取引の引合や受注段階において、お客様に輸出しようとする貨物や技術が、何に使われるか確認して 下さい。

In cases where there is a risk that they will be used in the development or manufacture of weapons of mass destruction or conventional weapons, please be sure to notify the export control office.

大量破壊兵器や通常兵器の開発・製造に使用される恐れがある場合は、輸出管理室まで 必ずご一報下さい。







## 4. 1) Control Procedure

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## **3) Classification:** Decision based on the law (Foreign Exchange and Foreign Trade Law)

Check whether or not the goods are subject to regulation under the law. Goods that are subject to regulation require METI permission before export.

Specifically:

When exporting, a check as to whether the goods are subject to regulation under the Foreign Exchange and Foreign Trade Control Law is required.

- If regulated  $\rightarrow$  Applicable
- If not regulated  $\rightarrow$  Not Applicable
- \* For our company this includes high precision machine tools and bearings.

If the goods are Applicable then export permission from METI is required. Export without permission will result in punishment for unpermitted export (imprisonment, export ban, in-house disciplinary action).

## 4. ① Control Procedure (System Operation)



#### J-SEC : <u>J</u>TEKT <u>Security</u> <u>Export</u> <u>Control</u>

#### **J-SEC1**: Customer Review

• Sales Dept.  $\rightarrow$  Application to export control office, authorization entered in DB.

#### J-SEC2: End-Use Review

• Sales Dept.  $\rightarrow$  Application to export control office, authorization entered in DB.

If not an end-user authorized at **J-SEC1** level the application will be rejected by the export control office.

• If the case falls under the **Applicability DB** then the export control office will perform shipping authorization.

#### Applicability DB:

- Applicability decision for all products including purchases are entered in the DB and preregistration is carried out.
- Specification of the goods at the **J-SEC2** stage will automatically enact the applicability decision-making process and the decision documentation will be automatically issued.



#### By digitalizing the workflow efficiency is improved and more robust control is realized.

## 4. 2 Regulations (Priority Management)



#### Automotive Parts (Steering & Driveline Systems)

- Low possibility of being used for other purposes, due to the fact that they are designed specifically for automobiles, AND, End-User/Use is determined at design stage.
  - → <u>Sensitivity Level: Low</u>

#### **Bearings**

#### 1) Specially Designed Bearings

- ◆ Treated in the same was as automobile parts due to the fact that they are designed specifically for automobiles, machine tools, construction machinery, steel facilities, and wind power generators, etc. → <u>Sensitivity Level: Low</u>
- 2) General Purpose Bearings (Catalog Products)
  - ◆ End-Use cannot be specified and neither can the End-User at the retail sales agent end,
    キャッチオールの観点から知り得る範囲で管理 → <u>Sensitivity Level: Medium</u>

#### **Machine Tools**

- Risk of being used in the manufacture of centrifugal separators for uranium enrichment, AND
- Have the ability to process almost anything (high level of universality)

#### → Sensitivity Level: High

## 4. 2 Regulations (Transfer Detection Device: TDD)

A **transfer detection device** (TDD) is installed in order to ensure that the machine tool is not used for the development and manufacture of weapons of mass destruction or conventional weapons without permission.

→ A transfer detection device is a device that disables resumption of operations when it has been detected (through vibration, etc.) that the machine tool has moved.



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## 4. 3 5-Axis Processor (Structure)

Basic Structure

The common components of milling, turning, and grinding machines are the head, column, slide, and spindle.

- The slide, which sits above the head or column, move the cutting tools and parts.
- The spindle holds the cutting tools (in the case of milling) or parts (in the case of turning).
- The slide usually moves linearly but it may sometimes rotate or tilt.
- Main Regulation Structure (Basic Regulation Parameters)
  - Overall positioning accuracy of the machine (linear axis, rotational axis)
  - ② The number of axes that <u>can simultaneously</u> <u>move for the purpose of contouring control</u>
  - The diagram on the right shows 5-axis (3 linear, 2 rotational) machine tool capable of performing complex processes such as <u>submarine screws</u>.



## 4. ③ 5-Axis Processor (Processing Examples)







Automobile Engine Block Cast

28 sec



**Turbine Blade** 



**Composite Rotary Table** 

## 4. ③ 5-Axis Processor (Processing Examples)

#### Vertical-Type M/C

Turbine Blade





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#### 4. ④ ISO Measurement (Laser Measurement)



In line with ISO230/2 (1988, 2006 or 2014) positioning accuracy is measured using equipment such as a laser length measuring devices.

位置決め精度は、ISO230/2(1988, 2006 or 2014)に基づき、レーザ測長器等で測定



## 4. 5 Recent Technology Trends (3D Printer: AMM)

- Regulations regarding 3D printers (additive manufacturing machines) used in the production of main components of gas turbine engines were added to the December 2014 Wassenaar Agreement.
- A 3D Printer is a laminate molding device which uses metal, resin or similar materials. There are hopes that 3D printers can be utilized in cases where the forms are too complex to be processed by machine tools. Development of composite processing tools, which incorporate 3D printer functionality into machine tools, is also progressing
- Other examples in Japan include incidents involving the use of 3D printers to manufacture plastic/resin guns powerful enough to kill.



Example of Gas Turbine Engine



Handmade plastic/resin guns manufactured using 3D printers, confiscated by Japanese police

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I have talked about export control of goods.

Please manage export control also about technologies for sure.

There are three points we have to do about export control of technologies.

- 1) Customer examination
- 2) Application examination
- 3) Examination of Foreign Exchange law that is applied



