

JIS

JAPANESE INDUSTRIAL STANDARD

Specified Items for Machine Tools

JIS B 6013—1977

Translated and Published

by

Japanese Standards Association

Printed in Japan

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Specified Items for Machine Tools

B 6013-1977
(Reaffirmed: 1982)1. Scope

This Japanese Industrial Standard specifies items to be described in specifications for general machine tools⁽¹⁾.

Note ⁽¹⁾ For machine tools to be used for special applications, it is desirable to be in accordance with this standard, as appropriate.

Remark: The units shown in { } in this standard are in accordance with the International System of Units and appended for reference.

2. Specifications

Items to be described in specifications shall be as follows:

2.1 General

- (1) Title
- (2) Type and Nominal Dimension
- (3) Full View
- (4) Purposes and Characteristics
- (5) Main Dimensions and Numerical Values (Each machine type shall be in accordance with Attached Table)
- (6) Accessories (standard accessories, particular accessories)

2.2 Design and Structure

- (1) Design and Structure in General⁽²⁾
- (2) Main Spindle Series
- (3) Cutting Driving Series
- (4) Feed Driving Series
- (5) Other Main Composing Parts

Note ⁽²⁾ As required, 2.2 (2) to 2.2 (5) may be summarized in structure in general.

2.3 Electrical Apparatus

- (1) General
- (2) Power Source
- (3) Main Electric Devices
- (4) Control Box
- (5) Operation Board
- (6) Summary of Operation
- (7) Wiring Works

2.4 Materials and Working⁽³⁾ Concerning the main composing parts and characteristics parts, the materials, working, etc. shall be described.

Note ⁽³⁾ The part described in 2.2 may be omitted.

2.5 Test and Inspection Methods on Running and Precision (These shall be in accordance with each JIS)

2.6 Accessory Documents

- (1) Handling Instructions (Installation drawing, electrical relation diagram, oil hydraulic system diagram and packaging details)
- (2) Accessory Details
- (3) Test and Inspection Result Record on Running and Precision⁽⁴⁾

Note ⁽⁴⁾ At the time of delivery of machine, these shall be appended.

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Attached Table 1. Engine Lathe

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYŌ		Capacity
BEDDO JŌ NO FURI	mm	Swing over bed
ŌFUKUDAI JŌ NO FURI	mm	Swing over carriage
SENTA KAN KYORI	mm	Distance between centers
KŌSAKUBUTSU KYOYŌ SHITSURYŌ	kg	Permissible weight of work
(SENTA SAGYŌ NO BAAI)		(In case of center work)
KIRIOTOSHI JŌ NO FURI	mm	Swing over gap
MEMBAN TAMMEN KARA NO KIRIOTOSHI HABA	mm	Width of gap in front of face plate
SHUJIKU		Spindle
SHUJIKUTAN (KĒSHIKI· BANGŌ)		Spindle nose (Type No.)
TĒPA ANA (KĒSHIKI·BANGŌ)	mm	Taper hole (Type No.)
KANTSŪ ANA KĒ		Hole through spindle
SENTA (KĒSHIKI·BANGŌ)		Center (Type No.)
KAITENSŪ HENKANSŪ		No. of spindle speeds
KAITENSŪ	rpm	Spindle speeds
ŌFUKUDAI		Carriage
TATE OKURI HENKANSŪ		No. of longitudinal feeds
TATE OKURI	mm/rev (mm/min)	Longitudinal feeds
YOKO OKURI HENKANSŪ		No. of cross feeds
YOKO OKURI	mm/rev (mm/min)	Cross feeds
HAYA OKURI SOKUDO (TATE)	mm/min	Rapid traverse (Longitudinal)
(YOKO)	mm/min	(Cross)

Attached Table 1 (Continued)

Items	Units	(Reference)
		English equivalent
NEJIKIRI		Threading
PITCHI NO SHURUI		No. of pitches
PITCHI NO HAN'I	mm	Range of pitches
OYANEJI (CHOKKĒ x PITCHI)	m x mm	Lead screw (dia x pitch)
SHIN'OSHI DAI		Tailstock
SHIN'OSHI JIKU NO CHOKKĒ	mm	Dia of tailstock spindle
SHIN'OSHI JIKU NO TĒPA ANA (KĒSHIKI·BANGŌ)		Taper hole of tailstock spindle (Type No.)
SHIN'OSHI JIKU NO IDŌRYŌ	mm	Travel of tailstock spindle
HAYAOKURI SOKUDO	mm/min	Rapid traverse
BEDDO		Bed
NAGASA	mm	Length
HABA	mm	Width
DENDŌKI		Motors
SHU DENDŌKI	kW-P	Main motor
ŌFUKUDAI HAYAOKURI YŌ	kW-P	Carriage rapid traverse motor
SHIN'OSHIDAI HAYAOKURI YŌ	kW-P	Tailstock rapid traverse motor
YUATSU POMPU YŌ	kW-P	Hydraulic pump motor
JUNKATSU POMPU YŌ	kW-P	Lubricant pump motor
SESSAKU YUZAI POMPU YŌ	kW-P	Collant pump motor
KIKAI NO TAKASA	mm	Height of machine
SHOYŌ YUKA MENSEKI	mm x mm	Floor space
SHŌMI SHITSURYŌ (HYŌJUN FUZOKU HIN O FUKUMU)	kg	Net weight

Attached Table 2. Bench Lathe

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYŌ		Capacity
BEDDO JŌ NO FURI	mm	Swing over bed
YOKO OKURI DAIJŌ NO FURI	mm	Swing over cross slide
SENTAKAN KYORI	mm	Distance between centers
KORETTO		Spring collet
KORETTO (KĒSHIKI·BANGO)		Collet (Type No.)
KORETTO KŌKĒ	mm	Collet capacity
KORETTO DŌKĒ	mm	Collet shank dia
SHUJIKU		Spindle
SHUJIKUTAN (KESHIKI·BANGO)		Spindle nose (Type No.)
KAITENSŪ HENKANSŪ		No. of speeds
KAITENSŪ	rpm	Speeds
SESSAKU DAI ⁽¹⁾		Carriage
TATE IDŌRYŌ		Longitudinal travel
(MAE OKURI DAI) ⁽²⁾	mm	(Front slide)
(MUKŌ OKURI DAI) ⁽³⁾	mm	(Back slide)
YOKO IDŌRYŌ	mm	Cross travel
SHIN'OSHI DAI		Tailstock
SHIN'OSHI JIKU NO CHOKKĒ	mm	Dia of tailstock spindle
SHIN'OSHI JIKU NO SUMPŌ	mm	Front size of tailstock spindle
SHIN'OSHI JIKU NO IDŌRYŌ	mm	Travel of tailstock spindle

Notes ⁽¹⁾ The carriage means the general term of part which is fixed on bed and carries out feed motion of cutting tool.

⁽²⁾ The front slide means the slide to attach the tool slide placed in this side of spindle centre line.

⁽³⁾ The back slide means the slide to attach the tool slide placed in opposite side of spindle centre line.

Attached Table 2. (Continued)

Items	Units	(Reference)
		English equivalent
BEDDO		Bed
MAGASA	mm	Length
HABA	mm	Width
NEJIKIRI		Threading
ONEJI		External threading
GAIKĒ	mm	Dia
PITCHI NO HAN'I	mm	Range of pitch
NAGASA	mm	Length
MENEJI		Internal threading
NAIKĒ	mm	Dia
PITCHI NO HAN'I	mm	Range of pitch
NAGASA	mm	Length
DENDŌKI	kW-P	Motor
KIKAI NO TAKASA	mm	Height of machine
SHŌYŌ YUKA MENSEKI	mm x mm	Floor space
SHŌMI SHITSURYŌ (HYŌJUN FUZOKUHIN O FUKUMU)	kg	Net weight

Attached Table 3. Turret Lathe

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYO		Capacity
BEDDO JO NO FURI	mm	Swing over bed
YOKO OKURI DAIJO NO FURI	mm	Swing over cross slide
SHUJIKU TAMMEN KARA TARETTO MEN MADE NO KYORI	mm	Distance of spindle end to turret face
CHAKKU NO GAIKE	mm	Chuck dia
KORETTO KOKKE (MARU)	mm	Collet capacity (Round)
(ROKKAKU)	mm	(Hexagon)
(SHIKAKU)	mm	(Square)
SHUJIKU		Spindle
SHUJIKUTAN (KESHIKI· BANGO)		Spindle nose (Type No.)
KANTSU ANA KE	mm	Hole through spindle
KAITENSU HENKANSU		No. of spindle speeds
KAITENSU	rpm	Spindle speeds
BEDDO		Bed
NAGASA	mm	Length
HABA	mm	Width
TARETTO DAI		Turret
KOGUTORITSUKE ANA NO KAZU		No. of tool holes
KOGUTORITSUKE ANA NO CHOKKE	mm	Dia. of tool holes
KOGU TORITSUKEMEN NO TAIHEN KYORI ⁽¹⁾	mm	Size across flats
RAMU (SADORU) NO IDORYO	mm	Ram (Saddle) travel
OKURI HENKANSU		No. of feeds

Attached Table 3 (Continued)

Items	Units	(Reference)
		English equivalent
OKURI	mm/rev (mm/min)	Feeds
HAYAOKURI SOKUDO	mm/min	Rapid traverse
YOKOOKURI		Cross slide
IDŌRYŌ (TATE)	mm	Travel (Longitudinal)
(YOKO)	mm	(Cross)
TATEOKURI HENKANSŪ		No. of longitudinal feeds
TATEOKURI	mm/rev (mm/min)	Longitudinal feeds
YOKO OKURI HANKANSŪ		No. of cross feeds
YOKO OKURI	mm/rev (mm/min)	Cross feeds
HAYA OKURI SOKUDO (TATE)	mm/min	Rapid traverse (Longitudinal)
(YOKO)	mm/min	(Cross)
DENDŌKI		Motors
SHUDENDŌKI	kW-P	Main motor
TARETTO DAI HAYAOKURI YŌ	kW-P	Turret rapid traverse motor
YOKO OKURI DAI HAYAOKURI YŌ	kW-P	Cross slide rapid traverse motor
YUATSU POMPU YŌ	kW-P	Hydraulic pump motor
JUNKATSU POMPU YŌ	kW-P	Lubricant pump motor
SESSAKU YUZAI POMPU YŌ	kW-P	Coolant pump motor
KIKAI NO TAKASA	mm	Height of machine
SHOYŌ YUKA MENSEKI	mm	Floor space
SHŌMI SHITSURYŌ (HYŌJUN FUZOKU HIN O FUKUMU)	kg	Net weight

Notes (1) In case where it is impossible to express by size a cross flats, it shall be the dimension equivalent thereto.

(2) The machine provided with bar feed mechanism includes the bar stand.

Attached Table 4. Single Spindle Automatic Lathe
(Stationary Head Type)

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYŌ		Capacity
BŌZAI SAGYŌ YŌ		Bar work
KORETTO KŌKĒ (MARU)	mm	Collet capacity (Round)
(ROKKAKU)	mm	(Hexagon)
(SHIKAKU)	mm	(Square)
SESSAKU DEKIRU NAGASA	mm	Turning length
KORETTO TAMMEN KARA TARETTOMEN MADE NO KYORI	mm	Distance of collect to turret face
BŌZAI OKURIDASHI NAGASA	mm	Stock feed length
CHAKKU SAGYŌ YŌ	mm	Chuck work
CHAKKU GAIKĒ	mm	Chuck dia
SESSAKU DEKIRU CHOKKĒ	mm	Cutting dia
SESSAKU DEKIRU NAGASA	mm	Turning length
CHAKKU TAMMEN KARA TARETTOMEN MADE NO KYORI	mm	Distance of chuck to turret face
NEJIKIRI NORYŌKU (KŌ) CHOKKĒ	mm	Thread cutting dia (in steel)
SHUJIKU		Spindle
SHUJIKUTAN (KĒSHIKI· BANGŌ)		Spindle nose (Type No.)
KANTSŪ ANA KĒ	mm	Hole through spindle
KAITENSŪ HENKANSŪ		No. of spindle speeds
JIDŌ HENKANSŪ		No. of auto change
KAITENSŪ	rpm	Spindle speeds

Attached Table 4 (Continued)

Items	Units	(Reference)
		English equivalent
TARETTO DAI		Turret
KŌGU TORITSUKEANA NO KAZU		No. of tool holes
KŌGU TORITSUKEANA NO CHOKKĒ	mm	Dia of tool holes
TARETTO NO CHOKKĒ MATA WA KŌGŪTORITSUKEMEN NO TAIHENKYORI	mm	Dia of turret or size across flats
IDŌRYŌ	mm	Travel
OKURI HENKANSŪ		No. of feeds
OKURI	mm/rev (mm/min)	Feeds
HAYAOKURI SOKUDO	mm/min	Rapid traverse
YOKOOKURI HAMONO DAI		Cross slide
KŌGUTORITSUKEDAI NO KAZU		No. of tool slide
HAMONODAI JŌMEN KARA SHUJIKU CHŪSHIN MADE NO KYORI	mm	Distance of spindle center to cross slide
IDŌRYŌ (TATE)	mm	Travel (Longitudinal)
(YOKO)	mm	(Cross)
OKURI HENKANSŪ		No. of feeds
OKURI	mm/rev (mm/min)	Feeds
HAYA OKURI SOKUDO	mm/min	Rapid traverse

Attached Table 4. (Continued)

Items	Units	(Reference)
		English equivalent
TATE HAMONO DAI		Vertical slide
KŌGUTORITSUKEDAI NO KAZU		No. of tool slides
IDŌRYŌ	mm	Travel
OKURI HENKANSŪ		No. of feeds
OKURI	mm/rev (mm/min)	Feeds
HAYAOKURI SOKUDO	mm/min	Rapid traverse
KAMU JIKU		Cam shaft
KAITENSŪ HENKANSŪ		No. of speeds
KAITENSŪ	rpm	Speeds
KAKŌ JIKAN	s/rev	Cycle time
DENDŌKI		Motors
SHU DENDŌKI	kW-P	Main motor
KAMUJIKU KUDŌ YŌ	kW-P	Cam shaft drive motor
TARETTODAI WARIDASHI YŌ	kW-P	Turret indexing motor
YUATSU POMPU YŌ	kW-P	Hydraulic pump motor
JUNKATSU POMPU YŌ	kW-P	Lubricant pump motor
SESSAKU YUZAI POMPU YŌ	kW-P	Coolant pump motor
KIKAI NO TAKASA	mm	Height of machine
SHOYŌ YUKAMENSEKI*	mm x mm	Floor space
SHŌMI SHITSURYŌ (HYŌJUN FUZOKUHIN NO FUKUMI)	kg	Net weight

* The machine provided with bar feed mechanism includes the bar stand.

Attached Table 5. Single Spindle Automatic Lathe
(Sliding Head Type)

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYŌ		Capacity
KORETTO KŌKĒ (MARU)	mm	Collect capacity (Round)
(ROKKAKU)	mm	(Hexagon)
(SHIKAKU)	mm	(Square)
SESSAKU DEKIRU NAGASA	mm	Turning length
SHUJIKUDAI NO IDŌRYŌ	mm	Head stock travel
SHUJIKU		Spindle
KANTSŪ ANA KĒ	mm	Hole through spindle
KAITENSŪ HENKANSŪ		No. of spindle speeds
KAITENSŪ	rpm	Spindle speeds
TARETTO DAI		Turret
KŌGU TORITSUKE ANA NO KAZU		No. of tool holes
KŌGU TORITSUKE ANA NO CHOKKĒ	mm	Dia of tool holes
HAMONO DAI		Tool slide
KŌGU TORITSUKE DAI NO KAZU		No. of tool slides
IDŌRYŌ (TATE)	mm	Travel (Longitudinal)
(Yoko)	mm	(Cross)
KAMUJIKU		Cam shaft
KAITENSŪ HENKANSŪ		No. of speeds
KAITENSŪ	rpm	Speeds
KAKŌ JIKAN	s/rev	Cycle time

Attached Table 5. (Continued)

Items	Units	(Reference)
		English equivalent
DENDŌKI		Motors
SHU DENDŌKI	kW P	Main motor
KAMUJIKU KUDŌ YŌ	kW-P	Cam shaft drive motor
JUNKATSU POMPU YŌ	kW-P	Lubricant pump motor
SESSAKU YUZAI POMPU YŌ	kW-P	Coolant pump motor
KIKAI NO TAKASA	mm	Height of machine
SHOYŌ YUKAMENSEKI *	mm x mm	Floor space
SHŌMI SHITSURYŌ* (HYŌJUN FUZOKUHIN O FUKUMU)	kg	Net weight

* The machine provided with bar feed mechanism includes the bar stand.

Attached Table 6. Multiple Spindle Automatic Lathe

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYO		Capacity
SHUJIKU NO KAZU		No. of spindles
CHAKKU GAIKĒ	mm	Chuck capacity
KORETTO KŌKĒ (MARU)	mm	Collet capacity (Round)
(ROKKAKU)	mm	(Hexagon)
(SHIKAKU)	mm	(Square)
SESSAKU DEKIRU NAGASA	mm	Turning length
BŌZAI NO OKURI NAGASA	mm	Stock feed length
SHUJIKU		Spindle
SHUJIKU NO KAZU		No. of spindles
KANTSŪ ANA KĒ	mm	Hole through spindle
KAITENSŪ HENKANSŪ		No. of spindle speeds
KAITENSŪ	rpm	Spindle speeds
TATEOKURI DAI		End tool slides
IDŌRYŌ	mm	Travel
YOKOOKURI HAMONODAI		Cross tool slide
HAMONODAI NO KAZU		No. of tool slide
IDŌ RYŌ	mm	Travel
KAMUJIKU		Cam shaft
KAITENSŪ HENKANSŪ		No. of speeds
KAITENSŪ	rpm	Speeds

Attached Table 6 (Continued)

Items	Units	(Reference)
		English equivalent
DENDŌKI		Motors
SHU DENDŌKI	kW-P	Main motor
YUATSU POMPU YŌ	kW-P	Hydraulic pump motor
JUNKATSU POMPU YŌ	kW-P	Lubricant pump motor
SESSAKU YUZAI POMPU YŌ	mm	Coolant pump motor
KIKAI NO TAKASA	mm	Height of machine
SHOYŌ YUKA MENSEKI *	mm x mm	Floor space
SHŌMI SHITSURYŌ* (HYŌJUN FUZOKUHIN O FUKUMU)	kg	Net weight

* The machine provided with bar feed mechanism includes the bar stand.

Attached Table 7. Vertical Boring and Turning Mill

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYŌ		Capacity
FURI	mm	Swing
HIROGETA TOKI NO FURI	mm	Extension swing
TĒBURU JŌMEN KARA YOKO KETA KAMEN MADE NO KYORI	mm	Distance of table top to cross rail
TĒBURU NO SAIDAI KAITEN NORYOKU	kgf·m {N·m}	Max torque
TĒBURU		Table
CHOKKĒ	mm	Dia
KAITENSŪ HENKANSŪ		No. of table speeds
KAITENSŪ	rpm	Table speeds
T MIZO (YOBISUMPŌ)	mm	T-slots (Nominal size)
SHŌMEN HAMONO DAI		Rail head
HAMONODAI NO KAZU		No. of rail heads
SESSAKU DEKIRU SAIDAI CHOKKĒ	mm	Max turning dia
JŌGE IDŌ RYŌ	mm	Vertical travel
SENKAI KAKUDO	°.	Swivelling angle
JŌGE OKURI HENKANSŪ		No. of vertical feeds
JŌGE OKURI	mm/rev (mm/min)	Vertical feeds
SAYŪ OKURI HENKANSŪ		No. of longitudinal feeds
SAYŪ OKURI	mm/rev (mm/min)	Longitudinal feeds
HAYAOKURI SOKUDO (JŌGE)	mm/min	Rapid traverse (Vertical)
(SAYŪ)	mm/min	(Longitudinal)

Attached Table 7 (Continued)

Items	Units	(Reference)
		English equivalent
YOKO HAMONO DAI		Side head
HAMONO DAI NO KAZU		No. of side heads
SESSAKU DEKIRU SAIDAI CHOKKĒ	mm	Max turning dia
SAYŪ IDŌ RYŌ	mm	Longitudinal travel
SENKAI KAKUDO	 [°]	Swivelling angle
TŌGE OKURI HENKANSŪ		No. of vertical feeds
JŌGE OKURI	mm/rev (mm/min)	Vertical feeds
SAYŪ OKURI HENKANSŪ		No. of longitudinal feeds
SAYŪ OKURI	mm/rev (mm/min)	Longitudinal feeds
HAYA OKURI SOKUDO (JŌGE)	mm/min	Rapid traverse (Vertical)
(SAYŪ)	mm/min	(Longitudinal)
TARETTO HEDDO		Turret head
KŌGU TORITSUKE ANA NO KAZU		No. of tool holes
SESSAKU DEKIRU SAIDAI CHOKKĒ	mm	Max turning dia
JŌGE IDŌ RYŌ	mm	Vertical travel
SENKAI KAKUDO	 [°]	Swivelling angle
JŌGE OKURI HENKANSŪ		No. of vertical feeds
JŌGE OKURI	mm/rev (mm/min)	Vertical feeds
SAYŪ OKURI HENKANSŪ		No. of longitudinal feeds
SAYŪ OKURI	mm/rev (mm/min)	Longitudinal feeds
HAYA OKURI SOKUDO (JŌGE)	mm/min	Rapid traverse (Vertical)
(SAYŪ)		(Longitudinal)

Attached Table 7 (Continued)

Items	Units	(Reference)
		English equivalent
YOKO KETA		Cross rail
JŌGE IDŌRYŌ	mm	Vertical travel
IDŌ SOKUDO	mm/min	Traverse
DENDŌKI		Motors
SHU DENDŌKI	kW-P	Main motor
YOKOKETA IDŌYŌ	kW-P	Cross rail traverse motor
SHŌMEN HAMONO DAI HAYAOKURIYŌ	kW-P	Rail head traverse motor
YOKO HAMONO DAI HAYAOKURIYŌ	kW-P	Side head traverse motor
YUATSU POMPUYŌ	kW-P	Hydraulic pump motor
JUNKATSU POMPUYŌ	kW-P	Lubricant pump motor
SESSAKU YUZAI POMPUYŌ	kW-P	Coolant pump motor
KIKAI NO TAKASA	mm	Height of machine
SHOYŌ YUKAMENSEKI	mm × mm	Floor space
SHŌMI SHITSURYŌ (HYŌJUN FUZOKUHIN O FUKUMU)	kg	Net weight

Attached Table 8. Upright Drilling Machine

Items	Units	(Reference)
		English equivalent
NORYOKU·YORYŌ		Capacity
FURI	mm	Swing
TĒBURU JŌMEN KARA SHUJIKUTAN MADE NO KYORI	mm	Distance of table top to spindle end
BĒSU JŌMEN KARA SHUJIKUTAN MADE NO KYORI	mm	Distance of base plate to spindle end
ANA AKE NORYOKU (S 45 C NO TOKI)	mm	Drilling capacity (in steel)
NEJITATE NORYOKU (S 45 C NO TOKI)	mm	Tapping capacity (in steel)
SHUJIKU		Spindle
TĒPA ANA (KĒSHIKI·BANGŌ)		Taper hole (Type No.)
IDORYŌ	mm	Spindle stroke
KAITENSŪ HENKANSŪ		No. of spindle speeds
KAITENSŪ	rpm	Spindle speeds
OKURI HENKANSŪ		No. of feeds
OKURI	mm/rev (mm/min)	Feeds
HAYAOKURI SOKUDO	mm/min	Rapid traverse
SHUJIKUTŌ		Spindle head
IDORYŌ	mm	Vertical travel
OKURI HENKANSŪ		No. of feeds
OKURI	mm/rev (mm/min)	Feeds
HAYAOKURI SOKUDO	mm/min	Rapid traverse