

TOYODA

G32 SERIES

Cylindrical Grinders /
Universal Grinders

GOS32
GOP32
GUS32
GUP32

JTEKT



<http://www.jtekt.co.jp>

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JTEKT
JTEKT CORPORATION

Traditional capability

More than 30,000 units of **TOYODA** grinders of JTEKT are working in the world already. The highly reliable and best-selling universal grinder

Cylindrical grinder / Universal grinder

GB2 SERIES

GOS32 / GOP32

Cylindrical grinder

The basic functions of cylindrical grinding, plunge grinding, traverse grinding, etc. have been integrated into one machine. A lineup of 8 variations, from manual GOS series to the universal and productive GOP series.



Photo is of GOP32x100. Photo includes optional specifications. Standard paint color shown. Standard paint color (silver metallic, dark gray metallic)



Photo is of GUP32x100. Photo includes optional specifications. Standard paint color shown. Standard paint color (silver metallic, dark gray metallic)

GUS32 / GUP32 Universal grinder

Capable of such high-level operations as plain grinding, shoulder grinding, or internal grinding on command. The manual GUS series and the universal GUP series are available in 4 grades.



Secured high-accuracy ▶ p03-04

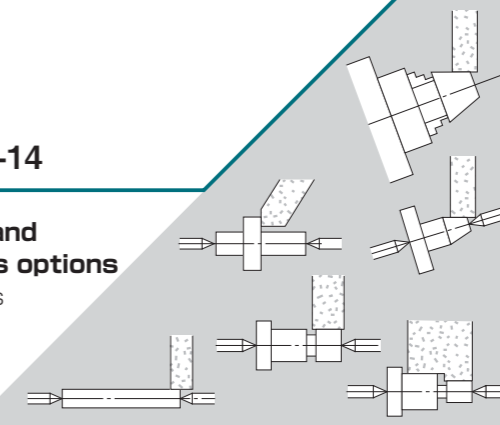
Wheel spindle rotational accuracy of 0.016 um
Consistent machining accuracy means high reliability over long period of time

Outstanding operativity ▶ p05-06

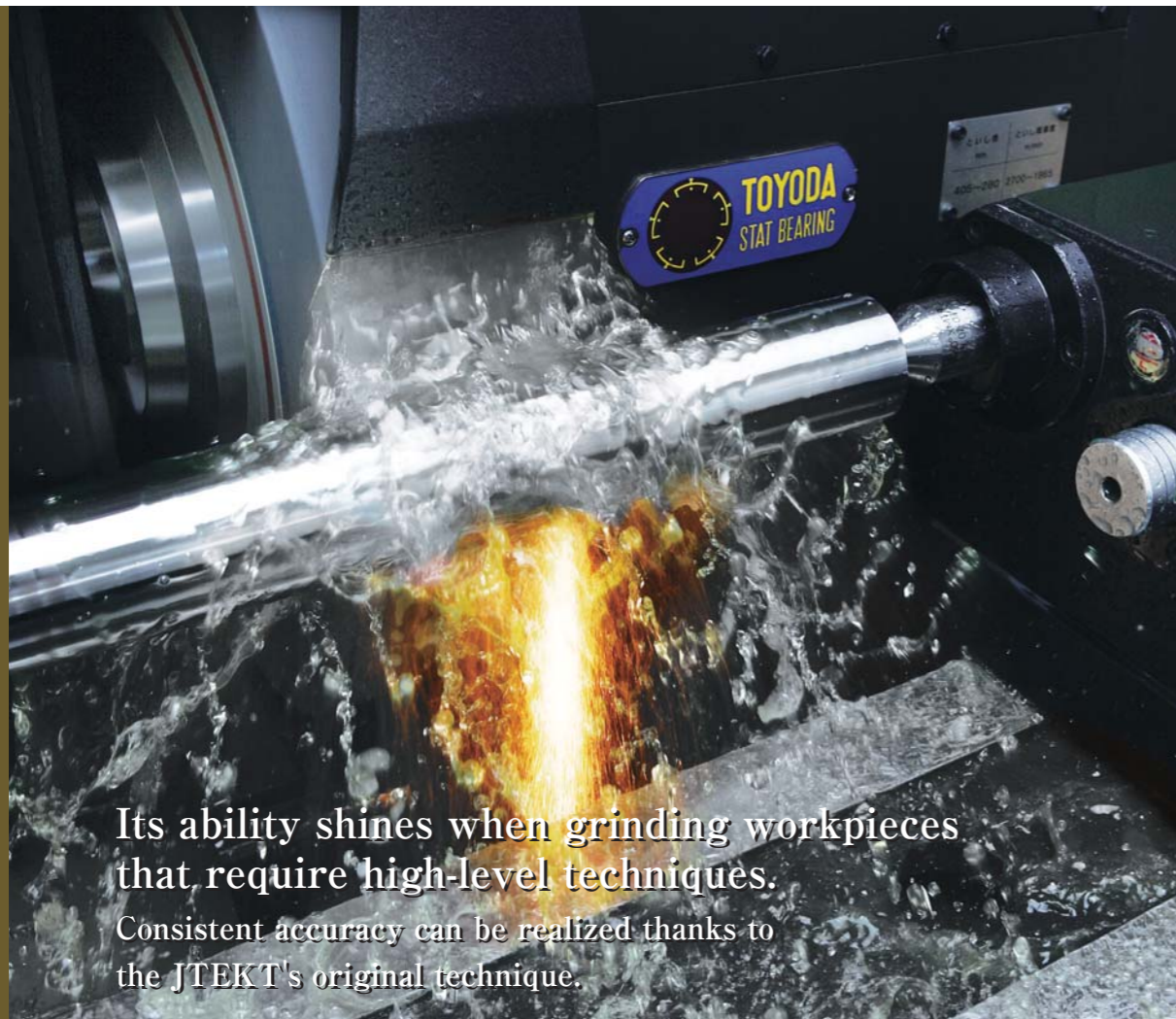
Capable of producing various types of workpieces in both small lots and mass-production
Excellent flexibility to meet every operational requirement

Enhanced diversity ▶ p07-14

Available in 12 types and 12 grades with various options
A lineup to meet each user's various requirements



High accuracy

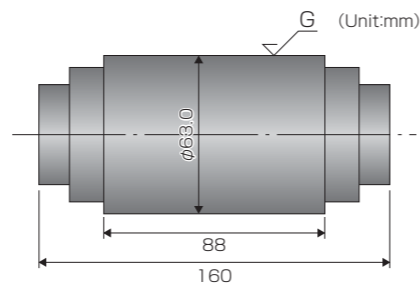


Its ability shines when grinding workpieces that require high-level techniques. Consistent accuracy can be realized thanks to the JTEKT's original technique.

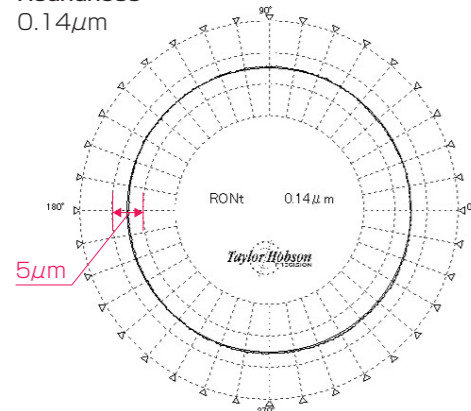
Example of mirror face finish grinding

[Grinding machine] GOP32×50

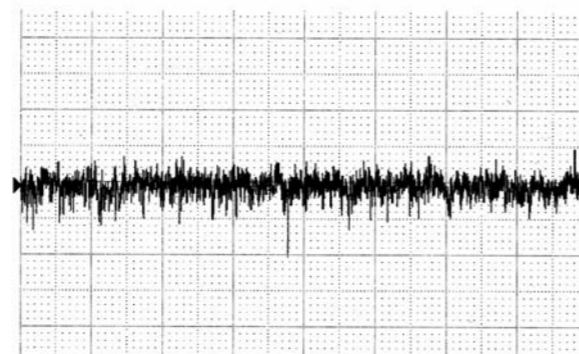
- Grinding condition
- [Grinding method] Traverse grinding
- [Wheel to be used] WA60K (φ405×75×φ127)
- [Wheel surface speed] 30m/s
- Workpiece
- [Name] Standard test piece
- [Material] SCM435



Roundness
0.14μm

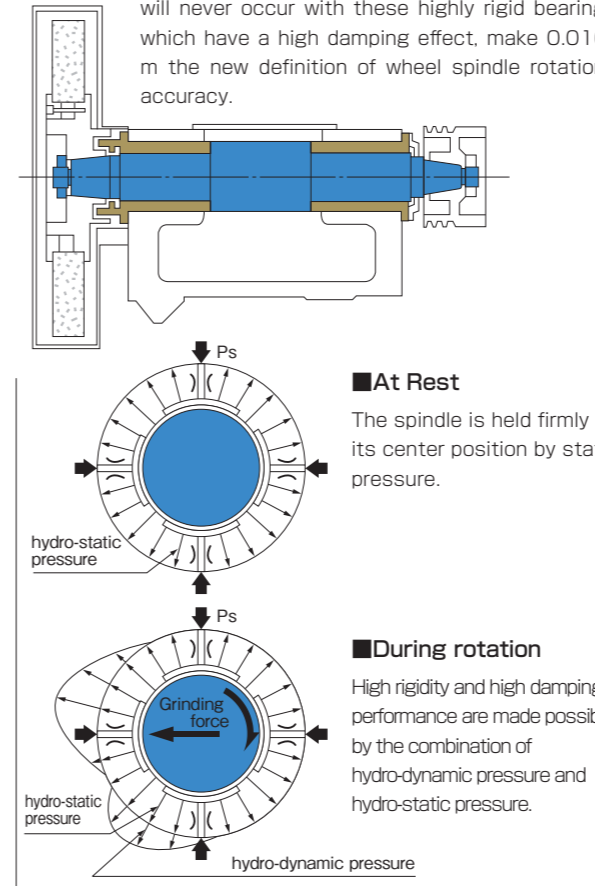


Surface roughness
Rz=0.161μm



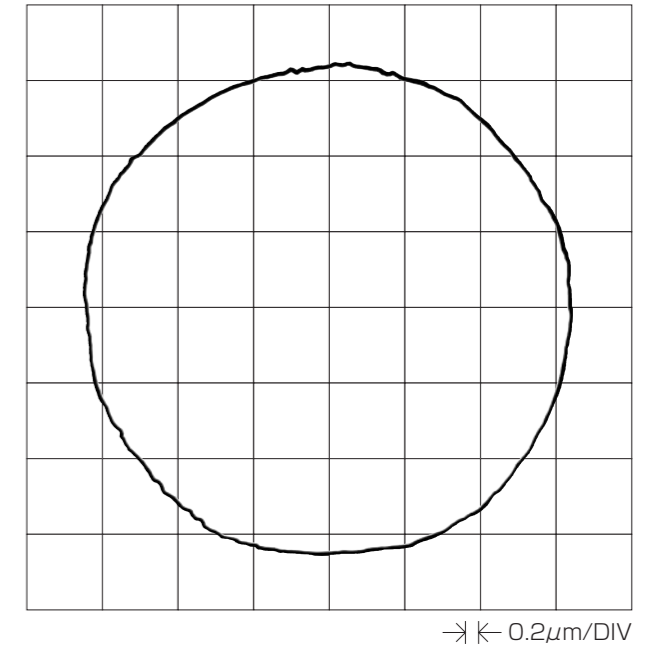
Wheel spindle

Hybrid TOYODA STAT BEARING are used for the wheel spindle bearings. Metal-to-metal contact will never occur with these highly rigid bearings, which have a high damping effect, make 0.016μm the new definition of wheel spindle rotational accuracy.



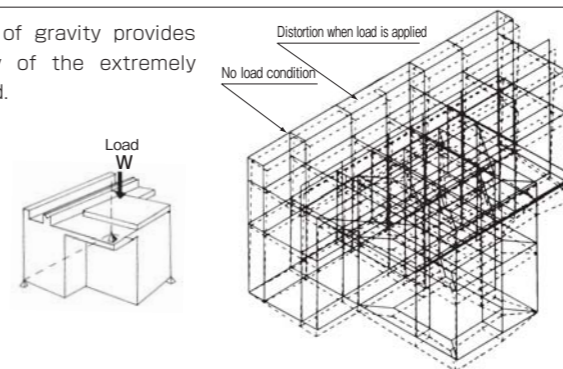
Wheel spindle rotational accuracy 0.016μm

An Example of Lissajou's Figure



Bed

A low center of gravity provides extra stability of the extremely rigid ribbed bed.



Work Spindle with Minimum Runout and Vibration

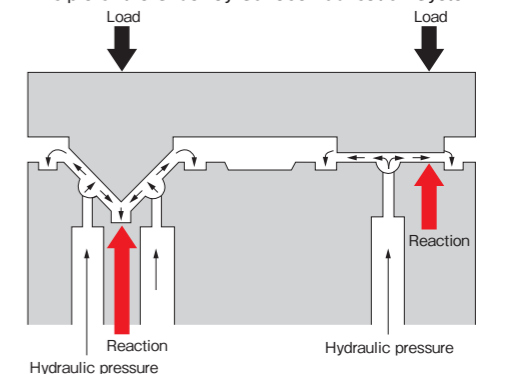
A highly accurate bearing is adopted, and the spindle drive motor with a little vibration is installed in the position in which center of gravity was lowered. A suitable rotational speed can be applied to a workpiece by infinitely variable speeds.



Table and wheelhead sideway

Highly accurate and smooth movement is maintained for long time by supplying filtrated low pressure lubrication oil, applying principle of TOYODA STAT BEARING.

Principle of the Slideway Surface Lubrication System





Operator-Friendly

Simplified manual operation

Even if you're a beginner, safe machine operation is no problem

Improvement of operativity

Simplification of table feed speed adjustment

The speed adjustment can be easily done within one rotation. Moreover, the micro feed speed can be reproduced according to the stop function.



Spoke shape handle

The spoke shape handle of a fit preeminent feeling that considered the easiness of the operation to do is adopted.



Ergonomic operation panel

The button lamp to use was reviewed, and the arrangement being easier to use is made.

Example)

- ◆ Abolition of selection type push button
- ◆ Adoption of button with lamp to the wheel spindle start button
- ◆ Timer counter with large display is adopted

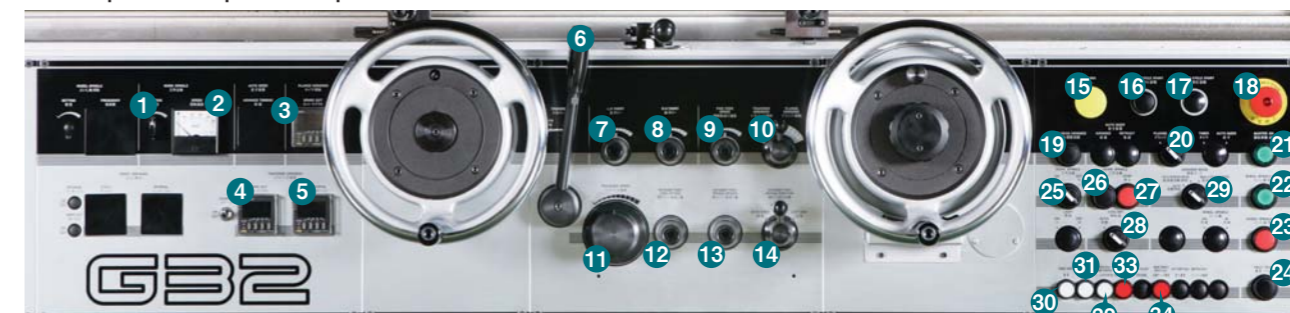


Opening and shutting type door with easy operation

The mounting/detaching of cover at the time of wheel change by adopting the opening and shutting type door to the bed cover becomes unnecessary.



Description of operation panel function



- | | | |
|--|---|---|
| 1 Work spindle speed set knob | 13 Traverse grinding intermittent rough feedrate set knob | 24 Fault reset button switch |
| 2 Work spindle speed meter | 14 Traverse grinding intermittent feedrate set knob | 25 Work spindle ON / OFF switch |
| 3 Sparkout timer | 15 Wheelhead position adjusting retract pushbutton switch | 26 Work spindle start switch button |
| 4 Traverse grinding with spark-out timer | 16 Grinding cycle start pushbutton switch | 27 Work spindle stop switch button |
| 5 Traverse grinding with cutting-in interval counter | 17 Dressing start button switch | 28 Coolant discharge cycle set switch |
| 6 Table feed manual / auto selection lever | 18 Emergency stop pushbutton switch | 29 Special grinding cycle setting switch |
| 7 Tarry adjusting knob at the left traverse end | 19 Wheelhead position adjusting advance pushbutton switch | 30 Power display lamp |
| 8 Tarry adjusting knob at the right traverse end | 20 Plunge/traverse changeover switch | 31 PC running display lamp |
| 9 Fine grinding feedrate adjusting knob | 21 MASTER ON pushbutton switch | 32 wheelhead rapid feed position display lamp |
| 10 Traverse / plunge selector and rough grinding feedrate set knob | 22 Wheel spindle start pushbutton switch | 33 PC battery display lamp |
| 11 Traverse speed adjusting knob | 23 Wheel spindle stop pushbutton switch | 34 work spindle servo fault display lamp |
| 12 Traverse grinding intermittent fine feedrate set knob | | |

The content of your work is a leading part.

It flexibly corresponds to the content of your work by abundant specification grade settings.

Variety

Models

Cylindrical grinders
 GOS× 50 Model ×100 Model ×150 Model

GOP× 50 Model ×100 Model ×150 Model

Universal grinders
 GUS×050 Model GOS×100 Model GOS×150 Model

GUP×050 Model GOS×100 Model GOS×150 Model

Type

Manual type

General-purpose type
plunge and traverse grindings

Production type
plunge grinding only

Manual type

General-purpose type
plunge and traverse grindings

Machine grade 1GO 2GO 3GO 4GO 6GO 7GO 8GO 9GO 1GU 2GU 3GU 4GU

Operation

List of accessories on each grade (※Standard accessories is excepted if option A is chosen.)
 ●: Standard accessory ○: Optional accessory A □: Optional accessory B - : Not available

Category	Name	Specification Grade											
		Cylindrical grinders						Universal grinders					
		Manual type		General-purpose type		Production type		Manual type		General-purpose type			
		GOS		GOP		GUS		GUP					
		1GO	2GO	3GO	4GO	6GO	7GO	8GO	9GO	1GU	2GU	3GU	4GU
Wheelhead	1 30M specifications	●	●	●	●	●	●	○	○	●	●	●	●
	2 45M specifications	-	-	○	○	○	○	●	●	-	-	○	○
	3 Wheelhead hydraulic feed unit	-	-	●	●	●	●	●	●	-	-	●	●
	4 Wheelhead intermittent rough feed unit	-	-	●	●	-	-	□	□	-	-	●	●
	5 Wheelhead Intermittent fine feed device, feed stop device (Item 9 or 42 is needed)	-	-	-	●	-	-	□	□	-	-	□	□
	6 Dead stop fine adjustment unit for wheelhead	-	□	●	●	●	●	●	●	-	□	●	●
	7 Wheelhead fine grinding feed device, feed stop device (Item 9 or 42 is needed)	-	-	□	●	□	●	□	□	-	-	□	□
	8 Wheelhead manual positive stop grinding attachment	-	□	□	□	□	□	□	□	-	□	□	□
	9 Wheelhead fine grinding feed (LS type) device	-	-	□	□	□	□	□	□	-	-	□	□
	10 Wheelhead handwheel C.C.W. rotation specifications	-	-	○	○	○	○	○	○	-	-	○	○
	11 Wide wheel specifications (GOP 100mm, GUP75mm), Wide wheel guard	-	-	□	□	□	□	□	□	-	-	□	□
	12 Wide wheel flange (round nut: 50mm~100mm wide)	-	-	□	□	□	□	□	□	-	-	□	□
	13 Wheelhead position read-out device (1μdia./div)	-	-	□	□	□	□	□	□	-	-	□	□
	14 510dia. Wheel specifications (max. width 50mm) ※1	-	-	-	-	○	○	○	○	-	-	-	-
	15 Specification of wheelhead rapid retraction amount 65mm	-	-	□	□	□	□	□	□	-	-	-	-
	16 Variable wheel peripheral speed device (inverter control [deceleration only] manual adjustment)	-	-	□	□	□	□	□	□	-	-	□	□
Workhead	17 Non-swiveling, infinitely variable speed workhead	●	●	●	●	●	●	●	●	-	-	-	-
	18 Swivel type infinitely variable speed workhead with combination of live and dead spindle	○	○	○	○	○	○	○	○	●	●	●	●
	19 Workhead with combination of live and dead spindle (infinitely variable speed, non-swiveling type)	○	○	○	○	○	○	○	○	○	○	○	○
Footstock	20 Manual type footstock (manual lever type: 25mm stroke)	●	●	●	●	●	●	●	●	●	●	●	●
	21 Footstock with manual taper corrector (manual lever type: 25mm stroke)	○	○	○	○	○	○	○	○	○	○	○	○
	22 Hydraulic footstock (quill stroke 20mm)	-	-	○	○	○	○	○	○	-	-	○	○
	23 Hydraulic footstock (hydraulic stroke 60mm)	-	-	○	○	○	○	○	○	-	-	○	○
Table	24 Manual taper adjustment type footstock (hydraulic stroke 60mm)	-	-	○	○	○	○	○	○	-	-	○	○
	25 Hydraulic table feed device	-	●	●	●	-	-	□	□	-	●	●	●
	26 Automatic traverse control device	-	-	□	●	-	-	□	□	-	-	□	□
	27 Table position read-out device (1μm/div)	-	-	□	□	-	-	□	□	-	-	□	□
Wheel Dresser	28 Straight wheel-face dresser type 1A (wheel width 50mm)	-	-	-	-	-	-	-	-	-	-	□	-
	29 Straight wheel-face dresser type 1A (wheel width 105mm)	□	□	□	□	□	□	-	-	-	-	-	-
	30 Straight wheel-face dresser type 1B (wheel width 105mm)	-	-	-	-	-	-	-	●	-	-	-	-
	31 Multi-step wheel-face dresser type 3B (wheel width 100mm)	-	-	-	-	-	-	-	-	●	-	-	-
	32 Automatic wheel-face dresser control unit	-	-	-	-	-	-	-	●	●	-	-	-
	33 Automatic wheelhead compensator	-	-	-	-	-	-	-	●	●	-	-	-
Internal grinding unit	34 ID/OD wheel dresser	-	-	-	-	-	-	-	-	□	□	□	□
	35 Internal grinding attachment (3-point steady rest, coolant automatic switching)	-	-	-	-	-	-	-	-	□	□	-	●
	36 Automatic grinding cycles for internal grinding	-	-	-	-	-	-	-	-	-	-	-	□
	37 Internal grinding spindle ON/OFF	-	-	-	-	-	-	-	-	□	□	-	●
	38 Taper quill for internal grinding spindle (Refer to the catalog of "Internal grinding unit")	-	-	-	-	-	-	-	-	□	□	-	□
Others	39 Grinding position height-up specifications (corresponding to max. swing 390mm dia.)	-	-	□	□	□	□	□	□	-	-	□	□
	40 Internal grinding spindle motor output specifications	-	-	-	-	-	-	-	-	-	-	□	□
	41 Sizer (3P, 5mm dia. to 80mm dia.)	-	-	□	●	□	●	□	□	-	-	□	□
	42 Sparkout timer	-	-	●	●	●	●	●	●	-	-	●	●
	43 Special grinding cycles	-	-	-	□	-	□	□	□	-	-	-	□
	44 Large diameter 3-point work rest (100dia. ~ 200dia.)	-	-	-	-	-	-	-	-	□	□	-	□
	45 Simplified lateral locator	-	-	□	□	□	□	□	□	-	-	-	-

※1: At the time of 510mm dia. wheel specifications, the cover of wheel change side becomes insertion cover.

The grinding cycle with free selection

The best-suited cycle can be selected from the various grinding cycles - everything from timer grinding to special grinding

→ Hydraulic rapid feed

→ Grinding feed

= Timer

- - - - - Manual feed

● : Standard accessory □ : Optional accessory

Method	Cycle	Specification Grades									Applications	Motions	Control	
		GOP	1GO	2GO	3GO	4GO	6GO	7GO	8GO	9GO				
Plunge Grinding Cycles														
Automatic grinding	Dead-stop grinding					●	●	●	●	●		General grinding	Rapid feed Grinding feed	Timer
	Fine LS control grinding					□	□	□	□	□				Fine grinding LS control
	Auto-sizer grinding					□	●	□	□	□				Auto-sizer

On the automatic plunge grinding, each grinding method is selectable according to the characteristic of required accuracy and workpiece

Method	Cycle	Specification Grades									Applications	Motions	Control	
		GOP	1GO	2GO	3GO	4GO	6GO	7GO	8GO	9GO				
Traverse Grinding Cycles														
Automatic grinding	Dead-stop grinding						●					General grinding	Rapid feed Grinding feed	Counter
	Fine LS control grinding					□	□			□	□			Fine grinding LS control
	Auto-sizer grinding					□	●				□			Auto-sizer

On the automatic traverse grinding, each grinding method is selectable according to the characteristic of required accuracy and workpiece

Method	Cycle	Specification Grades									Applications	Motions	Control	
		GUP	1GU	2GU	3GU	4GU	-	-	-	-				
Internal Grinding Cycles														
Automatic grinding	Dead-stop grinding						●					General grinding	Automatic operation for grinding only; other operations are manually performed	Timer
	Dead-stop grinding						●							Counter

Automatic internal grinding controls wheelhead by the counter and the signal of LS

Special grinding cycle

Object grade | 4GO | 7GO | 8GO | 9GO | 4GU |

Automatic grinding at retracted end

Automatic grinding can be done from retracted end of wheelhead even if the wheel diameter is large and the rapid advance stroke is under 40 mm dia.

	Plunge Grinding Cycles	Traverse Grinding Cycles
Dead-stop grinding		
Fine LS control grinding		

Manual grinding at retracted end

Automatic grinding at retracted end of wheelhead
Manual grinding can be done from retracted end of wheelhead even if the wheel diameter is large and the rapid advance stroke is under 40 mm dia.

Manual grinding at retracted end

Test grinding

Test grinding
It is possible to grind the workpiece till over size beforehand and is possible to make additional grinding any number of times while confirming the size.

	Plunge Grinding Cycles	Traverse Grinding Cycles
Test grinding		

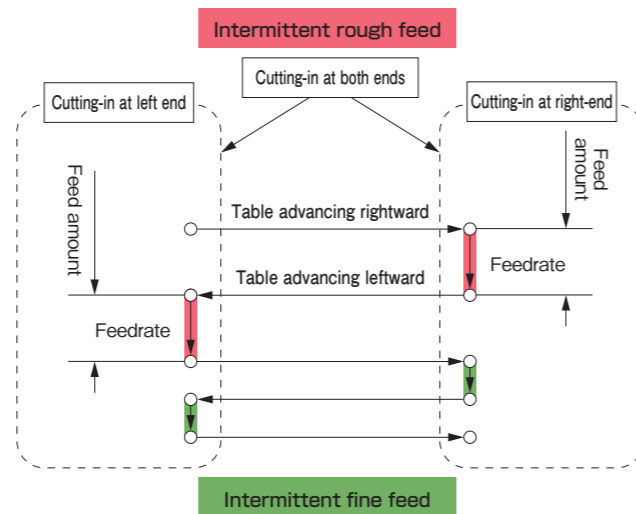
Engineering supporting highly accurate grinding

wheelhead intermittent feed unit

The condition of wheelhead feed in the table traverse grinding are the cut-in method (left end, right end and both ends), the cut-in amount (feed amount) and the cut-in speed (feed rate), it is possible to perform suitable grinding for the workpiece by setting them.

First step feed amount adjustment: The cut-in of wheelhead is executed at table traverse end. This cut-in amount is possible to set according to usage and workpiece characteristic. (max. 0.04mm/radius)

Second step feed amount adjustment(option): It is possible to execute intermittent cut-in of finish grinding by equipping the sizing unit. (max. 0.005mm/radius)



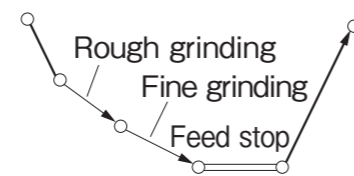
Dead stop fine adjustment unit for wheelhead

If using this micro adjustment device at the time of final size adjustment of wheelhead feed, the wheelhead advanced end position can be set easily without changing the setting of fine grinding feed amount.



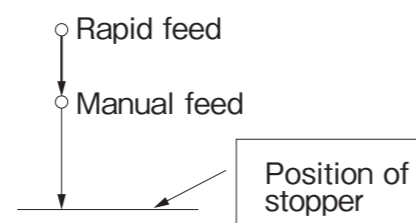
wheelhead fine grinding feed device, feed stop device

The workpiece can be finished to the correct size by making the grinding feed finer by the wheelhead fine grinding feed device or the signal of sizing device. Furthermore, it is possible to stop the wheelhead feed similarly even though workpiece is near the correct size and to turn on the spark-out timer.



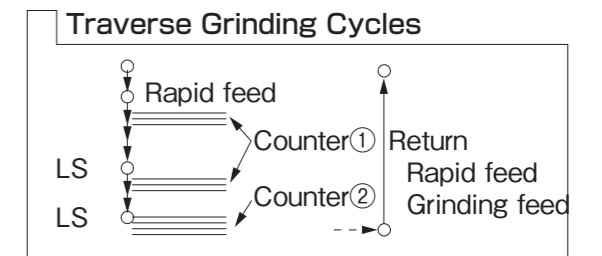
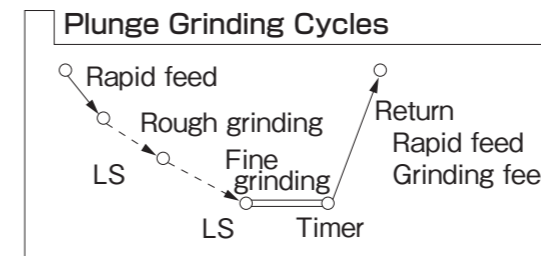
Wheelhead manual positive stop grinding attachment

The stopper was mounted to the wheelhead feed handle in order to keep the grinding accuracy by stopping repeatedly the wheelhead accurately at the halfway position. The workpiece can be ground to the set size by making the positioning, pushing the workpiece repeatedly to the stopper by manual feed.



Wheelhead fine grinding feed (LS Type) device

In order to perform more accurately the dead stop grinding listed above, this device detects LS at the switching position from the rough grinding to the fine grinding by setting the fine grinding feed range due to dividing rough grinding amount. Furthermore, the spark-out can be started by setting LS and stopping the fine grinding at the traverse grinding.



Wheelhead position read-out device (1 μm dia./div)

By adding a magnetic scale to the wheelhead feed portion, operator can read the wheelhead current position and wheelhead positioning can be done to the necessary position easily.

Table position read-out device (1 μm dia./div)

The table positioning can be done easily by adding the magnetic scale to the table feed portion as well as wheelhead feed.

Wheelhead micro cut-in handle

The standard handle is of 5 μm dia./div, but the finer cut-in of 1 μm dia./div can be done by this handle. And setup change is possible without changing the grinding stroke because the cut-in is done at the advanced end of grinding stroke.

Wheel spindle inverter

When grinding workpiece by using ultra grain wheel such as CBN and diamond, the rotation speed matched to workpiece and the proper rotation speed for truing are easily adjusted and reproduced.

Internal grinding spindle motor with high output specification

The capacity of the motor for wheel rotation can be increased, corresponding to heavy grinding of difficult material to grind (ceramic, carbide, high-speed, etc.) and to grinding by large diameter wheel.

◆0.75kW (Standard) —> 1.5kW
 —> 2.2kW

Simplified lateral locator

Operator can lower the dial gauge mounted on the wheelhead manually and perform easily table positioning by measuring the datum end face on each workpiece.



Excellent Techniques

Front installation makes it easy to change the template.

A round template, which can be made by the user, has been selected.

Wheel Dresser Types 1 and 3 (Both types can be mounted on wheelhead, which enables to dress wheel face accurately)

	Straight Wheel Dresser Type 1A	Straight Wheel Dresser Type 1B	Profile Wheel Dresser Type 3B
	<ul style="list-style-type: none"> (Straight wheel dresser type 1A) • Straight wheel dressing type • Manual diamond tool infeed • No automatic compensation of the wheelhead feed for wheel dressing amount 	<ul style="list-style-type: none"> (Straight wheel dresser type 1B) • Straight wheel dressing type • Automatic diamond tool infeed • With automatic compensation of the wheelhead feed for wheel dressing amount 	<ul style="list-style-type: none"> (Profile wheel dresser type 3B) • Multi-step wheel dressing type • Automatic diamond tool infeed • With automatic compensation of the wheelhead feed for wheel dressing amount
Machine grades applicable	Wheel width 50mm : 3GU Wheel width 105mm : 1GO, 2GO, 3GO, 4GO, 6GO, 7GO	8GO	9GO
Specifications	Wheel diameter	φ405~φ280mm (GOP), φ355~φ220mm (GUP)	
	Wheel dressing width	GOP : Max. 105mm, GUP : Max. 50mm	
	Manual diamond tool infeed	0.02mm dia./div	
	Automatic diamond tool infeed amount	φ0.02~φ0.10mm	
	Dressing stroke	GOP : Max. 115mm, GUP : Max. 70mm	
	Diamond tool	Shank diameter=8mm dia.	
Step of different diameters	Max. φ30mm		

※Taper adjustment mechanism is equipped.

A Wide Range of Operations

Maintains high accuracy while performing complex grinding and internal grinding, which require high-level techniques.

Auto Sizer

The auto sizer outputs the sizing signals, corresponding to the preset target dimensions and indicates automatically the wheelhead feedrates and the feed stop by signals. The auto sizer is best for more efficient work and more precise work.

Amplifier Specifications

Controller	Type	3P amplifier (for 3-point control)
	Model	AX-1030
	Meter indication range	H range : -10~0~50μm (1μm/Div) L range : -100~0~500μm (10μm/Div)
	Size adjustable range	
	Signal setting range	1 0~+500μm 2 0~+60μm 3 0μm
	Relay setting range	AC100V, 3A (resistance load)
	Power source	AC100 110/200/220V±10% 50/60Hz rating
	Mass	6.1

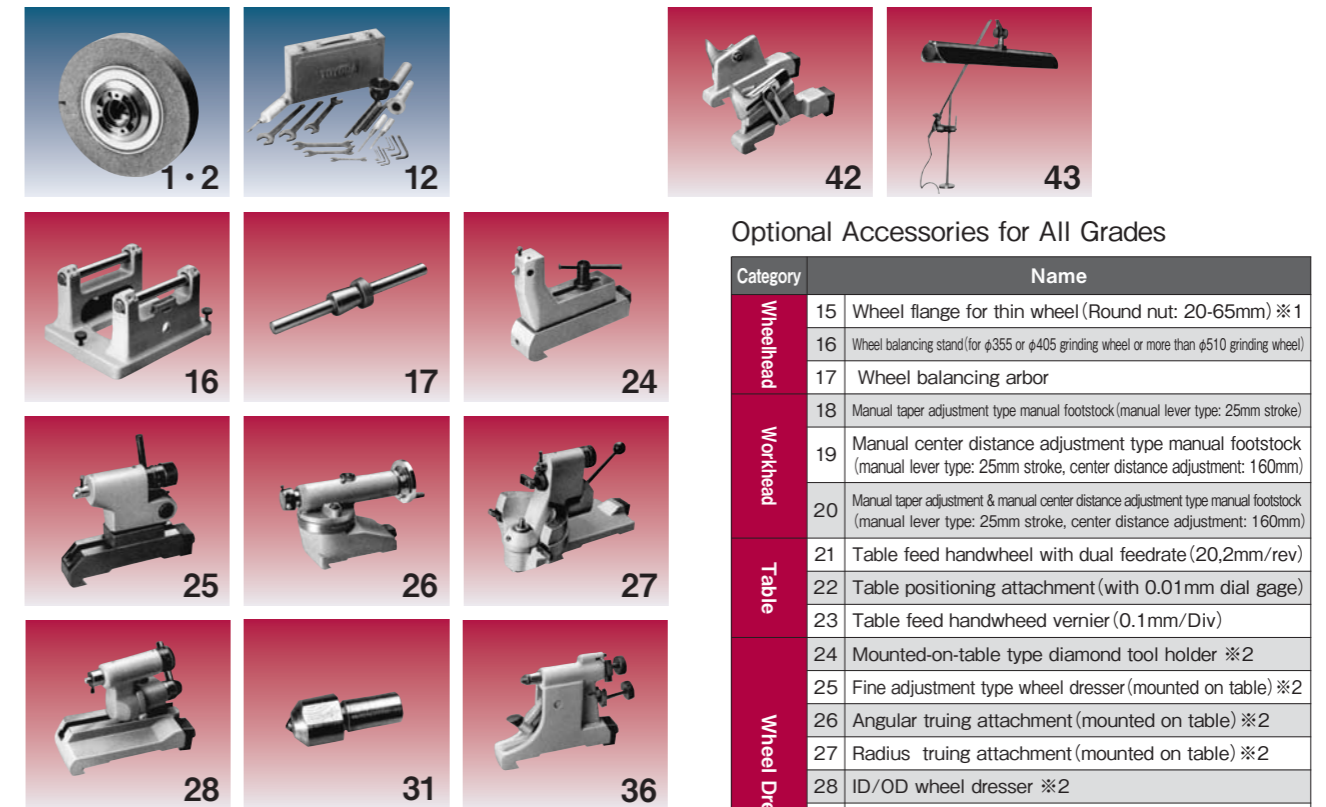
Auto-sizer Specifications

Gaging head	Type	Hydraulic type
	Model	FX-1001
	Example of Gaging	
	Application	Cylinder OD gaging
	Gaging range	φ5~φ80mm
	Contact pressure	2~2.5N
	Tip materials	Diamond
	Cylinder stroke Weight	80mm
	Options	Cylinder stroke Weight 50mm Cylinder stroke Weight 120mm

OPTION

More Versatile

A Wide Variety of options are available
Original machine for only you is available



Optional Accessories for All Grades

Category	Name
Wheelhead	15 Wheel flange for thin wheel (Round nut: 20-65mm) ※1
	16 Wheel balancing stand (for φ355 or φ405 grinding wheel or more than φ510 grinding wheel)
	17 Wheel balancing arbor
Workhead	18 Manual taper adjustment type manual footstock (manual lever type: 25mm stroke)
	19 Manual center distance adjustment type manual footstock (manual lever type: 25mm stroke, center distance adjustment: 160mm)
Table	20 Manual taper adjustment & manual center distance adjustment type manual footstock (manual lever type: 25mm stroke, center distance adjustment: 160mm)
	21 Table feed handwheel with dual feedrate (20,2mm/rev)
	22 Table positioning attachment (with 0.01mm dial gage)
Wheel Dresser	23 Table feed handwheel vernier (0.1mm/Div)
	24 Mounted-on-table type diamond tool holder ※2
	25 Fine adjustment type wheel dresser (mounted on table) ※2
	26 Angular truing attachment (mounted on table) ※2
	27 Radius truing attachment (mounted on table) ※2
	28 ID/OD wheel dresser ※2
	29 Mounted-on-footstock type diamond tool holder ※2
	30 Formed diamond tool (0.5R)
	31 Single-point diamond tool (shank diameter 8)
	32 Pump unit Separate mounting specification (40L) ※3
Others	33 Coolant supply unit (230L, with cleaning pump and no-coolant detection unit)
	34 Coolant supply unit with paper filter (200L or 250L)
	35 Magnetic coolant separator (Processing ability 40L/min or 80L/min) ※4
	36 Manual steady rest (10dia. to 100dia.; 100dia. to 200dia.)
	37 Driving dog (φ5 to φ50mm, φ50 to φ80mm)
	38 Automatic dog (φ5 to φ45mm, φ45 to φ80mm)
	39 3-jaw scroll chuck (selection from 4", 5", 6", 7", 9")
	40 Independent 4-jaw chuck (selection from 4", 6", 7", 8", 10")
41 4-slot faceplate (φ228mm)	
42 Work holder (each one for R & L, φ10 to φ120mm)	
43 Work light (fluorescent lamp)	
44 Designated color other than JTEKT standard color One color	
45 Feed handwheel made of with resin for wheelhead and table	
46 Adjusting knob for table feed speed adjustment Multi rotary type	

Standard Accessories for All Grades

Category	Name
Wheelhead	1 Grinding wheel (for 30M or 45M)
	2 Standard wheel flange (round nut: 30-80mm) ※
	3 Hydraulic rapid feed
	4 Wheel spindle ON/OFF switch
	5 Wheelhead handwheel graduation on work diameter
Workhead	6 Work spindle ON/OFF switch
	7 Work spindle jog switch
Others	8 Carbide tipped center (workhead, footstock)
	9 Coolant ON/OFF switch
	10 Pump unit Integrated specification (40L)
	11 Coolant supply unit (150L, no-coolant detection unit is not equipped.)
	12 Service tools (special tools, wrench, spanner, etc.)
	13 Standard paint color: silver metallic, dark gray metallic
	14 Standard instruction manual, maintenance manual ... one for each

※30-50mm for universal grinders

※1 : 20-35mm for universal grinders
 ※2 : Diamond tool is not attached as standard accessory parts.
 ※3 : Floorspace requirement is 2,730mm in width and 1,800mm in depth.
 ※4 : Processing ability 80L/min is recommended for wide wheel specifications.

Cylindrical Grinder Specifications

Item	Model	GOPseries			GOSseries		
		GOP32×50	GOP32×100	GOP32×150	GOS32×50	GOS32×100	GOS32×150
Max. swing over table	mm	φ320					
Distance between centers	mm	500	1,000	1,500	500	1,000	1,500
Grinding diameter	mm	0~φ220					
Max. load between centers	kg	Max. 150					
Wheel	OD x Width x ID	φ405×75×φ127 (straight type No.1 wheel)					
	Surface speed	30 (45)			30		
	Use range	φ405~φ280					
Wheelhead	Grinding feed mechanism	Hydraulic feed			Manual feed		
	Total stroke	220			220		
	Handwheel feed stroke	180			180		
	Hydraulic rapid feed stroke	40			40		
	Automatic feed stroke	1.6			—		
	Automatic intermittent infeed amount in traverse grinding	0.005~0.08			—		
	Handlever infeed stroke with positive stop	—			(special specification 0.7)		
	andwheel feed amount	2.0			2.0		
	andwheel feed amount	0.005			0.005		
	Table	Amount of oscillation	Min. 5				
Traverse speed		50-4000 (oil temperature 25°C)					
Handwheel feed amount		20 (special specification 20:2)					
Swiveling angle (counterclockwise-clockwise)		12.5°-5°	10°-3°	8.5°-3°	12.5°-5°	10°-3°	8.5°-3°
Workhead	Dead spindle						
	Center	MT. No. 4					
	No.of spindle speed step	Infinitely variable					
	spindle speed	21~500					
Footstock	Hand lever type						
	Center	MT. No. 4					
	Quill stroke	25					
Electrical Equipment	Power supply voltage 200V , control voltage DC24V						
	Wheel spindle motor	3.7 (5.5) (4P)			3.7 (4P)		
	Work spindle motor	1.5 (AC servo)					
	Hydraulic pump motor	0.75 (4P)					
	Wheel spindle bearing pump motor	0.25 (2P)					
	Coolant pump motor	0.18 (2P)					
	Motor for spindle bearing lubricant cooling device	0.080			—		
	Tool power consumption	11.2 (13.6)			11.2		
Tank Capacity	Hydraulic oil	40 (Mobil Vacuoline 1409)					
	Wheel spindle bearing oil	12 (15) (Mobil Velocite No.3)			12 (Mobil Velocite No.3)		
	Coolant	150					
Floor space requirement (width x depth)	m	2.64×1.84	4.50×1.84	6.55×1.84	2.64×1.84	4.50×1.84	6.55×1.84
Machine mass	kg	2,900	3,800	4,600	2,900	3,800	4,600

※Note: Values in red are for the 45M specification (wheel surface speed:45m/s) ※Specifications are different depending on grade. Specifications may be limited depending on customer's tooling.

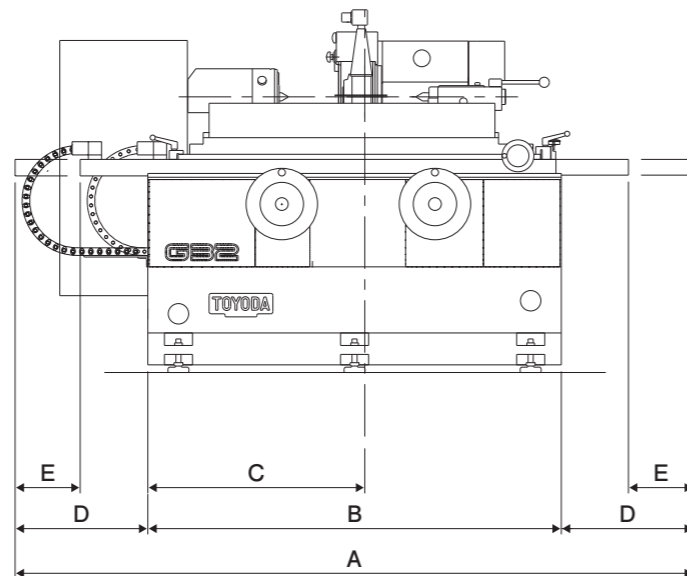
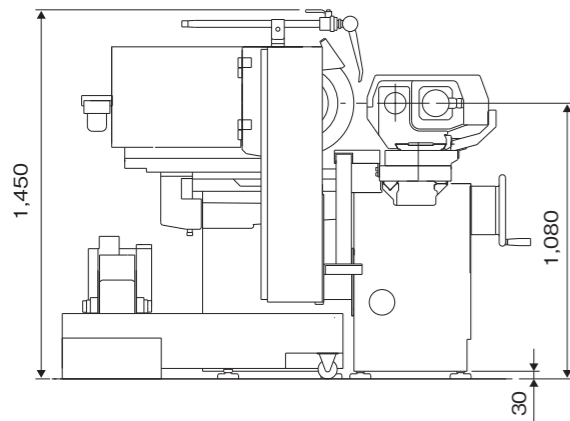
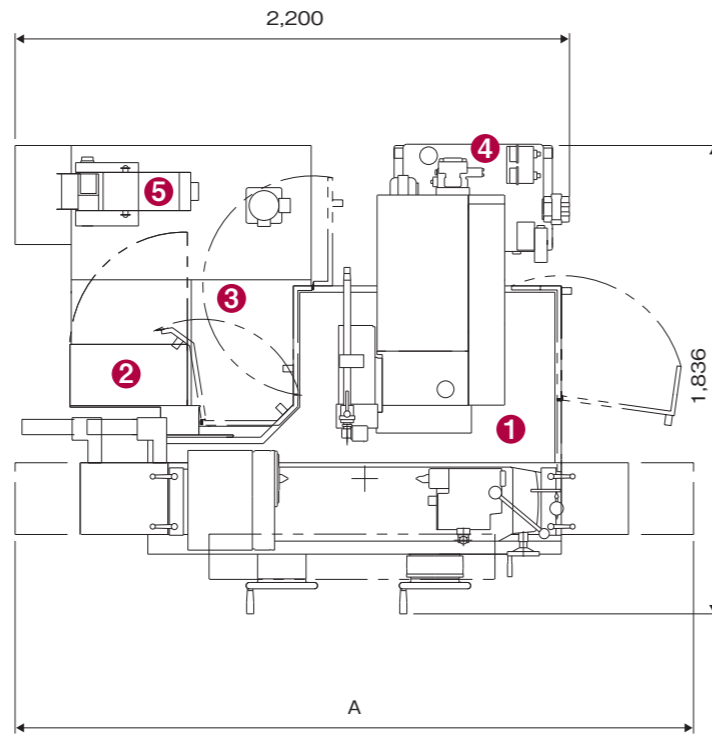
Universal Grinder Specifications

Item	Model	GUPseries			GUSseries		
		GUP32×50	GUP32×100	GUP32×150	GUS32×50	GUS32×100	GUS32×150
Max. swing over table	mm	φ320					
Distance between centers	mm	500	1,000	1,500	500	1,000	1,500
Grinding diameter	mm	0~φ280					
Max. load between centers	kg	Max. 150					
Wheel	OD x Width x ID	φ355×50×φ127 (straight type No.1 wheel)					
	Surface speed	30 (45)			30		
	Use range	φ355~φ220					
Wheelhead	Grinding feed mechanism	Hydraulic feed			Manual feed		
	Total stroke	220			220		
	Handwheel feed stroke	180			180		
	Wheel position adjustment amount	75			75		
	Hydraulic rapid feed stroke	40			40		
	Automatic feed stroke	1.6			—		
	Automatic intermittent infeed amount in traverse grinding	0.005~0.08			—		
	Handlever infeed stroke with positive stop	—			(special specification 0.7)		
	andwheel feed amount	2.0			2.0		
	andwheel feed amount	0.005			0.005		
Table	Amount of oscillation	Min. 5					
	Traverse speed	50-4000 (oil temperature 25°C)					
	Handwheel feed amount	20 (special specification 20:2)					
	Swiveling angle (counterclockwise-clockwise)	12.5°-5°	10°-3°	8.5°-3°	12.5°-5°	10°-3°	8.5°-3°
Workhead	Swivel type with combination of live and dead spindles						
	Center	MT. No. 4					
	Diameter of work spindle hole	φ22					
	No.of spindle speed step	Infinitely variable					
	spindle speed	21~500					
	Swiveling angle (counterclockwise-clockwise)	90°-30°					
	Live spindle load	Max.40 (including fixture)					
Footstock	Center	MT. No. 4					
	Quill stroke	25					
Electrical Equipment	Power supply voltage 200V , control voltage DC24V						
	Wheel spindle motor	3.7 (3.7) (4P)			3.7 (4P)		
	Work spindle motor	1.5 (AC servo)					
	Hydraulic pump motor	0.75 (4P)					
	Wheel spindle bearing pump motor	0.25 (2P)					
	Coolant pump motor	0.18 (2P)					
	Motor for spindle bearing lubricant cooling device	0.080			—		
	Motor for internal grinding spindle (optional)	0.75 (2P) (1.5kW or 2.2kW motor is ready for high power spec.)					
Tool power consumption	11.2 (13.6)			11.2			
Tank Capacity	Hydraulic oil	40 (Mobil Vacuoline 1409)					
	Wheel spindle bearing oil	12 (15) (Mobil Velocite No.3)			12 (Mobil Velocite No.3)		
	Coolant	150					
Floor space requirement (width x depth)	m	2.64×1.84	4.50×1.84	6.55×1.84	2.64×1.84	4.50×1.84	6.55×1.84
Machine mass	kg	2,900	3,800	4,600	2,900	3,800	4,600

※Note: Values in red are for the 45M specification (wheel surface speed:45m/s) ※Specifications are different depending on grade. Specifications may be limited depending on customer's tooling.

Machine Layout

- ① Machine bed
- ② Electrical control box
- ③ Coolant supply unit
- ④ Pump unit Integrated specification
- ⑤ Magnetic separator(option)



	A	B	C	D	E
G32x50	2,640	1,620	850	510	250
G32x100	4,495	2,475	1,295	1,010	500
G32x150	6,545	3,525	1,845	1,510	750

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