ADVANTAGE OF WHEELHEAD TRAVERSE TYPE

The width of machine is roughly two thirds of that of the SHIGIYA table traverse type (GPL-30B-25) that has similar specifications.

COMPACT

Ongoing challenge to compact machinery to fit smaller area of space.

POTENTIALITY

Huge potential for higher accuracy and higher productivity

FLEXIBILITY

Superior flexibility for a wide range of automation systems.
Variable of automation lines can be constructed like clockwork

The smallest frontage in domestic manufactured, and the compact body combined with electricity. Accurate wheelhead traverse, which was achieved by the design with high rigidly such as using large diameter ball screws and low vibrate bed. GPC/GAC can easily combine with variable automation systems such as robots and auto loaders, by using wheel traverse system.

Integration with CNC Robot
Integration with CNC controlled gantry type loading system
The machine in the photo differs from the standard specifications.

- 90° index type loading arm and top chain conveyor
Minimizing the size of machine's body and increasing productivity

GPC series, SHIGIYA’s compact CNC cylindrical grinder, is a high accuracy machine that was made with the goal in mind to compact its body, increase productivity and use various automation systems to simplify making assemble lines.

Features

This CNC cylindrical grinder offers simultaneous 2-axis control with a plain wheelhead traverse type. Multiple automation system is available, and lines can be easily constructed. Achieve of the goal of high accuracy and high productivity.

- **GPC-30/40/B Series**
  - Directly connected with large diameter of precise ball screw and high output AC servomotor.
  - Achieved the goal of high rigidity feed mechanism, which is high accuracy wheelhead traverse.
  - Wheel peripheral speed 200 m/sec., CBN wheel specification (option). Achieved the goal of high speed grinding.
  - Large diameter and width. Max. $\phi$ 610 x width 125 mm. of grinding wheel can be attached (option).

- **GPC-20-10**
  - Achieved the goal of high efficiency grind for tiny precise parts.
  - Achieved the goal of high accuracy grind by high accuracy revolution of wheel spindle with high rigidity hydrodynamic bearing.
VARIOUS GRINDING AND DRESSING PATTERNS

SHIGIYA original interactive automatic programming system has been carried.
The system makes time short and operation easily for programming.

GRINDING PATTERNS

- Plunge
- Plunge oscillation
- Plunge + fine oscillation
- Multiple plunge + traverse
- Multiple plunge + taper traverse
- Taper traverse
- Right face + plunge
- Right face + plunge oscillation
- Right face + multiple plunge + traverse
- Parallel traverse
- Manual traverse
- NC format

※Left side face grinding-optional

DRESSING PATTERNS

- Straight
- Multi-step O.D.
- Taper
- Left face&R
- NC format
- Both faces & R (option)
The two greatest of compact series
Powerful and high accuracy angular type

Compact CNC angular cylindrical grinder, GAC, is one of the two greatest compact series, as well as GPC series. That is powerful high accuracy cylindrical grinder and can grind O.D. and face at once.

Features

This is an angular slide wheelhead traverse type CNC angular cylindrical grinder with simultaneous 2-axis control.

Multiple automation system is available, and lines can be easily constructed. Achieve the goal of high accuracy and high productivity.

GAC-30/40 SERIES

- Directly connected with large diameter of precise ball screw and high output AC servomotor.
- Achieved the goal of high rigidity feed mechanism, which is high accuracy wheelhead traverse.
- Max. 15 kW output wheel spindle motor and φ 610 x width 125 mm of large diameter grinding wheel can be driven (option). Achieved the goal of high efficiency grinding.

GAC-20/10

- Achieved the goal of high efficiency grind for tiny precise parts.
- Achieved the goal of high accuracy grind by high accuracy revolution of wheel spindle with high rigidity hydrodynamic bearing.
VARIOUS GRINDING AND DRESSING PATTERNS

SHIGIYA original interactive automatic programming system has been carried.
The system makes time short and operation easily for programming.

GRINDING PATTERNS

- Right face + plunge
- Plunge oscillation
- Right face + plunge oscillation
- Multiple plunge + traverse
- Taper traverse
- Parallel traverse
- Manual traverse
- NC format

DRESSING PATTERNS

- Straight + left face
- Multi-step straight
- Taper
- NC format
### MACHINE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>GPC 2010</th>
<th>30/40B 25</th>
<th>30/40B 40</th>
<th>GAC 2010</th>
<th>30/40B 25</th>
<th>30/40B 40</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swing over table</td>
<td>200mm</td>
<td>300 (410) mm</td>
<td>200mm</td>
<td>300 (410) mm</td>
<td>200mm</td>
<td>300 (410) mm</td>
</tr>
<tr>
<td>Distance between centers</td>
<td>100mm</td>
<td>250mm</td>
<td>400mm</td>
<td>100mm</td>
<td>250mm</td>
<td>400mm</td>
</tr>
<tr>
<td>Max. grinding diameter</td>
<td>20mm</td>
<td>300 (430) mm</td>
<td>30mm</td>
<td>300 (430) mm</td>
<td>30mm</td>
<td>410mm</td>
</tr>
<tr>
<td>Max. workpiece mass *1</td>
<td>20kg</td>
<td>150kg</td>
<td>20kg</td>
<td>150kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wheelhead</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle</td>
<td>0°</td>
<td></td>
<td></td>
<td>30°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel size</td>
<td>O.D.</td>
<td>355mm</td>
<td>510mm</td>
<td>355mm</td>
<td>510mm</td>
<td>610mm</td>
</tr>
<tr>
<td></td>
<td>W</td>
<td>38mm</td>
<td>50mm</td>
<td>38mm</td>
<td>50mm</td>
<td>75mm</td>
</tr>
<tr>
<td></td>
<td>I.D.</td>
<td>127mm</td>
<td>152.4mm</td>
<td>123.2mm</td>
<td>127mm</td>
<td>152.4mm</td>
</tr>
<tr>
<td>Max. wheel peripheral speed</td>
<td>33m/sec</td>
<td>45m/sec</td>
<td>33m/sec</td>
<td>45m/sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-axis feed speed</td>
<td>20 to 20,000rpm/minute</td>
<td></td>
<td></td>
<td>20 to 20,000rpm/minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z-axis feed speed</td>
<td>0 to 16,000rpm/minute</td>
<td></td>
<td></td>
<td>0 to 16,000rpm/minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-axis min. input increment</td>
<td>0.0001mm</td>
<td></td>
<td></td>
<td>0.0001mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z-axis min. input increment</td>
<td>0.0001mm</td>
<td></td>
<td></td>
<td>0.0001mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Table</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swivel angle</td>
<td>±0.2°</td>
<td>Small amount</td>
<td>±0.2°</td>
<td>Small amount</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Workhead</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Non-swivel, Dead spindle</td>
<td>Non-swivel, Dead spindle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotational speed</td>
<td>30 to 1,000min⁻¹</td>
<td>15 to 600min⁻¹</td>
<td></td>
<td>30 to 1,000min⁻¹</td>
<td>15 to 600min⁻¹</td>
<td></td>
</tr>
<tr>
<td>Taper hole</td>
<td>MT.No.3</td>
<td>MT.No.4</td>
<td></td>
<td>MT.No.3</td>
<td>MT.No.4</td>
<td></td>
</tr>
<tr>
<td><strong>Tailstock</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Manual lever type</td>
<td>Manual lever type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tailstock spindle stroke</td>
<td>20mm</td>
<td>30mm</td>
<td></td>
<td>20mm</td>
<td>30mm</td>
<td></td>
</tr>
<tr>
<td>Taper hole</td>
<td>MT.No.3</td>
<td>MT.No.4</td>
<td></td>
<td>MT.No.3</td>
<td>MT.No.4</td>
<td></td>
</tr>
<tr>
<td><strong>Motor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel spindle</td>
<td>2.2kW 4P</td>
<td>5.5kW 4P</td>
<td></td>
<td>2.2kW 4P</td>
<td>5.5kW 4P</td>
<td>11kW 4P</td>
</tr>
<tr>
<td>Work spindle</td>
<td>AC servo</td>
<td>0.75kW</td>
<td>1.4kW</td>
<td>0.75kW</td>
<td>1.4kW</td>
<td></td>
</tr>
<tr>
<td>Coolant pump</td>
<td>0.1kW 2P</td>
<td>0.1kW 2P</td>
<td></td>
<td>0.1kW 2P</td>
<td>0.1kW 2P</td>
<td></td>
</tr>
<tr>
<td><strong>Tank capacity</strong> [Viscosity grade]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubrication oil tank</td>
<td>2.7L [ISO VG68]</td>
<td></td>
<td></td>
<td>2.7L [ISO VG68]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic oil tank</td>
<td></td>
<td>20L [ISO VG68]</td>
<td></td>
<td></td>
<td>20L [ISO VG68]</td>
<td></td>
</tr>
<tr>
<td>Coolant tank</td>
<td>80L</td>
<td>150L</td>
<td></td>
<td>80L</td>
<td>150L</td>
<td></td>
</tr>
<tr>
<td><strong>Center height from floor</strong></td>
<td>980mm</td>
<td>1,050mm</td>
<td></td>
<td>980mm</td>
<td>1,050mm</td>
<td></td>
</tr>
<tr>
<td><strong>Mass of machine</strong></td>
<td>Approx.</td>
<td>4,500kg</td>
<td>5,500kg</td>
<td></td>
<td>4,500kg</td>
<td>5,500kg</td>
</tr>
</tbody>
</table>

*1 When using both centers
*2 Please use lubrication oil of ISO VG2 for wheel spindles if wheel peripheral speed is 80m/sec or higher.

### CNC SPECIFICATIONS (FANUC)

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
<th>Remarks</th>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of registerable workpiece in interactive display</td>
<td>47 pcs. Max. 20 different diameters per pc.</td>
<td></td>
<td>Program input</td>
<td>Custom macro B</td>
</tr>
<tr>
<td>Program capacity</td>
<td>512 KB</td>
<td></td>
<td>Setting and display</td>
<td>Alarm history display</td>
</tr>
<tr>
<td>Display</td>
<td>8.4-inch color LCD</td>
<td></td>
<td>Help function</td>
<td></td>
</tr>
<tr>
<td>Operation</td>
<td>Single block</td>
<td></td>
<td>Data input/output</td>
<td>Memory card</td>
</tr>
</tbody>
</table>
STANDARD ACCESSORIES

1. Wheel flange 1 set
2. Wheel flange extracting nut 1 pc.
3. Carbide tipped center* 2 pcs.
4. Dressing tool holder* 1 set
6. Tool set 1 set
7. Manual operated door 1 set

*These do not come with the Grinder, depending on its specifications. No oil or lubricant comes with the Grinder. Please prepare for yourself in advance.

OPTIONAL ACCESSORIES

1. Wheel balancing stand
2. Wheel balancing arbor
3. Wheel lifting tool Screw fix type
4. Spare wheel flange
5. Dressing tool holder for both side dressing
6. Dressing tool
7. Table swivel angle measuring device
8. 2-point steady rest
9. Work rest
10. Work driving dog set (S-1 to S-6) 6-kind (45 to 80mm)
11. Manual oil pump

OPTIONAL SPECIFICATIONS

1. Machine full cover ※Standard: GAC/GAC-20
2. Specified machine color ※Standard color: Munsell 5GY9/1
3. Specified as per changed wheel
4. Wheel spindle motor inverter device
5. Automatic wheel balancing device
6. Jib crane (Max. 150Kg, single beam / exchange wheel) ※GPC/GAC-30B Only
7. CBN wheel sharpener (bed mount type) ※GPC/GAC-30B Only
8. Touch sensor for CBN wheel dressing
9. Wheel infeed closed loop specified (X-axis)
10. Gap eliminator device
11. Inprocess gauge
12. Face gauge
13. Automatic slide front splash cover
14. Automatic collet chucking with non swivel workhead
15. Double drive workhead (AC servo)
16. Automatic work drive workhead (dead/non swivel)
17. Automatic eccentric work drive workhead (dead/non swivel)
18. Workhead air purge device
19. Hydraulic operated tailstock spindle (50mm: automatic lub.)
20. Manual operated tailstock (manual taper adjust/50mm)
21. Hydraulic op. tailstock (automatic taper adjust/50mm: lub.)
22. Hydraulic operated tailstock (100mm/125mm: automatic lub.: clamp detector)
23. Hydraulic tailstock (160-50mm: automatic lub.: clamp detector) ※GPC/GAC-30B Only
24. Wheel spindle lubrication cooler
25. Coolant pan cleaning device (including splash gun)
26. Capacity change of coolant tank
27. Oil mist collector
28. Coolant dust separator
29. Coolant fluid temperature control device
30. Loading/Unloading system
31. Work stocker
32. Machine lighting equipment
33. Control box lighting equipment with 100V socket
34. Additional indications

FLOOR PLAN

Unit: mm

GPC/GAC-20-10

GPC/GAC-30B-25

GPC/GAC-30B-40