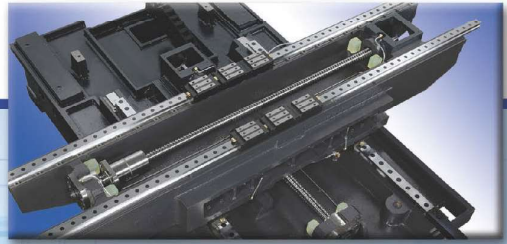
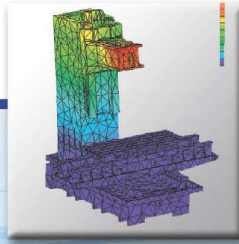


CHEVALIER®

Grinding / Turning / Milling



QP-L Series

High Speed
Vertical Machining Center

QP1620-L · 2033-L · 2040-L
QP2440-L · 2560-L

QP2033-L / 2040-L / 2440-L / 2560-L

Vertical Machining Center (Linear Ways)

Machine Features

These vertical machining centers are designed and built to meet the ever-increasing demands for high efficiency, high accuracy machining, such as 3C components production and other applications that require a powerful and reliable machine to minimize the manufacture cost.

Spindle Speed (QP2033-L / 2040-L)

- Belt Type : 10,000rpm
: 8,000rpm / 12,000rpm (Optional)
- Direct Type : 10,000rpm / 15,000rpm (Optional)

Spindle Speed (QP2440-L / 2560-L)

- Belt Type : 10,000rpm
: 8,000rpm / 12,000rpm (Optional)
- Direct Type : 12,000rpm
: 10,000rpm / 15,000rpm (Optional)

Automatic Tool Changing System

- Tool Changing : Arm Type, 24 Tools
Arm Type, 32 Tools (Optional)

Rapid on (X / Y / Z) Axes

- QP2033-L / 2040-L / 2440-L
36 / 36 / 24m/min (1,417 / 1,417 / 945ipm)
36 / 36 / 30m/min (1,417 / 1,417 / 1,180ipm) (Optional)
- QP2560-L
30 / 30 / 30m/min (1,180 / 1,180 / 1,180ipm)
24 / 24 / 20m/min (945 / 945 / 787ipm) (Optional)



QP2560-L : (L) 3,560 x (W) 2,250mm (140" x 88.5")

Note : Machine shown with optional accessories

QP2033-L / 2040-L / 2440-L

Vertical Machining Center (Linear Ways)



QP2033-L : (L) 2,430 x (W) 2,115mm (95.6" x 83.2")

QP2440-L : (L) 2,800 x (W) 2,200mm (110" x 86.6")

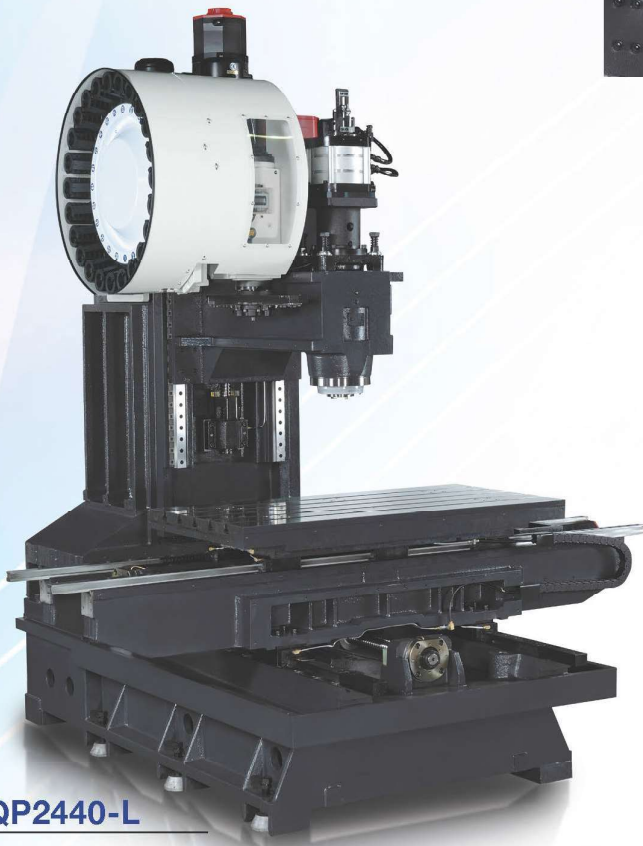
Note : Machine shown with optional accessories

QP2440-L / 2560-L

Machine Construction

Automatic Tool Changing System

- Tool Change Time : Tool To Tool : 1.8 sec.
Chip To Chip : 4.0 sec.
- Arm Type, 24 Tools



QP2440-L



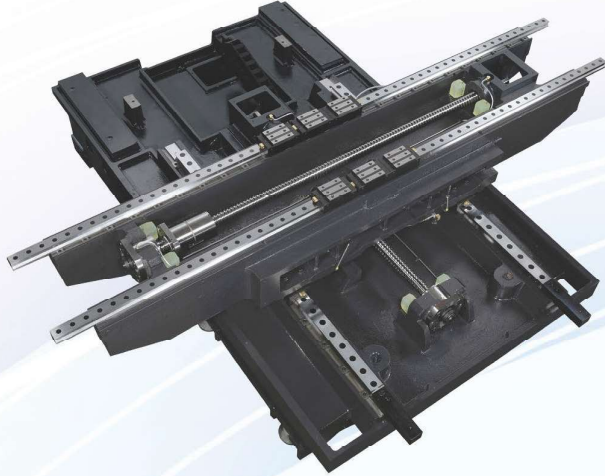
QP2560-L

QP2033-L / 2040-L / 2440-L / 2560-L

Machine Construction

High Accuracy Ballscrews

- 3-axes C3 pretensioned ballscrew Ø40mm x P12mm (Ø1.57" x 0.47").

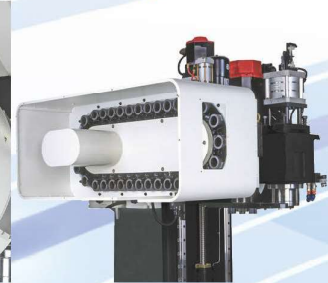


| A.T.C System | Arm Type | |
|-----------------------|----------------------------|---------------|
| Tool Shank | BT40 / CT40 / DIN40 / JT40 | |
| Tool Capacity | 24 | 32 (Optional) |
| Tool Selection | Random | Random |
| Tool Access | Bi-Directional | |

Arm Type 24 Tools



Arm Type 32 Tools



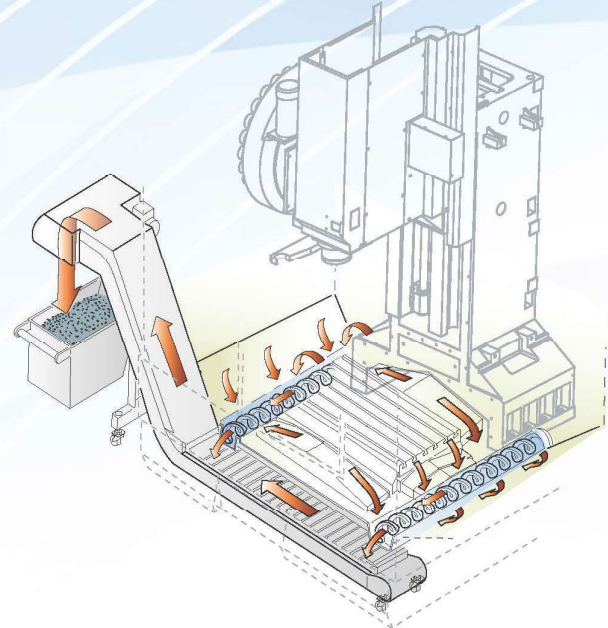
X / Y / Z Linear Roller Ways

- 3-axes linear ways, 35mm (1.33") width, Z-axis use lengthened sliding block for heavier rigidity.
- Y-axis stroke 530mm (20.9") for QP2033 / 2040-L, 610mm (24") for QP2440-L and 635mm (25") for QP2560-L.
- Dual chip auger (Optional)
- Linear roller guide ways (Standard)



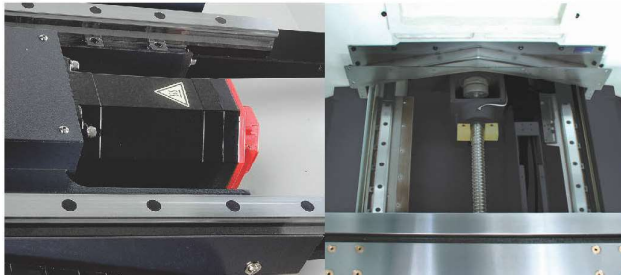
Easy Chip Flow Splash Guard Design

- Big slant chip guard design for easy chips flow. Rear flood coolant nozzles are standard.



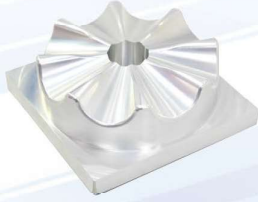
X / Y One Piece Motor Seat with Machine Base and Saddle

- Unlike bolts tightened motor seat, this new design provides much higher accuracy and rigidity.



QP-L Series

Application



Machine Model : QP20-L / Controller : 0iM

Unit : mm (")

| Workpiece | Cutting Material | Tool | Cutting Mode | Speed (RPM) | Feed rate (mm /min) | Total Time | Dimensions |
|-----------------|------------------|---------|--------------|-------------|---------------------|------------|---|
| Surface Cutting | AL-6061 | EDM D10 | Rough | 8,000 | 2,400 | 12:52:00 | 100 x 100 x 40 (3.93" x 3.93" x 1.57") |
| | | BM R4 | Rough | 8,000 | 1,800 | | |
| | | BM R3 | Finish | 10,000 | 1,200 | | |



Machine Model : QP20-L (With 4th axis) / Controller : 0iM

| Workpiece | Cutting Material | Tool | Cutting Mode | Speed (RPM) | Feed rate (mm /min) | Total Time | Dimensions |
|-----------|------------------|---------------|--------------|-------------|---------------------|------------|------------------------------|
| Blade | AL-7075 | EDM D8 | Rough | 6,000 | 1,800 | 2:30:00 | D270 x 32 (10.6" x 1.26") |
| | | Bull end mill | Finish | 8,000 | 600 | | |



Machine Model : QP20-L / Controller : 0iM

| Workpiece | Cutting Material | Tool | Cutting Mode | Speed (RPM) | Feed rate (mm /min) | Total Time | Dimensions |
|-----------|------------------|-----------|--------------|-------------|---------------------|------------|--|
| Honeycomb | AL-6061 | EDM D10 | Rough | 10,000 | 3,000 | 1:04:00 | 10 x 170 x 60 (6.7" x 6.7" x 2.36") |
| | | DRILL D12 | Rough | 1,600 | 480 | | |
| | | EDM D6 | Rough | 10,000 | 900 | | |
| | | EDM D6 | Finish | 10,000 | 900 | | |



Machine Model : QP20-L / Controller : 18iMB

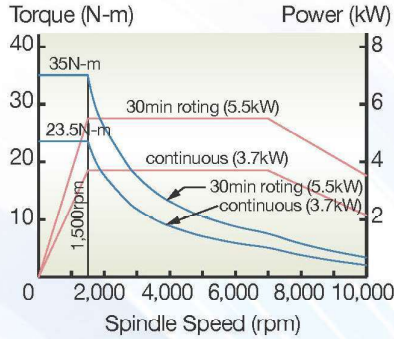
| Workpiece | Cutting Material | Tool | Cutting Mode | Speed (RPM) | Feed rate (mm /min) | Total Time | Dimensions |
|-------------|------------------|--------|--------------|-------------|---------------------|------------|---|
| Sponge Mold | NAK80 | EDM D6 | Rough | 10,610 | 1,597 | 4:12:00 | 160 x 160 x 80 (6.3" x 6.3" x 3.14") |
| | | BM R10 | Rough | 7,957 | 1,273 | | |
| | | BM R3 | Finish | 11,000 | 1,320 | | |

QP-L Series

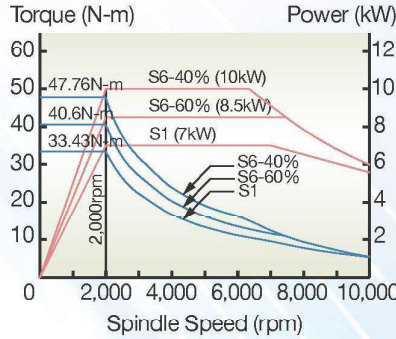
Vertical Machining Center (Linear Ways)

• QP1620-L

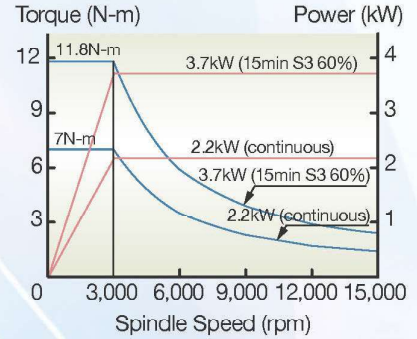
FANUC 5.5kW AC Spindle Motor for #40



SIEMENS 8.5kW AC Spindle Motor for QP1620-L #40

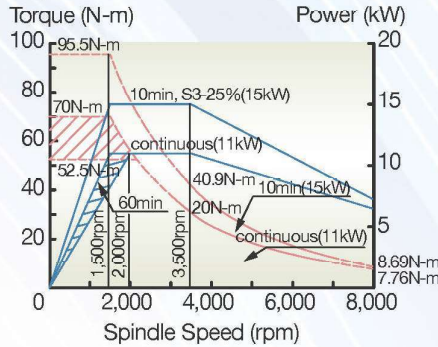


FANUC α 2i/15,000 AC Spindle Motor for QP1620-L #30

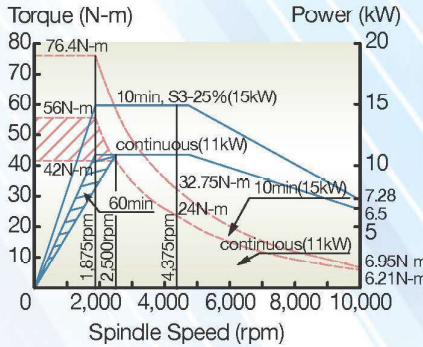


• QP2033 / 2040 / 2440 / 2560-L

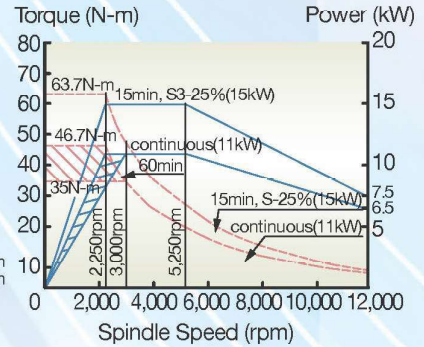
8,000rpm FANUC β 12i (15kW) Spindle Motor



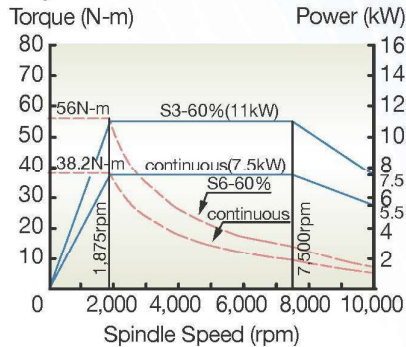
10,000rpm FANUC β 12i (15kW) Spindle Motor



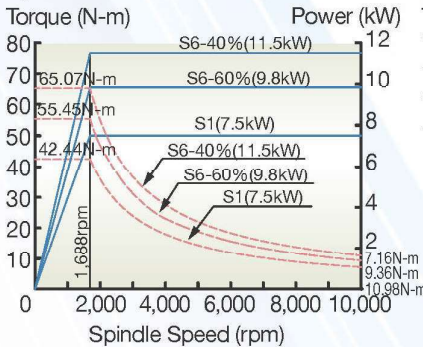
12,000rpm FANUC β 12i (15kW) Spindle Motor



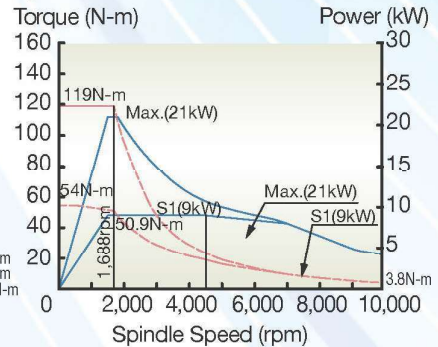
10,000rpm FANUC α 8i (11kW) Spindle Motor



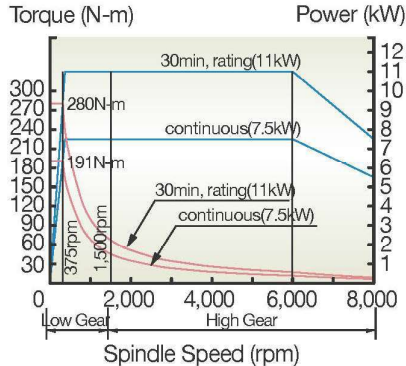
10,000rpm HEIDENHAIN QAN-200L Spindle Motor



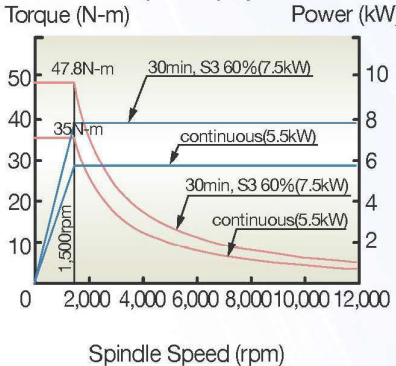
10,000rpm SIEMENS 1PH8107 Spindle Motor



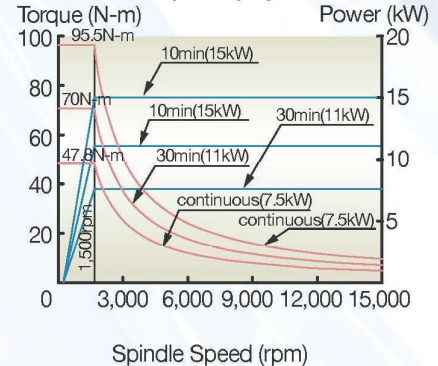
8,000rpm FANUC α 8i (11kW) With ZF Gear Box



Directly coupled 12,000rpm FANUC α 6i (7.5kW) Spindle Motor



Directly coupled 15,000rpm FANUC α T8i (11kW) Spindle Motor

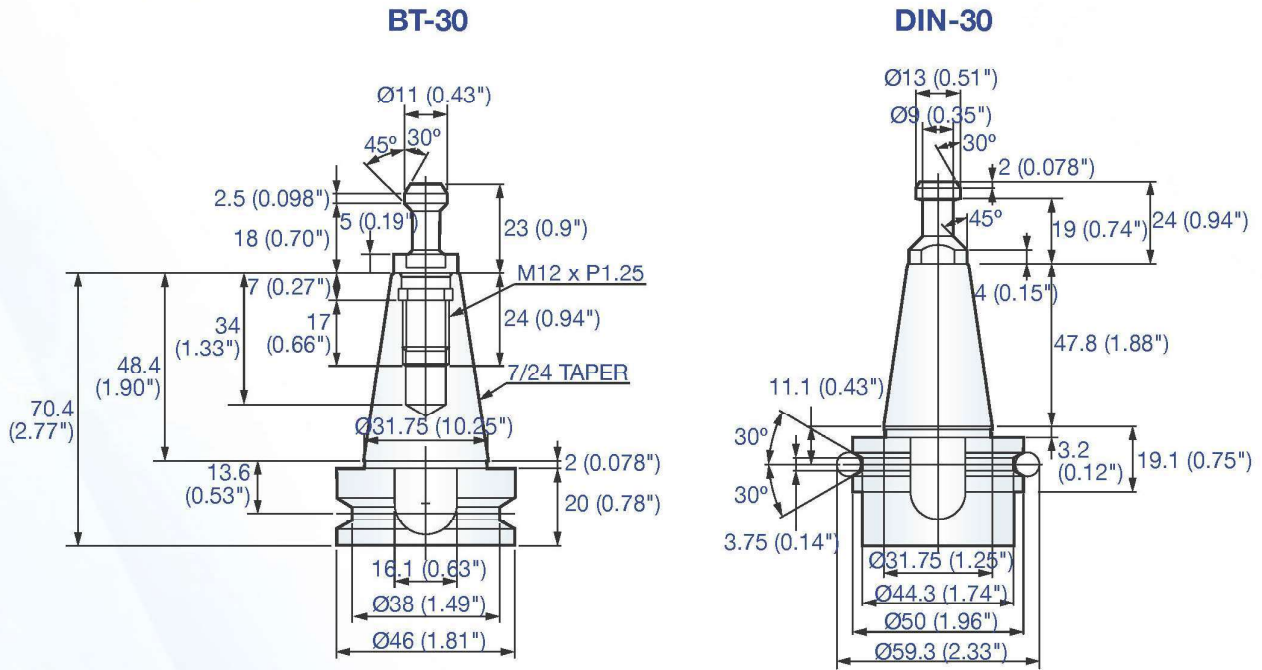


QP-L Series

Tool Shank and Pull Stud

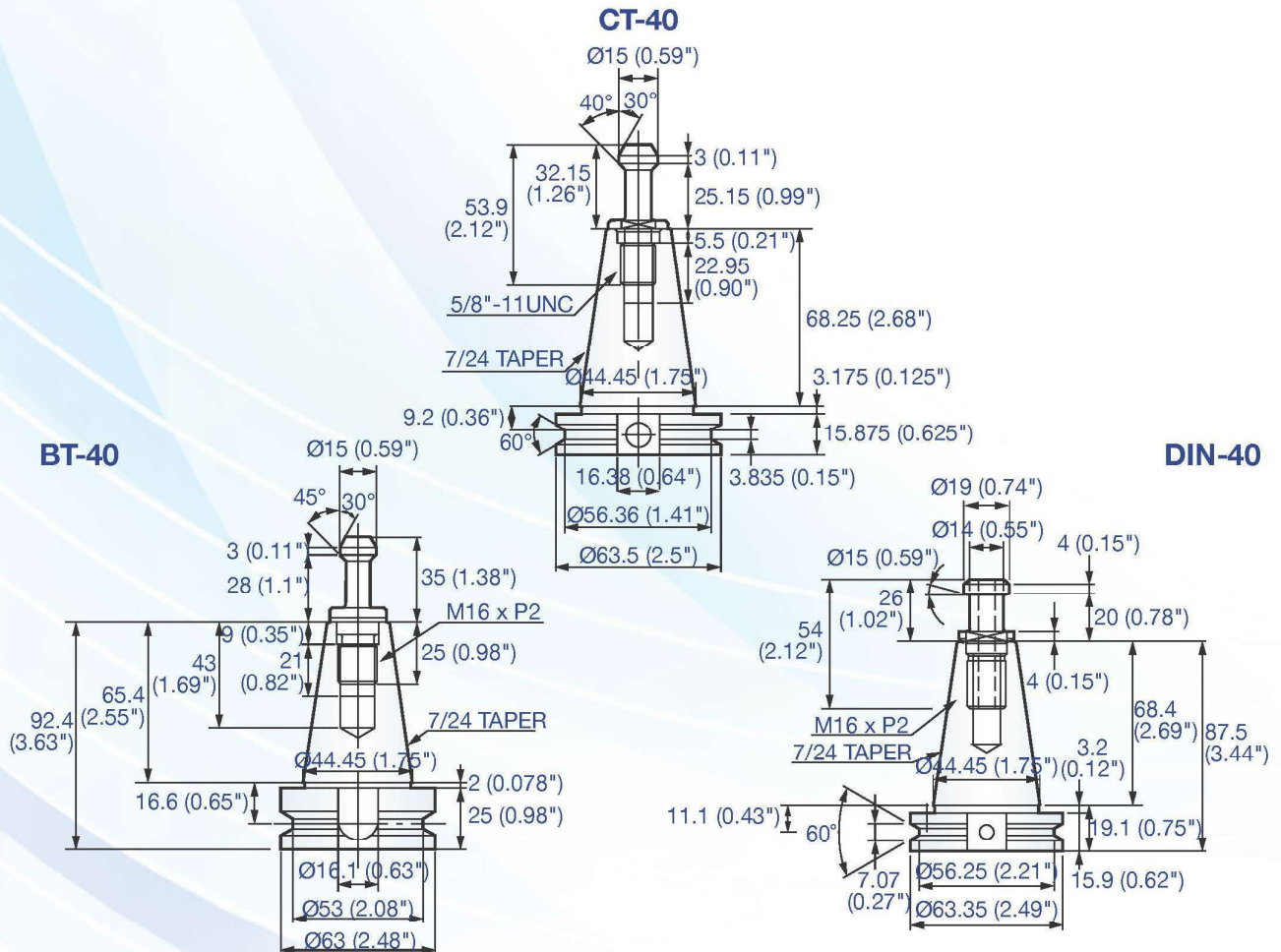
QP1620-L (#30)

UNIT : mm (")



QP2033-L / 2040-L / 2440-L / 2560-L (#40)

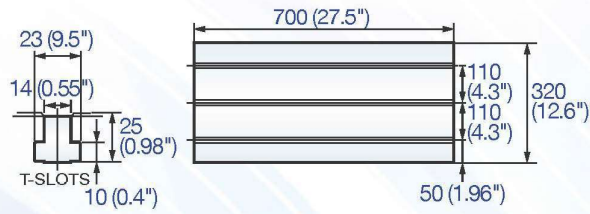
UNIT : mm (")



QP-L Series

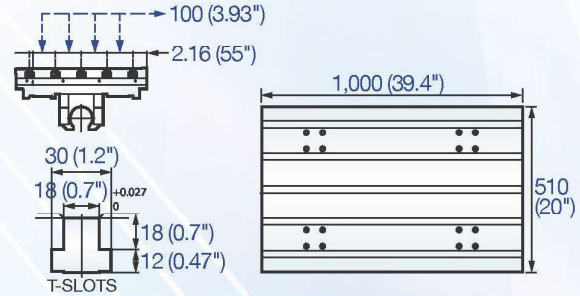
Table Dimensions

QP1620-L

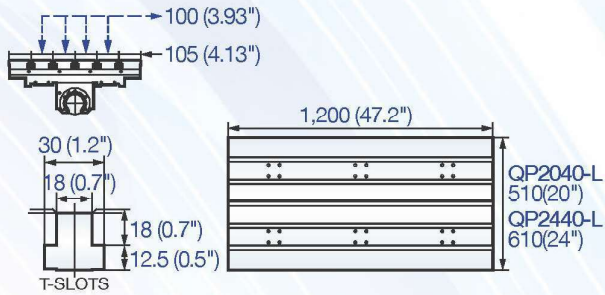


QP2033-L

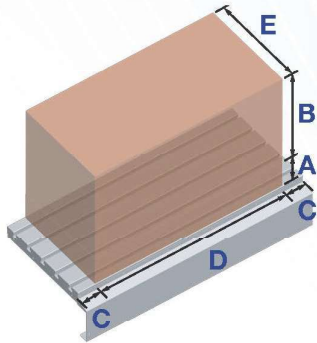
UNIT : mm (")



QP2040-L / 2440-L



QP2560-L



| Model | A | B | C | D | E |
|----------|------------|-------------|-----------|---------------|-------------|
| QP2033-L | 130 (5.1") | 510 (20.1") | 75 (2.9") | 850 (33.5") | 510 (20.0") |
| QP2040-L | 130 (5.1") | 510 (20.1") | 90 (3.5") | 1,020 (40.1") | 510 (20.0") |
| QP2440-L | 130 (5.1") | 550 (21.6") | 90 (3.5") | 1,020 (40.1") | 600 (23.6") |
| QP2560-L | 130 (5.1") | 635 (25.0") | 90 (3.5") | 1,470 (57.9") | 610 (24.0") |

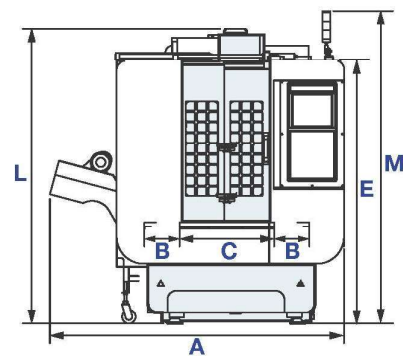
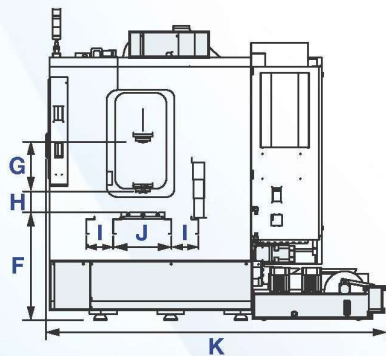
QP-L Series

Dimensional Drawings

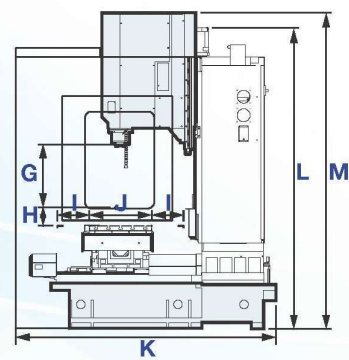
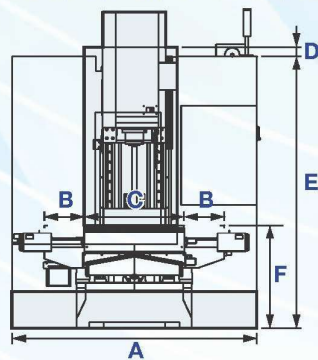
UNIT : mm (")

| Item | QP1620-L | QP2033-L | QP2040-L | QP2440-L | QP2560-L |
|------|----------------|---------------|--------------|---------------|----------------|
| A | 2,175 (85.6") | 2,430 (95.6") | 2,800 (110") | 2,800 (110") | 3,560 (140") |
| B | 260 (10") | 425 (16") | 510 (20") | 510 (20") | 762.5 (30") |
| C | 700 (27.6") | 1,000 (39.4") | 1,200 (47") | 1,200 (47") | 1,650 (64.9") |
| D | - | 76 (3") | - | - | - |
| E | 1,893 (74.5") | 2,227 (87.6") | - | 2,230 (87.8") | 2,325 (91.5") |
| F | 811 (32") | 850 (33.5") | 870 (34.2") | 870 (34.2") | 943 (37.1") |
| G | 380 (15") | 510 (20") | - | 550 (21.6") | 635 (25") |
| H | 150 (6") | 150 (5.9") | 130 (5.1") | 130 (5.1") | 125 (4.9") |
| I | 200 (7.9") | 265 (10.4") | - | 305 (12") | 317.5 (12.5") |
| J | 432 (17") | 510 (20") | - | 600 (23.6") | 610 (24") |
| K | 2,875 (113.2") | 2,115 (83.6") | - | 2,200 (86.6") | 2,250 (88.6") |
| L | 2,206 (87") | 2,467 (97") | - | 2,476 (97.5") | 2,620 (103.1") |
| M | 2,339 (92") | 2,813 (110") | - | 2,898 (114") | 3,325 (131") |

QP1620-L

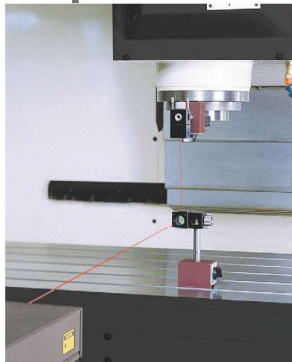


QP2033-L / QP2040-L / QP2440-L / QP2560-L



| QP2033-L | QP2040-L | QP2440-L | QP2560-L |
|--|---|--|---|
| 1,000 x 510 (39.4 x 20.1) | 1,200 x 510 (47.2 x 20.1) | 1,200 x 600 (47.2 x 23.6) | 1,650 x 635 (65 x 25) |
| 5 x 18 x 100 (5 x 0.7 x 3.9) | | 5 x 18 x 125 (5 x 0.7 x 4.9) | |
| 500 (1,100) | 600 (1,320) | 600 (1,320) | 1,500 (3,300) |
| 850 (33.5) | 1,020 (40.2) | 1,020 (40.2) | 1,525 (60) |
| 530 (20.9) | | 610 (24) | |
| 510 (20.1) | | 550 (21.7) | |
| 150~660 (5.9~26) | 130~640 (5.1~25.2) | 130~680 (5.1~26.8) | 125~760 (4.9~29.9) |
| 585 (23) | | 685 (27) | |
| #40 | | #40 | |
| Belt Type : 100~10,000 (Optional 8,000 , 12,000) Direct Type : 120~12,000 (Optional 10,000 , 15,000) | | | |
| 70 (2.8) | | 70 (2.8) | |
| 36 / 36 / 24 (1,417 / 1,417 / 945), Optional 36 / 36 / 30 (1,417 / 1,417 / 1,180) | | 30 / 30 / 30 (1,180 / 1,180 / 1,180), Optional 24 / 24 / 20 (945 / 945 / 787) | |
| 1-10 (39.4~394) | | | |
| N/A | | Air Equalizer | |
| 0.01 | | | |
| 0.007 | | | |
| Arm : 24 (Optional Arm : 32) BT40, (Optional CT40 or DIN40) T-T 1.8, C-C 4.0 P40T-1 80 (3.1) 300 (11.8) 7 (15.4) | | | |
| (F) Belt Type : 11 / 15 (F) Direct Type : 7.5 / 11 (S) Belt Type : 9 (cont.) (H) Belt Type : 7.5 (cont.) | | (F) Belt Type : 7.5 / 11 (F) Direct Type : 7.5 / 11 (S) Belt Type : 12 (cont.) (H) Belt Type : 10 (cont.) | |
| (F) 1.8 / 1.8 / 2.5 (Optional 3.0 / 3.0 / 4.0) (S) 3.3 / 3.3 / 4.87 (H) 3.5 / 3.5 / 5.7 | | (F) 4.0 / 4.0 / 4.0 (S) 3.77 / 3.77 / 4.87 (H) 5 / 5 / 5.7 | |
| 1 (0.76) | | 25 | |
| 20 | | 25 | |
| 5.5 (200) | | | |
| 2,430 x 2,115 x 2,813 (95.7 x 83.3 x 110) | 2,800 x 2,115 x 2,813 (110.2 x 83.3 x 110) | 2,800 x 2,200 x 2,898 (110.2 x 86.6 x 114) | 3,560 x 2,250 x 3,325 (140.2 x 88.6 x 131) |
| 5,800 (12,760) | 6,200 (13,640) | 6,700 (14,740) | 8,500 (18,700) |

Inspection



Laser Calibration

After assembling, all machines are measured and calibrated by state-of-the-art laser calibration equipment. This ensures precise verification and compensation of the machines, resulting in increased accuracy and repeatability.



Ball Bar Testing

The machine put through a series of circular moves in the X / Y plane, and 1/2 circle moves in the X / Z and Y / Z planes. Encoder data from the bar is fed into a computer, which outputs a chart of machine accuracy. Any deviations in squareness or length show up as distorted circles that are very easy for a technician to spot. This chart assures that the machine is accurate and properly aligned.



Grinding Machine

Grinding Machine

Turning Machine

Milling Machine

Headquarters

FALCON MACHINE TOOLS CO., LTD.

No. 34, Hsing Kong Road, Shang Kang, Chang Hua
TAIWAN 50971

Tel: +886 4 799 1126 Fax: +886 4 798 0011

www.chevalier.com.tw

overseas@chevalier.com.tw

TA-YA Factory Tel: +886 4 2567-3266

U.S.A. Headquarters

CHEVALIER MACHINERY INC.

9925 Tabor Place, Santa Fe Springs, CA 90670 U.S.A.

Tel: (562) 903 1929 Fax: (562) 903 3959

www.chevalierusa.com

info@chevalierusa.com



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